

# Computing Fundamentals Using Windows XP

IC<sup>3</sup> Module A ~ Courseware 1105-1





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# *Computing Fundamentals Using Windows XP*

IC<sup>3</sup> Module A — Courseware 1105-1

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FOR EVALUATION ONLY



## Preface

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This courseware is one in a series prepared by CCI Learning Solutions Inc. for use by students and instructors in courses on computer software applications. CCI designed these materials to assist students and instructors in making the learning process both effective and enjoyable.

CCI Learning Solutions Inc. would like to acknowledge the contributions of the instructors and consultants who have worked with CCI Learning Solutions Inc. for their participation in the development of this courseware. We acknowledge the financial support of the Government of Canada through the Book Publishing Industry Development Program for our publishing activities.

In providing this courseware for the use of students and instructors, CCI does not intend to replace the user's manuals and other documentation supplied by the software manufacturer. The manufacturer's documentation covers topics in more detail than this courseware, and the material CCI provides is based on interpretation of available information at the time of publication. It is therefore subject to change.

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The exercises in this courseware require you to use the data files provided for the book.

The data files can be downloaded from <http://www.ccilearning.com/data>. Complete instructions on how to download the files are located on page viii.



## Approved by Certiport

We are pleased to announce that our courseware has been approved for the IC<sup>3</sup> Certification. This book fulfills the basic requirements for the Computing Fundamentals IC<sup>3</sup> exam. What this means is that after completing the exercises in this book, the user could be prepared to take the Computing Fundamentals IC<sup>3</sup> exam for the IC<sup>3</sup> Internet and Computing Core Certification Program. Please refer to the IC<sup>3</sup> Courseware Mapping at the back of this book to see where each of the features are covered. Passing these exams demonstrates a level of proficiency to employers and customers. The exams are available through participating IQ test centers.

## IC<sup>3</sup> . . . What Is It?

IC<sup>3</sup>, or the Internet and Computing Core Certification program, is a global training and certification program providing proof to the world that you are:

- Equipped with the needed computer skills to excel in a digital world.
- Capable of using a broad range of computer technology – from basic hardware and software, to operating systems, applications and the internet.
- Ready for what the work employers, colleges and universities want to throw your way.
- Positioned to advance your career through additional computer certifications such as CompTIA's A+, and other desktop application exams.

## IC<sup>3</sup> . . . Why Do You Need It?

Employers, Colleges and Universities now understand that exposure to computers does not equal understanding computers. So, more than ever, basic computer and Internet skills are being considered prerequisites for employment and higher education.

## This is Where IC<sup>3</sup> Helps!

IC<sup>3</sup> provides specific guidelines for the knowledge and skills required to be a functional user of computer hardware, software, networks, and the Internet. It does this through three exams:

- Computing Fundamentals
- Key Applications
- Living Online

By passing the three IC<sup>3</sup> exams, you have initiated yourself into today's digital world. You have also given yourself a globally accepted and validated credential that provides the proof employers or higher education institutions need.

To learn more about IC<sup>3</sup>, visit [www.certiport.com/ic3](http://www.certiport.com/ic3)

To find a testing center near you, visit [www.certiport.com/iQcenterLocator](http://www.certiport.com/iQcenterLocator)



### About Certiport:

Certiport, Inc. is the leading provider of global, performance-based certification programs and services designed to enable individual success and lifetime advancement through certification. For more information about Certiport's offerings, visit [www.certiport.com](http://www.certiport.com)

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# About This Courseware

## Courseware Conventions

The following conventions are used throughout the courseware:

- *Italic* characters represent terms
- **Bold** characters represent menu options, menu choices or toolbar buttons
- the word “type” means to type: **the indicated text**
- **this typeface** indicates text to be typed, for example the save as **file name**
- the word “press” means to press the specified **Key**
- instructions for exercises are in numbered steps
- instructions throughout this courseware assume that you will be using a mouse

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Exercise text meant to be typed is typeset in this font. The Paragraph symbol (¶) is used to indicate pressing the **Enter** key for the end of a paragraph or to leave a blank line.¶

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## Using the Book

The goal of this courseware is to provide you with one of the best training solutions available for IC<sup>3</sup> Certification.

**Course Length:** This courseware covers all the objectives in the Computing Fundamentals exam, with a number of exercises designed to emphasize and reinforce concepts. It has been designed to fit within a 20 to 25 hour course. Suggested timings have been provided with each lesson as a guide; this will vary depending on the size and experience of your class.

**Step by Step Process:** Each concept covered has an accompanying step by step exercise (where applicable) to demonstrate how the feature works. The exercises take users through each step of the process to accomplish the task, with appropriate screen captures to show the progress.

 This book provides a variety of ways to complete a task. Whenever you see this symbol, it shows an alternate method to complete that task or additional information you need to know about the feature. As you progress, oftentimes there are hints or tips to help accomplish the task faster or more productively.

### Exercise Sets

The Essential Skills for Digital Literacy courseware provide a variety of exercises to teach a concept. These exercises are set up in the following method:



#### Exercise

Provides hands on, step by step exercises that guide students through procedures and commands. They are presented immediately following a topic explanation and provide basic instructions on the most productive method of using a feature.



#### Practice Exercise

Are also hands on, step by step guided exercises and provide extra practice and reinforcement or may present an alternative method of completing a task.

Additional exercises, case studies and projects are available for further practice of these concepts. Contact your course provider for access to the Essential Skills for Digital Literacy Supplemental Exercise Workbook.

## Courseware Setup

This courseware was developed using specific software and hardware configurations. In order to complete this courseware, you will require the following minimum requirements:

### Hardware Requirements

- 233 MHz (500 MHz or higher recommended)
- 64 Mb RAM (128 Mb or higher recommended)
- 300 Mb or higher free space on hard drive
- Mouse or other compatible pointing device
- 101 enhanced keyboard
- Printer (must have access rights to print)

➤ In order to fully recognize some of the components that make up a computer, it is preferable to have access to these actual components, wherever possible.

### Software Requirements

- Microsoft Windows XP Professional
- Microsoft Internet Explorer 6.0 or higher

The explanations in this courseware are based on the default settings established during the installation of the Microsoft Windows XP Professional program. Your computer (or the computers in the classroom lab) may be configured differently. If so, please check with your instructor, or consult the Microsoft Windows User's Guide to verify the setup.

The objectives outlined in each lesson can be achieved by properly using the material and exercises in this courseware, and by paying close attention to your instructor. You should not hesitate to ask questions if you have problems in working through the material.

A computer can be made up of a variety of components, some of which are either not discussed in great detail or at all in this courseware. The objectives in the IC<sup>3</sup> program are designed to provide you with the basic fundamental knowledge for working with computers and achieve a digital literacy competency. For more information about other computers or types of computers not discussed in this courseware, please speak to your instructor for additional resources you can access.

Windows is a large and powerful program, with more features than you can master in a single course. This courseware presents a tremendous amount of material in a simple, easy-to-learn format. You should read ahead during the course; you should also reread regularly. This will increase your retention of important concepts and skills, and will help you cope with the size and power of these programs as you continue to learn.

➤ If you are using another version of Windows, you will find that all of the concepts are the same; what will change may be some of the steps required to accomplish the task.

### Prerequisite Skills

This courseware has been designed to provide the essential skills for digital literacy and therefore is intended for those who have never used a computer, or have minimal experience, although some familiarity with using a mouse and keyboard can be helpful.

## Course Objectives

The main objectives of the Essential Skills for Digital Literacy – Computing Fundamentals courseware are to introduce new users to computers, the different types of computers that exist, how they're used, what makes up a computer, and an introduction to the Windows operating system. Upon successful completion of this courseware, you will be able to:

- identify types of computers, how they process information and how individual computers interact with other computing systems and devices
- identify the function of computer hardware components
- identify the factors that go into the decision on how to purchase computer equipment
- identify how to maintain computer equipment and solve common hardware problems
- identify how software and hardware work together to perform computing tasks and how software is developed and upgraded
- identify different types of software and the tasks to which each type of software is most suited or not suited
- identify what an operating system is and how it works, and solve common problems related to operating systems
- manipulate and control the Windows desktop, files and disks
- identify how to change system settings, and how to install and remove software

## Working with the Data Files

The exercises in this courseware require you to use the data files provided for the book. In order to maximize the usage of these data files, it is recommended that you reserve a minimum of 50Mb of space on your hard drive (or network, as applicable).

Follow these steps to download the Student Files from the CCI Web site:

- 1 Navigate to <http://www.ccilearning.com/data>
- 2 Enter 1105 in the **Courseware#** box and click the  button.
- 3 In the **Downloads** area click the [1105-1-student-data.exe](#) file and click **Run**. Click **Run** again in the Internet Explorer – Security Warning window, if necessary.
- 3 Click **Open** in the File Download dialog box.
- 4 In the Winzip Self-Extractor dialog box use the **Browse** button to specify the Windows Desktop as the location to unzip the file and then click on **Unzip**.
- 5 The **IC3 Mod A Files** folder, containing the required Student work files, has now been downloaded to your desktop. It is recommended that the folder be renamed using your own name before starting the exercises in this courseware. You can reinstall and use the work files as many times as you like.

All student data files have been checked for viruses at the time of development. The courseware developer is not responsible for any virus infection that may occur as a result of the customer or distribution channel manipulation. Please ensure your anti-virus software is current with the latest virus pattern to prevent new viruses from infecting the system.

## Unit 1: Recognizing Computers

This unit covers the knowledge and skills required to identify different types of computers, the components of a personal computer (including internal components such as microprocessors) and how these components work together. The domain also includes the knowledge and skills relating to computer storage as it applies to hardware components like floppy and hard disks and performance as it applies to processor speed and memory. It also includes the knowledge and skills required to identify how software works, software categories such as operating systems, applications and utilities, popular products in each category, and which application is best suited for a specific purpose.

<b>Lesson</b>	<b>Topic</b>
1	Computers All Around Us
2	Looking at Networks
3	Elements of a Personal Computer
4	Understanding Memory
5	Identifying Input/Output Devices
6	Working with Storage Systems
7	Looking at Printers
8	Basic Troubleshooting Techniques
9	Buying a Computer
10	Looking at Software Applications
11	Using the Computer

## Lesson 1: Computers All Around Us

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at different types of computers and how these types of computers are being used. On completion, you should be comfortable with the following concepts:

- Supercomputer
- Mainframe
- Minicomputer
- Personal Computer
- Notebook or Laptop
- Personal Digital Assistant
- Pocket PC
- Cellular Phones
- Other Electronic Computing Devices

### How Computers Can Be Used



The personal computer (PC) is a very powerful tool. Not only can it perform calculations much more quickly than a person can, it can also do many complex tasks simultaneously. This type of computer is also called a *microcomputer*. Although it does not seem that small, less than 20 years ago a computer with the same processing power would have filled an entire room. Today, as computers keep getting smaller, power and speed are the main characteristics by which we can differentiate among various types of computers. With increased power and speed, you can have more people accessing the same or various information without sacrificing performance.

The following section describes the relationship of the PC (personal computer) or microcomputer with other types or sizes of computers, such as mainframe computers, minicomputers, and notebooks or laptops.

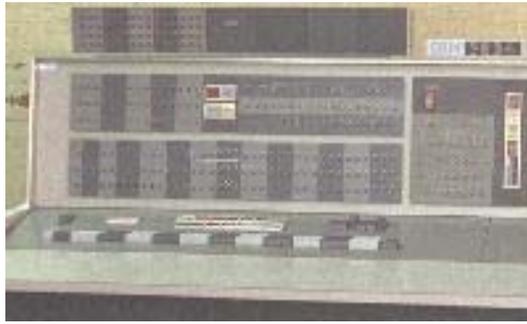
### Large Systems



A *supercomputer* is considered to be the fastest type of computer available. It is very expensive due to the amount of information that needs to be processed on a daily basis. The first supercomputer was created in 1958 with tremendous advancement in technology over the past years. Supercomputers generally have specialized software programs installed and are typically used for scientific and engineering tasks such as forecasting weather, nuclear energy



research, resource exploration, or animation. Supercomputers put all its power into running and performing calculations on a few programs as quickly as it can. Typically, it can handle very large databases and perform a huge number of calculations very quickly.



*Mainframe computers* are large enough to fill an entire room and require a large capital investment. They can simultaneously handle hundreds of different programs and users without sacrificing performance. They process large volumes of data at an incredible speed. These computers would need ten or more technicians to maintain them. Mainframes are commonly found in government agencies or large organizations, e.g., telephone companies, credit card companies, airlines, or universities. Often, users include members of the

public who need access to this information. For instance, you access a mainframe computer whenever you use your bankcard at an automated teller machine (ATM).



Mainframe computers can sometimes be called *centralized systems* as they control the flow of data to and from computers or terminals. Many larger companies that have been in business for a long time still use their mainframes to store historical data.

*Minicomputers* can fill part of a room, and often cost tens of thousands of dollars. Typically, they process data at a slower rate and in smaller volumes than the mainframe computers. Several people can use a minicomputer simultaneously; but as the number of users increases, each user would notice a reduction in speed. Minicomputers are commonly found in medium-sized manufacturing companies and legal or accounting firms. The point-of-sale terminals (cash registers) in a department store or the scanners in a grocery store would link to a minicomputer.



## Personal Computers



PC

*Microcomputers* sit on, beside or under a desk. They process data quickly and are designed for one user. The cost is relatively low, depending on the type, model and features. These computers are found in small businesses, schools and homes.

The advent of technology has greatly enhanced the availability of these computers for the home or office. The size of the components that can be used in or with a computer have decreased significantly as well as becoming more cost effective, thereby making these components much more affordable for the end user. A desktop computer has decreased in size and weight over the last few years, making them much easier to move around an office. They however are still too big to be considered portable, in the same manner as notebooks.

While there are many different types of programs that can be used with a microcomputer, there are generally two types of microcomputers: the PC (personal computer) based on the original IBM machine, or the Macintosh designed by Apple.



Macintosh

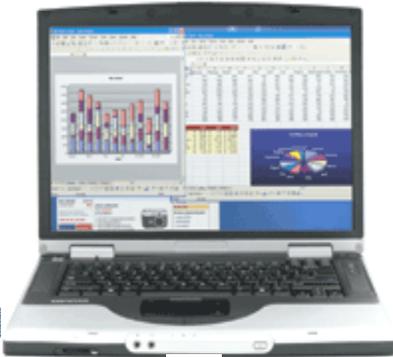
There are a variety of styles used for PCs and Apple computers; the ones shown here are examples of traditional styles. The computer you use will depend on what requirements you or your company has in order to accomplish specific tasks. Sometimes the choice is based on preference. For example, Microsoft Office is available for both the PC and Apple machines. For all intents, the software works exactly the same on either machine. Accordingly, a company who has had Apple machines for their customized software may choose to stay with these types to handle their daily documents using Microsoft Office for the Macintosh.

Traditionally, the majority of companies use PCs to handle their work requirements. This may primarily be due to the wide variety of software programs available to the PC machine and the relative lower cost of a PC as compared to an Apple machine. As well, Apple machines have traditionally been the choice for many specialized industries such as graphics design or publishing. As newer software programs were developed for the PC machines, the differences between the PC and Apple machines decreased significantly. Many companies and schools now have a mixture of PC and Apple machines.

## Notebooks or Laptop Computers



*Notebook/Laptop computers* are portable microcomputers, and are similar to the desktop models in speed, performance and usage. Laptops got their name from the fact that you could rest the computer on top of your lap and work (e.g., during seminars, lecture sessions, etc.) where no desk was available to rest the computer. One of the reasons they weren't as popular, despite the portability, was the weight of the computer as well as design elements such as cramped keyboard and the placement of keys. The advent of technology greatly enhanced the ability to have smaller and lighter components and reduce the size of the laptop to that of the size of a paper notebook, hence the name "notebook". Accessories such as expandable keyboards, notebook mouse, and docking stations, can be purchased separately to enhance the enjoyment and experience of using a notebook.



PC

Notebooks tend to cost the same or slightly more than a desktop computer, but provide a great advantage to the users who want portability. Notebooks are popular with sales people, real estate agents, students and others whose work requires them to be on the move constantly. Having a portable computer allows them to add, search, and even print information from their computer whenever they need, wherever they may be.

The cost of notebooks is now relatively low in comparison to when they were first introduced; hence the increase in the number of users who now have a notebook as their only computer. In the past, users may have bought a personal computer to handle all their daily work and data and a notebook for travel purposes; information would be entered into the notebook and then be transferred from the notebook to the personal computer or vice versa, as needed. Generally, this was due to the limitations of the notebook in the way of limited storage size, and the cost of memory chips. With notebooks being as powerful as desktop models, there is no longer a need to have to transfer information from the notebook back to the desktop.



MAC

Notebooks work in a similar manner to desktop computers with software needing to be installed on the notebook before you can perform any tasks. Information is input into the computer using the keyboard or the mouse.

### Tablets

These computers appear similar to a notebook but usually the screen can be swiveled or folded over to allow the user to write or select items using a special pen designed for the tablet. All tablets have the *touch screen* capability installed for easy data entry where you need only to touch the pen or stylo device to the selected item on the screen to have the entry recognized by the software. The stylo is similar in technology to those used for PDAs or Pocket PCs. Alternatively, the tablet also allows you to type the information using the built-in keyboard for any software that does not support or require the touch screen technology, e.g., word processing, entering budget figures, etc.



Some areas that currently have tablets for data entry include hospitals, home inspectors, engineers and salespeople. An example of how this would work is a home inspector who has the specialized software for his industry and as he completes certain aspects of the inspection, he can click on appropriate check boxes using the stylo pen. The stylo would also be used to click on any scroll bars or next/previous page buttons in that software. Another example where tablets can be used is for electronic/interactive books where you subscribe to the company who has the book in electronic form, order the “book” and download it to the tablet. Then using the software that allows you to read the book, you can then move from page to page with the stylo using the appropriate buttons on the screen, or even write notes on specific pages of the book for reference.

## Personal Digital Assistants



1.1.3

Small palm-sized computers that are used as personal organizers are referred to as *Personal Digital Assistants* (PDAs). These types of computers have software installed with features for making appointments, contact lists and writing notes — similar to manual organizer systems like Day-Timer, Franklin Covey, or Day Runner.



Monochrome PDA



Color PDA's



In recent years, the PDA has become so popular for its portability that you can purchase PDAs with a microprocessor chip that turns the PDA into a *Pocket PC*. With a Pocket PC, you have software installed that allows you to create documents in addition to having the organizer program that comes with all PDAs (e.g., Microsoft Office Small Business). Some PDAs also have digital cameras, video/audio, or Internet capabilities in addition to the office system and personal organizer software provided.

Newer cellular phones also include computer technology so you can access the Internet as well as use the built-in software to create documents, listen to music, take pictures or video, send text messages (similar to using an instant messaging program such as MSN or ICQ), and send e-mail (similar to using a dedicated e-mail program such as Microsoft Outlook, Outlook Express, Eudora).



Pocket PC with Digital Camera



The cost varies with the number of features and capabilities for each cellular phone, Pocket PC, or PDA. Whether you purchase a Pocket PC with PDA and cellular phone services depends on your needs and requirements. Additional services such as connection to the Internet, e-mail capability and extra software would be a separate expense over and above the purchase price of the item.

## Workstations



A *workstation* is essentially any computer. It generally has been considered a computer that requires a lot of power for processing files, such as drafting, desktop publishing, graphics design, video editing and programming. Because of the high amount of resources needed, these workstations may not have a disk drive and could be connected to a centralized system that has enough space and power to handle the software and storage requirements. In general, the operating system used for these computers will either be Unix or Windows NT.

Workstations can either be connected to a network where multiple users share the same software or data files, or used by one person only.

## Other Types of Computers



In addition to the aforementioned, you can find computer technology in a variety of devices, some of which you may not fully recognize as being part of a computer. For instance, many of the newer automobiles have computer technology built into the engine to help diagnose problems (or potential problems) with the vehicle. Automated Teller Machines (ATMs) within a banking institution use a specialized software that allows what you enter at the ATM to interact with the bank's database or network to verify and complete your transactions. ATM machines in locations other than a banking institution have a special software that connects them to a network that recognizes the banking institution you currently use and then connects to that institution's network to verify your profile and account details.

Computers can be found in many other industries such as manufacturing, not just for robotic technology but the systems that control or run the production equipment. Many of the equipment in the health industry are computerized or have customized software to help analyze the information received into the machine.

Computers exist in devices used on a regular basis such as calculators. Many calculators use the same type of chips found in computers in order to perform the calculations entered. The computer is really a very large and advanced calculator that performs tasks based on the hexadecimal computations of 1 or 0 (zero).

Computers may be decreasing in size but in order for them to communicate with other systems, there needs to be a network behind the scenes that connects everyone together in order to share the information. The network can be anything from a minicomputer that diagnoses the automobile engine to a satellite for a Global Position System used by PDAs, Pocket PCs, cellular phones, or automobiles on the road.

## Summary

In this lesson you looked at a different types of computers and how these types of computers are used. You should now be comfortable with the following concepts:

- Supercomputer
- Mainframe
- Minicomputer
- Personal Computer
- Notebook or Laptop
- Personal Digital Assistant
- Pocket PC
- Cellular Phones
- Other Electronic Computing Devices

## Review Questions

1. Supercomputers can handle multiple software programs and users simultaneously in order to process the information in as efficient manner as possible.
  - a. True
  - b. False
2. Mainframe computers are designed to handle multiple software programs or users simultaneously without sacrificing speed.
  - a. True
  - b. False
3. An example of a minicomputer could be a cash register or an automated teller machine.
  - a. True
  - b. False
4. What are the two general types of microcomputers?
5. What would be an advantage of buying a notebook rather than a desktop computer?
  - a. Portability
  - b. Size
  - c. Relative low cost
  - d. All of the above
  - e. Only a or b
6. Tablets are another type of notebook, where the keyboard is the only data entry method available.
  - a. True
  - b. False
7. Explain what a personal digital assistant is.
8. What's the difference between a PDA and a Pocket PC?
  - a. Pocket PCs always have a digital camera
  - b. PDAs are larger and more powerful
  - c. Pocket PCs have additional software for creating documents or multimedia (i.e., video, pictures, music, etc.) files
  - d. Nothing
9. Workstations are essentially any computer.
  - a. True
  - b. False
10. All computing devices need a means of communicating with each other, whether it is installed with the device or via a network that connects the devices together to share information.
  - a. True
  - b. False

## Lesson 2: Looking at Networks

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at what a network is and how it allows computers to share information. On completion, you will be familiar with the following concepts:

- What a network is
- Different types of networks
- Features and benefits of networks
- How computers connect and interact with a network

### What is a Network?



Microcomputers are often linked together to form a *network*. This linkage allows many users to access the same data. A network is a system that allows two or more computers to communicate and share resources with each other.

Networks can sometimes be called *centralized systems* as all data flows to and from these computers. The storage system on a network is generally quite large and designed to store software programs and data files. Not all networks or centralized systems have PCs connected to them; some have a combination of PCs, Macintosh machines, dumb terminals (monitor that displays information only), smart terminals (monitor that displays information with formatting capabilities and has limited processing capabilities), Unix systems, or Linux systems. You can also have portable devices such as a tablet, PDA or cellular phone connected to a network for easy access to information or e-mail when you are away from the office.

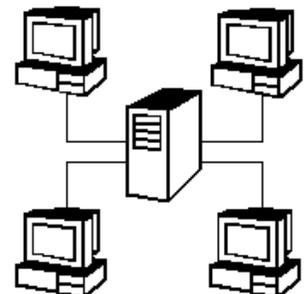
### Types of Networks

A network can be small or large, depending on the company or user requirements.

- LAN** A network connecting a small to medium number of computers together in a confined area is called a *Local Area Network*.
- WAN** A network connecting computers over long distances (i.e., between branches or offices in different provinces or states) is called a *Wide Area Network*.
- MAN** A network connecting computers in a metropolitan area is called a *Metropolitan Area Network*.
- CAN** A network connecting computers in a limited area such as a campus or military base is called a *Campus Area Network*.
- HAN** A network connecting computers in a home environment is called a *Home Area Network*.

Each computer requires a network interface card (NIC) and the appropriate cables to connect it to a dedicated computer called the network *server*. The cost of setting up a network varies, depending on the number of users and their requirements.

Mainframe computers generally store customized software applications and large amounts of data needed by people using the computers connected to them. In order for people spread across different locations to have access to this data, networks need to be set up. In the past, people who needed the information would generally have a computer with access to and from the network connecting to the mainframe computer; no actual information would be stored on the computer at their site. A trend away from this is called *client/server* technology. A client/server network has PCs connected that can function on their own as well as connect to the server to access information. In this arena, the server stores the data and the PC houses the application software.



## Features and Benefits



There are many benefits to being on a network, with the main one being the ability to share information, for example, the company's policies are maintained in the Personnel department. If these policy documents were available for viewing on a computer, you could access them from a network without having to leave your workstation. Another example could be the ability to print documents on the printer two floors away. Some features and benefits of having a network include:

- Larger storage capacity for company data that can be increased significantly more so than on a standard desktop
- Lower costs to upgrade the network only for larger storage, more memory, faster connections, etc. versus buying new faster computers for every employee
- Share resources such as data files, software programs, printers, internet connection
- Organize data in a more effective manner for access by any user on the network versus copying files from individual workstations
- Maintain updates on programs from one location rather than each computer workstation
- Administer and manage secure access to data and programs on the network through the network software
- Set up new users with the same computer configuration as existing workstations
- Ability to back up (or restore) the company data on the network (central area) for security and disaster purposes
- Set up different and roaming profiles for users who share workstations (e.g., log into the network from any workstation)
- Secure remote access by users away on sales trips, or working at home, etc.

## Connecting to a Network

In order to be connected to a network, you need to have a network interface card (NIC) installed on your system and have it set up correctly to recognize the network. Regardless of whether you connect to a network with a cable or a wireless connection, you still need to have a network card installed on the computer. If you plan to connect to a network using wireless technology, you will need a router that will be set up to connect to the network in addition to the NIC.

Once the network card is installed, the computer must then be set up to recognize the network. In most cases this can be accomplished by adding a new connection within Windows; however, if you are using specialized network software such as Novell or Banyan Vines, you will need to have the client version of that network software installed on your system before the network will recognize the computer and allow you access to the files or programs on that network server.

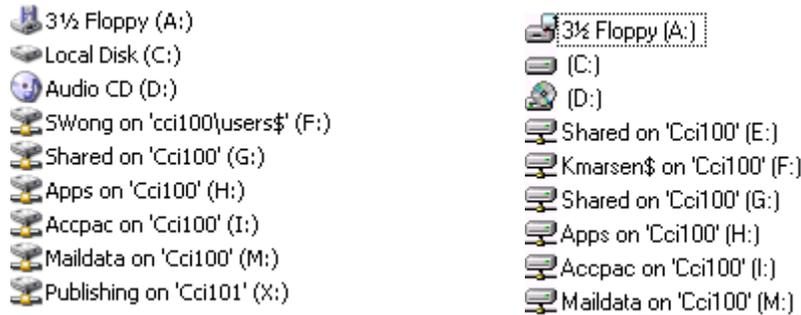


## Interacting with Networks



When your computer has been set up to recognize the network (server), you can then log into the network. This generally requires a valid user id (set up by the network administrator) and a password (originally provided by the network administrator and then administered by the user). This process is the same, regardless of whether the computer system is PC, Macintosh or Unix.

Depending on your requirements, the computer will then run a *script* (mini-program) that tells the network what access rights you have on the computer. These could include which drives/volumes, printers, modems, folders, etc., you can access. The number of files, programs, or drives available to you will depend on your login id and what rights or privileges have been assigned to you by the network administrator, as directed by your manager and/or company policies.



When connected, every time you need to use a program or access a file that is stored on the network, you are sending a request to the network for that item. The speed at which you can access items will depend on the speed of your network connection, the server microprocessor speed, the microprocessor speed on your system, and the number of other requests being made on the network.

### Summary

In this lesson you looked at what a network is and how it allows computers to share information. You should now be familiar with the following concepts:

- What a network is
- Different types of networks
- Features and benefits of networks
- How computers connect and interact with a network

## Review Questions

1. Explain what a network is.
2. Networks can sometimes be called centralized systems as all data flows to and from these computers.
  - a. True
  - b. False
3. Identify each of the network types shown in the following:
  - a. MAN
  - b. WAN
  - c. HAN
  - d. LAN
  - e. CAN
4. Which part of a network stores the data and which holds the application software?
  - a. Server
  - b. PC
5. List three features or benefits of being on a network.
  1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_
6. In order to be connected to a network, the computer system must have which hardware item(s)?
  - a. Cables
  - b. Network Interface Card
  - c. Router only
  - d. All of the above
  - e. Either b or c
7. To access the network, you need to have a user login id and a password assigned to you.
  - a. True
  - b. False
8. Everyone who logs into a network has the same access to all files and programs.
  - a. True
  - b. False
9. The speed at which you can access items depends on what?
  - a. The speed of your network connection
  - b. The server microprocessor speed
  - c. The microprocessor speed on your system
  - d. The number of other requests being made on the network
  - e. All of the above
10. When you log onto a network the computer will run a script that tells the network what access rights you have on the network.
  - a. True
  - b. False

# Lesson 3: Elements of a Personal Computer

## Objectives

Suggested Timing: 1 Hour

In this lesson you will look at some of the elements that make up a personal computer. On successful completion, you will be familiar with the following concepts:

- What makes up a personal computer
- What a system unit is
- What makes up a system unit
- The motherboard
- The microprocessor chip
- The power supply
- Expansion slots

## An Overview



There are four elements that make up a personal computer system. The user, software, hardware and electricity all work together to form the whole system. Each element is as crucial as the others are.

The central element is the *user* who needs to perform a task. The nature of this task determines the application program or software needed to accomplish the task. In turn, the software the user selects will require certain *hardware* components to function properly.

The equipment itself (the computer, monitor, printer, etc.) is called **HARD**ware because you can physically touch the components. The programs are called **SOFT**ware because they function only while the computer is turned on. A software program is a coded set of instructions the computer uses. By means of these instructions, the computer uses a series of on/off signals in order to carry out the user's task.

These on/off signals begin when you first turn on the computer. Without electricity the computer cannot function. Therefore, you control the computer's ability to function by a simple on/off switch. Even internally, the computer works through a series of on/off signals, just as in earlier times the telegraph functioned through a series of on/off signals.

For example, consider what happens when you, the user, create a letter. The first thing you do is turn on the power for the computer. You then choose a word processing software program in order to write the letter. You use a keyboard to type the letter, which appears on the monitor's screen. When the letter is finished, you tell the software to instruct the printer to print the letter. The software program works with the hardware components (the keyboard, monitor and printer) to perform the functions that you require. As explained, all four elements: the power, hardware, software and the user work together to make up a personal computer system.



The previous picture shows an example of a personal computer system (PC). The system unit or box, monitor, keyboard, and mouse are part of the system hardware. There are four major hardware component parts on a system: the Central Processing Unit (CPU), Random Access Memory (RAM), Input/Output (I/O) Devices, and Storage Devices.

These items can also be referenced as internal or external components. Essentially, an *internal* device is something that can be installed inside the system unit, whereas an *external* device is something that can be plugged into a connection on the computer, either at the front or the back of the system unit.

The following pages will describe some of the more popular items that can be installed and set up with your computer. Whether you purchase an internal versus external device depends on your requirements, e.g., amount of room on the desk, cost of the item (internal is usually less expensive than an external), experience with installing devices, etc.

Also, take note that while this courseware addresses the elements and components for a PC, these same elements and components can also be applied to an Apple system. The components will vary in size or appearance, but the concept remains the same.

## Looking at the System Unit

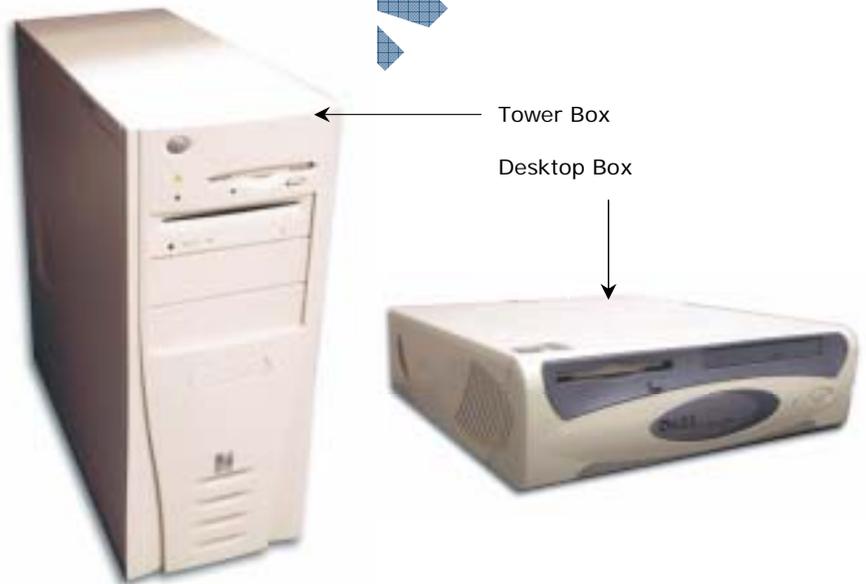


The System Unit or Box is often the most important and expensive part of the computer system. It comes as either a *Desktop* box or a *Tower* box. They both provide the same functionality.

Whether you choose a tower or a desktop model depends on your desk space. Some system units give you the ability to change the unit to be either style to customize for your work environment. There essentially is no difference between the models.

Be cautious when turning a desktop unit into a tower as this may affect the component's functionality, e.g., the CD drive will not read CDs completely, the system may hang more often, etc. Always check with your technical support before turning your desktop upright; they may need to set some switches within the computer to recognize that it will be sitting vertically now.

Inside the box, there are many separate devices that perform specialized functions for the computer. If one of these devices fails, it is usually a matter of replacing the defective part. The power supply, which provides electricity to the devices, is also located inside the box. Descriptions of these components follow.



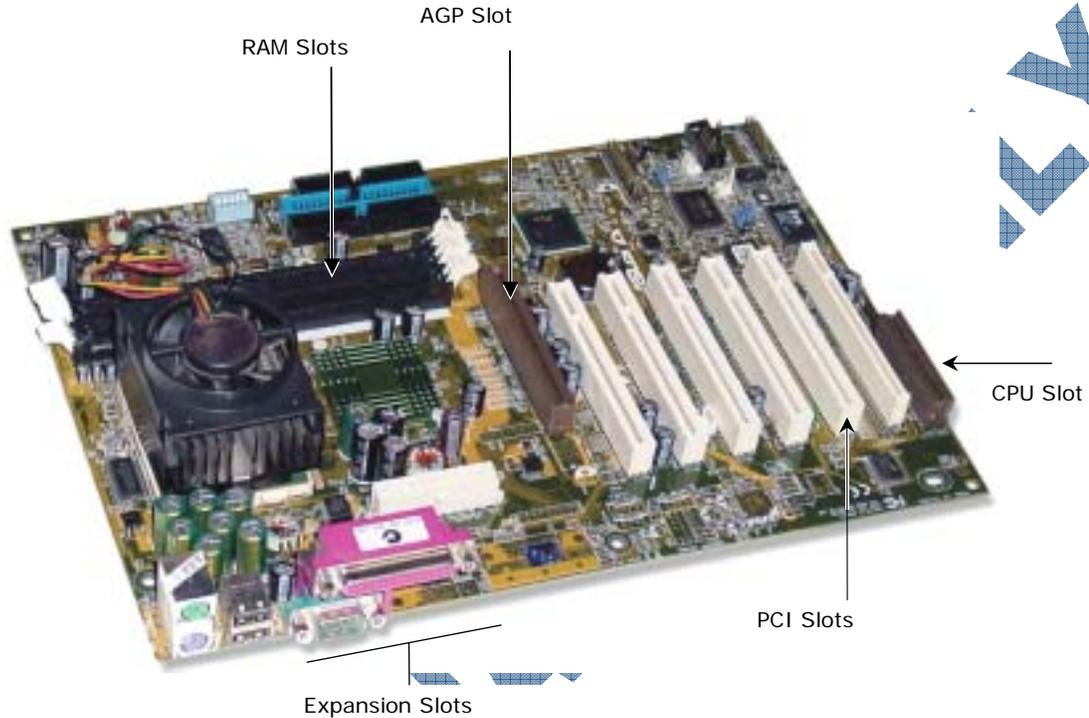
FOR REVIEW

**The Motherboard**

1.1.4  
1.1.5  
1.2.2

The largest electronic circuit board in the computer is called the *motherboard*. It is the foundation of the computer and consists of the *CPU*, *RAM*, and *ROM BIOS*.

The motherboard lies on the bottom of the box or the side of a tower, and smaller circuit boards are plugged into prefabricated expansion slots. These smaller circuit boards are called *daughterboards*. An example of a daughterboard would be a sound card that enables stereo-like sound quality.



**Expansion Slots**

These slots are designed so you can expand your computer by adding items such as a graphics card, memory, etc.

**PCI Slots**

*Peripheral Component Interconnect*; these slots allow you to add new components or cards in the computer, such as a modem or sound card. PCI can also be used on newer Macintosh computers.

**AGP Slot**

*Accelerated Graphics Port*; this slot is meant for a card that can handle 3-D graphics.

**CPU Slot**

*Central Processing Unit*; this slot will contain the microprocessor chip.

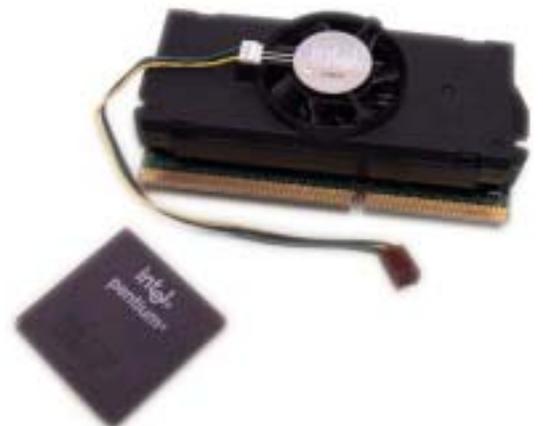
**RAM Slots**

*Random Access Memory*; these slots are designed for these types of memory chips (covered later in this module).

**The Microprocessor Chip**

1.1.4  
1.1.5  
1.2.2

The *microprocessor chip* is the “brain” of the computer and is located on the motherboard. This can also be referred to as the CPU or Central Processing Unit. It is the component that receives and executes instructions from the software programs and the user. Each model or type of CPU processes information and instructions at a different speed measured in Megahertz (*MHz*) or Gigahertz (*GHz*). Try to imagine the MHz rating as a Miles Per Hour (*MPH*) rating, where it is the relative speed among the models.



Examples of different microprocessor speeds include:

Processor (CPU)	MHz or GHz
8088 (XT)	4 to 10 MHz
80286 (286 or AT)	8 to 16 MHz
80386SX/DX (386SX/DX)	16 to 33 MHz
80486 (486)	25 to 100 MHz
Pentium	60 to 200 MHz
6x86	120 to 166 MHz
Pentium (MMX)	166 to 200 MHz
Pentium PRO	150 to 200 MHz
Pentium II	200 to 400 MHz
Pentium III	500 MHz to 1.2 GHz
Pentium 4 or Pentium M	1.4 to 3.2+ GHz
Pentium 5	5 GHz to 7 GHz

Even though a microprocessor speed may be shown at a set Hz rate, this may not always be indicative of the actual performance, depending on how the computer was configured and constructed.

MMX refers to MultiMedia eXtension technology, or the ability to play video or audio files on a computer. This occurs due to additional instructions provided by the processor that enhances multimedia performance.

This technology was introduced in the Pentium II processors, and continues today.

The Pentium M is a newer type of microprocessor designed for notebooks. The M stands for mobile and provides a number of memory management tools for notebooks.



### The Power Supply

Every system box has a power supply that converts the AC (alternating current) coming from a wall outlet to the DC (direct current) format needed by a computer. A power supply for a computer needs between 5v and 12v, with 5v needed for the circuit boards and 12v for hard drives and CD-ROMs. Newer computer systems generally use lower voltages.



### Expansion Slots

Expansion slots are the openings at the back of a system unit that allow you to expand the components within the system box. A circuit board containing the new device can then be added onto the motherboard. These circuit boards could be anything from more memory chips, sound cards, video adapter cards or internal modems, as examples.



Memory Chips



Video Card



Sound Card



External SCSI Expansion Slots

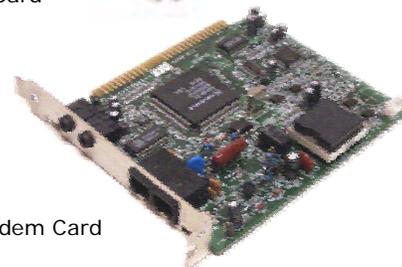


Internal PCI Expansion Slots



Internal ISA Expansion Slots

Expansion Slots



Modem Card

The previous pictures show the different types of slots on the motherboard for the component (card) to be added. When you want to install a card, you need only to look at the bottom of the card and match it to the same type of slot.

➤ The aforementioned items are not a complete list of everything within a system unit. This lesson is meant as an introduction to the elements that make up a personal computer. Further details on specific components within the personal computer can be found later in the book.

## Summary

In this lesson you looked at some of the elements that make up a personal computer. You should now be familiar with the following concepts:

- What makes up a personal computer
- What a system unit is
- What makes up a system unit
- The motherboard
- The microprocessor chip
- The power supply
- Expansion slots

## Review Questions

1. What are the four elements that make up a personal computer?
2. The equipment that makes up the computer is called hardware because you can physically touch it.
  - a. True
  - b. False
3. What are the four major hardware component parts on a system?
4. What's the difference between an internal and external device?
5. A system unit can be either a tower or desktop box.
  - a. True
  - b. False
6. What is the foundation of the motherboard?
  - a. Memory (RAM and ROM BIOS)
  - b. CPU and RAM
  - c. CPU, RAM, and ROM Bios
  - d. Daughterboards
7. What does the microprocessor measure?
8. What does MMX refer to?
9. The power supply converts AC coming from a wall outlet to DC format, as needed by the computer.
  - a. True
  - b. False
10. Provide some examples of how expansion slots can be added to the motherboard.

## Lesson 4: Understanding Memory

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at how to measure memory and how it is used within a computer. On successful completion, you will be familiar with the following concepts:

- What is memory
- How memory is measured
- ROM memory
- RAM memory
- Cache memory

### Looking at Memory



In order for a computer to be able to store information, either about its configuration or data files, the computer needs to have memory chips installed. Memory is measured in bytes; in very simple terms, one byte is equal to one character.

Officially, computers were developed using a numbering system of 1s and 0s. These two unique numbers are designed to represent the charged or uncharged nature of electricity. This is known as the *binary* system. These two digits essentially make a *bit* and eight bits make one byte. With the advancement of computer technology, the availability for storage capacity has grown:

1 Kilobyte	=	1,028 Bytes	or	1 Thousand Bytes
1 Megabyte	=	1,028,000,000 Bytes	or	1 Million Bytes
1 Gigabyte	=	1,028,000,000,000 Bytes	or	1 Gillion Bytes
1 Terabyte	=	1,028,000,000,000,000 Bytes	or	1 Trillion Bytes

All data processed in a computer is made up of bytes, in various combinations as calculated by the computer. Every file used in a software program by the computer has a specific file size, based on the instruction for that feature. As you create or revise files, the size of the data file will increase or decrease accordingly, based on the information stored within the file. Accordingly, you will need to understand how memory works and which types might need to be increased in size in order to handle both program and data files.

In essence, the larger the data file, the more memory you will need to process the information in the file, and the larger the amount of space will be needed to store the file. For example, if a data file is 102Kb in size, this means that the file contains 102,000 characters (in simple terms). These characters could be text characters but they could also refer to any instructional codes inserted by the software program in order to perform a task when the file is opened or printed, e.g., changing the font style, adding boldface or italics to text, insert a page break here, etc. A software program, (like Microsoft Office), requires at least 64Mb in the RAM area in order to process your documents, e-mails, and budgets at the same time. It also needs at least 400Mb in storage space for the software program, which means you will need a storage device that is at least ten times that size for all possible data files and other programs (e.g., Windows, Internet Explorer, etc.).

Even if a file is not being stored (printing the document only or creating an e-mail) on the computer, it still requires memory to process it. For example, if you are creating a message to be sent via e-mail, every piece of information you enter into the message form takes up one byte (in simple terms), including the code entered when you pressed the **Tab** key to move the text from the left edge of the message screen.

## Read Only Memory (ROM) BIOS



The *Read Only Memory - Basic Input/Output System (ROM BIOS)* is a group of integrated circuits responsible for starting the computer, checking the RAM and loading the operating system. This occurs only when the computer is first turned on or each time you have to restart (reboot) the computer. This is the type of memory commonly found in calculators or printers as it reads the information entered and processes it during the time it resides in the memory. When the information is complete, it clears itself and waits for the next entry. It does not perform any tasks other than to read the information and process it based on the device where it resides. For example, when you send a document to print, the printer will read the document and process it for printing. When the printing is complete, the printer stops processing until another print job is received.

## Random Access Memory (RAM)



*Random Access Memory (RAM)* is a kind of electronic pool of memory where the computer can hold programs and data. It is located on the motherboard with the CPU. The computer uses RAM to temporarily hold the current software program and the current data created by the user; this may also be referred to as system RAM. RAM is volatile — it only works when the computer is turned on and the information “vanishes” when the computer is turned off. Therefore, the actual software programs must permanently reside on a hard disk or CD-ROM. The computer can then load the programs into memory and remove them from memory as required by the user. **It is important to remember that RAM is only a temporary, changeable storage location.** It is erased when you turn off the computer.



When discussing RAM, there are three different areas where RAM may be used: system, video/sound cards, and cache.

The computer’s RAM is provided by an array of integrated circuits and memory chips. Newer, more powerful computers or software programs need more RAM, and it is not uncommon to find computers with 256 Mb of RAM or more.

Ranging from past to present, the following are examples of typical system configurations:

Processor (CPU)	MHz / GHz	Typical RAM
8088 (XT)	4 to 10	640Kb
80286 (286 or AT)	8 to 16	1 to 2Mb
80386SX/DX (386SX/DX)	16 to 33	1 to 8Mb
80486 (486)	25 to 100	4 to 32Mb
Pentium	60 to 200	8Mb plus
6x86	120 to 166	16Mb plus
Pentium (MMX)	166 to 200	16 to 32Mb
Pentium PRO	150 to 200	32Mb plus
Pentium II	200 to 400	32Mb plus
Pentium III	500 to 1.2	64Mb plus
Pentium 4	1.4 to 2.2	128Mb plus
Pentium 5	5 to 7	256Mb plus

RAM can be purchased and installed in a computer in these formats:



**SIMM** – Stands for Single Inline Memory Module



**DIMM** – Stands for Dual Inline Memory Modules

The number refers to the actual size of the memory chip and the number of connectors needed to match the construction (architecture) on the motherboard.

RAM is measured in nano seconds (ns) or one billionth of a second, or the speed it takes from the time the request is made until it is completed (also known as the *access time*). A nanosecond is extremely fast; a computer can perform a large number of instructions in 10 nanoseconds.

Depending on the architecture of your computer, some of the RAM may be allocated for the video display (how fast the picture appears on your monitor), sound cards, or as cache memory.

## Cache Memory



*Cache* (pronounced as “cash”) memory helps to speed up the processor by storing frequently used instructions and data in this area. There are two types of memory used for cache:

- DRAM or Dynamic RAM constantly changes, using as much as it needs based on what instructions are being performed. This RAM is constantly being “refreshed” based on what the computer needs.
- SRAM or Static RAM is a specific amount of RAM that never needs to be refreshed. This RAM is traditionally faster and more reliable due to the fact that it never changes.

Cache generally has two levels:

- *Level 1* is known as primary or internal cache and is built right onto the processor chip. This cache is usually very small, from 8Kb to 64Kb.
- *Level 2* is known as external cache and is made up of SRAM chips. The cache here is larger (ranging from 64Kb to 2Mb) but is also slower due to the SRAM chips.

Cache helps speed up processing time as a result of storing frequently used instructions and data. When the computer sends an instruction, it will go to Level 1 of cache, then Level 2, and then onto RAM. Each level search results in a delay in processing time. If the instruction is not found in these three areas, it then moves onto searching the hard drive or a CD-ROM drive.

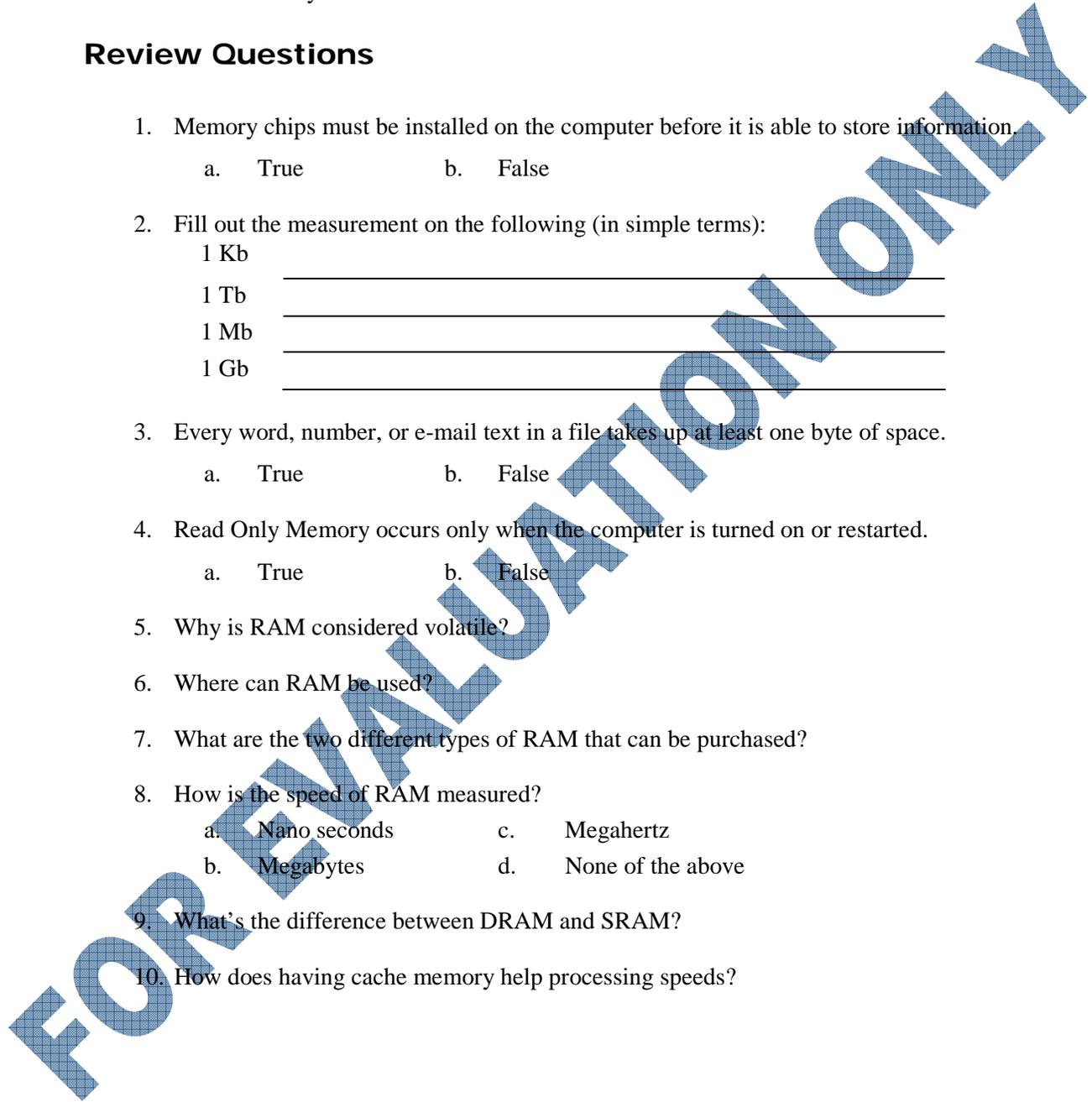
### Summary

In this lesson you looked at how to measure memory and how it is used within a computer. You should now be familiar with the following concepts:

- What is memory
- How memory is measured
- ROM memory
- RAM memory
- Cache memory

### Review Questions

1. Memory chips must be installed on the computer before it is able to store information.
  - a. True
  - b. False
2. Fill out the measurement on the following (in simple terms):
  - 1 Kb \_\_\_\_\_
  - 1 Tb \_\_\_\_\_
  - 1 Mb \_\_\_\_\_
  - 1 Gb \_\_\_\_\_
3. Every word, number, or e-mail text in a file takes up at least one byte of space.
  - a. True
  - b. False
4. Read Only Memory occurs only when the computer is turned on or restarted.
  - a. True
  - b. False
5. Why is RAM considered volatile?
6. Where can RAM be used?
7. What are the two different types of RAM that can be purchased?
8. How is the speed of RAM measured?
  - a. Nano seconds
  - b. Megabytes
  - c. Megahertz
  - d. None of the above
9. What's the difference between DRAM and SRAM?
10. How does having cache memory help processing speeds?



## Lesson 5: Identifying Input/Output Devices

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at what input or output devices are and be able to identify some of these devices. On successful completion, you will be familiar with the following:

- What are input/output devices
- Monitor
- Video cards
- Keyboard
- Mouse
- Microphones
- Speakers
- Scanner
- Joysticks
- Digital cameras
- Digital video cameras/converters
- Environmental/scientific devices

### What are Input/Output Devices?



1.2.1  
1.2.2  
1.2.4  
2.1.1

A computer's *Input/Output (I/O)* devices allow communication between the user and the computer. There are actually three classifications of I/O devices you can use to:

- send information to the computer, e.g., the keyboard, mouse, trackball or scanner
- display/transmit information from the computer, e.g., monitor, printer, or speakers



All of these devices are commonly connected to the back of the system box. If a connection comes loose while you are using the computer, **DO NOT** plug it back in without turning off the computer first. Otherwise, you may damage the connection or the device.

- communicate between computers, e.g., modems and networks

In simple terms, anything that can be used to enter information into a computer, regardless of the format or type, is considered an input device. Anything that can be used to display the information in a computer, regardless of the format, is considered an output device.

### Looking at the Monitor



1.2.4

The *Monitor* is an output device, similar to a television set that allows you to view the information the computer displays. The output from a monitor is considered *soft copy* while a printer's output is considered *hard copy*.

The monitor's on/off power switch is usually found in the front, on the right side, or at the back of the monitor. There are also brightness and contrast controls that can be used to sharpen the screen image. These controls are located under the screen or on the sides.

Monitors come in a variety of sizes, resolution, and types. The larger the screen size, the larger the image will be on the screen and the more expensive the monitor will be. Resolution (the monitor's ability to display images to particular mathematical levels of sharpness and clarity, usually measured in *dot pitch*), is also a factor in determining selling price. Larger and higher resolution monitors are used for working with graphics, pictures or desktop publishing projects.



CRT Monitor



Flat Panel Monitor

The cost of monitors is relatively lower in today’s market than in the past and will continue to decrease for the newer flat panel monitors as they become more popular. Flat screen monitors are generally used whenever there is a touch screen program available, e.g., health information monitors at the pharmacy, game schedule information at an arena, restaurant orders, etc. Touch screen technology allows you to press an option on the screen using your finger instead of a mouse or keyboard. These types of monitors are designed with a special microprocessor to recognize the touch as well as where it was pressed in the specialized program.

Do not leave your monitor on with an image that does not change (i.e., the document you are working on) if you plan to be away from the computer for a length of time. The image from the screen can become permanently etched into the monitor and become visible when the monitor is turned off. You can avoid this “screen etching” by turning down the brightness and contrast knobs to blank the screen or turn the monitor off when not in use. Alternatively, use the screen saver feature that comes with Windows (or another screen saver software program you can purchase or download) that provides changing images when the computer is not in use.

### Using Video Cards



In order for the monitor to display information, it needs to be connected to a video card. All computers come with a standard video card for the configuration purchased; however, you can purchase other video cards with more memory to handle large amounts of graphics, 3D graphics, or just to be faster in general for displaying information. In fact you can also install a second video card to be able to view information on two monitors if you are using Windows 98 or higher.

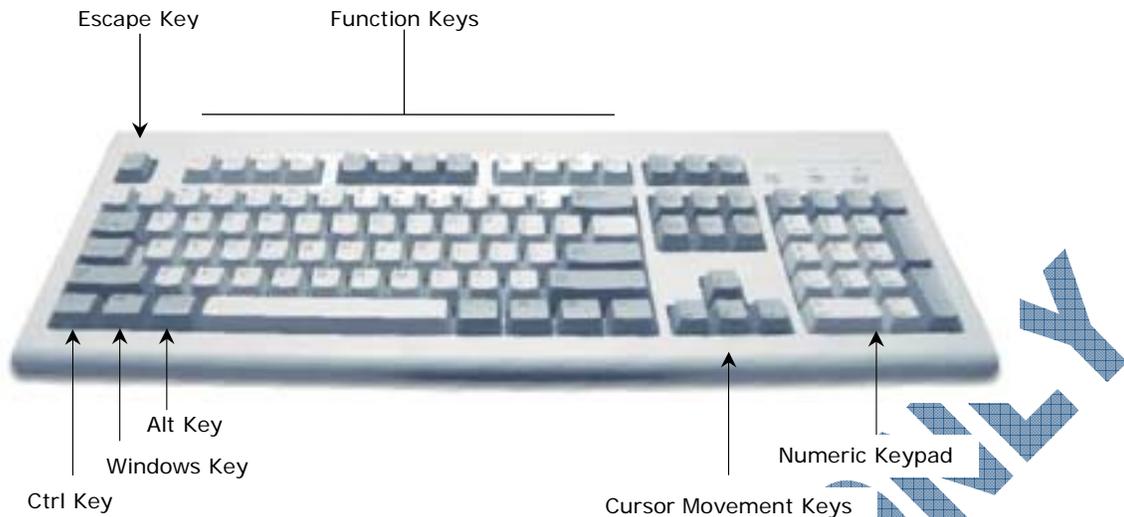


The type and cost of these video cards vary significantly; the rule of thumb is the more options you want on a video card, the more it will cost.

### Using the Keyboard



The *Keyboard* is an input device, similar to a typewriter, which allows you to send information to the computer. It is the primary tool for inputting alphanumeric data. You can also use your keyboard to instruct your computer via a series of keystrokes. The following section outlines the keyboard keys you should become familiar with when using a computer.



There are a variety of keyboards available for the computer; the above screen displays the traditional keyboard. Some of the newer keyboards address issues such as ergonomics to reduce or prevent stress on the wrists (i.e., carpal tunnel syndrome) or eyestrain. Many of the newer keyboards also contain buttons to enhance the multimedia experience while using your computer.



Ergonomic Keyboard



Illuminated Keyboard

Regardless of which keyboard you use, all keyboards share the same keys for document processing. Special keyboards can be purchased for game enthusiasts.

### Typewriter Keys

Often referred to as a QWERTY keyboard after the top left row of letters (just under the number row), these keys are used for entering text or commands into the computer. When entering numerical data, ensure that you use the **1** key rather than the letter **L** key. The same suggestion applies to the **0** (zero) key versus the letter **O** key. This is especially important when you are using an accounting or spreadsheet program that relies on numeric values to perform calculations.

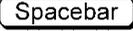
The following provides a basic description of the more commonly used keys. Although most of the keys are standard, there are some special keys not found on a regular typewriter. Some keys are also used in combination with other keys. You press the first key and then hold it down while you tap the second key once. After the second key is released, you may release the first key.

**Enter**

Executes a typed command, performs a selected option from a menu, marks the end of a line, or creates a blank line. This key performs the same function as the *Carriage Return* key on the typewriter.

**Backspace**

Deletes one character to the left of the flashing cursor each time you press it, usually to correct typing mistakes. If you hold this key down, the computer continuously deletes characters to the left of the cursor until the key is released. This key is often marked along with a left pointing (**←**) arrow.

-  Also shown as the  key on the numeric keypad. Deletes the character above or to the right of the flashing cursor each time it is pressed. It is used to correct spelling mistakes. If you hold this key down, it will repeat its function until you release it.
-  Used to insert a blank space between words or sentences. It is also the safest key to press when a software program prompts you to press any key.
-  Cancels a current selection, or generates a special code for the computer. Referred to as the *Escape* key.
-  Advances the cursor to the right a specified number of spaces in a word processing program or to the next cell in a spreadsheet program. By holding down the  key and then pressing , you can move the cursor a similar distance to the left, also known as *tabs*.
-  Selects the uppercase letters for the typewriter keys and produces the punctuation symbols that share the number keys. You can also use this key in conjunction with other keys in order to perform a function or task in a program, e.g., + activates the thesaurus in Word.
-  Locks the letter keys to produce only uppercase versions of each letter.
-  Provides a secondary meaning or function for almost every other key on the keyboard. For example, you can hold down the  or *Control* key in conjunction with another key to send a command to the computer, or to perform a specific task in an application program, e.g., pressing + adds boldface to text in most application programs.
-  Providing you are using a Windows keyboard, pressing this key will display the Start menu.
-  Providing you are using a Windows keyboard, this key will open a shortcut menu similar to right-clicking on an item. The options available in the shortcut menu will depend on where the mouse pointer was at the time the key was pressed.
-  Provides a secondary meaning or function for almost every other key on the keyboard. You can hold down the  or *Alternate* key in conjunction with another key to send a command to the computer, or to perform a specific task in an application program, e.g., + will activate the File menu in a program that has pull-down menus.
-   Use to move the cursor up, down, left or right. On most enhanced keyboards, you will find the cursor keys between the typewriter keys and the numeric keypad.
-  
-  Captures a snapshot of the information on the screen. In DOS, it sends it to the printer; in Windows, it sends it to the Clipboard.
-  On some keyboards, and in some applications, you need to hold the  key down and then press the  key.
-  Use to toggle (start and stop) the scrolling display of data on the screen.
- + Use to stop or freeze the computer. The computer will continue when any key is pressed. Holding the  key down while pressing the  key sends a *Break* code to the computer. This combination is used to unfreeze or unhang a computer.

## Function Keys

The *function* keys are located along the top row of the keyboard. They are labeled (F1) through to (F12). Each application program, such as WordPerfect or Excel, assigns a special meaning or function to each key. The primary purpose of a function key is to provide a shortcut for commonly used commands.

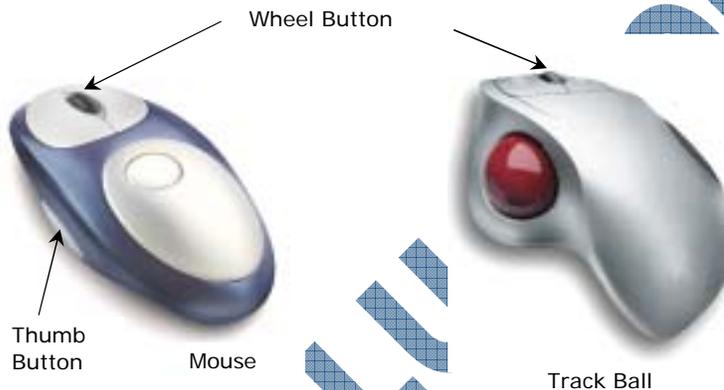
## Cursor and Numeric Keypad

The Cursor and Numeric Keypad is located at the far right of the keyboard. You can toggle it on and off by pressing the (Num Lock) key in the top row of the pad. When the toggle light is active (ON), the pad becomes a calculator or numeric pad. When the toggle light is inactive (OFF), the pad becomes an arrow or cursor movement pad.

## Using the Mouse



The mouse is a device used to move the mouse pointer around on the monitor. Moving the mouse on a flat surface such as a desk causes the mouse ball to rotate and initiates movement reflected by the mouse pointer on the monitor. This also applies if you have a trackball or a thumb mouse (the ball sits on the top or side of the mouse rather than underneath).



On a mouse, there are usually two buttons that you will use to select and activate features on the screen. Common terms to remember are:

- Click** Pointing the mouse or trackball pointer at an item and then pressing and releasing the *left* mouse button is used to select an item on the screen.
- Double-Click** Pointing the mouse or trackball pointer at an item and then clicking the *left* mouse button twice in rapid succession is used to initiate programs and open files.
- Right-Click** Pointing the mouse or trackball pointer at an item and then clicking the *right* mouse button is used to display the shortcut menu for that item.
- Left Drag** Pressing and holding the *left* mouse button while moving the mouse is used to move items or select multiple items on the screen.
- Right Drag** Pressing and holding the *right* mouse button while moving the mouse is used to move or copy items. Upon release of the mouse button you will be presented with a shortcut menu and at that time you may choose the desired option. (The use of the right mouse button is a safer more efficient method of moving and copying items.)

**Middle Wheel or Button**

On some mice there is a middle or third button that can be customized with software that comes with the mouse, to perform certain actions such as double-click. Most mice now come with a small wheel, which creates a four-headed arrow, allowing you to scroll up, down, left or right.

**Thumb Buttons**

Some mice will come with additional buttons on the side of the mouse where your thumb would rest when holding the mouse. These buttons can be customized to perform specific tasks, e.g., start a program, work as an alternate **Ctrl** key, etc.

To move the mouse pointer:

- If you have a traditional mouse (the ball is underneath), grasp the mouse with your palm down, and your index finger gently resting on the first button. Slide the mouse flat along the desk next to the computer. You will notice the pointer moving in the same direction you move. If you run out of space on the desk, lift the mouse from the desk and place it in a new position and continue moving.
- If you have a trackball, rotate the ball in the direction desired. Most people rotate the trackball with their thumb, resting the index finger on the first button and the rest of their hand on the desk, gently grasping the trackball. With a trackball, you will not run out of space on the desk but it may take some time getting used to how far to rotate the ball.
- To cancel any option, click anywhere away from the option being selected on the screen with the left mouse button.

You can also purchase different types of pointing devices if you don't want to use the traditional mouse as shown here. The traditional mouse also is available in cordless form. Some other types of pointing devices include the Pen mouse or Glide point.

**Looking at Other Input/Output Devices**



There are numerous other types of input or output devices that can be used with the computer; many of these are not common in an office, but are available if required. Some of these include:

- Digitized or graphics tablets are another type of pointing device that is designed to handle graphics design work. The tablet records information from a special pen (similar to a stylo) and generally provides a very good resolution (clarity) for drawings. Digitized or graphics tablets come in a variety of sizes, resolution capability, software and custom settings. As with a mouse or keyboard, many of the newer models of tablets can be purchased as cordless.



- Microphones allow you to record sounds and convert them into a digital format that can be used on the computer. Microphones can be purchased in a variety of sizes and shapes, depending on your requirements. This method of inputting information works with specialized software in order to handle *voice recognition* where the software will try to translate what is spoken into the microphone and convert it to text characters on the screen.





- Speakers allow you to play the sounds saved as digital files on the computer. There are many different forms of sound files, including mpg, mpeg, wav, and ram. Some of these are specific to music programs; some are generic for any player device on the computer to read and play.

- Scanners allow you to “take a picture” of the original item and then convert it into a digital format. Most scanners can handle pictures as well as text; the software that comes with the scanner will determine the degree of detail you will be able to get with the scanned file.

- Joysticks are designed for use with games. You can purchase a variety of joysticks, depending on the type of game you have and the type of joystick needed. For example, a flight simulator program requires a joystick that looks like a gear shift whereas a sports program may use a controller type of joystick, similar to those used with video games.



- Digital cameras allow you to take pictures that are automatically captured as digital files. The software that comes with the digital camera then takes the pictures from the camera and transfers the files directly to the computer. Depending on the digital camera, you may be able to connect the camera directly to a dedicated photo printer or to a compact flash reader device where you can copy and store the pictures from the digital camera.



Digital Camera

Compact  
Flash Reader

- Digital video cameras or converters allow you to take video captured with a video camera and convert it into digital files. There are a variety of digital video cameras available; some allow you to connect directly to a computer (as in the case of a digital camera), but not all can convert the video automatically; hence the availability of the converter device. The converter device essentially is a filter that takes the video from the video camera and converts the file to a digital format using specific software.



Digital Video Camera



Digital Video Converter

- *Bar code readers* are very common in retail stores where the store clerk will use this device to read the UPS product code on any product being purchased. Other industries that use bar code readers include health care and manufacturers. Bar code readers are designed to reduce the amount of data entry someone may need to do for routine transactions or verification of product. Each code reader is designed to scan or read the thin and thick lines as well as the spaces of the product code. Bar code readers come in a variety of styles, depending on what is preferred by the company.



Bar Code Reader



Pen Reader

- When delivering a presentation to a large audience using the information on your computer, you can hook up a projector to the computer and then display the presentation information on your screen only, to the projector only, or on both devices. Projectors can be purchased based on a number of criteria to suit requirements such as size, resolution quality, portability, and/or accessories.



- In order to facilitate the presentation, the speaker will tend to use a remote control that has been programmed to recognize the commands on the projector, or for the computer itself. This is advantageous as it gives the presenter the freedom to move around and still be able to control the presentation. Remote controls are also available for the computer for those who may be disabled and cannot use the keyboard or mouse in a traditional manner.



Projector Remote Control



Computer Remote Control



- Other input devices could include those used in certain industries such as environmental or scientific devices which can be used to measure specific types of data, e.g., air quality, soil temperature/mixture, weather sensors, etc. These items work similar to any other input/output device that can then be connected to a PC in order to collect the data for analysis in specialized software programs.

## Recognizing Ports



Ports are the connection plugs at the back of a computer (or other device) that allow you to connect an input/output device. Ports generally are used for connecting drives, display devices, keyboards, pointing devices, printers and modems.

Ports can be categorized into these types:

- Parallel ports come in a variety of sizes and are generally used for connecting printers.



- Serial ports are used for connecting a mouse or modem.



- SCSI, or Small Computer System Interface, ports are used to connect devices that have high performance requirements, such as a CD writer.



- USB, or Universal Serial Bus, ports are used to connect newer models of devices such as mouse, modems, keyboards, scanners, etc. These support the *plug-and-play* (the operating system will recognize the new device and try to install it the first time it detects it) and *hot plugging* (can remove the device even though the device is still working and the computer recognizes it's now unplugged) features in newer operating systems.



- Network or Internet ports look like telephone jacks. These ports allow you to connect either to another computer on a network, a modem, or the Internet directly (the last two depend on the type of Internet connection you have).



Midi, or musical instrument digitized interface, ports will appear similar to a parallel or serial port but are specialized to handle musical types of devices, e.g., keyboards, synthesizers, etc. These ports allow the device to be recognized on the computer as an input device.

- Infrared ports work similar to a wireless connection where there is a device that is installed on the computer (or output device) that recognizes the infrared light waves. Most of these ports will be serial ports.



In many instances you can connect multiple devices on a port using an extension cable, hubs (a box that contains several ports), or by “daisy-chaining” devices, e.g., plug the scanner into the parallel port at the back of the computer and then plug the printer into the parallel port on the scanner, or using a cable with a serial connector for both the keyboard and mouse if your computer only has one serial connector available, etc. SCSI ports can attach up to seven devices on the same port.

Many new models of computers now use USB connections more frequently for input and output devices. Depending on the computer you have and how many other devices you want to connect to your computer, you may need to consider the best way to connect all these devices; the most common is to use a hub.



Alternatively, you may need cables that can convert an input or output device to suit your computer. For example, you may have a mouse you like to use but the serial connector is one with pins instead of a USB port, you want to connect a keyboard into a PC or Mac that needs a USB port, or you want to plug in a PDA into your computer. Retailers sell cables to help convert from one type to another, based on the original and new ports.



## Summary

In this lesson you looked at what input or output devices are and how to identify some of these devices. You should now be familiar with the following:

- What are input/output devices
- Monitor
- Video cards
- Keyboard
- Mouse
- Microphones
- Speakers
- Scanner
- Joysticks
- Digital cameras
- Digital video cameras/converters
- Environmental/scientific devices

Review Questions

1. What are the three classifications of input or output devices you can use?
2. Why should you never leave your monitor on with an image that doesn't change?
  - a. Wasting electricity
  - b. Document can be seen by anyone
  - c. The image can be etched onto the monitor screen
  - d. All of the above
3. You can set up a second video card if you want to view information on two monitors, provided you are using Windows 98 or higher.
  - a. True
  - b. False

4. Identify the functions that the following keys perform:

- a.  \_\_\_\_\_
- b.  \_\_\_\_\_
- c.  \_\_\_\_\_
- d.  \_\_\_\_\_
- e.  \_\_\_\_\_
- f.  \_\_\_\_\_
- g.  \_\_\_\_\_
- h.  \_\_\_\_\_
- i.  \_\_\_\_\_
- j.  \_\_\_\_\_

5. Which key would you use to ensure the numeric keypad will display numbers or mathematical operands (i.e., + - \* /)?

- a.
- b.
- c.
- d.

6. Which mouse button would you press to select or execute a selected option?

- a. Left
- b. Right

7. What does right-drag mean?

8. A digitized tablet is the same as a PC tablet.

- a. True
- b. False

9. List some of the other input or output devices you might use for multimedia information, e.g., recording, presentations, etc.

10. Ports are the connectors at the back of the computer that allow you to plug in input or output devices.

- a. True
- b. False

## Lesson 6: Working with Storage Systems

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at what storage systems are and how they can be used, based on their size restrictions. On successful completion, you will be familiar with the following concepts:

- What are storage systems
- Floppy disk drives
- Hard disk drives
- CD drives
- Other storage devices
- How to identify a disk drive

### What Are Storage Systems?



1.1.6  
1.2.5

Storage systems are required to store software programs and to keep permanent records of the work done. When you are working on the computer, the memory (RAM) area holds your current work and the currently active software program. RAM is only temporary. All information is discarded when you turn off the computer's power. Therefore, you must save your work permanently to a storage device before quitting the software program or turning off the power.

The storage devices chosen depend upon the amount of storage required and speed of data retrieval. Historically, software programs all came on floppy disks and were then installed onto the hard disk drive. This has changed because software programs have become increasingly larger. Now most software applications come on CD and can either be installed onto the hard disk drive or run from the CD drive itself.

Some storage devices are better suited than others due to their data transfer rate (the speed at which data is sent from computer to storage device and vice versa). Hard disk drives are used most often to store software programs and needed data due to their speed and storage capacities. They are able to store large amounts of data and to retrieve that data at great speeds. When writing to a CD, the data transfer rate is slower but CDs store large amounts of data that can be retrieved quickly. Tape drives are slower at storing and retrieving but can store large amounts of data in a compact and economical form. Small business owners use tape backup drives in order to create a second copy of their data for security purposes (known as *backup*).

### Working with Disk Drives



1.2.5

A disk drive is the device that enables you to save your work from the computer's RAM memory to disk, store software programs and move information from one disk to another. Imagine the disk as the record album, and the disk drive as the record player (phonograph) and recorder.

A disk drive performs the following three functions:

- It rotates the disk at a constant speed, thereby allowing access to each sector on the entire disk surface.
- It moves the "read/write head", a small recording/playback head, across the tracks on the entire disk surface.
- It reads data from the disk and writes data to the disk using the read/write head.

The computer writes data from RAM to a disk, just as a cassette deck records sounds on a magnetic tape. Floppy or hard disks contain one or more plastic disks coated with magnetic iron oxide (commonly known as rust) particles. The information on the disk is arranged in *tracks*. Each track is divided into several *sectors*.

The computer reads data from the disk and writes it to the disk by using a *read/write head*. The disk drive has two or more read/write heads so that it can read the top and bottom sides of the disk or disks without forcing the user to turn the disk(s) over like a record album.

The disk drive steps the read/write head across the surface of a disk in precise increments. This “stepping” is important because it efficiently moves the head to a specific location on the disk for retrieving or writing data, instead of starting at the beginning of the disk each time. When the computer records data on the surface of a disk, it uses a standard format so that all disks created on a PC will work on other compatible machines.

To segment the disk into more manageable pieces, each track is divided like a pie into equal sections, called *sectors*. The process of preparing a disk for use so that the tracks and sectors are present is called *formatting*, where the computer places special information on each track that marks the location of each sector. A disk must be properly formatted before you can store any data on it. You can purchase new disks already formatted, or you can format each disk separately.

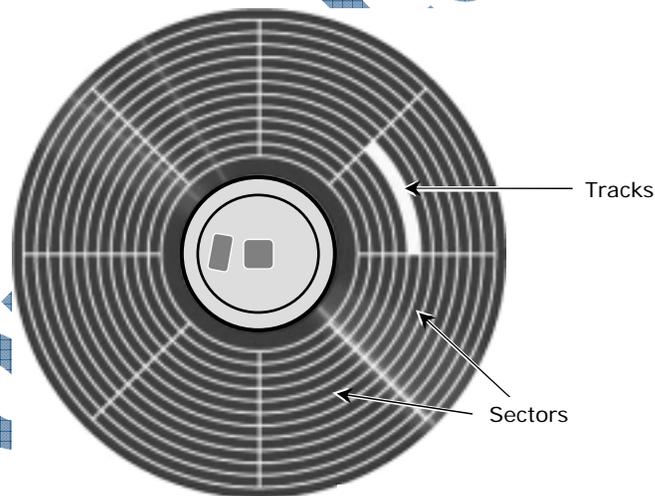
## Identifying the Floppy Disk Drive

At the front of the CPU box, there is usually a horizontal or vertical slot. This slot is the opening of the device called a *floppy disk drive*. When you place a disk into the disk drive, the drive unit clamps the disk down at the central hole or hub and spins it around at high speed.

Floppy disk drives were the original means of getting software into the computer and then later onto the hard disk drive. Nowadays software can be installed to the hard drive from CD-ROM, the Internet or floppy disk drive. Take note that many of the newer computers will not have a floppy disk drive for use. This is due to the demand for larger storage devices and with portability of files being very quick and easy using e-mail (or via a virtual web storage device), floppy disks are no longer required.

The 3.5” disk is protected from dust and fingerprints by a strong flexible plastic cover. The actual disk is located inside the casing and consists of a very thin, round piece of material resembling camera film. Never remove a floppy disk from the disk drive when the light is on. This could damage the disk drive, as well as the disk.

To organize information on a disk, the computer writes data to the disk’s surface on a series of invisible concentric rings called *tracks*. *Double density* (DD) disk drives work with 40 tracks per disk surface; *high-density* (HD) disk drives work with 80 tracks per disk surface.



## Handling Floppy Disks

The floppy disk is a fragile storage medium. The black plastic surface inside the protective cover can be melted, coated, dented or cracked. If any one of these things happen, the information stored on the disk would be destroyed.

