Essent!al Sk!lls
for Digital Literacy

Living Online Using Windows XP

IC³ Module C ~ Courseware 1118-1

CERT!PORT
APPROVED COURSEWARE

IC³
INTERNET AND
COMPUTING CORE
CERTIFICATION
2005 Standard

Living Online Using Windows XP

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Preface

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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Canada: 1-800-668-1669	All rights reserved.
www.ccilearning.com	Printed in Canada.

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.

About This Courseware

Approved by Certiport

We are pleased to announce that our courseware has been approved for the IC³ Certification. This book fulfills the basic requirements for the Living Online IC³ exam; please refer to the IC³ Courseware Mapping at the back of our book to see where the features are covered. What this means is that after completing the exercises in this book, the user could be prepared to take the Living Online IC³ exam for the Internet and Computing Core Certification Program. Passing these exams demonstrates a level of proficiency to employers and customers. The exams are available through participating IQ test centers.

IC³ . . . What Is It?

IC³, 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.

IC³ . . . 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 IC³ Helps!

IC³provides 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 IC³exams, 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 IC³, visit www.certiport.com/ic3

To find a testing center near you, visit 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

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Lesson 8: Accessing the Internet in a Legal & Safe Manner

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

- The text set in 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.

- The instructions throughout this courseware assume that you will be using a mouse.

> 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.¶

Using the Book

Course Length: This book contains information to cover all the objectives in the certification program, with a number of exercises designed so that you can emphasize and reinforce concepts. It has been designed to fit within a 15 to 20 hour course. Suggested timings have been provided with each lesson as a guide; this will vary depending on the size of your class, the experience or skill level, and the number of tools you may have available for specific topics.

Step by Step Process: Each concept covered in an application module has an accompanying step by step exercise 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 another method to complete that task or additional information you need to know about the feature or step. As you learn each feature, oftentimes there are hints or tips you can use to accomplish the task faster or more productively. Alternatively, this could be a warning or an extra point about the feature that may occur, depending on what is happening on the computer.

Multiple Exercise Sets

Our books provide a variety of exercises to teach a concept. These exercises are set up in the following method:

Exercise

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

Hands on, step by step guided exercises presented after an exercise. These exercises provide extra practice and reinforcement or may present an alternative method of completing a task.

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

- 500 MHz or higher (1.2 GHz or higher recommended)
- 128 Mb RAM or higher (256 Mb or higher recommended)
- 300 Mb or higher free space on the hard drive
- Mouse or other compatible pointing device
- 101 enhanced keyboard
- Printer (user must have access rights to print documents)

> 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 SP2
- Microsoft Outlook Express 6.00.2900 or higher
- Microsoft Internet Explorer 6.0.2900 or higher

> If you are using a lower version of Windows XP, you may not have the same screens or options as noted in this courseware. The SP2 version of Windows XP has more and enhanced security features and as such, will limit or restrict some of the features discussed in this courseware for living online.

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^3 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.

Outlook Express and Internet Explorer are have more features than can be mastered in a single course. This courseware presents a tremendous amount of material in a simple, easy-to-learn format and was designed to teach digital literacy skills for living online. 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.

This courseware assumes and requires that you have a good working knowledge of the PC and Windows, as well as how to use a mouse and keyboard.

The explanations in this courseware are based on the default settings established during the installation of the Microsoft Windows XP SP2 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 Guide or the Microsoft web site to change the setup.

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   Select the **IC3 Module C Student Files 1118-1-student-data.exe** file from the list of files. Click the **Download** button.

3   Click **Open** in the File Download dialog box.

4   In the **Winzip Self-Extractor** dialog box that appears, use the **Browse** button to specify the Windows Desktop as the location to unzip the file and click **Unzip**.

5   The **IC3 Mod C Files** folder, containing the required Student work files, has now been downloaded to your desktop.

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: Getting Connected

This unit will introduce you to some of the common terminology and tasks associated with going "online". You will begin with a look at what networks are, how they can connect you to others either in the office or off-site, and how to use e-mail to communicate.

Lesson	Topic
1	Networking Fundamentals
2	Looking at the Internet
3	Understanding E-mail Fundamentals
4	Using Microsoft Outlook Express

Lesson 1: Networking Fundamentals

Objectives   **Suggested Timing: 1 Hour**

In this lesson you will look at what a network is and how it relates to "living online". On successful completion, you will be familiar with the following concepts:

- What a network is
- Network standards
- Different types of networks

- What's required to connect to a network
- Advantages and disadvantages of being connected to a network

What is a Network?

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1.1.1
1.1.2

A network in simple terms exists whenever two or more computers are connected together for the purpose of sharing resources and information. A network can be as small as two computers in a home, or as large as a company that has branches around the world.

Living online refers to the process of being able to connect to the Internet and find information whenever it is needed. The Internet is a "living" network of resources where you can communicate with others online to find new, updated, or archival information.
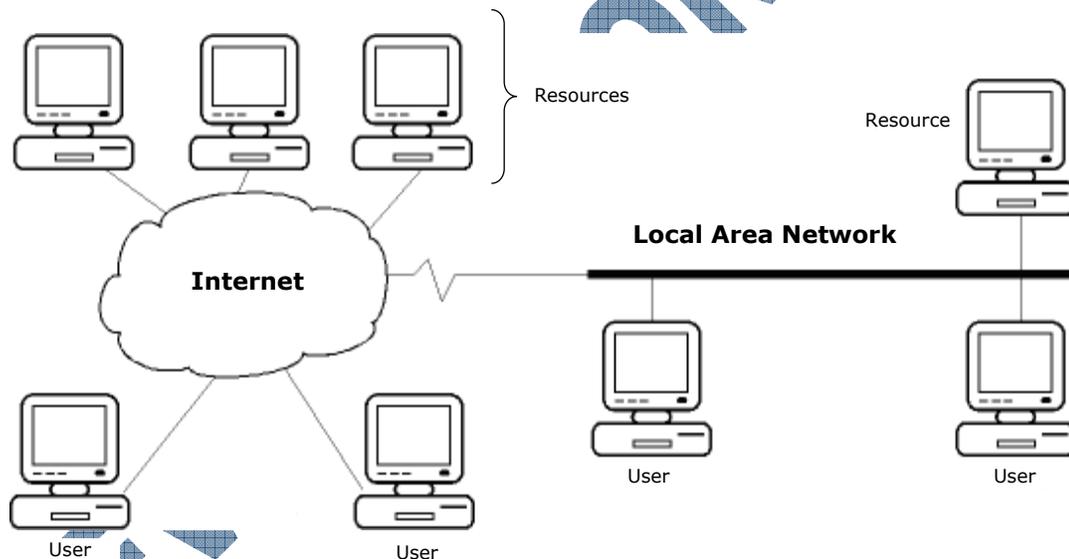
As a user living online, you can access the many resources, as well as communicate with other users connected, via the Internet.

A related scenario is the local area network (LAN). Many companies or organizations have an internal computer network that allows users to access internal company resources and to communicate with other employees. The LAN is typically also connected to the Internet.

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1.1.3

Computers that connect to a network can be any type of computer from a mainframe to a PC or an Apple desktop or notebook to a PDA or cell phone. Each computer could be configured with a different operating system as well. There are no restrictions other than having the network software understand the protocol or rules and language needed to recognize the computer type and its operating system. For simplicity purpose in this courseware, we use the PC as our model for how a computer connects to a network. This model will reflect the standard guidelines for connecting any computer to a network, regardless of the type of computer it is; the differences will lie in the technology required to match the protocol needed to connect to a network such as notebook or desktop model, PC or Apple or mainframe, cable or wireless, etc.

Where the Personal Computer Fits

IC³ 1.1.2

The personal computer (PC) is the most commonly used tool to connect to a network. Before dealing with networking, consider how the PC communicates with the outside world. The PC is shown schematically here:
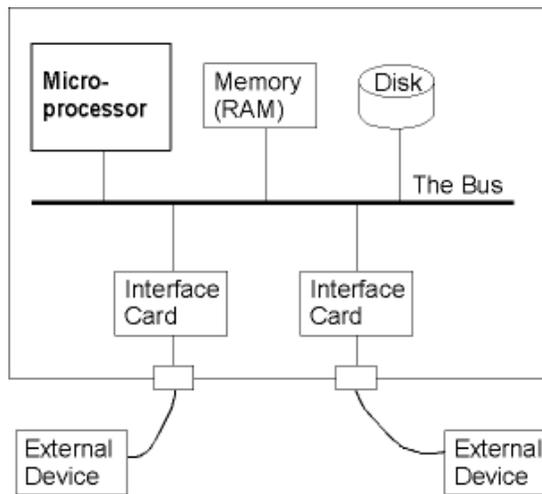
The microprocessor chip is the "brains" of the PC. It communicates with the other components (like the memory or the disk) of the PC via an internal connecting device called a "*bus*".

To communicate with external devices such as printers and scanners, the PC needs an *interface card*. Most PCs will have a number of empty "*slots*" where you can plug interface cards, depending on what types of external devices you intend to use. The interface cards have connectors that you can see at the back of your computer.

If you want to connect your PC to a network, you need an interface card appropriate for the type of network, suitable cable, and appropriate software.

Networking Standards

IC³ 1.1.2

When you interconnect two or more computers so that they can communicate and share resources, you have established a *network*.

Imagine attending a meeting where everybody spoke at the same time, in different languages, and about different subjects — confusion would reign! For meetings to be effective, they need to adhere to an agreed-upon *protocol* or set of rules.

Protocols also make networking possible. There are rules governing the type of cables, interface cards, and electrical signal format. The *Ethernet* cabling standard is an example of this type of protocol and is very popular for office and home networks.

There are also protocols governing how information will flow between computers on a network. These are called *transport* protocols which will determine:

- the way a computer indicates it needs to send information over the network

- how the receiving computer checks that the information was received correctly

- how the sending computer must address (label) the information so it goes to the correct destination computer

Application level protocols determine how a program on one computer communicates with a program on another computer. An example of this is the browser program on your computer "talking" to the web program on the web server computer. They will "talk" using the *hypertext transfer protocol* (*http*).

The basic concepts of networking are not very difficult to understand. The networking standards that have evolved since the introduction of the PC have made networking easier and more affordable.

There are a number of different ways that networks can be set up and configured that go beyond the scope of this courseware. The most common types of networks are discussed here.

Peer-to-Peer Networks

Peer-to-peer networks are inexpensive and easy to put together. They are ideal for home and small office networks. The network is called *peer-to-peer* because all computers have equal authority — no single computer controls the network.
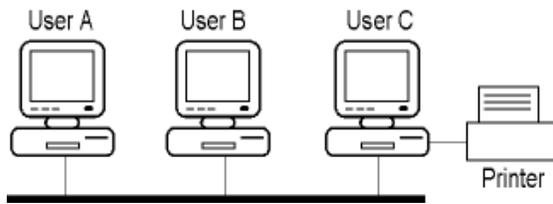
Any computer can *share* its resources (e.g., hard drive, printers, etc.) with other computers on the network. For example, computer C can declare its high speed color printer as a shared resource. Then when computer A wants to print a document, the high speed color printer will appear in the list of available printers almost as if it were connected directly to computer A.

The peer-to-peer protocols were included starting with the Microsoft Windows 95/98/ME operating systems. There are also several proprietary peer-to-peer network systems available. Windows NT (or higher) has a network component built in that uses more complex protocols to connect computers.

Client-Server Networks

Client-Server networks are typical for larger networks. One computer, called the *network server*, is dedicated to controlling network traffic and managing the resources.
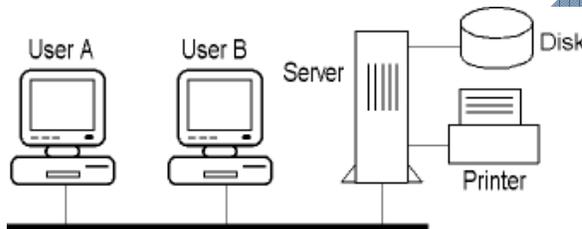
This type of network provides better performance and security than a peer-to-peer network because the server controls who can access what resources and when. It is also considered a central server as all files used by the company may be stored here for an employee to access from anywhere in the world. The server is called a network *node*.

For instance, the above diagram is an example of a simple client-server network. Assume one user is in the Accounting department and the other is in the Warehouse. With the appropriate access to the server, both users can print their individual reports on the printer located at the back of the office on the second floor. They can also access a vacation request form designed for all employees stored on the server.

The accounting software that both of these departments use is also installed on the server; however, the Accounting user may have access to all the modules of the accounting program whereas the Warehouse may only have access to the Inventory module. The Disk object in the diagram might represent a backup device that performs a daily backup of all the company data, regardless of which department entered the information or when it was entered.

Popular server network software systems include:

- Unix
- Novell Netware
- Microsoft Windows Server

The server can essentially be a mainframe, minicomputer, Unix workstation or very powerful PC; it must also have the server software installed, with the users clearly identified and access rights set up.

The client computer can be any type of computer that has a network card and appropriate software to connect to recognize the server. Many larger companies have a mixture of PCs and Macintosh computers connected to their network; all users share the information from the same server even though the protocol to connect that computer to the server may differ. The sales people may also use notebooks with wireless network cards and be able to retrieve e-mail even though they are making customer visits outside of the office.

LANs and WANs

What is the difference between a local area network (LAN) and a *wide area network* (*WAN*)? The same networking concepts discussed previously apply to both LANs and WANs. The difference lies in who is responsible for the cabling.