When you handle the disk, always hold it by the label area. When the disk is not in the disk drive, place it in a protective box or container and store it at room temperature.

To use the disk, hold the disk by the label. Insert it into the computer with the metal cover facing towards the disk drive and the hub (spinning device) of the disk facing the bottom of the drive. The disk should click into the drive when inserted properly. A small button called the *eject button* will pop out when the disk is fully inserted. To eject the disk from the disk drive, you press the eject button.

**Things you SHOULD DO:**

- Hold the disk only by the edge with the label.
- Insert the disk with the label side up.
- Store your disks in a proper box or container, and keep them in a dry, cool place.
- Use the write protect tab to prevent accidental writing of new data or deleting data from a disk.

**Things you DON'T DO:**

- Never touch the shiny plastic disk inside the protective cover. A thin oil film from your skin would coat the surface and create a barrier.
- Do not place anything heavy, hot, sharp or wet on top of a disk. The surface could become dented or cracked.
- Do not keep disks near telephones, magnets, or magnetized tools and equipment. The magnetic fields these things generate can erase or destroy your data.
  - Do not keep disks inside your car on a warm day, as this could lead to melting.
  - Do not put the disk anywhere within an inch of the monitor as there is a magnetic field approximately one inch around the monitor. The same is true for television sets, and for unshielded speaker systems.



**Working with Hard Disk Drives**



Computers use *hard disk drives* (hard drive) as their primary storage for both data and programs. Many software programs must be installed onto a hard disk before you can actually use them. The hard disk drive is similar in design to the floppy disk drive, but stores and retrieves far more information than a floppy, and at much faster speeds. It consists of one or more disk media. A floppy disk rotates at 360 RPM (revolutions per minute) inside the drive, but a hard drive spins at speeds of 5400 RPM or more (depending on the size and type of drive). The hard drive is usually permanently fixed inside the computer and can have several read/write heads per surface, with each head covering a small section of the disk.



With the higher speeds and more heads per surface, the hard drive takes much less time to find a particular piece of data. Hard drives range in capacity from 100 million bytes (100Mb) to several thousand million bytes (1000Mb is 1Gb). There are many manufacturers of hard drives, and each model stores a different amount of information. The storage capacity of hard drives is increasing all the time. For example, a standard workstation in the office may have a 40Gb hard drive but a workstation in a specific department may require a bigger hard drive (e.g., 80Gb) to handle larger files such as database information, graphics, procedures manual, etc.

Hard drives are also used in computers designated as network servers. These drives are generally very large in size to accommodate the company requirements. Depending on the network server configuration, there will be at least two hard drives that will be segmented (separated) into different *volumes* (drives) for specific types of information. For example, the network may have a drive G where all general correspondence is saved for everyone in the company to access. Drive M on the same network may be reserved for private information and everyone in the company will be assigned a personal folder on this drive that only that employee can see.

## Working with CD Drives



The CD-ROM (Compact Disk Read Only Memory) or CD drive is another form of data storage. This type of drive works similar to a CD player in a stereo system. The information is burned (embedded) onto the vinyl surface and is retrieved with a laser beam, which is different technology than the previously discussed magnetic disk drives.



A much larger amount of data can be stored on a CD than on a conventional disk. The average storage capacity of a CD is around 650Mb for data. You would need many floppy disks to store a 15 to 20 volume encyclopedia; but you could store all the volumes, with pictures and movies, on one or two CDs. Because of this large storage capacity, most software companies now offer their programs on CD. The information on the CD is *read-only* because the plastic surface can only be burned once (i.e., Read Only Memory). There is the drive technology for reading and writing data to a CD called *CD recordable drives*. These drives allow you to burn and read CDs. This could be very useful for storing backup data, large files and software programs. Recordable CD drives are slower than conventional CD-ROM drives and cost more.

CD drives of different speeds are available, from dual (2x) to much higher speeds. There are also units that can hold multiple CDs. The higher the speed, the faster the information is read and transferred to the computer; with multiple disk storage, more data can be retrieved. As with all technology, the more features a product has, the more money it costs.

To insert a CD into the computer, you must first open the drive tray, usually by pushing an eject button. You then place the CD on the tray and push the tray back in, or press the eject button to retract the CD tray. Once the disk is in, the drive uses a laser beam to read the data. When handling CDs, try to hold them by the edge of the CD or with a finger in the middle hole for support and the rest of your hand holding the edge of the CD. Try not to touch the bottom part of the CD as this is where there data has been stored. New computers come with at least one CD drive; CD-RW or DVD drives may also be included.

### CD Writers

Another type of CD drive that comes with newer systems (or can be purchased separately) is a CD Writer, or commonly referred to as a *burner*. This type of drive looks and acts like a regular CD-ROM drive, but has the ability to record information onto a blank CD. The technology for this advanced in recent years, now giving you the capability of being able to write several times to a CD. There are two types of technology for writing to CD:

**CD-R** Refers to the ability to write once only to a blank CD, but the CD can be read multiple times.



**CD-RW** Refers to the ability to read and write multiple times onto a CD.

The cost of blank CDs is relatively inexpensive these days, with the CD-R disks being much lower in cost than the CD-RW. When you purchase a CD-R or CD-RW drive, software comes with the drive which will need to be installed onto the computer so you can burn the data onto the CD.



### DVD Drives

A DVD drive is basically a CD drive that can read digital versatile/video disc formatted CDs. DVDs can store information from 4.7Gb to 17+Gb with rapid access speeds. The average movie is generally no more than 4.7Gb in size. As with CD drives, you can purchase different formats for DVD drives:

**DVD-ROM** Reads the data only. This is the typical format used in DVD players where you can place the DVD into the device to play the video.

**DVD-R** Allows you to record onto a blank DVD once. Similar to CD-R, you can record only once but the DVD can be read multiple times. This format can be read in a DVD player as well as a DVD drive installed on a computer.

**DVD-RW** Allows you to record multiple times onto a blank DVD as well as being able to read multiple times. This format can be read in a DVD player as well as a DVD drive installed on a computer.

**DVD-RAM** Similar to DVD-RW but can only be used on devices with this specific format. These types of DVDs are usually in the form of cartridges rather than CD.

As with CD burners, special software comes with the DVD burner and is designed to help you manipulate the video or data being made onto the blank DVD. For instance, you may want to edit parts of the video out before it is burned onto the DVD. The software generally has tools to help you with any editing options you may want to apply to the video before you make a copy of it onto a blank DVD. The cost of DVD-R discs are currently lower than DVD-RW discs.

## Using Other Types of Storage Devices

There are numerous other types of storage devices that can be used to store data. Some of these are removable, which means you can move the drive to different locations and computers to store data from that location or computer. These devices allow you to transfer large amounts of data from a computer to a storage device (e.g., zip disk, jaz disk, tape, etc.) that can then be used in another computer, or as a backup system to restore or protect against lost data.

### SuperDisk Drives

A superdisk drive (also known as an *LS-120*) uses a technology created by Imation Corporation to store up to 120Mb of data onto a disk. This type of drive has the advantage of being able to read the traditional 3½" 1.44Mb floppy disk. This drive and its disks are relatively inexpensive.





### Tape Drives

A tape drive (also known as a *tape streamer*) uses a cartridge that has magnetic tape (similar to a cassette tape) for storing information. This type of drive is used generally when a backup of a large amount of data is needed, either as a backup for off-site storage purposes or to protect against lost data on the existing computer. Information stored on this backup tape can then be restored back to a computer.

These drives or streamers use a number of different formats and the size of the tapes can range from 250Mb to over 80Gb. Newer tape drives use Digital Audio Tape (DAT) format, which are smaller and faster than traditional tape drives. These newer drives can take the large size tapes and transfer data from the computer to the tape at speeds that exceed 7.2Gb per hour.

### Zip Drives

A zip drive looks very similar to a floppy drive except that the disk used can hold between 100Mb and 250Mb of data. This technology was developed by Iomega Corporation and has developed into a popular method of storing large amounts of data due to its relatively inexpensive cost. A disadvantage of this type of drive is that the newer systems are not compatible with the original 100Mb devices.

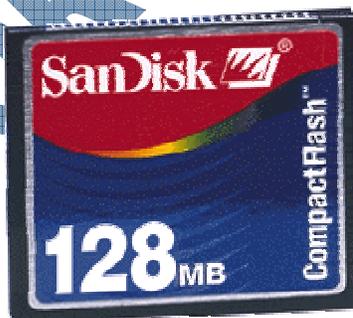


### Jaz Drives

The jaz drive is similar to a zip drive (made by the same company) and allows data storage of up to 2Gb. These disks have a very fast transfer rate (5.5Mb per second). The cost is still relatively expensive compared to other removable storage devices.

### Flash or Memory Cards

With the advent of technology comes the requirement for larger storage systems for all sorts of input or output devices. Flash or memory cards are used generally with digital cameras or digital video cameras to increase the number of pictures or video taken on that device. These cards or sticks come in a variety of sizes; the larger the storage capacity, the higher the price.



Flash Card



Memory Card



Flash Reader

These storage devices can be inserted or plugged into the digital device prior to turning it on and then as pictures or video are taken, the user can choose to save these images to the memory cards or device.

## Virtual Storage Systems



Other storage devices available are known as *virtual storage systems*. This type of drive generally does not exist at your location as indicated by the term, virtual. These types of drives are very common with Internet Service Providers (ISP) who offer you the ability to save information on a virtual/web/Internet storage system. In essence, these storage systems are drives on a network or dedicated server at a particular site where you can then log into with a secure ID and password to access the information.

The advantage of using one of these storage systems is the flexibility of having files available from any location where you have access to the Internet. The cost of these storage systems varies, depending on your requirements. Generally, most ISPs offer a standard size as part of your account and anything larger would increase the cost. Alternatively, there are a number of companies who sell storage services which may be more cost effective if you have a large amount of data to be stored.

Virtual storage systems are very useful for off-site backup storage of data for your company’s files, or as a “central system” for people around the world to share information, e.g., a company has several branches around the world and requires everyone to be able to access the product/inventory database or see calendars for specific people. The main downside to using a virtual storage system is the speed of the Internet connection, which can enhance or hinder the flow of information. As with networks, virtual storage systems can be impacted by the speed of the connection as well as the number of requests being made to that storage device.

## Identifying Disk Drives

The majority of computers have one floppy disk drive and at least one hard disk drive and CD drive. Each disk drive is assigned a letter and referred to as Drive [D]: or [D]:, e.g., the hard drive would be shown as Drive C or C:. The general rule of thumb for identifying drives is:

- Floppy Drives      A or B
- Hard Drives        C and higher for each subsequent hard drive installed
- CD Drives          D or higher for each subsequent CD/DVD drive installed
- Network Drives    F or higher for each network drive you will have access to

For example, if a typical computer has one floppy drive, one hard drive and two CD drives and no connection to a network its drives would be identified as:

- Floppy Drive      Drive A
- Hard Drive        Drive C
- CD Drive #1      Drive D
- CD Drive #2      Drive E

You can add or remove disk drives and can have drives of different sizes. The total number and size of drives you can install will depend on the vacant *device bays* (racks for holding the disk drives) available inside the CPU box. The number and type of disk drives in your computer will depend on the specifications of the computer you purchased, or as configured by a technician in the computer department of your company.

## Summary

In this lesson you looked at what storage systems are and how they can be used, based on their size restrictions. You should now be familiar with the following concepts:

- What are storage systems
- Floppy disks drives
- Hard disk drives
- CD drives
- Other storage devices
- How to identify a disk drive

## Review Questions

1. What is a storage device and what is its main purpose?
2. Why should you save your files on a regular basis?
  - a. To prevent data loss when the computer is turned off
  - b. To store information from RAM onto the storage device
  - c. To have a permanent record of the data
  - d. All of the above
  - e. Only a and b
3. The computer reads data from the disk and writes it to the disk by using a read/write head.
  - a. True
  - b. False
4. A hard drive can contain much more data than a floppy disk or a CD.
  - a. True
  - b. False
5. Network drives are very similar to hard disk drives except that they reside in a designated computer called a network server and are generally much larger in size than found on a desktop computer.
  - a. True
  - b. False
6. Identify the purpose of each of the following CD drives types.
  - a. CD-ROM \_\_\_\_\_
  - b. CD-R \_\_\_\_\_
  - c. CD-RW \_\_\_\_\_
7. A removable storage device is one that can be taken from one computer at a location and used on another computer in another location.
  - a. True
  - b. False
8. An example for using a tape drive is to handle backups on a network server.
  - a. True
  - b. False
9. Explain what a virtual storage system is.
10. If the computer had one floppy disk drive, two hard drives, and two CD drives, what would be the assigned letter for the second CD drive?
  - a. D
  - b. C
  - c. E
  - d. F

## Lesson 7: Looking at Printers

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at the different types of printers available for use with a computer. On successful completion, you will be familiar with the following concepts:

- What are printers
- Dot matrix printers
- Ink jet printers
- Bubble jet printers
- Laser printers
- Miscellaneous types of printers

### Using Printers



Printers are considered output devices as they will display what was on your screen once you activate the print command. All applications allow you to print the file you are working on, and in fact, offer different options you can set for printing the file, e.g., landscape versus portrait orientation, paper size, manual feed versus cartridge tray, etc. These options will vary depending on the printer you have installed for your computer.

There are a number of different types of printers available for purchase. The one you choose or use for printing will depend on your needs, e.g., preprinted forms may require a dot matrix printer as will printing checks, but regular documents such as letters and budget reports may require laser quality.

### Dot Matrix Printer

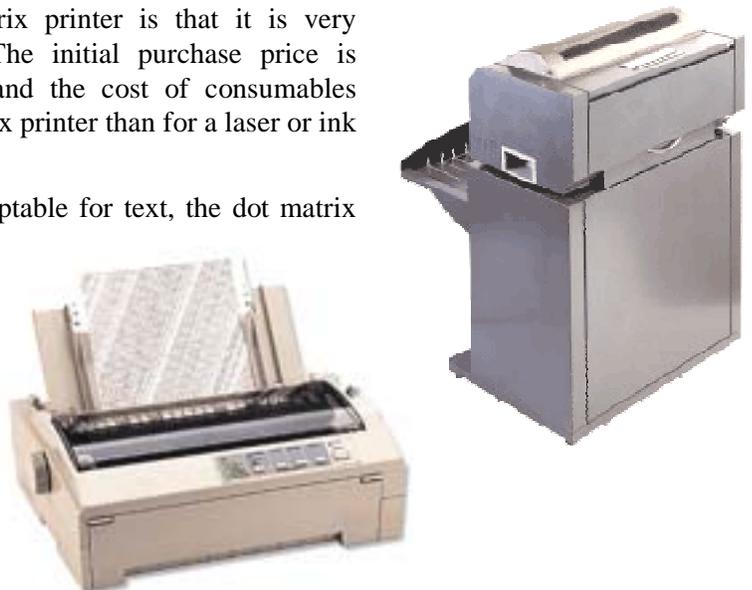
A dot matrix printer consists of a print head constructed with a matrix of 9 or 24 pins. These pins “hammer” onto the ink ribbon to print text and graphics. Therefore, a printer with more pins gives a better quality of output. Models with 9 pins are called Near Letter Quality (NLQ); models with 24 pins are known as Letter Quality (LQ).

The average dot matrix printer prints 192 characters per second (cps); high-speed models print up to 550cps. Dot matrix print resolution technology is limited to about 180 dots per inch (dpi). This is useful for printing multi-part documents (or carbon copies) such as application forms, sales invoices and billing statements.

One important advantage to the dot matrix printer is the tractor feed, for continuous, fan-folded computer paper. Dot matrix printers are the only printers which provide tractor feed as a standard.

Another advantage of the dot matrix printer is that it is very affordable to buy and maintain. The initial purchase price is markedly lower than alternatives, and the cost of consumables (ribbons, paper) is less for a dot matrix printer than for a laser or ink jet printer.

While the print quality may be acceptable for text, the dot matrix printer can only support low-resolution graphics. Furthermore, color output has been compared to painting with crayons. It should also be noted that the speed is slower when graphics are being printed.



## Ink Jet Printer

The ink jet technology was developed after the laser printer. It is considered “laser comparable” since the print quality is very close to that of a laser printer.



Using a concept similar to dot matrix technology, the ink jet printer has tiny nozzles in the print head (instead of striking pins). Droplets of ink are injected through the nozzles directly onto the paper and dried instantly. The average ink jet printer has about 64 nozzles and can achieve resolutions from 300 to 1200 dpi.



An ink jet printer is faster than a dot matrix, both for text and graphics. Some models measure print speeds in terms of pages per minute (ppm); some use characters per second (cps). An average ink jet prints 3ppm (or 230cps).

The advantage of an ink jet printer is that it costs less than a laser printer yet produces attractive, high-resolution text and graphics in color and black-and-white. Where multiple sheet or bulk printing is not needed, an ink jet printer is a good choice.

One disadvantage of ink jet printers is that consumables cost more than for dot matrix to produce large amounts of text or graphic printing. Color ink cartridges are especially expensive; although the more commonly used black ink cartridges cost less. When considering an ink jet printer, research how many pages the ink cartridges produce on average, and at what price.

Most ink jet printers use ordinary, cut sheet plain paper. However, if poor absorbency paper is used, ink smudges and smears may distort the print quality. Some printers require specially coated, expensive ink jet paper to ensure higher resolution output. This is especially true if you are planning to print photographs wherein you will need to set the printer to high quality (uses up a lot of ink) and have photo quality paper in the paper tray.

## Bubble Jet Printer

The only difference between ink jet and bubble jet is that the print head propels the ink in a different way. The bubble jet printing mechanism creates characters and graphics by firing droplets of ink onto the paper through nozzles in the print head. But unlike the ink jet printer, the ink is pushed out of the nozzles by expanding bubbles. As ink in the nozzles is rapidly heated, ink bubbles are formed.



Bubble jet printers, like ink jet printers, have an average of 64 nozzles and are capable of producing 300 to 1200 dpi resolution. Black-and-white and color bubble jet printers are available.

As with the ink jet printers, bubble jet printers cost less than laser printers but produce high-resolution text and graphics output.

Like the ink jet, it is important to research the cost and output of bubble jet printer ink cartridges. Also, like the ink jet printers, plain paper can be used in most models, although some printers require specially coated paper to ensure higher resolution output.

## Laser Printer

A laser printer uses the same laser beam electrostatic printing method on which the office photocopier is based. The laser recording process uses laser light to “write” the images of a document onto a photosensitive drum. The sensitized areas around the drum then attract the toner powder to print the dark portions of the document.



Laser printers produce high quality print on all kinds of media, including cut sheet plain paper and transparencies. Laser printers are capable of printing from 300 dpi to 1200 dpi, depending on the model.

Although the cost of a laser toner cartridge is higher than the cartridges of ink jet and bubble jet printers, the actual cost per page is lower. Maintenance also tends to be quite low.

For an individual or office that does a great deal of printing, a laser printer is an excellent choice. However, you may want to do a cost analysis prior to printing a large amount of copies of a document on the color laser versus sending to a printer for reproduction. Color printing can be quite expensive with color laser printers, when you include the cost (and number of cartridges needed to complete the print job) of the toner cartridges, the cost of the paper, and the time required to print these copies. Initially, both the cost of a color printer and the color toner cartridges can be high.



The productivity of a laser printer can be increased significantly by increasing the amount of RAM memory installed on the printer. Additional RAM chips can be purchased and installed on a laser printer as well as other devices to help with printing, e.g., infrared port to enable a notebook to print without needing a cable to connect to the printer. An example for installing more RAM on the printer instead of your computer would be for printing documents where there are a lot of graphical elements, e.g., photographs, fonts, colors, etc. Another example would be if the printer has the capability of printing duplex (double-sided), increasing the RAM will speed up the printing process to handle large documents.

## Miscellaneous Types of Printers

There are a number of different types of printers that are a combination of any of the aforementioned, and/or combine a number

of general office devices into the printer. For example, you can purchase a “Printer All-in-One” model where in addition to printing documents, the printer can fax, scan, or make copies of documents. This type of printer can be very cost effective for a small business where they can purchase one device instead of two or three devices to handle these common tasks.



The size of the machine will vary based on all the features the printer comes with. If looking to purchase one of these items, be sure to check the specifications for the device to ensure it has all the items you may want or need initially, as well within the next year.



Plotters are another type of printer that exists in the marketplace. These printers essentially print images onto very large pieces of paper, e.g., posters, drafting or architectural plans, etc. Many companies who manufacture plotters have replaced this technology with color lasers that can handle large size paper sheets.

You may also see printers advertised as *Photo Printers*. These printers are designed to be able to connect directly with the digital camera (or video camera) to print directly onto the photo paper inserted in the printer's paper tray. You will get exceptional quality from these printers as they were designed to handle photographic images. These printers come in a variety of size, with various features, depending on the manufacturer.



## Replenishing Printer Supplies

One of the considerations you need to include in the choice of printer is the cost and disposal of printer supplies. In most cases, paper can be recycled using the same standards for handling paper mailings or general correspondence you receive. Printer cartridges are a different matter. You can simply throw away the cartridges but these can be damaging to the environment. Whenever possible, consider recycling your printer cartridges either by purchasing kits where you can refill them yourself, or taking the cartridges to a supplier who can dispose of the cartridges in a safe manner. There are a number of organizations who will pay you for specific types of cartridges, give you a discount on new or refilled cartridges for each one you give them to recycle, or you can donate your used printer cartridges to charity and they will recycle them for you.

## Summary

In this lesson you looked at different types of printers available for use with a computer. You should now be familiar with the following concepts:

- What are printers
- Dot matrix printers
- Ink jet printers
- Bubble jet printers
- Laser printers
- Miscellaneous types of printers

## Review Questions

1. Printers are considered output devices as they print what was on the screen when the print command is activated.
  - a. True
  - b. False
2. What would be an advantage of using a dot matrix printer?
  - a. Lower cost for consumables
  - b. Continuous feed for printing
  - c. Print quality on text documents
  - d. All of the above
  - e. Only a or b
3. Which is faster: the dot matrix printer or the inkjet printer?
  - a. Dot matrix printer
  - b. Inkjet printer
4. Both inkjet and bubble jet printers can produce high quality results, regardless of the paper type being used.
  - a. True
  - b. False
5. Which of the following advantages can be associated with laser printers?
  - a. Very fast for printing multiple page documents
  - b. Can have additional RAM installed to increase the printing speed
  - c. Maintenance on laser printers tend to be low
  - d. All of the above
6. The cost of using a color laser printer to print multiple copies of a document is about the same as using a black and white printer.
  - a. True
  - b. False
7. What is a printer all-in-one?
8. A plotter is a printer that essentially prints on very large pieces of paper.
9. What's the difference between an inkjet printer and a photo printer?
10. Whenever possible, recycle used printer cartridges instead of simply throwing them away.
  - a. True
  - b. False

## Lesson 8: Basic Troubleshooting Techniques

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at different methods or options available to help maintain your computer's performance as well as how to perform some basic troubleshooting functions to identify problems on your computer. On successful completion, you will be familiar with the following concepts:

- How to increase the computer's performance
- What to look for when installing hardware
- What to do if the hardware does not work
- General maintenance considerations for the computer
- How to dispose of older or non-working components

### Increasing the Computer's Performance



The performance of your computer depends on how you use it. Despite the speed and type of microprocessor installed in your computer, you may find that the computer seems to respond slower (or not at all). This could be a result of any of the following:

- System resources are low, especially in RAM memory (i.e., too many programs open, one program takes up a lot of memory, etc.).
- Too much network traffic so the document being requested seems to take a long time to appear on your screen.
- Not enough space on your hard drive for the operating system to handle processing the multiple programs.
- The size of the file and its contents are quite large (e.g., pictures, fonts, etc.) and will not open or close as quickly due to the speed of your microprocessor.
- One program has failed for whatever reason and you are not aware of it until you access the Task Manager.
- Conflict in system device files, e.g., sending a document to print on a printer that doesn't exist any more.
- Operating system, software program, or data file may be corrupt.
- A device you want to access has a loose connection or is not plugged in.
- Your modem connection is either too slow or not big enough to handle the transfer of information.
- There may be a virus on your system that is now active.
- Your system is becoming full or has an excessive number of temporary files stored on it.

How can you increase the overall performance of your computer? Depending on what caused the system to slow down, look at the following suggestions as a checklist and a starting point:



- Change the microprocessor chip. The speed of the microprocessor definitely makes a difference regarding how quickly the commands are processed and understood by the computer. The higher the frequency of the microprocessor, the faster your computer will be. Take note that you may not be able to just replace the microprocessor chip; depending on how old your computer is, it may be more cost effective to purchase a new computer or change your network connection in order to increase the speed.
- Increase the amount of RAM memory chips for the system. Since RAM is a temporary holding pool during the time you are working on a file, the larger the pool, the more information you can process at one time (regardless of whether it's for one program or multiple programs), especially when working with graphic files.

- Change the video card and the amount of RAM for that video card. This will greatly enhance or display more details on the monitor, especially if you are using programs that use a large amount of graphics.
- Change the network type and connections. The size of data transfer allowed on your network card may be a limiting factor, or it could be the type of network you have, e.g., Novell, Microsoft NT versus 2000, Unix, etc. The network software you have may also be limiting in how specific programs work, e.g., a Windows program may not be compatible with a Novell network. Take note that the network you have may not have any relation to the speed of your computer. Some of the new network technology allows users to use older computers as if they were Pentium 4 class units.
- Increase the size of the hard drive for storage. The operating system requires a certain amount of space in order to handle the system files, and if the amount of free space on your hard drive becomes quite low, the number of files being processed will be very limited. In addition, the amount of free space on your hard drive over and above the amount used by the operating system will determine how much room there is to swap information from the hard drive to RAM and vice versa.
- Clean your hard drive of any older files you no longer use or need. This includes any software programs you no longer require. Freeing up space on the hard drive can significantly increase the speed for finding and saving files. Delete any temporary files you may have stored on your computer as a result of any software programs crashing previously. This includes any temporary files created when you search the Internet. Both types of temporary files can be deleted using the **Disk Cleanup** feature that comes with Windows.
- Change the modem connection type. If you are using a dial-up telephone connection, for example, you may want to change the connection to one of the faster types available in your area. The cost in most cases will be worth the upgrade as you will then be able to access the Internet more often and more quickly as the line connection will be bigger for data transfer.
- Write down the error messages you may see and work with your technical support contact to determine what the problem might be or where it may be originating. If a system file for a program has been corrupted, this generally means the program will have to be re-installed. This is especially true for the operating system.
- Have your technical support run the anti-virus program on your system to ensure there are no viruses, and if there are, that they are at least quarantined, if not deleted completely. Be sure to check that you have the latest updates for the anti-virus program as well and that your system is set up to check for updates on a regular basis.
- Check to make sure that all the components are plugged in, active and online, or even exist. This type of error happens regularly in an office when equipment is moved to a different location, re-installed with a new name on the network, when someone has cancelled their job on the printer and forgot to turn it back online, if you inadvertently loosened the connection when you pulled on another cable, or if you move the computer and may not have plugged the connections all the way into one of the ports (or in the wrong port). Sometimes a quick check of the connections can resolve the problem quickly without waiting for technical support to get back to you.

## Working with Hardware



1.2.7  
1.4.4  
1.4.5  
1.4.6  
1.4.8

On occasion you may find that a hardware element does not seem to respond in the same manner as previously or has stopped working altogether. In this situation, consider following a logical path to try and isolate where the problem may actually be and how to resolve it. For instance, the following list was compiled from steps used by technical support when checking why a hardware device may not work.

- ❑ Is the hardware securely plugged in? It's possible that the connection came loose if the computer was moved or if a cord was inadvertently disconnected.
- ❑ Check the cable or cord type. Look to see that the number of pins between each connection and each port is correct and none of the pins are bent. If you used an extension type of cable, ensure the cable is the right type for the hardware. Many cables look similar and should work if the number of pins match; however, certain cables are designed to work only with specific hardware.
- ❑ Turn the computer off and restart it. Occasionally a device may stop working due to low memory resources or a conflict within Windows wherein you would have seen an error message and may have chosen to ignore it.
- ❑ Do not ever try to force a connection between the device and the port. The connector for the device should match the number of pins or holes on the port.
- ❑ Did you delete any files recently? If so, restore all the deleted files and see if the device works now. If it does, you may have accidentally deleted a file that is required for the device to work, even though the file does not look as it has any relevance to the device.
- ❑ Have you upgraded or installed any new software recently? If so, you may need to find an up-to-date driver file for the hardware device. A *driver file* is a program file that identifies the hardware item and associates it with the current operating system to ensure both are compatible.
- ❑ If the device is your mouse, clean the area around the desk to ensure there is no dirt getting into the mouse. Clean the mouse button and the mouse and desk surfaces as well to ensure these are dirt-free. If using a traditional mouse, open the casing for the mouse ball and clean the rollers inside.
- ❑ If some of the keys on the keyboard are sticking, turn the computer off and with a clean cloth, wipe off any dirt on and between the keys. Also turn the keyboard upside down and shake out any dirt that may reside underneath the keys.
- ❑ You can also purchase cleaning kits for the keyboard, mouse and CD drives to help ensure there is no dirt in these areas. You can also purchase vacuums or air pressure cans to help disburse any dirt.



- ❑ If the problem is with printing, first check that the printer is turned on. Then check that there are no paper jams or open areas on the printer. Most printers have a display that will indicate what the problem may be (e.g., toner out, paper jam, paper overflow, door open, etc.) with a button to either cancel or reset the print job. Occasionally you may need to cancel the print job if the file is very large. If the printer doesn't have enough memory to handle the contents of the document, it will keep trying to send the document to print and the printer appears to be "hanging". Cancelling the print job will enable the printer to reset its print buffer to process other print jobs.

- Consider the quality of the printer cartridges if your documents appear smudged or smeared. This could be the result of spilled toner within the printer from a bad cartridge or a paper jam where parts of the toner spilled into the printer or are smeared on the roller inside the printer cartridge. In most cases, you should be able to open up the printer and use a small brush to wipe away the spilled toner. Alternatively, call technical support to ask them to provide service on the printer.
- Check the connection from the printer to your computer, or in the case of a network printer, check the network cable connection from the printer to the corresponding port on the wall. If the connection is loose, the signal from the computer may not be reaching the printer.
- Occasionally you may also need to turn the printer off and on to reset the connection for the next print job. This may be a result of cancelling a print job. The printer displays a message indicating you need to turn off the printer in order to reset its buffer. It could also be a result of something happening between the printer and the network server (e.g., power outage, network cable was loose and you just plugged it back in, etc.) and you need to reset the connection.
- If you cannot access a file from a floppy disk, it may be that the floppy disk cannot be read in the floppy disk drive. This might be due to the heads being misaligned or the floppy disk could be damaged or corrupted. Try reading the disk on another system and if it can be read from that system, then your floppy disk drive may need to be cleaned. If neither system can read the floppy disk, it may be that the disk was formatted in a different method than what your system is able to read (there will be differences between versions of Windows for formatted disks) or the disk has been corrupted in some manner so that it cannot be read any further.
- If you are having problems accessing data from your hard drive, this may be an indicator of a more serious problem. Try exiting from all programs on your computer and then activate some of the maintenance tools that come with Windows. One tool you should use initially is the **Scandisk** feature which will check the integrity of the hard drive and detect any problems with the hard drive itself. If no errors arise from using Scandisk, then use the **Defragment** feature to reorganize the files and folders on your system. As with a filing cabinet, when you save more items in the filing cabinet, you will begin to run out of room and will need to do some reorganizing. The same is true for the computer. Accordingly, you should look to reorganize your computer on a monthly basis to ensure the system does not begin to slow down due to the hard drive becoming full.
- If you have run the maintenance tools and continue to see error messages indicating a failure to access a file, this usually is an indicator that the hard drive may not be working fully and may need to be replaced. In this scenario, call technical support to have them give you instructions on what to look out for and how to proceed.

There are no firm rules or instant solutions for troubleshooting a particular error on your computer. The best rule you can apply is to start with logical solutions first and then move up to more advanced solutions. For example, you notice that the software programs seem to be starting slower over the past few weeks. One of the first solutions you could use to determine why is to check the amount of space left on your hard drive. Is the amount of space quite large in size? If not, it may be time to delete older files or programs you no longer use. If the space is quite large, when was the last time any maintenance tools were used on your system? Would defragging the hard drive make a difference? How much RAM do you have installed on the system? Could you benefit (and afford) to purchase additional RAM for your system? The checklist items provided in this courseware are suggestions for some methods for working with hardware; the items are listed for you in a similar manner to the approach a technical support person would take to increase your computer's performance. The list is not complete by any means, nor are they listed in the only order to be used. You will find that if you approach working with hardware using a logical method, you will begin to develop a process that suits your requirements.

When installing new hardware onto your computer, if the device does not work after following the instructions on how to install this device, check the following:

- Is the device connected securely in its port? If the connection is loose, the computer may not recognize the new device.
- Is the device connected to the appropriate port? Even though a port is available that looks like it may be the correct one, the port may be for another device and will not recognize the new hardware. For example, the computer may have two video cards installed even though only one monitor is set up. The port on the second video card may look similar to one that can be used for a midi device or an digitized tablet; however, as it is a video card, it will only work with another monitor cable.
- During the installation of that device, did you see any error messages? If so, this may indicate the installation was not complete. You will need to uninstall the device and try installing it again. You may need to uninstall any older versions of software for that device before installing the new one. For example, if you change from a specific wheel mouse to an infrared cordless mouse, you should uninstall the software for the first mouse before installing the software for the new mouse to avoid any confusion for similar files during the installation.
- When installing a new device, always be sure to read the instructions completely before moving ahead with the installation. If the device comes with software, this will be more crucial than simply plugging in a microphone or speakers. Always check to see what came with the new device, and read the Getting Started section (as available) for that device before plugging it in and running the installation program.

In most cases, once you plug in the new device and start the computer, Windows will detect the new hardware and then start the **Add/Remove Hardware** feature for you. This is known as *Plug and Play* technology. You can then follow the prompts on the screen to select the correct options to install the software for this new device.

- If the computer you are using is in an office, in most cases the technical support person will complete the installation for you. You should check with technical support at all times before automatically installing a new device to ensure they are aware of this new device and what impact it may have on your system or the network.
- If you do not have access to a technical support department (e.g., home computer), the first avenue for help should be the vendor who sold the computer to you. If the computer is still under warranty, technical/customer support at the computer vendor will be able to help you with either a fix or a replacement. If the computer is no longer under warranty, check with the vendor first to see what options are available and the cost of same to fix your computer. The next option would be to call computer vendors who handle repairs in your area. Start with quotes from some of the larger retailers and also try some of the smaller organizations who may be able to offer you a more customized service although the cost might be slightly higher. In most cases you will need to take the computer to the service company you choose for repair.

## Taking Care of the Computer



1.4.1  
1.4.2  
1.4.3  
1.4.4  
1.4.5

For the most part, computers are efficient and run well on their own. As new devices and software are added to the computer, you may begin to experience different types of errors, problems, or have general queries on how to manage the computer. Some of these are listed in the following and can be used as a guide when setting up or maintaining your computer:

- What kind of power source do you have for the computer? In general, the computer should be connected to a power bar that will then be connected to the wall outlet. Ensure the power bar being used is one that can protect your system from power surges, brown outages, or general fluctuations that may occur due to the electrical requirements of the computer.

- Where is the computer set up? Is it easily seen from a window or door? While you won't be able to prevent theft from happening in your office or home, you can prevent your location from being an easy target by ensuring the computer is not in an area where it becomes an open invitation for theft. You can also purchase special types of security cables and locks which can help to prevent easy removal of the computer.



- Is there a heat source near the computer? If so, you will need to move the computer to a different location. The computer needs to have a semi-open area for the fan to keep the computer cool, as well as to prevent a high heat or humidity source from damaging the hardware and any media discs you have for software or data. Alternatively, extreme cold conditions can also affect the contents of any drives or media discs.
- Ensure there are no magnetic items near the computer. The computer can be easily influenced by any electrical or magnetic fields near it. For example, if there are magnets near the CPU, you could potentially erase the contents of the hard drive. As well, if you have any electrical or magnetic fields around the monitor, you may notice that the image flickers occasionally.
- Refrain from eating or drinking around the keyboard. Any spillages onto the keyboard can cause the keys to stick or not work at all. At the same time, try to keep the area round the keyboard and mouse as clean as possible. Both devices can pick up dirt easily and may cause the device to either not work or slow down when being used (e.g., mouse cursor seems slow as you move the mouse on the desk).
- Any time you move the computer, always be sure the computer is first turned off. Then unplug all the devices and move them carefully to the new location.  
Likewise when you want to install a new hardware device. Always turn off the computer first, then plug in the new device and restart the computer. This will prevent any confusion by Windows (or other software) for the correct device to use.
- If a device no longer works, always check first to ensure the device is properly connected to the computer. Then try restarting the computer to see if the device will be recognized.
- In the situation where weather is a factor (e.g., storm, lightning, etc.), always turn off the computer to protect it against any sudden power surges to your home or office.
- When considering whether to leave your machine on all day and night even when it isn't being used, give some thought to what is on your computer, whether it is logged on or not, and who else might want access to your computer. For example, a home computer with 24-hour Internet access is used by several members of the family. Assume the parents are assigned full rights to see everything on the computer and they also have a budget file showing income and home expenses. The parent using the computer last may want to log off the system if they plan to leave the computer on so that the next person using that computer needs to log onto the computer. This will verify the user and ensure that this user does not have access to any confidential information.

- Do not share your id and password with anyone other than your supervisor or someone who has administrative rights to the computer. This will prevent others from entering your computer and making unauthorized changes. Consider a security plan for your computer if you have personal or confidential information you do not want to share with others.
- Any time you need to change a major component of your computer (e.g., hard drive, video card, Internet connection, wireless setup, etc.) or if you are not comfortable making the changes yourself, always consider using a technical person who can help or do the change for you. Unless you have a lot of experience with computers and how they work, it may be better to leave the installation of major components such as drives to a computer technician.
- If your system is displaying a number of error messages or activating different items that you have not requested, it may well be that your system is infected with a virus or needs servicing. Consider taking your system to a technical support service to at least provide you with a quote and analysis of what the potential problem could be. This can then give you a starting point as to whether you want to try and repair or update the problem yourself, versus hiring them. For example, if the technical support company tells you the computer is infected with a serious virus, it would be best to let them fix this for you as they may be able to salvage some of your data files using specialized software. They will also know which tools are needed in order to clean the computer of any viruses and prevent further infection.

## Replacing or Upgrading Equipment



Computers, like automobiles, will become obsolete after a certain period of time given advancements in technology. What you need to consider during the lifetime of your computer is whether to replace versus upgrade specific components of your computer. You do not always need to have the latest and greatest computer unless your work demands these specifications.

For example, someone who has a computer at home for personal use may not need to upgrade or replace the computer for a few years. This might change as newer games or software requirements are needed by specific members of the family. This can also be true of a computer in an office. A computer used by the receptionist may not need to be changed for several years until such time as the company chooses to update all the computers in the company, or if the responsibilities for the receptionist increases to include tasks that require a more powerful computer.

The general rule when deciding whether to replace or upgrade would be:

- If you want to replace an existing input or output device (anything outside of the CPU that can be plugged in), this is an easy task that most users can handle as Windows will generally recognize the new device and provide you with tools to help set it up for you.
- When looking to replace a component inside the CPU, consider what the cost of the component is and whether it is something you are capable of. In most cases, changing anything inside the CPU should be handled by someone with computer experience. In addition to being able to make the change for you, they will also be able to give you advice on whether this is a cost effective choice for you.
- How old is the computer? If the computer is relatively new, changing out components may be the more cost effective option. However, the older the computer is, the more likely it is that you will need to replace it in order to use any of the newer software programs.



Consider the following examples:

- Increasing the amount of RAM is very easy to do. You need only to know which RAM chips to buy and then where to insert them in the computer. This process generally doesn't require a technician provided you know the specifications of your computer. Increasing the RAM is also a very cost effective way of increasing the power of your computer without having to purchase a new computer. Again, if you are unsure of the specifications and where to insert the chips, have someone with computer experience help you.

- If you need more space to store files on the computer, you will need another hard drive. Should you purchase a bigger hard drive or replace the existing one? Before going out to make the purchase, you may want to find out how many bays (drive areas) you have available inside your computer. You will need to consider the cost of purchasing the hard drive and the time to set up the new hard drive to be installed in your computer. For example, assume you need to buy a bigger hard drive as there are no extra bays in your computer. You will also need to hire someone to make the change for you. The cost will include the price of the new hard drive and the labor cost for the technician to copy the files from your existing hard drive to a safe location, format (prepare) the new hard drive, copy your existing files from the safe location onto the new hard drive, and test the computer to ensure everything is working correctly. This generally would be about three to four hours of work, depending on how much data existed on your original hard drive. The cost of a new CPU with a bigger hard drive may be cheaper than choosing the first route.
- When planning to upgrade several components of the CPU, always look at the cost to purchase the components and labor to install those components. The cost of newer computers are very reasonable and it may not be worth the time or effort to install newer components versus buying a new computer. For example, assume you have a Pentium III 500MHz system and want to upgrade to Windows XP as well as put in a larger hard drive, additional RAM, and a video card to handle 3-D games. In this situation, the cost to purchase the additional elements would cost you more than a new computer, especially with the plan to upgrade the operating system as well. Some of the older systems cannot handle the newer software programs and as such, will not work much faster or better on the existing computer. What may be a better alternative is to buy a new computer system that contains many of the additional elements required, and either sell the older system or give it to someone who may only want a computer to go onto the Internet, e-mail, and work with basic documents.

## Disposing of Older or Non-Working Items

When you can no longer use an item for the computer, try to dispose of the item in an environmental-friendly manner. Items thrown away in a regular garbage container are generally put into a landfill which is not good for the environment given the materials used to manufacture computer components.

There are a number of organizations who will recycle or dispose of the equipment in a safe manner. For example, printer cartridges can be recycled and reused. Depending on the equipment and its state, computer parts can be either recycled into newer products or refurbished (fixed) and donated to organizations who cannot afford to buy new computers.

These companies can be found in your telephone book under the category of recycling, or through a search on the Internet.

## Summary

In this lesson you looked at different methods or options available to help maintain your computer's performance as well as how to perform some basic troubleshooting functions to identify problems on your computer. You should now be familiar with the following concepts:

- How to increase the computer's performance
- What to look for when installing hardware
- What to do if the hardware does not work
- General maintenance considerations
- How to dispose of older or non-working components

## Review Questions

- The performance of your computer depends on how you use it.
  - True
  - False
- What could be the cause of poor quality in printed documents?
- When installing a new device, in most cases, Windows will recognize a new device has been connected to the computer.
  - True
  - False
- If you don't have a technical support department available, what options are available to obtain technical support?
- What should you watch for when setting up a computer in a specific location?
  - The power source coming into the computer
  - Whether it is visible to the public from this location to prevent theft
  - Ensure it is not near any heat or cold sources
  - There are no magnetic or electrical fields near the computer
  - All of the above
  - Only a, b and c
- Any time you want to add or check a hardware device that is not working, what should you do?
  - Turn off the computer
  - Check the connections
  - Clean the device first before restarting the computer
  - All of the above
- Why should you refrain from eating or drinking anything around the computer?
- If you don't want to share your files with others who use the same computer, what can you do to prevent them from seeing your files?
- If your system has a virus, it is best to have someone who is experienced with computers fix the system for you.
  - True
  - False
- When planning to add or change several components in the CPU, it may be more cost effective to buy a new system instead.
  - True
  - False

## Lesson 9: Buying a Computer

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at the decision making process involved in purchasing a computer and what considerations are needed in order to purchase the most productive computer for your needs. On successful completion, you will be familiar with the following concepts:

- Hardware considerations
- Software considerations
- Price considerations
- Support or service considerations

### Building Your Checklist



1.3.2  
1.3.3

When planning to purchase a computer, you need to consider both hardware and software requirements. Your checklist on what you need (or may need in the future) should include the following:

- How fast does the system need to be, given what the user will be doing on the system? For example, is the user going to be handling mostly simple administrative documents, or are they going to be performing desktop publishing on the documents? The difference between these types of tasks could impact the microprocessor you choose for the system.
- How much RAM will the system need to have? Most computers come with a standard amount but if the user is going to be performing some intensive tasks (e.g., programming, graphics design, etc.), they may need to have more. As well, your operating system may demand that you have more than the standard, e.g., Windows XP workstations require more RAM than Windows 98/2000 workstations.
- How big should the hard drive be? Is the user going to be saving their work to a network drive or onto their local drive? Do they even need a hard drive based on your network setup?
- Should the computer be a desktop model or a notebook? How important is portability to the user? Even if this is for a home computer, you may want to consider that a notebook may be more suitable for someone who wants to roam the house and work in any location. A notebook is much more feasible for someone who has to travel and wants the option to work when away from the office or home.
- Is Internet access needed? If so, what type of connection does your company have or need to have? Are they likely to need to access other computers using a modem for other purposes, e.g., synchronizing data by a sales person on the road, accessing bank accounts for daily updates, etc.? Would going with an online service be better for your company or user needs?
- Would an internal or external modem be better for your users? For example, if only one person needs to have outside access, then you may find that an internal modem is sufficient; however, if two people need access to the same information but infrequently, an external modem might be the better choice. As well, how fast should the modem be? The rule of thumb is that the larger the number of kilobits per second, the faster the modem.
- What about a traditional network/modem card versus a wireless card? Where will the computer be placed in proximity to the network connection? How long will the cable need to be in order to connect between the computer and the network? Consider that the longer the cable, more likely the cable may become tangled or come loose when it is pulled in any manner. Having a wireless connection gives you the flexibility to move the computer (desktop or notebook) from one location to another and still be connected to the Internet (or the office network).

- What type of network connection do you have? How fast is the connection and how busy is it during the normal work day? Would it be better to give the user a faster system rather than a standard one if they need to work with a large number of files?
- Should you include a network card with the purchase of the computer, or do you have extra network cards in the office? Depending on the system you purchase, some new computers come with built-in network cards whereas others require you to purchase a separate one.
- Is the standard size of the monitor sufficient for the user? For example, someone doing desktop publishing might want a larger monitor or two monitors for multiple programs or tasks.
- What type of mouse do they need, e.g., instead of a standard mouse, would a pen mouse or digitized tablet device be more suitable for graphics design?
- What about the video card that comes with the standard computer? Should you upgrade to one with more RAM in order to speed or improve up the display?
- Most computers come with a CD drive, what type of CD drive will be needed on this workstation? Will the user only need a CD-ROM drive, or will they need to burn CDs which then leads to whether they need a CD-R or a CD-RW? What about DVD capability? Is this needed for the user? How likely are they to need to have this option, e.g., will the user be responsible for making copies of any videos captured, will their job require them to review DVDs, etc.?
- Which operating system would be best for this user? If the user will need to work with multiple programs that are graphics intensive, should they have a newer operating system that can better manage memory?
- For specific types of tasks, can an off-the-shelf program accomplish what the user needs to do? For example, which program is best to handle payroll in your office? Would it be better to sign up with a company who provides this service, or can you accomplish everything with an accounting program that has a module for payroll?
- What about the software that comes pre-installed on a new computer? How effective are those programs and will they suit the user's needs? In most cases, a new computer for an office will need to have the same software currently used as the standard for the office, e.g., Microsoft Office, WordPerfect, etc. If this is the situation, check to see whether you can purchase the computer with this software installed versus the pre-packaged software. If the computer is designated for home use, it may not matter which software programs are pre-packaged with the new computer.
- If you need to buy specific software programs, do the specifications for that software match or exceed the specifications of the computer? In most cases, you can check the software specifications either on the side of the program box, from the software vendor's web site, or check with a retailer.
- Do you need to purchase any extra utility programs such as anti-virus programs, system diagnostic programs, etc.? Most new computers come with a trial version of an anti-virus program where the user will have the option to subscribe for a year. Every computer should have an anti-virus program that is customized to update itself, but utilities programs are not as essential at initial purchase.
- If you're planning your network specifications at the same time, what about programs to address security or disaster and recovery? What hardware requirements will you also need to add or upgrade to your network for these issues?
- What about security and disaster considerations for the workstation? Will you need a backup for this system? If purchasing a notebook, does it come with any security lock features to prevent theft?

- Are all the computers in your office the same type? If not, are there file conversion issues you need to address? What software would be best to handle that? For example, if your office has mostly PC systems and you use Office XP, files saved on these machines can be read automatically on Apple (Macintosh) systems that have Office 98 and OS X.
- Do you have access to mainframe computers, or computers using different operating systems than Windows or Mac OS? For example, do you need special software and hardware to access a university's network? Although most larger organizations have software that is compatible with PC-based systems, you might need special hardware or cabling for complete access.

As you can see, there are a number of issues you need to address before purchasing a computer. The aforementioned list is not complete by any means and you may need to get very specific details from the people who will be using the computer before you can finalize the decision.

## How Much Will It Cost?



1.3.4

The price of the computer will obviously depend on what components come standard with the computer, what options you may add to it, and which software you purchase. Sometimes a special price offered by a retailer seems so attractive that you may feel you need to purchase the computer now. A special price should not be the deciding factor; in the computer industry, if you miss a special offer today, there will be others tomorrow, and sometimes they are even more attractive. The most important decision to put into whether to buy this computer (or notebook) is to look at what you plan to do with the computer and have you accounted for all the things you might want to do within the next year.

For example, the user may be a typical office user whose main responsibility will be to handle administrative documents. However, if that system is to be shared with someone else who will be doing more advanced documents, you may need to add extra components to that computer, even though the main user does not need them. Another example could be that you are looking at a standard configuration on a notebook for a salesperson to use for capturing their notes. Initially they may only be working on their own files for customers; however, if the company is setting up their inventory on a database, the salesperson can then use the notebook for display purposes during client visits. Accordingly, the notebook may need to have more RAM and remote access capabilities.

A few other issues you may want to consider before making the decision include:

- Is someone in your company working on a program or project that the users will be accessing within the next six to twelve months?
- Does the company plan to upgrade the network system within the next twelve months? This could include items like the network connection, a new network system itself, or faster network cards.
- Is the position for the employee getting the new computer likely to change with the outcome being higher responsibility (e.g., security and access issues) or more complex tasks?
- What kind of budget has been set aside to purchase computer hardware or software items in the current fiscal year? Can the purchase of a new computer or components for the computer be in phases?
- What kind of warranty or service/support options are included with the computer? Do you have to purchase extra services? Most computers come with a standard of one to three years warranty, and service or support after that warranty period will cost more. How cost effective would it be to purchase additional warranties if you also have an on-site technical support department?

- Are you purchasing from a local retailer or online from the computer vendor's web site? As well, what is the reputation of the retailer or vendor? What decision helped you decide to purchase from this vendor? Most people trust their own instincts regarding dealing with specific companies. You may want to ensure you have completed a thorough analysis that includes both price, reputation, and service available.
- What about return policies? If you need to replace an item, how easy would the process be? How long will you have to wait for the replacement part and what options do you have if the wait time is long?
- What kind of support do you have in regards to tracking where the computer is once you've purchased it, or the history of service on this computer? Is this something you will need to address yourself or will the computer vendor be able to help?
- How long do you anticipate having this computer based on the initial requirements for it? Most computers will be compatible to handle documents for two to three years. As requirements for software and hardware change, you may need to look at whether to upgrade or replace the computer at that time. For example, computers in an office can handle the needs of daily transactions for at least three to five years, depending on the company's business type. If you know you are likely to need a faster system within a couple of months, decide whether you need to purchase now versus later or which type of system to buy now, if that system will be passed onto another employee/family member.

Consider what the future may be for the company and whether the plan to upgrade is based on budget or industry standards. Sometimes companies upgrade within two years in order to stay current with industry standards, and as such, need to purchase new computers accordingly, e.g., graphics design, video/game production, web-based businesses, etc.

Companies may also need to upgrade after a certain amount of time in order to take advantage of newer software programs or network issues. For example, more security features are available with newer Windows Server programs to handle requests for employee accesses as well as prevent unauthorized access by external factors. In order for the entire company to benefit from these newer features, the company must purchase newer computers that can handle the operating/network system requirements.

For most home computers, the computer should last for at least two to three years, depending on the needs of the family. In this type of scenario, components may be added to the computer to accommodate changing needs, e.g., wireless network set up for multiple computers in the home, additional RAM added, a video card with more RAM to handle new games, etc.

There are no "hard" rules regarding the purchase of a computer. The main considerations have to be what you need the computer for, what you want and need the computer to be able to do, and how much you can afford, both now and in the future for support and services. In fact, if you ask five different people what their decision would be, you will receive five different answers. The only advice that is solid and valid would be to work with someone who has a solid reputation in working with computers (e.g., technical support person, network administrator, etc.) and who you trust. Have them help you with the process by talking to the user(s) and the vendors to provide you with the most efficient computer that will suit your needs for the next year (or more, depending on what your company plans for computer purchases in the future).

## Summary

In this lesson you looked at the decision making process required to purchase a computer and what considerations are needed in order to purchase the most productive computer for your needs. You should now be familiar with the following concepts:

- Hardware considerations
- Software considerations
- Price considerations
- Support or service considerations

## Review Questions

- When buying a computer, you need only to think about the cost of the computer.
  - True
  - False
- Which factor(s) would influence the purchase of a notebook instead of a desktop computer?
  - Portability
  - Network requirements
  - Wireless capability
  - All of the above
- When purchasing a computer for an office employee, you don't need to worry about the network side.
  - True
  - False
- If the user needed a CD drive to read and write blank CDs several times, which CD drive would you consider with the new computer?
  - CD-ROM
  - DVD-RW
  - CD-R
  - CD-RW
- The pre-packaged software programs that come with the new computer are suitable for any user.
  - True
  - False
- What does security or disaster planning for a computer mean?
  - Having a backup system
  - Having security locks for the computer
  - Having an anti-virus program
  - All of the above
  - Only a and c
- Price is based on what factor(s) for a new computer?
  - How new the computer is
  - What components you have in the computer or add to the computer
  - What other options (e.g., service) you add to the purchase
  - All of the above
- All warranties are the same for new computers.
  - True
  - False
- You do not need to consider the reputation of the vendor as much as the price for the computer.
  - True
  - False
- Having someone who is experienced with computers who you trust can be very advantageous in selecting the right computer to suit your needs.
  - True
  - False

## Lesson 10: Looking at Software Applications

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at some of the common types of software applications or programs being used, as well as how data is transferred between computers. On successful completion, you will be familiar with the following concepts:

- What software programs are
- How software programs are developed
- Understand what the operating system is
- Which software programs are designed for specific tasks

### What is a Software Program?

Programs are called software because they only function when loaded into the computer's RAM memory. Because RAM is volatile, software must be permanently stored on a hard disk. Software programs are created using programming languages that contain commands to perform specific tasks. It is these commands that users will activate in order to complete the task. The commands can be available in a menu, toolbar button, shortcut keystroke, shortcut menu, or a combination of these options.



The commands are based on a set of rules (referred to as *algorithms*) created in the software program to complete the specific tasks. For example, when you select text in Word to add bullets, after you click on the button in the appropriate toolbar, the Word program actually runs the rule to check that the bullet feature is available, looks to see what format was last chosen (if any), and then applies the feature to the text. Another example is if you choose to perform a total or sum calculation in Excel with specific numbers. The Excel program will run the algorithm for the sum formula based on the locations (cell addresses) you provided to find the data, do the calculation, and then display the results. If the result isn't what you expected, it isn't necessarily a problem with the program as much as what information was given on the worksheet to perform the task, e.g., one of the cells contained text instead of numbers, or a number was in the wrong format (exponents).

Accordingly, these algorithms set the guidelines for how data is inputted into the software program, and the format for the output. For example, if you wanted to record narration for a video presentation, you would need to convert your voice from analog (continuous information) to digital (information broken down into smaller amounts of non-continuous information). Having a microphone connected to the computer doesn't do this conversion automatically; you need to have a software program running at the time you record your voice to convert the narration to a digital file. Essentially you would be inputting your voice via the microphone and the output would be a sound file created with the software program.

As noted previously, there are numerous devices that can be used to input and output information. Depending on which software program you are using, this will determine whether your output is text, numbers, sound, video, etc. Output will always require hardware in order to see or hear it:

- Your monitor allows you to view your documents, video, web sites, etc., or check the file names and location.
- You need a printer for hard (paper) copies of the files.
- You will need speakers or a headphone plugged into your computer in order to hear music or sound files located on your computer, or from the Internet.

Software programs are created to help the user perform tasks on the computer. Which software programs you use depend on what requirements you or your office may have for the output. There are a large variety of software programs that perform the same type of tasks; no one program is better than the other. The choice for software is really based on what you need to accomplish, the degree of detail and features needed, and what you can afford.



2.1.2

All retail software programs go through a thorough process before they are released for sale. The software vendors always perform quality controls on their program based on the most commonly used tasks to ensure the minimal amount of problems that could occur once the program is installed on a computer. In most cases, a software vendor generally follows this process:

- The software program is created or updated based on new technology, request for new features, etc. by programmers who set up the algorithms for the program features. These designers are called programmers as they use programming language (software) to create (write) the codes or rules in the software program for specific tasks. Some popular programming languages include C++, Visual Basic, Fortran, or Pascal.
- Once developed, copies of the program are sent to designated people outside the software company who agree to test the beta of this program. These testers are selected by the software company based on specific criteria for the software type, e.g., different operating systems, technical users versus beginners, etc.
- Testing usually occurs for a specific amount of time, wherein feedback is required from the testers back to the software company.
- The programmers then revise and modify the program as needed based on the feedback, and produce another beta copy. This step may be repeated as many times as needed, depending on the size and type of software program.
- Eventually a “gold” copy is created and distributed to a small number of customers that meet a specific criteria, e.g., large company with a variety of computer types and operating systems, specific business needs, hardware vendors, etc.
- Generally within a month of the gold copy being released, the final version of the software is released to the general public through retail vendors.

## Upgrading Your Software



2.1.3

As most people know, it is very unusual for software programs to be error free with the first release of the software. A lot of the *bugs* (errors) that occur generally are items that the software company can't always predict based on how the customer uses the program. Software companies develop for the most commonly used or requested features; accordingly, sometimes they need to do *patches* on the programs and announce to customers that updates can be obtained. *Updates* or upgrades are not always problems with the software; updates may occur as a result of changes in government rules or requirements, or external factors they have no control over, e.g., tax tables for accounting programs, new viruses that can break into the software program, etc.

These known issues should not prevent users from purchasing software for their computers. Whether you purchase software when it's released or after a few months should depend on your own requirements, e.g., your company wants to upgrade to Windows XP Professional and Office XP, or you want the latest version because it has features you need, etc.

When you register your copy of the software, you will receive notices from the software vendor whenever there is an update or upgrade available for the software. This could be through e-mail or actual material received in the mail, based on your preference for these notices at the time you registered the product. Some software vendors will also build in a feature within the program to allow you to schedule or automatically check for online updates, and/or display messages on the screen to indicate a new update is ready for installation.

If you chose to receive updates via the postal mail system, you will receive floppy disks or CDs containing the update for you to install. If you choose to receive the updates via e-mail or an online system, the software program will send you notices generally with a link to where the update can be found. For example, when you register with the vendor for the anti-virus program on your system, you will be given the choice to receive the updates via regular mail, or online. If you do not have an Internet connection yet and choose regular mail, the software vendor will send you media whenever there is a major update needed for the software or protection against a virus (called virus patterns). If you do have an Internet connection and chose to receive updates online, the software vendor then gives you access to an Update feature within the software to get these updates.

Whether you choose to update the software depends on the software and whether you feel the update is warranted. For example, you should always update your anti-virus program to protect your system against newer viruses. However, you may not feel it is necessary to update your system for the latest update for the tax tables in the personal financing software pre-packed with your computer. In more cases than not, it is beneficial to install the update so that your version of the software is the most current and up-to-date. Generally the updates will either reduce the amount of problems you might be experiencing with the software or contain the latest edition for the features in the software.

There are also drawbacks to updating the software that include:

- incompatibility or conflicts with other software (the upgrade now protects your system from potential viruses but you now can't open attachments with e-mails)
- incompatibility or conflicts with the operating system (the update contains technology for a new input device but is not being recognized by Windows as it is new to the computer)
- problems with the upgrade within the software (features don't work, can't access older files)

Applying the most recent updates/upgrades is not always the best route to take unless you are very experienced with computers and can "tweak" the system if something doesn't work. Most people tend to wait for a couple of weeks after the release of the update/upgrade to ensure there are little or no problems with the updated software. As well, if your system should fail for whatever reason, you need to install all the original software versions and then install all the updates/upgrades you've applied for this software since the software's original release date before your system is back to the original state before it failed.

If the software is an older version and is no longer supported or available from the software vendor, you will not be able to have the same version as was on your system before it failed. You may be able to find a copy of the update file by searching the Internet, although there is no guarantee that a copy will be available or that the file is authentic. For the most part, if the software program is still popular in the current market, the latest update from the software vendor will include any of the updates available previously.

It is very prudent to register the software on your system with the software vendor as you will receive notices whenever an update is available. Provided you have access to the Internet, you can always check the software vendor's web site to find specific updates, as needed. There are also a number of organizations, groups, or newsgroups who share information on what the updates are, what they contain, the reason for the update, and whether you should install it or not. Once you receive a notice of the update, you have the option of saving a copy of the update file onto your system instead of automatically installing it from the vendor's web site.

### **What about Upgrading to New Versions?**

Software vendors generally release new versions of the software on a yearly or two-year basis, depending on the software. For example, newer versions of accounting programs are traditionally released each year in order to accommodate new tax laws or calculations in addition to new features the software now offers the user. Microsoft releases a newer version of Office (e.g., Word, Excel, PowerPoint, Access, and Outlook) generally every two years.

A new version of a software program is developed generally to include new features, fix any bugs or problems with features, make the software compatible for different operating environments or other software, include new technology (e.g., security rights, higher resolution types, etc.), or to reflect changes in governmental laws and regulations.

Do you need to buy the new version for your system? The answer depends on whether you want or need the newer features, the software is needed in order to be compatible with other tasks or software you are using, or if it is a requirement for your job. Consider the following before automatically switching to the new software:

- ❑ Are the features in this version crucial for daily tasks? If the new software version contains some features that will increase your productivity, then it might be worth purchasing. Alternatively, check the web site for the vendor or speak to your technical support department to find out what's new in the next version and whether it will suit your needs. For example, you may not need to buy the newest version of the accounting software if you are happy with the version currently being used. If you only want the new tax table, these are available as updates from the software vendor.
- ❑ Can your current computer handle the new software? For example, you cannot run Microsoft Office System 2003 on a computer that does not have the Windows 2000 NT Service Pack 3 or Windows XP operating system installed. Alternatively, if the new software indicates you need to change some components in the computer (e.g., more RAM, specific type of video card, etc.) is your system compatible?
- ❑ How many people may be affected by the change in software on your system? If you are the only one upgrading to the newer version, will documents be compatible between computers? For example, if you upgrade to the Pro version of Simply Accounting to test the features for this version, you will not be able to open the company file created on the Pro version on any other computer in the office if everyone else is using Simply Accounting Basic. Another example could be if you currently use Word but your clients use WordPerfect, you will need to remember to save your files with a format that can be read in WordPerfect.
- ❑ How much training will be involved to have everyone switch to the newest version? There is always some downtime involved when people switch to a new software or software version. For instance, if you are upgrading from Word 2002 to Word 2003, the new features in Word 2003 may not have as big an impact on everyone than if upgrading from Word 2000 to Word 2002/2003. Take into account what the potential learning curve may have on productivity when making the decision whether to purchase the newer version or not. The downtime will grow significantly if there are a large number of people who will require training and/or if you are upgrading more than one program for the office, e.g., moving to Windows XP and Office 2003 from Windows 98 and Office 2000.

If you decide to move to the newest version, you will be presented with the choice of purchasing an *Upgrade* version versus a *Full* version. The Upgrade version is a less expensive choice but does require that you have a Full version of the software already installed on your system, or access to the CD to install other components of the software, as needed. This is an important consideration should your system fail and you need to re-install all the software programs. You will need the original Full version of the software and then the Upgrade version to return to the same state for the software before the system failure. The Full version generally is double the cost of the Upgrade version and contains all the files you will need for this software program.

The choice for upgrade or full versions are applicable even when purchasing software for a large company. The difference here would be that you have the option of purchasing licenses for each computer where this program will be installed. Generally the network administrator will receive one CD with the software program and documentation with a *volume license key* that enables him/her to install the software on all computers requiring this software program.

## Looking at Operating Systems

An *operating system or environment* is a collection of programs designed to control the computer's interaction and communication with the user. The operating system essentially performs two important functions on the computer: it manages the input devices (keyboard and mouse), output devices (monitor and printer), and storage devices (hard and floppy disk drives), and it also manages the files stored on the computer and recognizes the file types to complete tasks.



3.1.1

Every computer requires an operating system to function. A computer must load the operating system into memory before it can load an application program such as Word, Outlook Express, or PhotoShop.

Examples of operating systems include DOS, Windows, Unix, Linux, and the Apple Operating System.

DOS was the original operating system for the PC and stands for Disk Operating System. There have been many versions of DOS since its original release. The two most commonly known ones are:

**MS-DOS** This version was created by Microsoft and is the most commonly used on IBM and clone computers.

**PC-DOS** This version was created by IBM and guaranteed to work with a genuine IBM Personal Computer; however, it may not work perfectly with some IBM compatible computers.

3.1.2  
3.1.3

In the current market, it is rare to find a computer still using DOS as the operating system due to the display, e.g., text characters only. As well, typing commands in order to perform a task was based on one line commands that were often hard to decipher, especially when errors occurred.

```
C:\>d:
Invalid drive specification
```

```
Northwest Airlines, Ltd. Jan 31, 1992
Add/Modify/Delete Databases
Batch [ ] Entry mode (Normal entry) Entries:
Description [ ] Debits:
Credits:

Entry [ ] Period [ ]
Line [ ]
Source code: - [ ]
Date [ / / ]
Reference [ ] Description [ ]
Account [ ] Dept. [ ]
Debit [ ] Credit [ ]
Line-Reference-Description-Amt.-Dept.-Debit-Credit

Entry totals:
Out of balance by:
LF00-New Aston 102-East FL36hp
```

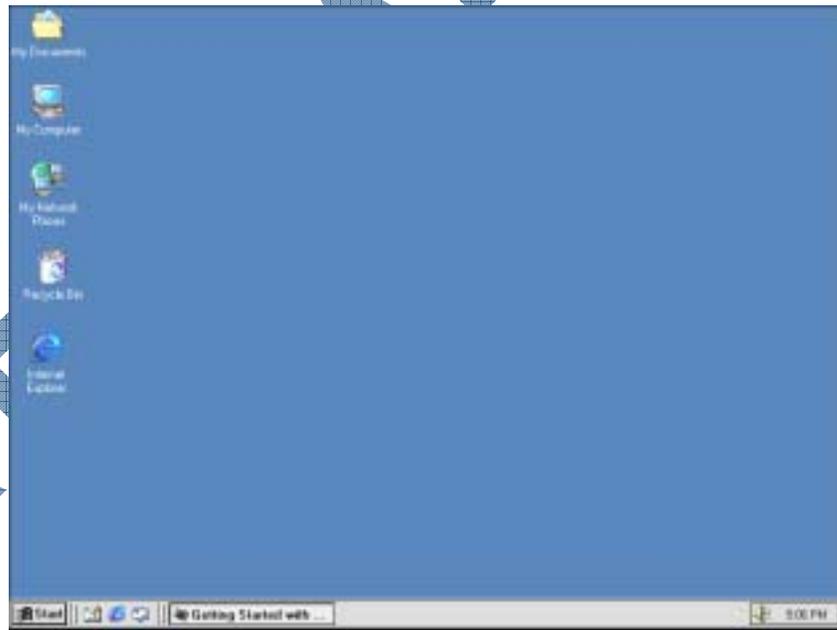
With the exception of a system using the Unix operating system, all other computers use a graphical operating system like Windows or the Mac OS (Operating System). This has become the standard for operating systems over the last few years as they make working with computers much easier. The graphical user interface (GUI – pronounced “Goey”) allows a person to use a mouse and other devices to point and select desired functions rather than having to remember commands. Many of these commands and functions appear as buttons or have a picture/symbol to represent the task to be accomplished. Software vendors also design their programs to use the same buttons/symbols/pictures for commonly used functions (e.g., cut, copy, paste, bold, save, print, etc.) which helps reduce the time to learn new software.



- **Microsoft Windows** is the operating system for PCs. Windows products allow a WYSIWYG (“What You See Is What You Get”) screen display, which is especially important for word processing, desktop publishing, graphics design, multimedia, or web development programs.



Windows 98 Desktop

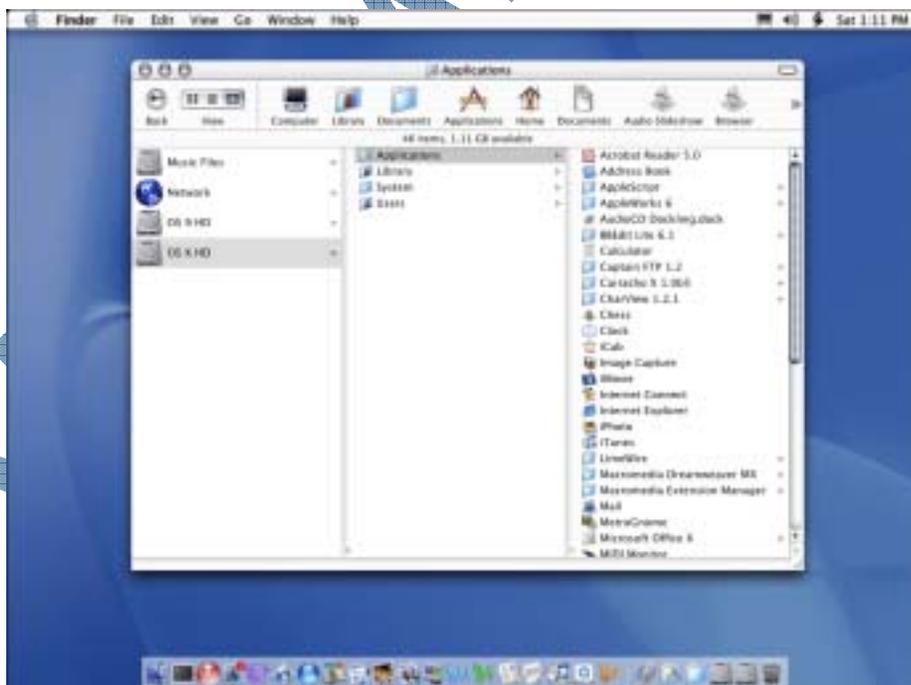


Windows 2000 Desktop



Windows XP Desktop

- Mac OS** – This operating system is designed for the Apple Macintosh computers. As with Windows, it provides the user with a graphics interface that makes working on the computer much easier and faster. This operating system was one of the original graphic user interface systems and set the standard for true WYSIWYG programs. The latest version of the Mac OS is based on Unix technology.



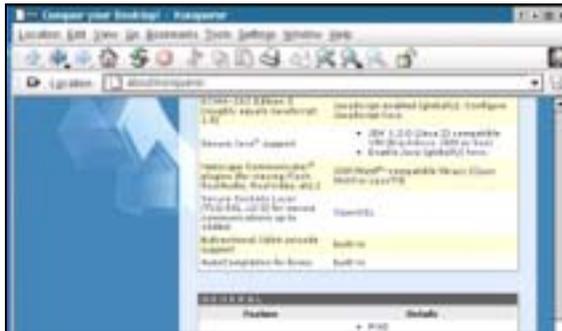
- UNIX** – This operating system was created in the early 1970s by programmers for programmers. The system was designed with flexibility in mind and used one of the more popular programming languages (i.e., C) readily available on most computers. However, the main drawback to this operating system is that it is based on one-line commands controlling the functions versus a graphics user interface display. This system is very popular with universities and scientific or research organizations.

```
Processes: 33 total, 7 running, 31 sleeping... 89 threads          12:59:51
Load Avg: 0.44, 0.43, 0.46    CPU usage: 2.7% user, 10.3% sys, 86.5% idle
SharedLibs: run = 181, resident = 22.8M code, 1.62M data, 6.38M LinkEdit
MemRegions: run = 2242, resident = 17.8M + 5.11M private, 15.1M shared
PhysMem: 43.8M wired, 72.1M active, 1001 inactive, 216M used, 236M free
VM: 338M + 44.3M 7146(0) pageins, 0(0) pageouts

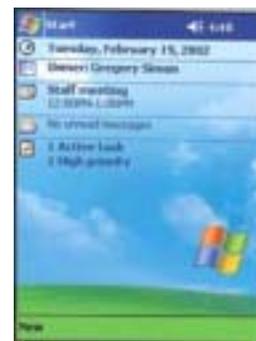
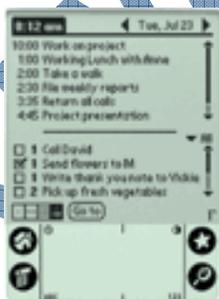
PID COMMAND           %CPU   TIME    #TH  #PRTS  #MREGS  RPRVT  RSHRD  RSIZE  VSIZE
345 top                 0.9%   0:01.06  1    14    15    228K   324K   475K   1.62M
339 tcsh                 0.0%   0:00.23  1    24    15    436K   652K   903K   5.72M
338 Terminal           0.8%   0:04.09  4    63    148   1.86M   7.95M   8.81M   59.7M
301 Navigator          0.0%   6:57.02  9   137    321   16.6M   25.5M   32.5M   90.2M
277 AudioCDMan         0.0%   0:00.27  1    43    54    577K   5.11M   1.13M   30.4M
276 Microsoft          0.0%   0:03.55  2    75    82    1.96M   10.3M   1.24M   55.5M
275 SystemLibs         0.0%   0:03.44  3   123   157   2.49M   1.63M   4.55M   70.3M
273 Dock                0.0%   0:05.57  2    93   101   1.83M   5.15M   1.13M   18.9M
260 Finder              0.0%   0:10.06  4   113   200   10.1M   11.5M   12.7M   72.5M
262 pts                 0.0%   0:12.99  1    23    44    5.52M   824K   6.33M   23.0M
258 automount           0.0%   0:00.02  2    11    18    164K   363K   324K   2.14M
247 loginwindow         0.0%   0:11.44  7   147   148   2.89M   5.64M   4.95M   42.2M
243 cron                0.0%   0:00.04  1     3    15     72K   345K   152K   1.52M
```



- Linux** – This operating system is based on Unix and provides more of a graphics user interface than Unix did. As with Unix, this system is readily available and very popular for use with high-end servers, and also with entrepreneurial software developers.



- Handheld Operating Systems** – These operating systems are designed to work with a PDA device. The operating system you get on the PDA will depend on the type of PDA you have. For example, if the PDA is strictly a PDA, the software is most likely the Palm OS (operating system) versus a Pocket PC which will likely have Windows CE.



Windows CE



Each operating system has its advantages and disadvantages; how applicable these are depends on the type of system you have and what requirements you need for files. Some examples of limitations with older operating systems include:

- File names for DOS programs were limited to eight characters only with a three digit file extension type. If you wanted to be more descriptive with the file name, you had to learn to be creative, e.g., SA-BD92E.XLS would be the file name for the Sales Budget (1992 Estimate), ABCLT1251.DOC would be the file name for a letter sent to ABC corporation on December 5, 1991, etc.

- File names for DOS programs were also restricted from using certain characters, e.g., @, \, space, : (colon), <, >, |
- There was no true multi-tasking capability with DOS or the earlier versions of Windows, unlike the Macintosh wherein you could open two or more different programs at the same time.
- The earlier versions of operating systems also did not have as good memory management capabilities as the more recent versions. This meant that certain programs would not work if you did not have enough RAM to open the program.
- The DOS and Unix operating systems were text-based, using only one-line commands. This was considered cryptic and required the user to learn and remember many of the commands and structure in order to perform a task.

As a result of these types of limitations in the PC environment, software companies who created operating systems moved more towards a user friendly operating system, with features such as graphics interface, longer file names, better memory management, true multi-tasking, true plug and play technology, etc.



Regardless of which operating system you use, there are some aspects of every operating system where problems can arise, partially from hardware, software, or user restrictions. Some of these may include:

- The software does not work. This generally is a result of the software and operating system being non-compatible. In general terms, you can install and use older software on newer operating systems, but you cannot run a software program designed for a newer operating system (such as Windows XP) on a system using an older version such as Windows 98. Occasionally you may also find that the software is too old to be recognized by the newer version of the operating system. You may want to check with the software vendor who may either have an update you can use for this software, or if the software is discontinued, you may be able to purchase a newer version more compatible with the operating system.
- Error messages from the operating system indicating a device does not work is usually a case of the hardware not being recognized by the operating system. This could be the result of an older device being used with newer operating system, or the hardware installation files could be corrupt. Many hardware vendors provide you with newer versions of *drivers* or the installation files in order for your device to be recognized in the new operating system.
- The installation files for any hardware or software installed on a computer are computer files with specific tasks built into the installation setup for that device or software. It is crucial that you never delete any files from the folders where these files reside (e.g., C:\Program Files, C:\Windows, etc.). Also be careful when installing (or uninstalling) new items when a message appears asking if you want to overwrite the existing file. Messages of this nature should be read very carefully and never changed unless you are absolutely sure of the result.
- Error messages that indicate a file is missing or corrupted will mean you will need to reinstall the software for the missing or corrupted file. This can occur for either the operating system or a software program. Files can be missing or become corrupted as a result of power failures, shutting down the computer incorrectly, too many installations of software or incorrect installations, a virus that has infected your system, or if a conflict between the software and the operating system changes a required file.
- If the error message refers to a file for the operating system, you will need to reinstall or upgrade the operating system. You may be able to ignore the message and solve the problem by restarting the computer for a while; eventually you will need to fix this problem before it grows worse. It is strongly recommended that if your system displays a number of error messages or requires you to restart the computer several times that you check with someone who is experienced with computers to reinstall or upgrade the operating system on your system.

- If you see an error message indicating you do not have access to a particular PC, drive, software program, or file/folder, this generally is a restriction that occurs as a result of the login id you used or network restrictions placed on your id. For example, in an office, you may have been assigned certain access to specific drives or software programs on the network, based on the position you hold in the company. As such, you will not have access to other programs or drives that other users might have if you are not required to use that program or share the files on that drive. For a home user, you might be set up as a guest only instead of a power user or a supervisor so you have access to only specific areas of that computer and not see any personal or confidential information by the owner of the home computer. Before asking for more access, check to see that the error message wasn't a result of incorrectly spelled id or password. The spelling set up for the id and password must match how it was set up on the computer; otherwise, you cannot gain access to the computer.