A company or organization can do the network cabling within its own building, but are not allowed to install cabling that will cross a public street. That is the responsibility of the public authorities — usually the local telephone company.

As long as a network stays within a building it is referred to as a LAN. If the network crosses a public street and makes use of publicly-supplied cabling for part of the network, it is referred to as a WAN. The following diagram shows two computers in different buildings connected in a network to form a simple WAN.
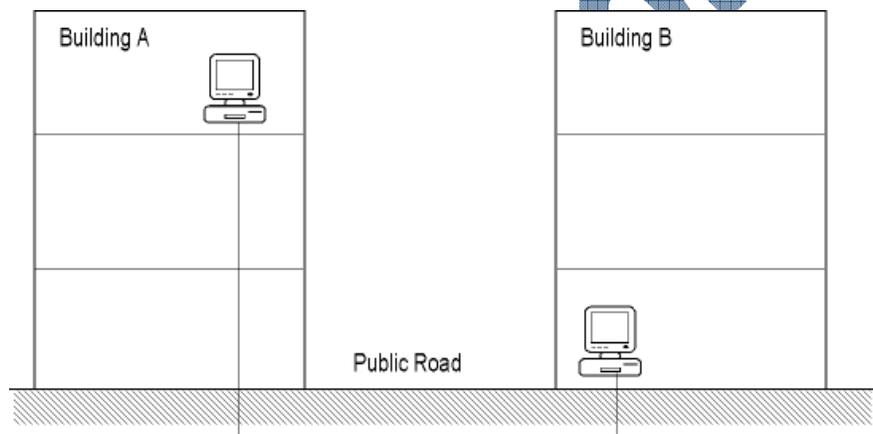
All networks require additional network devices. These will be discussed shortly.

When a computer or a LAN is connected to another computer or LAN in another city, or even another country, it becomes too complex to show the public portion of the WAN. It is frequently represented schematically by a "*cloud*":
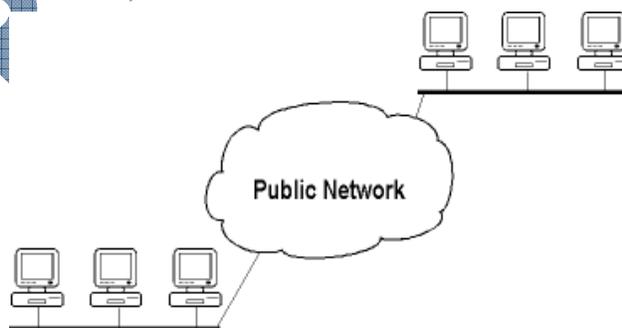
The public network, or cloud, will consist of many nodes.

Connecting to a Network

1.1.1
1.1.3

There are standard network devices that facilitate putting a network together. Even the cabling comes in standard lengths complete with appropriate connectors. So putting a network together is almost like connecting a number of "boxes" together. Which options, devices, or software you use depends on the needs and requirements for the network. The following information and diagrams discuss how a computer can be connected to a network that is within close distance to each other such as an office or home. You can also connect to a network via a modem such as connecting to the Internet from your home computer or from your Pocket PC.

Connection/Cabling Options

There is a variety of connection or cabling options available to access information to or from a network. Newer connection types allow the data to be transferred between a computer and the network to flow much faster; with the costs of these connection types dropping significantly, more people are choosing to either set up or switch to a faster connection method. Some of the more popular connection options include:

Coaxial   This is a wire with a center wire surrounded with insulation and then a grounded cover of braided wire to minimize electrical and radio frequency interference. This cable type used to be the main type of cable used for company networks or television transmission, with most company networks using Ethernet specifications in their network configuration.

Fiber Optics   A fiber optic cable is made up of bundled glass or plastic fibers (threads) to transmit data. This option is generally faster than coaxial cable as it has a much larger bandwidth for transmitting data and is much less susceptible to interference that occurs with metal cables.

Broadband   This type of data transmission is a single wire that can handle multiple paths or channels. These paths or channels are essentially from one connection to another. For example, the connection at the back of your computer is one end of a path and the network is the other end of that path; each computer in the company has its own channel to the network. Having a broadband connection allows a faster transmission of data as the network can then handle multiple channels at one time.

Wireless   This is quickly becoming the connection option of choice as it does not require any cables to be set in your home or office. There currently are three types of connections available for a specific use: cell phone, home, and office. In order to be connected in a wireless environment, each computer must have a network card with a wireless interface and an access point. Wireless devices work with radio frequencies for data transmission.

Infrared   This wireless option works with infrared light waves in order to transmit data. Some newer devices such as printers have an infrared device installed which then allows you to print a document to that printer provided you have an infrared wireless network card installed on your notebook. The one downside to using infrared is that the amount of distance between the two devices is less than using a wireless device that works with radio frequencies.

The Network Interface Card (NIC)

The PC talks to the external world via interface cards. To connect to a network, the PC must have a *network interface card* (*NIC*). Each NIC has a unique number or address and will have a connector (visible at the rear of the computer) that is appropriate for the type of cabling chosen.

Network cards come in a variety of styles and models that are appropriate for the computer type being connected to the network.

Internal PC NIC

Wireless PC NIC

Wireless Apple Notebook NIC

Wireless PC Notebook NIC

Cell Phone NIC

Wireless PDA NIC

The Hub

Hubs are used to connect PCs together to form a network. The diagram at the right shows a four port (connector) hub for a LAN.

A cable from the NIC in each PC connects to a port on the hub. A cable from the hub will also be required to connect to the network. Hubs are relatively inexpensive to purchase and install. The main disadvantage of a hub is that all users connected to a hub share equal maximum transfer speed. For example, if the bandwidth (speed) of the network connection is 100 Megabits per second (Mbps), each user in this diagram would have a maximum connection speed of 25 Mbps.

HUB
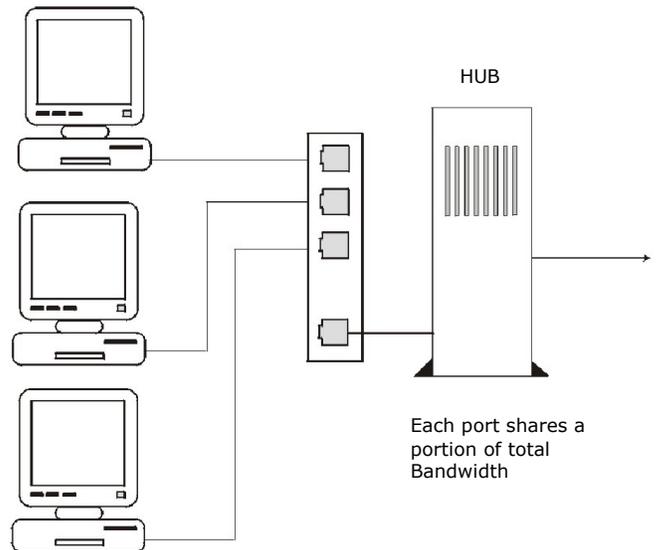
Each port shares a portion of total Bandwidth

Network Segments

If a network has two (or more) network interface cards, each card is considered a *segment*. For example, if a company occupies more than three floors in a building, a segment may be set up for each department regardless of their location, for everyone on a particular floor, or the type of data that is processed on that floor. Segments allow network traffic to flow faster, depending on which devices are used to manage the amount of requests at the network.

The Bridge

A *bridge* is used to connect these network segments to handle network requests. Bridges do not analyze or re-route messages which makes receiving the information faster. However, a bridge will not re-route or re-transmit information if anything is wrong with the connection at either end, until it has received the first transmission completely.

The Router

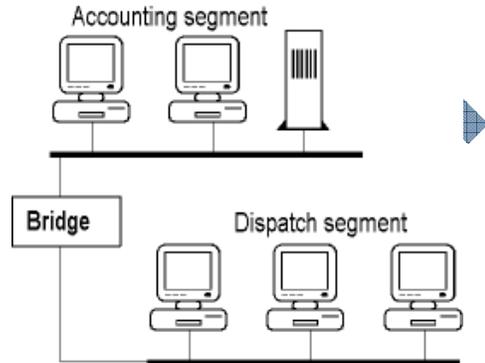Routers work similar to bridges except they examine the destination address of the information and pass it on the appropriate segment(s) only. For instance, when a message is received externally, when it reaches the network server, the router will analyze the message and route it to the appropriate recipients, if valid on the network. By the same token, if messages are sent externally via the Internet, the router will check to ensure the information is addressed correctly when leaving the server and forward it to the appropriate server to manage that message.
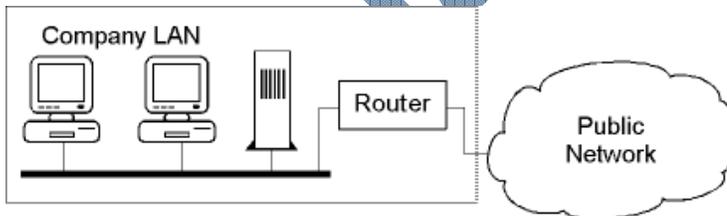
Bridges may be faster than routers but as noted, they will not check the information coming in; the message coming in would be sent to everyone on the network, not just specific recipients.

When installing a wireless router to your network, be sure to set up the encryption (password) security options to prevent unauthorized access from external sources using your connection to go online to the Internet.

The Switch

A *switch* works similar to a hub except that each user connected to the switch has access to the full bandwidth. For instance, if the bandwidth was 100Mbits, every user on the switch would have a connection speed to the network of 100Mbits. Switches can also be used to join network segments.
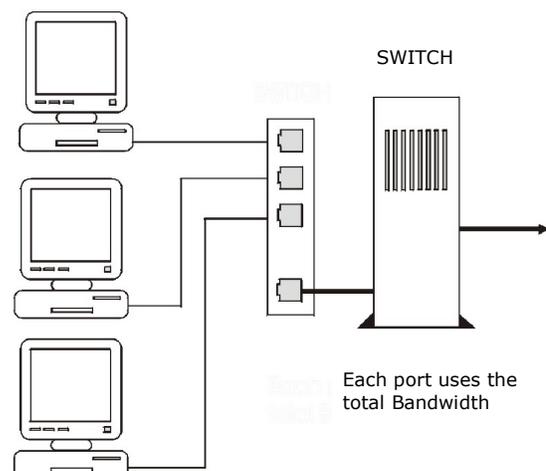
The Firewall

The firewall can be a physical device or specialized software installed to prevent any unauthorized external access into any network that is connected to the Internet. The firewall is designed to check any messages that travel through the network and ensure it matches the specified security requirements (criteria) set up by the company. If the message does not meet those security requirements, it is then blocked from entering or exiting the network. This can be especially useful against any viruses attached to a message.

The diagram here shows an example of firewall software that was installed on a computer dedicated for that purpose. Depending on the network configuration, the firewall software may be installed with the router or on individual computers (home computer).

Benefits of Networking

Networking does *not* make the individual workstations faster or more powerful! The benefits of networking fall into two main categories, communication and sharing of resources.

Communicating

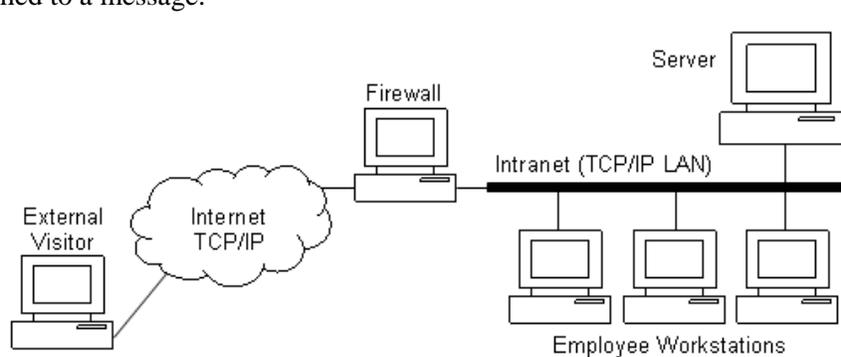If you want to send information generated on a stand-alone PC to someone else, you would have to put the information on a portable disk. Then you would have to physically carry or mail the disk to the other person. By contrast, users on a network can send the information electronically.

Another advantage of using networks for communicating is that a message can be stored on the network and is not lost if the recipient isn't available at the time the message is sent. This is particularly useful when you need to communicate with a person in another time zone and don't know when that person will connect to the Internet to retrieve their messages. This is much more cost efficient than calling long distance. For instance, you may want a progress report on how negotiations are going on a prospective deal in Europe as you would like to report on it in the Sales Meeting next Monday morning. You can send a message to the sales person in Europe requesting an update by Friday and they can send you a response within the next two days. This is less costly and time consuming than determining the appropriate time frame to call Europe and trying to reach the sales person directly.

Many communication software programs contain a feature that allows users to instantly message someone else without having to use the electronic mail (e-mail) portion of the communication software. When using messages, you often do not get a response to the message until the recipient replies. Instant messaging allows for "real time interaction", similar to having a conversation with someone in front of you. Provided all users are connected to the same network, multiple users can participate in the same conversation. This can be very advantageous when several users need to discuss the status of a project and each user is at a different location. There are some limitations of using instant messaging but these can be minor issues for being able to communicate with each other in real time.

Sharing Devices

Some devices like a high speed color printer or an all-in-one printer can be expensive to set up on every PC, especially if individual users will only need it occasionally. Networking allows such devices to be shared; this can be a cost savings to the company as they don't need to buy a device for every system as well as saving time for technical support or maintenance.

Connecting devices that need to be shared by multiple users via the network allows the network administrator to perform updates or troubleshoot problems from the server location. If further action is required, technical support can then move to the location where the actual equipment resides.

Sharing Information

When people work together, they need access to common information. In a stand-alone PC environment, the information has to be duplicated on every computer. This duplication leads to unnecessary work, potential errors and conflicts of version, i.e., which document is the latest valid version? In any network environment, files or folders on any disk can be set up to be shared by that user. Other users can then access that information (provided the user has turned on their PC).

Whenever a group of people want to share information, it is referred to as a workgroup. This term is generally used for a group of users who need to share business documents although any group of users who need to share information for a workgroup will transfer or save their files to a common network. This common network then becomes a centralized server for those who need information stored on the network, e.g., business documents, software applications, templates, etc. As a central area for required resources, the server has control over which files are accessed and which users can use those files. This can assist to manage the files and number of requests from users on the network.

A common network can be extremely helpful to the network administrator for setting up rights or performing maintenance for the workgroups. For instance, a workgroup can consist of all the sales and marketing staff who need access to the contact management database stored on the server. They also want access to the accounting program so they can input or check orders and run daily sales reports. Instead of having to set this up on every computer for all the sales and marketing staff, the network administrator can set up a workgroup with these staff member names and then assign rights to the appropriate software programs. Whenever one of these members logs in, they have the same rights as everyone else in that group. If a new employee is added to the Sales department, the network administrator needs only to add this new employee's user name to the workgroup and they will automatically have the same access rights as any other sales member.

Using Dedicated Servers

A *dedicated server* is a computer that provides a specialized *service*. Because the server is dedicated to a specialized service, they can do the job better and faster than a general purpose PC. Such servers tend to be more expensive than regular PCs but this may be due to the specifications required to handle the task, e.g., very large hard drive, backup drive included, etc. The biggest advantage of dedicating a server for a specific purpose is that it allows anyone with proper access to this server to enter, view, manipulate, or print the information on this server.

Network   A client-server LAN uses a *network server* to control network traffic and security. The server manages the network and is referred to as the network *node*. Depending on the size of a company, the network server may also perform the same tasks and contain the same information as a file or database server.

File   A high speed, high capacity hard drive. The server is usually equipped with back-up facilities. File servers are used for the company's common information or sensitive information that needs to be backed up regularly, e.g., designs for products, daily correspondence, etc.

Web	A dedicated PC that stores information in web format. Users on the network can access the information using a browser. Web servers are commonly used in company *intranets* which we will discuss in more detail later.
Mail	When a network has a high volume of internal and external electronic mail, a *mail server* is use to manage it. This can also be the centralized location for organizing each member's messages.
Database	Generally used in complex database applications where many network users would need to access the data at the same time. An example of this type of server would be to handle all the accounting data or a customer database.

Disadvantages of Networking

Just as there are many advantages to setting up a network, there are also disadvantages, some which include:

Dependency

IC³
1.1.5

A big disadvantage is that the organization's activities depend on the network to be up and running. Should the network fail, the users lose access to information and the ability to communicate electronically. This can seriously affect the organization. In some instances you may be able to work from your local drive, but if all the company's information is stored and shared from the server, the cost of downtime may be more expensive to the company in the long term.

Expensive

Networks are expensive to install and maintain. If the network is complex and has many users, there will be the additional need and expense of employing a network administrator. Another consideration for setting up a network is in planning a "disaster and recovery" plan, not just for theft or security breach, but also power outages or potential hardware failure. A company may decide to install several types of hard drive for the server where the server will continue to work if one of the hard drives fails. Alternatively, the decision may be made to purchase two network servers and dedicate one as a "backup" to the first server, or one as the main server and the second as a dedicated database server for the customer base.

Setting up or upgrading a network server should always be discussed with the network administrator or a consultant who specializes in networks prior to making any decisions. There will be times when it may be more cost effective to purchase a very large computer to be used as a network server versus purchasing several powerful computers and dedicate them to specific functions.

Security Risk

A network could also represent a potential security risk for the organization as it contains organization information that may be sensitive or commercially valuable. This information can now, in principle, be accessed by any computer connected to the network by a person with ill-intent like a disgruntled employee or a hacker. A number of resources are available to restrict and prevent unauthorized access to the server and these should be purchased and set up on your server. However, there is no way of being able to absolutely protect your computer from any damage or harm from internal or external sources.

IC³
1.1.6

Some steps a network administrator can take to minimize potential damage to the network include:

- Ensure every person who wants to log into the server has a valid login id, and it is set up according to the company's standards such as first name and first initial of last name or vice versa. Set up the options so that each user login id must be unique.

- Ensure every person who wants to log into the server has a valid password. Set up the password options so that the user is forced to change their password at a set interval (every 2 months) and that the password must be unique.

- When setting up a new person, ensure that the name and information about the user is entered correctly into the administration options. Set up the password so that it must be changed the first time the user logs onto the network.

- Do an audit periodically of each user to ensure that the access rights to programs and files are the same. Sometimes users move to different positions in the company but they still have access to certain programs that is no longer needed.

- Ensure any requests received for access rights to anything on the network have a signature from the corresponding manager.

- Delete any users who no longer work for the company. If the user has moved to another branch or location away from the main office, change the options for that user accordingly to reflect same.

- Do not ever give out a password for any user and especially not the network administrator. The network administrator may be required to change a password for a user and this should be set to a generic password but still forces the user to change it when they next log into the server. The password used by the network administrator should be changed occasionally as well.

- Any staff who work with the network administrator should have their own login id and password set up. Depending on their position, they may have the similar access rights as the network administrator and these should be changed as soon as possible if this person leaves the department, or deleted if they leave the company.

- Ensure there is a firewall set up for the Internet connection that has been set up to check the user id when sending or receiving messages. Also ensure that the firewall software being used is the most current in order to take advantage of newer security features.

- If access has been authorized for users outside the network, ensure the firewall checks these user ids when a request is received to access the network from a remote location. Only certain ports should be set up on the router that is connected to the network and this port id should be set up for each user who will be requiring remote access. The firewall should be able to detect whether the request is from an authorized or unauthorized user.

- Using the administrative features of the network software, restrict any users from being able to delete files from any folder on any network drives. They can have control to manipulate their own files and folders, but restrict them from others. The one drawback to this is if a network drive has been designated as the "public" drive or the shared drive where everyone in the company can save or find files. Encourage users to refrain from deleting anything that was not created by them. Network personnel should check this shared drive periodically to see if any files or folders may have been inadvertently moved to within another folder versus actually deleted.

- Ensure that the antivirus program installed on the server is current and has the latest protection files so it can detect if a virus exists with any incoming messages. A the same time, these protection files can also detect if a virus exists with any outgoing messages. Users may bring in files from home or had them given to them by someone else. Once the files have been copied onto their hard drive or a network drive, it becomes very crucial that the antivirus program be current and perform a scan each time a user logs into the server. In most cases, the user will open that file once it has been copied and the antivirus program should be able to scan and detect any viruses that might exist.

- Network personnel should perform maintenance checks periodically as well to see what activities may have occurred. For instance, someone should be assigned to view the reports or logs created by the antivirus program on a weekly basis. This can identify if there were any viruses found and the status of these viruses. It may also reveal that one user may be getting a lot of viruses, which then requires action by the network personnel to check that workstation as to why there are so many viruses on that computer.

- Network personnel should be encouraging users to ensure they have the latest updates of Windows on their computers. As there are a number of people writing programs to damage computers or allow them access into other computers, it is crucial that the security updates be applied to each station that has an Internet connection. Depending on the type and how the computers were set up, this may be as easy as network personnel performing the update and each user is updated the next time they log into the network; alternativley, network personnel may need to check each system and either update it themselves or request that the users do the update.

Loss of Autonomy or Privacy

Many users fear a loss of autonomy when they are obliged to work in a network environment. With a stand-alone PC they could "do their own thing". This fear is actually unfounded as any person could still work autonomously if they need to while connected to the network. The downside to working on a stand-alone PC is that you have no access to the files on the network and the Internet unless you have a separate access to the network using an authorized connection.

Privacy may be a concern as well. For example, a network administrator has access to all information on a network, whether it is confidential or not. Confidential material may be left at a shared printer by accident. With proper network configuration and procedures, it is possible to address privacy and security concerns. In most cases, users who work with confidential material should have a printer attached to their system only, so no one else can see the printed copies.

Most companies will set up a drive on the network that is linked to your login id, and personal or confidential files can be stored here. However, the network administrator can still see these files. As well, if you leave your machine logged in but you aren't at your desk, anyone using your computer will have access to that drive and see your files.

If you share a computer with someone else, even though they log in with their own id, they can still see the files on your local drive. You do not have to log into a computer in order to see the files on the local drive.

General business rules dictate that work you do on a company computer belongs to the company, even though you may work on it on your own time. It is best to check with your manager first to ensure that there is no consideration of impropriety. As well, you may want to consider deleting the file or copying it to a disk and then deleting the file when you have completed it.

Viruses

Networks are vulnerable to virus attacks. A virus introduced on one workstation can spread quickly to the other workstations. Some viruses, called *worm* viruses, specifically target the servers on a network. These worms typically make the server do some task repetitively, millions of times, keeping it so busy that it no longer is available for other requests made to the network. This is why it is crucial to ensure the antivirus program on the server is always current and active. All workstations connected to the network should also have the local copy of the antivirus program on their workstations active at all times.

New viruses are being created every day and it becomes more prudent to read the screen carefully before automatically opening a message or clicking the highlighted button on the screen. Viruses come in different forms and as such, can be hidden in a message that looks harmless but could in fact be more damaging to your system and anyone who may be listed in your e-mail address book.

All antivirus programs provide a feature to automatically detect in "real time". This feature usually appears as an icon in the Task Notification area. If you have to turn this feature off in order to perform a defragmentation on your system, remember to turn it back on before proceeding any further. Also remember to run a scan of your computer on a frequent basis (weekly) and check for updates, especially if you are on a home computer.

Summary

In this lesson you looked at what a network is and how it related to "living online". You should now be familiar with the following concepts:

- What a network is
- Network standards
- Different types of networks

- What's required to connect to a network
- Advantages and disadvantages of being connected to a network

Review Questions

1. What is a network?

2. You can only connect PC or Macintosh types of computers together in a network.
    a. True   b. False

3. In order to connect a PC to a network, what three items do you need to have?
    a. _____   c. _____
    b. _____

4. List a couple of different types of connection or cabling options.

5. What's the difference between a bridge and a router?

6. What is a firewall?

7. What are some benefits of networking?
    a. Communicating with others
    b. Sharing devices like printers
    c. Having a server that is dedicated to a specific task, e.g., mail, database, network, etc.

    d. Sharing of files and other information
    e. All of the above
    f. Only a, b or d

8. What are some disadvantages of networking?
    a. Cost of setting up and maintaining the network
    b. Potential security risks by outside sources
    c. Dependency on the network always working

    d. Viruses
    e. All of the above
    f. Only a, b or d

9. The network administrator should set up each user with a unique login id and a password that must be unique and changed at set intervals.
    a. True   b. False

10. Setting up an antivirus program on a network means more than just installing it and rolling it out to users. It should be updated and checked on a regular basis.
    a. True   b. False

Lesson 2: Looking at the Internet

Objectives

In this lesson you will be introduced to a brief history of the Internet and different options for connecting to the Internet. On successful completion, you will be familiar with the following:

- Communicating via the telephone system
- Communicating via the Internet
- What you need in order to connect to the Internet
- What an Internet Service Provider is
- How you can connect to the Internet
- What an intranet or extranet is

Introducing the Internet

IC³
1.2.1

The *Internet* is an international wide area computer network. There has been a lot of hype about the Internet in the popular media. The result is that there is much unnecessary confusion and mystery about the Internet.

The Telephone Network

Although the network concepts of the Internet may appear complex, it helps to demystify it by looking at the telephone network first. We are familiar with using the telephone and never give the technical concepts a second thought. For example, if you would like to talk to someone in another city or even another country, you simply key in the appropriate number, wait for the phone to ring, and then start talking when the other party answers.
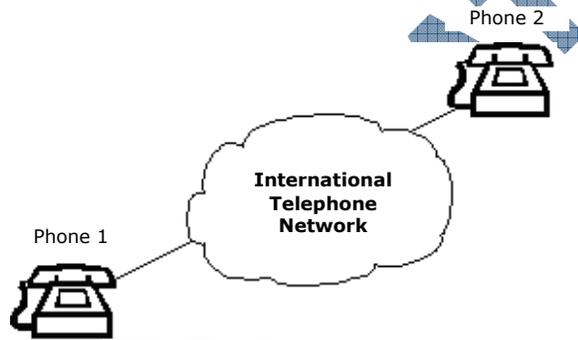
There are only *two* requirements to communicate successfully: 1) you need to know the number of the other person, and 2) you must speak the same language. If you don't speak the same language, you will still be able to connect but you will not communicate successfully.

This is also true of cellular phones. The main difference between cellular and standard phones is the type of devices or equipment needed to connect them to a network. As with notebooks, cellular phones are popular due to their portability feature, and as such, must connect via a wireless connection to a computer or network.

Each country has an organization that is responsible for the telephone network in that country and they ensure that the network conforms to the international telephony protocols or standards. This allows all country networks to be interconnected to form an international telephony network.

The network is a multifunction network and is used for transmitting voice, facsimile (fax) and data information over the same network. Devices connected via the network must "speak the same language", i.e., protocol. If you connect your phone to a fax machine you will hear weird sounds because you are not using the same protocol.