## Choosing an Application Program

An *application program* is a software program that performs a specific function such as accounting, word processing, or drafting. Selecting the correct software program for a given task may be more difficult than selecting the correct hardware. However, there are some standard categories of application programs to choose from:

- |                   |                       |
|-------------------|-----------------------|
| ▪ Word Processing | ▪ Spreadsheets        |
| ▪ Presentations   | ▪ Database Management |
| ▪ Graphics        | ▪ Multimedia          |
| ▪ Electronic Mail | ▪ Web Browsers        |
| ▪ Utility         | ▪ Suite               |
| ▪ Accounting      | ▪ Customized          |

Within each category, there are several software programs that have gained industry-wide acceptance. These programs are provided in the descriptions on the following pages for each application category.

A program that has “for DOS” after its name means it will be primarily text- or character-based, i.e., you cannot see graphic pictures or font styles, etc. Some of the newer DOS-based programs may provide the capability of viewing pictures, font styles, etc., but are still limited in their “graphical” display. Most programs of this type are customized programs suitable for the operating system.

A program that has “for Windows” after its name was designed for use within the Windows platform, e.g., Word for Windows, CorelDRAW for Windows, Excel for Windows, etc. This means you must have Windows already installed on your computer before you can install or use this program. Windows displays the commands and features for that program in a picture layout, and allows you to see the text as it will appear when printed, e.g., font styles, pictures, etc.

A program that has “for the Macintosh” after its name was designed for use with Apple computers, e.g., Office 98 for the Mac, Adobe Photoshop for the Mac, Motu Digital Performer, etc. All of the programs available for the Macintosh computer display all commands and features in a picture layout.



It is important to use the appropriate software program to complete tasks as this will help to organize and generate information as needed. For example, you would not want to keep track of your company's accounting records in a word processing program and while you might be able to keep some of your accounting records in an spreadsheet program, eventually you will want the flexibility of an accounting program to handle your daily transactions. While many programs share a number of features, look closely what you want to accomplish and which software programs should be able to handle at least 80% of these tasks. Consider making a list of all the tasks you want to accomplish on the computer, and then begin checking off items with comparing software programs. Also consider the amount of training time needed in order for you to be able to use that program. Choosing a software program that may be too advanced for your needs will be just as frustrating as choosing one that works well for only 20% of your tasks.

Many programs provide you with advanced features but not the flexibility of a dedicated version of that type of program. For instance, the desktop publishing features in Word are not as advanced or stable as the features in a dedicated desktop publishing program such as QuarkXPress or PageMaker. Another example could be entering names gathered from a trade show into a database where reports can be quickly generated from individual fields versus entering them into a word processing program where you may need to enter the data first, save it as one file, and then save that file as another file in order to delete unwanted information. If you really want or need a dedicated program, you should also have the fundamental knowledge before you can really “get into” the program, such as graphics design skills before you truly understand how to use any of the advanced effects features in PhotoShop, or accounting knowledge before using any of the accounting programs to enter transactions.

Many software programs share the same features and as such, certain tasks can be accomplished using one of these programs. For example, you can create a simple organization chart using Word, Excel, or PowerPoint. Each program has an organization chart feature that can be activated to help you with entering the text and levels for the chart. Using a program such as Visio which was designed to handle a variety of charts would provide you with more flexibility when you need to add, edit, or remove elements from the chart. Another example could be if you wanted to create a form for entering invoices. If this form was meant to be filled in manually, you might want to create it in Word using the **Tables** feature or in Excel using the Borders feature to set up the columns; however, if the form is meant to be used for data entry, you might prefer to create it in Access using the **Forms** feature to match the types of data.

Compatibility between software programs may play a role as you begin working with larger or more complex files that could be more easily manipulated in another program. For example, all your customers are entered into a database in Access. You would like to be able to sort down the list for customers who live in a specific area and then insert their names into a customized brochure for a new product you’re promoting. The customer list can be sorted and filtered in Access and then saved as a file in a format that can be used as a data source in Word, thereby allowing you to use the mail merge feature in Word without having to recreate the customer list.

The program you choose should meet the majority of your requirements; sometimes using a *Suite* provides the best solution by providing you with three or more products for these requirements. Other occasions you may need to purchase a dedicated product, e.g., graphics program, web development, desktop publishing, video editing, etc.

The more popular a software program is, the more often it will be updated with new and enhanced features. Many of the popular programs have evolved with the technology of graphic user interfaces and now are much easier to learn and use. It isn’t necessary to always purchase the latest version if you don’t need the new or enhanced features in that version; it may be more economical and productive to continue using the programs you currently have.

### Word Processing

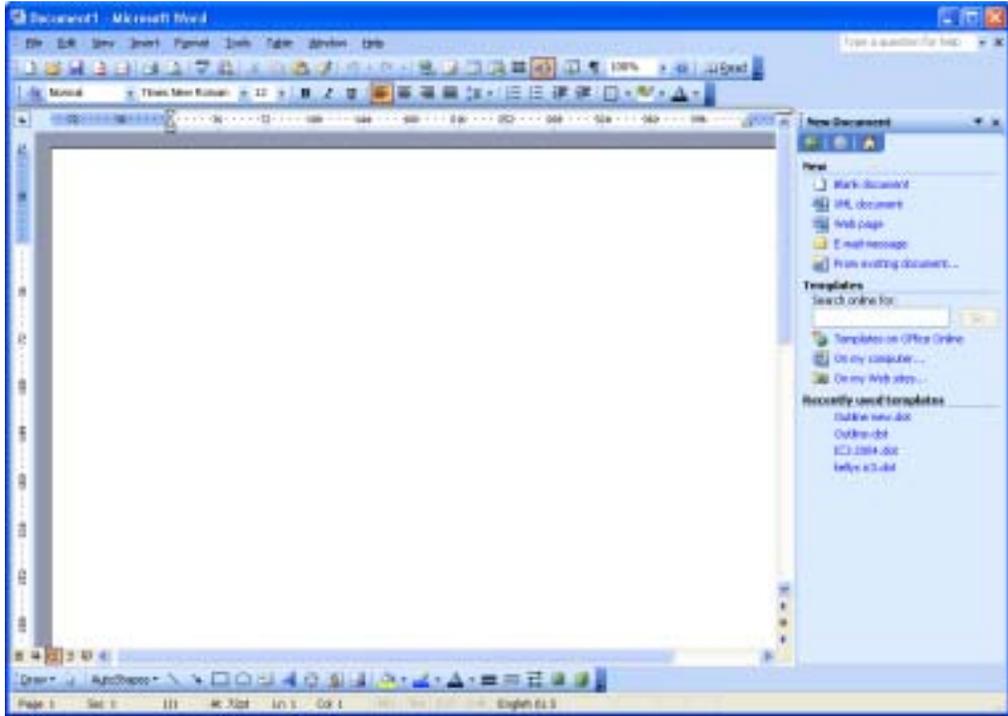


Word processing is the most common application for most users. Word processing software programs allow you to create, edit, and save documents, along with changing the position of text in a document, insert new information, or remove words and sections no longer needed. With a typewriter, you would have to re-type the entire document after a few major changes. On a computer, a document can be stored electronically and retrieved at any time for modification. Many of the dedicated word processing programs have the capabilities of handling “DTP” (desktop publishing) tasks, making these very popular for handling documents in an office.

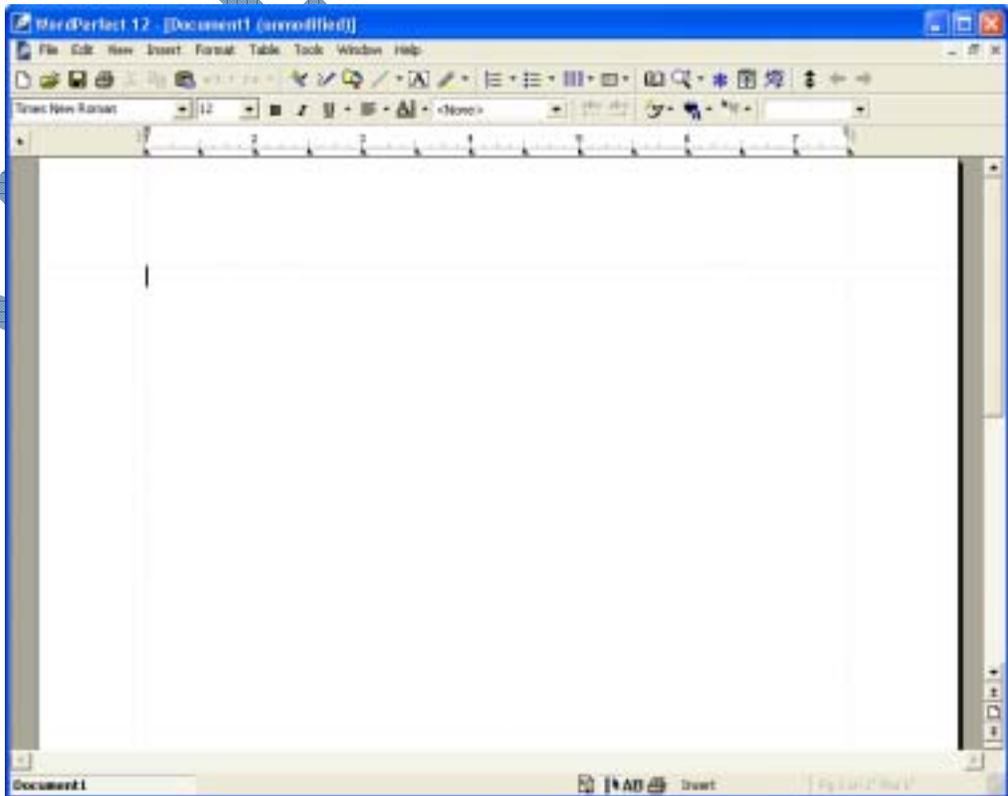
Word processing programs are standard in offices where documents such as letters, memos, invoices, faxes, etc. are required. Depending on the requirements of the office, people may be asked to create web pages using the word processing tools in addition to creating and editing newsletters, forms, brochures, or flyers. Many of the newer dedicated word processing programs come with these features, making the word processing program a more powerful tool for creating, editing, and formatting forms for your network or intranet.

Examples of word processing programs include:

- **Word** is owned by Microsoft and available for both the PC and Macintosh. Word also had a DOS version many years ago, but everyone who uses Word today is using one of the versions that comes with Microsoft Office.



- **WordPerfect** is owned by Corel Corporation and is available only for PC machines. While there was a DOS version that was very popular, people who use WordPerfect now use the Windows version. WordPerfect is available with the WordPerfect Office Standard and Professional Editions.



FOR

## Spreadsheets

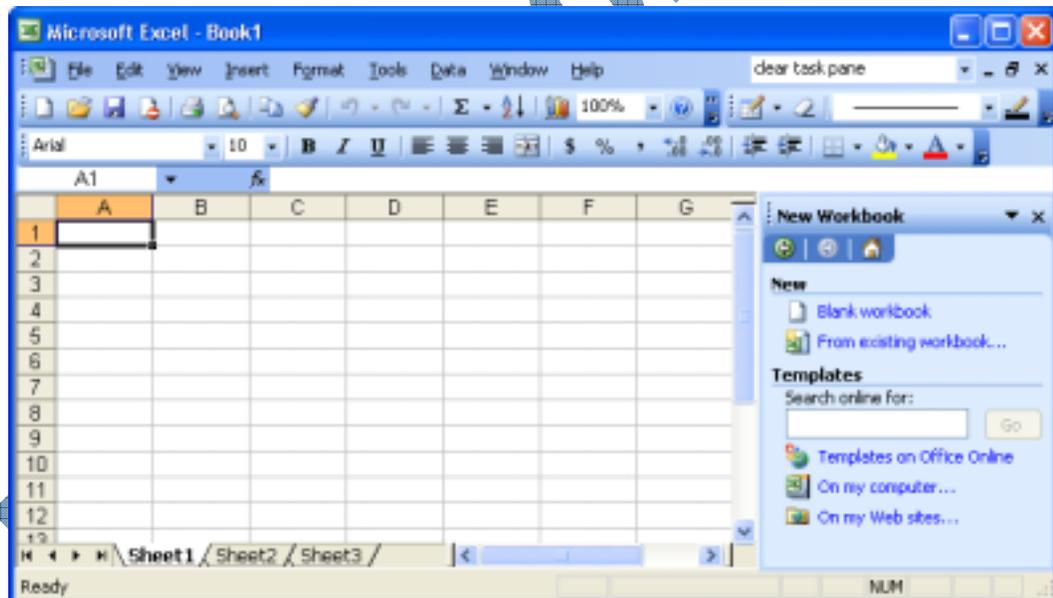


One of the most popular financial tools is a spreadsheet program that performs mathematical calculations and “what-if” analysis. Besides replacing your pencil and calculator for solving financial and statistical problems, spreadsheets can display line graphs, bar charts, and scatter plot diagrams. Often accounting and spreadsheet programs are designed to work together, in an effort to provide the best financial solution. Any time you need to track numbers or audit information for trends or patterns, a spreadsheet can generally help with these tasks.

One of the advantages of using a spreadsheet program to manage large amounts of data values is the ability to sort or find/filter information. This assists in being able to analyze the data, or depending on the information, you can also use any of the analysis tools available with spreadsheet programs. For instance, a spreadsheet program can be used to create and edit a company budget file where information for the budget figures can be linked to other files for cash flow, revenue and expense analysis, scenarios on the impact of an increase in the price of existing inventory, etc. You can also create worksheets to track information such as a simple bank reconciliation, travel expenses, assignment/report marks, etc. Once the information has been entered, you could then sort the information such as by grades, average grade, highest expense, number of deposits, etc.

Examples of spreadsheet programs include:

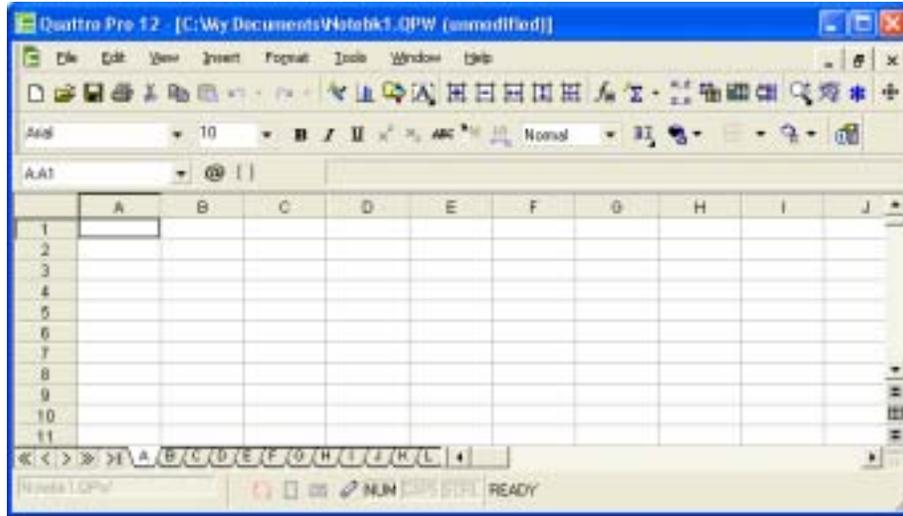
- **Excel** is owned by Microsoft and available for both PC and Macintosh machines. Excel is part of the Office Suite of programs, and has been available for several years.



- **Lotus 1-2-3** is owned by IBM Corporation and is available for PC machines. Lotus is part of the SmartSuite set of programs.

	Jul-97	Aug-97	Sep-97	Oct-97	Nov-97	Dec-97	TOTAL
INCOME							
Sales	15,000	16,500	16,150	18,965	21,962	24,156	115,734
Other	7,500	7,700	7,900	8,100	8,300	8,500	48,000
TOTAL INCOME	22,500	24,200	26,050	28,065	30,262	32,656	163,734

- **Quattro Pro** is owned by Corel Corporation and is available for PC machines only. It is part of the Professional Edition of WordPerfect Office.



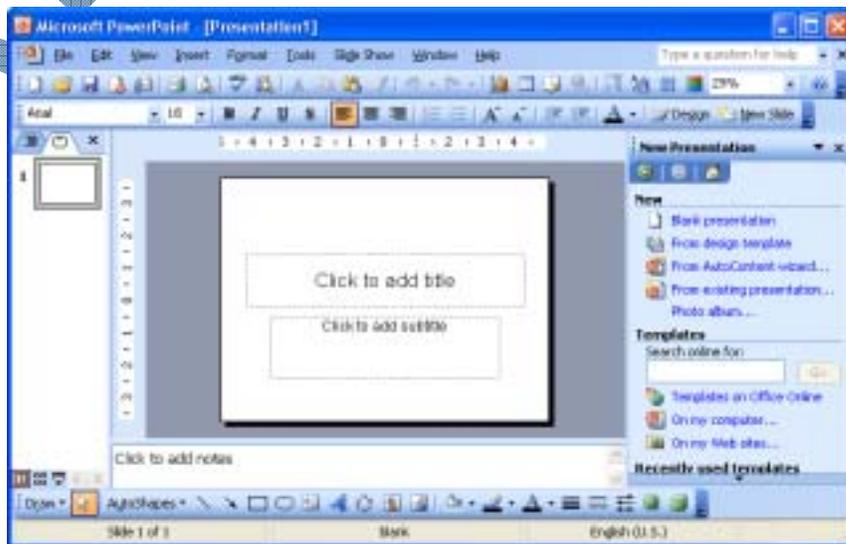
**Presentations**

There are several presentation programs that allow you to create slides or handouts for presentations (speaker delivered or self-running), quickly and easily. Special effects are provided in these programs, similar to the manual process of using a number of different pieces of audio or video equipment. Anyone who needs to create a presentation for display from a computer can use this type of program as a resource.

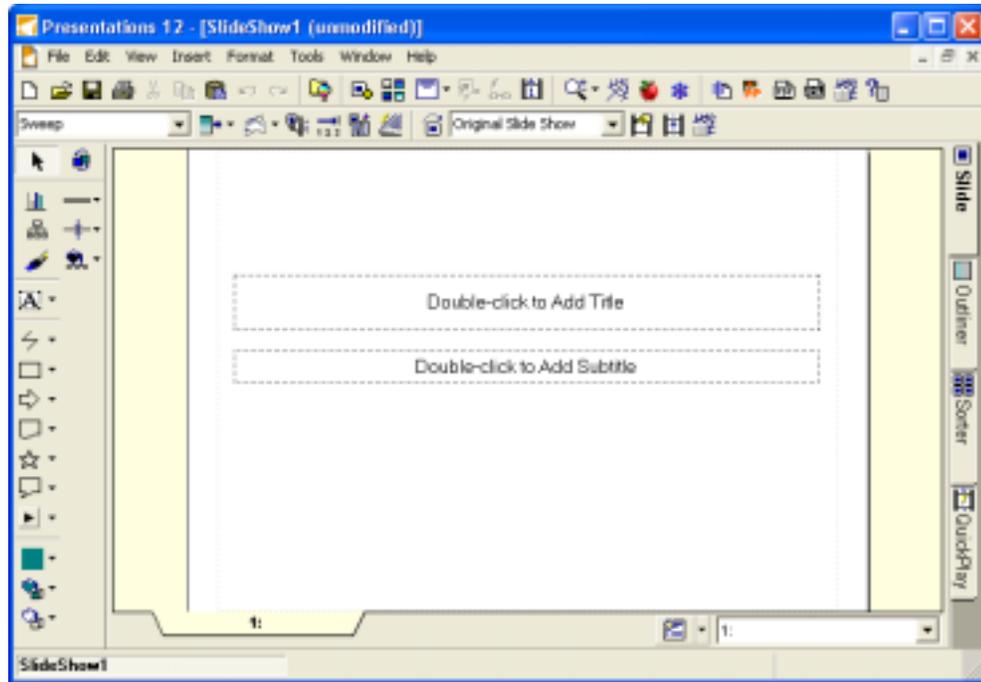
In addition to creating and editing the individual slides for the presentation, you can also create speaker notes and handouts for the audience. You can also set up the presentation for different delivery methods, e.g., over the Internet as a broadcast, to a live audience, or as a self-running slide show on a computer for training or education purposes. Working with a presentation file is similar to using a word processor in that you can add, edit and format text, as well as insert pictures, charts, or tables onto the slides of the presentation. You also have the flexibility of standardizing the look and layout of the slides for a presentation by using a master slide or template. This can be very handy when you want all your presentations to have the same color or placement of specific elements, such as a company logo.

Examples of presentation programs include:

- **PowerPoint** is owned by Microsoft and is available for both PC and Macintosh machines. PowerPoint is part of the Office Suite.



- **Corel Presentations** is owned by Corel Corporation and is available for PC machines. Presentations is part of WordPerfect Office Professional Edition.



## Database Management

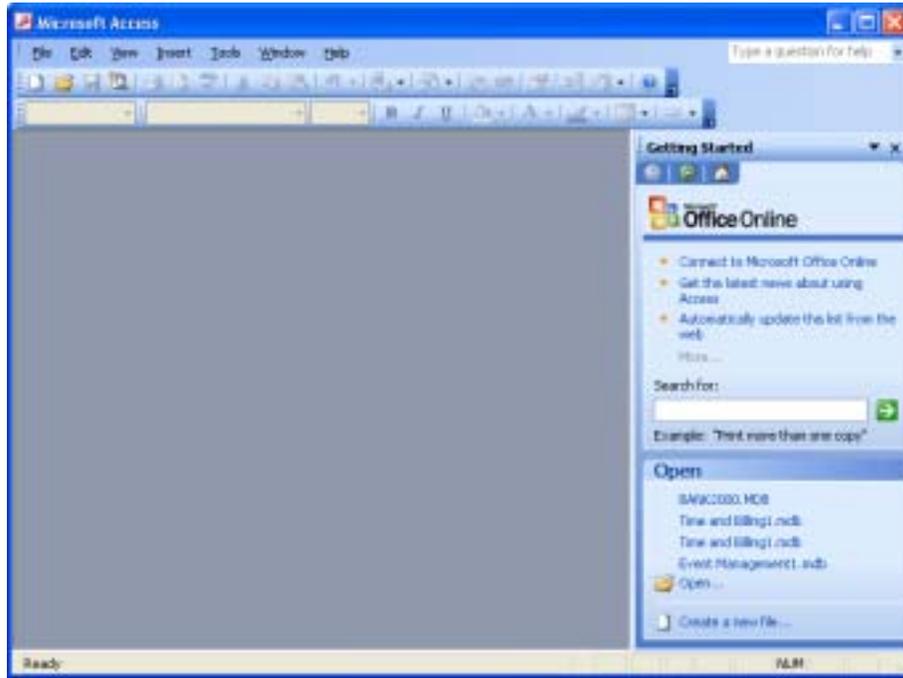
A database is simply a collection of related information. Some common examples are a phone book, inventory list, or personnel files. A Database Management Software (DMS) program assists in manipulating and organizing the information in a database. A database application is any task ordinarily handled by a filing cabinet, multiple file folders, or some other information storage system that requires organization and access to the information in any manner required. For example, if you had a large number of inventory items that need to be alphabetized and then categorized into multiple systems, a clerk would most likely alphabetize the items and then make copies for the multiple systems. With a database program, you need only to enter the items and then generate reports or queries to have the information alphabetized, or categorized by price, volume, type, etc.

Databases are identified by their structure: fields contain individual pieces of data (e.g., name, address, customer type, etc.) and the collection of related fields make up a record (e.g., all information for one contact is considered a record). All the records in the database make up a table. From this database table, you can then use queries to generate reports or forms using any of the fields within that table. You can set up key fields or link (relate) tables to each other to generate different reports that share information between the multiple database tables. This is called working with relational databases as the information from each database has information in one or more fields that can be found or related to another database that shares the same field(s) of information. For example, a transportation company such as freight delivery) will have a very large database where information about the inventory is linked to other databases and can show them which vehicle is currently being used by which employee and when they are scheduled to arrive at the final destination. A university would also have a database system wherein several databases may be linked (related) together in order to find information for students (active or inactive), teaching staff, course information, marks, housing facilities, etc. A university staff member could then generate a report to print all the class lists for a specific course being instructed by a specific teacher. Another report could be generated to print a list showing all students who have been allocated a dormitory room and the status of fees.

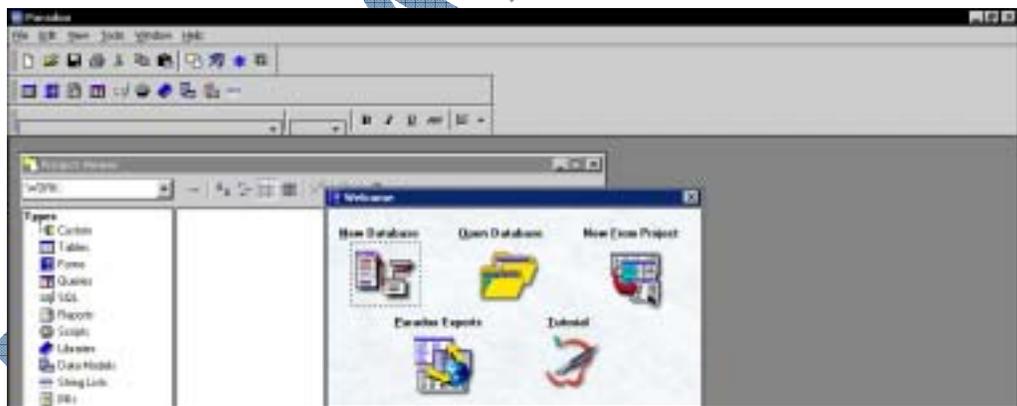
Not all databases are as elaborate or large; you can use a database program to capture information such as a mailing list for newsletters, library of books or videos/DVDs, food intake journal, etc. The power of databases lies in the fact that you can make the database as simple or as complex as needed.

Examples of database management programs include:

- **Access** is owned by Microsoft and is available for both PC and Macintosh. Access is a popular database program and is available only with the Professional Edition of Office.



- **Paradox** is owned by Corel Corporation and is available for PC machines. It is part of the WordPerfect Office Professional Edition.



2.2.5

## Graphics

You can obtain graphics (pictures) from different sources, but sometimes you may want to create your own or customize a picture file you already have. These pictures can then be saved and used in documents such as flyers, newsletters, letterhead, or for web pages. In general, it is best to have some graphics design fundamentals before working with these programs to minimize the learning curve for using the effects, or which tools to use to draw the picture. Graphic design programs are often grouped with multimedia software programs as many graphics design programs contain features that allow you to create or edit sounds or video in addition to manipulating pictures. For example, Adobe Studio gives you the opportunity to manipulate drawn pictures, photographs, create elements for web pages, video, or set up specific types of print requirements (e.g., PDF).

A dedicated graphics design program is different than a software program that may have a built-in drawing program. Some of these programs include desktop publishing programs such as Publisher, QuarkXPress, or PageMaker. These programs may have some of the tools available with a dedicated graphics program but they will not be as flexible as with a dedicated graphics design program.

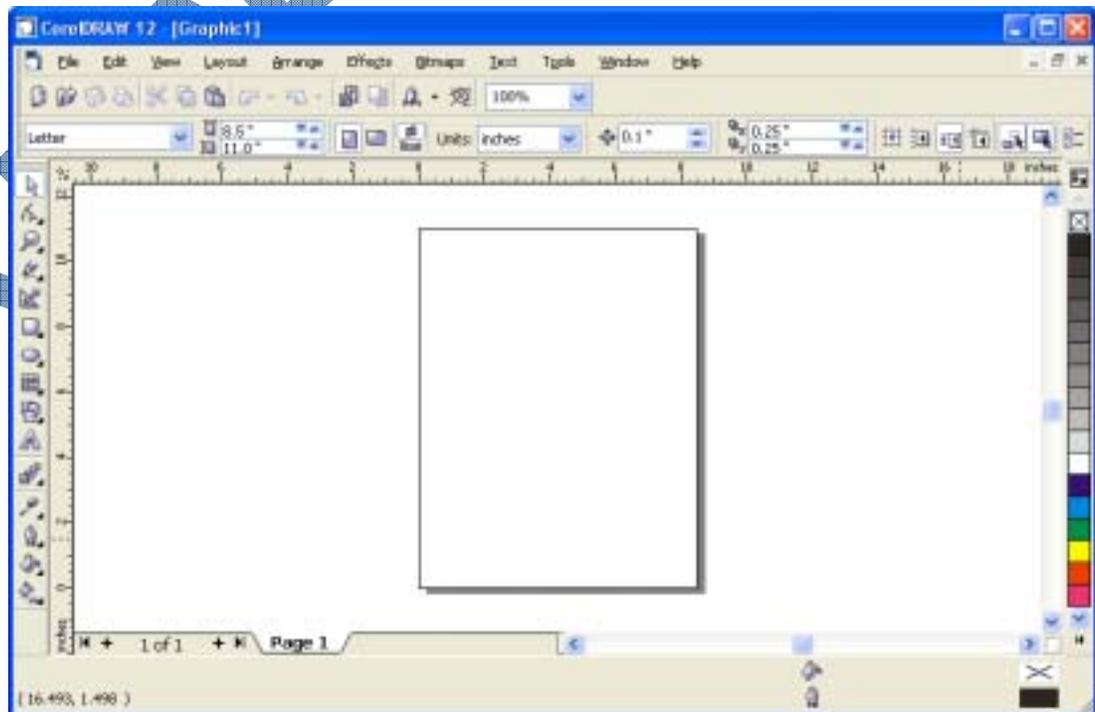
All graphic design programs come with a basic set of tools for drawing and painting the drawing. These include drawing varieties of boxes, lines, arrows, circles, or text. Painting tools generally include fill colors/patterns, line styles/width/color, or arrowhead styles. These are usually shown in a toolbar, toolbox, or palette on the screen at the top or left side of the screen when the program starts. Larger dedicated graphic design programs also provide options to create and edit shapes or curves, and have a wide variety of enhancement/effect tools such as 3-D, artistic blends, etc. These tools may also appear as toolbars, toolboxes, or palettes on the screen, usually at the right or bottom of the screen.

The program you use to draw the picture will allow you to save these drawings in different formats suitable for pictures. Some programs will offer more choices than others; the most common file types for pictures include tiff (Tagged Image File Format), bmp (Bitmap), gif (Graphics Interface Format), wmf (Windows Metafile Format), or jpeg/jpg (Joint Photographic Experts Group). Each file format affects the quality of the picture in different ways, depending on which program was used to create the picture and what effects were used on the picture within that graphics design program. Designers will save the files using one of these formats in order to allow anyone to view the picture in Windows without needing another program.

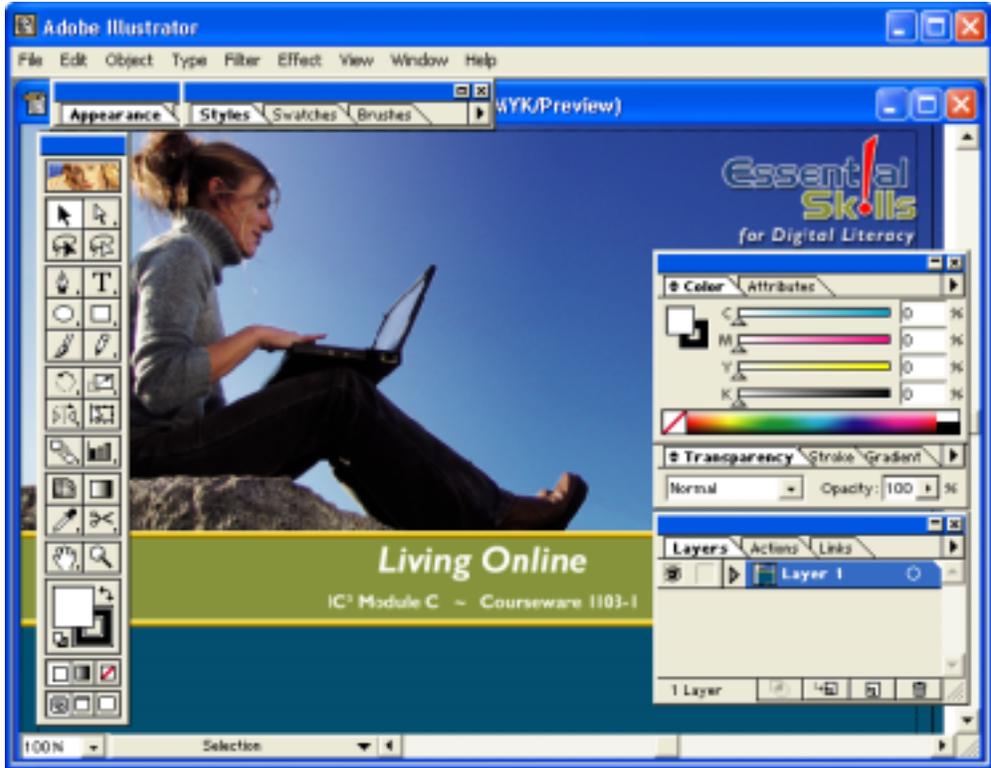
Many of the graphics design programs listed in the following are used in advertising, media, or publishing companies to create unique and interesting pictures for use in marketing/promotional material, company requirements (e.g., logo, product id, etc.) or web pages. However, many people who have not traditionally purchased these types of programs are now finding that there are a number of “studio” type products where they can be creative without needing the same experience as a graphics design artist for drawing or manipulating images of photographs. This has opened up a new market for people to create their own greeting cards, manipulate digital images for reports or promotional material, create music files by recording sounds, create web pages with animated elements, edit their own videos with additional elements such as text, still photographs, etc. Some of these programs are also targeted to children to show how easy it can be to manipulate pictures or text as appropriate for their needs.

Examples of different graphic programs include:

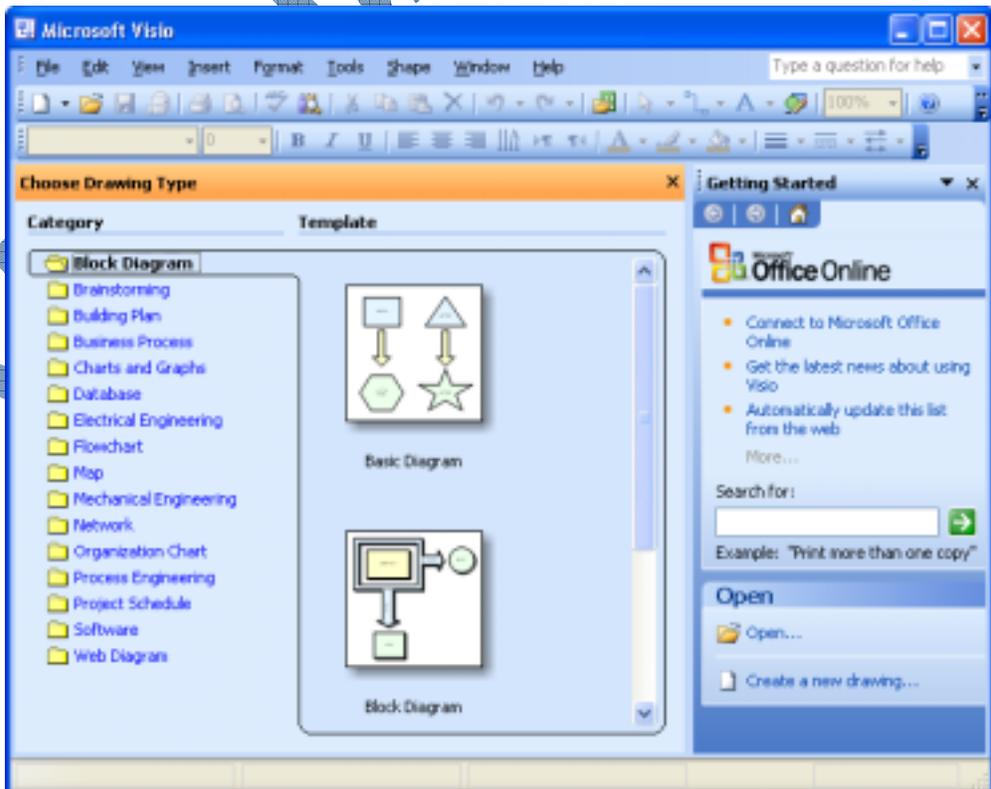
- **CorelDRAW** is owned by Corel Corporation and has been very popular with graphic design artists for many years. CorelDRAW is available for both PC and Macintosh machines.



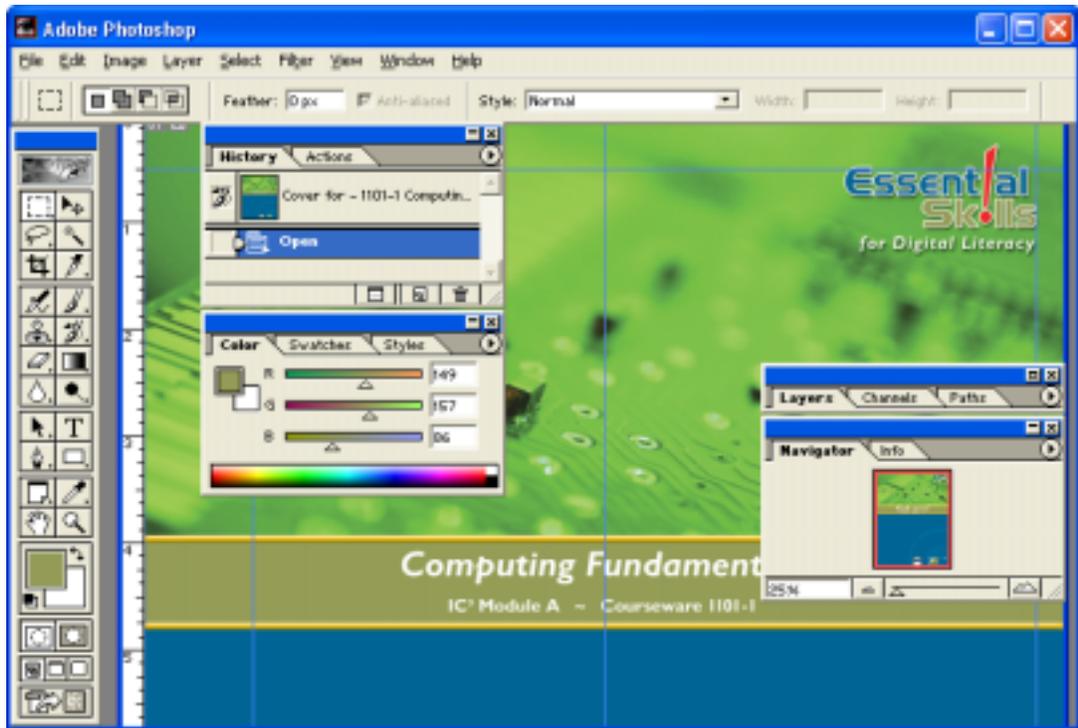
- **Illustrator** is owned by Adobe Corporation and has become very popular in the last few years with graphic design artists on both PC and Macintosh machines.



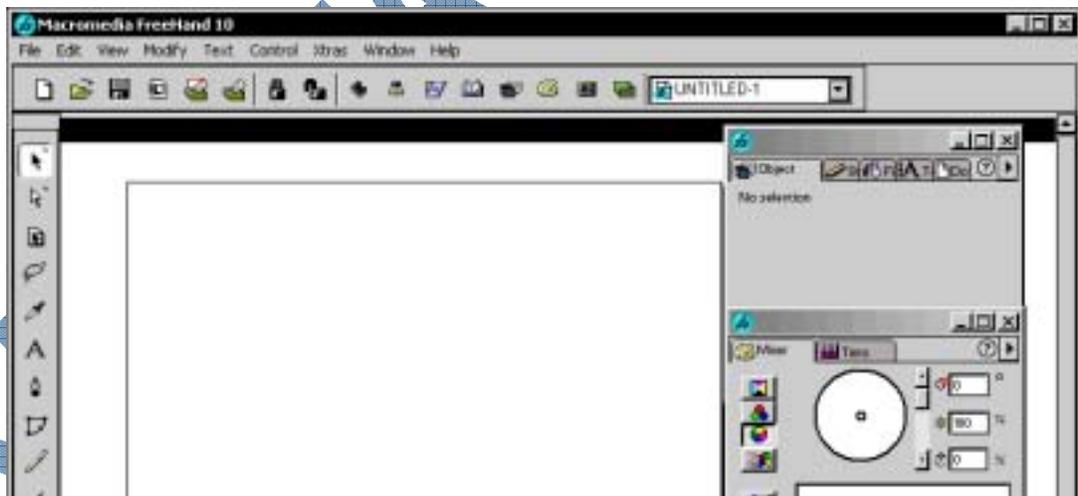
- **Visio** is owned by Microsoft Corporation and is more of a diagramming graphics program for people who need to demonstrate their ideas, systems, or design in a diagram, e.g., flow charts, processes, floor plans, etc.



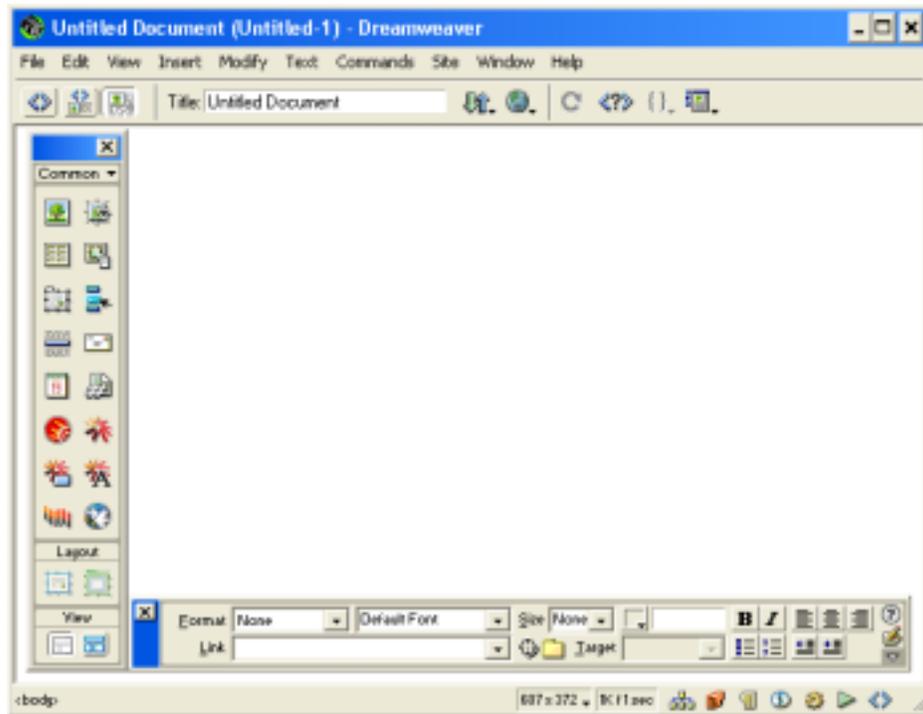
- **Photoshop** is owned by Adobe Corporation and available for both PC and Macintosh. This graphics design program is very popular and also includes a program called ImageReady.



- **FreeHand** is owned by Macromedia, Inc. and available for PC and Macintosh machines. This graphics design program is also a popular one.



- **Dreamweaver** is owned by Macromedia, Inc. and available for PC and Macintosh machines. Dreamweaver is, in essence, a web design program but it contains elements for creating graphics that can then be published on web pages on the Internet or an intranet.



2.2.5

Some of the end-user type of graphics design programs include PrintShop, Greeting Card (i.e., Hallmark), PictureIt!, PhotoShop Album, etc. There are many programs targeted to the home user, the small business user, or anyone who wants to be able to manipulate their pictures for web pages, promotional material, reports, etc. Each program has similar tools with specialized tools to match the software focus.

### Multimedia

These types of programs allow you to extend the capabilities of graphics design and add media elements into your file, such as video, music, or animation. These programs are becoming much easier to use for people who aren't graphics designers; as such, multimedia elements are being added to documents that are published on a web site for the Internet or an intranet.

As with graphics design programs, you need to save the files in the correct file format in order for the computer to recognize the file and be able to play it. Music and video files use the same type of file format, although music files are at a different level (3) than video (level 1, 2 or 4). The file formats used mostly for video are mpg/mpeg (Moving Picture Experts Group) or ani (includes animation). The most commonly used file format for music files are mp3 or wav (Windows Audio Video). These file types can be read from any computer that has the Windows Media or QuickTime software programs installed.

The following is a list of some of the popular multimedia programs available. As many programs have integrated features, multimedia has grown to include any software where graphics, music, or video can be incorporated. There are many desktop publishing programs targeted to small business or home users that have the ability to manipulate pictures, music, or video within the program.

Examples of some multimedia programs include:

- **Flash** is owned by Macromedia, Inc. and is available for PC and Macintosh. Flash is also a graphics design program but is designed to take graphics to a new level, i.e., add elements to turn files into multimedia type files, animation, video, e-learning, etc.



- **Shockwave** is owned by AtomShockwave Corp. and is available for download from the Internet for both PC and Macintosh machines. Shockwave allows you to view video, animation, games, and other programs for entertainment purposes from their web site.



- **Discreet** products are owned by Autodesk and include products such as 3ds Max, Fire, and Combustion. These products provide a variety of multimedia capabilities for objects, e.g., animation, rendering, 3D creation, etc. As there are so many products for this medium, we recommend you visit the Autodesk web site for further details.
- **Director** is owned by Macromedia, Inc. and is available for both PC and Macintosh machines. This program is designed to allow you to add interactivity to your web site, intranet, or programs/files to be put on CD/DVD.

There are a multitude of programs targeted for the small business or home user that provide multimedia capabilities such as Music Maker (similar to having an in-house music studio for mixing music files), Publisher 2003 with Digital Imaging, MovieMaker, etc. Some of these programs target a specific function whereas others offer several features.

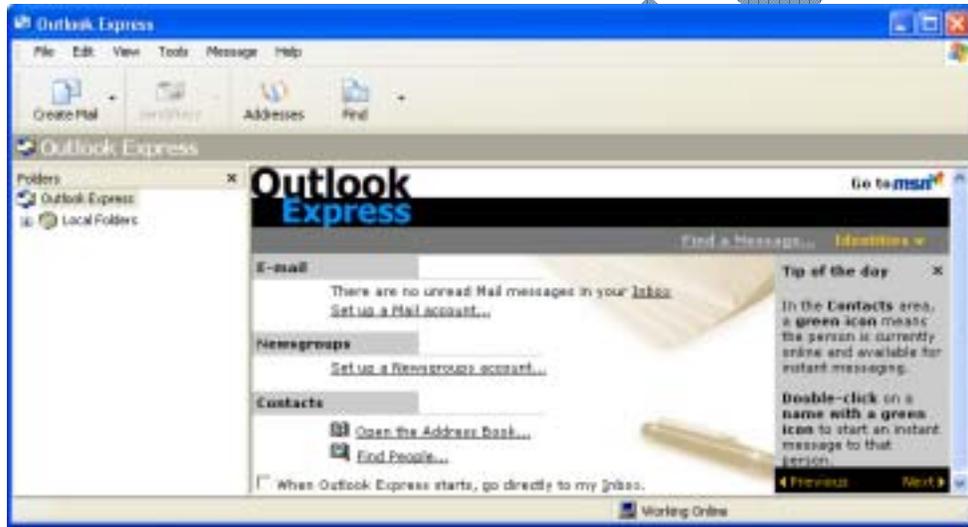
### Electronic Mail

Electronic mail or e-mail programs have been around for many years, and have evolved to be much easier to use. Many e-mail programs are also now developed to look and feel like a desktop/paper organizer. The process of sending e-mail is similar to that of the manual process for addressing, writing, and then mailing a letter on paper. The main difference is that the manual process requires you to use paper, envelope, stamp and have your post office deliver the letter, whereas e-mail requires only that you have an e-mail program, the correct e-mail address, and a connection to a post office, be it via the Internet or a local post office in your office (often referred to as a mail server).

E-mail programs have risen in popularity in recent years as they have become more user friendly and users generally receive responses in a relatively short time. The two most popular e-mail programs are included with their web browser program as the messaging program.

Examples of e-mail programs include:

- Outlook Express** is owned by Microsoft and comes with the Windows operating system, as part of the Internet Explorer program. It is available for PC, Macintosh, and Unix machines. Outlook Express handles e-mail and list of contacts.



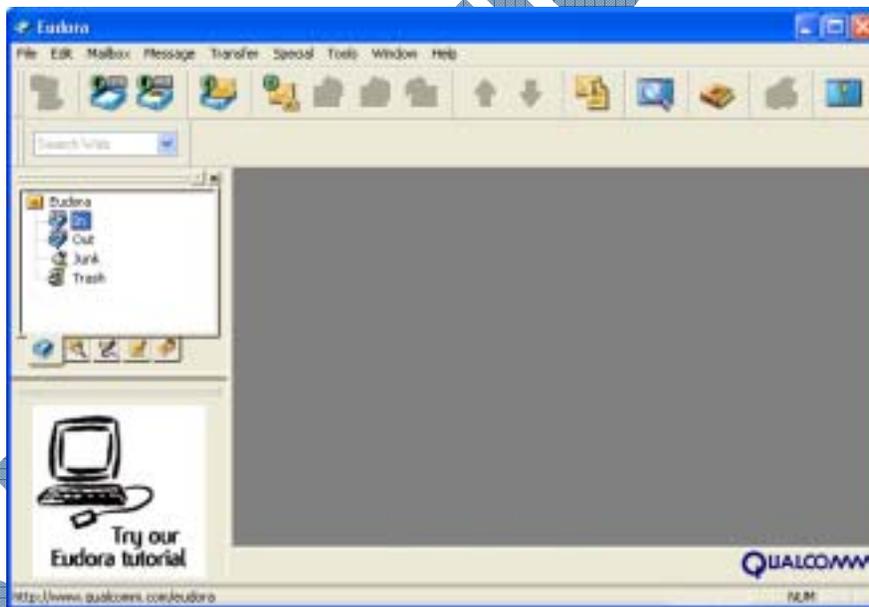
- Netscape Mail** is owned by Netscape and is a part of the Netscape web browser program. An older version is available with Windows, although you will need to download the latest version from the Netscape web site. This is available for PC, Macintosh, and Unix machines.



- **Outlook** is owned by Microsoft and part of the Office suite of programs. Outlook is a larger version of Outlook Express and includes a calendar, task area (to do lists), rolodex or contact list, journal, and notes. Outlook is one of the most popular e-mail programs used in offices.



- **Eudora** is owned by Qualcomm and is available for download from their web site. Eudora was one of the first e-mail programs available and is still very popular. Eudora is available for PC, Macintosh and Unix machines.



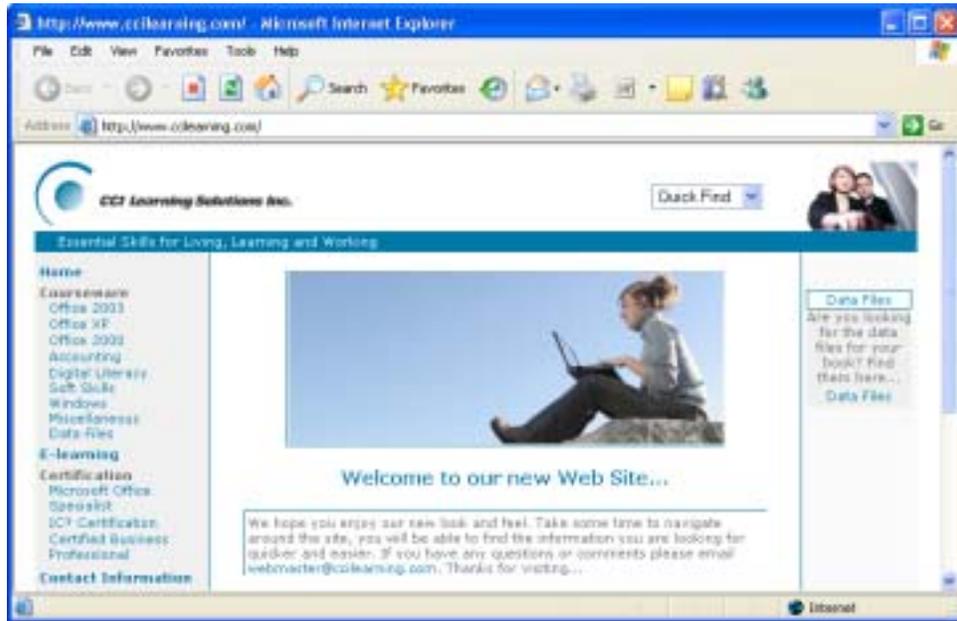
### Web Browsers

A web browser is a program that allows you to connect to the Internet and view web sites for different companies, organizations, or individuals. As with e-mail programs, browsing on the web has become much more popular as more users have connected to the Internet, as well as companies and individuals have set up web sites on the Internet.

In order to “surf” the Internet, you need to have an Internet connection and a web browser. You can then use the **Address** or **Location** field in order to move from site to site.

Examples of web browsers include:

- **Internet Explorer** is owned by Microsoft Corporation and comes with the Windows program, although latest versions can be downloaded from Microsoft’s web site. This web browser is very popular and available for PC machines only.



- **Netscape** is owned by Netscape and available for PC and Macintosh machines. Updates can be obtained from their web site.



FOR

- **Opera** is owned by Opera Software and available for PC, Macintosh, Unix, and Linux machines. Updates can be obtained from their web site.



## Utility Tools

There are a number of types of programs that help with the maintenance of your computer system. These utility programs can be actual *life-saving* programs should your computer break down at an unexpected moment. For example, one of the best investments you can make is to purchase an anti-viral program that is updated on a frequent basis (and the company notifies you to get these updates). Virus programs can disrupt, erase, or corrupt information on your computer. The most dangerous feature of a virus is that you rarely know when you have one, and/or when it will strike your computer.

Some popular types of utilities you should consider having available on your system include:

### Anti-Virus Protection

This is probably the wisest investment you can make for your computer. Having an anti-virus program (and keeping it up to date) will protect your system from unwanted viruses ruining your files or computer. Most computers come with a trial version which you can then subscribe on a yearly basis after the trial period. Subscribing gives you the opportunity to stay current with the latest protection files (called patterns).

### Disk Compression

This is similar to cleaning out the older files in the filing cabinet and reorganizing remaining files near the front of the filing cabinet for easy retrieval as well as freeing up space in the remainder of the filing cabinet. Windows provides you with a feature in its System tools area to handle this utility, but you can also purchase third-party vendor software to perform the same task.



FOR SALE

**Disk Cleanup**

As you begin working on your computer to install or uninstall programs or copy/move/delete files and folders, you should consider doing some disk cleanup occasionally. This will help to reduce the number of temporary files created by the computer or software programs that may cause conflicts between programs, or just take up valuable disk space. Windows provides this utility in its *System* tools but you can also purchase third-party vendor software.

**File Compression**

This utility can be very helpful when you need to reduce the size of a file or several files. This could be for storage purposes or when you need to transfer a file from one location to another. Compressing the size of file(s) is referred to as zipping, similar to when you stuff a tote bag with as much content as you can and then press everything down to make it fit prior to zipping (closing) the bag. For example, if you have several files which together exceed the maximum size allocated for an e-mail (i.e., 5Mb), use a file compression program to compress the size of these files to be much less. Also built into most file compression programs is a feature that allows you to turn the zipped file into a self-extracting file. What this means is that you can compress (zip) the files into a smaller format, apply the self-extracting command to the zipped file and then send it to someone else to use. Once the recipient has the file, he/she can double-click on the file to unzip (extract) the compressed files to a designated location of their choice without having to have the file compression software on their system.

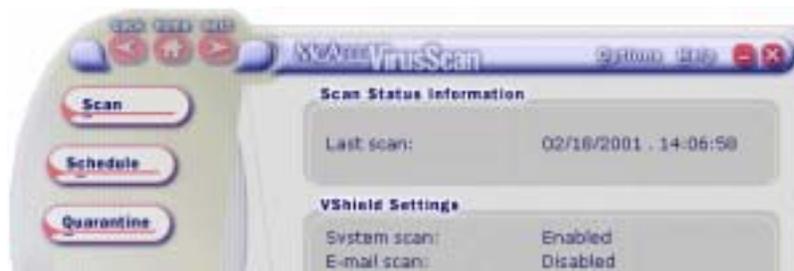
When dealing with maintenance utilities, it is strongly recommended that you schedule these tools to occur on your system on a regular basis. For example, it is very important to ensure your anti-virus program is always up-to-date to protect your system. In most cases, the anti-virus program will default to check for updates on a weekly basis. As there are so many viruses being created or reused, you may want to change this schedule to every two days or check for updates manually. For disk maintenance of your computer, you may also want to set up these tools to run on a regular schedule to keep your computer in good working condition and clean of unused or unwanted files.

Some examples of anti-virus programs include:

- **Norton AntiVirus** is owned by Symantec and is available for both PC and Macintosh machines. This utility program is one of the most popular ones for anti-virus software and can be purchased for a single user or a network (Corporate Edition).

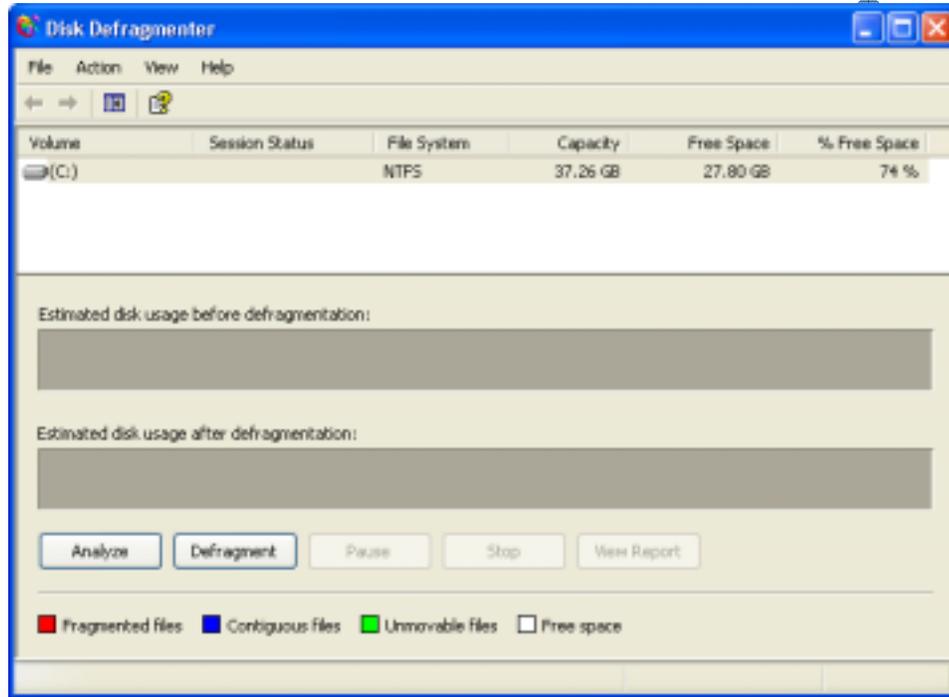
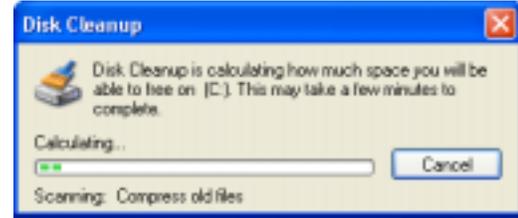


- **McAfee Anti-Virus** is owned by McAfee Enterprises and available for both PC and Macintosh machines. McAfee is a very popular anti-virus program with single users.

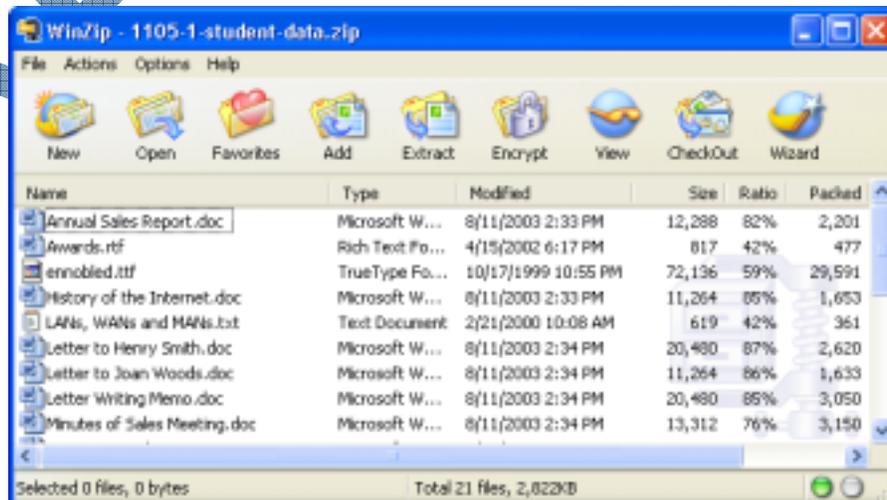


Some examples of utility or disk management programs include:

- Windows comes with a number of system tools you can use to run utilities on your computer in order to maintain the integrity of the system, such as defragmentation, clean disk, backup, scan disk, and monitor resource. Depending on what maintenance is needed on your system, these tools may be enough for general maintenance, or you may choose to purchase a third party product that can extend the number and type of utilities provided with Windows.



- Norton Utilities** is owned by Symantec and is available for PC machines only. Norton Utilities has been around for a number of years and is very popular for diagnosing potential or existing problems on a system.
- WinZip** is owned by WinZip Corporation and is a file compression software program. This program has been around for a number of years and is very popular.



**Suites**



A Suite is a group of programs that have been packaged together for purchase. In general, the Standard versions of suites (for office use) consist of a word processor, spreadsheet, presentations, and an e-mail program, with some smaller programs available, with the Professional versions extending to include a database and/or graphics programs. This grouping of programs is considered more cost effective for the company versus purchasing these programs individually.

- **Microsoft Office** is owned by Microsoft and is one of the most popular suite programs used by offices. This suite is available for PC and Macintosh machines.
- **WordPerfect Office** is owned by Corel Corporation and is available for PC machines only.
- **Lotus SmartSuite** is owned by IBM Corporation and is available for PC machines only.
- **Microsoft Works** is owned by Microsoft and is a popular integrated set of software for small business or home users. This suite is sometimes pre-packed with new computers and provides an excellent option for producing simple documents. Many new users may use this suite as a prelude to deciding whether they need to upgrade to a larger suite like Microsoft Office or WordPerfect Office.

**Accounting**

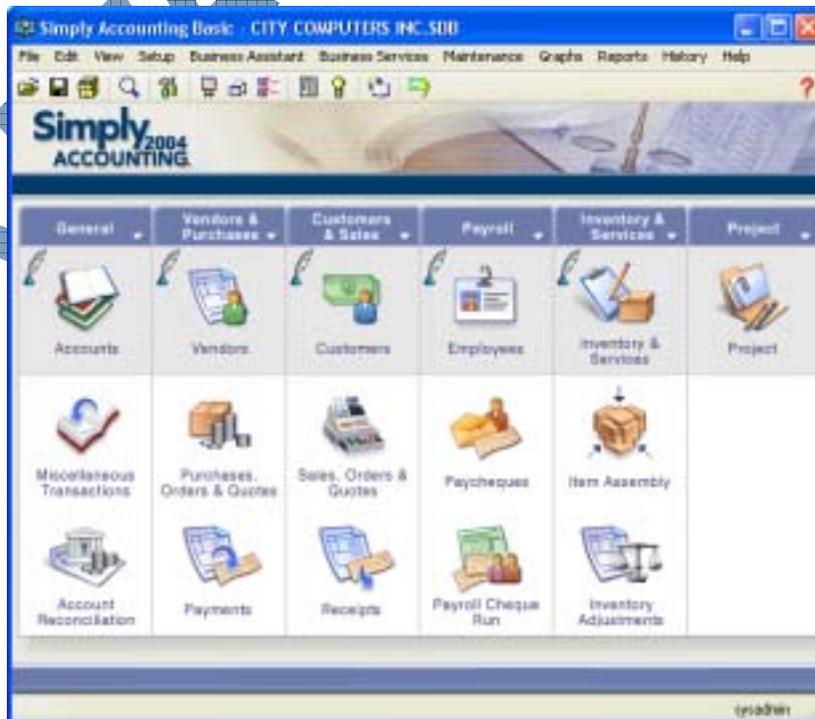


One of the primary functions of the first mainframe computers was to store and calculate volumes of financial data for banks and large businesses. Nowadays, personal computers are capable of handling the accounting and finances of almost any small to medium-sized business. Many different programs are available for plotting financial trends and performing everyday bookkeeping functions.

These programs essentially replace the manual tasks performed by accounting staff by automating many of these manual tasks online. While the Help feature can be very comprehensive, it is meant to provide help with the software program. Users are still required to have accounting fundamentals in order to fully understand all the features available in an accounting software program.

Examples of accounting programs include:

- **Simply Accounting** is owned by ACCPAC International and is one of the most popular programs for small to medium-sized businesses, and is available only for PC machines.



FOR

- **ACCPAC** is owned by ACCPAC International and has traditionally been used by medium to large businesses. This program is available for purchase only in the Windows environment, although updates can be obtained for the DOS version.



- **QuickBooks** is owned by Intuit and is available for PC machines. This accounting program is popular with small to medium-sized businesses. The most recent releases are available in both Canadian and U.S. versions.



- **Peachtree** is owned by Peachtree Software with a version for small to medium or medium-large companies in the U.S.



**Specialized**

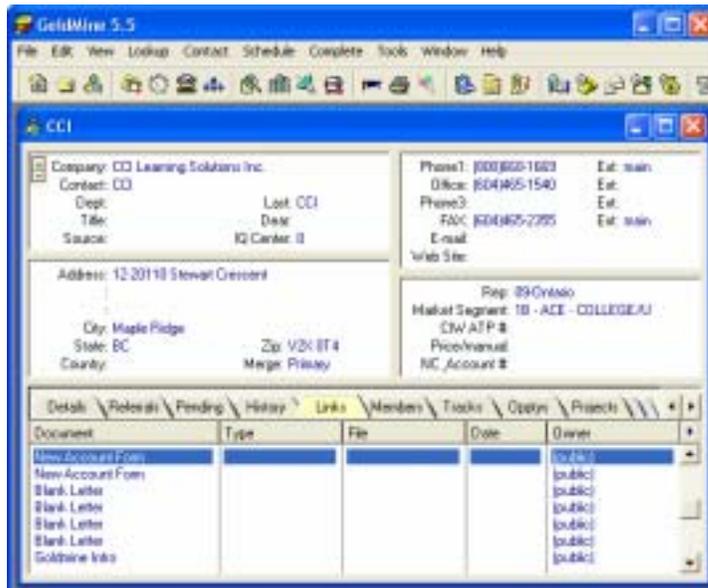


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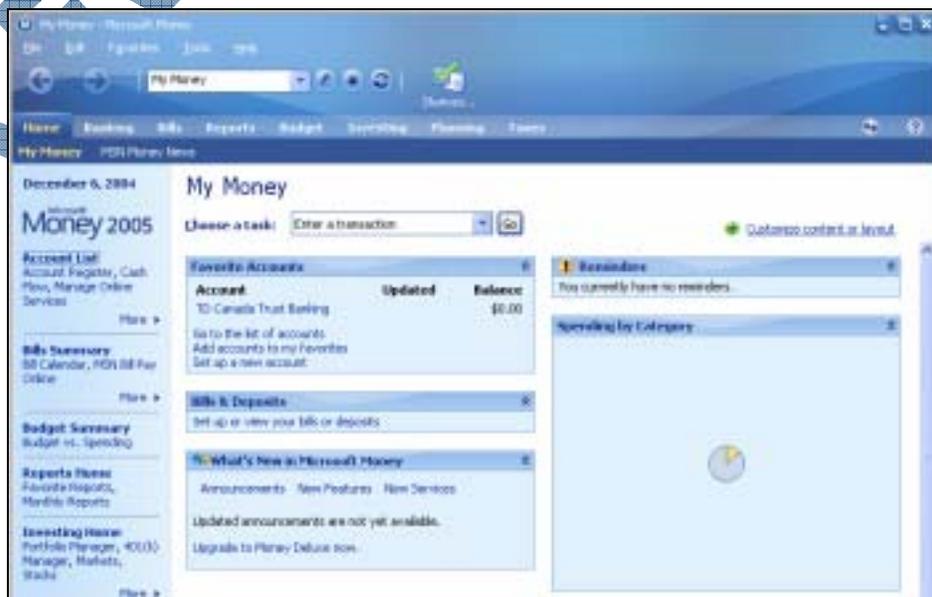
A specialized program refers to any program that targets a specific task or market, such as personal financial management, contact management, generating reports for your accounting program, income taxes. Occasionally accounting programs are placed in this category, especially if they come with additional features such as cash flow analysis tools or financial reports.

Examples of some specialized programs include:

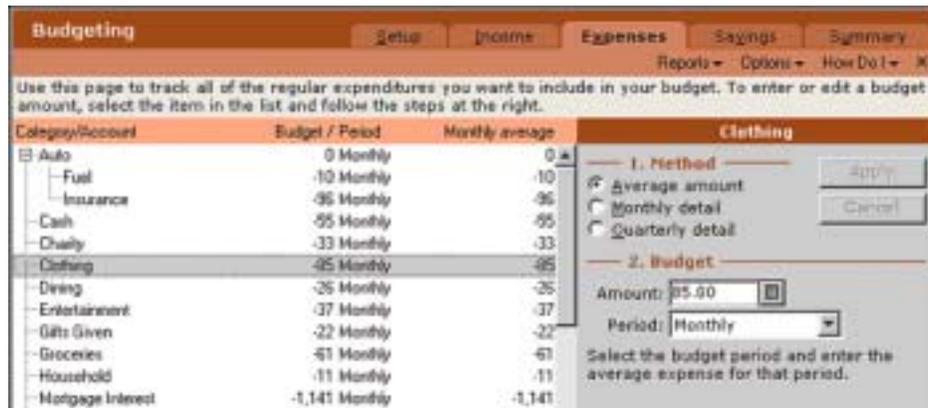
- **GoldMine** is owned by GoldMine Software Corporation and is available for PC machines. GoldMine is a *contact management* software program that allows users to enter information about the customer (e.g., name, address, contact, etc.) notes and history for the customer, set up reminders, send e-mail or documents from within the program, as well as other tasks related to selling or supporting items purchased by customers. This is one of the most popular contact management software for sales and marketing staff.



- **Money** is owned by Microsoft Corporation and is very popular for personal financial management. Money allows users to keep track of their own personal finances as well as help manage the finances. There are a number of different editions available for purchase with a variety of features.



- **Quicken** is owned by Intuit Corporation and is another personal financial management program that is very popular. This program helps users manage and organize their personal finances.



### Customized



Customized programs are essentially programs written for a specific company to perform specific tasks, with the company needs as the main focus. This program is used by this company only initially, or at least until other companies who need the same type of program ask to purchase the program.

These types of programs are used by different industries such as:

#### Types of Programs

Schools

Restaurants

retail stores

banking/credit card institutions

shopping sites on the Internet

manufacturing

transportation

scientific, medical, or engineering

#### Examples of Tasks

registration, attendance, report cards

processing food orders, bills, inventory/stock

point of sale, bar code readers

debit transactions, credit card transactions

ebay, Yahoo

automobile production, specifications for lumber size

airline reservation which can be accessed from a travel agency, online, or at the airline counter

inspections, environmental changes, patient progress

### Summary

In this lesson you looked at some of the common types of software applications or programs being used, as well as how data is transferred between computers. You should now be familiar with the following concepts:

- What software programs are
- How software programs are developed
- Understand what the operating system is
- Which software programs are designed for specific tasks

## Review Questions

1. Why are programs called software?
2. What are algorithms?
  - a. Commands based on a set of rules to calculate numbers
  - b. Commands based on a set of rules to complete specific tasks
  - c. Set of guidelines for how data is input into the software program
  - d. All of the above
  - e. Only b and c
3. Programming refers to a software language that is used to write codes and rules for a software program to perform specific tasks.
  - a. True
  - b. False
4. Updates refer to the option of receiving notices from the software vendor.
  - a. True
  - b. False
5. What are some drawbacks to updating the software?
6. What should you consider when trying to decide whether to upgrade your system versus buying a new system?
  - a. Cost of the new system versus cost of individual components to be upgraded
  - b. Time and labor involved to install newer components
  - c. Compatibility of newer software or hardware on existing system
  - d. All of the above
7. A full version of a software gives you all the files you need for a software program whereas the upgrade version provides only the newer files for an existing copy of the software.
  - a. True
  - b. False
8. What is an operating system and what is its purpose?
9. When choosing an application program, what should you consider?
  - a. What task do you want the application program to handle
  - b. How easy can you manipulate the files to accomplish specific tasks
  - c. How compatible is the software with other programs if I need to convert it to another format
  - d. All of the above
10. When choosing a utility program, which one would be the most important one to have installed and updated on your system?
  - a. Disk compression
  - b. Disk clean-up
  - c. File Compression
  - d. Antivirus

## Lesson 11: Using the Computer

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at how to start and exit the computer using the proper procedures. On successful completion, you will be familiar with how to:

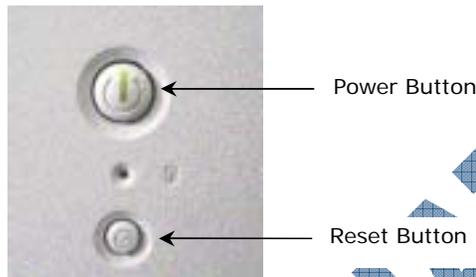
- Start a computer
- Reboot or reset a computer
- Start an application program
- Handle data files within an application program
- Exit an application program
- Shut down the computer correctly

### Starting the Computer



1.1.8

This lesson introduces the proper way of turning on a microcomputer. Because there are so many varieties of microcomputers, the locations of certain switches and buttons on your computer may not coincide with the instructions provided. With many of the newer computers, the power switch is at the front of the computer, sometimes at the top right, other times in the center of the front panel. The power switch for the monitor is usually at the front, lower right corner. **Do not** try to feel for the switches the first time you want to start the computer — find them visually.



Not all computers have a Reset button. Be sure to check your system first to determine which buttons are available to you. Older systems often have an extra button at the front that was used to set the microprocessor speed.

### Starting the Computer

- 1 Turn on everything connected to the system unit (i.e., the monitor and printer) first. This ensures a steady flow of power to the system unit when it is finally turned on. Otherwise, the power to the system unit would be interrupted each time one of these devices were turned on.
- 2 Turn on the system unit. Make sure that this is the last power switch that you turn on. In cases where you are using a power bar to turn on all the devices, simply turn off the system unit power switch, turn on the power bar, and then manually turn on the system unit.

After several lines of information are displayed to the screen, the computer starts to look for the operating system by accessing the A Drive. The disk drive light comes on, followed by whirring noises, and then the operating system is loaded off the disk or hard disk and into the computer's RAM memory.

## Understanding the Boot Routine



The process of turning on the computer and loading the operating system is called *booting* the computer. The term comes from the idea of lifting yourself off the ground by pulling up your boot straps. When you first turn on the computer, you are performing a *cold boot*. From the off position, the computer's power switch is turned on and the operating system is loaded from the disk into the RAM memory.

A *warm boot* refers to the process of clearing RAM and reloading a new copy of operating system from the disk. The word “warm” is used because the computer's power is left on. A “warm boot” is usually performed when the computer refuses to acknowledge keystrokes from the user, often referred to as “freezing” or “hanging” or “locking up”.

As the computer receives power, the Boot Program or ROM BIOS (Read-Only Memory — Basic Input/Output System) takes control. The ROM BIOS is a small program permanently stored in a special area of the computer's ROM (Read Only Memory). The boot program conducts an extensive check of the computer's main components, including the RAM memory, and tallies an inventory of all devices connected to the computer.

The final step of the boot program is to load the operating system. The first place the computer looks for the operating system is in Drive A, the floppy disk. If the computer does not find a disk in the floppy drive, it then proceeds to the hard disk (Drive C) in its quest. If there is no hard disk, the computer then reports an error stating that the computer could not find the necessary operating system disk. If the computer finds the operating system files on either disk, it is loaded into the RAM memory and control passes to the operating system. If not, you will not be able to do anything with the computer until an operating system has been found that is acceptable to the computer for further processing.

When the computer first loads the operating system and passes control to the operating system, the first screen you will see is the Windows splash screen (identified by the Windows logo and confirmation of the version of Windows). During this time, the operating system checks the *registry* for Windows that identifies what has been installed (both software and hardware) and should be recognized by Windows. When this is complete, you will see the Windows desktop.



## Working with an Application Program



Depending on how Windows was installed on the system, the desktop may have a background and color scheme similar to the previous screen, or it may have a solid color (see screens in the Looking at Operating Systems unit). Regardless of which version of Windows you are using, every desktop has the **Start** button at the lower left corner of the screen and a number of icons on the desktop for certain programs or functions.

You will most likely use the **Start** button and then the **Programs** menu to select an application program to start. Depending on how the program was installed, you may need to click on an additional submenu before you actually can start the program. As well, most application programs will provide you with an icon (picture) on the Windows desktop for that program that you can use to start the program rather than use the Start menu.

As with the operating system, when you select to start an application program, you are asking Windows to make a copy of that program and place it in RAM. This is why the software vendor recommends a specific amount of required RAM. This amount of RAM is needed in order to take advantage of the features of the application program in addition to running the operating system in the background. When you close the application program, the amount of RAM being used by the application is also released from RAM.

RAM is also used by the data files you create or use within the application program. The larger the file, the more RAM is needed in order to access areas of the file, or to display other files. Every file you work with, regardless of whether you create or open an existing one, uses a portion of the RAM available on your system. This is often why people suggest that the amount of RAM you have installed is larger than the recommended size on the software boxes. Data files are stored in RAM until they are saved or closed; as RAM is volatile, this is why it is very important to save your files periodically during the time you are working with them in order to save the changes made to the files.

When you no longer want to use the application program, you should close it. This will free up RAM, both for the application program as well as any files opened on the screen. An advantage that Windows provides for you with application programs is that it will recognize if you have any unsaved files opened on the screen prior to closing or exiting the application program. You are prompted to either save the file or to close the application and the files without saving anything.



### Exercise

- 1 Identify where the power buttons are on your computer for both the system unit and the monitor.
- 2 Press the buttons to turn the computer on.
- 3 Watch the monitor to see what messages and prompts are displayed.
- 4 Watch the Windows splash screen as it loads onto the computer.
- 5 When the Windows desktop appears, put your hand on the mouse appropriately and then slide the mouse along your desk and watch how the cursor () follows the same movements you make with the mouse.

## Resetting the Computer



3.2.3

Occasionally, a computer may experience a “glitch” where the computer may simply stop working. When the computer stops or freezes, it is called “hanging”. You often hear people talking about how their computer “crashed” in the middle of an important calculation. These terms simply mean that the computer experienced a problem and failed to work.

The following section explores some methods for solving the problem of your computer freezing or hanging.



Press and hold down the **Ctrl** key and tap the **C** key to put a break code into the computer. If this is successful in unfreezing your computer, you may continue working as if nothing had happened.



Press and hold down the **Ctrl** key and tap the **Break** key. The **Break** key usually shares a spot on the keyboard with the pause key. If this is successful in unfreezing your computer, you may again continue working as if nothing had happened. However, if the above two steps do not work, then you must proceed to the third step: a warm boot.

### Performing a Warm Boot

The warm boot resets the computer by reloading a new copy of the operating system into the RAM memory. Be careful — the warm boot wipes the RAM memory clean before reloading the operating system; in other words, you lose what you were working on prior to the computer “hanging”.

To warm boot the computer:

- 1 Press and hold the **Ctrl** key.
- 2 Press and hold the **Alt** key simultaneously.
- 3 Press the **Delete** key and then release all the keys immediately.

This is normally illustrated as **Ctrl+Alt+Delete**.

The computer resets itself and returns to the same point as when the power was first turned on. You may need to re-enter the date and time.

### Performing a Cold Boot

The most drastic solution to the problem of a “crashed” computer is to turn the power off. This is called a cold boot because you actually turn the power off and the computer “cools down”.

If you have to perform a cold boot, wait about 30 seconds before turning the computer back on. You can damage a computer by turning the power off and on very quickly. Remember to use the cold boot only as a last resort.

### Using the Reset Button

Some machines come equipped with a *Reset* button, located at the front panel of the computer. Pushing this button not only reloads a new copy of the operating system into memory, but it also performs a quick diagnostic system check, similar to when the computer is cold booted. Therefore, the Reset button function actually lies between a warm boot and a cold boot in severity.

In the order of choices for resetting the computer, try a warm boot first prior to using the Reset button. This gives the computer a chance to try and recover any files that were active at the time it “crashed” or “hung”. If pressing the buttons to activate a warm boot do not work, then choose the Reset button. The power button should be used for a cold boot only as a last resort; the only exception here is if you do not have a Reset button available for your system.

## Shutting Down the Computer

When you no longer want to use the computer, always shut down the computer appropriately. Never turn the computer off without using the correct procedure as this can damage the system files, in addition to any application programs you may have open at the time. Always make sure any application programs are also closed prior to activating the shut down process. You should essentially be looking at your desktop just as if you had just started the computer.

To shut down the computer correctly:

- 1 Click on the **Start** button.
- 2 Click on the **Shut Down** command at the bottom of the **Start** menu.
- 3 Ensure that **Shut Down** is selected for the procedure and then click on the **OK** button.
- 4 Wait for Windows to completely shut down and turn off the computer before turning off the monitor or any other devices you may have turned on, such as speakers, printers or a scanner.

## Summary

In this lesson you looked at how to start and exit the computer using the proper procedures. You should now be familiar with how to:

- Start a computer
- Reboot or reset a computer
- Start an application program
- Handle data files within an application program
- Exit an application program
- Shut down the computer correctly

## Review Questions

1. Before turning on the CPU, you should turn on all other components connected to the computer in order to ensure a steady flow of power.
  - a. True
  - b. False
2. What does booting the computer mean?
3. When the computer starts, what is the first thing it does?
  - a. Turns on everything that is connected to the system
  - b. Checks to see which operating system is installed
  - c. Checks the BIOS to check the hardware components of the system
  - d. All of the above
4. Starting an application program means Windows is taking a copy of the application program and putting it into RAM for further processing.
  - a. True
  - b. False
5. The amount of RAM you have is not affected when you create or open existing files.
  - a. True
  - b. False
6. If the computer seems to be hanging or frozen, you could try pressing **Ctrl**+**C** or **Ctrl**+**Break** prior to activating a warm or cold boot.
  - a. True
  - b. False
7. Which keys would you use to activate a warm boot?
  - a. **Ctrl**+**Delete**
  - b. **Alt**+**Delete**
  - c. **Ctrl**+**Alt**+**Shift**+**Delete**
  - d. **Ctrl**+**Alt**+**Delete**
8. What does a cold boot refer to?
  - a. Turning the machine on for the first time on that day
  - b. Turning the machine on for the first time since you got the computer
  - c. Turning the machine off and on after it has crashed and the other options don't work
  - d. None of the above
9. What's the difference between using the Reset button and performing a warm boot?
10. You can always turn off a computer by pressing its power button, regardless of what you were doing on the computer before.
  - a. True
  - b. False

**FOR EVALUATION ONLY**

## Unit 2: Using Windows XP

This section includes the knowledge and skills required to familiarize you with the most frequently used functions of an operating system. Elements include the ability to install and run software, control the workspace (desktop), perform file management and change system settings (display, date and time settings, etc.). For purposes of this domain, the operating system covered is Windows, the most popular PC operating system, with consideration of some elements of DOS as they impact an understanding of Windows.

Lesson	Topic
1	Looking at Windows
2	Looking at the Desktop
3	Working with Windows
4	Exiting Windows
5	Getting Help
6	Running Application Programs
7	Looking at Files and Folders
8	Using Windows Explorer
9	Using the Recycle Bin
10	Managing Disks
11	Customizing System Settings
12	Installing and Uninstalling Programs

## Lesson 1: Looking at Windows

### Objectives

Suggested Timing: 30 Minutes

In this lesson you will look at different types of computers and how these types of computers are being used. On completion, you should be comfortable with the following concepts:

- What is Windows
- Which version to use
- Different versions of Windows

### What is Windows?

Windows is an operating system from Microsoft Corporation, the developer of DOS (Disk Operating System). It is a graphics based environment, allowing users to easily integrate data and graphics, and easily maneuver between applications. The operation environment was introduced by Microsoft in the early 1980's, and has advanced with the following versions:

- Windows 3.x
- Windows for Workgroups
- Windows NT
- Windows 95
- Windows 98
- Windows 2000 Professional
- Windows Millennium Edition (ME)
- Windows Mobile
- Windows XP Professional
- Windows XP Home

In addition to the graphics based environment, every application program created for the Windows platform conforms to certain standard elements, e.g., Close button, drop-down menus, toolbars, etc. This graphics based environment also introduced a new terminology for how application programs and the files created in these programs are displayed: WYSIWYG (What You See Is What You Get).

Every PC must have Windows installed on it before you can access any application programs. The Windows operating system gives you the opportunity to work on multiple tasks at the same time, regardless of whether it is multiple documents for a single application program (e.g., five different documents in a word processing program), or multiple application programs at the same time (e.g., Word, Excel, e-mail, web browser, playing a music CD, etc.).

In simple terms, think of Windows in the same manner as the windows in your home. Through one window you can look into that room and through other windows, you can see other rooms. If you perform a task or several tasks in one room, you can still go to another room to do other tasks while the original one is still taking place, e.g., cooking dinner on the stove in the kitchen while folding laundry in the recreation room. The multiple tasks you perform in your home are similar to the way Windows handles multiple tasks.

### A Quick History

Windows has evolved since its first release in the 1980's. It has become the standard operating system for all new computers. Each release improves the capabilities of working with computers as well as making it much easier to learn new application programs through its GUI and standards established (e.g., all software have the same three buttons at the top left corner of the screen for the program, every menu begins with File and Edit and ends with Help, every toolbar uses the same picture for the Open, Save and Print buttons, etc.).

Following is a brief history and explanation of the evolution of Windows to the current version today:

### Windows 3.x

This was the first version of Windows introduced. Before Windows could be installed, DOS had to be installed and set up on the computer. This version introduced the graphics user interface (GUI) that became widely accepted by PC users on their desktop. As technology advanced, this version became obsolete.

### Windows for Workgroups

This version of Windows was introduced originally as an upgrade to Windows 3.x. One of the biggest benefits of using this product was to set up a stand alone PC (used by only one person) on a peer to peer (one computer to another computer) network for sharing files and printers. This version also included Schedule+ (a day organizer type of program) and Microsoft Mail (electronic mail for internal messages).

### Windows NT

Windows NT (New Technology) was introduced in 1993 as an alternative for those offices that needed “more power” and network capabilities for sharing files and resources. This version also allowed you to use applications that were created for other operating systems such as OS/2 (IBM) or Unix, or on non-Intel based computers like the Digital Alpha.

Windows NT comes in two modes: *workstation* for individual users, and *server* for those users who wanted to set up a network server using this version of Windows. With the advancing technology, Windows NT included security features to protect the network server from unauthorized users.

### Windows 95

Windows 95 was introduced in 1995 with the intent of replacing all previous versions of Windows. This version included a number of different appearances for the desktop (front screen once Windows has started), as well as enhanced multi-media support and dial-up access to other computers (or the Internet). The original peer to peer networking features of Windows for Workgroups was enhanced and built into this version.

Windows 95 was not created based on DOS but does include compatibility with older versions of DOS and applicable software. This version was meant to replace the original disk operating systems or Windows version, as you no longer need DOS installed on your system before installing and running Windows.

### Windows 98

For all intents and purposes, Windows 98 works and looks like Windows 95. The differences are in the area of better support for the newer hardware available in the marketplace, enhanced graphic displays, better memory management, access connection to the Internet, or features that respond or appear similar to those seen on the Internet, e.g., web page background, single click to “jump” to a program or file, etc.

One of the more obvious differences between Windows 95 and 98 is the appearance of the icons and pictures in Windows 98 as a result of the better support for the different hardware (32-bit versus 64-bit graphics interface).

### Windows 2000 Professional

This is an enhanced version of Windows NT and comes with a number of advanced security features for a network environment. There is also better support for newer hardware devices as well as hardware management on the computer.

### Windows Millennium Edition (ME)

Windows ME is the end user version of the Windows 2000 Professional operating environment. Windows ME is still designed based on the Windows 98 technology but encompasses a number of the security features built into Windows 2000.

### Windows CE/Mobile

This version was designed originally for smaller PC types of computers where portability was an issue. Since then, this version has expanded significantly to handle the multitude of PDAs or Pocket PCs available.

### Windows XP Professional

This version of Windows brings the convergence of Windows operating systems by integrating the strengths of Windows 2000 (i.e., standards-based security, manageability and reliability) with the best features of Windows 98 and Windows ME — Plug and Play, easy-to-use user interface, and innovative support services.

### Windows XP Home

Windows XP Home is the end user version of Windows XP Professional. Many of the features available with the Professional version are included with the Home version; the main differences lie in the network and security issues normally required for an office.

## Which Version Should I Use?

There are advantages and disadvantages to using each version of Windows; many of these surround the issue of compatibility with software. Newer computers can be purchased with the latest version of Windows only. At the time of writing, this is Windows XP Home or Professional edition. If you are purchasing Windows for the office, you may have the option of buying licenses for an older version of Windows (e.g., the office will be upgrading to Windows 2000 rather than Windows XP).

The two latest versions of Windows (i.e., 2000 SP3 and XP) will allow you to purchase and use the latest versions of application software. However, this may not be a concern if you do not need all the new features of either the operating system or an application program. One other consideration for choosing the latest version is whether the hardware can handle the new software version.

With the advent of technology and need for faster processing speeds, hardware vendors generally do not support or manufacture new computers after a certain specification. For example, it is nearly impossible to purchase a new computer that has a microprocessor speed of 700MHz or less. Many users still have these types of systems and they work well for their needs. The problem comes when you want to upgrade these systems to the latest version. In many cases, the newer operating system will not work as efficient or productive as if it was installed on a new system. The same is true for application programs.

A general rule of thumb is:

- If you are purchasing a new computer, always choose the latest versions available for the operating system. This will allow you to work with older and newer application software on your system.
- If you have an older system and want to upgrade to a higher version of Windows, check with a technical support person prior to purchasing the Windows version. The technical person will be able to give you advice on whether your system will be able to handle the new operating system, and/or what other options are available to you.

## Summary

In this lesson you looked at a brief history and evolution of the Windows operating system. You should now be familiar with the following:

- What is Windows
- Which version to use
- Different versions of Windows

## Review Questions

1. One of the features of using Windows is the standard elements used in software programs used for Windows.
  - a. True
  - b. False
2. With Windows, you can either work on multiple documents in a single application program, or multiple programs at the same time.
  - a. True
  - b. False
3. The first version of Windows was:
  - a. Windows 3.x
  - b. Windows for Workgroups
4. Windows NT comes in two modes. What are they?
  - a. Home and Professional
  - b. Workstation and Server
  - c. Workstation and Client
  - d. Network and Terminal
5. What is one obvious difference between Windows 95 and 98?
  - a. Higher cost
  - b. Color schemes
  - c. Better support for pictures and icons
  - d. End user version
6. What's the difference between Windows NT and 2000?
7. Why use Windows CE/Mobile?
8. Windows XP comes in which versions?
  - a. Home and Professional
  - b. Workstation and Server
  - c. Workstation and Client
  - d. Network and Terminal
9. A consideration for whether to use the latest version of Windows is:
  - a. Whether the hardware can handle the new version
  - b. Whether you need to have the newest features for Windows
  - c. Whether you need to have the newest features in the latest application programs
  - d. All of the above
  - e. Only a or b
10. You should always get the latest version of Windows with a new computer.
  - a. True
  - b. False

## Lesson 2: Looking at the Desktop

### Objectives

Suggested Timing: 30 Minutes

In this lesson you will be introduced to the Windows desktop and how to navigate around in Windows. On successful completion, you will be familiar with the following:

- What is the Windows desktop
- Using the Start button
- How to use the mouse
- Using the Taskbar

### What is the Windows Desktop?

Once Windows loads, the desktop will look similar to the following. You will notice several objects or icons on the desktop.



The number of icons or folders on your screen will depend on who had access to this system last or the user id being used, e.g., network administrator set up folders for individual programs that you have access to, class before yours, the login id being used is a generic one for classes and only shows a minimal number of programs, etc.

#### Desktop

This is one of the most important features in Windows. It is a work area on which windows, icons, menus, and dialog boxes appear and may contain shortcuts to frequently used files, programs, or web pages. You can choose from Windows classic theme or the new Windows XP theme.

**Taskbar**

By default, the taskbar is located at the bottom of the screen. It contains the Start button, the taskbar notification area, and may display the Quick Launch bar or other toolbars. As you open a program or file, a button will be displayed on the taskbar for each open item. The taskbar is an integral part of the multitasking feature of Windows.

**Start Button**

Use this button to start programs, open documents, find items on your computer, get help, as well as log off and shut down your computer.



Depending on how the desktop was set up, you may not see the following desktop icons until they have been selected to display on the desktop.

**My Documents**

By default, this folder contains the documents or files you create and save on the computer. The My Documents folder is unique to each person who logs on to the computer.

**My Computer**

This folder allows you to quickly access storage devices (i.e., 3½" floppy disk, hard drive, CD-RW, DVD-ROM drive, or network drive) that have been mapped to your computer.

**My Network Places**

This basically performs the same function as My Computer except that it displays the shared resources available on your network, or can be used to install a network printer. It may show shortcuts to computers within your network, web servers or FTP (File Transfer Protocol) servers used for file transfers.

**Recycle Bin**

This is a temporary storage place for deleted files. You can use it to retrieve or restore files deleted in error. The deleted files are not actually removed from the hard disk until you empty the Recycle Bin.

**Internet Explorer**

This is a web browser that allows you to access the Internet and the World Wide Web (WWW) services or your company's Intranet.

**Mouse Cursor**

The pointing arrow is the symbol on the screen, representing the movement or action of the mouse. As you slide the mouse along the desk, the arrow will follow in the same direction.

**Using the Mouse**

The mouse is a pointing device used to move the cursor or pointer arrow around on the computer screen. As you work with Word, you will need to remember the common terms described below:

**Click**

Point the mouse at the desired item, and then quickly press down and release the left mouse button.

**Double-Click**

Point the mouse at the desired item, and then click the left mouse button twice in rapid succession.

**Drag**

Point the mouse cursor at the desired item or range; then press and hold down the left mouse button as you move the pointer. Release the mouse button when you have moved the item to the desired location or selected the range you want.

**Right-Click**

Point the mouse at the desired item, then quickly press down and release the right mouse button.

## Navigating Within Windows

The most common method of navigating within a graphical user interface like Windows is to use a mouse. The keyboard can be used when working with Windows but without the same degree of ease.

There are a wide variety of mice available: the standard 2-button mouse, 3-button mouse, optical mouse, trackball, wheel mouse, or even a cordless mouse. The exercises in this section refer to the standard two-button mouse and assume that the default setting of double-clicking will be used to open items, until otherwise noted.

➤ If the default setting has been changed to use a single-click, it may be restored by selecting **My Computer**, select **Tools**, **Folder Options**, click on the **General** tab and choose **Restore Defaults**.

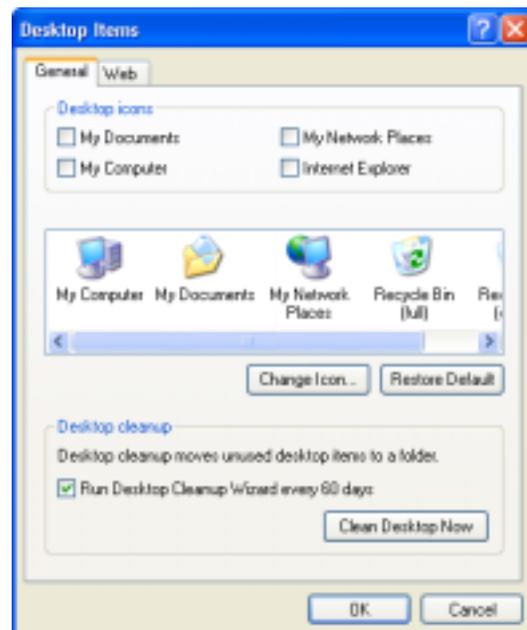


### Exercise

- 1 Point to a blank area of the desktop and then press the right mouse button. Point to the **Properties** command in the shortcut menu and then press the left mouse button.
- 2 Click on the **Desktop** tab.



- 3 Click on the **Customize Desktop** button.
- 4 In the **Desktop icons** area, place the mouse in the check box and click to select **My Documents**, **My Computer**, **My Network Places** and the **Internet Explorer**.
- 5 Click on **OK** twice.





### Using the Start Button

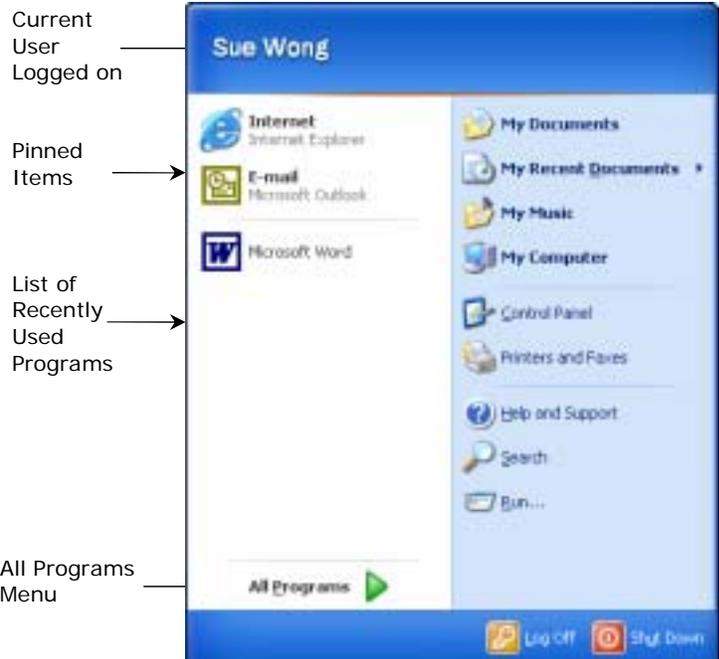


3.2.5

The **Start** button is the single most commonly used feature in Windows. This button is the primary means of starting programs, finding files, accessing online help, logging off the network, switching between users or shutting down the computer. You can use the mouse or keyboard to navigate through the **Start** menu. Whenever you see a triangle (▶) symbol pointing to the right, this indicates that a submenu will be displayed when you select the item with the triangle. A more menu items (⌵) symbol may be displayed at the bottom of the **All Programs** menu, indicating hidden programs that have not been recently used. You can also customize the menu to show this symbol at the top or bottom of a submenu to minimize the number of programs displayed in a menu. Alternatively, the default for Windows XP is to show the submenu in multiple columns, as applicable.

### Using the Mouse

Most users find it faster to use the mouse when navigating through the **Start** menu; however, the keyboard can be used as well. Using the keyboard can be advantageous if the mouse stops working for whatever reason. The keyboard method is described in the next section.



<b>All Programs</b>	Contains a submenu which lists all of your programs. It may only display the programs you use most frequently. Personalized menus in Windows Professional help keep track of frequently used programs and are shown in this menu; those that you have not used recently are hidden. This helps keep the menu from becoming too cluttered.
<b>My Documents</b>	Opens the folder where you can store letters, memos, reports, notes and many other kinds of documents.
<b>My Recent Documents</b>	Shows files recently accessed, regardless of the program used to view the file. The folder can hold up to 15 documents.
<b>Favorites</b>	Stores many of your favorite web sites, files and folders. By default this folder is not displayed in the Start menu.
<b>My Pictures</b>	Organize and share pictures with others on your computer and on the Internet using this folder. When you save pictures from your digital camera or scanner to your computer, Windows stores them in this folder by default.
<b>My Music</b>	Gives you more convenient access to your music. View your albums, MP3 files, and Windows Media Audio information in detail, and even group albums by artist or genre.
<b>Control Panel</b>	Provides options to customize the appearance and functionality of your computer.
<b>Printers and Faxes</b>	Shows installed printers and fax devices as well as helps add new ones.
<b>Help and Support</b>	Opens a central location for help topics, tutorials, troubleshooting and other support services.
	The next three items may not appear in the menu unless they have been selected to display, especially if you are in a non-networked environment.
<b>My Network Places</b>	Gives you access to files, folders and other information on other computers on a Network.
<b>Network Connections</b>	Connects to other computers, networks, and the internet. With Network Connections, you can create new connections, set up a home or small business network or modify existing connections.
<b>Administrative Tools</b>	Contains a collection of Windows tools, including Computer Management, Data Sources (ODBC), and Event Viewer. These tools are used generally by Network Administrators.
<b>Search</b>	Can be used to find files, specific words or phrases in a file. You can also search for folders, or information on the Internet, etc.
<b>Help and Support</b>	Displays the Windows XP Professional online help program. This serves as a central location for Help topics, tutorials, troubleshooting and other support services.
<b>Run</b>	Use this to run programs, open files or folders, or other resources.
<b>Log Off</b>	Provides options for closing your programs and logging off, or leave your programs running and switch to other users.
<b>Turn Off Computer</b>	Provides options for turning off or restarting your computer, or for activating Hibernate modes.

Depending on the customization or configuration of the **Start** menu, some items such as Administrative tools, the **Run** command, Network Connections, or Printers and Faxes may or may not be displayed in the Start menu.

**Exercise**

- 1 Click the **Start** button.
- 2 Move the mouse pointer to the **My Music** command.
- 3 Move the mouse pointer to **Help and Support**.
- 4 Move the mouse pointer to the **My Recent Documents** menu.
- 5 Move the mouse pointer to the **All Programs** menu.  
The submenu is now displayed.
- 6 Move the mouse pointer to the **Accessories** menu.
- 7 If displayed, point at or click the more menu items symbol at the bottom of the **Accessories** menu to display the hidden programs.
- 8 Move the mouse pointer to the **Startup** menu, located in the **All Programs** submenu.  
Programs listed in the **Startup** menu will automatically run or start up when you log on to your computer.
- 9 To close the **Start** menu, click the mouse anywhere on the desktop.

**Using the Keyboard**

The keyboard can be used when working with Windows to efficiently navigate through the **Start** menu. This can be handy if you prefer to use the keyboard, or if the mouse is not working. Use the Windows logo key () to access the **Start** menu, and the Application key () to display a shortcut menu for where the mouse cursor is pointing. When the Start menu is displayed, you can use the arrow keys to navigate, or press the corresponding key for the first or underlined character in the menu(s) for that command or program. You can also press **Ctrl+Esc** to display the **Start** menu.

**Exercise**

- 1 Press the  key.  
The **Start** menu is activated. Notice how each menu item has one underlined character. By pressing the appropriate keyboard character, it will select that menu item. You can also use the arrow keys to navigate through the **Start** menu.
- 2 Press **M**.  
Any item that starts with the letter *M* will become highlighted. By continually pressing the letter *M*, the highlight will jump around the menu.
- 3 Press **Enter** to activate the program you wish to open, such as Tour Window XP.
- 4 Press **Alt+F4** to close the open program.
- 5 Press the  key to activate the **Start** menu.
- 6 Use the **Esc** key to cancel the current selection.
- 7 Press **M** to select any program that starts with the letter *M*.
- 8 Press **Enter** to activate the program you wish to open.
- 9 Press **Alt+F4** to close the open program.

## Using the Taskbar

By default, the taskbar is visible at the bottom of the Windows desktop. The taskbar contains the **Start** button, toolbars, a notification area, the clock, and displays a taskbar button for each open program.



The *Notification Area* is the area on the right of the taskbar. The Notification Area displays the time and also can contain quick access to programs such as the volume control, an anti virus program, and many other essential and non-essential items. As well, the Notification Area can also show shortcuts that appear temporarily to provide information about the status of activities, e.g., the printer shortcut icon appears after a document has been sent to the printer and disappears after the printing is complete. You can choose which notification icons to show and which icons to hide. You can keep the Notification Area uncluttered by hiding the icons that you have not recently used.

Take note of the following for changing or customizing the taskbar:

- The taskbar can be moved to any side of the screen by placing your mouse cursor in a blank area of the taskbar and dragging it to a new location.
- You can use the toolbar handle to show more or less of the toolbar. Position your cursor on the toolbar handle (i.e., ) . You will see the mouse cursor change to ; as you drag the toolbar, the symbol will change to .
- To change the size of the taskbar, position the mouse cursor on an edge of the taskbar. When the cursor changes to , drag the taskbar to the desired height or width.
- To lock the toolbars from being changed or moved, right-click on a blank area or the Notification area of the taskbar, and click on **Lock the Taskbar**. All handles and symbols will not appear as you move the mouse cursor around the taskbar.
- To change (customize) the properties for the taskbar, right-click in the appropriate area or the **Start** button. Choose the option to be changed.



### Exercise

- 1 Click Start, Control Panel, and then double-click on Sounds and Audio Devices.
- 2 Under **Device volume**, place a check mark next to **Place volume icon in the taskbar** and click **OK**. Close the Control Panel window.
- 3 Right-click on the time in the Notification Area. Select **Properties** from the shortcut menu.
- 4 In the Notification Area, uncheck the **Hide inactive icons** check box and click **OK**.
- 5 Right-click on the time in the Notification Area.
- 6 Select **Properties** from the shortcut menu.
- 7 Place a check mark in the **Hide inactive icons** check box and click **OK**.

The Notification Area should look similar to the following:



- 8 Click on the  to expand the Notification Area.
- 9 Move your mouse away from the Notification Area and the Notification Area will automatically collapse; if not click on the  button to collapse.

Now move and then resize the taskbar.

- 10 Right-click on the time. If the **Lock the taskbar** option has a check mark next to it, the taskbar is locked and cannot be moved. Select **Lock the taskbar** to turn off this feature.
- 11 To move the taskbar, position the mouse pointer on a blank location in the taskbar, then click and drag the taskbar to the left edge of the desktop. Release the mouse.
- 12 Now, move the taskbar back to the bottom edge of the Windows desktop.
- 13 To make the taskbar larger, position the mouse pointer over the top border. When a double-headed arrow appears, click and drag to make the taskbar slightly larger.
- 14 Resize the taskbar back to its original size.



### Practice Exercise

- 1 Click the **Start** button, select **All Programs, Accessories** and **WordPad**. Repeat to open the **Notepad** program so that you have an additional icon displayed on the taskbar.
- 2 Move the taskbar to the top edge of the desktop.
- 3 Resize the taskbar so it is approximately 2 inches high.
  - ▶ Position the mouse pointer over the bottom border. When a double-headed arrow appears, click and drag to make the taskbar larger.
- 4 Resize the taskbar so that it is back to its default size showing only one row of icons.
- 5 Click Start, All Programs, Accessories, Paint.
- 6 Move the taskbar to the right edge of the desktop.
- 7 Click Start, All Programs, Accessories, Calculator.
- 8 Now move the taskbar back to the bottom edge of the desktop.
- 9 Close each open program by right-clicking on the program's icon in the taskbar and selecting **Close** from the shortcut menu.

### Summary

In this lesson you were introduced to the Windows desktop and how to navigate around in Windows. You should now be familiar with the following:

- What is the Windows desktop
- Using the Start button
- How to use the mouse
- Using the Taskbar

### Review Questions

1. Why is the desktop area important?
2. The taskbar appears across the bottom of the screen and will display buttons for each open application program/file.
  - a. True
  - b. False

3. The My Computer icon allows you to quickly access storage devices.
  - a. True
  - b. False
4. Which mouse option would you use to select an icon on the desktop?
  - a. Click with the left mouse button
  - b. Click with the right mouse button
  - c. Double-click with the left mouse button
  - d. Double-click with the right mouse button
5. You can use the mouse or keyboard to navigate around in Windows.
  - a. True
  - b. False
6. Which option is the single most commonly used feature in Windows?
  - a. Desktop
  - b. Taskbar
  - c. Start button
  - d. My Computer
7. In order to see the programs installed on your system, which option from the Start button would you use?
  - a. Documents
  - b. Programs
  - c. Search
  - d. List of Quick Start items
8. What does a triangle following a command in a menu mean?
9. Which button would you use to access the Start menu with the keyboard?
  - a. 
  - b. 
  - c. 
  - d. 
10. How could you move the taskbar to a different location?
  - a. Position the mouse cursor at the top of the taskbar and then drag to the new location.
  - b. Position the mouse cursor overtop of the Taskbar handle and then drag to the new location.
  - c. Right-click on the Taskbar and then choose a location from the shortcut menu displayed.
  - d. Either a or b.

# Lesson 3: Working with Windows

## Objectives

Suggested Timing: 30 Minutes

In this lesson you will learn about the common elements shared by all windows, regardless of whether it is an application window or a window that opens after activating a command. On successful completion, you will be familiar with the following:

- What is a window
- The Minimize, Maximize/Restore, and Close buttons
- The Menu Bar and Toolbar
- How to move a window
- How to size a window
- How to identify and use a scroll bar

## Looking at a Typical Window



When programs or folders are opened, they appear on the desktop in their own individual windows. You can potentially have multiple windows displayed on the screen; you are not limited to displaying one at a time. Each window shares similar features, as noted in the following:



- Control Icon** When active, displays commands for manipulating the window, i.e., Restore, Move, Size, Minimize, Maximize, or Close.
- Title Bar** Displays the name of the feature or application program currently active (e.g., My Computer).
- Menu Bar** Displays the command names for each menu that can be pulled down for further action.

- Toolbar** A row of buttons for commonly accessed commands. These buttons may have the names below or beside the icon used to represent the command, e.g., .
- Minimize/Maximize/Restore/Close** These three buttons always appear at the far right side of an application program window. The  (**Minimize**) button allows you to temporarily suspend the window and put it as a button on the taskbar for later use, the  (**Maximize**) button maximizes the window to full screen, the  (**Restore**) button restores the size of the window to the size it was before it was maximized, and the  (**Close**) button closes the application or document window. If the window only has the  or the  (**Help**) button, then a feature window is displayed for further action.
- Task Pane** Displays common actions, locations, or general information about the window for your reference. Each of the actions or locations are links, i.e., click on the command to go directly to that feature or location.
- Status Bar** This appears across the bottom of the window and displays information about the status of any request being made, such as Ready, # Objects, etc. The message will vary depending on the window type and the action requested.
- Scroll Bar** If displayed, appears at the far right and bottom of the window when there are more items than can be shown in the current window size.
- Sizing Handle** Located at the bottom right of a window, this handle allows you to resize the window by the bottom and right sides at the same time.

### Exercise

- 1 Open the **My Computer** window.
- 2 Click the  control icon.



Selecting this icon displays the Control menu to perform commands such as moving, sizing and closing windows.

- 3 Select the  button at the top right corner of the window.

Notice how the title bar indicates the name of the window (e.g., My Computer). If you have more than one window open on the screen, the title bar that is generally a bolder or darker color of intensity, is the active window.

- 4 Click the  button.

The Minimize button is used to *temporarily* remove the window from the desktop.

- 5 To redisplay the minimized window, click on the **My Computer** button from the taskbar.

- 6 If the window is not already maximized, click the  button.

When the window is maximized, it occupies the entire Windows desktop area and the  button appears.

- 7 Click the  button.

When the window is restored, it is usually mid-size (i.e., it does not occupy the entire Windows desktop) and the  button appears.

- 8 Click the  button.

## Moving a Window



On occasion, you may want to move a window on the screen to look at another window or see what else may be on the desktop. A window can be moved anywhere on the desktop. You can use the mouse or the keyboard to move a window.

- If using the mouse, position the mouse cursor anywhere on the title bar and then drag the window to the new location.
- If using the keyboard, press **Alt**+**Spacebar** to activate the control icon. Press the **↓** key to select the **Move** command and press **Enter**. Using the arrow direction keys, move the window to the new location and then press **Enter** to exit the action.

Before a window can be moved, it must be restored to any size other than full screen. Maximized windows cannot be moved as they occupy the entire screen.



### Exercise

- 1 Open My Computer.
- 2 If necessary, restore the My Computer window.
- 3 Position the mouse pointer on the title bar of the My Computer window.
- 4 Hold down the left mouse button and drag the window to a new position on the desktop, then release the mouse button.
- 5 Practice moving the window around to several different locations.
- 6 Close the My Computer window.

## Sizing a Window



On occasion you may want a different size for the window. For example, if you had several programs running at the same time, you may want to see a bit of each window on the desktop. You can use the mouse or the keyboard to size a window.

- If using the mouse, position the mouse cursor anywhere on the border (side) to be sized. When you see the mouse cursor change to a double-headed arrow (i.e., you will see  for the top or bottom border, or  for the left or right border), drag the mouse to the desired size.
- Alternatively, if you want to size the right and bottom sides at the same time, position the mouse cursor on the sizing handle (i.e., ) and then drag to the desired size for the window. Take note that the sizing handle does not appear on all windows; some windows are set at a specific size and you cannot alter this.
- If using the keyboard, press **Alt**+**Spacebar** to activate the control icon. Press the **↓** key to select the **Size** command and press **Enter**. Using the appropriate arrow direction key for the side to size, press that direction key until at the desired size and then press **Enter** to exit the action. You will need to repeat this action for every side to be sized.

## Exercise

- 1 Open My Computer.
- 2 If necessary, restore the My Computer window.

Notice the border around the window and the symbol in the lower right corner. This symbol is commonly referred to as the *sizing handle* for displayed windows. If you don't see this symbol in the corner, select **View** and then **Status Bar** to display this line in the window.

- 3 Move the mouse pointer to the right edge of the window and hold the mouse over the border until the mouse pointer changes to a double-headed arrow ().



- 4 Drag the border to approximately 1" from the right side of the screen. Release the mouse button when you have resized the window to the desired size.
- 5 Move the mouse pointer to the lower right corner of the window and hold the mouse over the sizing handle until the mouse pointer changes to a diagonal double-headed arrow (i.e., .
- 6 Drag the corner of the window until the window is approximately half the current size, then release the mouse button. Practice resizing the window to several different sizes.

This should resize the window vertically and horizontally at the same time.

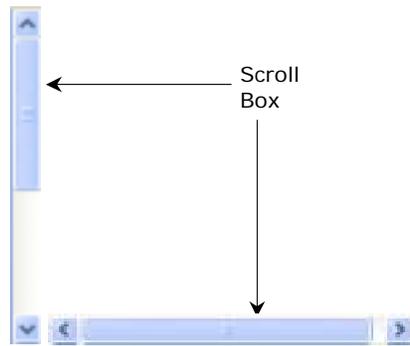
- 7 Close the My Computer window.

## Using Scroll Bars

If the size of a window is too small to display all of the contents, scroll bars will automatically appear. Scroll bars appear either vertically on the right side or horizontally at the bottom of a window.

A scroll bar consists of three parts: an *arrow button* at each end of the scroll bar, a *scroll box* and the *scroll area*. The scroll box is sometimes referred to as a thumb or an elevator.

The position of the scroll box within the scroll area provides an approximate gauge of how much information is currently displayed in the window, in relation to the entire window's contents. For example, if you were working in a word processing document that contained ten pages of information, not all ten pages would be displayed in the window at the same time. Drag the scroll box half way down, you would be viewing approximately page 5.



Use one of the following methods to move around with the scroll bars:

- Click in the lighter shaded area, either above or below the scroll box, to display either the previous or subsequent screen of information.
- Click the arrow at either end of the vertical scroll bar once to display a line of information in either direction.
- Click the arrow at either end of the horizontal scroll bar once to display a column of information in either direction.
- Click and hold down the mouse button on the arrow at either end of the scroll bar to watch your document scroll in that direction.
- Drag the scroll box to a specific area in the scroll area to move directly to that location. Depending on the program, you may also see a tip showing the page number where the cursor will be placed when you release the mouse button.



### Exercise

- 1 Open My Computer.
- 2 If necessary, resize your window so you see both a vertical and horizontal scroll bar.
- 3 Click the arrow button at the bottom of the vertical scroll bar.
- 4 Click the arrow button at the top of the scroll bar.
- 5 Drag the scroll box to view the information in the window.
- 6 Resize the window so that all of the contents are visible and the scroll bars disappear.
- 7 Close the window.

### Summary

In this lesson you learned about the common elements shared by all windows, regardless of whether it is an application window or a window that opens after activating a command. On successful completion, you will be familiar with the following:

- What is a window
- The Minimize, Maximize/Restore, and Close buttons
- The Menu Bar and Toolbar
- How to move a window
- How to size a window
- How to identify and use a scroll bar

## Review Questions

- You are limited to only displaying one window at a time.
  - True
  - False
- What is the difference between the Maximize and Restore buttons?
- When you use the  button, you are closing the entire window.
  - True
  - False
- Identify where the sizing handle is on the following screen:



- If using the mouse to move the window, how would you do it?
  - Click and drag the Control Icon to move to the new location
  - Click and drag the Title Bar to move to the new location
  - Click anywhere in the window to move to the new location
  - Click on the  button

- What do the following symbols indicate?



- All windows can be resized, regardless of what the window might show.

- True
- False

- Scroll bars appear whenever the window is too small to show all the contents.

- True
- False

- Identify the scroll box in the following:



- If you wanted to go to a specific area of the window, how would you do it?

- Click on the corresponding arrow on either side of the scroll bar
- Click in a blank area of the scroll bar
- Drag the scroll box to a specific area of the scroll bar
- All of the above
- Only b or c

## Lesson 4: Exiting Windows

### Objectives

Suggested Timing: 30 Minutes

In this lesson you will look at the different ways you can exit Windows. On successful completion, you will be familiar with the following:

- Why you need to log off or shut down the computer
- How and why to put the computer in Standby mode
- How to shut down properly
- Restarting the computer

### Exiting the Computer Properly



From a security perspective, it is extremely important to *log off* the computer when you have finished working on it. This will prevent unauthorized access to your files and more importantly, to your company's network, thereby minimizing the chances that someone will successfully break into the system and retrieve confidential information.

At the end of the day, when you have finished working on the computer, save your files, close the programs you were using and log off the computer. If you are going for a short break or lunch, you can still protect your computer by logging off.

If you are using a standalone computer, it is just as important to log off the computer if you share the computer with others. Even if you don't share the computer with others, to protect your files and programs, consider logging off the computer when you may be away from it for a length of time.

Alternatively, shut down the computer completely in order to help prevent others from using your computer. Always shut down the computer using the **Shut Down** command. Never turn off your computer without closing your files and any software program in the correct manner (i.e., use **File, Exit** or the  button for the software program). This will protect the software and your data files from being inadvertently corrupted or lost.

The options to exit Windows are found at the bottom of the **Start** menu.

### Exiting from a Networked Environment

If you are connected to a network, you will have different screens for logging off or shutting down the computer.

- Use the **Log Off** command when someone else needs to log on to your computer with their name and password. Using their own name and password gives them full access to their own files.



- Use the **Shut Down** command when you want to either shut down the computer for whatever reason (e.g., end of the day, moving the computer, etc.), or if you need to restart the computer.



Within the **What do you want the computer to do** drop-down list, you can select options to shut down the computer completely. If you need to reset the computer for whatever reason, use the **Restart** option.

Depending on how the power options on the computer were set up by the Network Administrator, you may also see a **Hibernate** and/or **Standby** option. Most offices will restrict users from having these options readily available. Please refer to the next topic for more information on these two options when using a stand-alone computer.

## Exiting from a Non-Networked Environment

You can run Windows XP in a non-networked environment. This mode appears similar to the Windows XP Home version. In this environment, you will have the option to exit Windows and shut down the computer, to switch users, or to put the computer into a hibernation/standby mode.

- Use the **Log Off** command when someone else wants to log on to the computer with their name and password. Using their own name and password gives them full access to their own files.



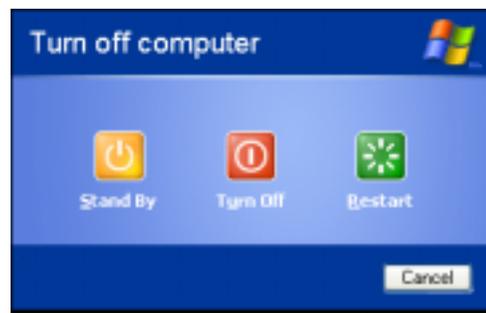
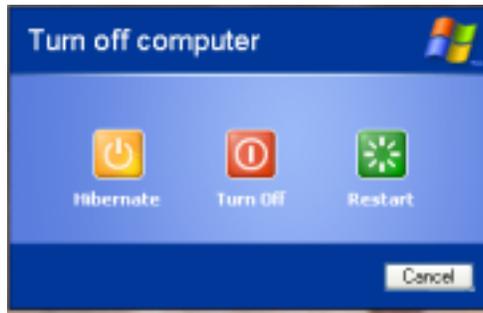
### Switch User

You will see this command when you click on the **Log Off** button. Use this command to switch to other users. This will let another user log on while your programs and files remain open.

### Log Off

Use this command when you go for a break or lunch to secure the computer. This will close all open windows and end your Windows session. For security reasons, it is important to log off the computer when you are finished using it.

- Use the **Turn Off Computer** command when you want to either shut down the computer, to restart the computer, or to put the computer into Hibernation mode.



**Hibernate** Saves your current desktop state to the hard disk and then shuts down the computer. When you restart the computer, Windows then restores the program(s) and document files you were working on before you activated the hibernation mode previously.

**Turn Off Computer** This command closes all of the operating system files, saves any necessary operating system data from the memory to the hard disk drive, and prepares the computer to be safely turned off.

**Restart** Use this command to restart or reboot your computer if you need to end the current session, shut down Windows, and start Windows again.

If you are shutting down the computer, do not turn off the computer until a message appears telling you that it is safe to do so. Newer computers are generally set to automatically shut off once the **Turn Off** command is complete. Shutting off a computer before Windows has completed the shut down process may cause files to be corrupted and result in Windows displaying a message when you next turn on the computer indicating the machine was not properly shut down.

Depending on the Power Options scheme and configuration of your computer, your computer may also be able to go into *Standby* mode. In Standby mode, the monitor and hard disk turn off after a set interval of time as specified in the power options. If a power failure should occur, you will lose any unsaved information. To return back to normal mode, Standby mode can be turned off generally by moving the mouse or pressing a key on the keyboard.

▶ You can also switch between the Hibernate and Standby mode by pressing the **(Shift)** key.

Standby is generally used when you want to leave your computer on but will not be using it for a length of time (e.g., you're working on some letters but need to attend a training seminar that is three hours in length). Hibernation modes are generally used on laptops where portability is a requirement.

 **Exercise**

- Click on the **Start** button, and click **Shut Down**.
- Click the down arrow for the **What do you want the computer to do** field and then click **Restart**.
- Once the computer has been restarted, log in with the your user account and password.
- Click on the **Start** button, and click on **Shut Down**.
- Click the down arrow for the **What do you want the computer to do** field and then click **Shut down**.

The following steps will demonstrate how to use the **Stand by** feature. Please check with your instructor to verify the feature is available.

- 6 Click on the **Start** button, and click on **Shut Down**.
- 7 Click on the down arrow for the **What do you want the computer to do** field and click on **Stand by**.

The screen should turn off shortly once the power has been set to low. You will need to press the power button on your computer to turn off the Standby feature.

- 8 Press the button to turn the power back on for the computer.
- 9 Press **Ctrl**+**Alt**+**Delete** to log back onto the computer.
- 10 Enter your login id and password accordingly.

The computer should display the desktop.

➤ The following exercise is for non-networked Windows XP users.



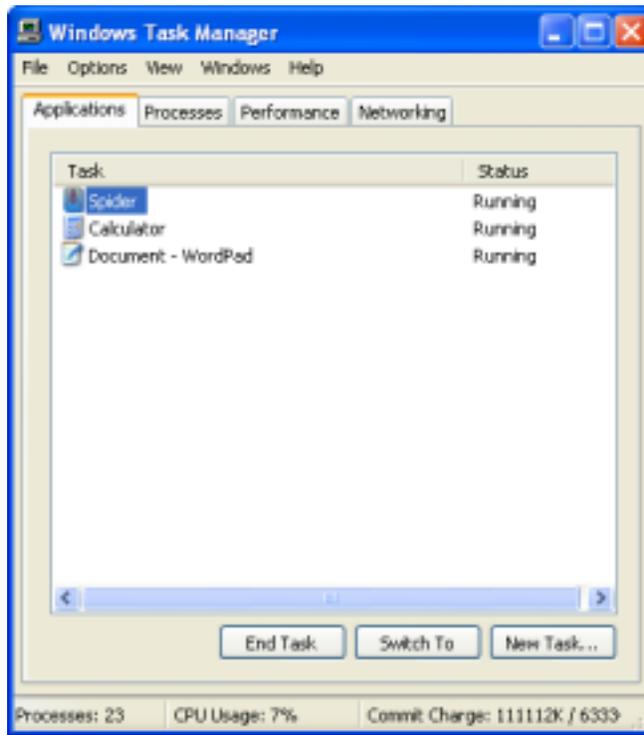
### Practice Exercise

- 1 On the **Start** menu, select **Log Off**. Select **Switch User**.  
You may need to check with the instructor to see which user to select.
- 2 Select the new user account to switch to.
- 3 If required, enter the password field and then click the  button.  
You will now be logged on as a different account. Now log off and return to the previous user account.
- 4 In the **Start** menu, select **Log Off**. Select **Switch User**.
- 5 Select the previous user account, enter the password (if necessary), and then click the  button.  
You are now back in the original user account.

## Restarting the Computer



On occasion you may find that the computer seems to be frozen and not responding to a request made. This generally requires you to reboot or restart in order to reset the computer. When you use the **Ctrl**+**Alt**+**Delete** combination within Windows, the Task Manager window can be displayed with information on the status of the application programs you may have active.



**Applications** Displays the programs that are open and running on your computer.

**Processes** Displays information on programs running such as display information on the CPU and memory usage.

**Performance** Displays a dynamic overview of your computer's performance, using graphs to show CPU and memory usage.

▶ **IMPORTANT:** Do not end any processes unless you are very familiar with the service, subsystem or executable program that you want to terminate. If you end a system service, it may cause some part of the operating system not to function properly.

You can use Task Manager to switch to a program, start a program or to end a “*problem*” program safely that has stopped responding. The Windows Task Manager is an advanced application and the other tabs in this feature should only be used by an experienced user or a Network Administrator.

If the Task Manager does not respond or allow you to close down the applications appropriately, you will need to press the **(Ctrl)+(Alt)+(Delete)** key combination again in order to restart the computer. If you can activate the **Start** menu, you can also use the **Restart** option from the **Shut Down** command.

### Exercise

- 1 Open WordPad.
- 2 Open Calculator.
- 3 Open Solitaire from the All Programs, Games menu.
- 4 Right-click on a blank area of the taskbar and select **Task Manager**.
- 5 Ensure the **Applications** tab is selected.

If a program has stopped responding, it will be listed in the **Applications** tab with the status *Not Responding*. To end the non-responding program, select the program and click **End Task**. The “hung” or crashed program will display a dialog box confirming with you that the program has stopped responding. By pressing **End Task** again, the non-responding program will be closed, and you can continue working with your other applications or try and rerun the program again.

- 6 From the list of tasks running, select the **WordPad** program and click the **Switch To** button. WordPad now becomes the active window.
- 7 Select the **Solitaire** program and click the **End Task** button.  
This will close the program.
- 8 Select the **Calculator** and click the **End Task** button.  
This will close the Calculator.
- 9 Select the **WordPad** program and click the **End Task** button.  
This will close the WordPad program.
- 10 Close from the Task Manager.
- 11 Close any other open programs.

 The following exercise is for non-networked Windows XP users.



### Practice Exercise

- 1 Click on the **Start** button, and click **Turn Off Computer**.
- 2 Click the  button to restart the computer.
- 3 When the computer has restarted, select the user account and enter the correct password.
- 4 Click on the **Start** button, and click on **Turn Off Computer**.
- 5 Click the  button to shut down the computer.

The computer should automatically power down and turn off. If the computer does not automatically shut down, then manually press the power button to turn off the computer.

### Summary

In this lesson you looked at the different ways you can exit Windows. You should now be familiar with the following:

- Why you need to log off or shut down
- How and why to put the computer in Standby mode
- How to shut down properly
- Restarting the computer

## Review Questions

1. Why is it important to log off or shut down the computer properly?
2. What's the difference between logging off and shutting down a system?
3. Hibernate mode means your system will:
  - a. Power down or turn off after a specified interval of time
  - b. Shut down completely and restart automatically when you next start the computer
  - c. Save the current state of the desktop to the hard drive and power down currently, and then reinstate where you were prior to going into this mode when started again
  - d. Log your user id off this system so you can switch to another user
4. Standby mode means your system will:
  - a. Power down or turn off after a specified interval of time
  - b. Shut down completely and restart automatically when you next start the computer
  - c. Saves the current state of the desktop to the hard drive and power down currently, and then reinstate where you were prior to going into this mode
  - d. Log your user id off this system so you can switch to another user
5. How can you reactivate your system if it has gone into Standby mode?
  - a. Press the Power button
  - b. Move the mouse or keyboard
  - c. Press the Reset button
  - d. Either a or c
  - e. All of the above
6. When would you use Standby versus Hibernation mode?
7. Using the Log Off command allows another user to have access to the same files and programs on the system.
  - a. True
  - b. False
8. When would you use the Task Manager?
9. How can you activate the Task Manager?
  - a. Press **Ctrl**+**Alt**+**Delete**, then select Task Manager
  - b. Select the Restart option from the Start, Shut Down command
  - c. Select Restart from the All Programs menu
  - d. Either a or b
10. You can use the End Task button in the Task Manager to end a program that isn't responding.
  - a. True
  - b. False

## Lesson 5: Getting Help

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at how to find and access help for Windows, using the online options available. On successful completion, you will be able to:

- Access online help
- Understand the Help screens
- Mark a help topic in the Favorites folder
- Use the index to find specific topics
- Access Help from within a dialog box
- Check the history of help topics

### Using Windows Help and Support



Windows XP provides an extensive HTML (Hypertext Markup Language) online Help system to assist you. Instead of referencing information in a manual, simply use the online Help system to locate the answer to your question. Depending on the topic you select, the Help program may display step-by-step procedures, definitions for terms or may offer hypertext links to other related topics. Also, Web Help is available for additional help and online support via the Internet.

The Help Viewer provides you with many navigation tools: **Index**, **Search** and **Favorites**. These tools can be used to navigate within the Help program to quickly find information.

There are a number of ways to activate Help:

- select **Help and Support** from the **Start** menu
- from within an application program, select **Help** from the menu bar
- press **F1**
- click the **(Help)** button in any dialog box, if available

On the taskbar, Windows XP help will be shown as .

### Looking at the Help Screen

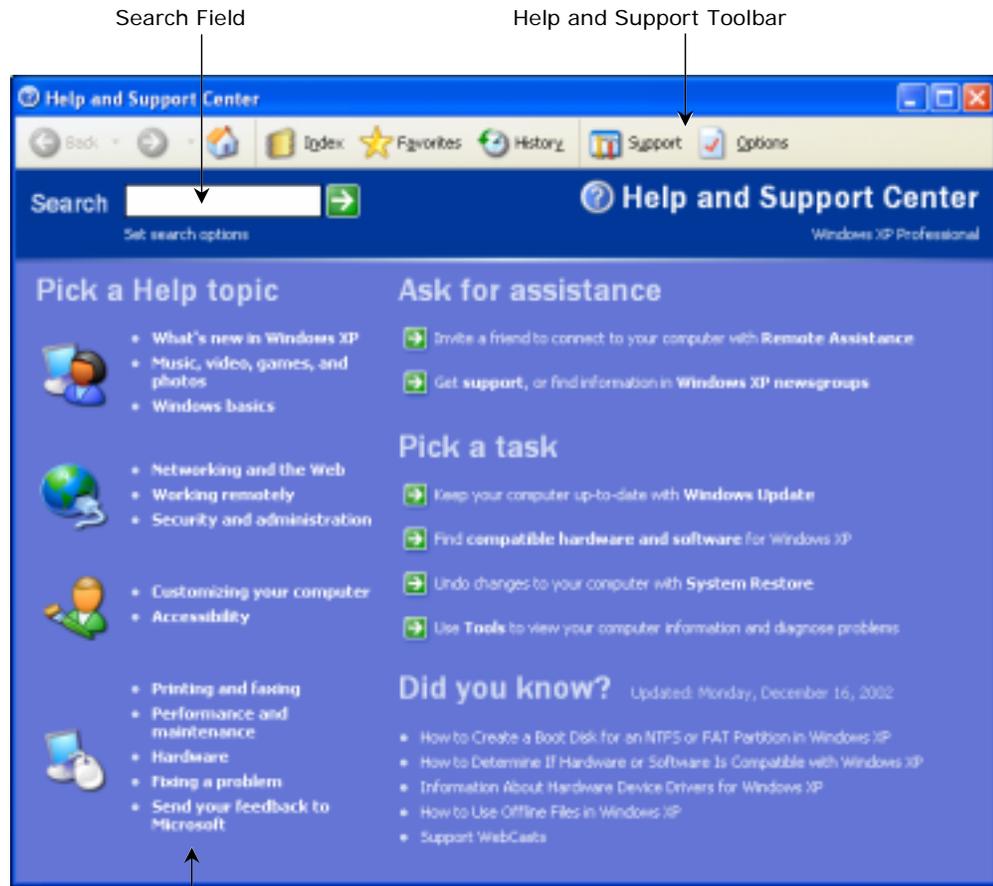
You can select from several different choices in the online Help and Support screen. If your question remains unanswered you can also type the contents of what you are looking for in the Search box. The results will be a collection of information from several different sources: the online Microsoft Knowledge base, Full-text Search Matches, or Suggested Topics.



#### Exercise

- 1 Click the **Start** button.
- 2 Select **Help and Support**.

The Help and Support Viewer will be displayed.



Search Field

Help and Support Toolbar

Suggested Help and Support Topics



Split Bar

This command displays the previous help topic.

This command will only be available once you used the Back button. It displays the next help topic.

**(Go to Help and Support home page)**

Clicking on this button will bring you to the Help and Support Home page.

Index

The Index provides a fast, easy way to find topics and resources.

Favorites

You can save your search results to the favorites list, as well as add topics and any other pages to make them easy to locate in the future.

History

This button will expand a preview pane allowing you to choose from other topics that you've viewed this session.

Support

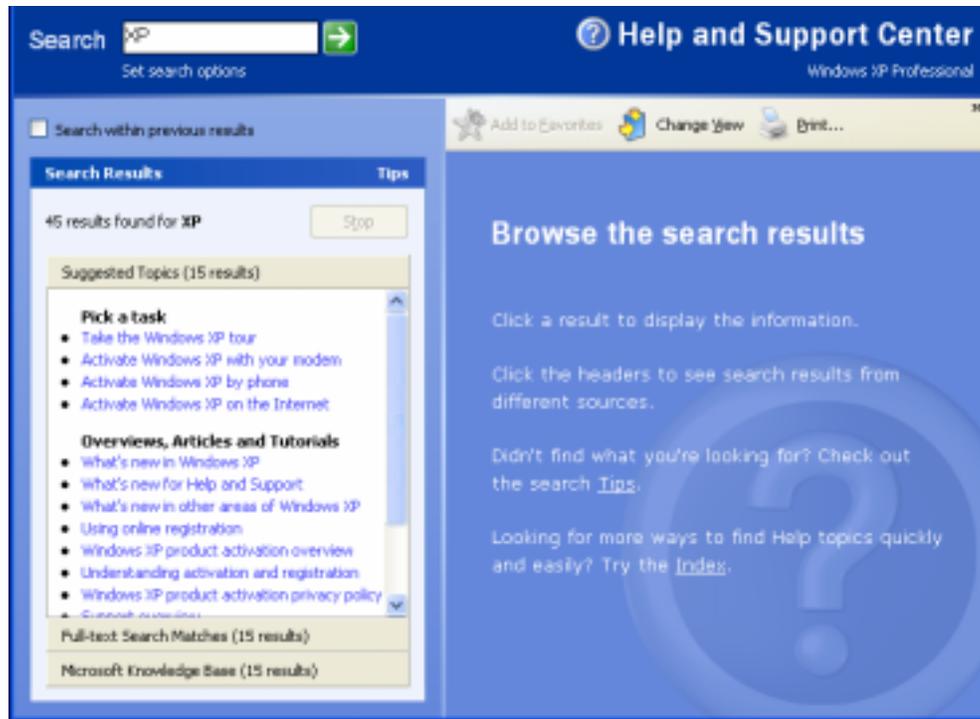
Providing you have Internet access, this command helps you get online support with remote assistance or contact a support professional.

Options

Change Help and Support options, set search options and install and share Windows Help.

This is the bar between the Help navigation pane and the Topic pane. When you place the mouse over this bar, it becomes a double-headed arrow (↔). You can then drag the bar to the left or right.

- 3 Type: **XP** in the **Search** field and click on the  button.



The search results will find approximately 45 results on the word *XP*. Notice Windows breaks it down by categories, to help easily identify which area you may want to go to for more assistance.

- 4 In the Suggested Topics list, take note of the topics found.
- 5 Click on **What's new in Windows XP**.



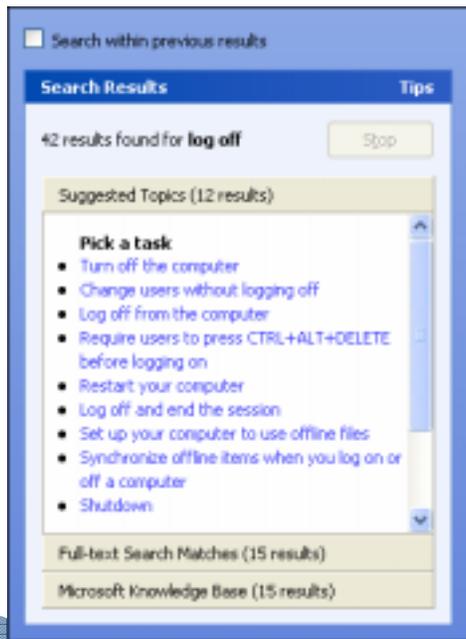
The information should appear in the window pane at the right.

- 6 Click on **What's new for Help and Support** in the Suggested Topics list to display the help topic in the right pane.

- 7 In the right pane, click the  button next to the **Tours and Articles** topic to expand the topic.  
The  button turned to a  button when you clicked on it. The  button means to expand (open) and the  button means to collapse (close). Notice how additional links are shown with underlined text; any links that have a  symbol next to the underlined text generally will start a program. In this case, it would start up a program that will provide you with a tour of Windows.
- 8 Click the  button to collapse the **Tours and Articles** topic.
- 9 Click the  button next to **Online Help** to display the associated help information, and then click the  button when you have finished reading the help information.
- 10 Click on the  button to close the Help and Support window.

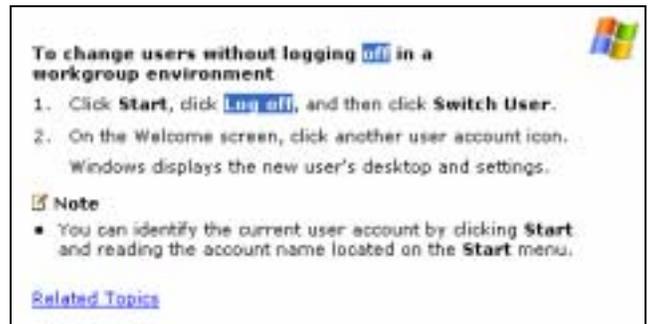
 **Practice Exercise**

- 1 Click the **Start** button.
- 2 Select **Help and Support**.
- 3 In the **Search** field, type: **log off**



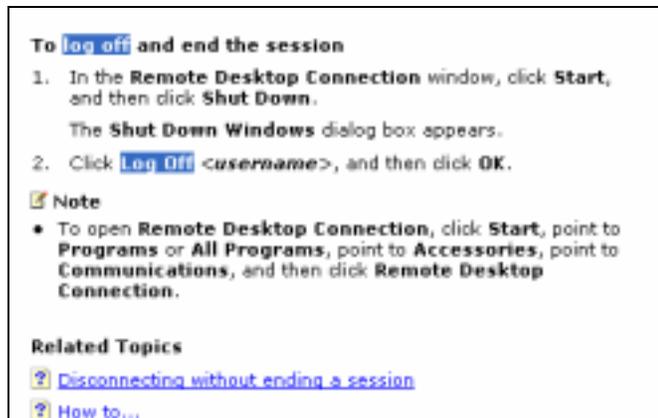
- 4 In the Suggested Topics pane, click on the **Change users without logging off** item in the list.

The information should appear in the right pane. When using **Search** to locate information, the keyword(s) may appear highlighted in the Topic pane. If keywords are not highlighted, click the **Options** button, select **Set search options**, select **Turn on search highlight**, and then reselect the topic.

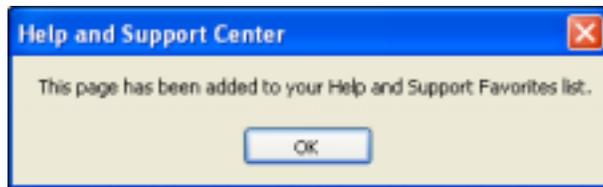


- 5 Click on several different topics of your choice until you feel more comfortable with the Help and Support program.

- 6 Click on **Log off and end the session** to display the information in the right pane.



- 7 Click on the **Disconnecting without ending a session** link.
- 8 Click on the **Add to Favorites** button to save the Help topic for viewing at a later date.



- 9 Click the **OK** button to acknowledge.
- 10 When you have finished reading the description, click the **Back** button to return to the previous help topic.
- 11 Now click the **Forward** button to return to the previous screen.
- 12 Click on the **How To** link in the Related Topics area.
- 13 When you have finished reading the *How to* contents, click in the **Search** field and highlight the text in there.
- To highlight text, either place the mouse insertion pointer on the left or the right of the text and hold down the left mouse button and drag over the text.
  - You can also triple click the left mouse in fast succession. That will cause everything in the **Search** field to become highlighted.
- 14 In the **Search** field, type: **mouse** and then click the  button.
- 15 Under **Pick a task**, select the **Change the number of mouse clicks required to open items** topic.
- 16 Click on the **Add to Favorites** button to save the help topic so it is easier to find at a later date.
- 17 Close the Help and Support window.

## Using Favorites

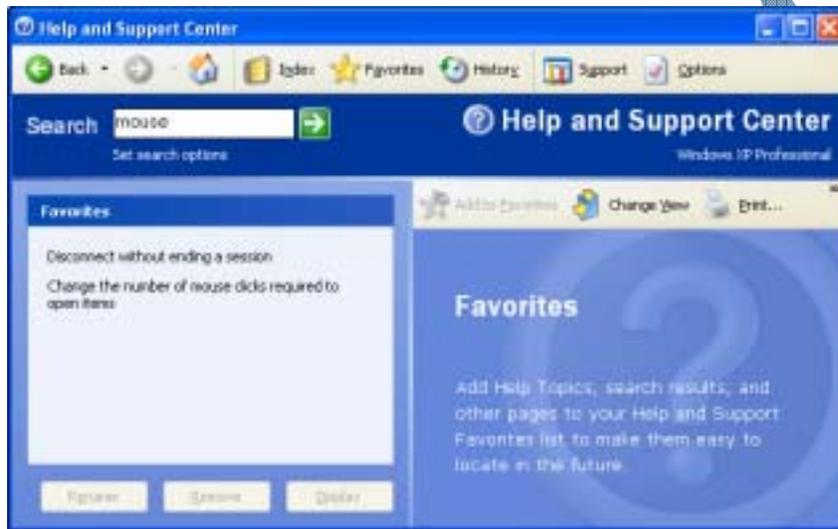
*Favorites* allows you to save specific help topics you have researched and come back at any time to display items that have been stored in the Help and Support Favorites list. Using the analogy of a book, if you want to mark a specific page for reference, you would use a bookmark so that you could easily find the page later. By adding a favorite topic, it allows you to quickly access those topics that you refer to on a regular basis.

Help topics that you add will be displayed in the Favorites list.



### Exercise

- 1 Click the **Start** button.
- 2 Select **Help and Support**.
- 3 Click the **Favorites** button on the toolbar.



- 4 Double-click on **Disconnect without ending a session**. Your saved contents on that topic will be displayed in the right pane.



When to double-click and when to single-click? If the item is underlined, you only need to click once; if the item is not underlined, then you will need to double-click on that item to access it.

- 5 Double-click on **Change the number of mouse clicks required to open items** in your Favorites list in the left pane. Once again, the information will show up in the right pane.

You will now delete your favorites from the Favorites list.

- 6 Ensure that your Favorites list is open.
- 7 Click on the **Disconnect without ending a session** item in the list.
- 8 Click on the **Remove** button at the bottom of the window.

Notice that this topic has been deleted from the Favorites list.

- 9 Click on the next saved favorite, **Change the number of mouse clicks required to open items**.

- 10 Click on the **Remove** button at the bottom of the window.

There should be no more entries saved in your Favorites list.

- 11 Close the Help and Support window.



### Practice Exercise

- 1 Click the **Start** button.
- 2 Select **Help and Support**.
- 3 In the Search field, type: *Windows XP*
- 4 Under **Suggested Topics – Pick a task**, scroll down the list until you find the **What's new in Windows XP** topic, and click on it.  
  
Notice that when you move your mouse over that item it becomes underlined, meaning that only a single-click is required to open it.
- 5 Click the **Add to Favorites** button to add this help topic to the Favorites list.
- 6 Click **OK** for the confirmation dialog box.
- 7 Close the Help and Support window.
- 8 Click the **Start** button.
- 9 Select **Help and Support**.
- 10 Click the **Favorites** button on the toolbar.
- 11 Double-click on **What's new in Windows XP** to view the contents.
- 12 Ensure that the **What's new in Windows XP** topic is still selected and click the **Remove** button at the bottom of the window.  
  
The Favorites list should now be empty.
- 13 Close the Help and Support window.

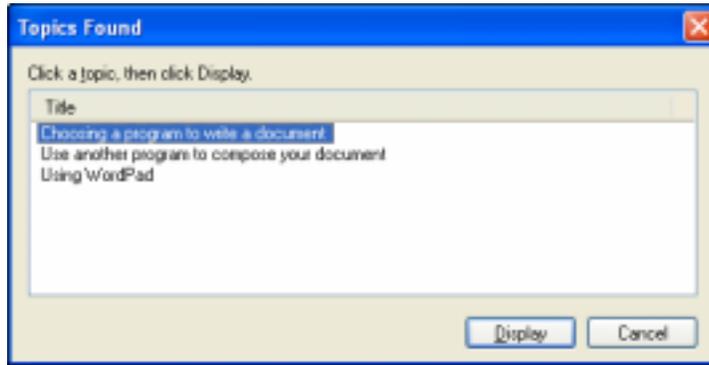
### Using the Index

The **Index** tab is similar to using the index at the back of a book. Like an index in a book, keywords will be listed with symbols first, followed by numbers, and then text in alphabetical order. A topic may have several subtopics listed.



### Exercise

- 1 Click the **Start** button.
- 2 Select **Help and Support**.
- 3 Click the **Index** button.
- 4 Click in the text box, type: *WordPad* and then click the **Display** button at the bottom of the window.



- From the list of topics found, select **Using WordPad** and click on **Display**.



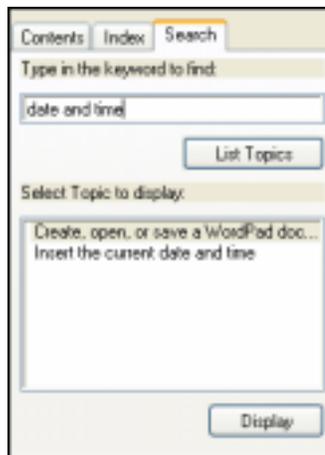
- Click the hyperlink in the right pane to open the WordPad program.
- In the WordPad program, press **(F1)** to display the WordPad Help window.
- If required, click the **Show** button to display the navigation pane.



- In the WordPad Help window, select the **Search** tab.



- 10 Click in the text box, type the keywords: **date and time** and then press **Enter**.



- 11 Select the **Insert the current date and time** subtopic, then press **Enter**.
- 12 Close the WordPad Help window and close WordPad. Then close the Help and Support window.



### Practice Exercise

- 1 Click the **Start** button.
- 2 Select **Help and Support**.
- 3 Click the **Index** button.
- 4 Click in the blank text box and type the keyword: **WordPad**
- 5 Double-click the **WordPad** topic.
- 6 Double-click on the **Using WordPad** topic.
- 7 Click the hyperlink to open the WordPad program.
- 8 In the WordPad program, select the **Help** menu, then **Help Topics**.
- 9 If required, click the **Show** button to display the navigation pane. In the WordPad Help window, select the **Index** tab.

- 10 Click in the blank text box, type the keyword: **printing** and then press **Enter**.
- 11 Double-click the **Print a WordPad document** subtopic.
- 12 Select the **Options** button and select **Print**.
- 13 In the Print dialog box, click the **Print** button.
- 14 Close the WordPad Help window and close WordPad.
- 15 Close the Help and Support window.

## Getting Help in a Dialog Box

Content sensitive help is available in most dialog boxes. A description of the various features will be displayed so that you can choose accordingly when making selections for the different options or commands. When you activate the help mode, you will see the mouse cursor change to . You can then click on an option in order to display help for that option. In most cases, this may be a small box that appears overtop the option.



### Exercise

- 1 Click the **Start** button.
- 2 Select **Help and Support**.
- 3 Click the **Index** button.
- 4 Click the **Print** button in the right pane.
- 5 Click the  button in the top right corner of the dialog box.  
Notice the  symbol that now appears as the mouse cursor.
- 6 Click on **Collate** to display a banner of the description of this feature.

If you have selected more than one copy, specifies whether you want the copies to be collated.

- 7 Click on the help description to close the banner.
- 8 Close the Print and the Help and Support windows.



### Practice Exercise

- 1 Open the *My Documents* folder on the desktop.
- 2 Select **Tools**, then **Folder Options**.
- 3 Ensure the **General** tab is selected, and then click the  button.
- 4 Click on the **Restore Defaults** button to display a help banner.
- 5 Press **Esc** to close the help banner.
- 6 Practice using the  button to obtain a description for some of the other commands in this dialog box.
- 7 When you have finished, click the **Cancel** button to close the Folder Options dialog box.
- 8 Close the My Documents window.

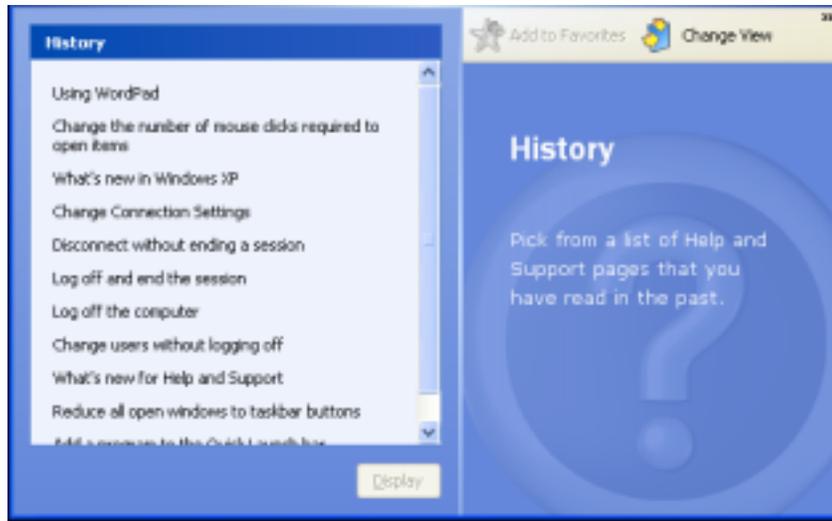
## Checking the History

The Help and Support program will give you a list of items that you have read in the past. The History is similar to the Favorites; however, the History list keeps track of everything that has been read.

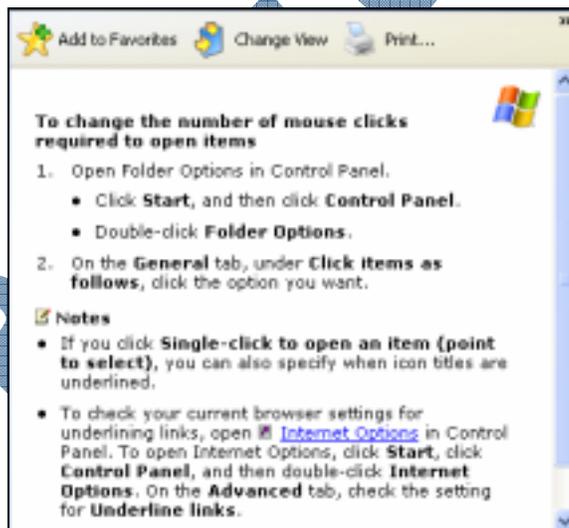


### Exercise

- 1 Click the **Start** button.
- 2 Select **Help and Support**.
- 3 Click the **History** button.



- 4 Scroll through the list and then select **Change the number of mouse clicks required to open items**. Click the **Display** button.



- 5 Click the **Back** button to return to the History list.
- 6 Double-click on **What's new in Windows XP**.
- 7 Close the Help and Support window.

## Getting Additional Technical Support

If you cannot find help on a specific topic online, a number of options available for technical support are available:

Contact Microsoft. A list of numbers and ways to contact them are available in the **Help** menu from any Microsoft application program, or use the online help option to find technical support information.

Go to a computer store which provides technical support. This does not have to be the store where you purchased the computer. Technicians here generally charge an hourly fee for repairs and/or training.

Hire a consultant who can come to your site to either fix the computer or provide you with training or assistance on the problem. Consultants will also charge you an hourly fee and may also include travel time in their invoice.

Take additional courses on Windows where you can learn more advanced topics or troubleshooting techniques. Check your Yellow Pages or go online to locate courses offered in your area. Pricing for courses will vary, depending on the training facility where the course is being offered.



When you require further technical support, you may be asked which version of Windows you are using. If you aren't sure or don't know, use the **Start** menu to confirm the version (shown along the left side); Windows XP does not show the version but will show the **All Programs** menu near the bottom of the menu. It is important to tell technical support which version of Windows you are using so they can provide you with the correct support for that version.

### Summary

In this lesson you looked at how to find and access help for Windows, using the online options available. You should now be able to:

- Access online help
- Understand the Help screens
- Mark a help topic in the Favorites folder
- Use the index to find specific topics
- Access Help from within a dialog box
- Check the history of help topics

### Review Questions

1. The only way to get help within Windows is to take a course on Windows.
  - a. True
  - b. False
2. How can you activate the Help feature?
  - a. Select Help from the Start menu
  - b. Click on the Help menu in an application program
  - c. Click on a Help icon/button if displayed on the screen
  - d. Press **F1**
  - e. All of the above
3. The Help and Support screen provides you with a field where you can enter the search criteria.
  - a. True
  - b. False

4. Which button would you use to go quickly back to the main Help and Support screen?



5. Once you've entered a search criteria, Windows will display a list of the total number of matching results.
- a. True                      b. False
6. What do the ☒ and ☐ symbols mean?
7. You could use the Favorites tab to mark those help topics you use a lot.
- a. True                      b. False
8. How does the Index tab work?
- a. Similar to an index at the back of a book
- b. Similar to a table of contents at the front of a book
- c. It's a separate window where you can search for help topics.
- d. It's a separate help feature that can be activated from the Start menu.
9. What does this  symbol mean?
10. The History keeps track of everything that has been read in the Help mode.
- a. True                      b. False

FOR EVALUATION ONLY

# Lesson 6: Running Application Programs

## Objectives

Suggested Timing: 1 Hour

In this lesson you will look at how to start an application program and look at some common elements of an application program for Windows. On successful completion, you will be familiar with the following:

- How to start an application program
- How to start an application using the Run command
- Common elements found in an application program for Windows
- General information regarding managing files
- How to access a document from the most recently used documents list
- How to move between open application programs

## Starting Application Programs



The most common method for running or starting a program is to select the program from the **All Programs** menu. Another way to start a program is to select the shortcut for the application program on the desktop or the Quick Launch toolbar, if available. Any programs that have been installed on the computer will automatically be placed in the **All Programs** menu. Not all applications will create a shortcut on the desktop or in the Quick Launch toolbar for you.



An application program might also create an option in the Startup folder during the time of installation, which means it will automatically run each time you start Windows, e.g., MSN Messenger, QuickTime, Microsoft Outlook, the antivirus program, etc. These items will appear in the Task Notification area of the taskbar.



Once an application program has been started, you can then use it as needed. During the time the program is active, a button will appear in the taskbar as a reminder that you have the application open. When you no longer need to use the program, be sure to close it properly.