The Computer Network (Internet)

The same principles for telephones apply to the international computer network, or the Internet. Each country has a computer network that conforms to the international standards and these computer networks are interconnected forming an *inter*connected *net*work or Internet.
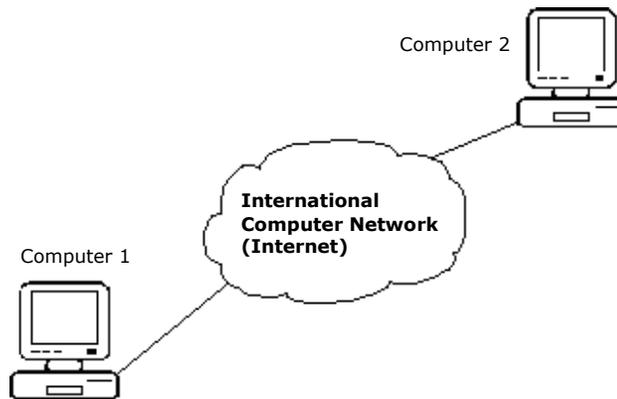
Any computer connected to the Internet can "talk" to any other computer connected to the Internet provided that: 1) you know the number of the other computer, and 2) the computers speak the same language (called protocol in networking terminology).

Computer 1 can talk to computer 2 that may be anywhere in the world. This is possible because each country's computer network conforms to the international standards. The set of protocols used by the Internet is called *TCP/IP* (transfer control protocol/Internet protocol).

Multifunctional

As with the telephone network, the Internet can be used for different functions. There are millions of computers connected to the Internet worldwide. They typically fall into two groups: 1) servers that provide the services, and 2) clients or users who make use of those services. This is shown schematically in this diagram.

There are many different types of servers; the diagram shows a selection of the most frequently-used types. The types of services they provide are different and as such, each type of server "speaks its own language", i.e., uses a different protocol to handle requests from a client and to transfer the requested information to the client. For example, if you request a page from a web server, the language or protocol used is *hypertext transfer protocol* (*HTTP*).

For each type of server that you would like to use, your computer needs to be able to "speak the same protocol". So if you would like to use services from a *gopher* server, for example, you must have gopher client software on your computer. The end result is that you need several different client programs on your computer, which tends to make using the Internet complicated. This gave rise to the development of the *browser* which we will discuss in a later section.
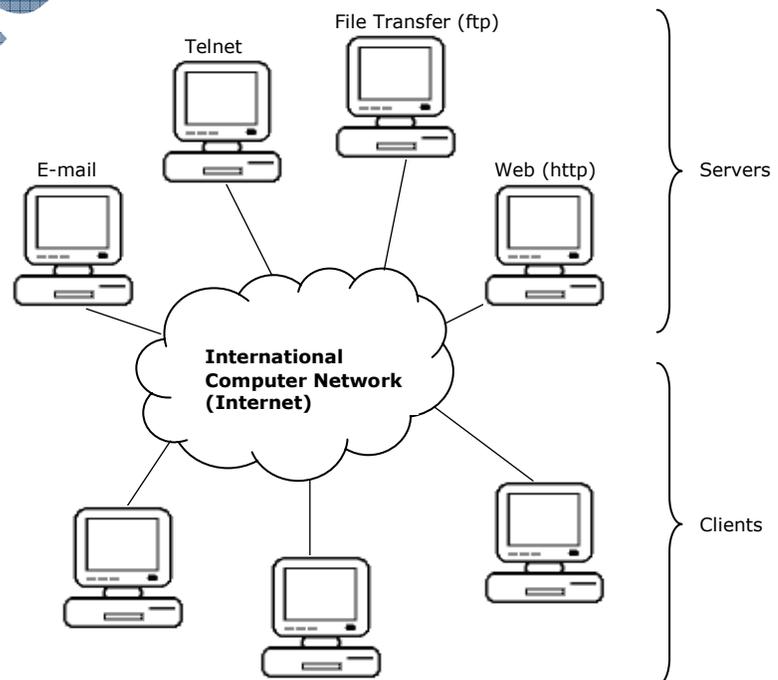
"I got it on the Internet" is a commonly used expression but it is not technically correct. We get nothing on the Internet but rather, we connect to a number of smaller servers via the Internet. Even though the Internet is often referred to as the Super Information Highway or a super network, these servers connect to Network Access Points (NAP) that make up the Internet, and provide the services where we can "get" items. NAPs make up the *backbone* of the Internet and it is often here where "traffic" problems occur due to the number of requests made by everyone using the Internet.

Connecting to the Internet

**IC³**

1.2.2
1.2.4
1.2.5

Any computer can connect to the Internet but just how do you connect your computer to the Internet? There are several ways depending on your needs and how much money you are prepared to spend. Without one of these methods, you cannot gain an "onramp" or connection to the Internet.

You could connect directly to the Internet; however, as the Internet is a WAN, you cannot set up your own cabling to any of the NAPs for the Internet. The public authority that looks after the Internet in your area has to bring the necessary cabling to your location and you would then have to provide the appropriate network devices (router, etc.). This is an expensive solution, both in terms of initial cost and monthly rental, and is only viable for large organizations. The most cost effective method for someone wanting to connect to the Internet is to use an Internet Service Provider.

Looking at Internet Service Providers

IC³

1.2.7

Internet Service Providers (ISP) represent a method of getting relatively inexpensive access to the Internet. An ISP will obtain a high-speed, high capacity (bandwidth) direct connection to a network access point (NAP) that in turn connects to the Internet. The ISP then resells a portion of that capacity to companies or individual users, shown schematically here:
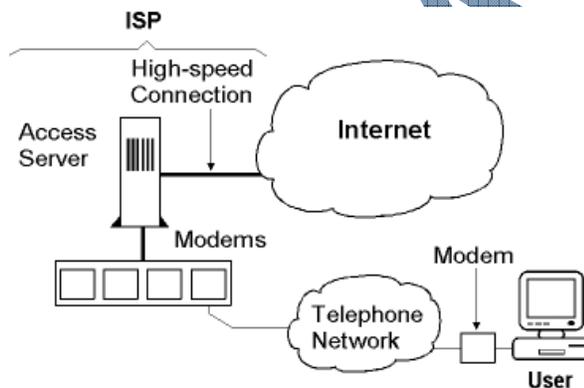
The portion sold to a user is your connection (onramp) to the Internet that you pay for on a monthly basis. The monthly fee usually includes other services provided by the ISP which include:

- The maintenance of the connection lines. The ISP is responsible for ensuring the lines continue to work, regardless of the time that users log onto their server. When maintenance is required on the lines, it is also their responsibility to inform all their users that there may be some downtime (when you can't log on either the ISP server or access certain areas of the Internet) experienced. For instance, most ISP's lease the connection lines from the local telephone company before they can offer Internet service. When the local telephone company needs to perform maintenenace on these telephone lines, you will not be able to go onto the Internet even though you may be able to log into the ISP. How long you may be "down" is dependent on the type of maintenance being performed. The ISP will either send an e-mail to all their users of the upcoming maintenance work, or if it occurs unexpectedly, will have a message on their technical support line informing users of same.

- The maintenance of the hardware or software used at the ISP's site. This may also extend to the modems distributed to users to connect to the ISP's server. As technology advances or software is updated for connecting to the Internet, the ISP should be updating these accordingly. An example of this could be when the ISP wants to change the modem you currently have with a newer model that allows for better access to the Internet.

- Customer support. As a service provider, ISPs recognize how important it is to maintain a good relationship with customers. As such, you may receive e-mail from the ISP informing you of different packages or additional services that may suit your needs, or promotions the company may support, e.g., concerts, plays, etc. At the same time, you should be able to call the ISP for support at any time for any reason regarding your service. For instance, if you have a question regarding the billing charges or want to know if there is a problem with the connection, someone at the ISP should be able to answer your question when you call the customer support number.

- Technical support. As part of the monthly fee, the ISP is responsible for providing you with technical support whenever you experience problems with your Internet connection. Not all problems you may experience while working on the Internet are related to the service provided by the ISP, but this is a good starting point. For example, if you were looking at different web sites and then you see an error message for every web site you tried to view, this could a problem with the connection line. However, if you can view several web sites but a few display error messages, this could be a problem with the web sites.

IC³
1.2.3

- Part of the maintenance and technical support service should also include protection against potential viruses or unauthorized access requests. ISPs generally have a firewall included with their service that helps to minimize these types of problems. One of the more common problems that users experience is junk mail or spam, and many ISPs include a service that filters out a lot of common types of spam messages before they reach your mail inbox. Another service an ISP may offer is filtering or blocking of certain sites for their clients. A parent, for example, may want to set up specifics to help block out potential web sites from being accessed by their children. On the other side, the ISP may also set up a block against their users accessing sites that may promote illegal activities. Most ISPs do not block their users from being able to access any site but they may have a monitoring service set up to watch or check for certain types of activities or how often specific sites might be accessed.

Regardless of the method used to connect to the Internet, you must have these standard components:

Modem   This can be an internal or external device that allows you to transmit data by converting an analog signal (usually telephone or cable) to a digital signal recognized by computers. Modems are measured in bits per second (bps); this determines how fast the data can be transmitted or received. Traditional modems that worked with the telephone were able to transmit or receive up to 56Kbps or 56,000 bits per second. Newer modems for the faster connection types like cable or ADSL can handle upwards of 5Mbps or 5 million bits per second.

Network Card   In order to connect to the Internet which is an international network, you must have a network card installed on your system. Handheld devices such as PDAs or notebooks will require different card technology than a desktop computer.

Cables   For a standard computer setup, you will need a cable to connect from the jack on the wall (ISP service), to the jack at the back of the computer (network card). If you have a digital service (cable or ADSL), the cable must originate from the jack on the wall and then connect to the modem. Another cable is then needed from the back of the modem to the back of the computer. If you decide to go wireless with the computer, the cable from the wall will then be connected to the router and another cable connects the router to the modem. These cables are for standard Ethernet connections. Handheld devices do not require cables.

Internet Account	This is the account you signed up for with the Internet Service Provider. You will be paying a monthly fee to the ISP in order to have access to the Internet; the fee amount will vary depending on the service package you purchased. Similar to having a cellular phone or television service, there are a variety of packages you can select from, based on your needs or anticipated Internet usage.
Web Browser	This is a software program that allows you to search for items on the Internet. All computers provide you with a web browser when you purchase it but you can also install another web browser of your choice. Web browsers are discussed in the next unit of this courseware in further detail.
Telecommunications Software	This is software that allows you to configure the computer you are using to connect to the Internet. For instance, the Windows CE operating system installed on a PDA or Pocket PC has a telecommunications feature but must be configured accordingly. Newer cellular phones must have the Global System for Mobile Communications (GSM) or General Packet Radio Service (GPRS) feature and must be activated before you can connect to the Internet.

The diagrams in this lesson will show how you can connect to the Internet using a computer. The concepts remain the same regardless of the type of computer you are using to connect to the Internet. You will, however, need to consider some of the following:

- What extra hardware or software are you going to need to purchase for your device? Will you need to go with a wireless option? What extra services are you willing to pay for? A company may want Internet service on cell phones for their sales staff so they can receive messages at any location and as such, need to purchase cell phones with GSM/GPRS and pay for that service per phone. An individual may choose to have Internet service set up on their PDA, buy a wireless card for the PDA and pay for the telecommunications service on that PDA.

- How much is the monthly service and what does it include? Will you need all the services and does the ISP offer a variety of packages? A company will need a faster connection than a home user and as such, be willing to pay more for the fast connection and all the extra services to protect unauthorized access or to minimize downtime by employees having to delete spam messages. A home user may choose an online service that offers more entertainment features and set up restricted access options on their own.

- What about the reputation of the ISP and can you rely on them for good and constant service? Not all ISPs offer the same service — just because the ISP advertises fast speed for a low fee does not mean this is what you will actually get or pay. Be sure to do some research on what you want and what you're willing to pay for; talk to people with different Internet services and then base your decision on what is most important to you. Is customer service more valuable to you than a low monthly fee? Is the ISP local or do you need to call a toll free number? How fast are the connections in your area? Sometimes one digital connection type may be faster in one location than another, based on how far away your location may be from an Internet hub.

The following lists some of the different connection types you can use to connect to the Internet.

Telephone Access (Dial-up Access)

Unless you are in the same building as the ISP, you cannot connect directly to the ISP's access server. One common procedure is to use the normal telephone network. The ISP has, for example, 100 telephone lines. When you set up an account with the ISP, they will give you a telephone number to dial which will connect to one of those incoming lines at the ISP.

The telephone network is designed for sound so you need to convert your computer's message to sound via the modem. The modem at the ISP reconverts your message from sound (analog) back to computer signal (digital) before it goes on the Internet.

The software you will need to set up telephone access is included in the Windows operating system, or it may be provided by the ISP and you are required to install it on your computer.

Dial-up access is considered low bandwidth which means the speed will not be as fast you might want. However, this method of connection can be very cost effective if you are not sure how much time you may need or want to be on the Internet, or if the only thing you want to do on the Internet is send or receive e-mail. Take note that once you dial into the ISP, the clock begins ticking on the amount of time allocated for your monthly service until the time you disconnect. If using this type of connection to the Internet, you may want to make sure you have typed up your messages to be sent prior to connecting to your ISP, and connect only when you want to send or receive the messages. Once your messages have arrived, you may want to disconnect until ready to reply to the messages.