▶ To keep a submenu from the **Start** menu on the screen, hold the **(Shift)** key down and then click on the other applications. This can be useful when you need to start more than one program from a specific menu.

### Exercise

- 1 Click the **Start** button, then **All Programs**.
- 2 Select **Accessories** and click on the **WordPad** program.
- 3 To quit the program, click the **✕** button.

### Practice Exercise

- 1 Click the **Start** button, then **All Programs**.
- 2 Select **Accessories** and click on the **Paint** program.
- 3 To quit the program, press **(Alt)+(F4)**.
- 4 Click the **Start** button, then **All Programs**.
- 5 Select **Accessories** and click on the **Calculator** program.
- 6 Right-click on the **Calculator** button in the taskbar and then close it.

## Using the Run Command

Occasionally you may be required to start a program that was not or does not need to be installed on your system, or is not in the **Start** menu. In circumstances such as this, you will need to access the program using the **Run** command in the **Start** menu. You will need to know what the command is before it can be used with this command. For example, if you want to install a program from a CD that does not start up automatically when it is inserted into the drive, the command to run the installation will most likely be *setup.exe*. Alternatively, if you need to use the traditional DOS prompt, you need to type *command* as the program file to run or execute. Most of the commands to run an application program will have the *exe* file type.

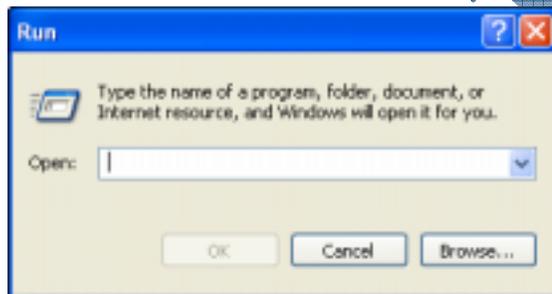
➤ More details and information on how to determine a file type or view the files for a CD or other device can be found in Lessons 7 and 8, dealing with File Management.

Whenever possible, use the **Start** menu to start a command, or activate it from the desktop if an icon exists. Whenever a software program is installed on your system, the command to run that program will be automatically installed on the **Start, All Programs** menu. The **Run** command, in most cases, will be used when you need to run a program from another drive or to start some troubleshooting commands (e.g., msconfig, sysedit, regedit, etc.) that are beyond the scope of this course.



### Exercise

- 1 Click on the **Start** button.
- 2 Click on the **Run** command in the **Start** menu.

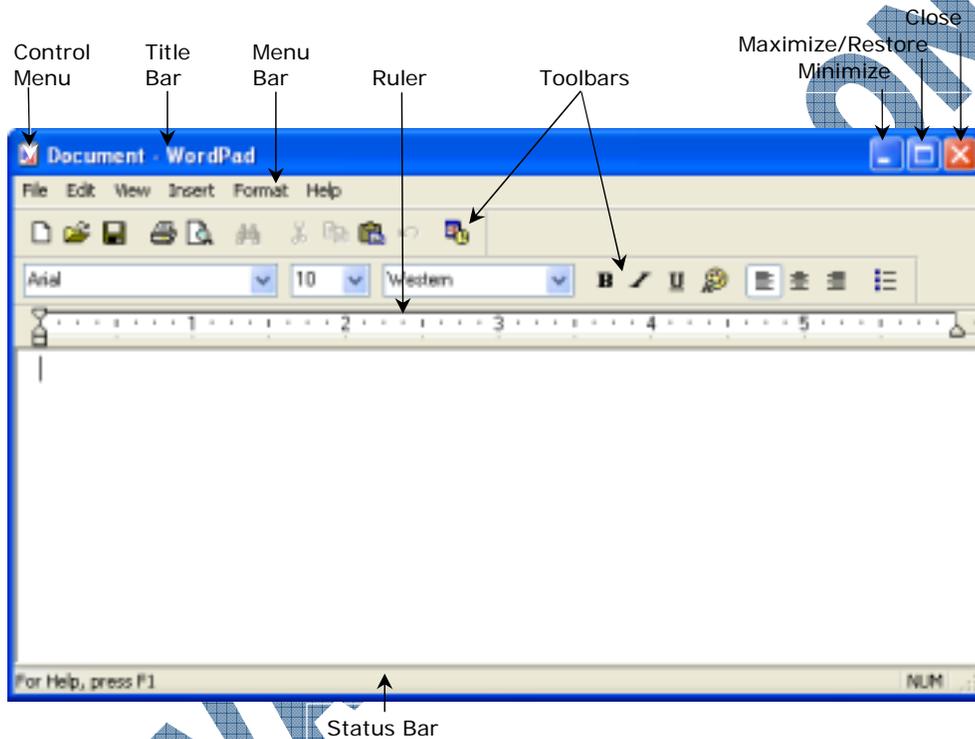


- 3 Type: **calc** and click **OK**.  
The calculator should now be open on the screen.
- 4 Close the calculator.
- 5 Click on **Start, Run** once more.
- 6 Type: **mspaint** for the command and press **Enter**.  
Notice how the Paint program is now open on the screen.
- 7 Close the Paint program.

## Working with a Typical Program

This unit covers the fundamental skills required to work with programs in Windows. All of the Microsoft programs have the same “look and feel”, thereby making it easier to learn many different programs because the standard features are all placed in the same positions.

An analogy is how cars and trucks are designed similarly; the driver’s position is at the front left of the vehicle (in North America), and all driver’s controls — such as the steering wheel, accelerator, brake, clutch pedal, etc. — are placed in specific positions. This greatly reduces the training time for a person to learn how to operate a different vehicle. This standardization also allows a person to operate different vehicles throughout the day with minimal confusion — such as a semi-tractor trailer driver switching back to his personal vehicle at the end of his shift — a crucial feature in emergency situations.



The WordPad window shows the standard features available in most programs:

**Title Bar** Indicates the name of the document and the program that is open (e.g., *Business Plan - WordPad*). If you have more than one window open on the screen, the title bar that is a brighter color or intensity is the active window.

**Menu Bar** Located below the title bar, this bar contains various commands for the program. For example, the **File** menu contains commands that allow you to open, save or print a file. Each of the menu items displays a drop-down menu with a list of commands.

**Toolbar** A toolbar contains buttons or icons that allow you to quickly perform common tasks by using the mouse. For example, the  (**Print**) button allows you to print the document simply by clicking on the icon. The toolbar buttons will change with each different program that you use. To see the name of the button on the toolbar, position the mouse pointer over the icon on the toolbar. After a couple of seconds, a banner will open up with the name of the icon.

➤ Descriptions of the buttons in the WordPad toolbars can be found in the Productivity Tools Appendix.

**Status Bar** Displays information for the current document or program. For example, if you were working with a Microsoft Word document, the Status bar would display the page number you were currently viewing. The Status bar may not be available in all programs or windows.

### Working with Menus

The menu bar contains various commands that are specific to the program you are running. Most programs will have similar menus such as **File**, **Edit**, **View** and **Help**. The other menu items will vary depending on the program. When working with menus, you can use the mouse or the keyboard to make selections.

When selecting commands from a menu, notice the following:

- A command is unavailable if it is shaded out (a lighter color).
- Some commands display a toolbar icon, such as , at the left. This means that there is a corresponding toolbar button available for this command. Whether it appears on a toolbar depends on how often it is used.
- Some menu commands display a keyboard shortcut, such as **Ctrl+C** at the right. This means you can press this keyboard shortcut to activate the command instead of using the menu equivalent or the toolbar button.
- If you see an ellipsis (...) after a command, it indicates that a dialog box will appear on the screen, prompting you for more information.
- If a menu command does not have any markings, the command will run when selected.
- Menu commands with a check mark indicate the feature is turned on or activated. This is a toggle command: click on the command to activate the feature, click again to deactivate or turn off the feature.

Edit	
Undo	Ctrl+Z
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Paste Special...	
Clear	Del
Select All	Ctrl+A
Find...	Ctrl+F
Find Next	F3
Replace...	Ctrl+H
Links...	
Object Properties	Alt+Enter
Object	

Menus and their commands can be activated in one of the following methods:

- Click on the menu command and then the appropriate command when the menu is displayed.
- Press **Alt** (or **F10**) and then the key for the underlined character in the menu command, e.g., press the **F** key for the File menu. When the menu is displayed, click on the key for the underlined character of the required command, e.g., press **S** for the Save command. Alternatively, you can use the **↑** and **↓** arrow keys to move between commands in the pull-down menu. When at a command with a submenu, you can use the **→** key to display the submenu (or press the **←** key to hide the submenu) and then move up and down as in the previous menu.

To exit the menu and its options, do one of the following:

- Click anywhere away from the menu.
- Press **Esc** to back up one menu at a time. When the menu command appears as a button in the menu bar, press **Esc** once more to deactivate the menu command.

 **Exercise**

- 1 Click the **Start** button, then **All Programs, Accessories, WordPad**.
- 2 Click the **View** menu to select it.  
Notice the drop-down menu listing several commands.

- 3 Move the mouse pointer to the **Edit** menu and notice the commands listed.

As you have worked within WordPad yet, the commands in this menu are mostly in gray. Once you begin working with text or select items, the commands will become available to you.

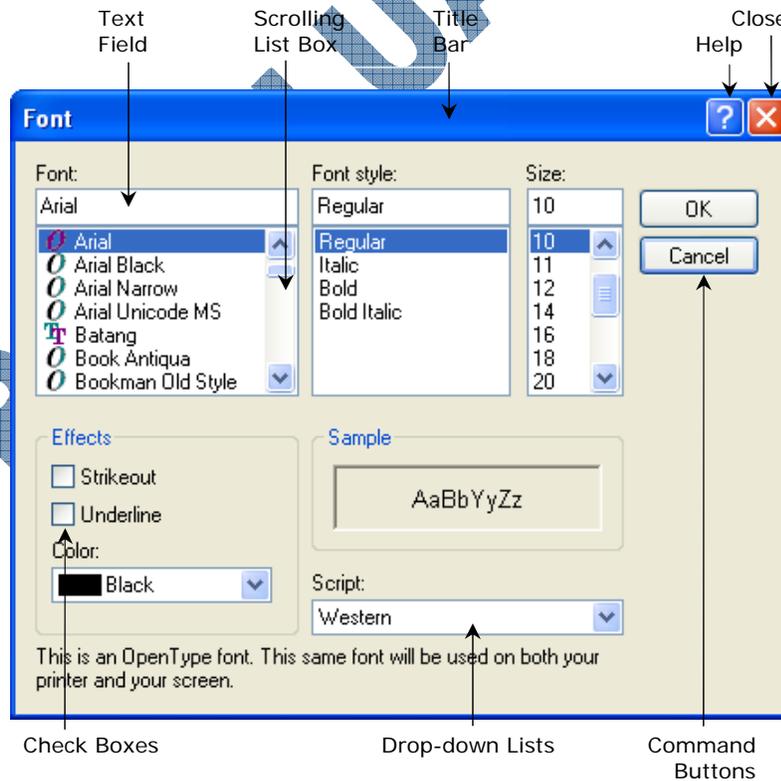
- 4 Click anywhere on the screen to exit from the list of commands on the menu bar.

 **Practice Exercise**

- 1 Ensure the WordPad program is open.
- 2 Press **(Alt)+F** to display the **File** menu.
- 3 Press the **(↑)** key or the **(↓)** key to move through the menu.
- 4 Press **(Esc)** once to close the menu, press **(Esc)** again to exit from the menu bar.

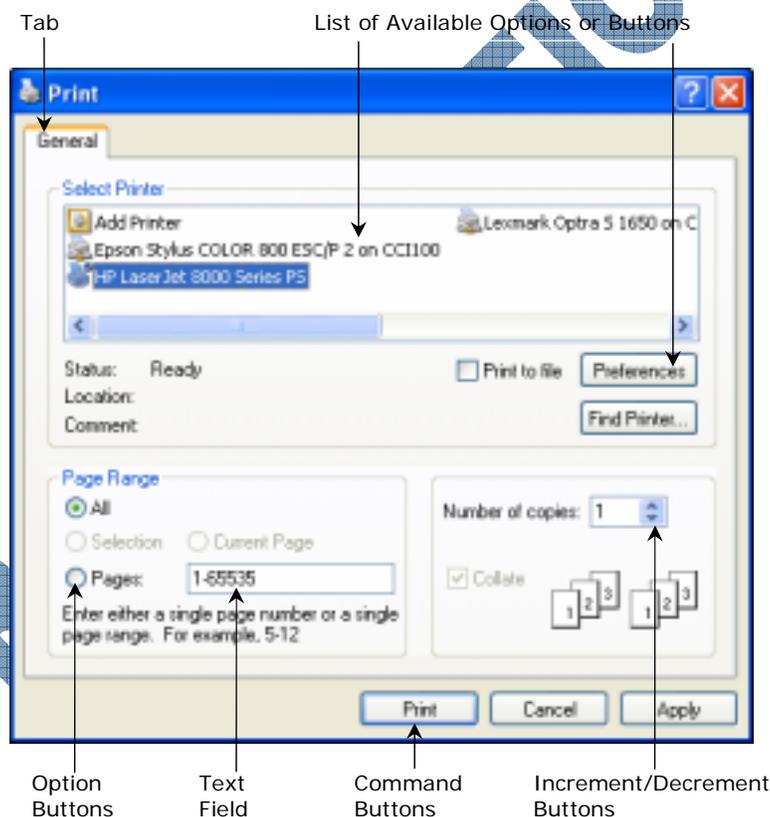
**Working with Dialog Boxes**

A dialog box is a window that contains additional features or commands for a specific action. Most users find it easier to use the mouse when navigating within a dialog box; however, the keyboard can also be used.



- Title Bar** Displays the name of the dialog box you are viewing as confirmation of the feature selected.
- Text Field** Click in the text field and type the desired information or select the required choice from the list box. If a scroll bar appears in the drop-down list, this indicates there are more items in the list. Use the scroll bars to view all of the items in the list.
- Scrolling List** Similar to a scroll bar, this list displays options available for this feature, e.g., font names, sizes, etc. Use the arrows at the top or bottom of the scroll bar to move between the list, or use the scroll area to move to a specific location in the list.
- Check Box** Certain features can be turned on and off by clicking in the check box. A check mark indicates the feature is turned on or activated. Depending on the command, you may be able to turn on multiple features, e.g., bold, italics, and outline effects for selected text.
- Drop-Down List** To select items from a drop-down list, click the down arrow button and then click on the required item from the displayed options.
- Command Buttons** To activate a command button, click on the desired button. The active command button will have a thicker line around the command.

Depending on the command or feature selected, the dialog box may also display different tabs with further options that can be selected for the command or feature.



FOR

- Tab** A dialog box may display more than one tab that will contain additional features and commands. Click on the tab for the information you wish to display.
- Option Buttons** Option buttons are also referred to as radio buttons. For an option set, you can only choose one item.
- Increment/Decrement Buttons** These buttons are also referred to as a spin button. To increase or decrease the value, click the up or down arrow. Alternatively, click in the text box field and type the value you wish to use.

To select items in a dialog box with the mouse, click on the command or item to be selected or viewed.

To select items in a dialog box using the keyboard, use the following keys:

- Press **Alt** and the key of the underlined character for that command to select it.
- Press **Tab** to move to the next feature, or **Shift+Tab** to move to the previous feature.
- Press **↓** to access a drop-down list once you have selected that command.
- Press **Spacebar** to turn a feature on or off. This is applicable to both option buttons and check boxes.
- When at a text field, either type the text for the feature directly in the text field, or use the **↑** or **↓** key to move within the list.
- To activate a command button, press **Tab** to move to the button and then press **Enter**.
- To exit the feature or the dialog box, press **Esc**.

The methods of accessing commands or menus can be used individually or combined. For example, you can click on the drop-down button for a list and then use the **↓** key to scroll through the options.



### Exercise

- 1 Ensure the WordPad program is open.
- 2 Type your name in the window at the location of the flashing cursor and then double-click on your name to select the word.
- 3 Select **Format, Font**.
- 4 In the **Font** area, scroll through the list or click in the text field and type: **Tim** to move quickly to the *Times New Roman* font in the list. Select **Times New Roman**.
- 5 In the **Effects** area, click in the **Underline** check box to turn on the feature.
- 6 In the **Color** area, click the  and click on a color from the drop-down list.
- 7 Click **OK**.
- 8 In WordPad, click in the blank space.

The selected text should now have the desired formatting features applied.

The Print dialog box will now be used to review additional terms.

- 9 Select **File, Print**.
- 10 In the **Page Range** section, select the **Pages** option.
- 11 In the **Pages** text field, type: **2**
- 12 In the **Number of copies** field, click the increment button to increase the number of copies to **3**.
- 13 Click the **Cancel** button to cancel any selections and close from the Print dialog box.



## Practice Exercise

- 1 Ensure the WordPad program is open.
- 2 Select **File, Print**.
- 3 To move between fields, press the **Tab** key to move forward or **(Shift)+Tab** to move backwards through the fields.
- 4 Press the **Tab** key to move to the **Print to file** check box and then press the **Spacebar** to turn the option on.
- 5 Press the **Spacebar** to turn the option off.
- 6 Press the **Tab** key to move the the **Number of copies** area.
- 7 Use the **(↑)** or **(↓)** keys to change the **Number of copies** to **4** and then back to **1**.
- 8 Press the **Tab** key to move to the **Cancel** button and then press **Enter**.

## Creating, Opening and Saving Files

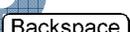
When working with files in an application program, the process will be very similar between programs. Windows has set up standards where the New, Open, or Save commands reside in the **File** menu and may also be found on a toolbar with icons similar to  (**New**),  (**Open**), or  (**Save**). The program may have set up shortcut keystrokes or a shortcut menu to activate the same commands.

The WordPad program will be used to demonstrate how to create, open, edit and save files. WordPad is a mini word processing program included as part of the Windows Professional software. It does not have the same flexibility and advanced features as a full word processing program like Microsoft Word. For example, it does not have a spell check feature; however, you can perform simple tasks such as creating, opening or editing documents.

If you haven't worked with a word processing program before, here are some helpful hints for entering text or moving around in the document:

**Word Wrap** When typing a long line of text, just keep typing as you approach the right margin area. The words will automatically wrap to the next line if word wrap is turned on.

The *insertion point* is the blinking vertical bar located in the top left corner of the window. It indicates where text will be entered when you begin to type. The I-beam () in the middle of the screen is the mouse pointer, which moves around the document as you move the mouse.

	Ends a paragraph and/or inserts a line between paragraphs.
	Moves the insertion point ½" to the right on a line.
	Inserts a space.
	Deletes a character to the left of the insertion point.
	Deletes a character to the right of the insertion point.
 / 	Moves the insertion point to the left or right.
 / 	Moves the insertion point a line up or down.
	Moves the insertion point to the beginning of the line.
	Moves the insertion point to the end of the line.
	Moves the insertion point to the beginning of the document.
	Moves the insertion point to the end of the document.

**Shift**+Arrow Selects text. Alternatively, click and drag with the mouse to select text. To select a word, double-click on the word.

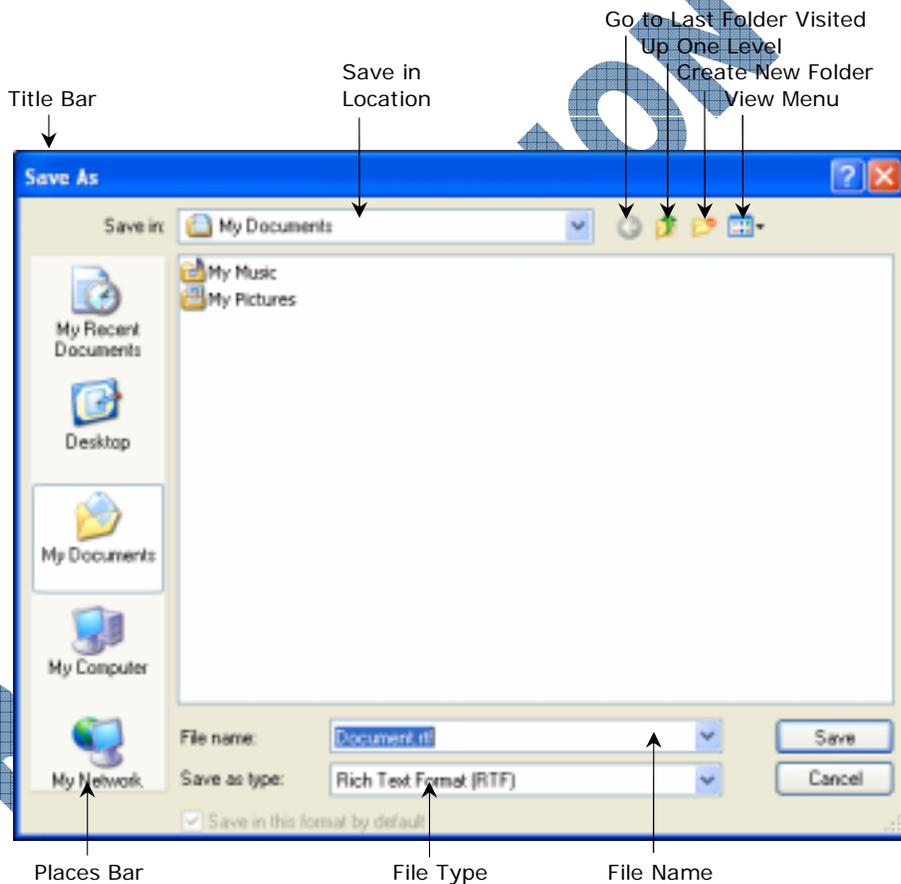
**Saving Files**

Most people will recommend that you save any changes you make to a new or existing file to ensure you have all the information for future use. You do not always have to save a file but you may want to train yourself to save everything so you have it available. Files can always be deleted later. The number of files you save will affect how you choose to handle file management on your computer (discussed further in Lessons 7 and 8).

The **Save As** command can be used to:

- save a new document
- save an existing document with a new name, or
- save an existing document to a different location

When you save a file for the first time, you will see the Save As dialog box:



The number of folders or documents that appear in the My Documents folder will vary, depending on what was installed or who else has used this computer.

- Title Bar** Displays the name of the dialog box being viewed.
- Save in** Shows the location where your file will be saved. Click on the drop-down list to choose another drive such as the 3½ Floppy (A:), Local Disk (C:), or network drive.
- Go to Last Folder Visited** This is available only if you have navigated through other folders or locations on your computer. You can then use this button to go back to where you started.

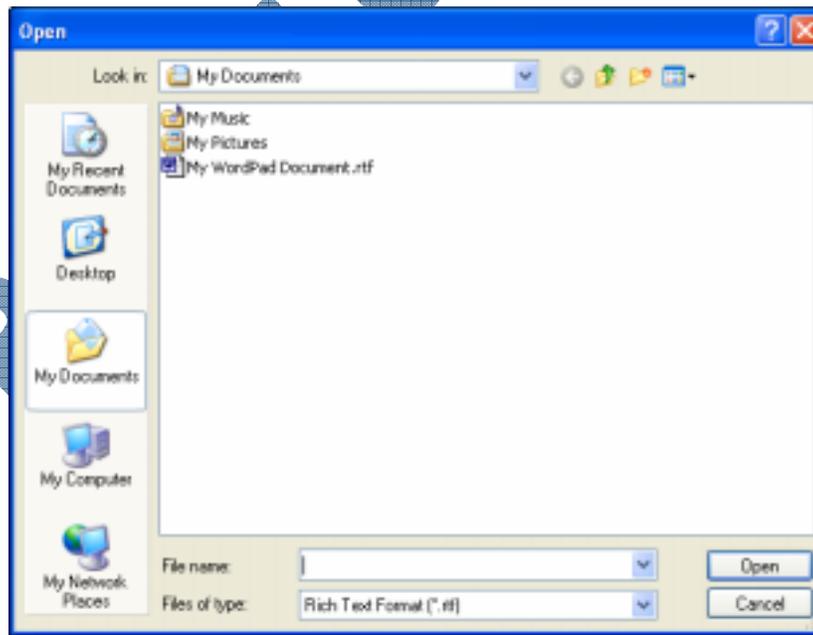
- Up One Level** Changes the folder location to the next higher level folder or drive.
- Create New Folder** Creates a new folder so that you can save your document into a specific location.
- View Menu** Changes the way the information is displayed. You may choose from Thumbnails, Tiles, Icons, List or Details.
- Places Bar** Click on one of these folders or places in the bar to go directly to this location to save your file.
- File name** Type a name for the file you are saving. A file name may contain up to 200 characters, including spaces. You cannot use the following symbols when naming files: \ / : \* ? " < > |
- Save as type** Specifies the type of file you are saving, such as .doc for a Word document or .txt for a text document, etc. You can select different file types or formats if you want to use this file in another program other than WordPad or Word.

### Opening Files

Files saved will be stored on the device of your choice. In most cases this will be your hard drive and most likely in the *My Documents* folder. Windows sets this up as a default area where you can always search first prior to moving to other folders that may be set up on your hard drive or another drive you can access (e.g., network, CD, etc.).

When you open another document in WordPad, the previous document will be closed. This may not always be the case when working with larger programs; many of them allow you to open multiple documents and work with each one, as needed.

Once the Open command has been activated, you will notice that this dialog box appears very similar to the Save command. As another standard, the Open and Save dialog boxes will share very similar information in order to maintain consistency for managing your files. Be sure to check the title bar of the dialog box to determine whether you can open or save the file.



## Creating New Files

Most application programs will open with a blank file for you to begin entering information. Some programs will display a window with the option to create a new file or to open an existing one. Some programs will allow you to create more than one new file at a time while others will require you to save and close the existing one prior to creating a new file. Limitations in the software will depend on the program type, size and flexibility, and/or the software vendor.



### Exercise

Data files have been supplied with this courseware and should have been installed prior to the beginning of this course. Check with your instructor as to where these files are located and then replace the default location as noted, or refer to Page viii in the Preface section of this courseware for details on how to obtain and access these files. The instructions in the Preface will place the data files into a folder called **IC3 Mod A Files** on the desktop.

- 1 Ensure the WordPad program is open.
- 2 Select **File, New**.
- 3 Select **Rich Text Document** and click **OK**. If you are prompted to save changes to the previous document, click **No**.
- 4 Type the following line of text: You can create, edit and format documents using the WordPad program. Documents created with WordPad can also be opened in Microsoft Word. ¶
- 5 Select **File, Save As**.

You can also click the  (**Save**) button on the toolbar or press **(Ctrl)+ (S)** to save a document.

- 6 In the **Save in** field, ensure the *My Documents* folder is selected. If applicable, check with your instructor for the drive and folder location of where your files should be saved.
- 7 In the **File name** field, ensure the default text is highlighted (selected) and then type: *My WordPad Document*

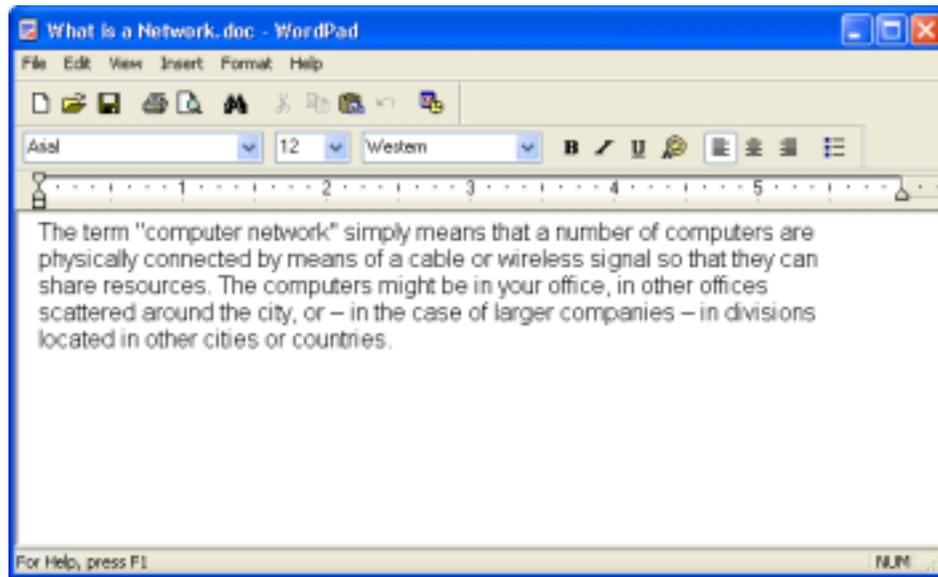
Any time Windows displays text in a highlighted box as shown in the **File name**, you can quickly replace the text with new text simply by typing in the new text. This highlighted box is similar to selecting text.

- 8 Click the **Save** button.

Notice that the new name of the document now appears in the title bar.

You will now open another document.

- 9 Click the  button.
- 10 Click on the down arrow in the **Look in** field, and navigate to the location of your data files folder.
- 11 Click the down arrow for the **Files of type** to display **All Documents (\*.\*)**. Click on the *What is a Network* file in the displayed list, and then click the **Open** button.



- 12 Position the insertion point at the end of the paragraph of text and press **Enter** twice. On the next new line, type your first name.
- 13 Select **File, Save As**.
- 14 In the **Save in** field, ensure the **My Documents** folder is selected.
- 15 In the **File name** field, change the file name to: **What is a Network Draft**
- 16 If required, change the Save as type to Rich Text Format.
- 17 Click the **Save** button.



### Practice Exercise

- 1 Ensure the WordPad program is open.
- 2 Click the  button on the toolbar, select **Rich Text Document**, and then click **OK**.
- 3 Type the following text. Press the **Tab** key to indent the first line. Press **Enter** at the end each paragraph.

Windows XP Professional comes with two “word processing” programs: WordPad and Notepad.

Each program has its strengths! Use WordPad if you want your document to contain formatting such as bold or italics. Notepad is a basic text editor and does not support any formatting or graphics.

You will now change the text flow so that it wraps to the ruler.

- 4 Click **View** in the menu bar and select **Options**. Select the **Rich Text** tab and select the option **Wrap to ruler**, click **OK**.
- 5 Click the  button on the toolbar.
- 6 In the **Save in** field, ensure *My Documents* folder is selected.
- 7 In the **File name** field, select the default name of *Document* and type: **Word Processing Programs**
- 8 Click the **Save** button.

Notice that the new name of the document now appears in the title bar.

- 9 Close WordPad.

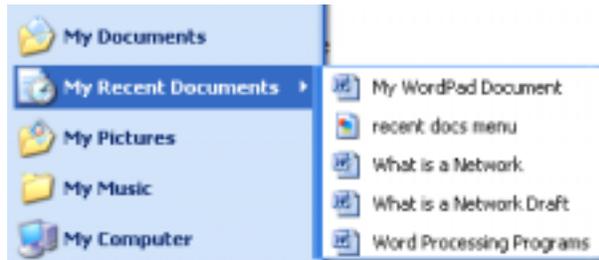
## Using the My Recent Documents Menu

This menu provides a *shortcut* or link to quickly access recently used documents or saved web pages. By selecting a document from this menu, you can open or print it from this menu instead of starting the program first and then opening it for printing. If you are working with saved web pages, you can e-mail a link to a web page that you have recently visited.

The My Recent Documents menu will show up to the last 15 documents or saved web pages recently accessed. If the file you wish to open or edit is not listed on the **My Recent Documents** menu, it can be opened from the appropriate program, from **My Computer**, or by using the **Search** command.

### Exercise

- 1 Click **Start**, then **My Recent Documents**.



- 2 Click on **My WordPad Document** to open the file.

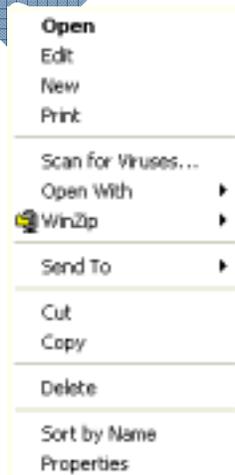
 If Microsoft Word is installed on the computer, the **My WordPad Document** will open in Microsoft Word; otherwise, the document will open in WordPad.

All documents listed in the My Recent Documents folder are shortcuts. By clicking on a shortcut, the computer activates the original, no matter where it is stored. A shortcut is like a safety net; if a shortcut is deleted, the original remains untouched. The My WordPad Document that you opened is still located in the My Documents folder. The My WordPad Document that you clicked on is a shortcut.

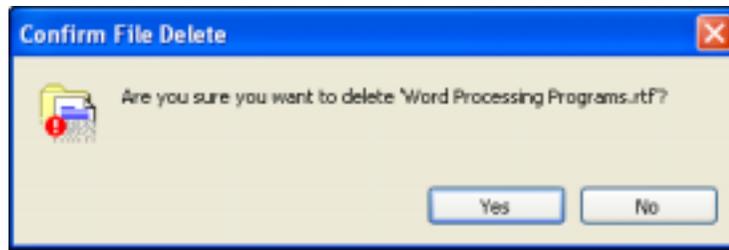
- 3 Close the **My WordPad Document** file and the program by selecting **File, Exit**.

### Practice Exercise

- 1 Click the **Start** button, then **My Recent Documents**.
- 2 Click the right mouse button on the **Word Processing Programs** document.



- 3 Click on **Delete**.



- 4 Click **Yes**.

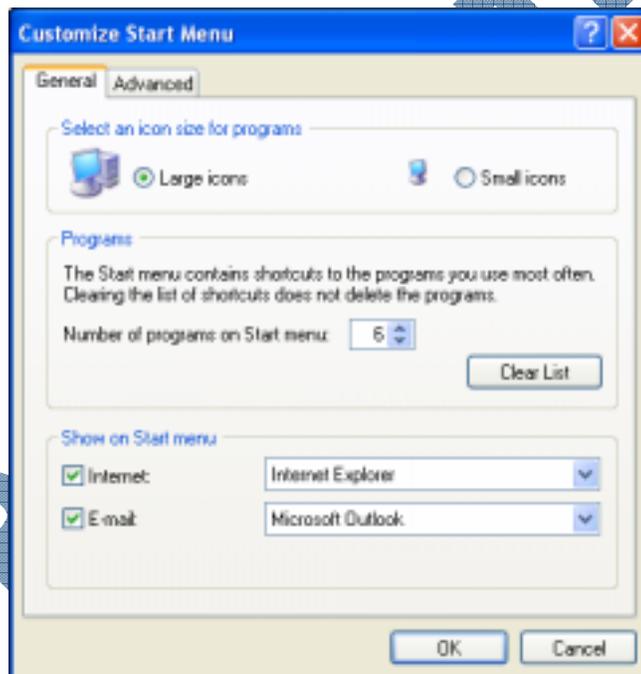
### Clearing the My Recent Documents Folder

There may be times that it is necessary to clear the My Recent Documents menu, perhaps for security reasons or for personal reasons. As these are shortcuts to documents, you may not want anyone to have immediate access to these files from this menu.

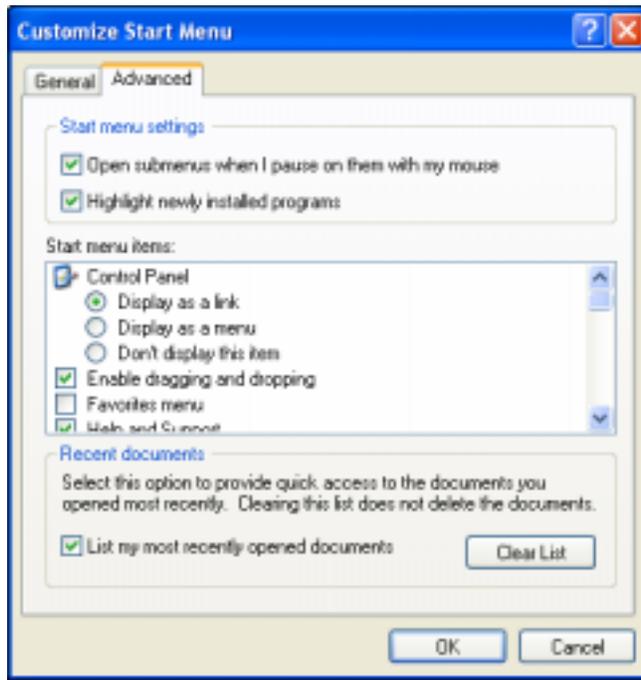


#### Exercise

- 1 Right-click on the **Start** button, and then click **Properties** from the shortcut menu.
- 2 Make sure that the **Start Menu** tab is selected.
- 3 Click on the **Customize** button.



- 4 Click on the **Advanced** tab.



- 5 Under **Recent documents** (lower right corner), click **Clear List**, then click **OK** twice.
- 6 Click the **Start** button, then **My Recent Documents**.



The most recently used documents are removed from the My Recent Documents folder. Note that this action does not delete the documents from your hard disk.

### Concealing the My Recent Documents Folder

It may be necessary to conceal the My Recent Documents menu for security reasons, or perhaps for personal reasons. This method may be simpler in preventing others from seeing your list of files rather than clearing the list itself.

#### Exercise

- 1 Right-click on the **Start** button, and then click **Properties** from the shortcut menu.
- 2 Make sure that the **Start Menu** tab is selected. Click on the **Customize** button.
- 3 At the top of the dialog box, click on the **Advanced** tab.
- 4 Under **Recent documents** in the lower portion of the dialog box, clear the check box next to **List my most recently opened documents**, and click **OK** twice.
- 5 Click the **Start** button.

Your My Recent Documents menu should no longer be showing.



### Practice Exercise

- 1 Right-click on the **Start** button, and then click **Properties** from the shortcut menu.
- 2 Make sure that the **Start Menu** tab is selected. Click on the **Customize** button.
- 3 Click on the **Advanced** tab.
- 4 Under **Recent documents** in the lower portion of the dialog box, click in the **List my most recently opened documents** check box, click **OK** twice.
- 5 Click the **Start** button.

Your My Recent Documents menu should be visible again.

## Multitasking



3.2.4

*Multitasking* is a method of operation where a computer's operating system can work on more than one task at a time; therefore, more than one program can be opened and running at a time. For example, you may be working on a document in Microsoft Word and need to verify some information from the company web site on the Internet. You can start Internet Explorer, find the information you need, and then switch back to Word to confirm you have the same information. You might also want to start your e-mail program to retrieve mail while both Word and Internet Explorer are running in the background.

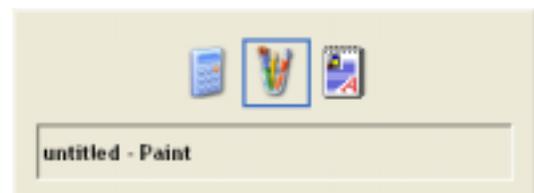
When you are working with several programs at the same time, Windows provides you with several ways of switching between the programs and organizing the open windows.

Each program appears in its own window. As you open each program, any other programs running are minimized to a button on the taskbar. You can move or switch from one program to another using the mouse or with the keyboard.

The taskbar displays a button for each program currently running. You can easily switch between the open programs by using the taskbar. If using the keyboard, you can press **Ctrl+Tab** or **Alt+Esc** to switch between the active programs on the taskbar.



Alternatively, press **Alt+Tab** to display a small window that displays icons representing each of the programs opened. The program icon with the box around it is the current selection. Press and hold the **Alt** as you press **Tab** to toggle from one program icon to another. Release both keys when the appropriate program icon is selected and that program will become the active screen.



### Exercise

- 1 Click the **Start** button, then **All Programs, Accessories, WordPad**.
- 2 Click **Start, All Programs**, and while holding down the **Shift** key, click on **Accessories**. From the Accessories menu, click on **Calculator**.
- 3 Click on **Paint** and release the **Shift** key.
- 4 To make WordPad the active window, click the **Document - WordPad** button on the taskbar.

- Click the **Calculator** button on the taskbar, then click the **Document - WordPad** button, click the **untitled - Paint** program button, click the **Calculator** button again.

Now try using the **(Alt)+[Tab]** keyboard combination.

- Press and hold the **(Alt)** key while tapping the **(Tab)** key. Each time you press the **(Tab)** key, notice the square box around the selected program. Ensure the Paint program is selected, and then release the **(Alt)** key. The Paint program will now be the active program and appears on the screen.

The Quick Launch toolbar may be shown beside the taskbar.



In order to use the Quick Launch toolbar, you may need to activate it; if it is already displayed on the Taskbar, skip to step 8.

- Right-click on a blank area on the **Taskbar**, select **Toolbars** and then with the left mouse button click on **Quick Launch** to activate the Quick Launch toolbar.
- To minimize all programs at the same time, click the  button on the Quick Launch bar in the taskbar.
- Right-click on the **WordPad** button on the taskbar and select **Restore** from the shortcut menu.
- Right-click on the **Calculator** button on the taskbar and select **Close** from the shortcut menu. Repeat this step to close each open program.

### Practice Exercise

- Open the following three programs: **Help**, **Paint** and **WordPad**.
- Press and hold down the **(Alt)** key while tapping the **(Tab)** key to display the Running Programs banner.
- To quickly minimize all windows, click the  button on the Quick Launch bar in the taskbar.
- Click  on the taskbar again to restore all windows.
- Hold down the **(Alt)** key and press the **(Tab)** key. Each time you press **(Tab)**, notice the selected program in the taskbar. Ensure the **Paint** program is selected, then release all keys and press **(Enter)**.

The Paint program will now be the active program and appears on the screen.

- Minimize the open windows by pressing **(Alt)+[M]**.
- From the taskbar, click  twice.
- Close each program, pressing **(Alt)+[F4]**. Do not shut down Windows.

## Organizing the Windows

While running several programs, you may want to see the contents of more than one window at the same time. For example, you may want to see the colors used in the new company logo for description in an e-mail to employees announcing the new company logo. There are a number of different ways to display more than one window on the screen without having to move and resize each window separately.

There are three ways to display multiple open windows:

- Cascade Windows** Displays the windows in an overlay manner with the title bars showing for each open program. The active window is the front window.
- Tile Windows Horizontally** Displays the windows one above another in a fitted tile manner, with each open window the same size on the screen.
- Tile Windows Vertically** Displays the windows in a fitted side-by-side tile manner, with each open window the same size on the screen.

When there is more than one window displayed on the desktop, only one window can be the active window, the remainder are running in the background.

There are some notable features about the active window:

- When you click in the active window, you will notice a brighter colored title bar. All background windows will have their title bars displayed in a lighter shade.
- Almost all keyboard commands will be directed to the active window, with the exception of the  key and the  key.



### Exercise

- 1 Open **WordPad** and ensure the window is restored or maximized.
- 2 Open **Notepad** and ensure the window is restored or maximized.
- 3 Open **Paint** and ensure the window is restored or maximized.
- 4 To arrange the open windows on the desktop, right-click on the current time displayed in the right corner of the taskbar.
- 5 From the shortcut menu, select **Cascade Windows**.



- 6 Close the Paint program. If you are asked if you would like to save changes to the untitled document, click on **No**.
- 7 Right-click on a blank area of the taskbar and select **Minimize All Windows**.
- 8 Close the remaining open programs.



### Practice Exercise

- 1 Open the following three programs: **WordPad**, **Notepad** and **Paint**. Ensure the windows are open on the desktop either restored or maximized.
- 2 Right-click on the time in the taskbar, or right-click on a blank area of the taskbar and select **Tile Windows Horizontally**.
- 3 Right-click on a blank area on the taskbar and select **Tile Windows Vertically**.
- 4 Minimize the open windows by pressing +.
- 5 Right-click on a blank area of the taskbar and select **Undo Minimize All**.
- 6 Close each program, by right-clicking on the program button on the taskbar and selecting **Close** from the shortcut menu.

### Summary

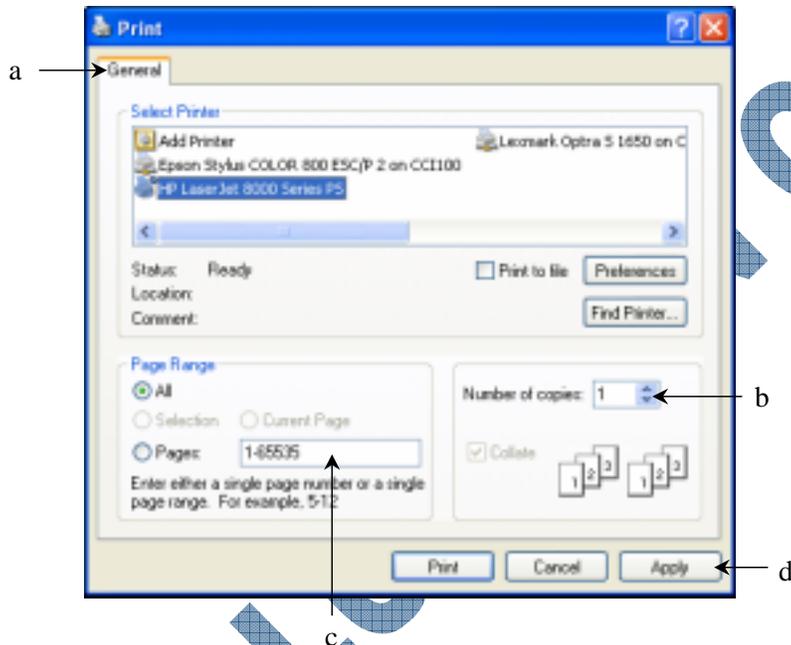
In this lesson you looked at how to start an application program and at some common elements of an application program for Windows. You should now be familiar with the following:

- How to start an application program
- How to start an application using the Run command
- Common elements found in an application program
- General information regarding managing files
- How to access a document from the most recently used documents list
- How to move between open application programs

### Review Questions

1. Name two ways that you can start an application program.
2. Once an application program has been started, you can use it as required but you must always close it properly when you no longer need to use that program.
  - a. True
  - b. False
3. When could you use the Run command?
  - a. When you want to start a program that hasn't been installed on your system
  - b. You want to go to the DOS prompt
  - c. You want to install a program that does not start up automatically when you put in the CD
  - d. All of the above
4. All Windows-based application programs share a number of similar elements such as toolbars, menu commands like File, dialog boxes, etc.
  - a. True
  - b. False

5. How can you activate a menu?
  - a. Click on the menu command, e.g., File, Edit, etc.
  - b. Press **Alt**+**F10**
  - c. Press **Alt** and then the underlined character for the menu command
  - d. All of the above
  
6. A dialog box is a window that contains features or commands for a specific action.
  - a. True
  - b. False
  
7. Identify the following items on the following image:



a. \_\_\_\_\_ c. \_\_\_\_\_  
 b. \_\_\_\_\_ d. \_\_\_\_\_

8. Why is it important to save your file, even if you might not need it again?
  
9. Any of the files listed in the My Recent Documents menu are shortcuts to the original files, not the actual files themselves.
  - a. True
  - b. False
  
10. How could you switch from one program to another?
  - a. Press **Alt**+**Tab**
  - b. Click on the appropriate program button in the taskbar
  - c. Click on the shortcut for that program on the desktop
  - d. All of the above
  - e. Only a or b

## Lesson 7: Looking at Files and Folders

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at the different ways files or folders are displayed and where they may be located. On successful completion, you will be familiar with:

- What a file or folder is on the computer
- Changing the view for drives, files or folders
- How to recognize a file or folder on the desktop
- How to create, customize or change a folder's properties
- How to recognize the drives available

### Understanding Files and Folders



3.2.5  
3.2.6

A *file* is commonly referred to as a document. Files or documents are usually created from within a specific program. For example, you could use Microsoft Word to create word processing files such as letters, memos or reports. You could also enter many transactions into the company file for an accounting program. The computer's operating system and programs also use files; these files are not stored in a readable form. Files are represented with an icon and usually include a symbol of the associated program.

A *folder* is a container for programs and/or files and is a method of organizing information. Folders in Windows are very similar to folders in a conventional filing cabinet. Folders are represented with a yellow icon that looks like an actual file folder. Folders can be created by a software program or you can create them as needed.

Files and folders can appear at any level, similar to an inverted hierarchy or family tree. You may hear the terminology “tree” and “root” used when discussing the level of folders and files. Using the analogy of the family tree, at the top level is the Windows Desktop. Each folder at the level below it may contain more folders and files, depending on how it was set up. Consider the following example:



This structure shows the Desktop at the top level, with a subfolder called My Documents. Within the My Documents folder is a subfolder called ABC Company. Within this folder is another folder called Proposals. In the Proposals folder, there is a file called Proposal - August 28<sup>th</sup>.doc and another file called Financials at July 31<sup>st</sup>.xls. If you needed to tell someone where the August 28<sup>th</sup> Proposal file was located, you would write it as:

C:\My Documents\ABC Company\Proposals\Proposal - August 28<sup>th</sup>.doc

This is called the *path* because you are providing the exact path required to find this file. The C: indicates this is the drive where the file is located, the backslash (\) is a symbol to indicate “go down to this level”, followed by each folder name and finally, the file name. This syntax helps someone using My Computer or Windows Explorer to locate the folders and files.

There are no limitations as to where you can store a file or the number of folders that can be created to store files. You may want to consider how many subfolders you want or need for general correspondence versus specific files for projects, customers, companies, etc.

Consider your file and folder structure in a similar manner to how you might want to set up a filing cabinet for hard copies of your documentation. Having all your documents in one folder (e.g., My Documents) may be the simplest method but may require a bit of time and consideration for naming files appropriately so that you can quickly identify which file is the one to use. Conversely, if you set up a number of folders and subfolders for a project, will you wind up spending a lot of time “drilling down” to find the appropriate folder for the required file?

There is no right or wrong way to set up a filing system; be sure to follow the company’s standards or create one that is logical to you and others who might be sharing your computer. Nothing is more frustrating than when you need to find a file on a system and there is no obvious pattern for how or where to begin looking for that file. One rule of thumb that can be used is to consider setting up folders in a simple structure so everyone can use the system, both for storing files or folders and finding them in future.

## What’s on my Desktop?



3.2.5

The Windows Desktop generally contains icons for specific features available in Windows. It may also contain folders or files that have been created or stored in this location for quick access. For example, if you access the cash flow report every day, it will be faster to start this file and its corresponding application program by clicking on the shortcut on the Desktop versus using the **Start, All Programs** menu to start the application and then open the file from within the application.

A file that has been saved on the desktop will appear similar to the icon at the right. Notice how the icon represents the application program that can be used to view the document, and the file name appears below the icon for easy identification. This can be very handy if you need to use this file on a regular basis; be careful that if you delete this icon from the desktop, you are actually deleting the file itself.



Letter to New Customer.doc



New User Request Form.doc

Conversely, a file that appears with a small arrow at the lower left corner of the picture for the file is a shortcut to the actual location where this file was originally saved. This appears similar to the previous icon but the arrow is a visual clue that this is a shortcut only, indicating that if you delete this icon from the desktop, only the shortcut is deleted, not the actual file.

Folders may be created on the desktop to hold numerous files or you can set up a shortcut to point to a folder stored in another location. This would present a more cleaner desktop and a central location to access these files used every day.

A file that has been saved on the desktop will appear similar to the icon at the right. Notice how the icon represents the application program that can be used to view the document, and the file name appears below the icon for easy identification. This can be very handy if you need to use this file on a regular basis; be careful that if you delete this icon from the desktop, you are actually deleting the file itself.



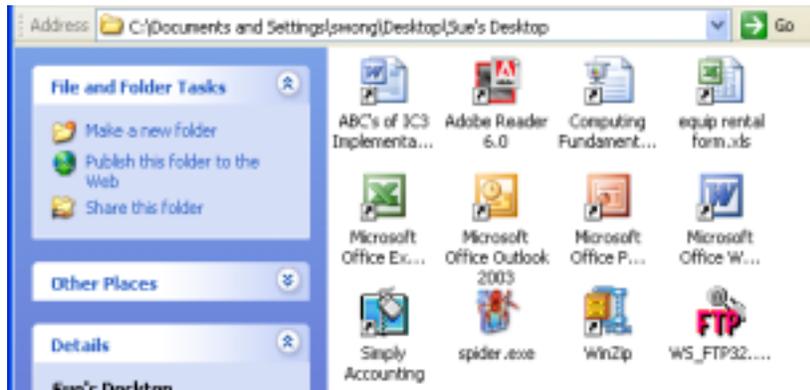
Sue's Desktop



SUE

Similar to the file examples, Windows will identify the icon as a folder actually on the desktop versus a shortcut to a folder on your system (shown at the right). The first example is a folder that was created on the desktop whereas the second is a shortcut for a folder residing on a network drive.

Similar to opening a paper folder, when you open a folder on the desktop, it will display in a separate window. The view for the files or folders in that folder will vary, depending on which option is selected. Folders can contain a combination of items, not just document files. The screen at the right demonstrates a folder that contains both document and program files.



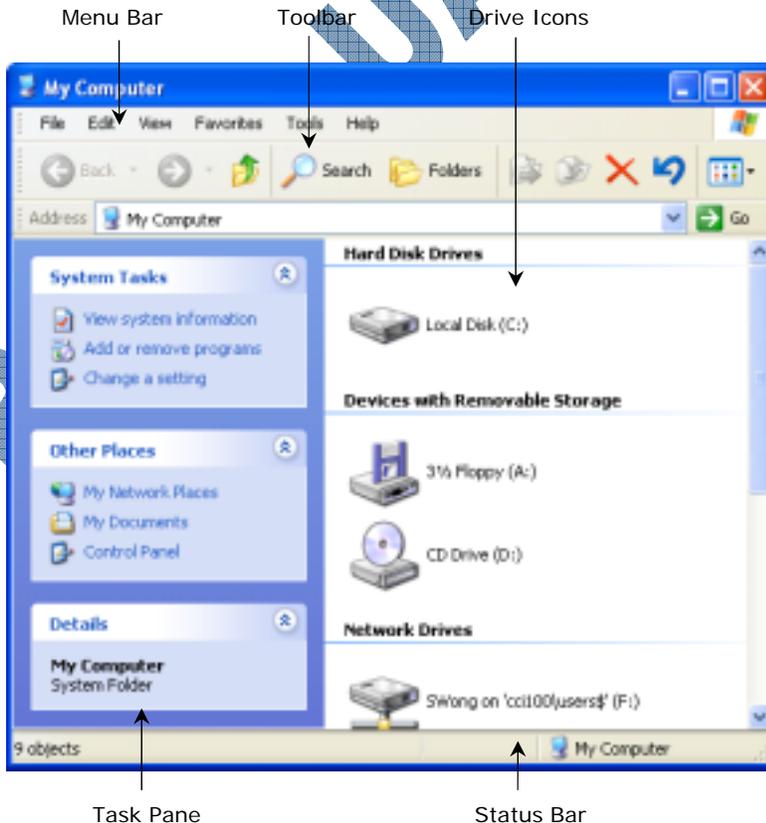
In general, the icon for a file indicates which program was used to create or which program on your system will open and allow you to edit this file. The examples shown here are for Microsoft Word, Microsoft Excel, and Microsoft PowerPoint. You will be able to tell by the name across the bottom of the icon whether this is a document file or a program file. For the most part, files will show the file type at the end of the name and a blank sheet of paper behind a program icon. A program file will generally have a file type of exe, com, or bat or the shortcut arrow with the name of the program clearly indicated.

### Using the My Computer Feature



The primary purpose of the My Computer feature is to view or access the contents of different storage devices, i.e., the local hard drive(s), CD or DVD drive, floppy disk drive, or network drive(s). Windows provides an icon on the desktop for easy access.

The My Computer window allows you to quickly and easily open drives to see what folders and files are stored in them. To select a drive, place your mouse over the item; to open the drive, click on it.



FOR

- Toolbar** Contains buttons or icons to quickly perform common tasks by using the mouse. In the My Computer window, three toolbars are available: Standard Buttons, Address Bar and Links. To see the name of the button on the toolbar, position the mouse pointer over the icon on the toolbar and after about a second, a banner will appear displaying the name.
- Drive Icons** Represent the drives or disk devices available for storing or accessing files. The floppy disk drive is usually identified as the *3½ Floppy (A:)* and the hard disk is usually identified as *Local Disk (C:)*. Depending on the configuration of your computer, more than one local disk may be displayed. Compact disc drive(s), network drive(s) and mobile devices may also be displayed.
- Status Bar** Displays information such as the number of objects within the current window or the amount of free space and capacity of a selected disk.
- Task Pane** Contains specific tasks on the left side of the window pertaining to that folder. The My Computer folder contains system tasks such as view system information, adding or removing programs, or changing a setting. This folder also contains hyperlinks to other places on the computer such as My Network, My Documents, Shared Documents, or the Control Panel. There is a section at the bottom of the task pane that offers information on whatever is selected. For example, if the local drive is selected, the Details task would display what type of file system it is, how much free space is available, and the total size of the drive.

Another method of seeing the files and folders on a drive or the computer is with the Windows Explorer (discussed in Lesson 8) feature. Both Windows Explorer and My Computer share the same options and features used to manage your files or folders. The main difference is that you can only view the contents of one drive at a time per window using My Computer.

In order to keep your system running properly, you should not modify the contents of the Local Disk drive except for data files. This drive contains all the operating system (Windows) files and program files that keep the computer running smoothly; they should only be modified by an experienced user or a networking professional.



### Exercise

- 1 From the desktop, open **My Computer**.
- 2 Ensure the Standard Buttons toolbar and Address Bar are displayed. If required, select **View, Toolbars** to turn on each toolbar.
- 3 Ensure the Status Bar is displayed. If required, select **View, Status Bar**.
- 4 Position the mouse pointer on the **Local Disk (C:)** drive icon and notice the screen tip indicating the free space and total size.
- 5 Click once on the **Local Disk (C:)** drive icon.



The first time you access the Local Disk (C:), the contents of the drive will be hidden for your protection.

- 6 Click on **Show the contents of this folder**.
- 7 Click the **Back** button to return to My Computer.
- 8 Click the down arrow in the Address Bar and select **Local Disk (C:)**.



- 9 Click the  button to return to My Computer.
- 10 When finished, close the window.



### Practice Exercise

- 1 Open **My Computer**.
- 2 Click the hyperlink to the *My Documents* folder.
- 3 Click the  button.  
The desktop icons are now displayed in the window.
- 4 Click the down arrow in the Address Bar and select **Local Disk (C:)**.
- 5 Click the **Back** button.
- 6 Click the **Forward** button.

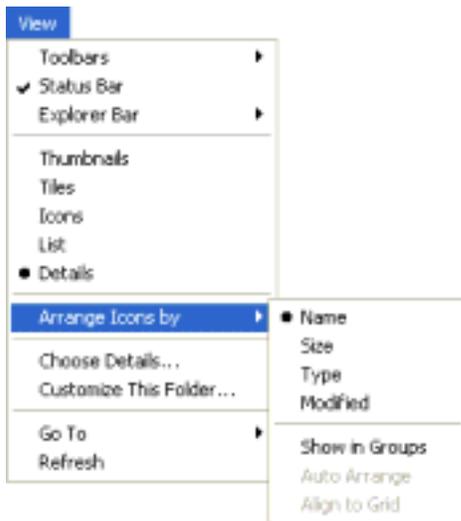
- 7 Click the hyperlink to *My Computer*.
- 8 Select **View, Go To** and then select **My Documents** from the submenu.
- 9 When finished, close the window.

## Changing the View



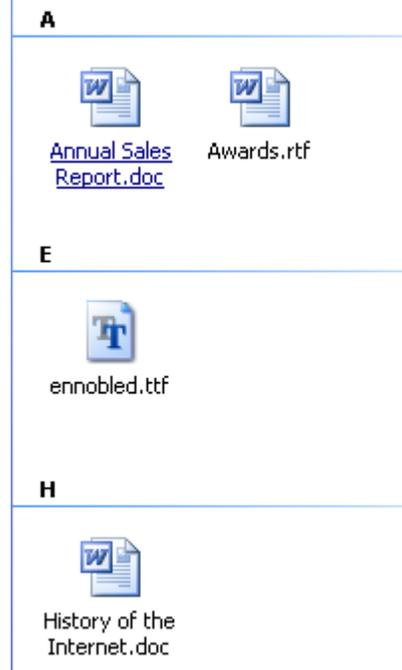
3.2.6

There are a number of different ways to display the information when looking at files or folders. Occasionally a different view may be required to sort files in a specific order, or to see more information for the files or folders. The view options can be selected using the  (**Views**) button on the toolbar, or you can use the **View** menu to see more options than available with the  (**Views**) button on the toolbar.



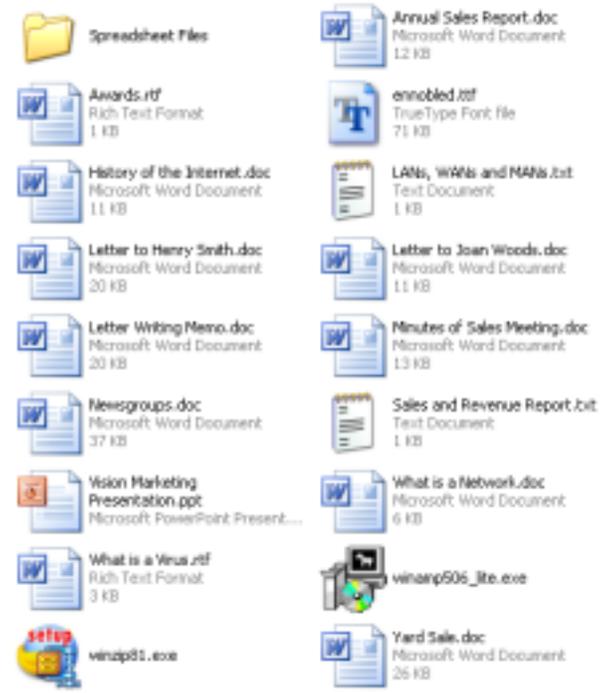
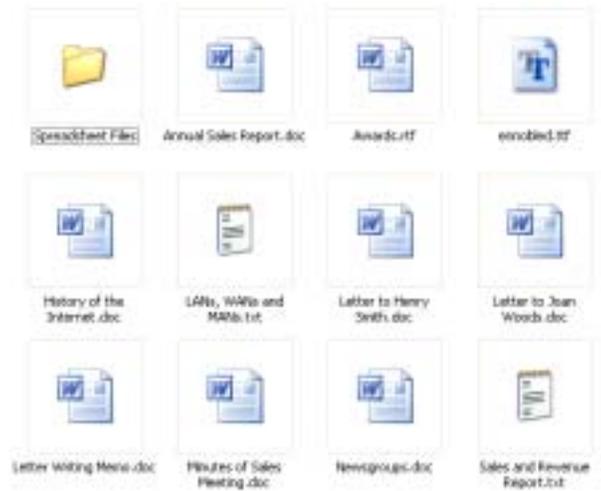
As noted, the files and folders can be sorted on the screen in a specific order to help find or manage your file or folder structure. Use the options available in the **View, Arrange Icons** submenu to select the sort order, or change the view to the Details view in order to use the column headings as the sort order.

Alternatively, Windows XP provides you with the option to use the **Show in Groups** feature and group your files by any detail of the file such as name, size, type, or date modified. For example, if you group by file type, image files appear in one group, Microsoft Word files appear in another group, and Excel files in another. Show in Groups can be arranged in the **View** menu. This option works with every view except List.



**Thumbnails**

Group your files by any detail of the file such as name, size, type, or date modified. For example, if you group by file type, image files appear in one group, Microsoft Word files appear in another group, and Excel files in another. Show in Groups can be arranged in the **View** menu. This option works with every view except List.

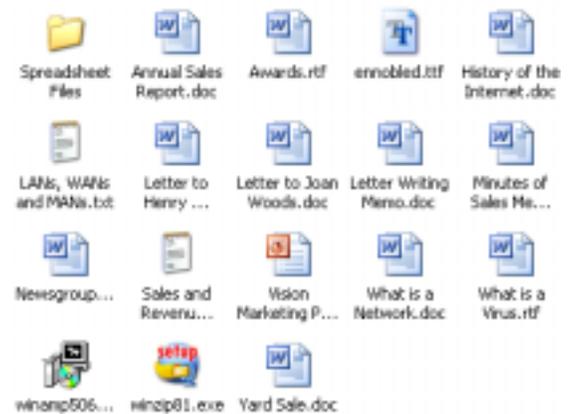


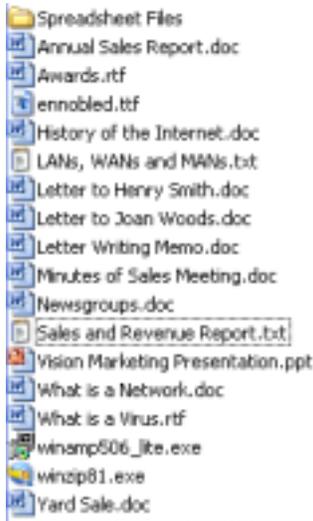
**Tiles**

Displays your files and folders as icons with some general information provided for files, e.g., size or file format. Icons are larger than in the Icon view, and the sort order is arranged in the **View** menu. For example, the following screen has the files sorted by the file name.

**Icons**

Displays files and folders as icons. The name is displayed under the icon; however, sort information is noted by how the icons or file names are arranged. The following screen shows the files arranged by file type.



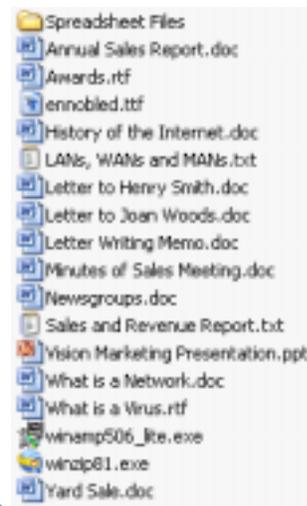


**List**

Displays the contents of a folder as a list of names preceded by small icons. This view is useful if your folder contains many files and you want to scan the list for a file name. Files and folders can be arranged in the same options as with other views.

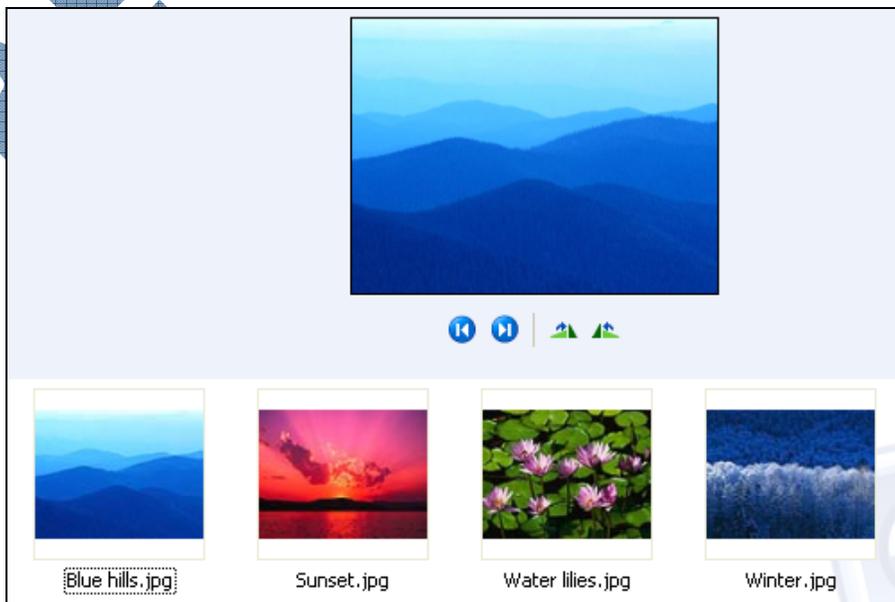
**Details**

Lists the contents of the open folder and provides detailed information about your files and folders, including name, type, size, and date modified. In Details view you can also show your files in groups.



**Filmstrip**

Filmstrip view is available only with picture folders. Your pictures appear in a single row of thumbnail images where you can scroll through your pictures using the left and right arrow buttons. If you click on a picture, it is displayed as a larger image above the other pictures. You can also choose to edit it in Paint, or make some modifications using the Viewer feature.



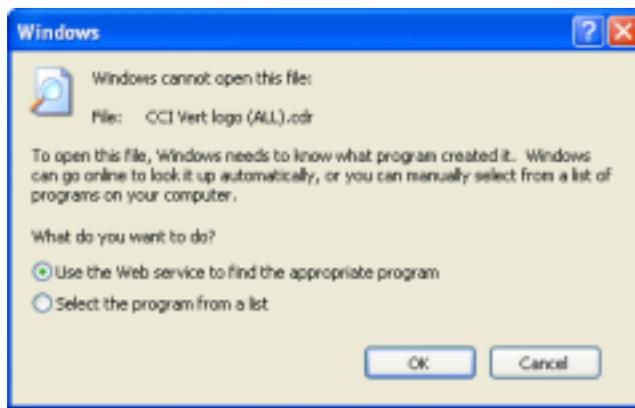


When viewing files you may see file extensions or types such as .doc, .exe, .bmp. The default setting in Windows is to hide file extensions for known file types to keep the display simple. In most cases, the icon at the left of the file name represents the software program it was created in as a visual reminder. However, the icon may indicate which program you can use to view or edit the file; you may want to see what the file type or extension is to determine if another program might be more applicable for editing a file or if you even have a software program that can edit this file type.

Having the extensions displayed can also be handy when you want to see how the file was saved, and to give you a quick method of organizing files. For example, you may have a photo image that doesn't look very focused when you view it. One way to determine why the picture appears unfocused could be to look at the file format used for the file. The picture might have been scanned and saved with a .tif format and looked fine, but once it was saved as a .jpg for a web page, the resolution or clarity of the picture may have been reduced due to the file format requirements.

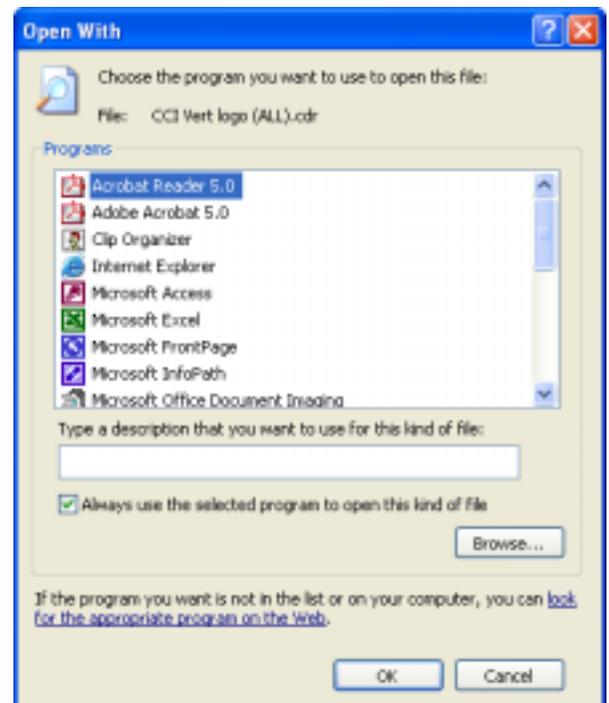
You can change the view option in My Computer by selecting **Tools, Folder Options, View** tab. In the **Advanced settings** area, make the necessary changes or click the **Restore Defaults** button.

On occasion, you may click on a file to open it and see a window similar to the following:



This indicates Windows cannot find a program on your system to automatically accept or open this file (e.g., you do not have that software installed, the file was renamed incorrectly, etc.). In most cases, use the **Select the program from a list** option to choose another program already installed on your system to try and open this file.

The Open With dialog box allows you to scroll through the list to find a program that may be compatible for the file type, or look for more help on the web to find out information about this file type. Be careful when choosing a program to open the file type; in some cases, the program may take longer to open than using a “quick and simple” program to view files of this type. For example, using PhotoShop to open .jpg files takes longer to start PhotoShop than to use the Windows Picture and Fax Viewer program that comes with Windows XP. If you are unsure as to which program to use, always check with your network administrator or a technical support person prior to selecting a program in this dialog box.





## Exercise

- 1 Open **My Computer**.
- 2 Open the Student data files folder.
- 3 Select **View, Tiles**.

The information is displayed in the My Computer window.

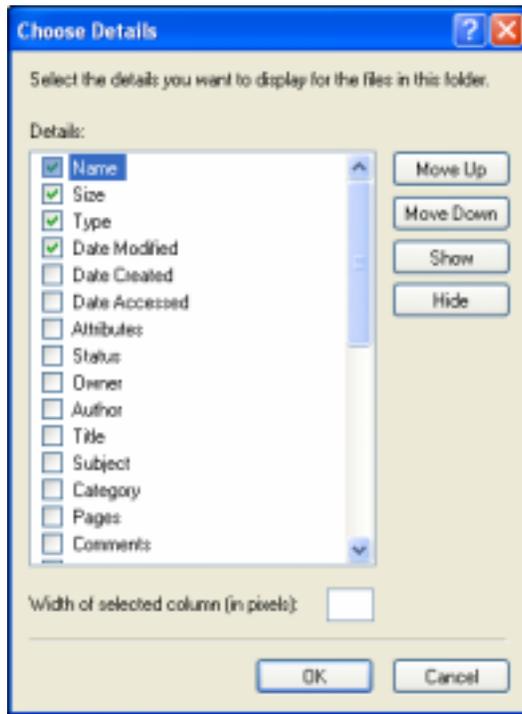
- 4 Right-click in the blank space in the window and select **View, Details** from the shortcut menu.
- 5 Click the  button and select **List**.
- 6 Click the  button and select **Thumbnails**.
- 7 Click the  button and select **Details**.

Notice the column titles displayed at the top of the file list. One advantage of using the Details view is that you can quickly sort files in ascending or descending order by clicking on the appropriate column title.

- 8 Click the **Name** column to change the sort order of the files to descending order.
- 9 Place the mouse pointer on top of the vertical line that divides the **Name** column from the **Size** column. When the mouse pointer turns into a , drag to adjust the width of the column.

Name	Size	Type	Date Modified
Yard Sale.doc	26 KB	Microsoft Word...	8/11/2003 2...
winzipBI.exe	1,762 KB	Application	12/10/2003 ...
winamp506_lite.exe	741 KB	Application	12/1/2004 1...
What is a Virus.rtf	3 KB	Rich Text Format	7/26/2000 8...
What is a Network.doc	6 KB	Microsoft Word...	8/11/2003 2...
Vision Marketing Presentation.ppt	14 KB	Microsoft Powe...	8/11/2003 2...
Sales and Revenue Report.txt	1 KB	Text Document	3/17/2000 8...
Newsgroups.doc	37 KB	Microsoft Word...	8/11/2003 2...
Minutes of Sales Meeting.doc	13 KB	Microsoft Word...	8/11/2003 2...
Letter Writing Memo.doc	20 KB	Microsoft Word...	8/11/2003 2...
Letter to Joan Woods.doc	11 KB	Microsoft Word...	8/11/2003 2...
Letter to Henry Smith.doc	20 KB	Microsoft Word...	8/11/2003 2...
LANs, WANs and MANs.txt	1 KB	Text Document	2/21/2000 1...
History of the Internet.doc	11 KB	Microsoft Word...	8/11/2003 2...
ennobled.ttf	71 KB	TrueType Font ...	10/17/1999 ...
Awards.rtf	1 KB	Rich Text Format	4/15/2002 6...
Annual Sales Report.doc	12 KB	Microsoft Word...	8/11/2003 2...
Spreadsheet Files		File Folder	12/3/2004 1...

- 10 Select **View, Arrange Icons by, Type**.
- 11 Select **View, Choose Details**.



**Move Up /  
Move Down**

To reorganize columns, select the desired column and then click the appropriate button. Alternatively, the columns can be moved by dragging the column to a new location within the window.

**Show/Hide**

Show or hide the column.

**Width of  
selected column  
(in pixels)**

Type a number for the column width for a preferred width. It may be easier to drag the column to a preferred width rather than using this option if you are not familiar with pixel measurement.

- 12 In the Column Settings dialog box, turn off **Type**, and then click **OK**.
- 13 Right-click on any column, such as the **Size** column, and then select **Type**.
- 14 Click the  button and select **Tiles**.
- 15 When finished, close the window.



**Practice Exercise**

- 1 Open **My Computer**.
- 2 Ensure you are viewing the files in the Student data files folder.
- 3 Select **View, Arrange Icons by**, and then click on **Show in Groups**.
- 4 Click the  button and select **Thumbnails**.  
Notice the different grouping of the icons.
- 5 Scroll to view the list of files.
- 6 Right-click in the blank space and select **View, Tiles** from the shortcut menu.
- 7 Select **View, Arrange Icons, by Name**.
- 8 Click the  button and select **Tiles**.
- 9 Click the  button and select **List**.

Notice that you cannot display the **List** view in groups.

- 10 Click the hyperlink to *My Computer*.
- 11 When finished, close the window.

## Creating Folders



3.2.5  
3.2.6

When working on the computer, most of your documents or files will be created directly from within the programs you use. On occasion, you may create a folder at the same time as saving a file. For example, if you are using Microsoft Word to type a new letter and are ready to save the file, you may wish to create a new folder at the same time and then save the file into the newly created folder. Alternatively, you can use My Computer or Windows Explorer to create additional folders at any time for storing your files.

When creating folders, you may create folders or subfolders within folders, depending on the complexity of your filing system. Folders are represented by a yellow icon that looks like an actual file folder, whereas files are represented by an icon that looks like a document and includes a symbol representing the program used to create it.

To create a folder, use one of the following methods:

- Select File, New, Folder.
- Click on **Make a new folder** from the **File and Folder Tasks** area of the task pane.
- Right-click in a blank area of the drive window and then click on **New, Folder**.

When creating subfolders, ensure you have opened the appropriate folder that will contain the new subfolder. The Address Bar displays the name of the open folder. You can turn the Address Bar on using the **View** menu.

Windows does not restrict where the folders are created, or whether another folder shares the same name. Wherever possible, try to keep the folder name unique to prevent any accidental deletion or replacement of files and folders (deleting or moving folders are also discussed later in this courseware). Once a folder has been created it can be renamed or moved to a more appropriate location as needed.



### Exercise

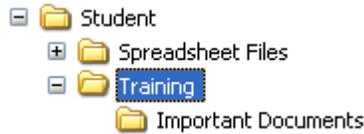
- 1 From the desktop, open **My Computer**, click the down arrow in the Address Bar and select **Desktop** and open the Student data files.
- 2 In the Task Pane under **File and Folder Tasks**, click on **Make a new folder**.

A folder will be created with the name, *New Folder*.



- 3 Type: **Training** and press **Enter**.
- 4 Double-click on the *Training* folder to open it.  
You will now create a subfolder.
- 5 Right-click in the blank area of the window, to the right of the task pane.
- 6 Select **New, Folder** from the shortcut menu.

- 7 Type: **Important Documents** and press **Enter**.
- 8 Click the  button on the toolbar.  
The Folders pane now appears on the left side.
- 9 If necessary, click on the  button next to the *Training* folder to display the new subfolder.