TV Cable Access

The TV cable companies have a network of high-performance cabling (cablevision) so it is a natural extension for them to also provide Internet services. Conceptually, the process is the same as the telephone access. Their cabling systems are designed for TV signals so you need a *cable modem* to convert your computer message to TV signal before it can travel over the TV cabling system.
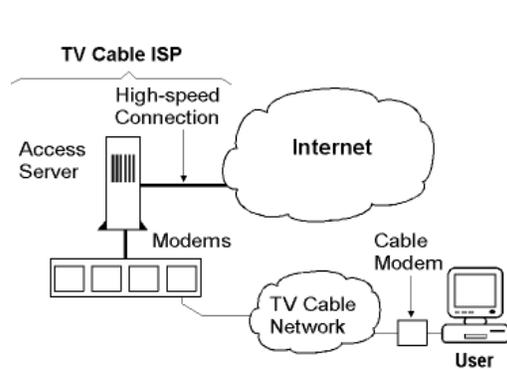
There is no need to dial a number to get Internet access — you are connected all the time. The connection is also a lot faster than dial-up access, but it is also more expensive. However, if you need or want 24-hour access or if you have multiple computers and users in your location, this can be a very cost effective option.

Cable is a popular option for home users as it can be packaged with the television cable services and offer very fast speeds. Many of the cablevision companies are also replacing their existing cables with fiber optic cables, thereby offering even faster speeds.

Using Online Services

One way to connect to the Internet is through existing *online services* such as America Online, CompuServe or Prodigy. These companies have their own networks with access points in most major cities. They provide a full range of services on their networks including electronic mail.

However, most of these companies also have a *gateway* between their networks and the Internet, so their users will have access to all their services as well as access to the Internet.
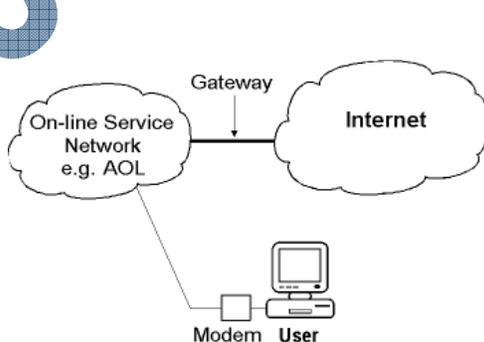
This type of connection is relatively inexpensive and requires a modem on your computer. When you set up an account with them, they will provide you with the necessary software. One of the reasons these types of connections are very popular is the sense of community that is quickly established once you sign up. These networks are essentially a type of centralized server that hosts a variety of services for their clients. Some popular online services such as AOL or MSN include the ability to chat with friends/family/celebrities or participate in online auctions designated for this service only.

Many of the online services have switched their connection lines to be broadband so speeds are much faster than in the past. The monthly costs are very comparable to choosing an ISP with a cable or digital connection line and usually charged to a credit card each month.
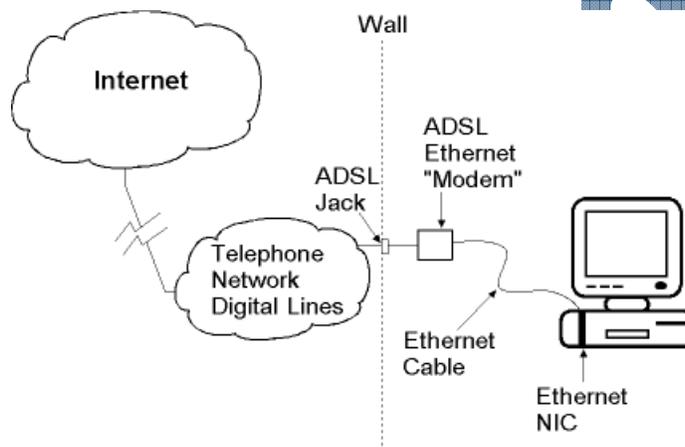
Digital Connections

IC³
1.2.6

Another type of Internet connection is through a digital line. Digital connections begin at *56K* (56,000 characters per second). One digital connection is called *ISDN* (Integrated Services Digital Network) which runs at 128K. *DSL* (Digital Subscriber Line) or *ADSL* (Asynchronous Digital Subscriber Line) digital connections run at up to 9Mbps download and up to 640Kbps upload.

"Digital line" implies that your computer message does not have to be converted to sound but can travel down the line in computer signal form which means you do not need a modem to convert the signal to sound. You do, however, need a network device commonly referred to as a "cable modem", which can be rather misleading.

For example, when you set up an ADSL account, your ISP will arrange to have a special cable installed to your home or office. The ADSL cable will have a jack similar to a standard telephone jack but slightly larger in size. You need to connect the ADSL Ethernet box to the ADSL jack and then via an Ethernet cable to a high speed network interface card (NIC) installed in your PC. This is shown schematically in the following diagram:

An advantage of having a digital connection is dedicated access. This type of connection requires an ISP, but each user has his own line for connection. Therefore, there is never a busy signal when connecting through your service provider to the Internet.

It is more expensive than dial-up modem access but the higher speed more than compensates for the extra expense. The higher speed also makes technologies like streaming video and web broadcasting viable. Many ISPs now offer competitive prices for choosing a DSL connection.

Another digital line type is T1 which is very fast in comparison to the other digital lines. T1 lines are generally leased by ISPs although some companies are moving to these lines in order to have faster speeds for processing large amounts of data online. A company that has a lot of e-commerce (purchases online) would likely use this type of connection in order to process all sales that are made through the Internet or from the credit card/point of sale terminals. These lines are still relatively expensive in comparison to the other types of connections; home users will tend to purchase a service package with cable or DSL connections whereas businesses may choose to set up a T1 line for much faster connections despite the cost.

Recognizing Intranets and Extranets

With the popularity of the Internet, a need grew to expand networks so others can share information from one location, regardless of whether you were at the same site as the network server or had authorized access from outside the server location. Two different networks take advantage of these communication options.
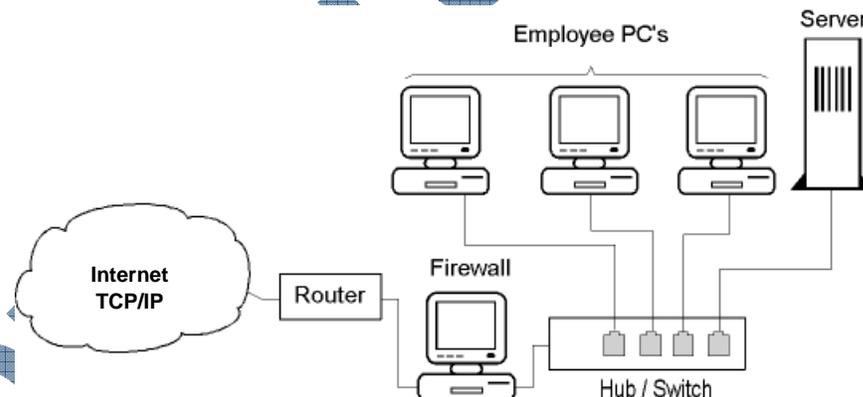
Intranet

An *intranet* is a private local area network in a company or organization that uses the same set of network protocols as the Internet, i.e., *TCP/IP*. The network will typically also have a web server. The web server will contain common documents like the company policy and procedure manual. All an employee needs to access these documents is a web browser.

The diagram here shows a schematic representation of a typical intranet. It also shows the intranet connected to the Internet. This is common practice as it allows the employees to access resources on the Internet and to communicate via electronic mail with people external to the company.

When the intranet is connected to the Internet there is a danger that confidential information on the intranet can be accessed by people external to the company. A firewall is then placed between the intranet and the Internet to block unauthorized access to the intranet. The firewall can be as simple as a program, or a combination of a computer and software depending on the level of security you need.

The following diagram shows the intranet and the network components:

Extranet

1.2.5

An *extranet* uses Internet technology to allow a company to share information with another company or organization.

For example, company A and company B are working together on a specific joint project. Employees from company A working on the project are given usernames and passwords to allow them access to files and resources relating to the project on company B's intranet. This is shown schematically in the diagram here:
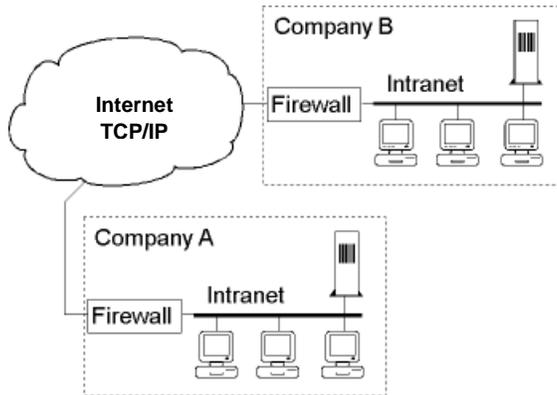
Extranets have a higher risk for unauthorized access. It is common to have more sophisticated security protection and complex firewall installations than shown here. It is advisable to involve a network security expert when setting up an extranet.

Summary

In this lesson you were introduced to a brief history of the Internet and different options for connecting to the Internet. You should now be familiar with the following:

- Communicating via the telephone system
- Communicating via the Internet
- What you need in order to connect to the Internet
- What an Internet Service Provider is
- How you can connect to the Internet
- What an intranet or extranet is

Review Questions

1. What are the two requirements to communicate successfully in a telephone network?

    a. _____   b. _____

2. What is the set of protocols used by the Internet called?

    a. DNS   c. TCP/IP

    b. SMTP   d. All of these

3. What is an ISP?

    a. Internet Service Possible   c. Internet Security Program

    b. Internet Service Provider   d. International Systems Provider

4. The fee you pay to your ISP should include which services?

    a. Cost of connecting   d. Technical support

    b. Regular maintenance   e. All of the above

    c. Customer support   f. Only b, c or d

5. In order to connect to the Internet, which standard components do you need to have?

    a. Modem   e. Web browser

    b. Network card   f. Telecommunications software

    c. Cables   g. All of the above

    d. Internet account   h. Only a, b, d or f

6. If you wanted to connect to the Internet using a PDA, you can plug it into the wall in the same way as with a computer.

    a. True   b. False

7. When would a low bandwidth dial-up account be of benefit to someone who wants to go onto the Internet?

8. A benefit of using an online service to connect to the Internet is the sense of community that these types of services can provide to an end user.

    a. True   b. False

9. Name two different types of digital connection lines.

    a. _____   b. _____

10. What's the difference between an intranet and an extranet?

Lesson 3: Understanding E-mail Fundamentals

Objectives

In this lesson you will look at electronic mail and basic e-mail fundamentals. On successful completion, you will be familiar with the following:

- What electronic mail is
- Differences between internal and external e-mail
- The structure of an e-mail address
- Recognizing what to enter when creating a new message

- Using different e-mail options
- Understanding what attachments are
- How to use e-mail appropriately
- Advantages and disadvantages of using e-mail

What is Electronic Mail?

2.3.1

Electronic mail (e-mail) has been a key factor in the increased popularity of networks. E-mail essentially follows the same process as for postal mail (commonly referred to as snail mail). You still need to have the name and address of the recipient in order to have the post office deliver your letter. Advantages of using e-mail include:

Speed	This is most likely the biggest advantage of using e-mail due to the relatively fast method of communicating with others. E-mail is faster than the postal service and allows you to send a message to someone without waiting a long time for a reply. You can also send (or receive) messages to multiple people, thereby reducing the time spent on the telephone trying to contact others.
Paper Trail	Although people speak about a "paperless society", there are many occasions when it is prudent to print the message as a permanent record of the communication. This can be very advantageous when you need a timeline for the communications. At the same time, every e-mail program gives you the option to create folders to file or store the messages, giving you a history and storage of older messages.
Sharing Information	E-mail is one of the fastest ways of being able to share documents with others. Every e-mail program allows the user to attach a file to a message, as required. There may be some limitations to the size of the attachment that can be sent, but this is certainly a fast method when copies of reports are required or you wish to send pictures to others.
Easy Access	As e-mail can also be included as a service on handheld devices, people outside the office (or home) can continue to send or receive messages from remote locations. As well, wireless devices allow multiple users who share an Internet connection to send and receive messages from any computer sharing that connection.
Collaborating with Others	In addition to sharing files, you can also set up the message (correspondence) to be sent to other people at the same time as the recipient. This allows everyone to stay current on the information. At the same time, you can forward or route a message to someone else for further action without having to re-key the original message.
Cost Savings	The cost of sending e-mail is relatively low in comparison to long distance calls, courier, or physical visits. The e-mail service provided by ISPs are included in the monthly fee you pay to the ISP, therefore you don't need to worry about fluctuating rates based on time or weight, as in the case of long distance calls or sending information via courier or postal mail to others.

2.1.6

Take note that while e-mail is the most popular means of communicating from one computer to another, there are other ways of communicating such as text messaging or instant messaging. Although these two methods often are considered the same, there is a subtle difference and it generally occurs with the device being used to text message someone.

Instant messaging occurs on computers where this feature is included with the e-mail program used. Alternatively, it can also be part of a chat line where multiple conversations can occur. Many of the popular instant messaging programs such as MSN, Yahoo, or America Online can be used on handheld devices and higher end cellular phones that can display graphics. As such, real time conversations can occur between users.

Text messaging generally refers to the process of sending a message but only text is shown at the receiver's end. This can be on a pager or a cell phone that only has text messaging capabilities, and the message is limited to one person at a time, either entering the text or receiving the message.

Internal Mail

IC³
2.1.1

Internal mail refers to the process of sending or receiving mail by users who are connected to a local area network (LAN). The diagram shown illustrates the principles of e-mail on a LAN.

Each user on the network is allocated a "mailbox" on the server. When user A sends an e-mail message to user C, the message is placed on user C's mailbox on the server. When user C wants to see her e-mail, she has to "fetch" the mail that is waiting for her in her mailbox. If she is away on vacation or simply not at her desk at the time user A sent the message, it is placed in the mailbox on the server for user C.

The e-mail address used with internal mail is generally related to the user login id and travels within the LAN, using the e-mail program usually managed by the network software program.
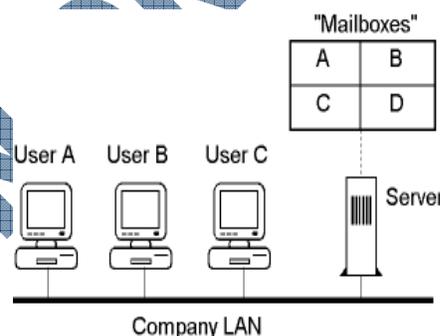
Internet E-mail

IC³
2.1.1

Internet e-mail is often referred to as external mail as it comes from "outside" your computer. The process for e-mail from the Internet is similar to internal e-mail, but is slightly complicated by the fact that the Internet is a WAN consisting of many interconnected networks. The diagram here illustrates the concepts (for simplicity purposes, we will use individual users):
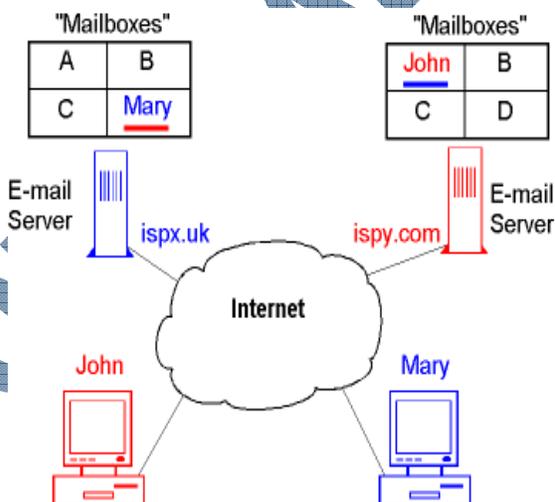
Each user of e-mail must obviously have a unique e-mail address. As with the LAN, e-mail messages are stored on a server. When a user sets up an e-mail account with an Internet Service Provider (ISP), the ISP allocates a mailbox on the e-mail server for the user. The mailbox is usually identified by the user's name.

The e-mail server itself has a unique address on the Internet, referred to as the *domain name* (discussed in more detail later). In this example, John has an e-mail account with an ISP called "ispy". The domain name of the e-mail server is ispy.com. The full address of John's mailbox is then: john@ispy.com, pronounced as "john at ispy dot com".

Similarly, in this example, Mary's full e-mail address is: mary@ispx.uk. Suppose John sends an e-mail message to Mary. He would address the message to mary@ispx.uk. The message is routed through the Internet to the e-mail server with the domain name, ispx.uk. The server then will put the message in Mary's mailbox on the server. The protocol used when one sends an e-mail to an e-mail server is *simple message transfer protocol (SMTP)*.

If Mary wants to see if she has received an e-mail, she requests her e-mail server to send any mail in her mailbox down to the e-mail program on her computer. The server does not send the mail to just anyone and will request that Mary first identify herself by giving her username and password. If these are valid, the server sends all the mail in Mary's mailbox to her e-mail program where it is placed in the Inbox folder. The protocol used to request and download e-mail from the mailbox is called *post office protocol (POP)*.

Understanding an E-mail Address

You can learn some useful things by looking at the different parts that make up an e-mail address.

The Domain Name Format

All computers connected to the Internet have a unique number called the IP address or IP number, just like every telephone on the telephone network has a unique number. Most owners of servers connected to the Internet will also have registered a domain name for their servers. As far as the Internet is concerned, IP addresses and domain names can be used interchangeably — but it is far easier to remember a domain name like *hartford.edu* than 207.230.244.190. In order to use an e-mail address, you must be set up as a user on a domain. This could be the ISP or it could be your company. A typical e-mail address is structured accordingly:

jsmith@ccilearning.com

Mailbox Name

Name of Organization

Domain Category
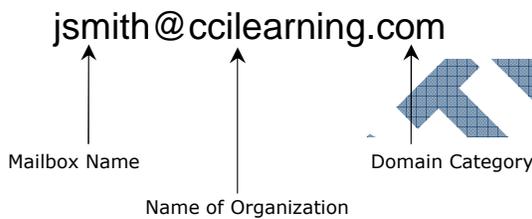
Mailbox Name	Identifies a particular mailbox on the e-mail server. Usually it would be some combination of the e-mail account holder's first and last names as this is the easiest to remember. Some domains allow you to create your own mailbox name with the only restriction being that it must be unique.
Name of Organization	Identifies the organization who owns the server. It does not have to be the full formal name of the organization but a version that is easy to remember (e.g., orders@ibm.com), or if someone else has a similar name (e.g., contact@ccilearning.com versus contact@cci.com).
Domain Category	Also called the *Top Level Domain*, it identifies the server's information domain.

The Internet was originally established in the U.S. to facilitate research and development of military projects. A set of domain categories were defined to distinguish the different groups involved in these projects. These domains are usually called the "original top-level domains":

.mil	US military
.gov	US government
.com	commercial companies
.edu	universities
.org	organizations
.net	network sites

Looking at the *jsmith@hartford.edu* address indicates that the address belongs to someone from Hartford University (or college) whose last name is Smith and first name starts with a "J".

The original top-domain categories were adequate for their original purpose but soon became inadequate when the Internet became international. The top-level domains were expanded to include two letter country codes. The following are examples:

.au	Australia
.de	Germany
.ca	Canada
.uk	United Kingdom

Larger countries may expand their domain names to indicate the region within the country, e.g., pittmeadows.bc.ca is located in British Columbia, a province of Canada.

Other countries use an expansion similar to the original domain names, e.g., amazon.co.uk is a commercial company in the U.K. and oxford.edu.uk is a university in the U.K.

Several new top-level domains have been proposed and may be available by the time this courseware goes to print. The following list gives a selection:

.aero	Air-transport industry
.biz	Businesses
.coop	Cooperatives
.ecom	electronic commerce
.info	Unrestricted use
.museum	Museums
.name	For registration by individuals
.new	news-related sites
.pro	Accountants, lawyers, and physicians

Internet Server Types

Organizations frequently own more than one type of server. The domain name convention for other server types is as follows:
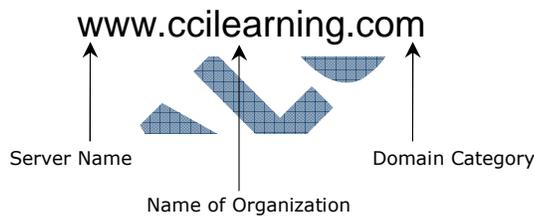
The *server name* label is used to identify the server at the organization. Traditionally this label indicates the type of server (i.e., www for web servers, ftp for ftp servers), but this is not mandatory.

Many organizations have several servers such as *www1.mit.edu, www2.mit.edu,* and *library.mit.edu* for different web servers at MIT.

Chances are that if you get an e-mail from *jsmith@betterbuilders.com* that they also would have a web server with web site address (URL) of *www.betterbuilders.com* where you can find out more information about jsmith's organization.

Looking at E-mail Message Components

Regardless of what e-mail program you use, the components of an e-mail message are the same as they are determined by the Internet e-mail protocols. The components of an e-mail message are:

- Addressing
- Subject Line
- Body
- Attachments

There are a number of different e-mail programs currently available for use with Internet e-mail. For the purpose of this courseware, we will use Outlook Express. The concepts remain the same regardless of which e-mail program you use; what differs is where the commands and features may be found in the e-mail program.

Addressing

The addressing portion of the e-mail is very important as it identifies who will receive the e-mail.
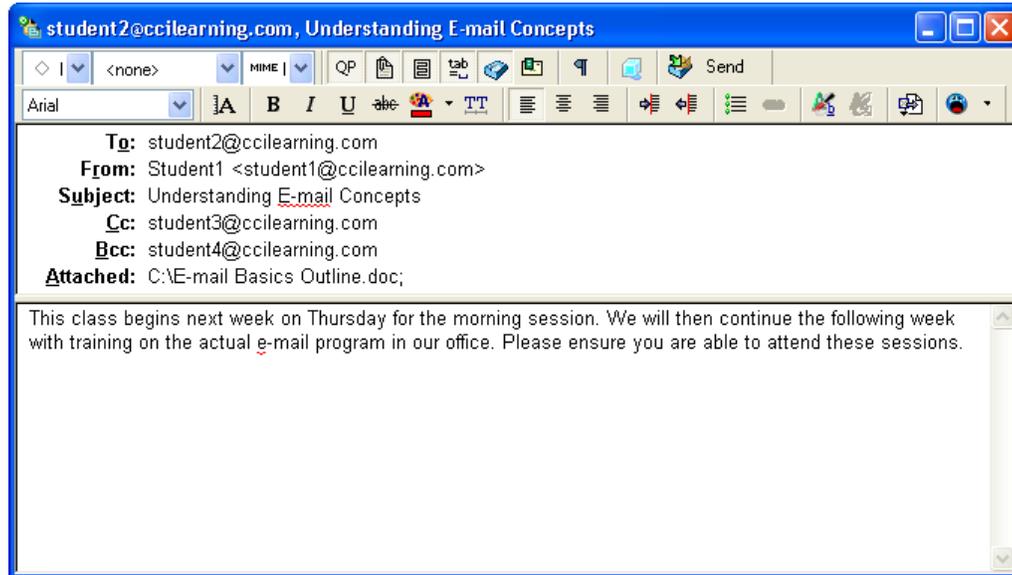
To This is the destination address. Without it, the e-mail cannot be sent. You can send the e-mail to several recipients, with their addresses separated by semicolons (;). Depending on your e-mail program, you may also be able to use a comma (,) as the separator.

Cc This is the Carbon Copy address. The recipient in this line gets a copy of the e-mail and knows that it was sent for information purposes only and that the recipient in the To: line is the main recipient. There can be more than one address in the Cc: line.

Bcc The Blind Carbon Copy is used when you want or need to hide the fact that this recipient is receiving a copy (e.g., you are e-mailing someone to confirm dinner reservations tonight and a Bcc goes to the friend who is organizing the surprise party). There can be more than one address in the Bcc: line.

The Subject Line

The subject line identifies the topic of the message, usually a short description of the content or purpose of the e-mail. People receive many e-mails and it is useful to scan through the list of recently received e-mails by looking at the subject lines. Depending on urgency or priority, one can then decide which messages to read first.

You can send an e-mail without a subject line but because it is so useful most e-mail programs will prompt you if you forget to enter a subject in the subject line. With the number of potential viruses in messages with no subject line, it becomes prudent on your part to add text to the subject line so recipients will read your messages.

The Message Body

This part of the e-mail message is where you type your actual message. Some e-mail programs will provide formatting features that can also be applied to the text for emphasis or enhancement. There are some guidelines that you can apply when entering your message to ensure there are no confusions or misinterpretations of the message text (e.g., typing in capital letters is similar to shouting). These are discussed later in this lesson.

Attachments

A very powerful feature of e-mail is that you can attach files to the message. People use this feature to send pictures, spreadsheets, word processing documents and many other items. It is much more convenient and faster than sending the files on a diskette using regular mail. ISPs may restrict the size of attachments (usually 2-5Mb) as these may slow down the retrieval of mail at the recipient's end, or cause traffic delays at the mail server when it is being sent or received.

Using E-mail Options

There are basically four options when sending an e-mail: create, reply, reply all, and forward. The option you use will depend on the purpose of the e-mail.