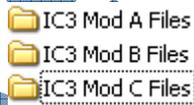


When working with folders, you may find it more convenient to display the Folders pane as this allows you to see the hierarchical structure of the folders and subfolders. This is the same view you will see when working with Windows Explorer.

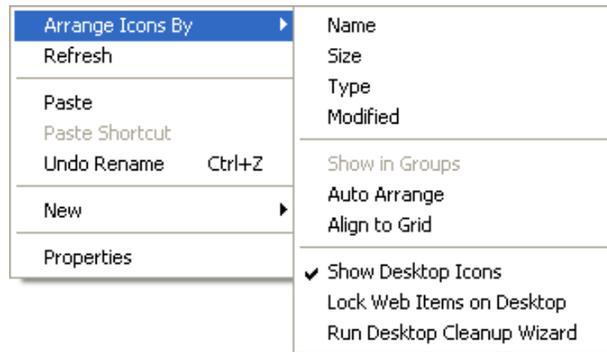
- 10 Click the  button on the toolbar.  
You should now have the task pane showing again.
- 11 Close the My Computer window.  
You should now be at the Desktop.
- 12 Right-click on a blank area of the desktop.
- 13 Click on **New** and then click on **Folder**.



- 14 Type your name for the name of the new folder and press **Enter**.
- 15 Double-click on the folder to open it.
- 16 Click anywhere in the blank area of the new folder's window.
- 17 Click on **New** and then **Folder**.
- 18 Type: **IC3 Mod A Files** and press **Enter**.
- 19 Repeat steps 16 to 18 to create a new folder for each Module as shown in the following:



- 20 Close the window to return to the desktop.  
You have successfully created a subfolder within a folder created on the desktop. However, notice that the folder stayed where it was created. You can move or rearrange folders or files on the desktop by changing their view.
- 21 Right-click on a blank area of the desktop.
- 22 Click on **Arrange Icons By**.



You should notice that the items here are very similar to when you change the view within the My Computer window. Windows tries to maintain consistency for certain commands, regardless of where you may be at the time you access the command.

**23** Click on **Name**.

The folder should now have moved to be listed alphabetically after the default icons on the desktop.



### Practice Exercise

- 1 At the desktop, right-click on a blank area and click on **New, Folder**.
- 2 Type: **Personal Docs** for the name of the new folder and press **Enter**.
- 3 Double-click on your new file to open it.
- 4 Right-click in a blank area of the window and click on **New, Folder**.
- 5 Type: **Mortgage Papers** for the name of the new folder and press **Enter**.
- 6 Right-click in a blank area of the window again and click on **New, Folder**.
- 7 Type: **Invoices** for the name of this new folder and press **Enter**.
- 8 Double-click on the *Invoices* folder to open this folder.
- 9 Right-click in a blank area of the window and then click on **New, Folder**.
- 10 Type: **Teaching** for the name of the new folder and press **Enter**.
- 11 In another blank area of this window, right-click and then click on **New, Folder**.
- 12 Type: **DB Dev** for the name of the new folder and press **Enter**.

You should now have two new folders within the *Invoices* folder.

- 13 Click on the  button to move up one level.

You should now be looking at the two folders in the *Personal Docs* folder, i.e., *Mortgage Papers* and *Invoices*.

- 14 Click on the  button to move up one level again.

You should now be looking at the folders and other locations at the desktop level.

- 15 Close My Computer.

### Changing the Folder



You can change the appearance of the folder to suit your preferences by changing the properties. For example, by default Windows displays the toolbar and Address Bar whenever you open the My Computer window. You can change this display to show only the contents of the folder and just the toolbar. You can also choose to display as many toolbars as required.

One option that can be very useful is to rename the folder. You can make the folder name as long or as short as required although the entire title may not be visible based on the default size for a folder name.

To change a folder's name, use one of the following methods:

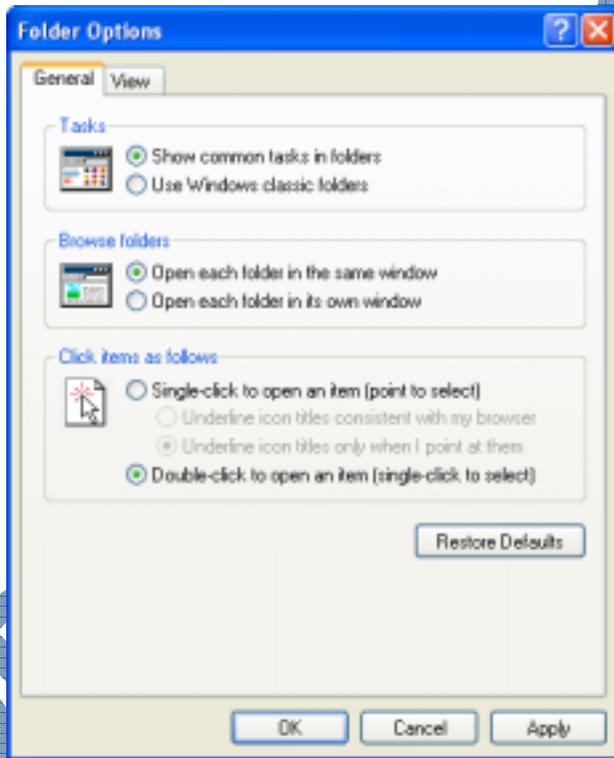
- Click on the folder icon to select it and then press **F2** to activate the Edit mode.
- Click to select the folder icon, then click inside the folder name to activate the Edit mode.
- Right-click on the folder and then click on **Rename** from the shortcut menu.



Personal Docs

Whenever you see a black line and the folder name highlighted as shown here this means you are in Edit mode. Once the name is highlighted as such you can type in a new name for the folder or use the mouse cursor or arrow keys to move to the appropriate location to insert or delete characters for the folder name.

To change the properties for a folder, select the folder first and then click on **Tools, Folder Options**.



#### Tasks

Each folder contains specific tasks on the left side of the window for that folder. For example, the My Music folder contains tasks such as Play selection, Play all or Shop online for music whereas the My Documents folder contains tasks such as rename a folder, move or copy a folder, delete or create a new folder, etc. All folders also have specific hyperlinks to common folder tasks and other places on your computer. These links also appear in the left pane of the window.

#### Browse folders

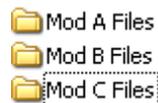
Specifies that the contents of each folder opens in a new window. The previous folder content still appears in a different window so you can switch between the windows.

**Click items as follows** Provides options on whether to single-click or double-click to open items. You may also choose to underline single-click items and select items by placing your mouse over the item, or underline single-click items when the mouse pointer hovers over them. You can also choose to double-click to open an item and single-click to highlight an item.

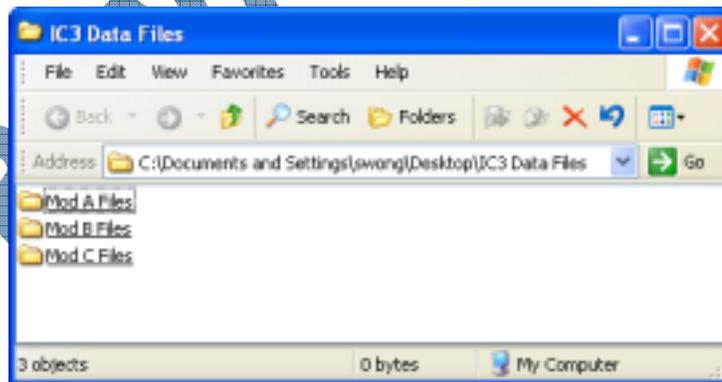


### Exercise

- 1 On the desktop, click on the folder icon with your name that you created previously.
- 2 Press **F2** to activate the Edit mode.
- 3 Type: **IC3 Data Files** for the new name and then press **Enter**.
- 4 Double-click on the folder icon to open the folder.
- 5 Right-click on the **IC3 Mod A Files** folder and then click on **Rename**.
- 6 Press the **Home** key to move quickly to the beginning of the folder name.
- 7 Press the **Delete** key to remove the *IC3* characters, including the space.
- 8 Press **Enter** to exit the Edit mode.
- 9 Using any of the methods for renaming the folder, change the other two folders so the final result appears as:



- 10 Select **Tools, Folder Options**. Ensure you have the **General** tab active.
- 11 Click on **Use Windows classic folders**.
- 12 In the **Click items as follows** area, choose **Single-click to open an item (point to select)**. Click the **Underline icon titles consistent with my browser** option.
- 13 Click **OK**.



Notice how the window no longer shows the task pane, and the folders now are underlined, in a similar manner to the way links appear.

- 14 Click on the *Mod A Files* folder.

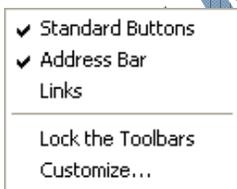
You should now be inside the *Mod A Files* folder. Notice how you only had to click on the folder in order to open it, instead of using a double-click. From this point forward, Windows will be operating in single-click mode. With this mode, be sure to point on the folder to select it and click on it only when you want to activate it.

- 15 Click on the  button to move up one level and then point to the *Mod C Files* folder. This folder should now be highlighted and not open.
- 16 Point to the *Mod B Files* folder to select it and then click on it. You should now be in this folder.
- 17 Click on the  button to move up to the *IC3 Data Files* level.
- 18 Select **Tools, Folder Options**.
- 19 Click on the **Show common tasks in folders** option. Click on the **Underline icon titles only when I point at them** and then click on **OK**.  
The window will now show the task pane again. Notice the contents no longer show an underline with the name.
- 20 Close this window to return to the desktop.

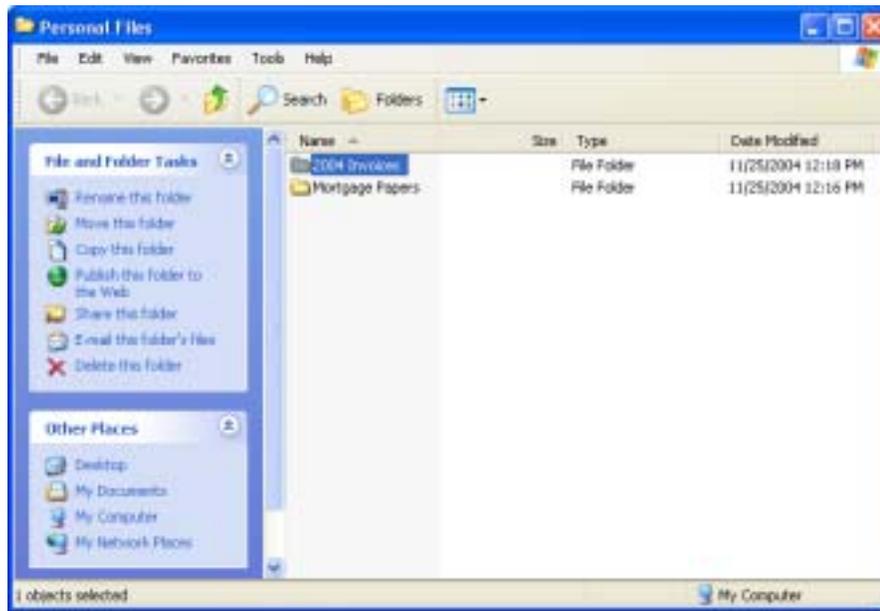


**Practice Exercise**

- 1 Right-click on the *Personal Docs* folder on the desktop and then click on **Rename**.
- 2 Click at the beginning of the *D* for Docs and press the **Delete** key to remove this word. Type: *Files* and then press **Enter**.  
You have just changed the name of this folder from *Personal Docs* to *Personal Files*.
- 3 Click on this folder to open it.
- 4 Point on the *Invoices* folder to select it and then press **F2**.
- 5 Press the **Home** key to move quickly to the beginning of this folder and type: *2004* (including a space) and then press **Enter**.
- 6 Select **View, Toolbars**.



- 7 Click on the **Address Bar** option to turn it off.



If you have folders with similar names on different drives, the Address Bar can be helpful in showing whether you are working on your local (C) or the network drive.

- 8 Select **View, Toolbars, Address Bar** to turn it on again.
- 9 Close the window to return to the desktop.

## Summary

In this lesson you looked at the different ways files or folders are displayed and where they may be located. You should now be familiar with:

- What a file or folder is on the computer
- How to recognize a file or folder
- How to recognize the drives available
- Changing the view for drives, files or folders
- How to create, or change a folder's properties

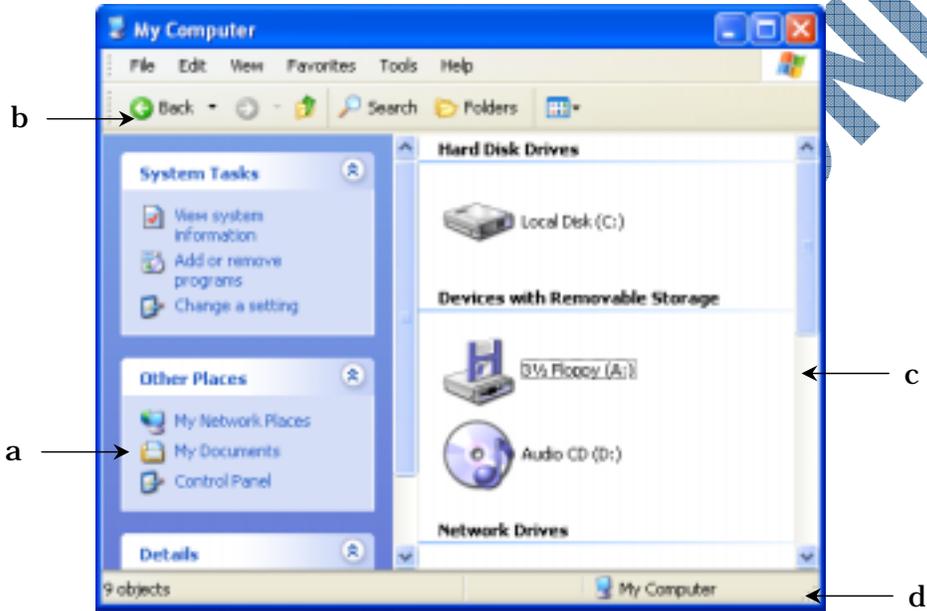
## Review Questions

1. What is a file?
2. How can showing the path for a folder or file be helpful?
  - a. It tells you which drawer the file or folder is stored
  - b. It tells you whether the file or folder is stored on a network
  - c. It tells you the name of which folder and how many levels to go through
  - d. All of the above
3. You can only create up to 20 folders within one folder.
  - a. True
  - b. False

4. What's the difference between the following items on the desktop?



5. The primary purpose for using the My Computer feature is to view or access the contents of different storage devices.
- a. True                      b. False
6. Identify elements in the following image:



a. \_\_\_\_\_ c. \_\_\_\_\_

b. \_\_\_\_\_ d. \_\_\_\_\_

7. Which view shows the files and folders with the date of creation or last modified?

- a. Thumbnails                      c. Details
- b. List                                  d. Tiles

8. If Windows displays an error message that it cannot open a file and asks you to select a program, what does this mean?

9. How can you create a folder?

- a. Select File, New, Folder                      d. All of the above
- b. Right-click and then click on New, Folder                      e. Only a or b
- c. Click on Make a new folder from the task pane

10. Which key could you use to rename a folder?

- a. (F1)                                  c. (F3)
- b. (F2)                                  d. (F5)

## Lesson 8: Using Windows Explorer

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at the Windows Explorer and learn how to manage files using this feature. On successful completion, you will be familiar with the following:

- Selecting files or folders
- Moving files or folders
- Copying files or folders
- Renaming files or folders
- Viewing file or folder properties
- Finding files

### What is Windows Explorer?



3.2.6

Windows Explorer displays the hierarchical structure of files, folders, and drives on your computer. It also may show any network drives on your computer. This feature is very similar to the My Computer option but can show you multiple drives at one time instead of only in one window. You can switch between My Computer and Windows Explorer by using the  button.

By default, Windows Explorer shows the Folders pane that lists drives, files and folders in a hierarchical structure whereas the Folders pane is not automatically shown in My Computer. Windows Explorer and My Computer display the same information but in a slightly different manner. In both My Computer and Windows Explorer, you can manipulate files and folders in very similar methods to handle tasks such as create, copy, move, rename, delete, or search for files and folders.

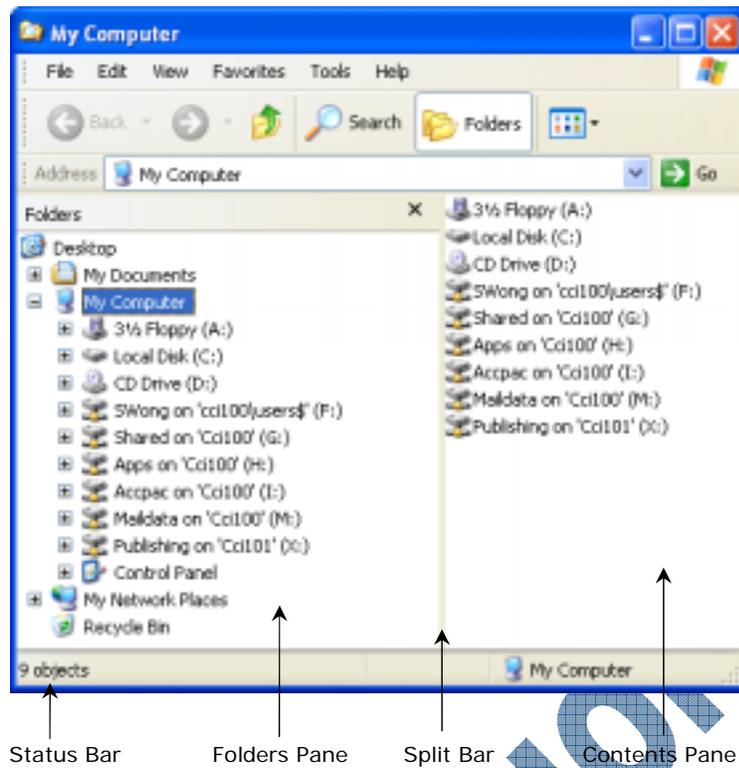
To start Windows Explorer, use one of the following methods:

- Click on the **Start** button, then click on **All Programs, Accessories, Windows Explorer**.
- Press  + .
- If you have an icon on the desktop for Windows Explorer, double-click on the icon.

When Windows Explorer opens, it displays the Folders pane and the contents of the My Documents folder. Notice the title bar shows My Computer even though you started Windows Explorer; remember that if the  button is active, this indicates you are using Windows Explorer. Windows defaults to the My Computer location whenever you start Windows Explorer so you can see all drives available for your computer.

As shown on the following screen, the My Computer location is highlighted in the left pane, and all the drives you have access to on this computer are also displayed. The right pane displays the contents of the My Computer location which in this situation are the drives you have access to on your computer. You may also see files and folders listed in the right pane, based on which folder or drive is selected in the left pane.

Depending on what options have been set or installed by another user on your system, you may see other toolbars displayed than shown in the following screen.



**Folders Pane**

Displays a list of drives and folders in a hierarchical structure. You can see more or less of the folder structures for each drive by using the Expand or Collapse buttons.



Commonly known as the Expand button, you can click on this to show more folders or items beneath this level. You may see several of these buttons based on how the drive or folder structure has been set up. Each time you click on this button, Windows will show more folders or items beneath that level.



Commonly known as the Collapse button, you can click on this to show less folders or items at this level. You may see several of these buttons based on how the drive or folder structure has been set up. Each time you click on this button, you will hide or collapse the folders or items beneath this level.

**Split Bar**

The vertical bar between the Folders and Contents panes; drag this bar to show more or less of the Folders pane.

**Contents Pane**

The right side of the Explorer window that shows the contents of the drive or folder currently selected in the Folders pane. How much information or how the contents are displayed will depend on which view you select. For example, if you have the Details view selected, you will see an icon representing the program associated with the file, the name of the file, and the file type, such as What is Windows.doc, Winzip.exe, or Budget 2004.xls. Alternatively, if you have the Thumbnails view shown, you will have larger icons representing the files and folders, picture files will be displayed in a preview mode, and data files show only the icon for the program associated with the file.

**Status Bar**

Located at the bottom of the screen to provide additional information for the selected drive or file such as number of files in this folder, amount of spaced used and free for the selected drive, etc.



## Exercise

- 1 Click on **Start**.
- 2 Select **All Programs, Accessories, Windows Explorer**.
- 3 Click once on the *My Documents* folder to display the contents of the folder in the Contents pane.
- 4 Click the  next to *My eBooks* folder in the Folders pane to display the contents of this subfolder in the Contents pane.

This expands the selection, showing the items beneath.

- 5 Click the  next to *My Documents*.

This collapses the selection, hiding the subfolder(s) beneath.

- 6 In the Folders pane, click on *My Computer*.

Notice the contents displayed in the right pane.

- 7 Minimize the window.

Now open and modify My Computer to display the same view as used by Windows Explorer.

- 8 From the Windows XP desktop, open **My Computer**.

Look at how the information is displayed in this window.

- 9 Click the  button in the My Computer window.

By displaying the Folders pane, the My Computer window provides you with the same view as Windows Explorer.

- 10 Click the  button again to hide the Folders pane.

- 11 Close all windows.



## Practice Exercise

- 1 Press  + .  
Windows Explorer opens and shows the contents of My Computer.

- 2 Click the  next to the *My Documents* folder.

The Folders pane now expands to show the contents under My Documents.

- 3 Click the  next to *My Computer*.

- 4 Click the  next to *My Documents*.

All folders have now been collapsed.

- 5 Click the  next to *My Computer*.

- 6 In the Contents pane, click on **Local Disk (C:)**.

The drive disk expands all the subfolders beneath and lists the objects in the Contents pane on the right.

- 7 Click the  button to hide the Folders pane.  
Notice how this looks similar to using My Computer.
- 8 Click the  button to display the Folders pane.
- 9 Close the window.

## Selecting Files or Folders



As you work with the computer and create a number of documents, you may need to reorganize your files so that you can quickly find documents. This can be accomplished by setting up a file management system (i.e., creating folders for your files) and moving or copying your files into the appropriate folders so they are better organized. Files and folders may be renamed or you may wish to delete files or folders that you no longer require.

 **IMPORTANT:** When copying, moving or deleting files or folders, ensure you are working with your files and folders. Do not move or delete any program files or program folders.

Before performing any actions such as copying, moving or deleting, the file or folder must first be selected.

Consider the following methods of selecting files or folders:

- To select one file or folder, point to that file or folder.
- To select all the files and folders in this location, select **Edit, Select All** or press **(Ctrl)+(A)**.
- To select multiple files or folders that are consecutive, point to the first file or folder in the list, press and hold down the **(Shift)** key, and then point to the last file or folder in the list.
- You can also use the *lasso* method to select consecutive files or folders. Point at the right of the first file or folder to be selected, then click and drag up or down to select the rest of the files or folders for the selection. A blue box will appear as confirmation of the selection, in addition to the files or folders being highlighted.
- To select multiple files or folders that are non-consecutive, point to the first file or folder to be selected, press and hold the **(Ctrl)** key, and then point at each file or folder to be selected.
- At any time files or folders are selected, if you need to change any part of the selection, you can use either the **(Shift)** or **(Ctrl)** key to deselect specific parts of the selection.

You can also invert your selection. This can be handy when you need to change the selection on files or folders. For example, you have selected all files and then realize you only need to select a couple of these files. With all the files selected, use the **(Ctrl)** key to deselect the two files you need, then use the **Edit, Invert Selection** command to invert the selection so that the two files you need are selected and everything else is deselected.

To turn off the selection on any files or folders, click anywhere in a blank area away from the selection.



### Exercise

- 1 Press **(Win)+(E)** and navigate to the Student data files folder.
- 2 If necessary, select the **List** view.

 If your files are listed in descending order, change the view to **Details** first, and click on the **Name** column to sort the files in ascending order. Then change the view to **List** to continue with the exercise.

You will now select a continuous list of files.

- 3 Highlight **Annual Sales Report** first, and then press **(Shift)** while highlighting the **Letter to Henry Smith** file.

Notice the list of files selected.

- 4 Click in a blank area to deselect the list.

You will now select files in random order.

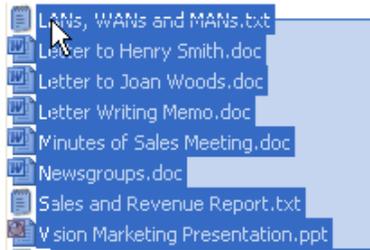
- 5 Select the **Annual Sales Report** file, press and hold the **(Ctrl)** key while highlighting the **Letter to Joan Woods** file.

The two files are now selected.

- 6 Click in a blank area to deselect the list.

You will now use the *lasso* technique to select files.

- 7 Position the mouse pointer on any blank space to the right of the **Vision Marketing Presentation** file and hold the left mouse button down as you drag up to the **LANs, WANs and MANs** file. As you drag the mouse, notice the box appearing around the selected files.



- 8 When the files have been selected, release the mouse. The files will then be selected and the lasso box disappears.

- 9 Click anywhere away from the selection to deselect the list.

You will now select all contents in this location.

- 10 Press **(Ctrl)+A**.

- 11 Click to deselect the list.

You could also have clicked once within the selection to deselect the list. However, to ensure that you do not inadvertently manipulate a file in the list by accident, consider clicking away from the list to deselect the list items as well as provide yourself with a visual clue to confirm the deselect action.

You will now create a folder after selecting a location in the Folders pane.

- 12 Right-click in a blank area of the Contents pane and then click on **New, Folder**.

- 13 Type: **Unit 2 - Windows** as the name of the new folder and then press **(Enter)**.

- 14 Click to open the folder, right-click in the Contents pane and then click on **New, Folder**.

- 15 Type: **Practice Files** as the name of this new folder and press **(Enter)**.

Look at your folder in the Folders pane and notice the first new folder you created is now listed below your other folders.

- 16 If you do not see the new subfolder created, click on the **(+)** at the left of the **Unit 2 - Windows** folder to expand the list.



## Practice Exercise

- 1 If necessary, open the Student data files folder.
- 2 Select the **Details** view.

Practice selecting files in sequential order.

- 3 Highlight one file.
- 4 Scroll to see the last file in the list and then press the **(Shift)** key while highlighting the last file.
- 5 Click in a blank area to deselect the list.

Practice selecting files in random order.

- 6 Highlight one file.
- 7 Press the **(Ctrl)** key while highlighting another file.
- 8 Click in a blank area to deselect the list.
- 9 Select four files in random order.
- 10 Select **Edit, Invert Selection**.

The previously selected files are no longer selected and the unselected files are now selected.

- 11 Click to deselect the list.
- 12 Drag the mouse to select multiple files. Position the mouse pointer on any blank space to the right of the file name and drag across five files. When the files have been selected, release the mouse.
- 13 Click to deselect the list.
- 14 To select all files, press **(Ctrl)+A**.
- 15 Click to deselect the list.

## Copying and Moving Files or Folders



Files or folders may be copied or moved from one drive location to another, from one folder to another, or to the desktop. You may find it more convenient to display the Folders pane as this allows you to see the hierarchical structure of the folders and subfolders and to quickly navigate between the different folders or drives. The procedures for copying or moving files are similar; there are a number of techniques that may be used: the toolbar, **Edit** menu, shortcut keys or right dragging. In addition, the **Send To** menu may be used to copy files.

### Copying Files or Folders

When a file or folder is *copied*, it remains in the original or source location and a copy is placed in the destination location. The same information will be in two locations; this is important to remember when updating files.

You need to select the files or folders first prior to copying. Use one of the following methods to copy a file or folder:

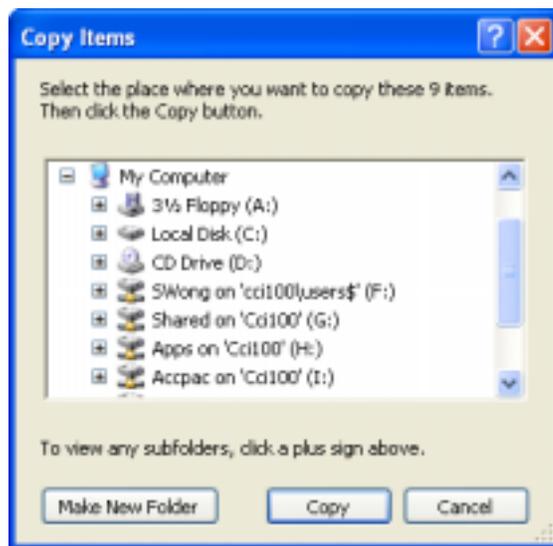
- Select **Edit** and then **Copy**. Move to the new location and then select **Edit, Paste**.
- Press **(Ctrl)+C**. Move to the new location and then press **(Ctrl)+V**.
- Right-click on the selection and then click on **Copy**. Move to the new location, right-click and then click on **Paste**.

- If using My Computer, click on **Copy the selected items** from the File and Folder Tasks pane. Move to the new location in the Copy Items window and then click on the **Copy** button.
- If buttons have been set up on the toolbar, click on the  (**Copy**) or the  (**Copy To**) button. When using the Copy button, move to the new location for the file or folder, and then click on the  (**Paste**) button.
- If copying files from one drive to another, Windows will automatically set up the selection to be copied as you drag the selection to the new location. You can also copy a selection using the drag and drop method on the same drive by pressing the **(Ctrl)** key as you drag the selection to the new location.

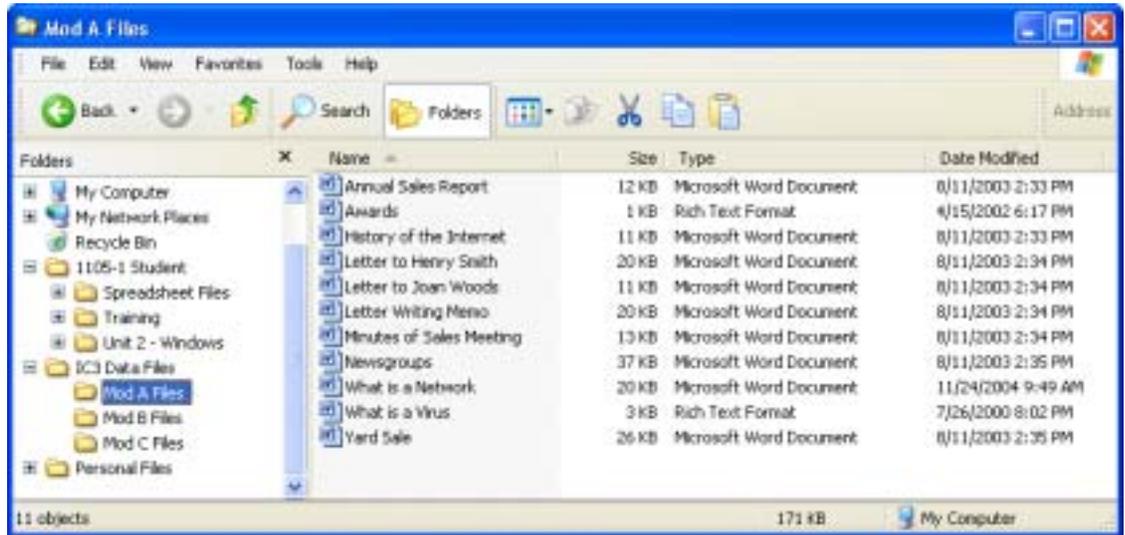


### Exercise

- 1 Ensure you are in the location where the data files have been stored.
- 2 Select the **Details** view and arrange the icons by **Type**.
- 3 Select all of the **Microsoft Word (.doc)** document files.
- 4 Click on the  button to switch back to the My Computer mode. In the File and Folder Tasks pane, click on **Copy the selected items**.

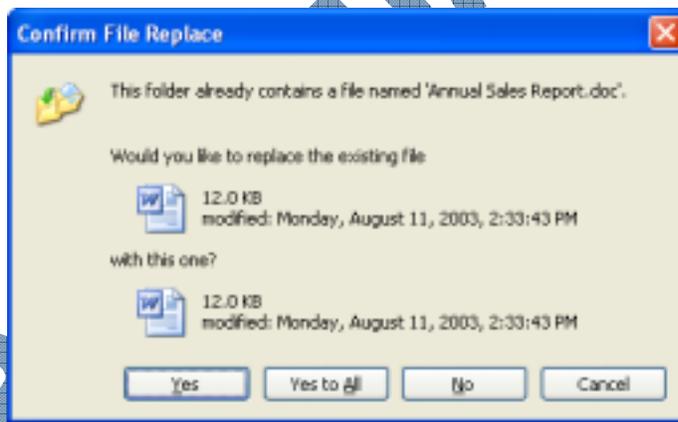


- 5 Scroll down the list until you see the **IC3 Data Files** folder. Click on the  to expand the folder. Then click on the **Mod A Files** folder.
- 6 Click the **Copy** button.  
The files will be copied from the student data folder into the **IC3 Data Files\Mod A Files** folder.
- 7 Click on the  button to display the Folders pane. Move down the Folders pane until you see the **IC3 Data Files** folder.
- 8 If necessary, click on the  to expand this folder and then click on the **Mod A Files** folder to display the contents of this folder in the right side of the window.



- 9 Move back to where the student data files for this course are stored.
- 10 Press **(Ctrl)+(A)** to select all the files and then press **(Ctrl)+(C)**.
- 11 Scroll down the list in the Folders pane until back at the **Mod A Files** folder. Click on the folder to select it.
- 12 Position your mouse cursor somewhere in the Contents pane (where the files currently are) and then press **(Ctrl)+(V)** to paste in all the copied files.

Windows will now begin to copy the files from the student data location into the **Mod A Files** folder. Since you selected all the files to be copied, you will see a message similar to the following:



This message occurs because Windows has detected that another file with the same name exists in the folder where the new file is being copied. Be careful whenever you see this message to ensure that you do want the new file to be copied overtop of the existing file. This is one of the reasons why you may want to keep the names of all your files as unique as possible.

- 13 Click on **Yes to All** to copy all the files into this folder.  
All of the files are now copied to the Mod A Files folder.
- 14 Right-click on the **Personal Docs** folder in the Folders Pane and then click on **Copy** from the shortcut menu.
- 15 Right-click in a blank area of the **Mod A Files** contents pane and then click on **Paste**.  
You now have a copy of the **Personal Docs** folder within the **Mod A Files** folder.



### Practice Exercise

- 1 Ensure you are in the **Mod A Files** folder.
- 2 Click in the **Spreadsheet Files** folder, right-click on the *Computer Sales* file and then click on **Copy**.
- 3 In a blank area of the Contents pane, right-click and then click on **New, Folder**. Type: **Practice Files** for the name of the new folder and press **Enter**.
- 4 Click on the **Practice Files** folder to open it, right-click in a blank area of this folder and then click the **Paste** command.
- 5 Click on the  button to move up to the **Mod A Files** level.
- 6 Right-click in a blank area of the window and then click on **New, Folder**. Type: **New Projects** for the name of the new folder and press **Enter**.
- 7 Select the **Spreadsheet Files** folder and then press **Ctrl+C**.
- 8 Click on the **New Projects** folder to open it, right-click in a blank area and then select the **Paste** command.

The **Spreadsheet Files** folder is copied from the **Mod A Files** folder to the **New Projects** folder.

### Moving Files or Folders



When a file or folder is *moved*, it only resides in the destination location and will be deleted from the original location. When you move a folder, all of the subfolders and files will be moved as well.

After selecting the files or folders to be moved, use one of the following methods to move a file:

- Select **Edit** and then **Cut**. Move to the new location and then select **Edit, Paste**.
- Press **Ctrl+X**. Move to the new location and then press **Ctrl+V**.
- Right-click on the selection and then click on **Cut**. Move to the new location, right-click and then click on **Paste**.
- If using My Computer, click on **Move the selected items** from the File and Folder Tasks pane. Move to the new location in the Copy Items window and then click on the **Move** button.
- If buttons have been set up on the toolbar, click on the  (**Cut**) or the  (**Move To**) button. When using the Cut command, move to the new location for the file or folder and then click on the  (**Paste**) button.
- You can also drag the selected files or folders to the new location, provided the new location is on the same drive. The moment you switch drives, Windows recognizes this and will automatically copy the selection unless you press the **Shift** key as you drag.



### Exercise

- 1 Ensure you are in the **Mod A Files** folder.
- 2 Select all the files ending with **.doc** and then press **Ctrl+X**.
- 3 Right-click in a blank area of the Contents pane and then click on **New, Folder**. Type: **Word Processing** and press **Enter**.
- 4 Click on the **Word Processing** folder, click in the Contents pane for this folder and then press **Ctrl+V**.

The **.doc** files are now moved from the **Mod A Files** folder into the **Word Processing** folder.



### Practice Exercise

- 1 Ensure the contents of the **Practice Files** folder are displayed in the right pane.
- 2 Place your mouse pointer over the **Computer Sales.xls** file and right-drag it overtop of the **Training** folder in the Folders pane.
- 3 Release the mouse and select **Move Here** from the shortcut menu.  
The file will be moved from the **Practice Files** folder into the **Training** folder.
- 4 Open the **Training** folder to verify that the file has been moved.

## Renaming Files or Folders



3.2.6  
3.2.7

When saving new documents, you need to specify a unique name for each file. Over time, you may need to *rename* a file to make it more descriptive or to identify it as an older file, thereby saving you time and enabling you to quickly identify the contents of the document. Folders can also be renamed. Remember the two limitations for file or folder naming conventions are a maximum of 255 characters, and the following characters: @, \, space, : (colon), <, >, |.

When renaming files or folders, ensure you are working with your files/folders. Do not rename any program files or program folders. Ensure you keep the same extension for the file or Windows will display an error message indicating the file type is not recognizable and may not be accessible after you accept the new name. As seen in a previous lesson, you can rename files in the same manner as with folders. To activate the Rename feature, use one of the following methods:

- Click on the file icon to select it and then press **F2** to activate the **Edit** mode.
- Click on the file icon to select it and then click inside the file name to activate the **Edit** mode.
- Right-click on the file and then click on **Rename** from the shortcut menu.
- Click once on the folder to select it. Then click once in  the folder name to activate the **Edit** mode.



### Exercise

- 1 Ensure you are in the **Mod A Files** folder.
- 2 Click on the **Word Processing** folder to open it. Point at the **Annual Sales Report** file and then press **F2**.
- 3 Using the arrow keys, move to the end of the word **Report**, insert a space and type: **2004** then press **Enter**.
- 4 Point at the **Minutes of Sales Meeting** file to select it.
- 5 Right-click on the file and then click on **Rename**.
- 6 Type: **ABC Corporation Sales Meeting.doc** and press **Enter**.

Notice how a file can be renamed with a long descriptive title, as required.



### Practice Exercise

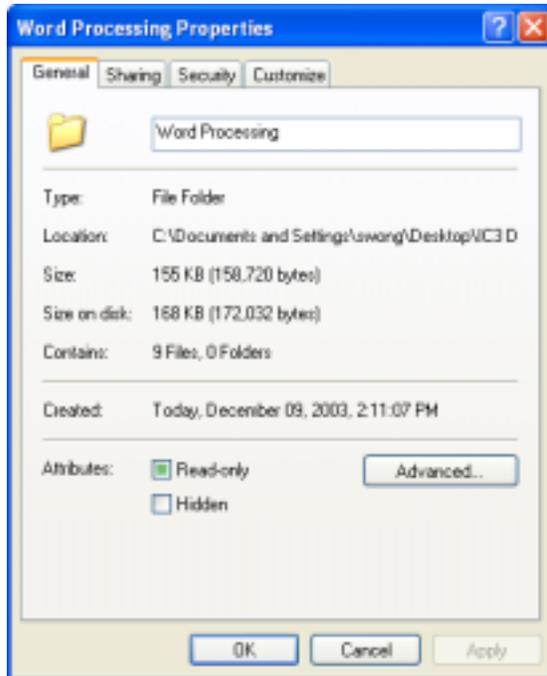
- 1 Ensure you are in the **Word Processing** folder within the **Mod A Files** folder.
- 2 Point at the **Letter Writing Memo** file to select it and press **F2**.
- 3 Type: **Interoffice memo regarding letter writing.doc** and press **Enter**.
- 4 Click on the  button to display the **Mod A Files** folder.

## Viewing File or Folder Properties



3.2.6

Windows provides you with additional information about your files or folders. Each file or folder has a *property sheet* that can be used to determine when a file was created, modified or accessed, or to determine the size of a folder. The number of tabs that appear when viewing the properties for a file or folder will depend on the folder, file type, or network connection and access rights.



### General

Displays information such as the file type, location, size, contents, date information and attributes such as read only or hidden. By default, hidden folders and files are not displayed.

### Sharing

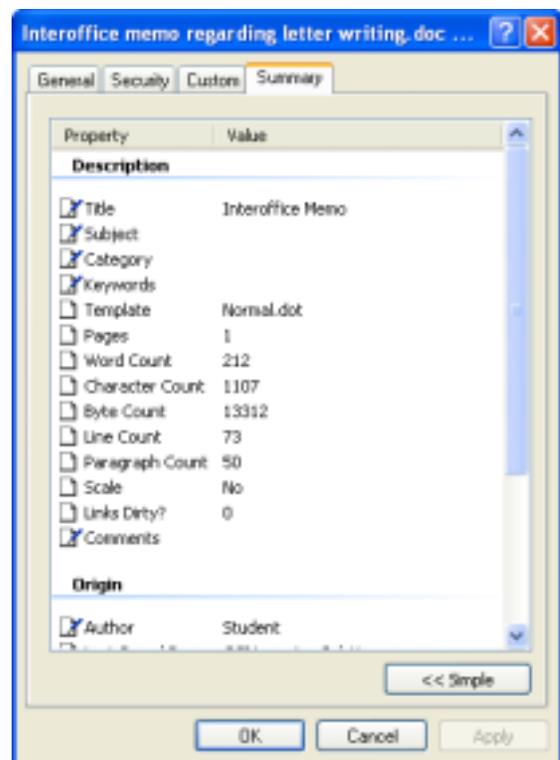
If your computer is part of a network and set up to allow file sharing, this tab will be shown when viewing the properties of a folder. The tab allows you to share the folder and its files with other users on your network. Consult your Network Administrator for more information on sharing folders or files.

### Security

If on a network, this tab allows you to view who has access rights to this folder and the type of rights assigned by the Network Administrator. You can only change the rights for your own user id(s); only the Network Administrator can change the rights for other people who may share this file or folder.

**Customize** Add or remove specific information about the file, e.g., name or department where the file was created, the type of file, etc. This option is available with files only. If you are viewing the properties for a file, this will contain information fields about the file such as author, typist, keywords, etc.

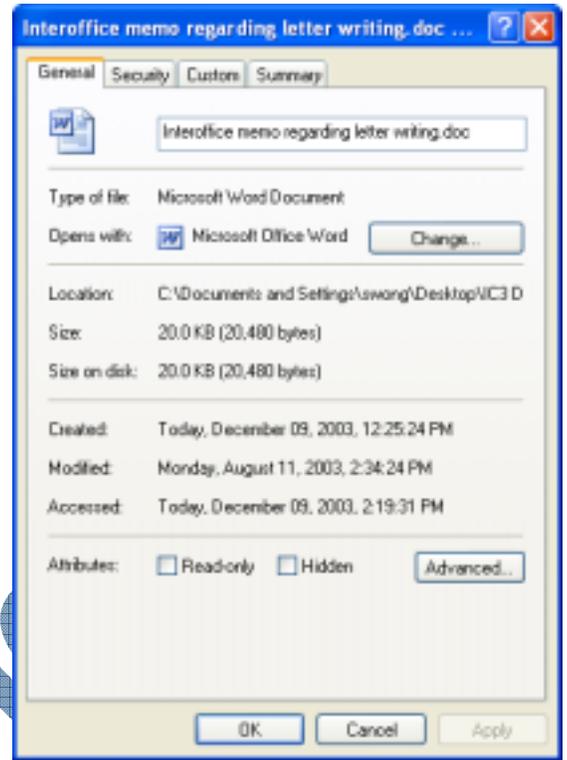
**Summary** This tab appears only when looking at the properties of a file. It displays a summary of general information on the file such as the author, some keywords that can be used to search for this file, when it was created, total number of words used in the document, etc. The **Advanced** button can be used to show all the information and statistics (as shown here), or the **Simple** button can show fields for basic information on the file (keywords, author, title, etc.). Whichever button was used last when viewing the properties for a file or folder will determine what appears the next time you activate this feature.



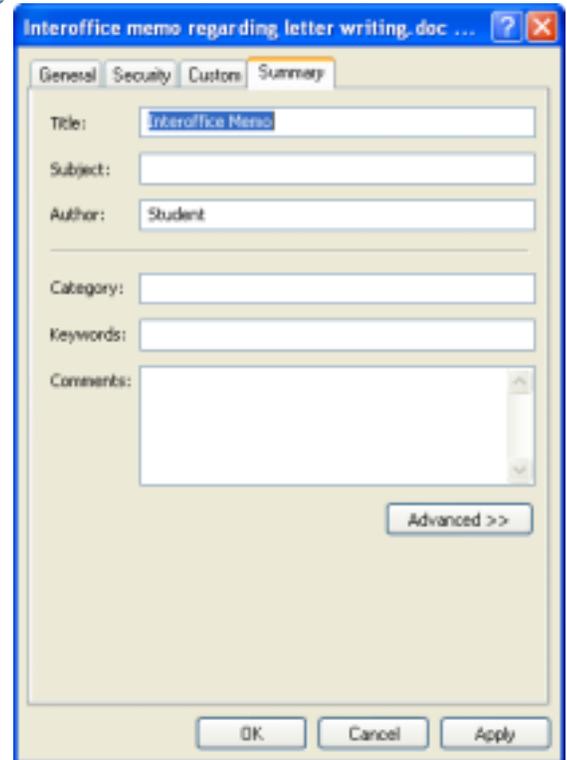
 **Exercise**

- 1 Ensure you are in the **Word Processing** folder.
- 2 Right-click on the **Interoffice memo regarding letter writing** file and then click on **Properties**.
- 3 Ensure the **General** tab is active.

Notice how Windows displays the program it has associated with the file type used (e.g., doc), as well as provides you with some general information regarding the file, e.g., when it was modified or accessed, if the file was set for read only versus open access, etc.



- 4 Click on the **Summary** tab.
- 5 Click on the **Advanced** button.
- 6 Scroll through the list to see the different types of information you can obtain for a file.
- 7 Click on **OK** to exit the properties.

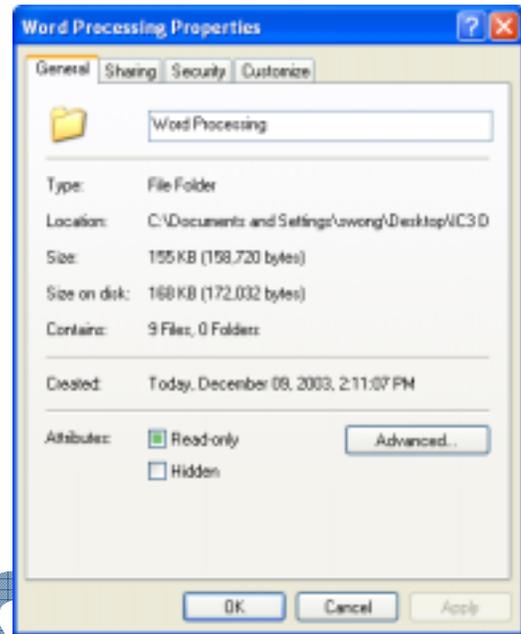


- 8 Click on the  button to display the **Mod A Files** folder.



## Practice Exercise

- 1 Ensure you are in the **Mod A Files** folder.
- 2 Right-click on the **Word Processing** folder and then click on **Properties**.
- 3 Click on each of the tabs available to you to see the properties for this folder.
- 4 Click on **OK** to close this window.



## Finding Files

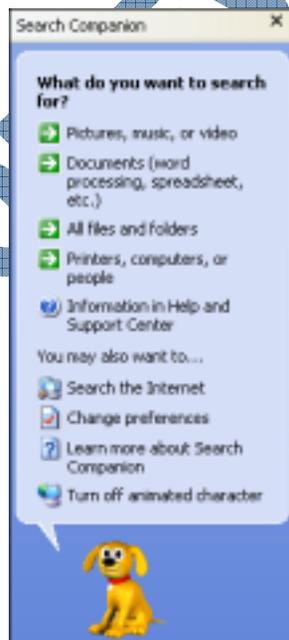


If you need to locate a particular file or folder, you can search for it by browsing through the various disk drives or folders. When you use Search, you can specify several search criteria, e.g., name, type, size, etc. You can also find a file based on when you last worked on it, specific text, or use the advanced options to specify additional search criteria. Windows also makes it easy to search for printers, people, and other computers on your network.

You can activate the Search feature using one of the following methods:

- Open My Computer and select **File, My Computer, Search**.
- Click the button from the toolbar in either My Computer or Windows Explorer.
- Click on the **Start** menu and then click on **Search**.

Windows will display a number of options to use when searching.



### What do you want to search for?

Use the options to help you narrow the search for specific items whenever possible; alternatively, have Windows search through every file or folder. You can also search specific devices, as needed.

### You may also want to

Use this area to either search for an item beyond your computer, or customize how Search looks or reacts. The Search Companion is the character at the bottom of the Search pane.

Once you select what you want to search for and/or where to search, Windows will then display a new window where you can enter the search criteria:



**All or part of the file name**

Type the name or partial name of the file or folder to be located. Use *wildcards*, such as the asterisk (\*) or question mark (?), to replace characters in the search text to narrow the search. For example, bdg??.xls will find all Excel files that are five characters in length and begin with “bdg”, whereas bdg\*.xls will find all Excel files that begin with the bdg characters but the file name can be any length.

**A word or phrase in the file**

Type the document text you wish to find. The document text will be searched in all files, and any documents matching the search criteria will be displayed in the search results window.

**Look in**

Specify the location for the search, e.g., My Documents, My Computer, local disk or network disk.

**When was it modified?**

Search for files modified, created or accessed within a specified period of time, e.g., within the last month, day, specific date, etc.

**What size is it?**

Specify the approximate size of the files you are searching.

**More advanced options**

List additional choices for defining the search criteria, e.g., search subfolders, search for hidden files or folders, search system folders, search for case sensitive text, etc.

As you enter the search criteria, you may find that words appear. This is known as the AutoComplete feature which keeps track of the entries in the Search field to help reduce the amount of time spent retyping information. You can select the appropriate text from the list to save time. You can also remove an item from the list by selecting it on the list and then pressing .

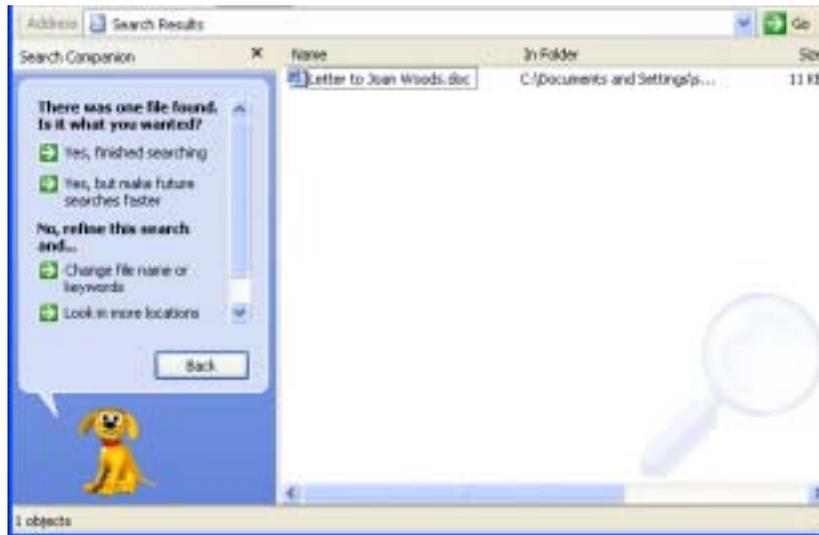
Once you activate the **Search** button after entering the criteria, Windows will display any matching results in the pane at the right. The Search feature can be turned off by clicking on the button.



**Exercise**

- 1 Open Windows Explorer and ensure you are in the **Mod A Files** folder.
- 2 Click the button to display the Search pane.
- 3 Click on **All files and folders** in the **What do you want to search for** area of the Search Companion pane.
- 4 Type: **letter** in the **All or part of the file name** field.
- 5 Type: **industrial** in the **A word or phrase in the file** field.
- 6 Select the **Word Processing** folder in the **Look in** field.
- 7 Click the **Search** button.

Results are displayed in the right pane of the Search Results window.



- 8 Click on the file name to open the file. Notice the file contains the *Industrial* text.
- 9 Close the document and the program by selecting **File, Exit**.
- 10 Close the Search Results window.



### Practice Exercise

- 1 Open My Computer.
- 2 Click the button.
- 3 Click on **All files and folders**.
- 4 Type: \*.doc in the **All or part of the file name** field.

By using the \* wildcard, you are asking Windows to look for files of any characters or length but must end with the .doc file type.

- 5 Select the **Word Processing** folder in the **Look in** field.
- 6 Click the button next to **When was it modified?**.
- 7 Ensure the **Don't Remember** option is selected.
- 8 Click the **Search** button.
- 9 Change to the **Details** view to see the modified date and time displayed for the results.
- 10 Close the Search Results window.

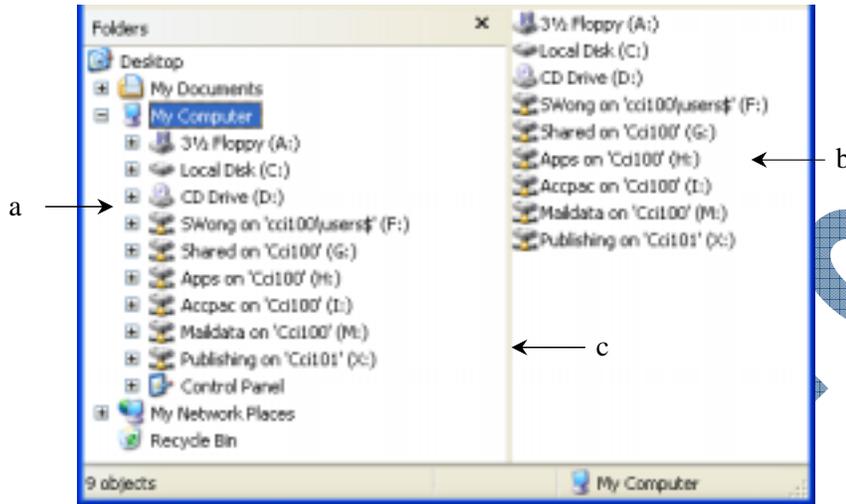
### Summary

In this lesson you looked at the Windows Explorer and learned how to manage files using this feature. You should now be familiar with the following:

- Selecting files or folders
- Copying files or folders
- Moving files or folders
- Renaming files or folders
- Viewing file or folder properties
- Finding files

### Review Questions

1. Windows Explorer displays files, folders, or drives in a hierarchical structure where you can see multiple files, folders, or drives.
  - a. True
  - b. False
2. Identify the elements on the following image:



- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

3. To select consecutive files, which key would you use to help you select the files?
  - a. **Ctrl**
  - b. **Alt**
  - c. **Shift**
  - d. **Tab**
4. To select non-consecutive files, which key would you use to help you select the files?
  - a. **Ctrl**
  - b. **Alt**
  - c. **Shift**
  - d. **Tab**
5. What's the difference between copying and moving files or folders?
6. Which method could you use to rename a file or folder?
  - a. Select the file or folder name and then press **F2**
  - b. Click on the file or folder name to select it and then click in the name
  - c. Right-click on the file or folder name and then click on Rename
  - d. All of the above
  - e. Only a or c
7. When looking at the properties for a folder, the number of tabs that appear will depend on whether you are on a network and able to share this folder with others.
  - a. True
  - b. False

8. What kind of information can the Summary tab for a file show?
  - a. When the file was last modified or accessed
  - b. Who authored the file
  - c. The size of the file
  - d. How many words were used in the file
  - e. All of the above
  
9. How can you activate the Search feature?
  - a. From the Start menu
  - b. With the Search button in the toolbar
  - c. From the File, My Computer menu
  - d. All of the above
  - e. Only a or b
  
10. When looking for a file, you must know exactly when it was created or how it was named before you can enter it as search criteria.
  - a. True
  - b. False

FOR EVALUATION ONLY

## Lesson 9: Using the Recycle Bin

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at how to delete files to the Recycle Bin and how to restore deleted files. You will also look at some ways to help resolve problems you may have with files. On successful completion, you will be familiar with the following:

- Deleting files or folders
- What the Recycle Bin is
- Restoring files from the Recycle Bin
- Emptying the Recycle Bin
- Recognizing or identifying some common problems with accessing files

### Looking at the Recycle Bin



3.2.6

The Recycle Bin is a temporary storage area for files and folders that have been deleted from the hard disk. Files and folders deleted from a floppy disk or a network drive are not sent to the Recycle Bin.

The Recycle Bin has an icon on the desktop for easy access, but is also accessible from within My Computer or Windows Explorer. The Recycle Bin will appear in two displays:



The first indicates there is something in the Recycle Bin that can be restored or emptied, and the second means the Recycle Bin is empty.

If the computer is shared by multiple users, a separate Recycle Bin is maintained for each user set up on this computer.

If you are deleting a confidential file and do not want to have it stored in the Recycle Bin, press and hold the **(Shift)** key while deleting the file; this bypasses the Recycle Bin and the file will be permanently deleted.

### Deleting Files & Folders



3.2.6  
3.2.7

Over time, you may find that you have a number of old document files that you no longer need. To save disk space, these types of files should be deleted. If you no longer require a folder, delete it as well.

If a folder contains files, they will be deleted at the same time as the folder. Before deleting a folder, ensure that you do not require any of the files it contains. This is especially crucial if the folder was stored on a network drive or floppy disk as they are not deleted to the Recycle Bin. Deleted files or folders from a network drive may be recoverable but you need to go through the Network Administrator to see if this is possible.

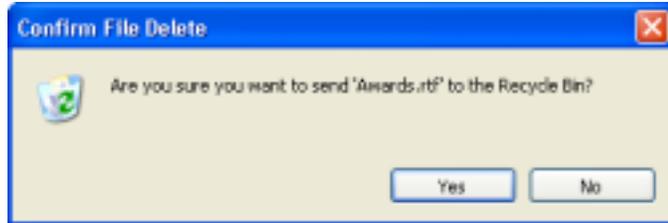
To delete a file or folder, select the required file or folder to be deleted and then use one of the following methods:

- Select **File** and then **Delete**.
  - Click on the  (**Delete**) button in the toolbar, if available.
  - Press **(Delete)**.
  - Right-click and click on **Delete** from the shortcut menu.
  - If the item to be deleted is on the desktop, drag it overtop the Recycle Bin to delete it.



### Exercise

- 1 Open the **IC3 Data Files** folder on the desktop.
- 2 Open the **Mod A Files** folder.
- 3 Right-click on the **Awards.rtf** file and then click on **Delete**.



- 4 Click **Yes**.  
The file is deleted from the **Mod A Files** folder and placed in the Recycle Bin.
- 5 Point at the **Practice Files** folder to select it and then press the **Delete** key.



- 6 Click **Yes**.  
The folder and its contents are deleted and placed in the Recycle Bin.



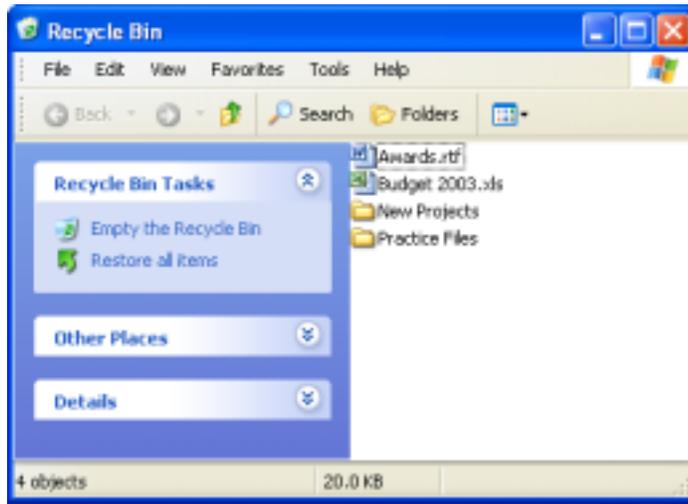
### Practice Exercise

- 1 Ensure you are in the **Mod A Files** folder.
- 2 Open the **Budgets** folder, located in the **Spreadsheet Files** folders.
- 3 Select the **Budget 2003.xls** file and press **Delete**.
- 4 At the Confirm File Delete window, click **Yes**.
- 5 Now select and delete the **New Projects** folder.
- 6 At the Confirm Folder Delete window, click **Yes**.
- 7 Close the folder window.

## Restoring a File or Folder



If a file or folder is accidentally deleted, you can “undelete” or restore it to its original location. If you restore a file that was originally located in a deleted folder or subfolder, the folder and/or subfolders will be restored as well as the file.



To restore a file or folder from within the Recycle Bin feature, use one of the following methods:

- Select the file or folder to be restored, and then click on **Restore this item** in the Recycle Bin Tasks area.
- If multiple files or folders are to be restored, select the appropriate files or folders, and then click on **Restore the selected items** in the Recycle Bin Tasks area.
- If all items are to be restored, click on **Restore all items** in the Recycle Bin Tasks area.
- Select **File** and then **Restore** to restore the selected item(s) in the Recycle Bin.
- Right-click on the selected files or folders, and then click on **Restore**.

If you have several items in the Recycle Bin with similar names, you can change the view option to show more or less detail as required.



### Exercise

- 1 On the desktop, open the **Recycle Bin**.
- 2 Select **View, Details**.
- 3 Select **View, Arrange Icons by, Date Deleted**.
- 4 Select the **Awards.rtf** file.
- 5 In the Recycle Bin Tasks pane, click on **Restore this item**.  
The file is now restored.
- 6 Highlight the **Practice Files** folder.
- 7 In the Recycle Bin Tasks pane, click on **Restore this item**.
- 8 Close the Recycle Bin.
- 9 Open the **IC3 Data Files** and then the **Mod A Files** folder from the desktop.  
Notice both these items have been restored.
- 10 Close the folder window.



### Practice Exercise

- 1 Open the **Recycle Bin**.
- 2 Right-click on the **New Projects** folder.
- 3 Select **Restore** from the shortcut menu.
- 4 Close the Recycle Bin.
- 5 Open the **IC3 Data Files** folder and then the **Mod A Files** folder.  
Notice the folder has now been restored.
- 6 Close the window.

### Emptying the Recycle Bin



Deleted files remain in the Recycle Bin until you empty the Recycle Bin or, if it fills up, Windows will automatically delete the older files and folders to free up enough space for any new files and folders that you are deleting. Once you empty the Recycle Bin, the files and folders are permanently deleted.

To empty the Recycle Bin, use one of the following methods:

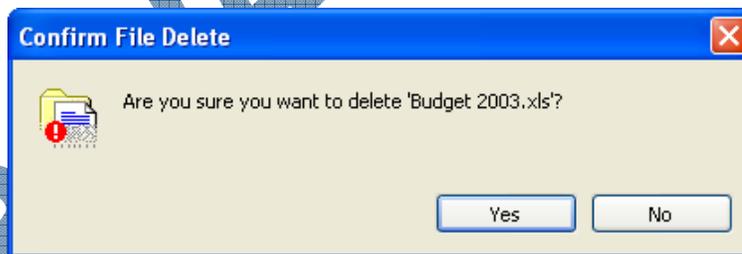
- Click on the **Empty the Recycle Bin** option in the Recycle Bin Tasks area.
- Select **File** and then **Empty Recycle Bin**.
- Right-click in a blank area of the Recycle Bin window and click on **Empty Recycle Bin**.

You can also empty the Recycle Bin from the desktop by right-clicking on the Recycle Bin icon and then clicking on **Empty Recycle Bin**.



### Exercise

- 1 From the desktop, right-click on the **Recycle Bin**.
- 2 Select **Empty Recycle Bin** from the shortcut menu.



- 3 Click **Yes**.
- 4 Open the **Recycle Bin**.  
This window should now be empty of any files and folders.
- 5 Close the Recycle Bin.

## Identifying Common Problems with Files



Working with the Recycle Bin is a great feature to help with file management, especially if you don't want or need the files or folders any longer. However, not being able to access a file is not always the result of the file being deleted and no longer in the current drive where your work is stored.

When working with files, you may encounter an occasional problem in finding, opening, copying or moving a file. Many of these problems usually stem from the fact that the file either has a file type that is not recognized by Windows, the file exists in a different location, or with a different name. The Search feature is very helpful in being able to put in specific criteria to narrow down the search for a file. There are other situations where the Search feature won't help you. Some of these include:

- When saving files or folders, be sure to use a standard naming convention, as set out by the company or department. If you are not on a network, consider setting up a standard naming convention for yourself so that you can find files easily as well as make it simple for others when sharing your files. For example, if you receive budgets from different departments, rename each to start with the year and then the department name (e.g., 2004 Sales.xls, 2004 Warehouse.xls, etc.), and the final consolidated one would follow this convention (e.g., 2004 Consolidated.xls).
- Try not to leave all your documents in one location (e.g., My Documents), especially if you have to share documents with others. While you can start by using this folder as your central location for managing files, eventually you should look at creating folders and moving files into the appropriate folders to help you find information. For example, it is easier to find the letter sent to a specific customer in a folder with that customer's name than to search through all the letter files in the My Documents folder.
- As noted previously, if Windows displays a message indicating the selected file does not have a program that Windows can associate with it, this is a clear sign that you either do not have the necessary software program installed on your computer to read this file, or the file type was incorrectly typed while the file name was being changed (e.g.: from jpg to jgp). To resolve this issue, look at the file name and the file extension at the end of this file. You may need to get technical support involved in order to either allow you to install the correct software or to help you determine the type of file so it can be read by one of the programs on your system. For example, you cannot read any PDF files unless you have Adobe Reader installed.
- Be careful when renaming files if your system has been set up to show the file types. If the file shows a file type originally, you must type in the same file suffix after entering the file name. There must also be a period between the file name and the file suffix in order for Windows to recognize the file type, e.g., Interoffice memo regarding letter writing.doc, Sales budget.xls, What is a Virus.rtf, etc.
- If you are unsure whether to copy or move a file or folder, the best course of action is to copy the file or folder. You can always go back and delete the duplicate file or folder later. This may be crucial when working with a network drive, especially if you are located in an area where there might be a lot of power surges that can affect the network connection.
- In addition, be very careful when moving files or folders. Be absolutely sure you have the correct file or folder selected prior to activating the move command. It is very easy to accidentally move the mouse and point at another file or folder when using the single click mode. This can be a very common occurrence on a network where multiple users have access to the same folders or files. If you cannot find a file (or folder), open Windows Explorer and check other folders in the area where the file should be to see if it was inadvertently moved to another folder by another user. If this is a constant problem in the office, ask the Network Administrator to set up access restrictions for moving files or folders.

- If using floppy disks, consider saving a copy of the file on your local drive before saving it to a floppy disk. Work with the file from the local drive and when all changes are complete, then copy the file to the floppy disk. This will ensure that if the floppy disk is corrupted in any way, you will still have access to the file for editing. Floppy disks may also be corrupted by other systems due to the way the heads are aligned in the floppy disk drive and as such cause the floppy disk not to be recognized in the other system.
- When deleting files or folders, always try to delete them so they go to the Recycle Bin. You can always restore the file or folder later provided it exists in the Recycle Bin first. Remember that Windows does not send files from a floppy disk or a network drive to the Recycle Bin. Consider copying these files to a temporary folder on your local drive before deleting them.
- If you cannot open a file, read the error message that Windows will display for you. Even though you are using an application program to open the file, Windows will still help you by displaying an error message if the file isn't accessible. Generally this occurs if the file is in a format the program cannot read, the file is corrupted, or you do not have access rights to open the file due to password or network/logon restrictions. You may need to check with your Network Administrator to obtain access rights to certain files if you are expected to work with existing files created by others.
- A file can have a password saved with the file, even assigned within an application program or through an encryption program. Without the password you will not be able to access this file. This is true even if you assign a password to a file and then don't remember what the password is. You will not be able to access this file again. Be very careful when using passwords on your own files; be sure to use one that is logical to you or the file, and not obvious to others if this file is confidential. If the password was assigned by someone else, you will need to get that password in order to open the file. While there are some programs that can "crack" the encryption or password used to protect that file, they will not always remove the password and only experience support people should work with these types of encryption programs.
- There is no absolute method of preventing your files from being corrupted. Corruption can happen as a result of hardware failure, power surges, software/hardware incompatibilities, software issues, or viruses. The best method of protection is to ensure you have an anti-virus program installed and that it is kept up to date against new or revised strains of viruses, you perform maintenance on your systems on a frequent basis to ensure there are no hardware issues you should be aware of, and that there are backups of your data. Backups could be performed by the network on a daily basis, you could use the Backup feature provided with Windows, or you could create a copy of your data files by writing these files to a CD as your backup.
- Consider making backups of your data files, even if you don't think you may need them. Backups are exactly what they imply and can provide you with security against potential loss due to theft, fire, hardware failure, etc. It doesn't matter which method you use to create a backup but do consider setting up a backup to occur on a frequent basis. Remember that a backup is not necessarily a duplicate copy of the contents of your hard drive or data files; it could also be the storage device you use for very large files (or older files) you do not use all the time, e.g., pictures, video, documents from five years ago, etc.
- One precaution you should consider is the amount of files that may be on your system. There is often a false security of believing you can keep all your files on the system due to the size of hard drive, or keeping deleted files in the Recycle Bin. This is considered a false security because the more items you leave on the hard drive, the more space is taken up by these files. Windows requires a minimum amount of space on the hard drive in order to process work (i.e., open or save data files) as well as for running programs; this space is in addition to what occurs with RAM. Similar to a physical filing cabinet, you will need to do some file management when the cabinet becomes full. As you begin to fill up the drive, Windows processing will begin to slow down.

- This is an example of why it is important to learn how to use My Computer or Windows Explorer to manage your files. Consider deleting files that are older than a couple of years or write them to a CD for storage and then delete them to free space on the local hard drive. When working with picture, video, or music files, consider writing these to a CD as well if you don't use them all the time. These files are generally large in size and when you have several files of these types, they can add up quickly and take up a lot of space on the local drive.
- Whenever possible, schedule disk maintenance (discussed in the next lesson) to prevent lost or broken portions of files. On occasion you may hear someone refer to broken or lost clusters; this terminology refers to the concept of how and where files are saved. The hard disk constantly spins during the time the computer is on; when you activate the save command, the hard disk stops at the first available space to complete the command. If there is enough room there for the file, it will save it there in its entirety. If not, it will save as much as it can and then save the rest in the next available free space. Therefore, as the computer gets used more often and software programs are installed or uninstalled, and files are deleted or saved, the hard disk will need to be reorganized. Windows provides you with a few utilities to help clean up the hard disk and prevent these clusters from being lost or further fragmented, which can lead to the file being corrupted. Running these utilities will improve the system performance.

As there is no sure method to ensure the files you create or use are available all the time, the general rule of thumb for working with files is to ensure you have a backup of the data for “disaster recovery”. Always work with technical support for files where error messages indicate an access problem until you become more experienced with computers. Technical support is often the best way to learn how to manage and resolve problems that occur with files.

## Summary

In this lesson you looked at how to delete files to the Recycle Bin and how to restore deleted files. You also looked at some ways to help resolve problems you may have with files. You should now be familiar with the following:

- Deleting files or folders
- What the Recycle Bin is
- Restoring files from the Recycle Bin
- Emptying the Recycle Bin
- Recognizing or identifying some common problems with accessing files

## Review Questions

- The Recycle Bin is a temporary storage area for files and folders that have been deleted from the hard drive.
  - True
  - False
- Files or folders deleted from any drive are automatically placed in the Recycle Bin.
  - True
  - False
- Which key could you use to permanently delete a file or folder?
  - Ctrl**
  - Shift**
  - Alt**
  - Delete**
- Which method can you use to delete a file?
  - Select File, File or Folder, Delete
  - Press the **Delete** key
  - Right-click on the selected file and then click on Delete
  - All of the above
  - Only b or c
- All items in the Recycle Bin can be restored at the same time.
  - True
  - False
- When you empty the Recycle Bin, you can still restore these files or folders.
  - True
  - False
- Why should you be careful when renaming a file that displays a file type?
- When deleting files or folders, try to delete them to the Recycle Bin first before permanently deleting them.
  - True
  - False
- You can access a file with a password simply by opening it in the right application.
  - True
  - False
- How can corruption of a file occur?
  - Virus
  - Hardware failure
  - Power surges
  - Software issues
  - All of the above

# Lesson 10: Managing Disks

## Objectives

Suggested Timing: 1 Hour

In this lesson you will look at some utilities that Windows provides to help manage and maintain your system. On successful completion, you will be familiar with:

- How to format a floppy disk
- How to check your disk for errors
- What defragmenting your disk means
- How to clean your disk of unnecessary files

## Maintaining Your System

Windows includes a number of disk utilities or programs to format floppy disks, check for errors on a disk, defragment a disk, or run disk clean up to remove redundant files. Consider using these to help you maintain a trouble-free system, as well as to help keep the system running at its optimum speed.

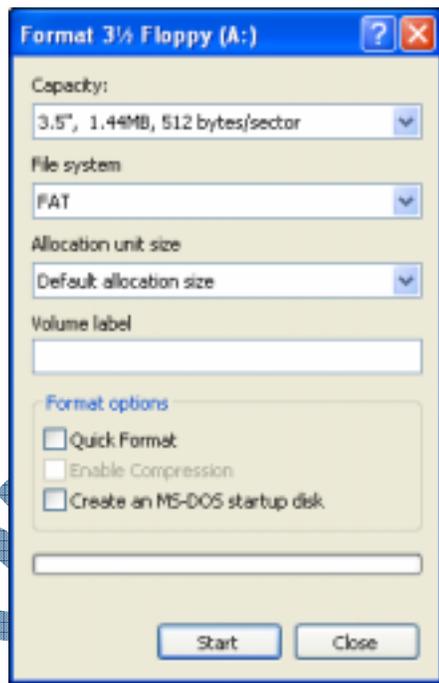
## Formatting Floppy Disks



Today, most disks are already formatted; however, it is possible to get unformatted disks which must be formatted before the first use. In addition to formatting new disks, you can use this command to quickly erase all existing data and check for damaged areas on a floppy disk previously used.

It is also possible to format a hard disk but this should not be attempted without the assistance of a technical support person or until you are very experienced working with computers.

The Format command can be activated from either My Computer or Windows Explorer.



### Capacity

The most common size for a 3½" floppy disk is 1.44MB.

### File system

If formatting floppy disks, FAT is the only file system option. FAT32 and NTFS are available when formatting a volume or portion of the physical hard disk.

FAT stands for *File Allocation Table* and is a data structure created by Windows to store information about how the files and folders could be stored on this disk.

FAT32 works similar to FAT except that it is enhanced to handle smaller bits of information.

NTFS stands for *Network Technology File System* and is an advanced filing system, providing security, performance, reliability, or advanced features (permissions, compression).

### Allocation unit size

The smallest amount of space that can be set to hold a file.

### Volume label

Type a name to identify the disk or volume, e.g., Personal Docs, 2004 Xmas.

### Format options

When formatting floppy disks, you can do a quick or full format. You can compress folders and files on NTFS volumes only.

### Quick Format

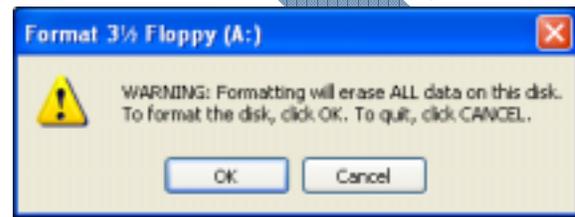
If a floppy disk has been formatted, use this to quickly erase and delete all files from the disk. A Full Format erases all files and checks the floppy disk for damaged areas or bad sectors; it must be used to format an unformatted floppy disk.

 **Exercise**

 A floppy disk is required for this exercise. Ensure that the disk does not contain any data that you want, as all of the information will be erased during this exercise.

- 1 Insert a 3½ floppy disk into the disk drive.
- 2 Open **My Computer**.
- 3 Select the  **3½ Floppy (A:)** icon.
- 4 Select **File, Format**.
- 5 In the **Capacity** field, select the appropriate size for the type of disk you are formatting.
- 6 In the **Format options** area, ensure **Quick Format** is turned off.
- 7 Click the **Start** button.
- 8 Click **OK** for the warning message.

All data on the disk is erased and the surface of the disk will be scanned for bad sectors.



- 9 Click **OK** when the Format Complete message appears.
- 10 Close the Format dialog box.
- 11 Close My Computer.

 **Practice Exercise**

- 1 Insert a floppy disk into the disk drive.
- 2 Open **My Computer**.
- 3 Right-click on the  **3½ Floppy (A:)** icon.
- 4 Select **Format** from the shortcut menu.
- 5 In the **Capacity** field, select the appropriate size for the type of disk you are formatting.
- 6 In the **Format options** area, turn on **Quick Format**.
- 7 Click the **Start** button.
- 8 Click **OK** for the warning message.
- 9 Click **OK** for the Format Complete message.
- 10 Close the Format dialog box and then close My Computer.

## Checking for Errors



The error checking program may be used to check for file system errors and bad sectors on a floppy disk or hard disk. If any programs report a disk problem when reading from or writing to the disk, you should run the error checking command.

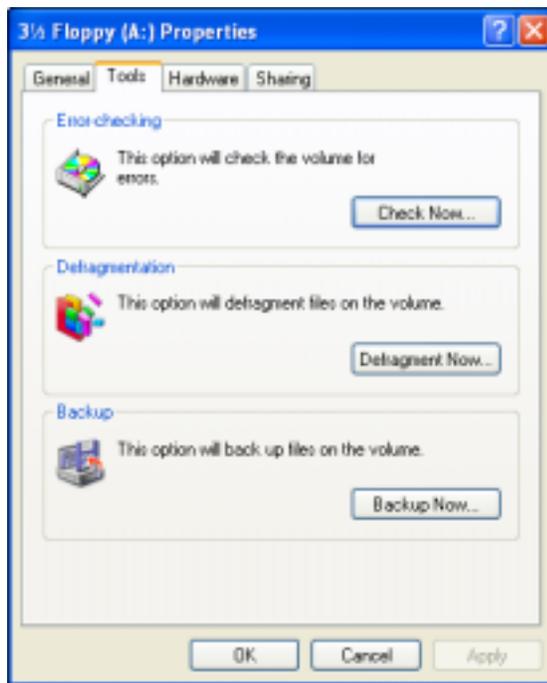
The Error Checking command works very similar to another utility program provided by Windows called *ScanDisk*. This feature will scan the disk and provide you with information if it finds a bad area on the disk or if there are problems with the files, usually with a message indicating you will need to run the *Disk Defragmenter* command.