Creating New

When you create a new e-mail, the program will give you a blank form where you can put all the necessary message components and type in the message body. When the message is complete, you click on the **Send** button (or select the **Send** command from the menu bar). The e-mail program then uses the STMP protocol to send the message to the server on which the recipient's mailbox is located.
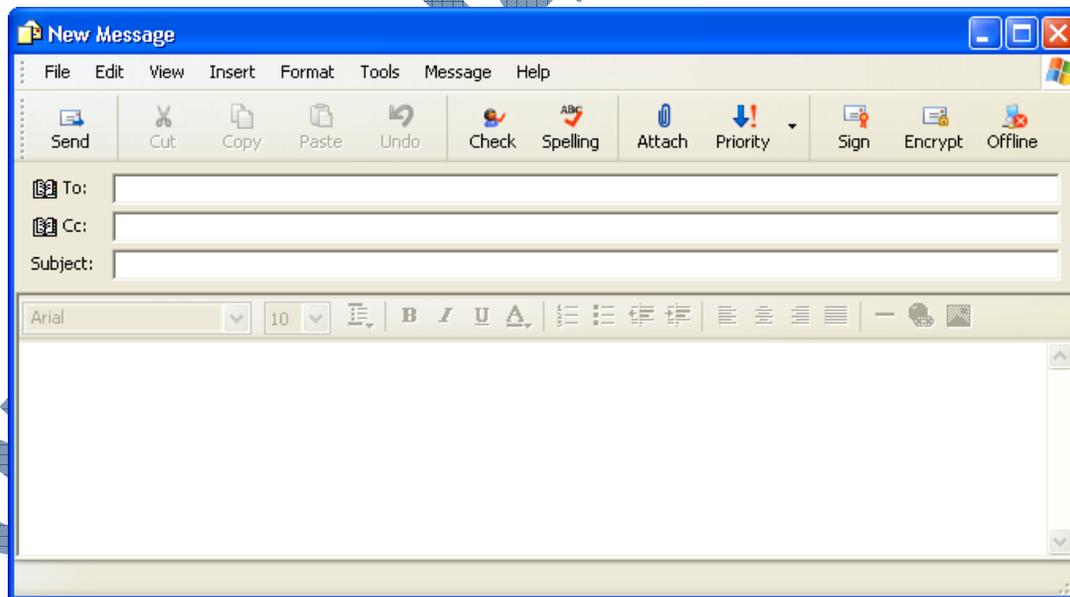
Reply Options

When you have received an e-mail there are basically three things you can do:

- Reply or respond to the sender only
- Reply or respond to sender and all those who received copies
- Forward the message to another person

Reply   When you receive an e-mail from someone, you will likely reply to it. When you use the **Reply** button, the e-mail program will display a similar screen to the message received, with the *To* field showing the address of the person you are replying to (sending). The Subject line stays the same except that *Re:* is added so you can recognize it is a reply to a previous message. The original message is placed at the bottom of the message body as reference.
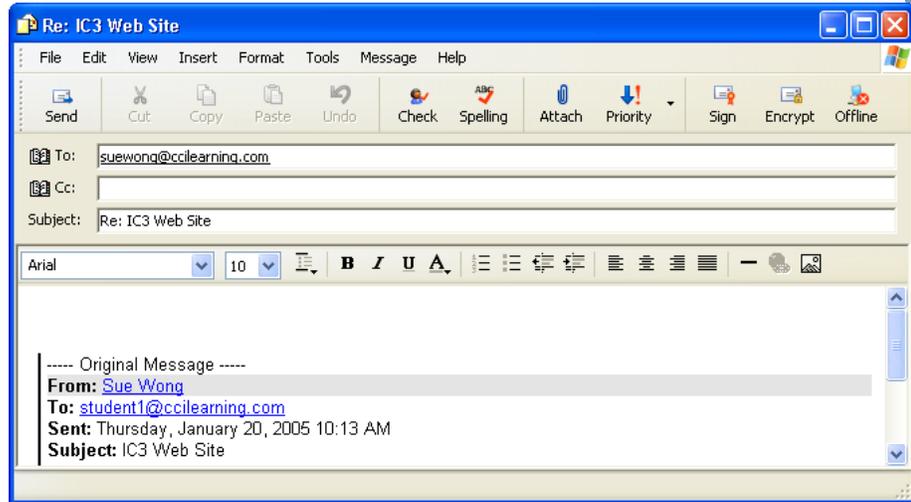
Reply All   This is similar to the previous option except that the reply will be sent to all who received the original message, regardless of whether they were listed in the *Cc* or *Bcc* field. This is a useful option when several people are working together on a project, or are planning a vacation together.

Forward   This option allows you to send the message you received to a third person for further action. The original message is again appended at the bottom of the body and a *Fw:* is added in the Subject line.
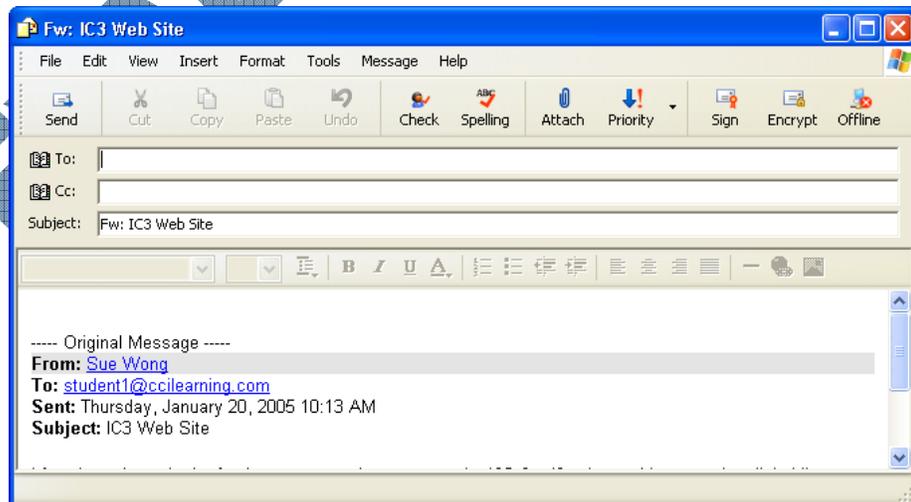
Receiving E-mail

When you request your e-mail from the mail server (using the POP protocol), the e-mail program will put the mail in a folder, usually called the *Inbox*. Most programs also have folders called *Outbox*, *Sent*, *Draft*, or *Deleted Items* to help you organize the amount of e-mail you may receive. Although the folder names may vary slightly in different programs, their use is self-explanatory.

When you open an e-mail program installed on your system, it will appear similar to the following:
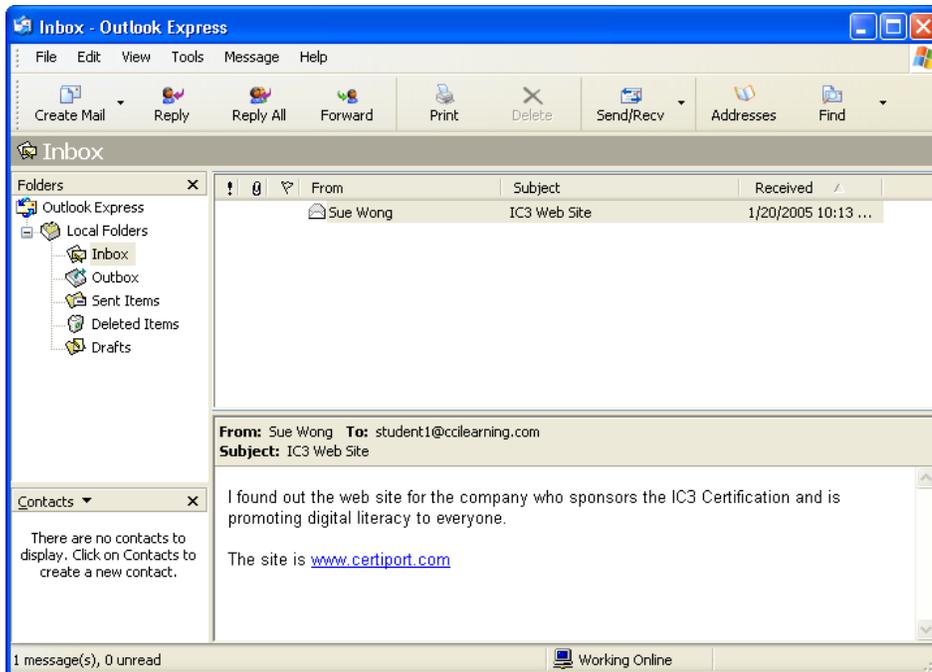
When using an e-mail program that is part of an integrated application such as Lotus Notes or Windows Exchange, the e-mail program becomes just one function of that integrated application and provides you with features and options to manage your messages along with other tasks you need to handle in the office such as scheduling meetings.

The screen shown is an example of an e-mail program that has some other programs integrated into it. Microsoft Office Outlook 2003 allows you to send and receive e-mail, set up and organize a calendar, manage contacts, set up to-do (tasks) lists, or keep notes.
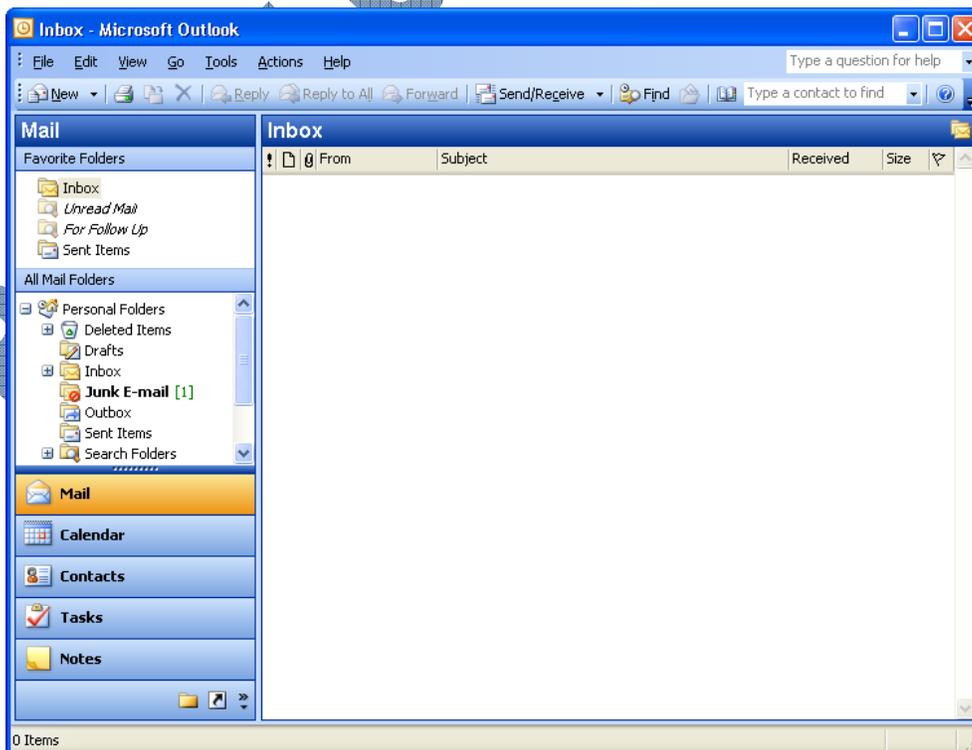
Notice the features at the left side of the screen, showing the different types of tasks and the easy access to these tasks. Outlook also uses many of the same layout and features found in other programs to reduce the learning curve for using the different features.

The program is designed to allow the user to integrate the groups together to organize themselves, such as finding all messages from a specific contact or assigning tasks to a contact off-site.

Not all e-mail programs display mail in the same manner. When you use a web-based e-mail program such as Hotmail or Yahoo, it will appear similar to the following:
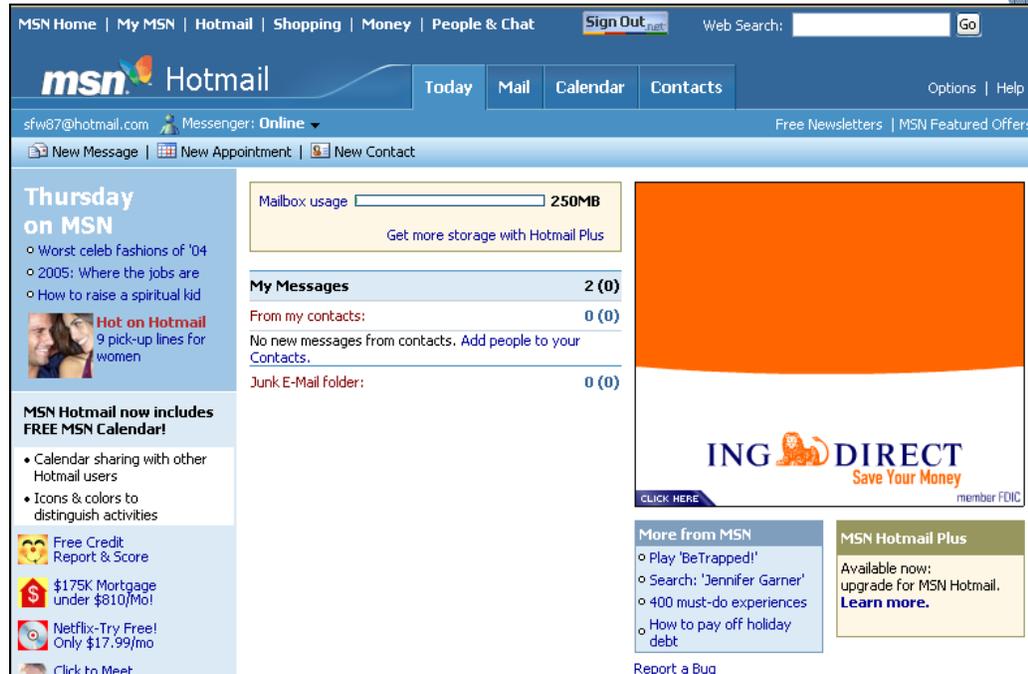
The folders of a web-based e-mail program are similar to other e-mail programs. The difference lies in what else you may see on the screen or features you may have access to with a web-based e-mail program. Web-based e-mail programs can be used by people who either don't have a computer, access to the Internet on their own computer, or just want to access their e-mail using a program that can be activated from any computer that is connected to the Internet, such as in a library or Internet cafe. It can also be used as the e-mail program where requests for information are directed (add me to your mailing list) instead of using their personal Internet account assigned by their ISP. Alternatively, people also use their e-mail addresses set up with a web-based program to receive messages from solicited and unsolicited sources, or to separate business and personal e-mail.

PDAs or cellular phones require special software program to be installed on the device prior to sending or receiving e-mail. Depending on the software program and technology available for the PDA or cellular phone, the user may be able to view graphics along with text when the message is received.

Attaching Files

One of the most useful features of e-mail is that you can attach electronic files to the message. For example, you could send an e-mail to a colleague explaining that you have written a draft report and you would like him or her to read and comment on the report. Then you *"attach"* the report, a word processing document, with the e-mail. When the colleague receives the e-mail, there will be an indication that there is an attachment, usually a ⬧ icon. Your colleague could then either save the attached document to a folder to work on later or open it immediately in the word processing program.

You can attach any kind of file: pictures, video clips, mp3 sound files, programs, games, etc. Many of these files can be very large and ISPs may put a limit on the size of attachments that they will allow, typically 2 to 5 Mb.