Prior to using the Error Checking program, ensure all programs and files are closed. No other tasks should be running while the disk is being checked for errors.

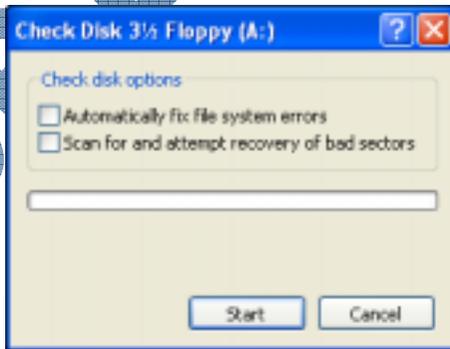
 **Exercise**

 A floppy disk is required for this exercise. The procedures for checking the hard disk are similar, however to save time, a floppy disk will be used to demonstrate this procedure.

- 1 Insert a floppy disk into the disk drive.
- 2 Open **My Computer**.
- 3 Right-click on the  **3½ Floppy (A:)** icon.
- 4 Select **Properties** from the shortcut menu.
- 5 Select the **Tools** tab.



- 6 In the **Error-checking** area, click **Check Now**.



**Automatically fix file system errors**

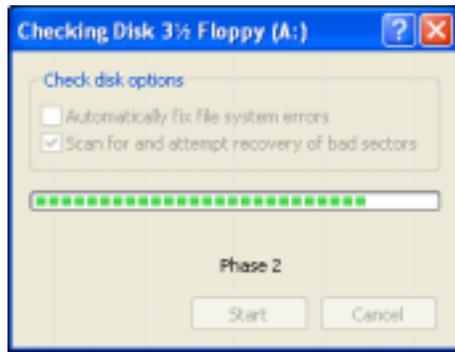
Check and fix file system errors such as invalid entries in the tables that keep track of file locations.

**Scan for and attempt recovery of bad sectors**

Check the disk for errors and fix any file system errors. If errors are found, the readable data will be recovered from the bad sector and the bad sector will be marked as unusable.

- 7 Turn on **Scan for and attempt recovery of bad sectors**.
- 8 Click **Start**.

It may take a few minutes while the disk is being scanned for errors.



- 9 Once the disk has been checked, click **OK** at the Disk Check Complete prompt.
- 10 Close the Properties window and then close My Computer.



### Practice Exercise

- 1 Insert a floppy disk into the disk drive.
- 2 Open **My Computer**.
- 3 Select the  **3 1/2 Floppy (A:)** icon.
- 4 Select **File, Properties**.
- 5 Select the **Tools** tab.
- 6 In the **Error-checking** section, click **Check Now**.
- 7 Turn on **Scan for and attempt recovery of bad sectors** and turn on **Automatically fix file system errors**. Click **Start**.
- 8 Once the disk has been checked, click **OK** for the Disk Check Complete prompt.
- 9 Close the Properties window and then close My Computer.

## Defragmenting the Disk



Files are stored on a disk in blocks called *allocation units* or *clusters*. A file is not necessarily stored in a single contiguous space; it is saved in the first space available. Over time, as you create and delete files, download files from the Internet, and install or remove programs, a hard disk will become fragmented. Eventually, new files may have their contents spread out all over a disk as Windows allocates unused clusters in which to store the new data. As result, the speed in which your system can read and write these files diminishes — sometimes significantly — because the bits and pieces of a file are spread out or fragmented.

The Disk Defragmenter program reorganizes the way information is stored on a hard disk so that the files reside in a contiguous section. This is similar to reorganizing the filing cabinet after purging or archiving old information; a drawer may be half empty and rather than open two different drawers to view folders, you may want to move the folders from the second drawer into the first drawer.

This command is commonly referred to as the “Defrag” command or “running a defrag on your system”. This is one of the most common techniques you can use to help reduce any problems with accessing information or speed up the access time.

How often you use Defrag will depend on what is stored on your system, and how often you access the files or programs. If you do not install or uninstall a lot of programs or open and save a large number of files on a regular basis, you may want to use this feature once a month. If you work with a variety of programs or files on a daily basis, you may want to consider running defrag weekly on your system.

A defrag can be run on a floppy disk or a local drive. You cannot use defrag with a network drive; networks are set up with network software to create *volumes* that look like they are actual drives.

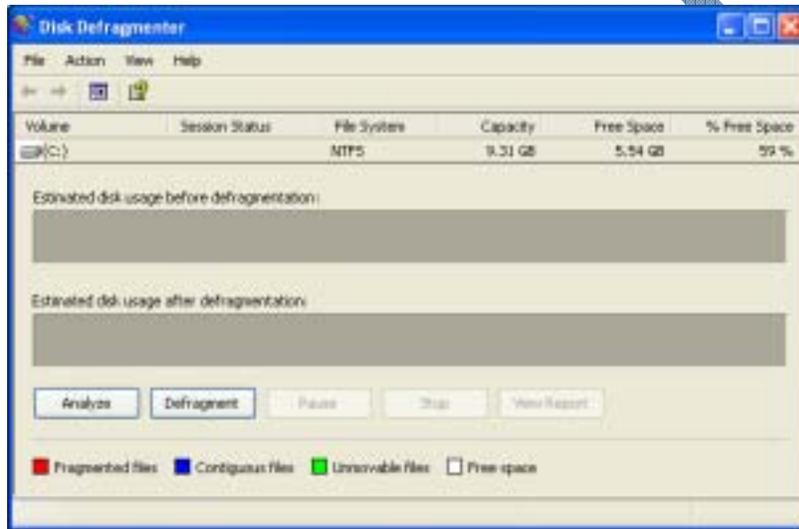
Disk Defragmenter can be run using one of the following methods:

- Click on **Start, All Programs, Accessories, System Tools, Disk Defragmenter**.
- Open My Computer. Right-click on the local disk you wish to defragment, then select **Properties**. Click the **Tools** tab and then select **Defragment Now**.

If you do not have access to the Disk Defragmenter program, contact your Network Administrator. This feature may be deactivated on your system or you may not have access rights to use this program. Additionally, if you have an anti-virus program on your system, you may want to disable it during the defragment process.

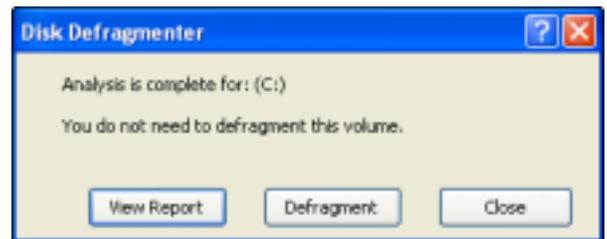
 **Exercise**

- 1 Click **Start**, then select **All Programs, Accessories, System Tools, Disk Defragmenter**.
- 2 Select the volume of the local disk that you wish to defragment.



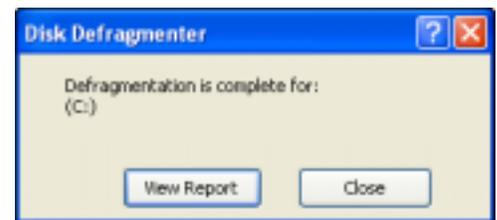
- 3 To determine if the volume is fragmented, click on the **Analyze** button.

After the analysis is complete, a window similar to the one at the right appears, advising you if you need to defragment the volume (drive). This information will vary depending on the length of time since the last time the Defragment command was used on your system.

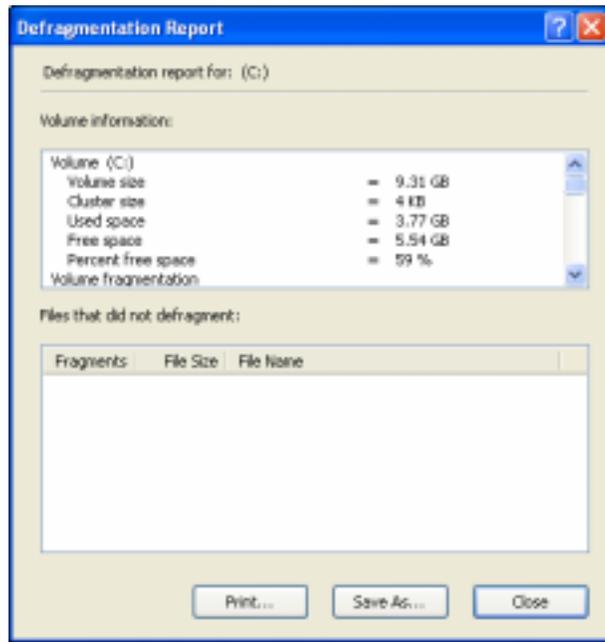


- 4 To defrag the disk, click **Defragment**.

The length of time to defrag the drive will depend on the size of the volume (drive). When complete, you will see a screen similar to the one at the right where you can choose to close the feature or view a report showing you any statistics about the formatted drive.



- 5 To view the report, click **View Report**.



- 6 When you have finished viewing the report, click **Close**.
- 7 Close Disk Defragmenter.

## Cleaning Up the Disk

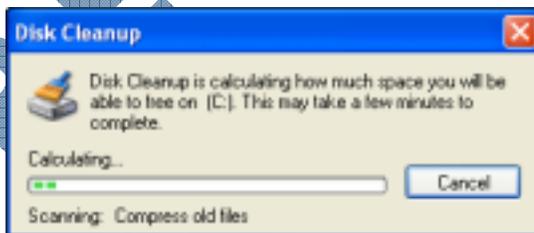


You can easily and safely remove redundant or unnecessary files from your hard disk by using the **Disk Cleanup** program. These files are usually temporary files that Windows creates or makes copies of when installing or uninstalling programs, paths to web sites visited on your system, or temporary files of your data or the status of an application program when it stopped responding.



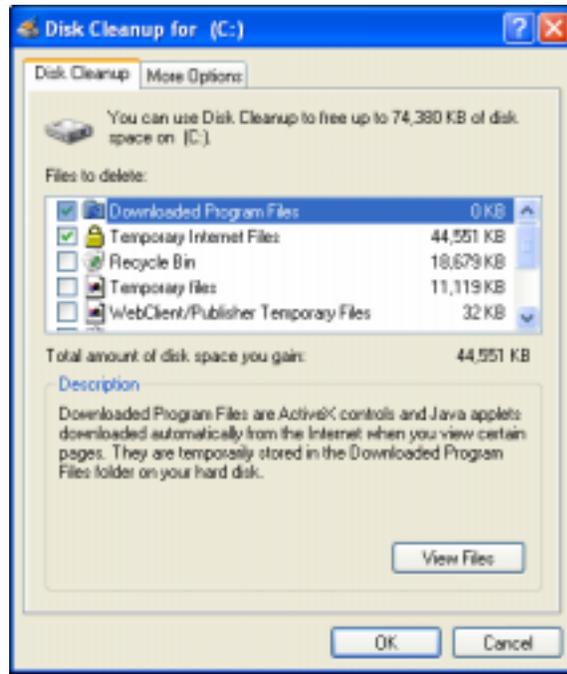
### Exercise

- 1 Click **Start**.
- 2 Select **All Programs, Accessories, System Tools, Disk Cleanup**.
- 3 Select the hard drive you want to clean up (usually this will be either C or D) and click **OK**.

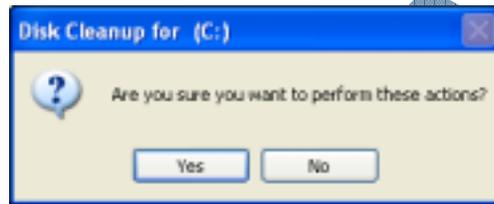


The length of time to calculate the amount of space will depend on when this command was last used on this system or the amount of file management performed (e.g., installing/uninstalling programs, deleting files, system crashes within an application, etc.).

Once Disk Cleanup has finished calculating the amount of free space possible, you will see a dialog box similar to the following:



- 4 If desired, you can free up additional space by also selecting the Recycle Bin and Temporary files, etc. Click **OK**.



- 5 Click **Yes**.  
Disk Cleanup will then remove the unnecessary files.
- 6 Close Disk Cleanup.

### Summary

In this lesson you looked at some utilities that Windows provides to help manage and maintain your system. You should now be familiar with:

- How to format a floppy disk
- How to check for errors on your disk
- What defragmenting your disk means
- How to clean your disk of unnecessary files

## Review Questions

1. Provide two reasons for when you would format a floppy disk.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
2. What does FAT stand for?
  - a. File Allocation Table
  - b. Folder Allocation Table
  - c. File Access Table
  - d. File Access Technology
3. What's the difference between a Quick Format and a Full Format?
4. When could you consider performing a Quick Format command?
5. When could you use the Error Checking command?
6. Which command is the Error Checking command similar to?
  - a. Disk Defragmenter
  - b. Disk Cleanup
  - c. ScanDisk
  - d. None of the above
7. How are files stored on a disk?
  - a. Anywhere on the disk
  - b. In allocation units or clusters
  - c. In set folders or drives
  - d. All of the above
8. You can run a defrag command on which of the following?
  - a. Floppy disk
  - b. Local hard disk
  - c. Network disk
  - d. All of the above
  - e. Only a or b
9. Running a defrag is the most common technique used to help reduce any problems with accessing information or to speed up access time opening or saving files.
  - a. True
  - b. False
10. Cleaning up a disk refers to deleting any temporary or unnecessary files created when a program was installed or uninstalled, web site paths, or temporary files created when a program stopped responding.
  - a. True
  - b. False

# Lesson 11: Customizing System Settings

## Objectives

Suggested Timing: 1 Hour

In this lesson you will look at how to use the Control Panel to customize the appearance or behavior of different system options. On successful completion, you will be familiar with the following:

- What is the Control Panel
- Changing or customizing the desktop display
- Changing the date or time
- Changing or customizing mouse settings
- Changing or customizing multimedia devices
- Adding or viewing fonts
- Working with printers installed on your system

## Using the Control Panel

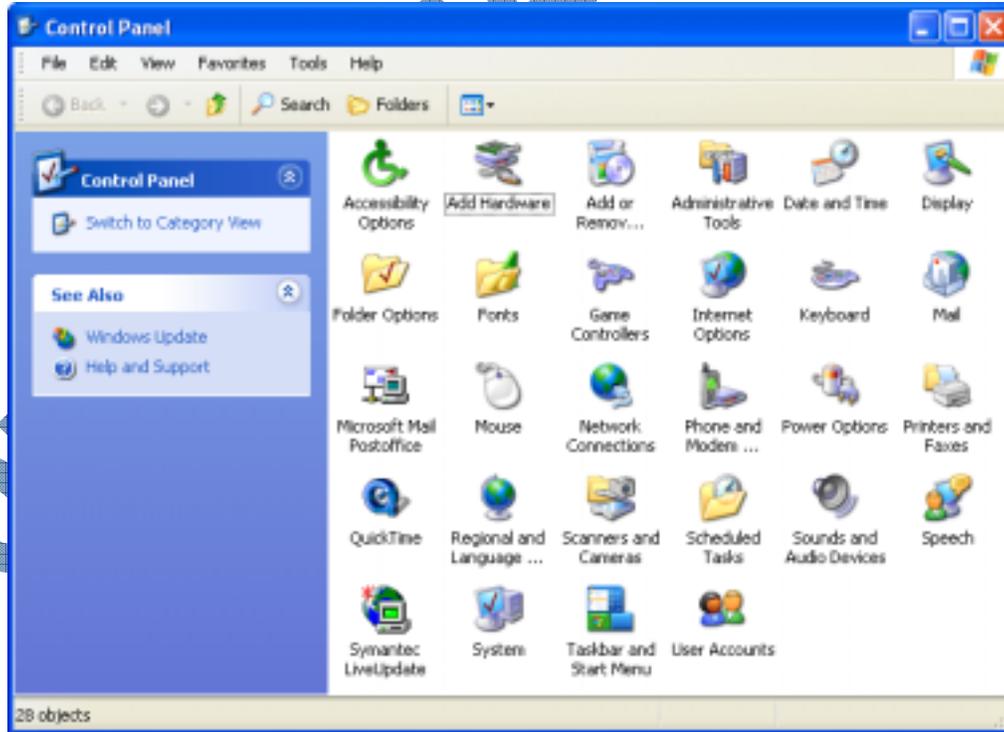


The Control Panel is an area in Windows where you can access features to either install or customize the settings for devices on your system.

The Control Panel can be accessed using one of the following methods:

- Click on **Start, Control Panel**.
- If the system is activated for Windows Classic, click on **Start, Settings, Control Panel**.
- Click on the **Control Panel** link in the **Other Places** area of the task pane in My Computer.

There are also some shortcut methods of accessing some of the more commonly used settings such as the date and time or the screen display. These shortcuts are provided with the description of the feature as discussed later in this lesson.



The number or types of features available in the Control Panel will depend on what was installed when Windows was set up on the system, and/or what options are made available by the network administrator. The standard options on most computers are listed.

<b>Accessibility Options</b>	Changes your computer screen, mouse, keyboard features, and sound to make Windows more accessible for people with physical challenges or disabilities.
<b>Add/Remove Hardware</b>	Allows you to add new hardware to your computer.
<b>Add/Remove Programs</b>	Installs and removes software automatically, and adds or removes installed components in Windows.
<b>Administrative Tools</b>	Allows you to manage some services provided by Windows for specific types of tasks. Only make changes here if you are experienced with computers.
<b>Date and Time</b>	Changes the system date, time, and time zone.
<b>Display</b>	Changes the appearance of your screen by changing screen colors, fonts, the appearance and size of windows, background design, icons, and other visuals.
<b>Folder Options</b>	Similar to accessing the <b>Tools, Folder Options</b> command. Allows you to change or customize how folders will behave in Windows.
<b>Fonts</b>	Add, view, or remove fonts on your system.
<b>Game Controllers</b>	Sets up the configuration of game controllers.
<b>Internet Options</b>	Enables you to display and configure Internet properties.
<b>Keyboard</b>	Adjusts the keyboard delay and repeat rate, and adds keyboard symbols that are exclusive to other languages.
<b>Mail</b>	Enables you to create and configure a new mail profile or displays the current configuration. To be able to use this feature your computer must be operating on a network and have an e-mail username set up on the mail server.
<b>Mouse</b>	Customizes elements such as speed and button functions for your pointing device.
<b>Network Connections</b>	Configures network adapter cards, network services and protocols, and joins a workgroup or a domain.
<b>Phone and Modem Options</b>	Configures or customizes options for how a cellular phone or modem device connected to the system will behave for dialing, e.g., default area code, service provider, etc.
<b>Power Options</b>	Creates settings for how power should be managed on your computer, e.g., system powers off after shut down process complete, monitor shuts off after interval of time, etc..
<b>Printers and Faxes</b>	Adds and removes printers using the Add Printer wizard, a step-by-step printer setup program. Faxes are treated the same as an installed printer.
<b>Regional Settings</b>	Changes dates, time, currency, and numbers to reflect regional standards.
<b>Scanners and Cameras</b>	Adds or removes any scanners or cameras (imaging devices) on your system.
<b>Scheduled Tasks</b>	Allows you to schedule or change a scheduled task, e.g., copy all data files into a Backup folder every Friday at 5pm, etc.
<b>Sounds and Audio Devices</b>	Detects which sound devices are available on your system and allows you to customize as required.
<b>Speech</b>	Set up to allow you to use voice recognition software and devices.

<b>System</b>	Provides system information and advanced settings.
<b>Taskbar and Start Menu</b>	Similar to looking at the properties of the Taskbar or the Start menu, set up how the taskbar or Start menu will appear or behave, e.g., hide the Taskbar until it is accessed, add or remove items from the Start menu, etc.
<b>Users Accounts</b>	Enables you to set up your computer to be used by more than one person wherein they can set up their own desktop settings, colors, icons, and screen savers.



The Control Panel provides you with numerous features, many of which you will not use until you are very comfortable with the computer. In fact, until such time as you are at that stage, consider changing only the items discussed in this book, and have a technical person help you with the other options as needed. Making changes to any of these features can be easily done but may not be easily fixable, especially if they require you to be very familiar with the hardware, know how to use the advanced features of Windows, or have networking experience.

Before attempting any of the changes, be sure you fully understand the ramifications or impact of that change. For example, changing the date in order to enter a few more invoices before month end seems simple enough to do. However, you will need to remember to switch the date back to the current date before running any month end reports or creating any documents. Otherwise, the dates will provide the wrong information for sales reports. Changing the video driver for a monitor because the quality of the images does not appear clear can be more difficult if you don't know which video driver to use, or where you might find these driver files. This particular aspect should be handled with the assistance of someone who is very familiar with hardware devices. Choosing just any driver can cause the monitor to appear worse than before.

Some of the more commonly used features in Control Panel include:

- Changing the display, e.g., background color, size of the icons, etc.
- Choosing a screen saver
- Changing the options for your mouse or keyboard
- Changing the date or time
- Changing the sounds for specific actions in Windows
- Changing the volume of any audio devices

If you change a hardware device (e.g., video card, printer, etc.), Windows will most likely detect it and begin the plug and play feature to help install the new device. If this situation occurs, follow the prompts on the screen carefully to ensure you understand what is being asked and select the most appropriate option for the device.

When working on a computer that is networked or shared by others, you may find that some of these options are not available or you cannot change them (e.g., User Accounts, Administrative Tools, Internet Options, etc.). These restrictions will have been set by the company as protection against any changes to the existing system. If you are expected to make changes to any of the options, you will need to speak to the network administrator to have access rights assigned to you.



### Exercise

- 1 Click on the **Start** button.
- 2 Then click on **Control Panel**.

The Control Panel window should now appear.

## Customizing the Desktop Display



Customizing the desktop display includes changing the background, screen saver, desktop appearance or the screen resolution. You can customize almost any screen component in Windows by choosing the desired features from the Display Properties dialog box.

The options for this feature can be activated by using the Display command in the Control Panel, or you can right-click on a blank area of the desktop to display the same options.



There are tabs within the Display feature to help you customize how the desktop can display:

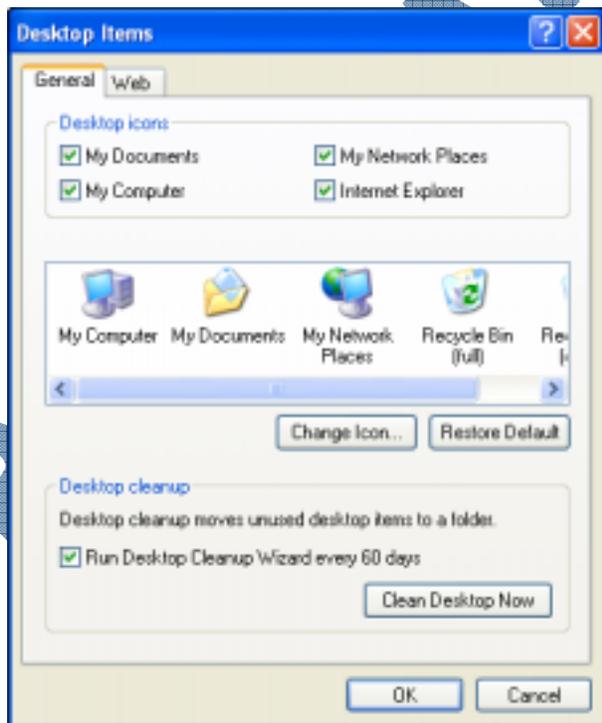
- Themes** A selection of pre-designed colors or images provided with Windows. Select one of these to apply the theme to your system.
- Desktop** Select a background picture for the desktop, or choose a color or pattern instead.
- Screen Saver** Select a screen saver to help protect the monitor so that the last image accessed is not burned onto the picture tube. The newer flat screen or LCD panels do not have the same concern as monitors that use the rear projection picture tube.
- Appearance** Choose a particular pre-designed color scheme or design one of your own. You can also change the size of the text used in the windows in addition to setting the colors for specific aspects of the windows.
- Settings** Select the resolution size or color quality for the monitor installed on your system. You can also change the video card if the picture is not as clear as should be with the existing driver file.

### Exercise

- 1 Right-click on the Windows desktop.
- 2 Select **Properties** from the shortcut menu.
- 3 Select the **Themes** tab, click on the down arrow to see what themes are installed. Click on the different themes to see the differences.
- 4 Select the **Desktop** tab to change the background of the desktop.



- 5 Scroll through the list of different backgrounds and select **Azul**. Notice the preview window. Scroll through the list of available backgrounds and select a background of your choice. Click on the down arrow below **Position** and select your choice.
- 6 Click on the **Customize Desktop** button.

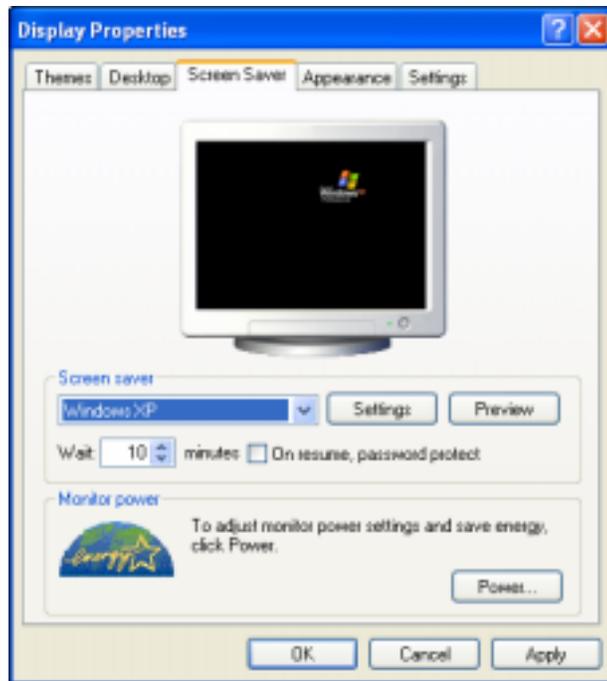


- 7 In order to show (or hide) the icons on the desktop, click next to the items. Make sure they are all selected and click **OK** twice to see the changes.

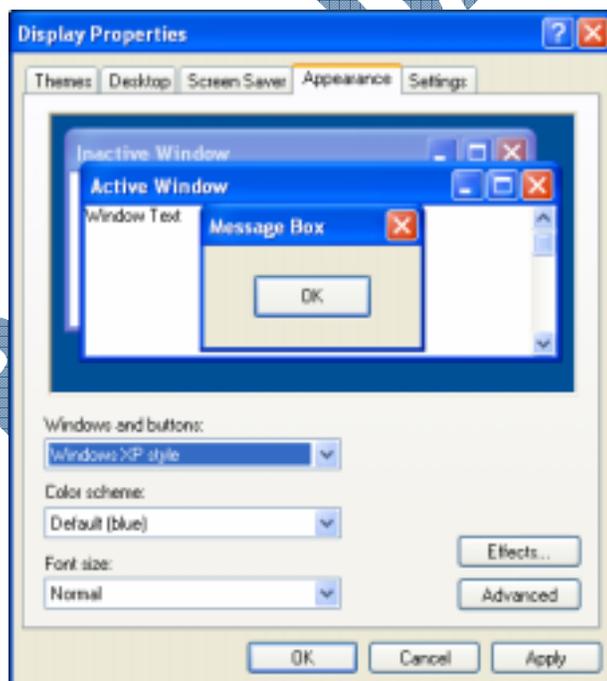
Notice the icons on the desktop have been activated. As well, the background has now changed according to the choice you made.

- 8 Right-click on the Windows desktop. Select **Properties** from the shortcut menu.

- 9 Select the **Screen Saver** tab.

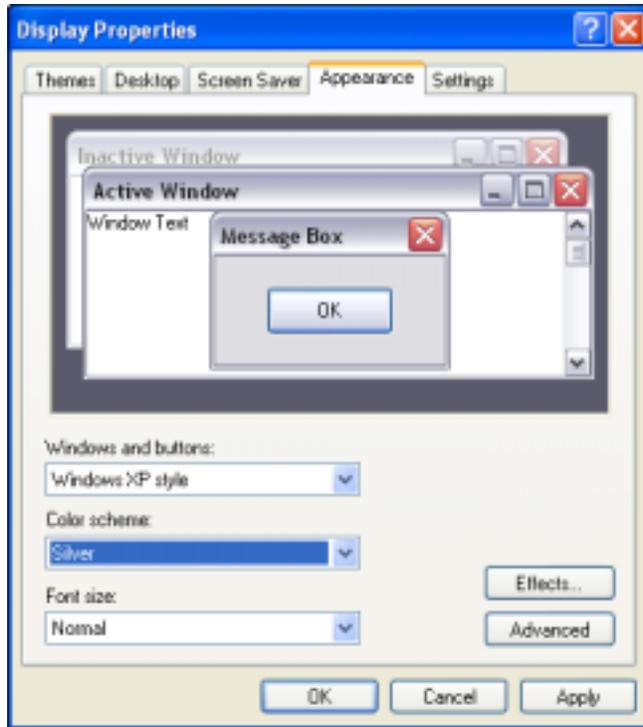


- 10 Under **Screen saver**, click the down arrow and scroll through the list of different screen savers and select one.
- 11 Click the **Preview** button to view the screen saver. When you have finished previewing the screen saver, move the mouse or press the **Spacebar**.
- 12 Select the **Appearance** tab.



- 13 Under **Windows and buttons**, select **Windows Classic style** to see the differences from Windows XP in the preview area. Notice how the title bars have the flat 2-D appearance of previous versions of Windows.
- 14 Select the **Windows XP style**.

- 15 Under **Color scheme**, select **Silver**.



Use the changes to the appearance in the preview pane as your guide.

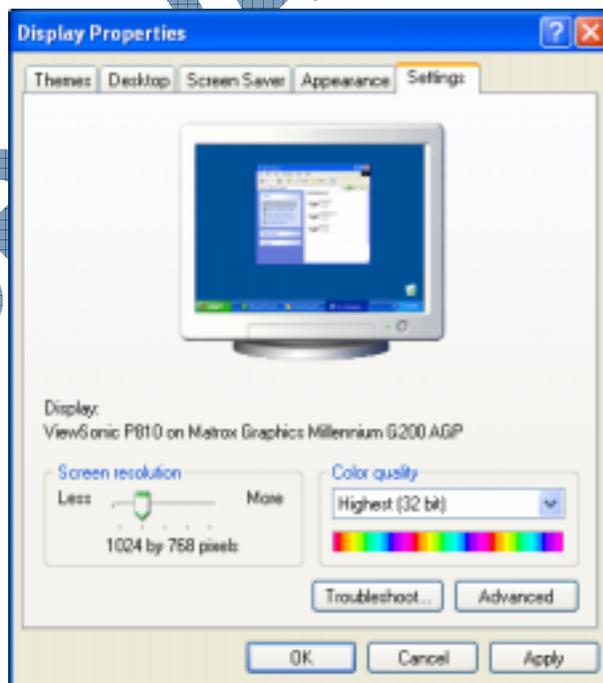
- 16 Under **Font size**, select **Extra Large**.

- 17 Click **Apply** to see the changes.

Notice the change to the screens in the preview as well as the icon names on the desktop.

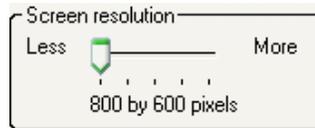
- 18 Change the color scheme back to the **Default (Blue)** option. Select **Normal** for the font size, and then click **Apply**.

- 19 Select the **Settings** tab.



Depending on the video card installed in the computer, this tab gives you the ability to increase the depth of color for a better picture. You can also adjust the screen resolution to fit more on the screen; alternatively, you can adjust the screen resolution to make everything on the screen larger, however you won't be able to see as much on the screen.

- 20 Change the screen resolution to **Less**.



This will make everything on the screen larger, thereby allowing you to see more of the screen elements in your programs, e.g., pictures on toolbar buttons, larger text display for icons, etc. However, you will also not be able to see everything on the screen without having to scroll around.

- 21 Click the **Apply** button.

- 22 Click **Yes** to accept the new settings.

Notice the changes, and how everything is now larger on the screen.

- 23 If necessary, drag the title bar for the Display Properties dialog box to the right side so you can see the changes to the desktop icons.

Some of the desktop icons may appear below the taskbar as a result of the change to the display. You would need to refresh or arrange the icons to display all of them on the desktop again.

- 24 Change the screen resolution back to the original position and click **OK** to accept the changes.

- 25 Close the Display Properties dialog box.



### Practice Exercise

- 1 Right-click on the Windows desktop.
- 2 Select **Properties** from the shortcut menu.
- 3 Select the **Desktop** tab, scroll through the list of backgrounds and select *Friend* or any other background available.
- 4 Select the **Appearance** tab. Change the color scheme to **Olive Green**.
- 5 Change the color scheme to **Silver**.
- 6 Click the **Apply** button.
- 7 Click the **Screen Saver** tab, select a screensaver of your choice, and then click the **Preview** button. Move the mouse once you have finished previewing the screensaver and change the screensaver back to the default screensaver.
- 8 Click **OK** to apply all the changes.
- 9 Right-click on the Windows desktop and select **Properties**.
- 10 Select the **Desktop** tab and change the background back to the default.
- 11 Select the **Appearance** tab and change the color scheme back to the **Default (blue)**.
- 12 Click **OK** to apply all the changes.

## Changing the Date & Time

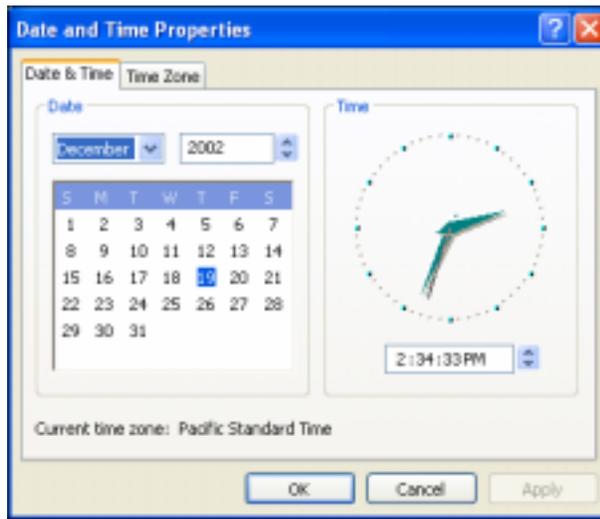


3.3.3

By default, a clock showing the time is displayed on the taskbar. By hovering the mouse pointer over the time, a screen tip will display the current day and date. Depending on your time zone, the date/time program will automatically adjust the internal clock for daylight savings time. The operating system uses the date and time settings to identify when files are created or modified. These date and time settings are obtained from a battery inside the computer (internal clock) that should be current. If the time or date begins to lag behind by a lot, then the battery inside the computer may need to be changed. Having the current date and time will play an important role in helping to identify when files were created.

Change the date or time by using one of the following methods:

- Click **Start, Control Panel** and then **Date and Time**.
- Double-click on the time in the Notification Area.



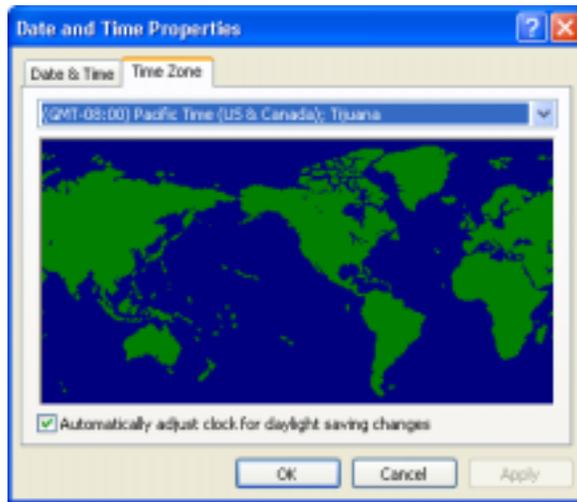
To change the date or time, choose from one of the following methods:

- Month** Click the down arrow, and then select the month.
- Year** Click the increment/decrement buttons or type the year.
- Day** Click the date in the calendar.
- Time** Click in the time field in the hour, minute, or seconds location and type in the correct number. You can also adjust the AM or PM, as required.



### Exercise

- 1 Double-click on the time in the Notification Area.
- 2 In the **Date** area, select the item you want to change.
- 3 In the **Time** area, select the item you want to change such as the minutes and then click the increment/decrement buttons or type in the information.
- 4 Select the **Time Zone** tab.



- 5 Click the down arrow to select a time zone. By default, the operating system will automatically adjust the clock for daylight saving changes.

## Customizing the Mouse



Windows allows you to customize features of the mouse such as changing the double-click speed, motion speed, or changing the mouse pointers. The mouse options will vary, depending on the type of mouse or other pointing device you are using.

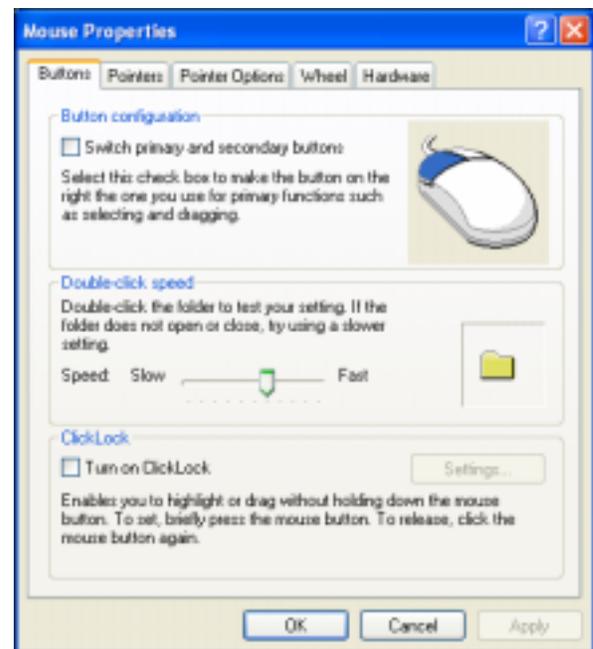


### Exercise

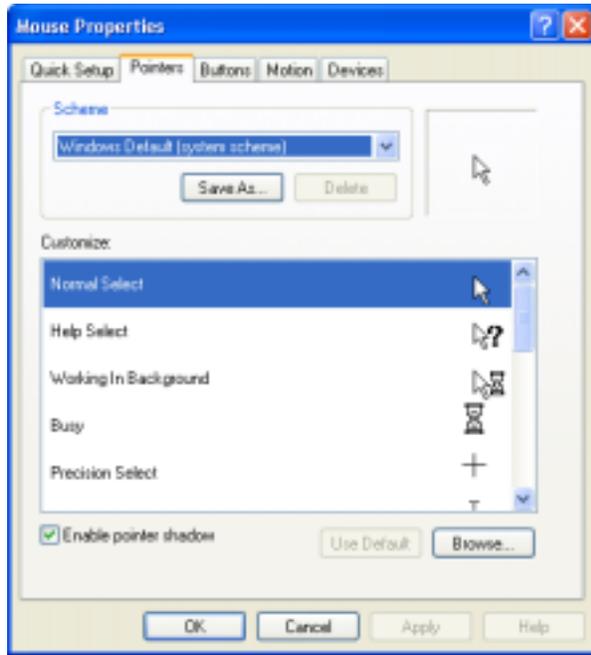
- 1 Click **Start, Control Panel, Mouse**.
- 2 Drag the **Double-click speed** slider slightly towards the **Fast** side, and then double-click on the picture of the folder to test the speed. Drag the slider towards the left to slow down the **Double-click speed**, and then double-click on the folder once again to test the speed.
- 3 Place a check mark next to **Turn on ClickLock** and click **Apply**.

The **ClickLock** option locks a mouse or trackball button after a single-click, enabling you to select or drag without continuously holding down the mouse button. Just press and hold down any mouse or trackball button for a moment, and your click is locked. With **ClickLock**, you can drag windows, objects, select blocks of text, and open menus. Click again to release **ClickLock**. To adjust the amount of time you need to hold down a mouse or trackball button before it locks, click **Settings**.

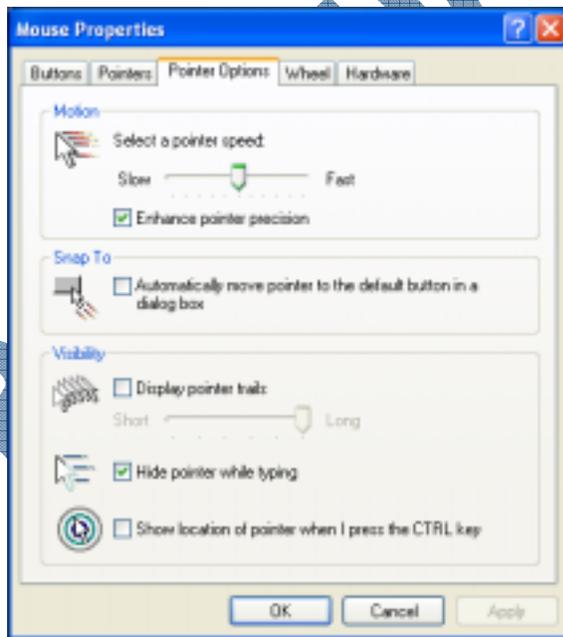
- 4 Place your mouse on the Title bar of the Mouse Properties window. Hold down the left mouse button for approximately 2 seconds, then release the mouse button and move the mouse around the screen. Notice that the Mouse Properties window is moving wherever the mouse pointer is moving. Click anywhere to release the dialog box.



- 5 Click on the check mark next to **Turn on ClickLock** to turn the feature off. Click **Apply**.
- 6 Select the **Pointers** tab.



- 7 In the **Scheme** area, click on the down arrow and scroll through the list of schemes and choose the one. Click the **Browse** button to see additional mouse pointers. If available, you may choose mouse cursors (.cur files) or animated mouse cursors (.ani files).
- 8 Select the **Pointer Options** tab.



- 9 In the **Motion** area, slow down the mouse speed by dragging the slider slightly to the left, click **Apply**.
- 10 In the **Motion** area, speed up the mouse speed by dragging the slider slightly to the right, click **Apply**.
- 11 Move the mouse around, notice the mouse pointer and mouse motion.

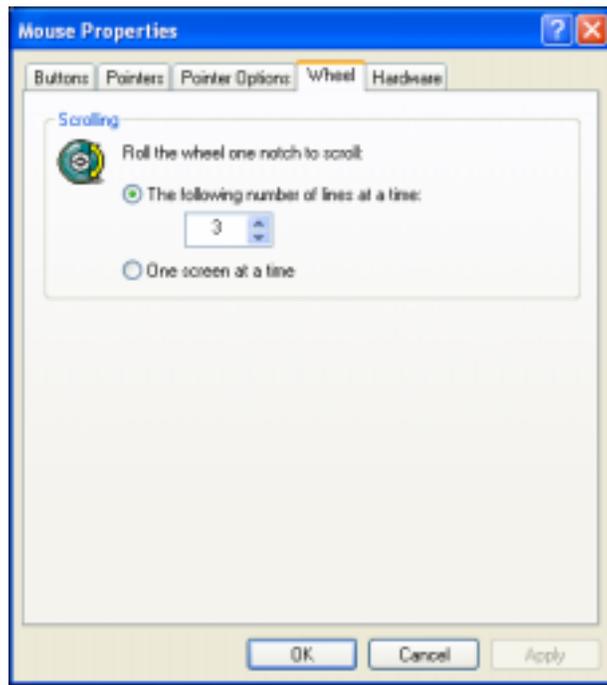
- 12 Adjust the slider until you find the desired speed, click **Apply**.
- 13 Under **Snap To**, place a check mark next to **Automatically move pointer to the default button in a dialog box**.

This feature specifies whether the mouse pointer snaps to the default button, such as **OK** or **Apply** in dialog boxes.

- 14 Click **OK**.
- 15 Click **Start, Control Panel, Mouse**.

Notice the mouse pointers default position is over the **OK** button.

- 16 Select the **Pointer Options** tab, and uncheck the **Snap To** option.
- 17 Select the **Wheel** tab.



The Wheel tab defines how far a page scrolls when you roll the wheel on the mouse one notch at a time. You can scroll a specific number of lines at a time or the entire screen.

- 18 Change **The following number of lines at a time** to 5 and click **OK**.

## Customizing the Keyboard

You can customize the keyboard in addition to the mouse. This can be handy if you purchase a different keyboard than the one provided with the computer such as a cordless keyboard or a keyboard for a different language. Windows provides you a number of other options for users with special needs when entering information into the computer or performing some troubleshooting for the keyboard.

➤ The type of options that appear in this dialog box may vary, depending on which keyboard you have installed on your system.



### Exercise

- 1 Click **Start, Settings, Control Panel, Keyboard**.
- 2 Click on the **Speed** tab, if not already active.

Use the options here to set how fast or slow you may want the keys to react when they are held down. You can also set the speed for the cursor within a text field or an application program.

- 3 Drag the slider arrow in the **Repeat rate** field to halfway on the slider.
- 4 In the **Click her and hold down a key to test repeat rate**, press the **[\*]** key.

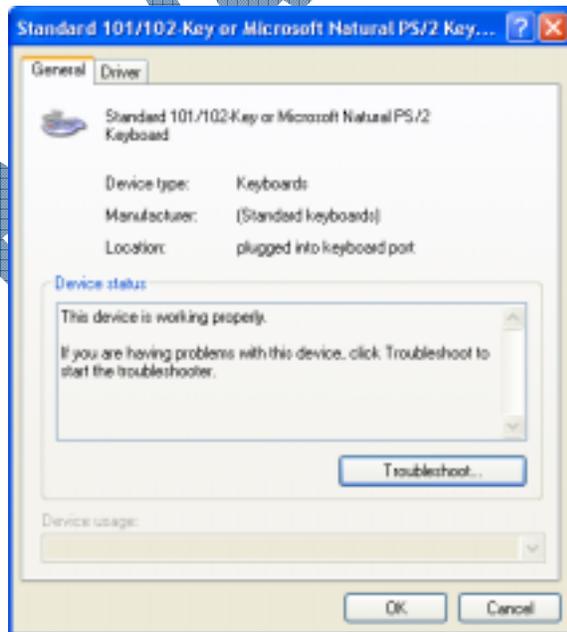
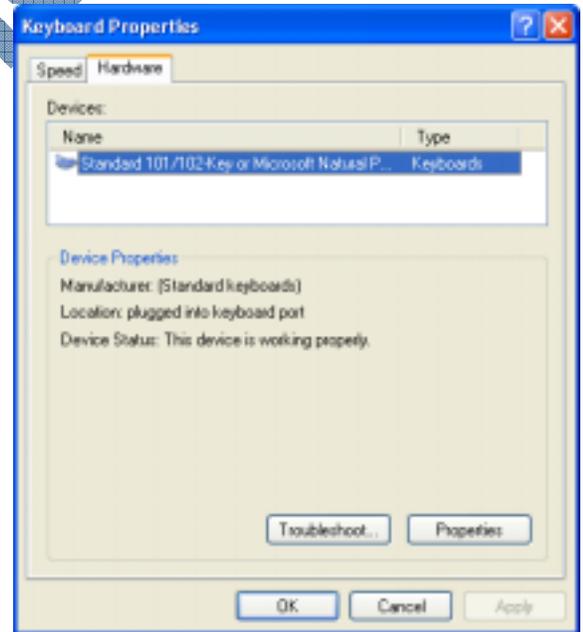
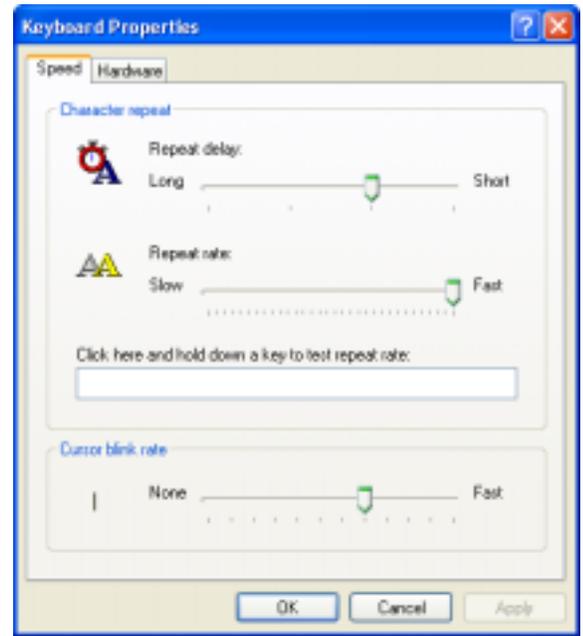
How did you find the speed? Was it too slow for you?

- 5 Drag the slider arrow in the **Repeat rate** field to your preference.
- 6 Drag the slider arrow in the **Cursor blink rate** to two notches before the **Fast** end.
- 7 Click **Apply** to set this speed for these options.
- 8 Click on the **Hardware** tab.

Use this dialog box to determine whether your keyboard is working properly. If for some reason the keyboard has stopped responding, you can click on the **Troubleshoot** button to try and diagnose the problem.

Alternatively, you can click on the **Properties** button to see the driver that is associated with this keyboard and then use the **Troubleshoot** button here if you need to repair the keyboard.

- 9 Click on the **Properties** button.



- 10 Click **OK** to leave the keyboard options.

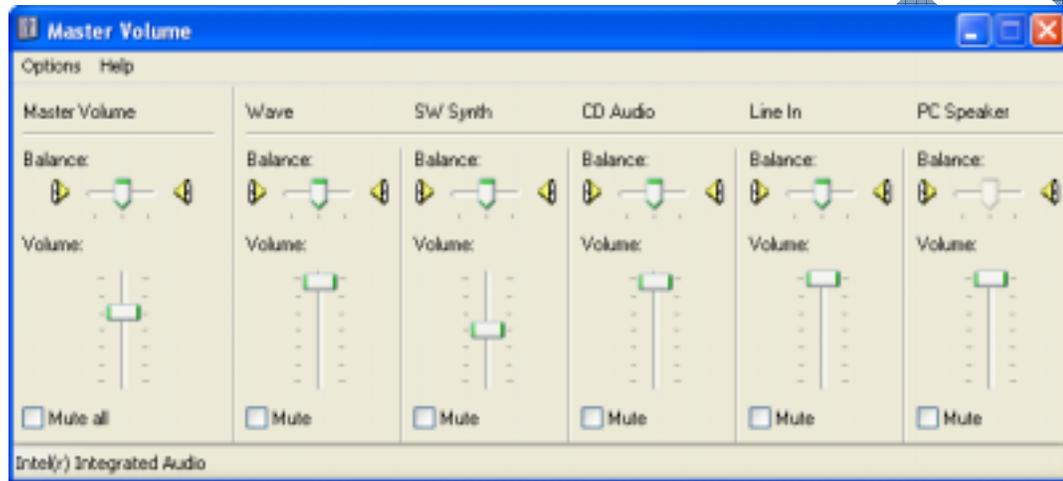
## Changing the Volume



If your system has a sound card and speakers hooked up, there will be a speaker icon in the Task Notification area. You can use this feature to adjust the volume for any sounds being played on the system. When you click once on this item, you will see a small window that displays the current volume level and a range for volume:

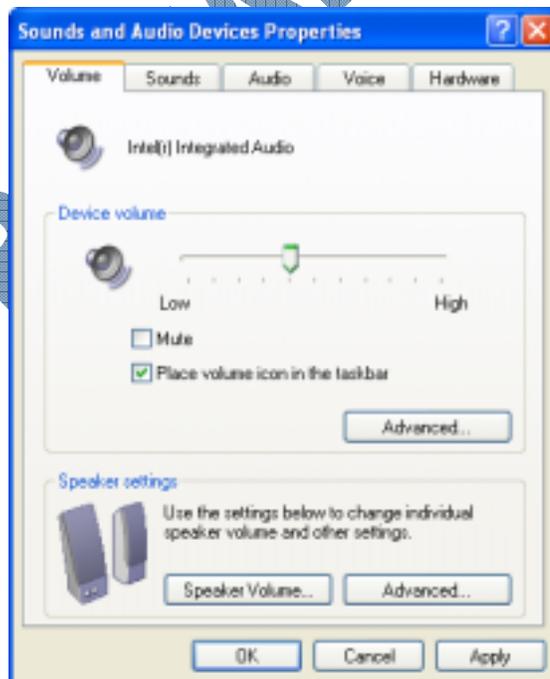
You can then click or drag the slider to the required volume for any sounds you want to hear. Alternatively, you can click on the **Mute** option to turn the sound off.

If you double-click on this icon, you will see a screen with more options on which audio devices can be adjusted:

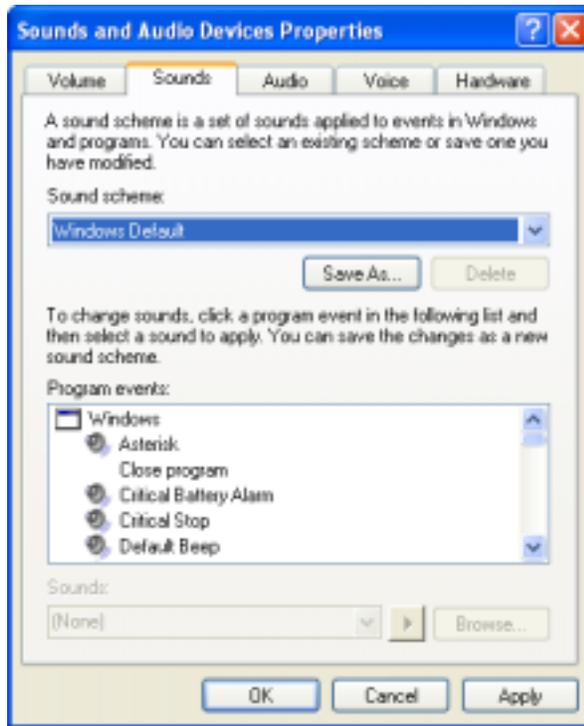


- ▶ If your speakers have buttons to control the volume or tone, you may want to use these to adjust the sound level faster than using the volume control in Windows.

If the volume icon does not appear in the Task Notification area even though you have a sound card installed on the system, you can turn this feature on using the **Sounds and Audio Devices** feature in the Control Panel.



You can adjust the volume level as well as customize options for how the speakers work on your system. You can also apply sounds to certain Windows tasks using the **Sounds** tab.



 **Exercise**

 The following exercise assumes you have a sound card and speakers installed on the system.

- 1 Click **Start, Control Panel**.
- 2 Click on the **Sounds and Audio Devices** feature.
- 3 Ensure the **Place volume icon in the taskbar** option is selected.
- 4 Click on the **Sounds** tab.
- 5 Ensure **Windows Default** is selected in the **Sound scheme** field.

 If your system is not set to Windows Default, change the scheme back to Windows Default and click on **No** at the prompt. Then proceed with the next step.

- 6 In the **Program events** area, click on **Critical Stop** to select it.
- 7 Click on the  button to hear the sound.
- 8 Click on the  icon in the taskbar and increase the volume level if you couldn't hear the sound.
- 9 Click on the  button again to hear the sound.
- 10 Scroll down the list until you see **Exit Windows** and select it.
- 11 Click on the  button to hear the sound.
- 12 Click on **OK** to exit the Sounds window.

## Using Fonts

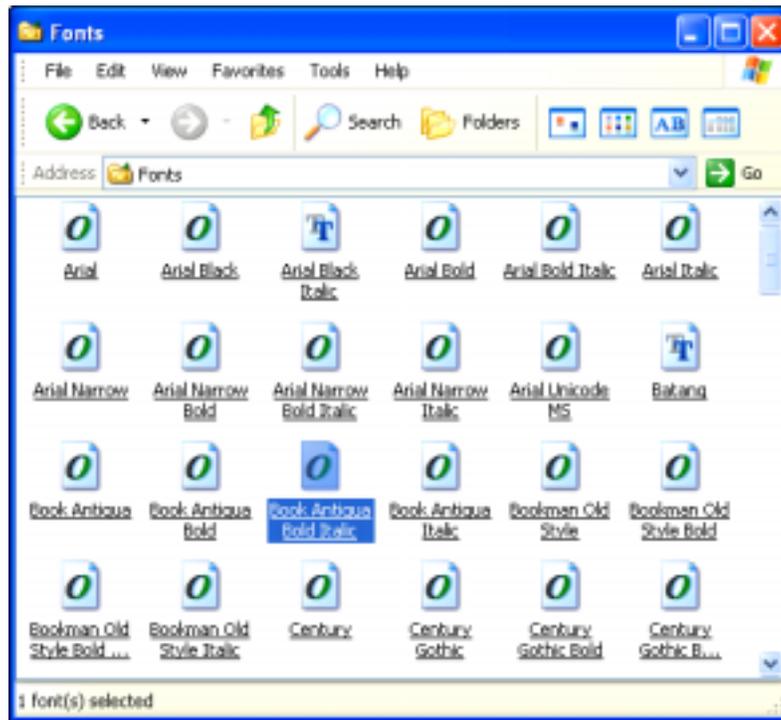


Fonts or typefaces are used to display text on the screen; what you see on the screen is what you will get in the printed copy. The WYSIWYG (What You See Is What You Get) feature is one of the main advantages of working with a graphical operating system such as Windows.

Use the Fonts folder in the Control Panel to view samples of the various fonts installed on your computer. Additional fonts may be obtained from numerous vendors or web sites. Before a font can be used in an application, it will need to be installed.

### Viewing Fonts

There are thousands of fonts or typefaces available today, with the difference between them sometimes being very subtle. Since the font appearance imparts a visual message to the reader, your choice of appropriate fonts is very important to the overall design of the document.



This identifies Type 1, Vector or Raster fonts. Type 1 fonts are designed for PostScript printers. Plotters mainly use vector fonts such as Modern, Roman or Script. Raster fonts, such as Courier, MS Serif, or Symbol are bitmap images and cannot be scaled or rotated.



OpenType fonts incorporate the TrueType technology and Type 1 technology.



TrueType fonts are scalable (i.e., set for any size) and can be used on all printers.



### Exercise

- 1 Click **Start, Control Panel**.
- 2 Click on **Fonts**.
- 3 Click on the **Arial** font.

The Arial font is a *sans serif* font. The word sans is derived from the French word for “without”. Sans serif type does not have the cross strokes at the end of the main strokes of each character.

Typically, the characters are an even thickness throughout. This type is usually best suited for headlines, subheadings, or short, crisp passages of text.

- 4 Click **Done**.
- 5 Click on the **Times New Roman** font.

The Times New Roman font is a *serif* font. The word serif is derived from the Latin word for “shoulders”. Serif typefaces, such as the one used for this courseware, have fine cross strokes at the ends of the main strokes. This type is usually best suited for body text because the cross strokes make it easy for the reader’s eye to move from letter to letter. Times New Roman allows characters to be typed on the line without causing excessive space between characters and words; this is a proportionally spaced font, meaning it takes only as much space as is required by the character, e.g., *i* versus *w*.

- 6 Click **Done**.
- 7 Click on the **Webdings** font.

Fonts such as Webdings or Wingdings display a variety of shapes and pictures instead of text characters.

- 8 Click **Done**.
- 9 Close the Fonts window.



### Practice Exercise

- 1 Click **Start, Control Panel**.
- 2 Click on **Fonts**.
- 3 Click on the **Courier New** font.

The Courier New font is similar to the typeface on a typewriter; a mono-spaced font meaning there are exactly the same number of characters per inch.

- 4 Click **Done**.
- 5 Click on the **Symbol** font.
- 6 Click **Done**.
- 7 Click on the **Wingdings** font.

The Symbol font displays special symbols instead of text characters.

- 8 Click **Done**.
- 9 Close the Fonts window.

### Installing Fonts

When you install new software, the program will often include new fonts and they are automatically installed at the same time as the program. For example, if you install Microsoft Word, a number of new fonts will be installed, these fonts will be available when using Word and also in all of your other Windows applications.

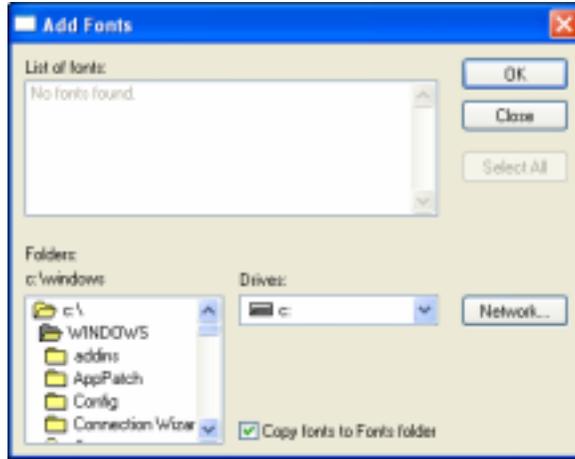
Alternatively, if you have downloaded fonts from a web site or purchased fonts from a third-party vendor, you can install new fonts by using the **Install New Font** command.

New fonts can be installed by dragging them directly into the *Fonts* folder. Windows will automatically recognize the new font.

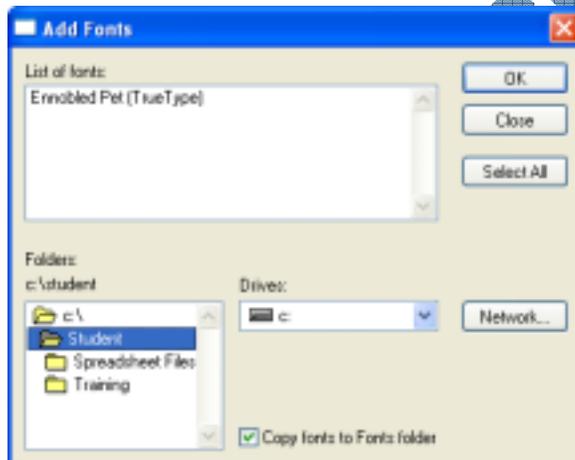


## Exercise

- 1 Click **Start, Control Panel**.
- 2 Click on **Fonts**.
- 3 Select **File, Install New Font**.



- 4 In the **Folders** area, double-click on **c:\** to move back one level. Then navigate to the location of your data files.



- 5 In the **List of fonts** area, select the font shown in the list and then click on **OK**.

The font will be installed and you should have returned to the Fonts window.

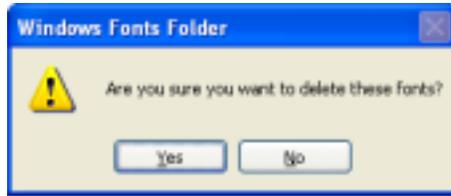
- 6 Scroll in the window until you see the *Ennoble Pet* font and then click on it to open the font.

You have successfully installed the font.

- 7 Click **Done**.



- Make sure the *Ennobled Pet* font is selected and then press the **Delete** key to remove this font.



The font is now deleted from your list of fonts.

- Close the Fonts window.

## Printing Files

When you print a document, the printer driver (i.e., printer software) processes the document into an acceptable format for the printer and the document goes into a print queue. From the print queue, the document goes to the print spooler; when the printer is ready, the spooler sends the document to the printer and your document is printed. In other words, printing occurs in the background while you work on the document or in different programs.

There are several ways to print a document. You may print an open document directly from within a program or you may print the document from a folder or shortcut such as the My Documents folder or the My Recent Documents menu.

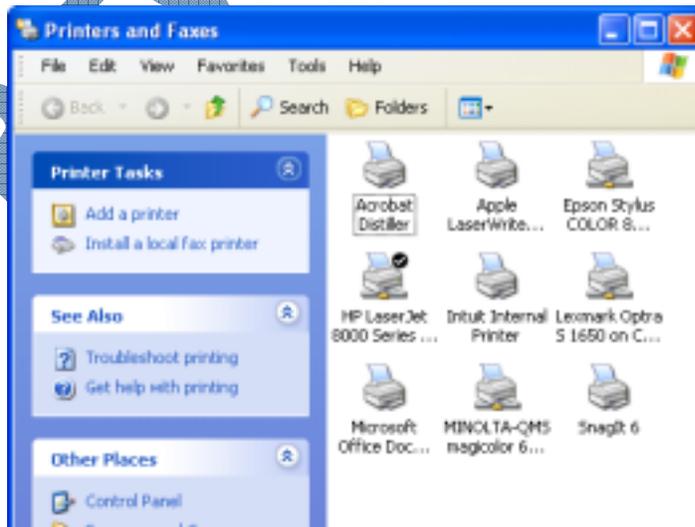
You may use the print queue to check the printing status of your documents or to cancel a print request.

### Checking the Printer List



Before sending a document to print, you may want to check the status of the printer or choose another printer if set up to print to multiple printers. Each printer varies slightly from another, with some having more options than available on others. The quality may vary as well with each printer.

The example shown following indicates this system is on a network where the user can select from multiple printers. The HP8000 and the Lexmark printers are both black and white lasers but the HP8000 printer also happens to have a duplex capability (i.e., print double-sided). You can check the features of your printer by selecting it from the list and then choosing **Properties**. If you do not have access to this option, you may be restricted by the network rights.



The printer with the check mark is set as the default printer, which means every time you select the Print command, the document is printed by this printer unless otherwise specified.

You can add a printer as required using the **Add Printer** command. When you activate this command, the Add Printer Wizard will start and prompt you with screens for each step required to add the new printer.

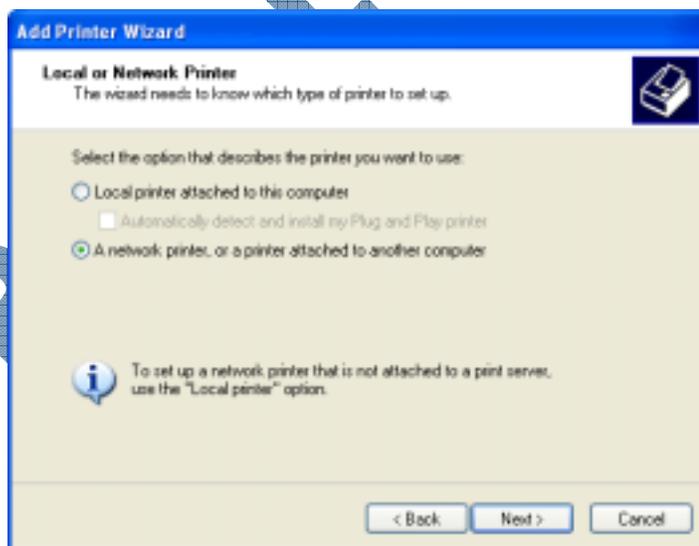
- The following exercise demonstrates how to add and then delete a new printer to be used on the local system only (not shared on a network). The printer used in the exercise may not exist in your location; it is used as demonstration only and should be removed per the instructions provided in the exercise.

### Exercise

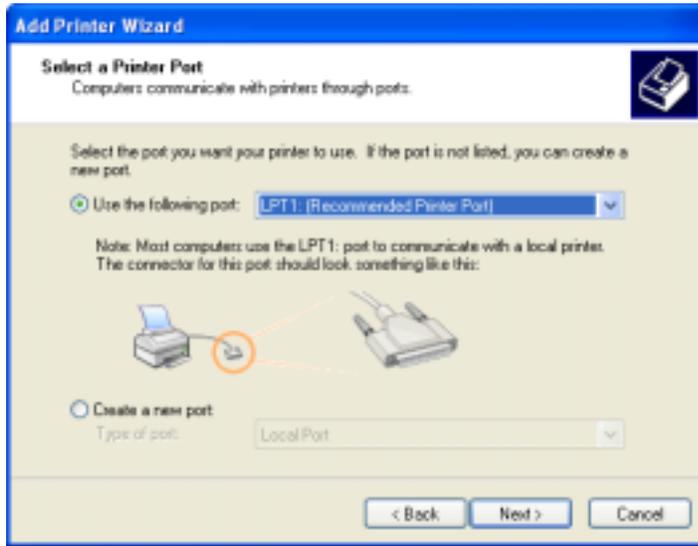
- 1 Click **Start, Printers and Faxes**.
- 2 Click on the **Add a printer** link in the **Printer Tasks** area of the task pane.



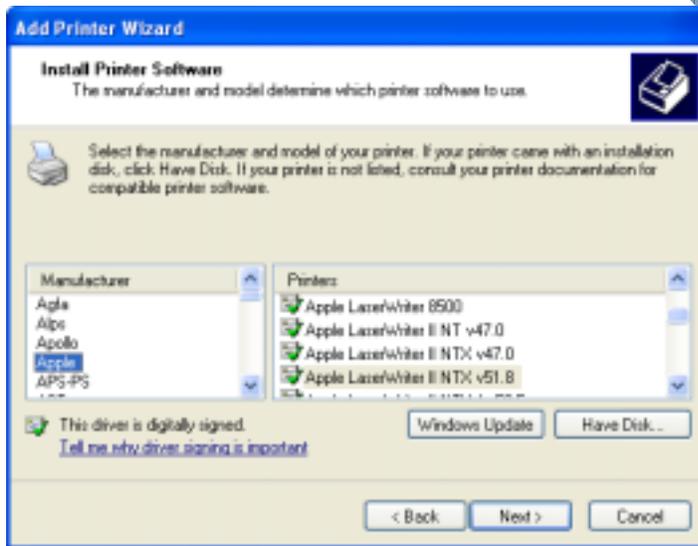
- 3 Read the information on how to install printers and then click on the **Next** button.



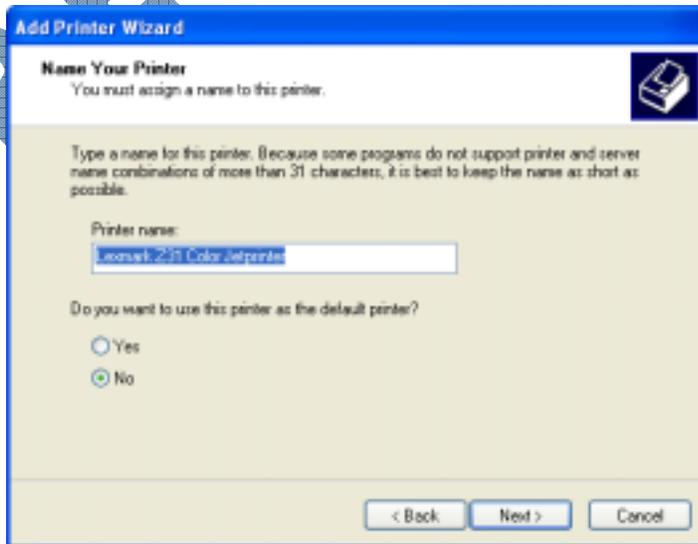
- 4 Click on the **Local printer attached to this computer** and then click on **Next**.



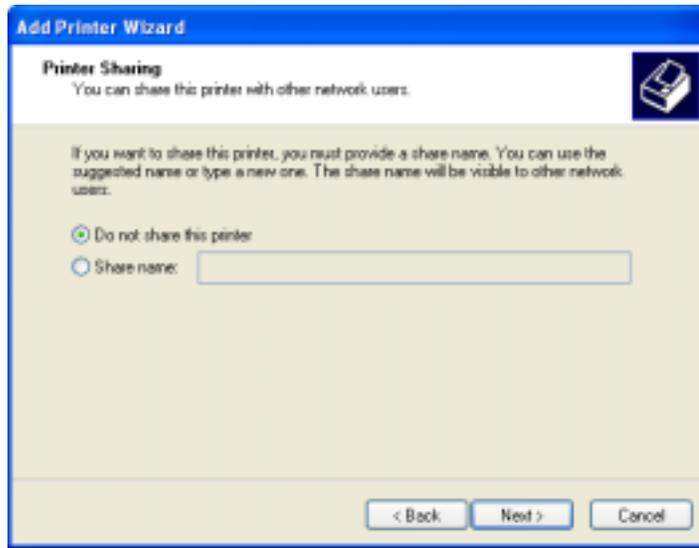
- 5 Ensure the **Use the following port** field shows LPT and then click on **Next**.



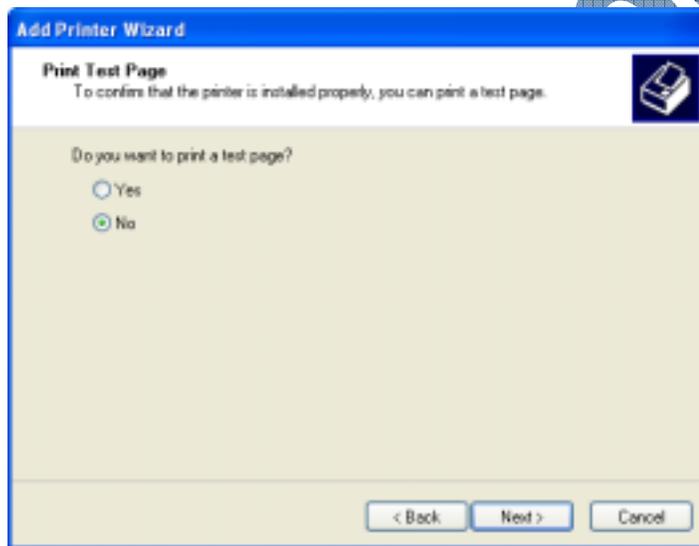
- 6 In the **Manufacturer** list, scroll down and then click on **Lexmark**. In the **Printers** list, scroll down and then click on **Lexmark Z31 Color Jetprinter**. Then click on **Next**.



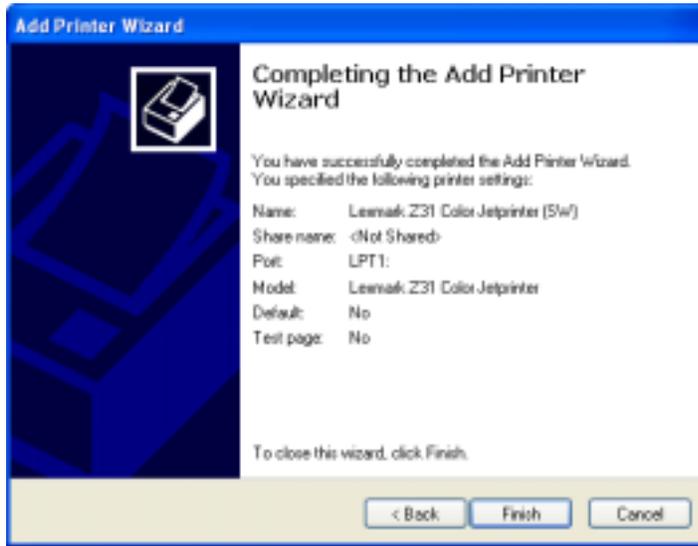
- 7 Press the **End** key to move to the end of the new printer name and add your initials in brackets. Ensure **No** is selected for setting this printer as the default printer. Then click on **Next**.



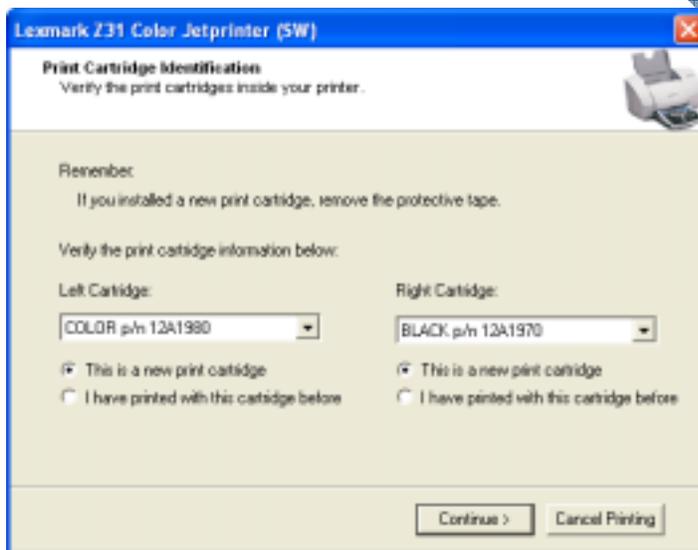
- 8 Ensure the **Do not share this printer** option is selected and then click on **Next**.



- 9 Ensure **No** is selected for printing a test page and then click on **Next**.



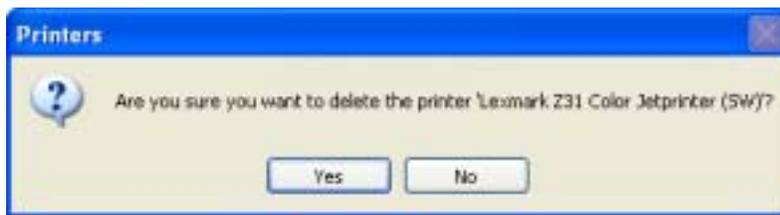
- 10 Click on **Finish** to complete the installation of this printer.



- 11 If this was a printer you were actually installing, you would now go through the screens to set up the features (such as single or double-sided printing, extra RAM, which trays contain special paper like letterhead, etc.) for this printer accordingly. As this is a demonstration only, click on **Cancel Printing**.

You have successfully installed a printer. For the purpose of this course, you will now delete this printer.

- 12 Select the new printer from the list and then click on the **Delete this printer** link in the **Printer Tasks** area of the task pane.

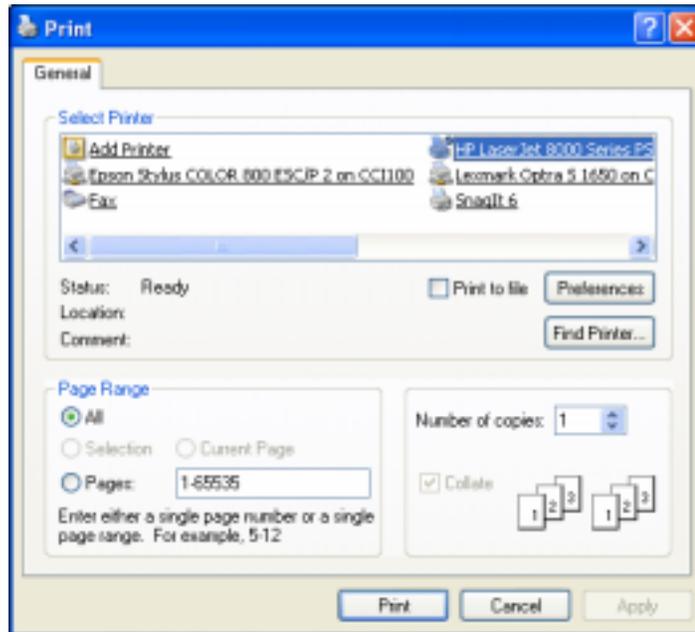


- 13 Click on **Yes**.

You have successfully deleted the printer if it no longer appears in the list of printers.

## Printing Documents

If you are printing a document from within a program, you can use Print Preview to see how the document would appear if it were printed. If you print a document from the My Documents folder, My Computer, or the My Recent Documents menu, Print Preview is not available.



**Select Printer** If you have access to more than one printer, click on the one that you wish to use. The Status area shows the number of documents waiting to be printed as well as the printer status e.g., Ready. Print to file saves the document as a print file (\*.prn) so that it can be printed either on another type of printer or by a printing service.

**Page Range** Choose to print all pages in a document, print selected text, the current page, or you may type a specified range of pages to be printed.

**Number of copies** Specify the number of copies you wish to print. The **Collate** feature applies if you are printing multiple copies of a document. For example, if you have a 10 page document and wish to print four copies, the printer will print pages 1-10 for the first copy, then pages 1-10 for the second copy, etc.

To quickly print the entire document, click the  (**Print**) button on the toolbar. To specify a particular printer, page range or number of copies, you must use the **File, Print** command, or press **Ctrl + P**.

### Exercise

- 1 Open WordPad and open the *What is a Virus* document from the data files.
- 2 In the first line at the top of the document, type your name and press **Enter** twice.
- 3 Click the  button.

The document looks exactly as it would appear if it were printed. The dotted lines represent the margins and will not print. Margins may be changed by selecting **File, Page Setup**.

- 4 Click the mouse in the document to zoom in or zoom out with the magnifier .
- 5 Click the **Print** button.
- 6 Click on the appropriate printer. Check with your instructor for the printer to use.
- 7 Click **Print**.

- 8 Click on **Start, Printers and Faxes**.
- 9 Click on the printer installed in your room to show the print queue.
- 10 When the document has printed, close the window and close from **Printers and Faxes**.
- 11 Close WordPad. When prompted to save changes to the file, select **No**.



**Practice Exercise**

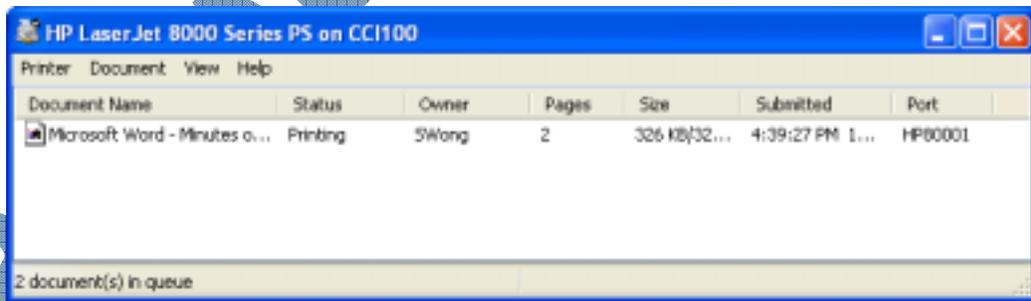
- 1 Open My Computer and then open your Student data files folder.
- 2 Highlight one of your documents such as the **LANs, WANs and MANs.txt** document.
- 3 Select **File, Print**.  
The document will open and print from the Notepad program and then automatically close.
- 4 Close from My Documents.
- 5 Click **Start, My Recent Documents**, and right-click on the **LANs, WANs and MANs.txt** document.
- 6 Select **Print** from the shortcut menu.  
The document will open and print from the Notepad program and then automatically close.

**Managing Print Jobs**

Use the print queue to check the printer status, your queued print jobs and to pause or cancel a print request. For example, if you have sent a document to the wrong printer or printed the wrong document, you can cancel the document provided the document is still listed in the print queue.

To access the print queue, use one of the following methods:

- Click **Start, Printers and Faxes**. Click on the printer the document was sent to.
- To quickly display the print queue, double-click the **Printer** icon in the status area on the taskbar.



- Document Name** Displays the name of the document.
- Status** Displays the current printing status, such as spooling, printing or paused.
- Owner** Displays the name of the user who sent the document to the network printer.
- Pages/Size** Displays the pages sent and the size of the file.
- Submitted** Displays the time and date the document was sent to the printer.

Pause
Restart
Cancel
Properties

Once the documents being printed are displayed, you can right-click on a file to make a further selection.

How long a document remains in the print queue will depend on the size of the document, the speed of your printer, or the order of your print job and when it was submitted. For example, a network printer shared by multiple users may display several documents submitted by other users and the document you sent to print is fifth on the list. Accordingly, even though your document is small in size, the print job will stay displayed on the list until the previous documents in the queue have been printed.

By default, you will have permission to print and manage your own documents in the print queue; you will not be able to change the order or modify the print jobs for other users. You will need to request the access rights for a Print Operator from the Network Administrator before you can manage the print jobs from all users for the printer.



### Exercise

- 1 Click **Start, Printers and Faxes**.
- 2 Click on the printer name to display the printer's queue.
- 3 Select one of your documents from the print queue, if available.
- 4 Select **Document, Cancel**.
- 5 Click **Yes** to cancel the selected print job.

The status will change to **Deleting** and the document will be removed from the print queue.

- 6 Close the Printer windows.

## Summary

In this lesson you looked at how to use the Control Panel to customize the appearance or behavior of different system options. You should now be familiar with the following:

- What is the Control Panel
- Changing or customizing the desktop display
- Changing the date or time
- Changing or customizing mouse settings
- Changing or customizing multimedia devices
- Adding or viewing fonts
- Working with printers installed on your system

## Review Questions

1. How can you access the Control Panel?
  - a. From the Start, Settings menu
  - b. From My Computer
  - c. From Windows Explorer
  - d. All of the above
  - e. Only a or b
2. List some of the more commonly used features in Control Panel.
3. When you install a new hardware device, in most cases Windows will automatically use the Plug and Play wizard to help you install the new device.
  - a. True
  - b. False

4. If you cannot access certain commands in Control Panel, what is the most likely cause?
  - a. You do not have access rights to these commands
  - b. You've selected the wrong command
  - c. Windows has restricted you based on the what you used last
  - d. All of the above
5. Why should you activate a screen saver on your system?
6. The date and time on a computer is determined by the internal clock of the computer, that is controlled by a battery.
  - a. True
  - b. False
7. Provide reasons for why you might want to change the options for the mouse.
8. What's the difference between doing a single versus double-click on the speaker icon in the Task Notification area?
9. List the two ways you can install fonts onto your system.
10. You can print to the default printer or you can select a different printer if you have access to multiple printers.
  - a. True
  - b. False

FOR EVALUATION ONLY

## Lesson 12: Installing and Uninstalling Programs

### Objectives

Suggested Timing: 1 Hour

In this lesson you will look at how to manage application programs, specifically installing or uninstalling programs. On successful completion, you will be familiar with the following:

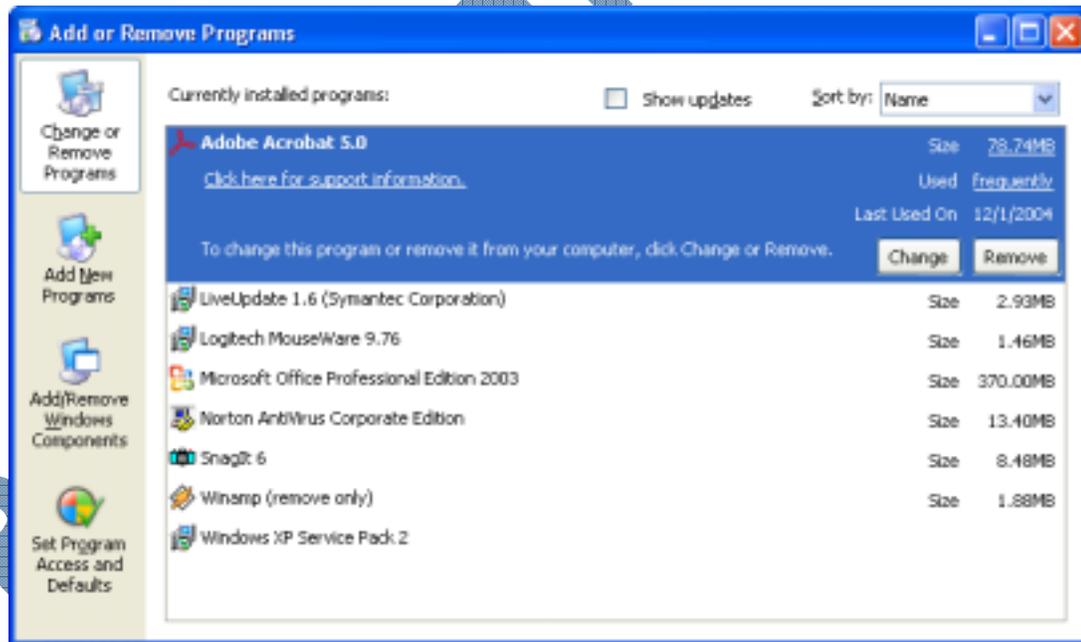
- How to install a new program
- How to uninstall a program
- What to do if the new program doesn't work

### Managing Application Programs



Windows simplifies the process for installing and removing programs by guiding you through the process. In most cases, when you insert a CD containing a software program, that CD will contain a program that will automatically start the installation process. If the CD doesn't contain a file of this type, Windows will detect that you have inserted a CD and will display a window prompting you for further action. If your system does nothing when a CD is inserted in the CD drive, this feature may be disabled on your system; contact your network administrator to check that you have rights with your login id to allow you to install programs as well as any hardware or software restrictions.

Before you install a program, you may want to check your system to see if the program is already installed. A program may not appear in the Start menu based on how the program was installed previously, or it may have been deleted from the Start menu. Use the **Add or Remove Programs** feature in the Control Panel to check if the program is on the list.



If the program exists in this list, then you can then add a shortcut to the Start menu or on the desktop.

When you purchase a software program, one consideration is to make a backup copy of the original CD media. Use the backup copy to install the software and put the original in a safe place where you can retrieve it for use at a later date, as needed. In a company setting, the Network Administrator or the IT department will most likely have the original copies of software in storage. Alternatively, the network may be set up with the software program and you are given access to specific parts of that program.

## Installing a New Program

Programs may be installed from a network drive, CD, DVD, or floppy disk drive. The information listed in this section describes the typical steps for installing a new program. Depending on the program you are installing, the step-by-step procedures may vary.

Some programs will automatically install the moment you insert the CD or DVD. This is a result of an Autorun file being set up with the installation program. Once the Autorun program starts, the installation will lead you through a step by step wizard.

Other programs may require you to start the installation process yourself. In this situation, you will need to either use the **Run** command from the **Start** menu or open My Computer or Windows Explorer and then click on the *Setup.exe* file. Most programs will use the Setup file to launch the installation program; you may need to review the files on the disk to look for a file that will start the installation for you.

You can also add a new program from within the Control Panel. This can be used when you want to add an additional component for an existing program on your system (e.g., add Access to the Microsoft Office Suite of products already installed on your system) or if you want to perform an upgrade on an existing program.

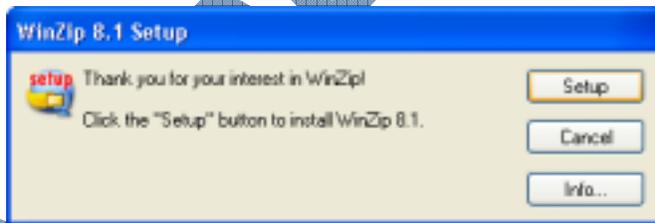
➤ The programs used in the following exercises are meant to provide different examples of how programs can be installed. This is not an endorsement for either program but merely a demonstration of two popular software programs that people will install on their systems. You will be required to uninstall these programs later in this Lesson.



### Exercise

The file used for this exercise is an evaluation copy of WinZip, a popular file compression program. This program can be used to reduce the size of one or multiple files that may be sent via e-mail.

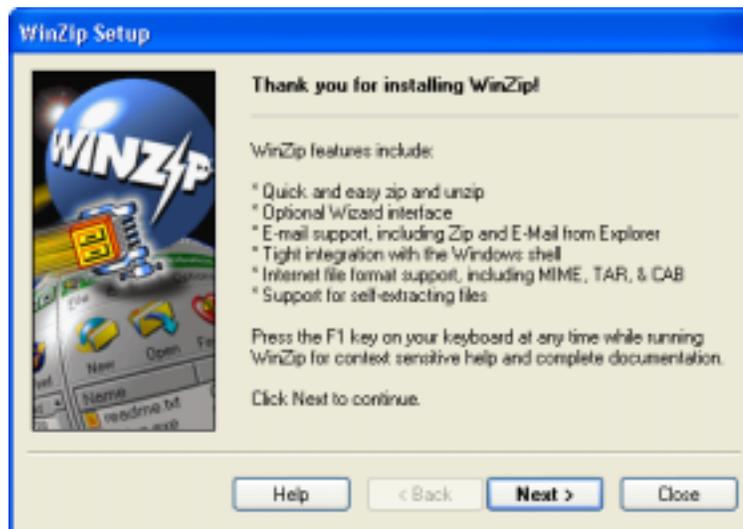
- 1 Open the Student data files folder.
- 2 Click on the *winzip81.exe* file.



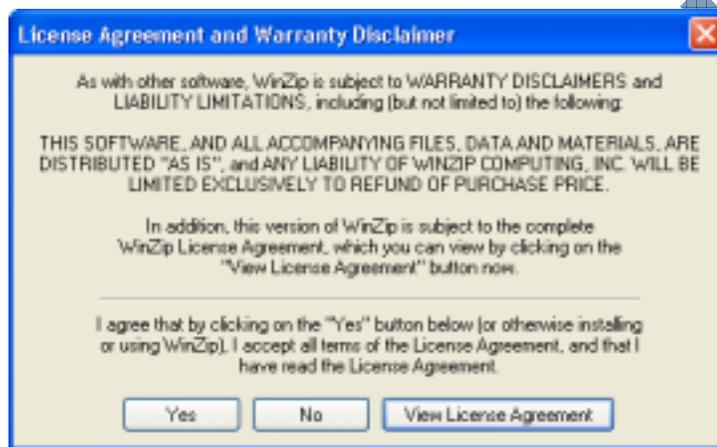
- 3 Click the **Setup** button.



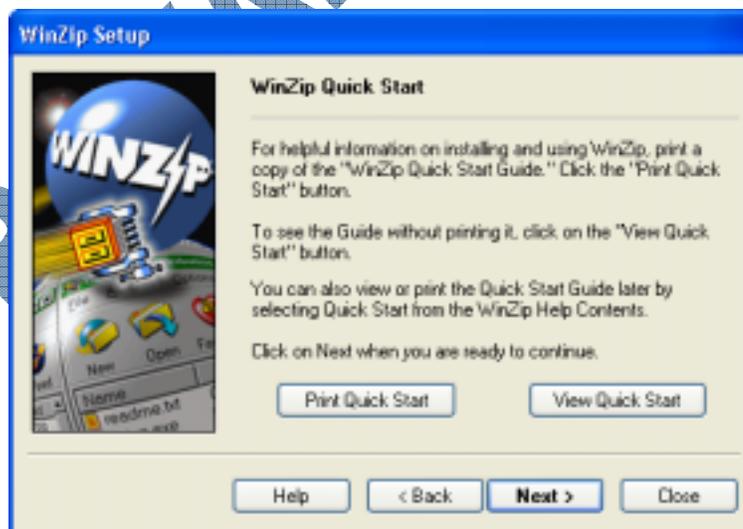
- 4 Click **OK**.



- 5 Read the information about WinZip and then click the **Next** button.



- 6 Read the License Agreement and then click **Yes**.



- 7 Click **Next** to bypass the Quick Start options.



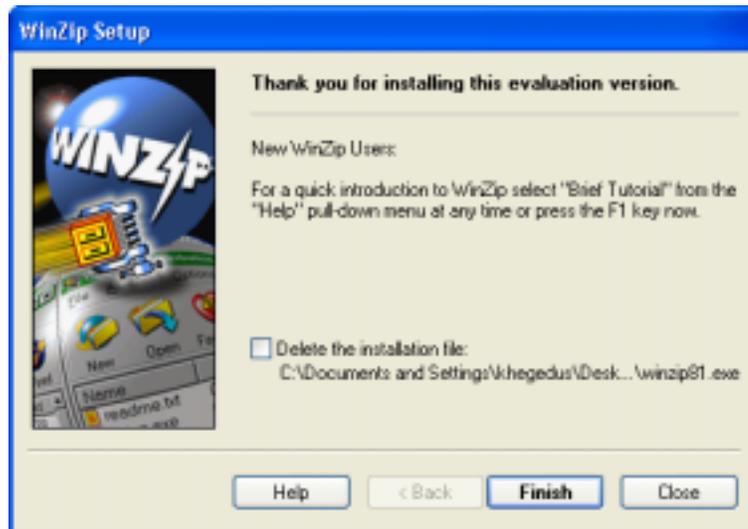
- 8 Using the Wizard mode will lead you through step by step when you need to zip or compress a file. For the purpose of this exercise, you will use the Classic mode. Ensure the **Start with WinZip Classic** option is selected and then click **Next**.



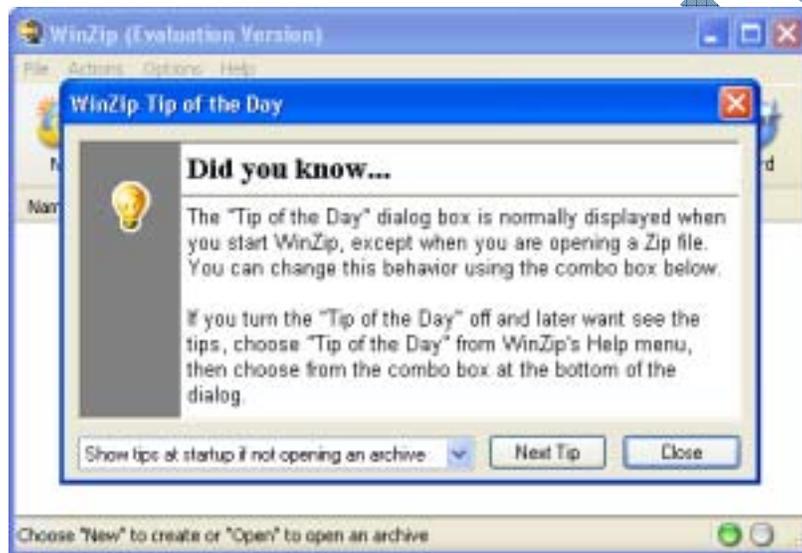
- 9 Ensure the **Express setup (recommended)** option is selected and then click **Next**.



- 10 Click **Next**.



- 11 Click **Finish**.



You have successfully installed WinZip.

- 12 Close the WinZip Tip of the Day and Winzip windows.

You should now notice you have a shortcut icon on the desktop for this program.



- 13 Click **Start, All Programs** to see if you have a folder for this program.



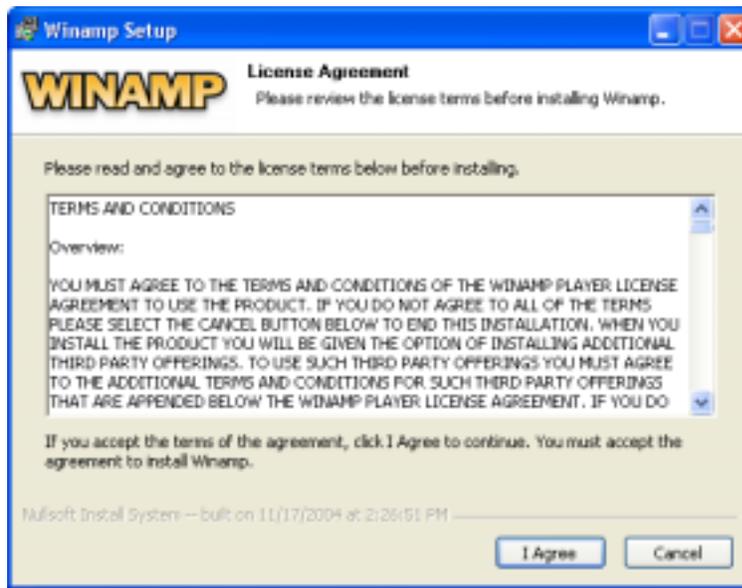
### Practice Exercise

This exercise will install a popular player for listening and playing MP3 music files. Although Windows comes with Media Player, some people prefer a smaller music player like WinAmp for listening to music on their system.

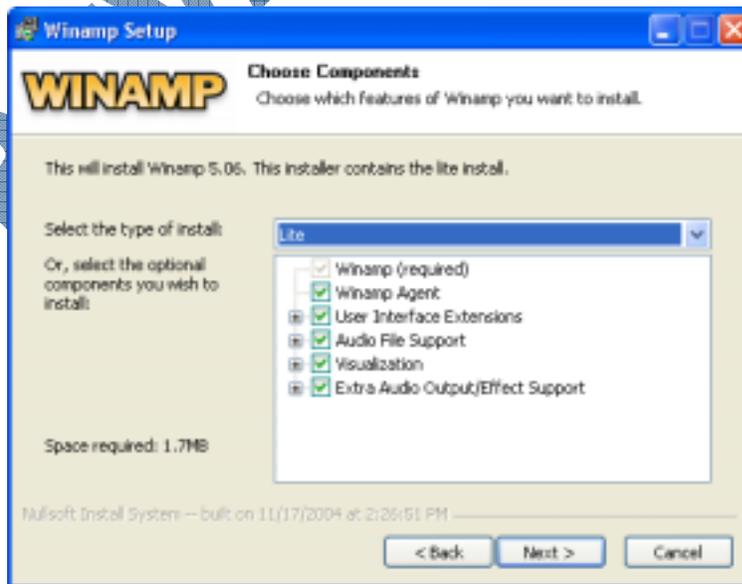
- 1 Open the Student data files folder.
- 2 Click on the `winamp506_lite.exe` file.



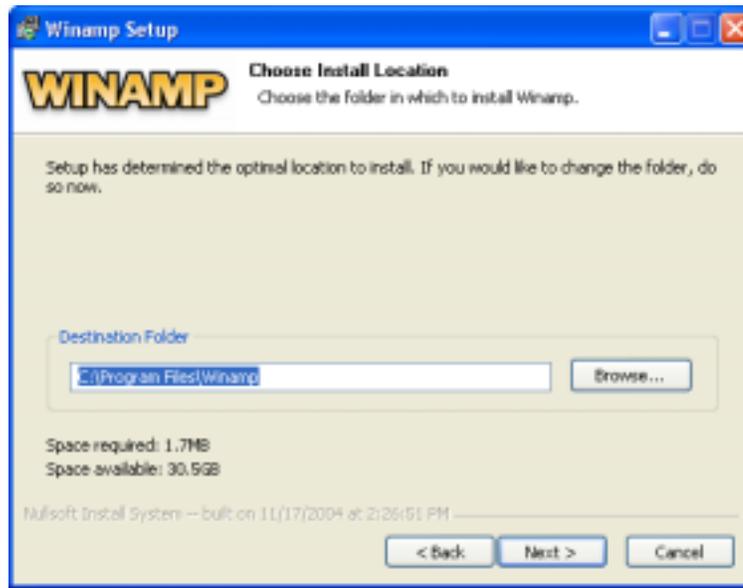
3 Click **Run**.



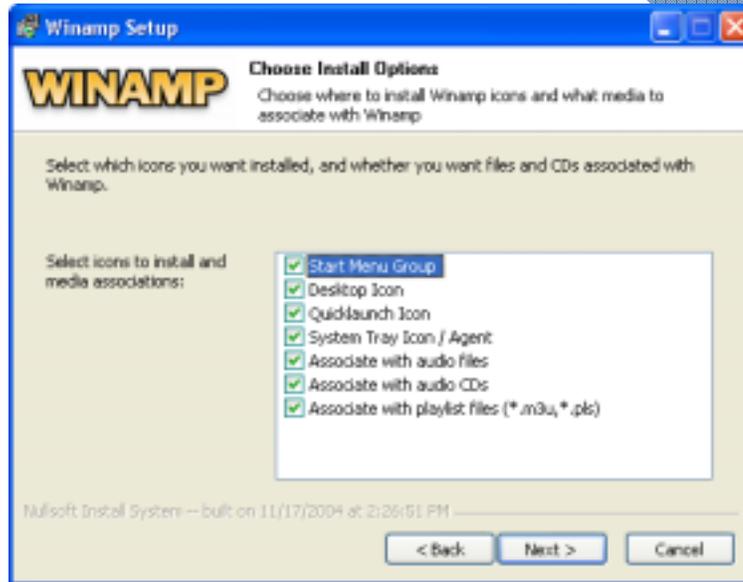
4 Read the license agreement and then click on **I Agree**.



5 Set up the same options as shown in the screen above and then click **Next**.

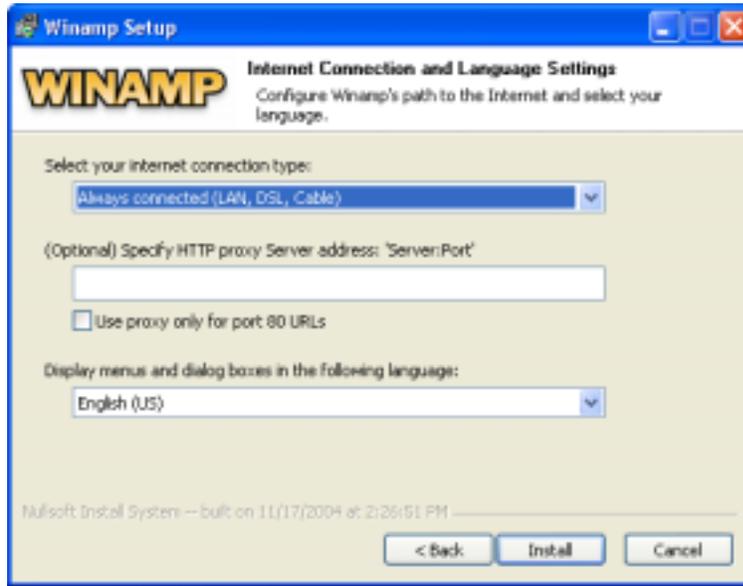


- 6 Ensure the path is as above and then click **Next**.



Notice how this program gives you the option of where this program can be placed for easy access after the program has been installed. Most larger or popular programs will provide you with an option of where the program should be installed as well as whether you want a shortcut on the desktop for this program.

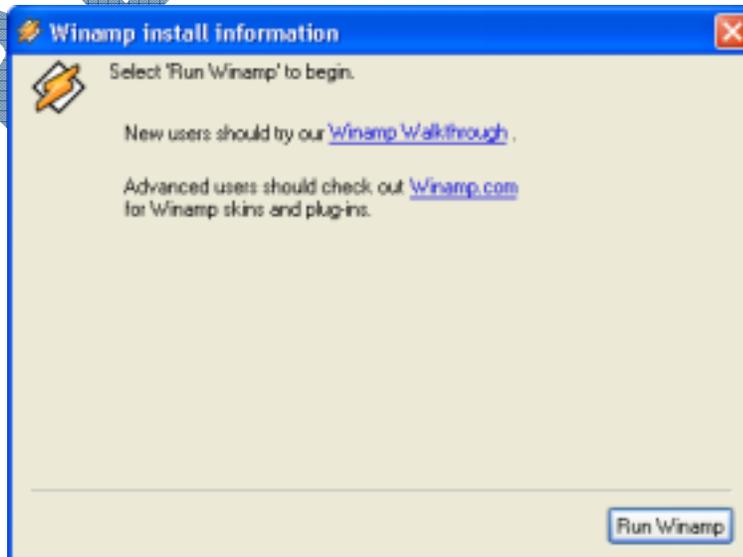
- 7 Leave all options checked and then click on **Next**.



8 Click **Install**.



9 Ensure **Yes, allow anonymous usage statistics (Recommended)** is selected then click **Send**.



- 10 Click on **Run Winamp** to test and see if the program runs successfully.



- 11 Click on the **Close** button for the top window to close the program.  
You should now have a shortcut icon for this program on your desktop.



Winamp

- 12 Click **Start, All Programs** to see if you have a folder for this program.

### Adding a Shortcut

Occasionally some programs will add a shortcut for the program to the Start menu but not the desktop. Some programs may not create a shortcut for either the Start menu or the desktop.

- If the program exists in the Start menu and you would like to have a shortcut for it on the desktop, display it in the **Start, All Programs** menu, press the **(Ctrl)** key and then drag the item onto the desktop. Windows will confirm that you are making a copy of the item by displaying a + sign at the lower left corner of the item as you drag it onto the desktop.
- Conversely, if the program exists as a shortcut on the desktop, you can add it to the **Start, All Programs** menu by dragging a copy of the shortcut into the appropriate location on the menu.
- You can also right-click on the program item and drag it to the new location. Windows will then prompt you whether to move or copy the item to this new location.
- If the program doesn't exist on the Start menu or as a shortcut on the desktop, you can create a shortcut by right-clicking on the desktop and then clicking on **New, Shortcut**.



### Exercise

- 1 Click on **Start, All Programs, Accessories**.
- 2 Right-click on the **Calculator** and then drag it to a blank area of the desktop.



- 3 Click on **Copy Here**.

You should now have a new shortcut that appears similar to the following:



Calculator

You will now make a copy of a shortcut for a program from the desktop into the Start menu. Assume that this program is one you want to use frequently and do not want to go through submenus to find it.

- 4 Point the mouse cursor at the Winamp shortcut on the desktop, then click and drag the icon overtop the Start menu.

The Start menu should appear momentarily.

- 5 Now drag the icon overtop the **All Programs** command to display the submenu.

- 6 Move your mouse cursor to below the last item in the submenu, similar to the following:



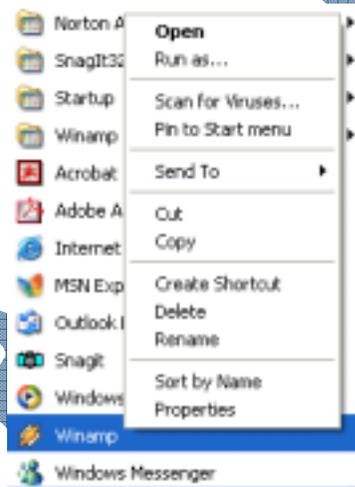
You should have a dark horizontal line with a “ghost” image of the shortcut as seen in the above. You can move this item anywhere in the menu. The line confirms the new location for the item.

- 7 Release the mouse cursor at this location.

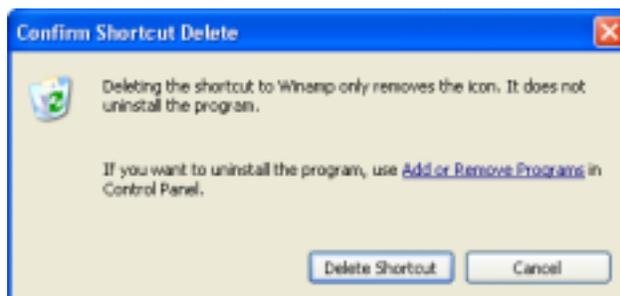


You have now added a new item to the Start menu. If you wanted to delete this item, this can be done quickly and easily from the Start menu as well.

- 8 Click **Start, All Programs**. Point at the **Winamp** item just added to select it.
- 9 Right-click overtop the item.



- 10 Click on **Delete**.

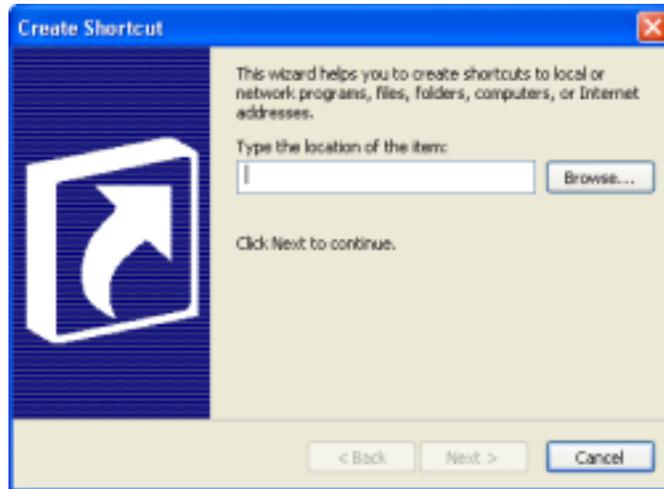


Notice how Windows confirms that you are deleting a shortcut only, not the original file nor will it uninstall the program.

**11** Click on **Delete Shortcut**.

You will now create a new shortcut for a program on the desktop.

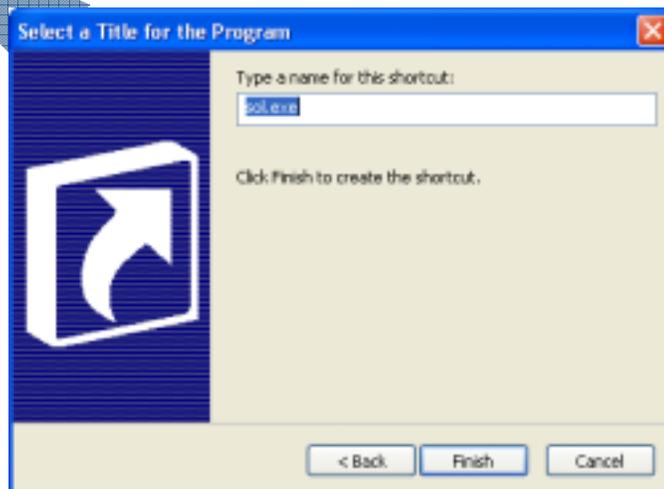
**12** Right-click on a blank area of the desktop and then click on **New, Shortcut**.



**13** Click on the **Browse** button.



**14** Click on the **+** for My Computer, then Local (C:), then Windows, and then System32. Scroll down the list and click on the Sol.exe file. Click **OK** then click **Next**.



- 15 Type: **Solitaire** for the name of the new shortcut and then click on **Finish**.

You should now have a shortcut on the desktop for the game, Solitaire.



Solitaire

- 16 Click on the shortcut to ensure it does start up the Solitaire game.
- 17 Close the program.
- 18 Drag this shortcut overtop the Recycle Bin to delete it.

### Why Isn't the Program Working?



3.3.7

When installing programs, you may run into the situation where the program doesn't work after the installation, or problems may occur during the installation. Some of these problems include:

- The program appears to be installing but after a couple of screens, you see an error message indicating you cannot proceed because you do not have enough rights. This occurs because your login id on this system does not allow you to install programs. This is common in schools or companies where the Network Administrator will restrict any software from being downloaded onto any system. These restrictions protect the network that is shared and used by many people from potentially being damaged by viruses or cluttered with programs that can cause conflicts with other programs, or even Windows itself. You will need to speak to the Network Administrator in order to gain rights to install specific software or have them install the program for you.
- You are using a copy of a software program to install it but it stops in the middle of the installation or displays various error messages. This is most likely the result of the copy of the software program being defective, either from damage to the CD or the burned copy was not a successful copy. Before using the original copy, check the back of the CD to see if there are any dirt or fingerprints that can be cleaned, or scratches which will not allow the CD to be read successfully. If after cleaning the CD and ensuring there are no scratches, try the installation program again. If it still doesn't work, then you will have to try using the original CD to install the program and dispose of the faulty copy.
- If the installation stops somewhere during the installation process, this could be a result of a bad CD (as noted previously), you have run out of space on your hard drive, a missing file, or a conflict between software programs. Be sure to read the error message that appears to help you with the installation and look for resolutions to this problem. For example, if the problem is a lack of space, you will have to cancel the installation and then remove some files or programs from your hard drive to free up more than the minimum amount required for the new program. Other types of problems may require the assistance of technical support to determine the best resolution.
- An installation can fail when there are hardware conflicts. These are recognized in the error message where it will indicate something is missing (e.g., driver file) or it cannot find the specified hardware. It is also possible that the installation will finish, appearing successful, but when you start the program, it doesn't work. To resolve this type of problem, check to see that you have the latest version of the software program for the operating system being used. For example, you may encounter problems with installing an older printer on a Windows XP system as there may not be an updated driver for this printer that is recognized by Windows XP. In situations like this, it is best to have a technical person help you to either find the right driver/software program for the hardware, update your Windows version, or handle the installation for you.

- Software conflicts are very common when installing programs. Not all software programs are compatible with each other, even though they are all designed for the Windows environment. Remember that software programs are created using programming code and each programmer writes code slightly different than another. Sometimes code is written in a certain way in order to accommodate the most likely use or hardware to be used with this software. Sometimes there is nothing wrong with the software program other than it is older than meant to be used with the version of Windows you are using, or it is not compatible with other software you currently use. These types of problems cannot always be resolved, although in most cases if you have the latest version of the software program, it should be able to work on your system. Check for the latest versions first, then if the program still doesn't work, check with a technical person. They may have a tweak that allows the program to work (e.g., modifying ACCPC for DOS to work on a Windows XP system) or they know of the right drivers, fixes, or add-ins to make the programs compatible.
- Even when the installation is successful and you can open the software program to work on new files, you may encounter a problem with existing files that can't be read by the new program. In this scenario, check if the new program has some tools in the program that weren't initially installed to allow you to convert files from an older format into the new program. If this is not the solution, check to see what format the files are in and if there is another format you can use for these files. For example, you may need to open one file in the previous software, save it in a format that is recognized by the new program, and then try opening this new format in the new program. If this still doesn't solve the problem, you may need to read the User's Guide for the new program to see if there are any suggestions on how to set up the different format, as well as check to see what the default file type is and change it accordingly. For example, if you cannot see any Word documents when you open Word, check the file type to see if it was inadvertently set for Document Templates which means Word will display files with the dot file type, not doc.
- If the software installation is successful but you are having problems seeing different parts of the program, check to see what the system requirements for the program are (check the software box). It may be possible that you have the minimum requirements and require more than what was suggested before you can go any further. For example, you install a new action game and the installation is successful. However, when you start the game, the view is very dark and you cannot see all the components on the screen (as compared to the User's Guide). This is most likely the result of the video card not having enough RAM to show all the background components of the game, and requires you to purchase a video card designed for this type of game.

The aforementioned problems are typical of what you may encounter when installing software. There are no real solutions that will always work; as there are so many different vendors who produce software, you will face different scenarios when installing software. Some steps you can take when faced with these types of problems include:

- Before purchasing and installing any program, check the prerequisites for the program. If necessary, have someone check your system to ensure you have the basic requirements for the program. Always try to ensure you have more than the minimum requirements, e.g., the program requires a minimum of 16Mb RAM – you should ensure your system has at least 128Mb when you are using Windows 2000 or higher, if the new program requires a minimum of 20Mb of space on the hard disk – you should ensure you have much more than just the minimum, etc.
- Check that the software you are using is compatible with the version of Windows you have on the system. For example, many of the older programs designed for DOS or Windows 95 will not work well with Windows 2000 or higher. The technology between the versions has changed significantly and you may experience further problems even if the software works initially.
- Make sure all programs are closed before you install the new program. Some programs will tell you that you must close down any programs before proceeding. You can, however, anticipate this by closing all programs prior to installing the new program. This includes your e-mail program.

- If the installation program completes but the program doesn't work correctly, uninstall the program using the correct procedure. Do not just delete the files and start over again! When you install software, a code in the software is written to the Registry file that tells Windows the software exists and as such, will display an error message that Windows cannot find the corresponding file to start this program whenever Windows starts. You must go through the uninstall process in order to properly remove any part of the new program. Reboot the system to ensure the uninstall worked completely and then try the installation again.
- Before attempting any changes to the system settings, always check with a technical person to make sure you should make these changes, or to get their assistance on changing devices in order to have the software run. They can provide suggestions on different types of resolutions or options.

## Uninstalling a Program

Always uninstall a program from your system when you no longer require or use it. This will free up space on your hard drive for other programs or files. If the program is not listed in the Add or Remove Programs dialog box, check if the program has its own uninstall utility and use it to remove the program from your computer.

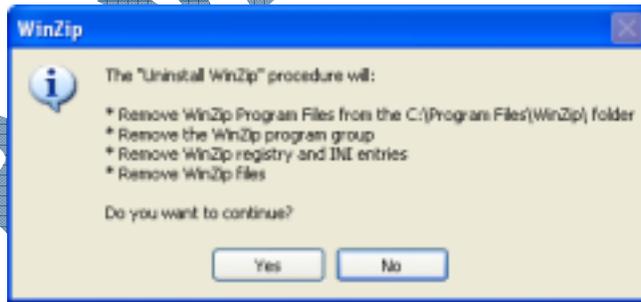
Remember to always choose the **Add or Remove Programs** option or an **Uninstall** option with the software program in order to properly remove a program from your system. This will protect the integrity of your system, and, in particular, clean the Registry of any potential messages about this program in future.

The information listed in this unit describes the typical steps for uninstalling a program. Depending on the program you are removing, the step-by-step procedures may vary.

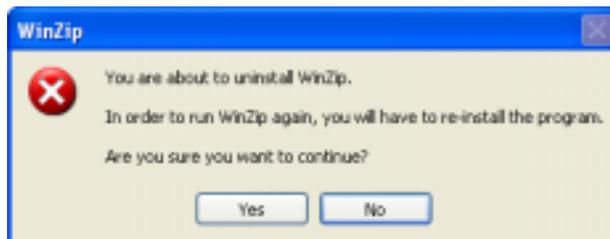


### Exercise

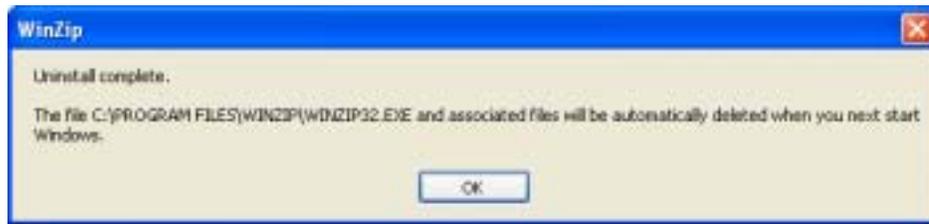
- 1 Click **Start, Control Panel**.
- 2 Click **Add or Remove Programs**.
- 3 Scroll through the list until you see the WinZip program. Then select the program and click on **Change/Remove**.



- 4 Click **Yes**.



- 5 Click **Yes**.

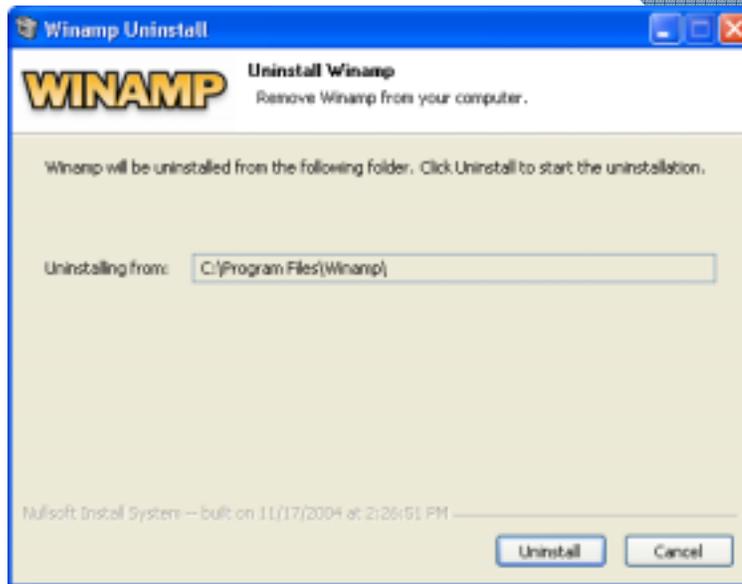


- 6 Click **OK** and then close the Add or Remove Programs window.
- 7 Close the Control Panel.



### Practice Exercise

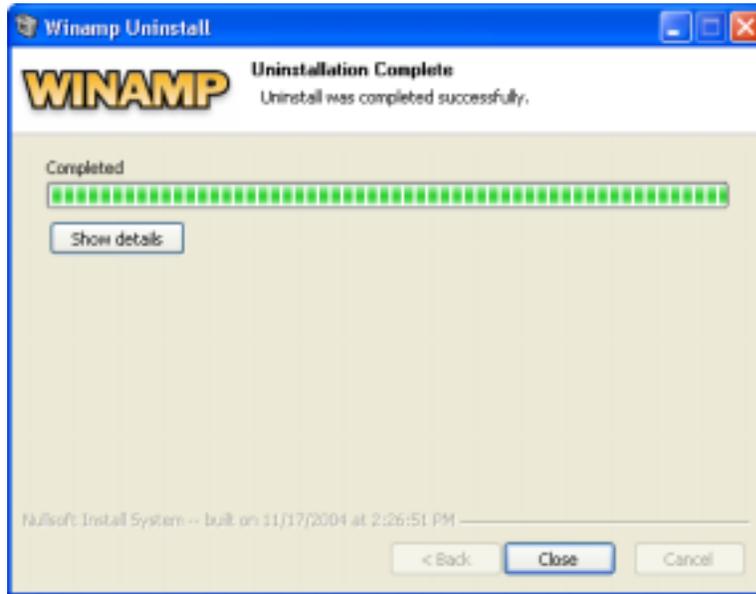
- 1 Click **Start, Control Panel**.
- 2 Click **Add or Remove Programs**.
- 3 Scroll through the list until you see the **Winamp (remove only)** program. Then select the program and click on **Change/Remove**.



- 4 Click **Uninstall**.



- 5 Click **OK**.



- 6 Click **Close**.
- 7 Close the Add or Remove Programs and the Control Panel windows.

### Summary

In this lesson you looked at how to manage application programs, specifically for installing or uninstalling programs. You should now be familiar with the following:

- How to install a program
- How to uninstall a program
- What to do if the new program doesn't work

### Review Questions

1. Consider making a copy of the original media for a new program for installation purposes and keep the original in a safe location.
  - a. True
  - b. False
2. All programs come with an automatic feature to start the installation process.
  - a. True
  - b. False
3. List some different ways you can install a program.
4. If a shortcut for a program exists on the desktop only, you can make a copy of this shortcut on the Start menu.
  - a. True
  - b. False
5. A shortcut can be created on the desktop only.
  - a. True
  - b. False

6. If a program can't install on a network, it's because you used the wrong process for the installation.
- a. True
  - b. False
7. What could be a reason for why the program isn't working?
- a. The CD media is defective
  - b. You need more than what was suggested for system requirements
  - c. There is a software conflict, e.g., Windows and the new program
  - d. All of the above
  - e. Only a or c
8. Before installing a new program, what steps should you take?
- a. Check the system requirements to make sure you have more than the minimum suggested
  - b. Close any programs currently open before starting the installation
  - c. Check the version of software to make sure it is the latest to match the Windows version installed
  - d. All of the above
9. Why would you want to remove a program?
10. Why should you remove the program versus just deleting the files for the new program?

FOR EVALUATION ONLY

## Appendices

**Appendix A: Productivity Tools**

**Appendix B: Glossary of Terms**

**Appendix C: Index**

**Appendix D: Courseware Mapping**

**FOR EVALUATION ONLY**

**FOR EVALUATION ONLY**

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# Appendix A: Productivity Tools

## The Standard Toolbar

The following toolbar is available when using My Documents, My Computer, Network Neighborhood, Recycle Bin, and the Search menu for files or folders.



Display the previous web page.



**(Forward)**

Display the next web page.



**(Up)**

Take you up one level from where you are in the directory.



Display the Search pane to define criteria to search for web pages, businesses, e-mail, or mailing addresses.



Display the folder structure view for the current selected drive.



**(Views)**

Display different types of view for the files and folders for the current selected drive.

## The Help Toolbar

The following toolbar is available when using My Documents, My Computer, Network Neighborhood, Recycle Bin, and the Search menu for files or folders.



Display the previous help topic.



**(Forward)**

Display the next help topic.



**(Go to Help and Support Page)**

Display the first or starting display for the active window.



Display the Index tab page.



Open a pane to display a list of Favorites sites.



Open a pane to display a list of all sites and locations recently accessed.



**(Web Help)**

Provide additional help and online support via the Internet. Access the Windows XP home page to obtain the latest information and tips or contact product support to obtain answers to frequently asked questions.



Display a menu of various commands to customize the help windows.

## The Address Bar



**Address Bar**

The Address Bar or the URL (Uniform Resource Locator) displays the address of the drive, folder, or web site. Addresses can be typed directly in this field.



Go to the selected address page entered in the Address Bar.

**FOR EVALUATION ONLY**

## Appendix B: Glossary of Terms

**Ctrl key** – The **Ctrl** key is a special key on a computer keyboard, not found on a normal typewriter keyboard. It is used to modify the effect of the normal keys. The **Ctrl** key is held down while the appropriate key is struck.

**Ctrl+C** – To stop a command or program running on the PC, you can sometimes use the **Ctrl+C** key sequence. You hold down the **Ctrl** key and press the **C** key. If the program is expecting you to do this, it will stop running.

**Ctrl+Break** – To stop the computer from displaying information on the screen, you can use the **Ctrl+Break** key sequence. You hold down the **Break** key and press the **Ctrl** key. This is only a pause function; as soon as you strike another key, the computer will continue displaying information.

**Access Permission** – A rule associated with an object (usually a folder, file, or printer) to regulate which users can have access to the object and in what manner.

**Account Lockout** – A security feature that locks a user account if a number of failed log on attempts occur within a specified amount of time, based on account policy lockout settings. (Locked accounts cannot log on.)

**Account Policy** – Controls the way passwords must be used by all user accounts of a domain, or of an individual computer. Specifics include minimum password length, how often a user must change his or her password, and how often users can reuse old passwords.

**Active** – Describes the window or icon to which the next keystroke or command will apply.

**Administrator** – A person responsible for setting up and managing the domain or local computers and their user and group accounts, assigning passwords and permissions, and helping users with networking issues.

**Algorithm** – A special set of rules or guidelines that dictate how information can be entered into a software program.

**Application Program** – Usually a collection of programs and data files that work together for a specific purpose. To handle all its accounting functions, for example, a business might use a collection of programs specially created to do this. A desktop publishing program would include many different programs to produce the final result. AutoCAD, WordPerfect, and ACCPAC are examples.

**ASCII** – (American Standards for Computer Information Interchange) The organization that sets the standard for interchange of information between various types of computers.

**Backup Disk** – A backup disk contains files backed up from another disk. Normally this disk is only used if the original disk or files are damaged. It should be stored in a safe place away from the computer, and preferably at a different location so that if the computer or files are damaged, you still have the backups that were on the disk. If your backup disks were made with the BACKUP command, then you must use the RESTORE command to recover the information.

**Backup** – When you make a copy of a file, usually onto a floppy diskette, you are making a backup. A backup is a copy of the file. If the original gets damaged, or deleted, you can restore the original file. The COPY, DISKCOPY, and BACKUP commands all produce backups of files on disks.

**Bit** – A computer stores information using ones and zeros. Each location can contain either a one or a zero. The name for a location is a bit.

**Bookmark** – Marks a location of an item such as a help topic so that you can quickly return to it at a later time.

**Boot** – When a computer is turned on, it must test itself and then load the operating system into its memory. This task of the computer getting itself going is called booting. The term comes from the idea of lifting yourself off the ground by pulling on your boot straps. A cold boot is when the computer's power is turned on. A warm boot is when the computer is already running and it is reset under control of the operating system.

**Browse** – To view available network resources by looking through lists of folders, files, user accounts, groups, domains, or computers. Browsing allows users on a Windows 2000 network to see what domains and computers are accessible from their local computer.

**Button** – In this courseware, a button usually refers to a Command button (See Command button) as opposed to a mouse button.

**Byte** – A byte is a collection of eight bits. The PC stores programs in its memory as a series of bytes. This series is often many thousands or millions of bytes long.

**Cache** – A special area of memory for storing information.

**CD** – Stands for Compact Disc. Every new computer comes with a CD drive which could be read only (ROM) or writeable (RW). Computers can play music and data CDs.

**Central Processing Unit** – The heart and brain of any computer is the Central Processing Unit, or CPU. It controls the entire computer, and follows the instructions in a program to perform a certain task.

**Character** – Can be a letter, number, or other piece of data. It is usually stored using one byte of memory.

**Check Box** – An option in a dialog box used for selecting or activating items or features. If checked, the feature is activated. If unchecked, the feature has been turned off.

**Classic Style** – The look and feel of Windows 9x.

**Click** – To press and release a mouse button quickly.

**Client** – A computer that may access shared network resources provided by another computer, called a server.

**Clipboard** – A temporary storage location used to transfer data between documents and between applications.

**Close** – To remove or shut down a document window or application window from the Desktop.

**Clusters** – Small groups of information stored on a disk when the save command is activated. Information is saved on the disk at the first available space and allocated accordingly. Similar to filing information in the filing cabinet in different folders or drawers.

**Command** – When you want the computer to perform a function, you enter the name of the function. This name and the function it represents are called the command.

**Command Button** – A command button may have a picture or icon, or a word appearing on the button. It is used to perform a specific function, such as OK, Cancel, Close, or Print.

**Computer Name** – A unique name that identifies a computer to the network. The name cannot be the same as any other computer or domain name in the network.

**Control Icon** – The icon appearing on every application that runs a window and on some non-Windows applications.

**Control Menu** – The menu appearing on every application that runs in a window and on some non-Windows applications.

**Cursor** – A cursor marks the position in a document on the screen where text or a graphical object will be placed. A cursor can appear in many different forms: an Insertion Point, a blinking underline, or a blinking square.

**Default Disk Drive** – When you enter a command on the keyboard, the disk operating system looks to see if the command is a file on one of the disk drives. The first one it looks at is called the default disk drive. If you specify another disk drive, you can override this automatic search of the default disk drive. The default disk drive is displayed on the screen by the prompt.

**Defragmentation** – The process of checking the disk drive for lost or bad clusters of information. Similar to cleaning and reorganizing a filing cabinet.

**Desktop** – The screen background for Windows where windows, icons, and dialog boxes appear.

**Device** – A hardware item that can be referenced or accessed by the user from an application program. For example a floppy disk, a hard disk or CD-ROM drive.

**Device Errors** – These are error announcements made by the operating system to indicate that an error has occurred when it tried to use a device. The device could be a disk drive, printer, or other unit connected to the computer. You are often asked to select an option to retry the function, ignore the error, or abort the entire operation.

**Dialog Box** – A window in which additional items may be selected or activated.

**Diskette** – A diskette, or floppy disk, is a thin plastic disk coated with iron oxide. Information is recorded and played back from the surface similar to an audio tape.

**Disk Management** – The process of maintaining the disk drives on the computer using specific tools for cleanup, defragmenting, or diagnosing potential problems.

**Domain** – A collection of computers defined by the administrator of a Windows 2000 network. A domain provides access to the centralized user accounts and group accounts maintained by the administrator. Each domain has a unique name.

**DOS** – DOS stands for Disk Operating System and composed of three different program units loaded into the PC's memory. DOS controls the entire computer, manages the disks and their files, responds to your command entries, and updates the video screen as new functions are performed. The version of DOS specifically written for the IBM PC is called PC-DOS, and the generic version is called MS-DOS.

**Double-Click** – To rapidly press and release a mouse button twice without moving the mouse.

**Download** – When you connect to another computer or web site and transfer files from there, to your own computer.

**Drag and Drop** – An action where the left mouse button is held down while the mouse is moved across the screen. This results in the selected object(s) being moved with the mouse.

**Drop-Down List Box** – By default, a small rectangular box will appear in the dialog box with a drop down menu button next to it. When the button is pressed, a larger rectangular box will appear (will drop down) with a list of choices that can be selected.

**Drop-Down List** – Displays additional choices.

**DVD** – Stands for Digital Video/Versatile Disc. This format is generally used for any type of presentation where sound or video is required. Newer computers may have a DVD drive where DVD movies or programs can be played.

**Elevator Button** – The small gray box in the middle of a scroll bar.

**E-Mail Address** – This is the name you are known by on the Internet. A typical e-mail address for an Internet user might be user@yourcompany.com

**E-Mail** – Electronic Mail. The most widely used application of the Internet. An Internet user can transfer files and write messages to other users simply by knowing their e-mail address.

**Encryption** – Makes information indecipherable. Files, folders or e-mail messages may be encrypted so that unauthorized people cannot view or use the information.

**Error Messages** – Whenever an incorrect command or parameter is entered, or if during the execution of a program an error occurs, DOS will display an error message on the screen to alert you to the problem. Depending on the problem, you can sometimes correct it by re-entering the command with the correct information.

**FAQ** – (Frequently Asked Questions) Many questions are asked repeatedly by new users especially of the Internet.

**File** – A basic unit of storage for a group of data that belongs together and has been given a name. For example, a document, a spreadsheet or a database.

**Filename** – To identify each file kept on a disk, the files are given unique names. DOS allowed you to use eight characters to name a file, Windows allows up to 255 characters. These characters can be letters, numbers, and certain punctuation symbols. In addition, there are three more characters to identify the type of file. This file type could be DAT for data, TXT for text, DOC for a document, etc. There are certain reserved file names and types which should not be used for your files.

**Fixed Disk** – A fixed or hard disk is very similar to a floppy diskette. In terms of DOS, the only difference is that a fixed disk can contain more files than a floppy diskette. The difference is that you cannot remove a fixed disk from the computer.

**Floppy Disk** – A storage device.

**Folder** – A container that is used to store files and other folders. Also know as a directory or subdirectory.

**Font** – A graphic design or typeface applied to numerals, symbols, and characters.

**Format Disk** – When a disk is purchased, it must be set up to work properly with the computer and operating system. The formatting process sets up special information for the operating system so that it can store and retrieve information from the disk. When a disk is formatted, information stored on the disk previously is destroyed.

**Format** – Term used to describe how a file is presented. Many programs come with formatting tools to enhance the file, e.g., boldface, different fonts, font sizes, etc.

**FTP** – (File Transfer Protocol) A client software that is used to access and download files from another computer on the Internet. A program like this allows a user to gain direct access to the "File Server" that holds the files you want.

**FTP Site** – A computer location on the Internet that has files available for downloading to your computer.

**GUI** – An acronym for Graphical User Interface. Windows is a GUI.

**Hard Disk** – See Fixed Disk.

**Hardware** – All the equipment connected to a computer is called the hardware, including the video display, keyboard, and computer unit, and any other devices attached to the computer.

**Header** – Text that appears at the top of every page of a document when it is printed.

**Help Support** – Many software programs provide online help support within the program. The depth of help is determined by the vendor and can extend to a link for their web site.

**Highlighted** – Indicates that an object or text is selected and will be affected by the next action or command.

**Home Page** – A page of information found on a website located on the World Wide Web.

**HTML** – (Hypertext Markup Language) A 'language' used to create/save web pages to the Internet. HTML creates a page with graphics, tables, hyperlinks and multi-media.

**HTTP** – (Hypertext Transfer Protocol) A protocol that determines how a program on one computer communicates with a program on another computer to domains on the Internet. These letters are used at the beginning of an address to indicate where to look for a location on the Internet.

**Hyperlinks** – Words or phrases, usually underlined, that indicate a location that can be accessed from the page you are currently viewing.

**Icon** – A graphical representation of various elements in Windows, such as disk drives, applications, and documents.

**Insertion Point** – The place where text will be inserted when typed.

**Internet** – A web of computers connected together throughout the entire world. It is a large non-administered collection of computers that no one person or organization is responsible for.

**Intranet** – A company's private web site that is accessible only to employees or authorized users.

**ISP** – (Internet Service Provider) A company that offers the use of its computers and facilities to access the Internet for a fee.

**LAN** – (Local Area Network) A group of computers in one location that are all connected together with a common wiring system.

**List Box** – A rectangular box with a list of choices that can be selected.

**Log Off** – To stop using the network and remove your user name from active use until you log on again.

**Log On** – To provide a user name and password that identifies you to the network.

**Mainframe** – A large computer that traditionally fills a room and used to store a large amount of data for a company or product where a history or archive of the transactions are required.

**Maximize Button** – The small box at the right of the title bar used to make the window full screen so that it occupies the entire desktop.

**Memory** – Every computer has a special area designed to store information. This area contains an array of devices called memory devices. When a computer executes a program, it copies the program into its memory, and then reads the memory and follows the instructions it finds.

**Menu Bar** – The horizontal bar containing the names of all the application menus.

**Menu** – A list of items used to execute commands, display dialog boxes, or display another menu.

**Microcomputer** – A small computer. A personal computer is very small compared to the enormous computers used by banks and research laboratories. The difference is not only in terms of size, but also capability and performance.

**Minimize Button** – The small box at the right of the title bar used to temporarily remove the current window from the desktop.

**Mouse Pointer** – An icon, usually represented by an arrow, appearing on the screen that represents where the mouse is pointing at any point in time.

**Mouse** – A small device with a ball mounted on the bottom side and a wire or connection leading to the computer. It is used with the computer as a method of pointing to different areas of the screen. When the mouse is moved around on a level surface, a marker moves correspondingly on the screen. When you stop moving the mouse, the marker will stop moving. The buttons on the top of the mouse can be used to select or activate a command. The wheel is generally used to scroll around on the screen.

**Multi-Tasking** – The ability of a computer to appear to perform more than one task at a time.

**Network** – When computers want to communicate with each other, they can be connected together with special cables in a network. Special programs can allow one computer to request data from another computer, regardless of where the computer is located.

**Non-Windows Applications** – Computer programs not designed to run within the Windows environment.

**Open** – To display the contents of a file in a window or to enlarge an icon to a window.

**Operating System** – A software program that controls all hardware and application software on the computer. It also provides all direct communication to the user via a user interface, such as the Windows Desktop or DOS command.

**Option Button** – A selection option that appears in a dialog box that allows a user to choose one of a small group of choices. Each choice will have an option button.

**Password** – A security measure used to restrict logons to user accounts and access to computer systems and resources. A password is a unique string of characters that must be provided before a logon or access is authorized.

**PDA** – Stands for Personal Digital Assistant. A small palm sized device to help organize your calendar and contacts.

**Pocket PC** – Similar to a PDA except it now contains Windows CE and appropriate programs to work on documents. Essentially a palm size computer.

**Program** – A program is a sequence of steps that a computer will follow.

**Programming** – The process of creating an application program using this type of software program. The program usually contains codes to tell the program what to do and how to do it following a logical algorithm.

**Prompt** – A message from the computer displayed on your screen to let you know it is waiting for you to enter a command.

**Protocol** – The “language” spoken between computers to help them exchange information.

**Random Access Memory (RAM)** – Makes up most of a computer's memory. When the computer wants to run a program, or temporarily store information, it keeps it in the RAM. When the power is turned off, all the information in the RAM is lost.

**Read Only Memory (ROM)** – Contains special programs you don't want to lose when the power is turned off. Although the computer can read the information stored in this memory, it cannot change it. The special programs that get the computer started when you turn the power on are kept in this memory.

**Reboot** – The process of restarting the computer as if you were turning it on for the first time that day. Rebooting the computer resets or refreshes the diagnostic and file/program recognition for that system.

**Recycle Bin** – A temporary storage area for deleted files. Deleted files remain in the Recycle Bin until the deleted files are restored or the Recycle Bin is emptied.

**Reset Button** – An optional button at the front of the computer that can be used to restart the computer.

**Restore Button** – You can use this button to reduce or enlarge the window.

**Save** – When information stored in the memory is copied to a disk, it is saved on the disk. If you turn the computer off, without saving to a disk, all the information you have entered in the memory will be lost.

**Screen Saver** – If selected, displays a picture that will appear when you do not use the mouse or keyboard for a specified period of time.

**Scroll Bars** – Scroll bars automatically appear in a window if the contents are not entirely visible. A vertical or horizontal scroll bar may appear.

**Server** – A main computer that provides services and access to common files in a group of computers. A dedicated computer that holds all the e-mail is called the “Mail Server”.

**Shortcut Icon** – A shortcut icon is a quick way to start a program or open a file or folder without having to go to its permanent location in Explorer. Shortcuts are especially useful for programs, files, and folders you use frequently.

**Shortcut Key** – A key or key combination, available for some commands, that you can press to carry out a command without first selecting a menu. Shortcut keys are listed to the right of commands in a menu.

**Shortcut** – A shortcut is a quick way to start a program or open a file or folder without having to go to its permanent location. Shortcuts are especially useful for programs, files, and folders you use frequently.

**Software** – Software is composed of programs and data that are used by the computer when it is operating.

**Start Button** – Displays the Start menu. The Start button is the single most commonly used feature in Windows.

**Start Menu** – The primary means of starting programs or customizing the computer settings.

**Tab** – Depending on the context used, it may refer to the **Tab** key on the keyboard or a page of options in a dialog box. Similar to an index tab protruding from a file folder.

**Task** – Any function you want the computer to perform is called a task. Copying a disk file, listing the files stored on a disk, or doing the daily accounts for a business are example of tasks.

**Title Bar** – The horizontal bar located at the top of a window and containing the title of the window or program.

**Troubleshooting** – The process of being able to identify a hardware or software problem and finding a resolution.

**Updates** – A change or enhancement to a software program or hardware device. You are usually notified by the vendor of the upgrade and it should be installed in order to take advantage of the features for the program or device.

**Upgrade** – The process of changing an existing item with a newer or better replacement.

**URL** – (Uniform Resource Locator) The entire address recognized “universally” as the address for an Internet resource. Each resource on the Internet has a unique URL and can begin with letters that identify the resource type (such as http, ftp, etc.), followed by a colon and two slashes. Then the computer's name is listed, followed by the directory and file name of the remote resource.

**User Name** – A unique name identifying a user account to Windows 2000. An account's user name cannot be identical to any other group name or user name on its own domain or workgroup.

**Virus** – A small program written for the purpose of destroying information on a disk or the entire computer. There are many different types of viruses in the market and they can occur at random times while working on the computer or disk. DOS now has an anti-virus command that will allow you to detect and then clean the virus from the disk or computer.

**Volume Label** – A name that identifies a disk.

**Wallpaper** – A picture or bitmapped pattern that appears on the Windows desktop.

**Web Browser** – Software needed to navigate through the web. For example, Internet Explorer, Netscape and Mosaic are web browsers.

**Window** – A rectangle area on your screen in which you view an application or document.

**WordPad** – Any application that was designed for Windows and will not run without Windows.

**Word Wrap** – A feature that moves text from the end of a line to the beginning of a new line as you type.

**Workgroup** – For Windows, a workgroup is a collection of computers that are grouped for viewing purposes. Each workgroup is identified by a unique name.

**Working Off-line** – Doing work or creating data on your computer while it is not connected to the network or to an on-line service such as the Internet.

**Workstation** – Any networked computer using server resources.

**Write Protect** – If you have special information on a diskette that you don't want to destroy, use the switch located on one side at the back that can be moved down to protect the disk.

**WWW** – (World Wide Web) A multi-media service on the Internet. The WWW contains a collection of online documents with text, images, sound, or video. The documents are housed on Internet servers around the world.

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**FOR EVALUATION ONLY**

# Appendix D: Courseware Mapping

Total Domains: 4		Total Objectives: 11		Total Skill Sets: 72		Total Courseware Requirements: 239	
Standardized Coding Number		Objectives & Skill Sets		Courseware Mapping			
<b>Domain 1.0: Computer Hardware</b>		<i>This domain includes the knowledge and skills required to identify different types of computers and computing devices, the components of a personal computer (including internal components such as microprocessors) and how these components function and interact. The domain also includes the knowledge and skills relating to computer storage, performance and maintenance procedures.</i>					
<b>Objective 1.1</b>		<b>Identify types of computers, how they process information and how individual computers interact with other computing systems and devices</b>		<b>Location</b>		<b>Page #</b>	
IC <sup>3</sup> -1	1.1.1	Categorize types of computers based on their size, power and purpose		Computers All Around Us		2	
IC <sup>3</sup> -1	1.1.2	Identify types of microcomputers		Personal Computers, Notebooks or Laptop Computers		3-5	
IC <sup>3</sup> -1	1.1.3	Identify other types of computing devices		Personal Digital Assistants, Other Types of Computers		6-7	
IC <sup>3</sup> -1	1.1.4	Identify the role of the central processing unit		The Motherboard, The Microprocessor Chip		13-16	
IC <sup>3</sup> -1	1.1.5	Identify how the speed of the microprocessor is measured		The Microprocessor Chip		16	
IC <sup>3</sup> -1	1.1.6	Identify the role of types of memory and storage and the purpose of each		Understanding Memory		18-20	
IC <sup>3</sup> -1	1.1.7	Identify concepts related to how memory is measured		Looking at Memory		18, 46-47	
IC <sup>3</sup> -1	1.1.8	Identify the flow of information between storage devices (such as floppy or hard disks) to the microprocessor and RAM in relation to everyday computer operations		Starting the Computer, Understanding the Boot Routine, Working with an Application Program		90-92	
IC <sup>3</sup> -1	1.1.9	Identify the differences between large systems (such as mainframe or mini-computer systems with centralized data processing and storage) and desktop computers and appropriate uses for large vs. small systems		Computers All Around Us		2	
IC <sup>3</sup> -1	1.1.10	Identify that computers integrate into larger systems in a variety of ways		Computers All Around Us, What is a Network		2, 9	
IC <sup>3</sup> -1	1.1.11	Identify how computers share data, files, hardware and software		Features and Benefits, Interacting with Networks		10, 11	
<b>Objective 1.2</b>		<b>Identify the function of computer hardware components</b>		<b>Location</b>		<b>Page #</b>	
IC <sup>3</sup> -1	1.2.1	Identify the types and purposes of external computer components, including standard input and output devices		Identifying Input/Output Devices		13-14, 22-31, 41	
IC <sup>3</sup> -1	1.2.2	Identify the types and purposes of internal computer components		Identifying Input/Output Devices		14-17, 22-31	
IC <sup>3</sup> -1	1.2.3	Identify the types and purposes of specialized input devices		Using the Keyboard, Using the Mouse, Looking at Other Input/Output Devices		16, 22-30	
IC <sup>3</sup> -1	1.2.4	Identify the types and purposes of specialized output devices		Looking at the Monitor, Looking at Printers		22, 27-29, 41-44	
IC <sup>3</sup> -1	1.2.5	Identify the types and purposes of storage media		Working with Storage Systems		33-39	
IC <sup>3</sup> -1	1.2.6	Identify ports used to connect input and output devices to a computer		Recognizing Ports		30	
IC <sup>3</sup> -1	1.2.7	Identify how hardware devices are installed on a computer system		Increasing the Computer's Performance, Working with Hardware		46-50	
<b>Objective 1.3</b>		<b>Identify the factors that go into an individual or organizational decision on how to purchase computer equipment</b>		<b>Location</b>		<b>Page #</b>	
IC <sup>3</sup> -1	1.3.1	Identify criteria for selecting a personal computer		Building Your Checklist		46-47, 55-57	
IC <sup>3</sup> -1	1.3.2	Identify factors that affect computer performance		Building Your Checklist		46-47, 55-57	
IC <sup>3</sup> -1	1.3.3	Identify hardware and software considerations when purchasing a computer		Building Your Checklist		46-47, 55-57	
IC <sup>3</sup> -1	1.3.4	Identify other factors that go into decisions to purchase a computer		How Much Will It Cost?		46-47, 57-58	

Objective 1.4	Identify how to maintain computer equipment and solve common problems relating to computer hardware	Location	Page #
IC <sup>3</sup> -1 1.4.1	Identify how to protect computer hardware from theft or damage	Taking Care of the Computer	50-52
IC <sup>3</sup> -1 1.4.2	Identify factors that can cause damage to computer hardware or media	Taking Care of the Computer	50-52
IC <sup>3</sup> -1 1.4.3	Identify how to protect computer hardware from fluctuations in the power supply, power outages and other electrical issues (such as use of computers on different electrical systems - 110V vs. 220V)	Taking Care of the Computer	50-52
IC <sup>3</sup> -1 1.4.4	Identify common problems associated with computer hardware	Taking Care of the Computer	46-52
IC <sup>3</sup> -1 1.4.5	Identify common problems that can occur if hardware is not maintained properly	Taking Care of the Computer	50-52
IC <sup>3</sup> -1 1.4.6	Identify maintenance that can be performed routinely by users	Working with Hardware	47-50
IC <sup>3</sup> -1 1.4.7	Identify maintenance that should ONLY be performed by experienced professionals	Replacing or Upgrading Equipment	52
IC <sup>3</sup> -1 1.4.8	Identify the steps required to solve computer-related problems	Working with Hardware, Replacing or Upgrading Equipment	47-53

**Domain 2.0:** Computer Software

*This domain includes the knowledge and skills required to identify how software works, software categories such as operating systems, applications and utilities, fundamental concepts and best uses of each type of software, and which application is best used for a specific purpose.*

Objective 2.1	Identify how software and hardware work together to perform computing tasks and how software is developed and upgraded	Location	Page #
IC <sup>3</sup> -1 2.1.1	Identify how hardware and software interact	What are Input/Output Devices?, What is a Software Program?	22, 60
IC <sup>3</sup> -1 2.1.2	Identify simple terms and concepts related to the software development process	What is a Software Program?	61
IC <sup>3</sup> -1 2.1.3	Identify issues relating to software upgrades	Upgrading Your Software	61-63

Objective 2.2	Identify different types of software, general concepts relating to software categories, and the tasks to which each type of software is most suited or not suited	Location	Page #
IC <sup>3</sup> -1 2.2.1	Identify fundamental concepts relating to word processing and common uses for word-processing applications	Word Processing	70-71
IC <sup>3</sup> -1 2.2.2	Identify fundamental concepts relating to spreadsheets and common uses for spreadsheet applications	Spreadsheets	72-73
IC <sup>3</sup> -1 2.2.3	Identify fundamental concepts relating to presentation software and common uses for presentation applications	Presentations	73-74
IC <sup>3</sup> -1 2.2.4	Identify fundamental concepts relating to databases and common uses for database applications	Database Management	74-75
IC <sup>3</sup> -1 2.2.5	Identify fundamental concepts relating to graphic and multimedia programs and common uses for graphic or multimedia software	Graphics, Multimedia	75-79
IC <sup>3</sup> -1 2.2.6	Identify the types and purposes of different utility programs	Utility Tools	82-84
IC <sup>3</sup> -1 2.2.7	Identify other types of software	Suites, Accounting, Specialized, Customized	79-82, 85-88
IC <sup>3</sup> -1 2.2.8	Identify how to select the appropriate application(s) for a particular purpose, and problems that can arise if the wrong software product is used for a particular purpose	Choosing an Application Program	69-70

**Domain 3.0: Using an Operating System**

*This domain includes the knowledge and skills required to perform the most frequently used functions of an operating system. Elements include the ability to install and run software, control the workspace (desktop), perform file management and change system settings (display, date and time settings, etc.). For purposes of this domain, the operating system used as an example for performance based questions is Windows, the most popular PC operating system.*

<b>Objective 3.1</b>		<b>Identify what an operating system is and how it works, and solve common problems related to operating systems</b>	<b>Location</b>	<b>Page #</b>
IC <sup>3-1</sup>	3.1.1	Identify the purpose of an operating system and the difference between operating system and application software	Looking at Operating Systems	64
IC <sup>3-1</sup>	3.1.2	Identify different operating systems	Looking at Operating Systems	64-67
IC <sup>3-1</sup>	3.1.3	Identify the difference between interacting with character-based and graphical operating systems	Looking at Operating Systems	64
IC <sup>3-1</sup>	3.1.4	Identify the capabilities and limitations imposed by the operating system	Looking at Operating Systems	67-68
IC <sup>3-1</sup>	3.1.5	Identify and solve common problems related to operating systems	Looking at Operating Systems	68-69
<b>Objective 3.2</b>		<b>Manipulate and control the Windows desktop, files and disks</b>	<b>Location</b>	<b>Page #</b>
IC <sup>3-1</sup>	3.2.1	Identify elements of the Windows desktop	What is the Windows Desktop?	102-103
IC <sup>3-1</sup>	3.2.2	Manipulate windows	Looking at a Typical Window, Moving a Window, Sizing a Window	111-113
IC <sup>3-1</sup>	3.2.3	Shut down and restart the computer	Exiting the Computer Properly, Restarting the Computer	93-94, 117-119
IC <sup>3-1</sup>	3.2.4	Use the Windows Start menu and Taskbar	Using the Start Menu, Using the Taskbar, Starting Application Programs, Adding a Shortcut, Getting Help, Using the Start Menu	105-109, 128, 226, 142, 121-126
IC <sup>3-1</sup>	3.2.5	Manipulate desktop folders and icons	Looking at Files and Folders, Deleting Files and Folders, Moving Files or Folders, Changing the Folder, Viewing File or Folder Properties	147, 179, 166, 169, 154-159, 148-149
IC <sup>3-1</sup>	3.2.6	Manage files using the Windows Explorer/File Manager	Using Windows Explorer, Understanding Files and Folders, What is Windows Explorer, Changing the View, Creating Folders, Copying and Moving Files or Folders, Deleting Files and Folders, Selecting Files or Folders, Using the Recycle Bin, Changing the Folder, Renaming Files or Folders, Viewing File or Folder Properties, Finding Files or Folders, Formatting Floppy Disks	161-187, 147-148, 150-159, 186-187
IC <sup>3-1</sup>	3.2.7	Identify precautions one should take when manipulating files	Identifying Common Problems with Files	170, 178, 182-184, 189-191
IC <sup>3-1</sup>	3.2.8	Solve common problems associated with working with files	Identifying Common Problems with Files	182, 188-192
<b>Objective 3.3</b>		<b>Identify how to change system settings, install and remove software</b>	<b>Location</b>	<b>Page #</b>
IC <sup>3-1</sup>	3.3.1	Display control panels	Customizing System Settings, Using the Control Panel	194-196
IC <sup>3-1</sup>	3.3.2	Identify different control panel settings	Customizing the Desktop Display, Changing the Date & Time, Customizing the Mouse, Customizing the Keyboard, Changing the Volume, Using Fonts, Printing Files	194-216
IC <sup>3-1</sup>	3.3.3	Change simple control panel settings	Changing the Date & Time, Customizing the Desktop Display, Customizing the Mouse, Customizing the Keyboard, Changing the Volume, Using Fonts	197-209
IC <sup>3-1</sup>	3.3.4	Display and update a list of installed printers	Printing Files	209-216
IC <sup>3-1</sup>	3.3.5	Identify precautions regarding changing system settings	Using the Control Panel	196
IC <sup>3-1</sup>	3.3.6	Install software	Managing Application Programs, Installing a New Program	218-227
IC <sup>3-1</sup>	3.3.7	Identify common problems associated with installing and running applications	Why Isn't the Program Working?	231

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