E-mail programs indicate attachments differently, either in a separate line with the name of the attachment, or it may appear as an icon within the message text.

Using E-mail Appropriately

There are no definite rules regarding the use of e-mail; similar to creating documents for distribution to audiences, the writing style and emphasis used in the documents should match the audience type. There are some general guidelines that should be considered, regardless of the audience type.

E-mail should never completely replace another form of communication and should be treated in the same manner as if you were going to write a letter or speak to someone directly. Some guidelines include:

- If you are sending an e-mail to someone regarding business, maintain a professional attitude at all times. This means using the spelling and grammar features available to check the writing style used in the e-mail. Business e-mails should have a formal writing style applied, and directed towards the product or service discussed. Keep your points brief and concise. Remember that your e-mail represents your organization to the recipient and should reflect the organization's image.

- Ensure you include subject text that clearly identifies the purpose of this e-mail. This will be helpful to the recipient if they receive a large number of messages during the day. The subject text should be kept brief and details provided in the actual message area.

- Consider the format you use with your message before sending it. How comfortable is the recipient with using e-mail? For instance, if you add too many formatting options or use a mail format that cannot be read or seen in the other e-mail program, then your message will not reach that person.

- E-mails are still official company correspondence; therefore, your e-mails should be filed and archived just like paper correspondence. Use the folders in the e-mail program to file the messages, or print out the messages and file them accordingly as a paper trail. Deleting an e-mail could be an offense, depending on your company's policies.

- A point that is often overlooked is that e-mails do not cost money, but using e-mail takes time and therefore costs the organization money. Don't write unnecessary e-mail. Make sure that your e-mail is clear, concise and to the point.

- If your e-mail is not clear, it can lead to misunderstandings and wrong actions or decisions being taken.

- Some people tend to write long rambling e-mails with no obvious point or purpose. This wastes time and causes frustration. Fortunately, it is more of a problem in informal settings. If you are prone to making this mistake, be sure to study a book on writing styles and techniques.

- People would never dream of saying personal jibes, ethnic jokes, or use bad language when they are in public. However, because of the Internet's anonymity, some people feel they can do these things online. Refrain from making any jokes or sending anything that could be considered politically incorrect, even with people you know.

- A flame is an e-mail message where the recipient is attacked personally. Such messages have no place in business or school communication, nor in informal communication, e.g., personal communication via e-mail or instant messaging. If you have been flamed, it is best to ignore it. If you respond in kind, it is apt to lead to many such messages and is then referred to as a flame war.

- There are times when you may want to show in your online communication that you are shouting (this should be done only in informal communication and not business communication). The convention is that you indicate shouting by TYPING IN UPPERCASE. Use shouting with utmost discretion or avoid it, whenever possible. The fact is that ALL CAPITALS is very hard to read. If you need to emphasize something in an e-mail, use bold text instead.

Using Emoticons, Abbreviations or Acronyms

2.3.3

When you speak to another person, you can use voice tone, inflections, facial expressions and body language to make your meaning clear. This is not available with e-mail. As a result, it is easy for misunderstandings to arise.

Over time, the "emoticon" concept evolved to compensate. *Emoticons* are text symbols that attempt to convey to the recipient what the sender's emotion was. For example, if the sender writes: "You are stupid", it would definitely be an insult. If the sender writes: "You are stupid ;-)", this means the sender was not serious and that it was said with a wink.

The following is a list of the most frequently used emoticons:

Emoticon	Description
;)	Wink (used to convey humor, sarcasm)
: (	Frown, sadness, disappointment, remorse
: /	Wry smile
: *	Kiss
:-)	Smile
:-0	Laughing loud
:-O	Shouting
:-*	Oops (used to imply unintentional mistake)
: @	Screaming, anger, yelling
: X	Won't say a word, lips are sealed
<g>	Grin
<s>	Smile
<vbg>	Very big grin
<tic>	Tongue in cheek

Abbreviations can save time and effort. The disadvantage is that people who are new to the Internet culture may not know the abbreviations and may misinterpret them. The following list gives some of the more commonly used abbreviations.

Abbreviation	Description
ASAP	As soon as possible
BRB	Be right back
BTW	By the way
F2F	Face to face
FAQ	Frequently asked questions
FYI	For your information/interest
IMHO	In my humble opinion
LOL	Laughing out loud
OTOH	On the other hand
PPL	People
TT4N	Ta-ta for now
TTUL	Talk to you later
TIA	Thanks in advance
WRT	With respect to
YIA	You're welcome in advance

As a general rule, emoticons and abbreviations should only be used for informal e-mail or instant messaging, and **not** for business or school e-mail. Also be careful about creating your own emoticons or abbreviations — make sure the people you communicate with understand these as they can be easily misinterpreted.

Using References

)IC³
2.3.5

If other information has a bearing on your e-mail, these should be referenced clearly. For example, you might write a first paragraph:

Further to point 1.2 of the minutes of the Acme Project meeting of September 14th,

When you are replying to an e-mail, the contents of the original e-mail could be referenced. For example, when answering a specific question, you may want to repeat the original question in your e-mail.

You asked, "What is the expected completion date of Phase 2 of the Acme project?" At present, the expected completion date is January 14, 2004. The delivery of your units is on the critical path for Phase 2.

If you include content in your e-mail, its origin must be clear. When e-mail programs include the original e-mail at the bottom of your reply, this is clearly indicated by a character like ">" or a vertical line. See the following example:

Dear Mr Smith

Thank you for your comments on the importance of computer communications.

> With the introduction of the personal computer and word processing,
> there has been tremendous growth in computer communications. This
> has transformed the way we do business and most importantly how we
> now communicate.
We agree. Therefore we have decided to insist on IC3 certification as a requirement for all our staff. We plan to make use of your training facilities.

Peter Piper
Human Resources Department
Acme Engineering

There is a proviso to keep in mind. If you are replying to a long e-mail but only need to comment on one point, there is no need to include the entire original message; that would burden the Internet unnecessarily. Include only the relevant portions of the original, and delete the rest from your reply. There may be times when it may be useful to keep the entire original message but use your judgment.

)IC³
2.3.6

Some e-mail programs copy the entire message when you activate the reply or forward option and put in characters; some do not. Again, use the general rules regarding how much of the original message needs to be included in the new message.

If you can direct the recipient to a particular web site for more information on a product or service, include the web address (URL) within the message. Most e-mail programs will automatically set this web address up as a hyperlink so that when the recipient clicks on this link, the web site will then display on their screen.

Most e-mail programs will also recognize e-mail addresses entered anywhere in the message. As with web site addresses, when the recipient clicks on the e-mail address in the message, a new message is created with that e-mail address in the To field.

Working with Attachments

IC³
2.2.2
2.3.4
2.3.6

Sending attachments with your e-mail gives you the ability to share information with others. However, when you want to include a file, be sure to consider some general guidelines regarding attachments:

- Try to keep the attachment file size as small as possible. The size of a message when received is based on how much text is part of the message and the size of any attachments. Remember that most ISPs limit the size of any message to between 2-5Mb; this will slow down your e-mail program to send the message initially, be stored at the mail server, and then when retrieved by the recipient.

- Consider what the attachment is and whether it should be sent via e-mail to someone. For instance, if you want to send a copy of a legal document to someone, it may be more prudent to send this copy using traditional methods (e.g., courier). The more secure or confidential a document is, you may want to protect that document from being accessed and used by others who may want a copy of that document.

- Will the recipient be able to open and view the attachment? This could be either at the time they receive the message or after they save the attachment to a location on their system. For instance, if you are sending a presentation file for review, does the recipient have PowerPoint installed as well as media capabilities and enough memory to be able to view the entire presentation? If you send a picture that was created and saved in a dedicated graphics design program, does the recipient have the same program at their end? Occasionally you may need to consider the file type and whether the file can be saved in a generic format that can be read on all systems. Also consider that you may need to consider whether the file can be read on the operating system (Windows, Mac OS, Unix, etc.) at the other location.

- If the file is available from a web site or an intranet, consider typing (embedding) the address or URL for this file. The e-mail program will turn this address into a link (in some cases you may need to set this up manually) and when the recipient clicks on this link, the file will automatically open and display on the screen for them. This can be much faster than sending them the entire file, especially if they don't have the software program to open this file.

- Also consider the e-mail program that the recipient may be using to send or receive e-mail. Some programs do not allow for large attachments while others may block any graphics, media items (e.g., sounds, animation, movies, etc.), or embedded links. As such, your message will only display the text and the impact of your message is lost for this recipient. In a situation as such, it may be best to send a message with a link to a separate document that contains the elements that cannot be displayed in specific e-mail programs.

Managing Spam

IC³
2.3.7

Spamming refers to the process of sending any unsolicited e-mail messages to many recipients to promote products and services or for political/religious purposes. Spam mail is often referred to as junk mail. People or companies who send these types of messages are called *spammers*.

Spammers buy the e-mail address list from companies that specialize in e-mail marketing. These lists can be generated by using software programs that harvest or collect any e-mail addresses that appear on personal or business web sites. They may also generate random e-mail addresses for a particular site with the intent that some of these addresses will be real e-mail addresses.

It is natural for companies to want to market their products. Associated companies would also like to "keep you informed". Reputable companies will have a sign-in marketing policy. In other words, they will ask for your e-mail address, and for permission to give it to other companies who sell associated products and services. However, they will only use your information if you sign in, i.e., give your permission. This is becoming the accepted norm for the Internet.

At the same time, most e-mail programs have a filtering feature that allows you to block spam or other junk e-mail. Many ISPs also have this feature set up on their mail servers so that the most common types of spam mail are blocked before they even reach your e-mail inbox. Many people believe it should be the ISP's responsibility to try and block as much spam mail as it can before it reaches any user. The Internet also provides some smaller programs that you can download and install that can help to block other spam types of messages that your e-mail program or ISP filtering program doesn't catch.

In the meantime, some ways you can avoid being placed on a list that could result in you receiving spam messages include:

- Do not let your e-mail address appear on e-mail marketing address lists. When you visit a web site that asks for your e-mail address, be sure to read the company's privacy policy. Only give your e-mail address when the company guarantees your privacy.

- Set up an e-mail account with a web-based e-mail program that you can use for these types of requests. This method separates the e-mail you may actually want and when you check the web-based e-mail program, you can delete all the junk mail messages at once.

- Do not respond to any e-mail that you consider to be junk mail. Even though the company says they will remove your name from their address list, in fact what you are actually doing is confirming that your e-mail address is real. Asking to be removed from a mailing list may actually generate more spam mail than before.

- Avoid putting down your name and e-mail address on any public lists. For example, if you are attending an event and they want your name and e-mail address on their mailing lists, you may not want to do this, especially if you don't know where else the list might also be used.

- Avoid giving your e-mail address on any online forums or newsgroups. These places commonly exchange information. If you have to leave your address in one of these online areas, try to disguise or camouflage the address by changing the structure with extra text, e.g., j_smith at hotmail dot com, j-smith-nospam@hotmail.com, etc.

Understanding Bad Netiquette

IC³

2.3.8

Communicating with others means more than just using e-mail; it also includes using chat rooms, mailing lists, newsgroups, or web pages. Good manners (good netiquette) should apply to all Internet communication, regardless of whether it is business or personal communication.

In her book, *Netiquette* by Virginia Shea, the author lists the following "The Core Rules of Netiquette":

Rule 1: Remember the Human

Rule 2: Adhere to the same standards of behavior online that you follow in real life

Rule 3: Know where you are in cyberspace

Rule 4: Respect other people's time and bandwidth

Rule 5: Make yourself look good online

Rule 6: Share expert knowledge

Rule 7: Help keep flame wars under control

Rule 8: Respect other people's privacy

Rule 9: Don't abuse your power

Rule 10: Be forgiving of other people's mistakes

In general, the rules discussed previously for e-mail should also apply to all forms of communication. Do not fall into the trap of behaving badly online just because there is a certain anonymity on the Internet. Try to treat others in the same manner that you would want to be treated, online or in person.

Identifying Common E-mail Problems

IC³
2.3.2
2.3.8

As with anything on the computer where a large number of requests are being made, there will be some problems that may occur when working with e-mail. Some of these you can troubleshoot and resolve on your own; some may require additional software or maintenance on software.

Messages Not Being Sent or Received

If it appears that no messages are being sent or received, this could be an indication that the mail server at your ISP is not connecting to your system for some reason. Check the cables on your system that connect at the back of the computer as well as to the wall, either for your telephone, cable or wireless connections. Check that the power cords for any modems or wireless devices are plugged in completely, both at the back of the device and for the plug.

If this doesn't solve the problem, start the e-mail program and check the settings for your connection to the ISP for mail. This can usually be found in a command called Options or Preferences in one of the menus in the e-mail program. You may need to call your ISP for assistance on the correct IP addresses to use for your incoming and outgoing mail servers.

If the information in the incoming and outgoing mail server fields has not been changed, call the ISP to ask if there are problems with the mail server. If there isn't a problem with the mail server directly, you will be directed to technical support. When you speak to someone in technical support, they will ask you for your e-mail id and password so they can check your line on their systems. They will then work with you to solve the problem.

Problems with Attachments

Attachments can sometimes present more problems with e-mail than expected. Based on size limitations, even though it may appear that the message with the large attachment was sent from your system, it may be blocked at the mail server due to the size limitation. The recipient may then not get the message and attachment accordingly.

If you cannot send messages with attachments or open those with received messages, this could be a result of the level of security set on your system. Many e-mail programs have a security feature that can help to prevent potentially harmful files from being saved or opened on your system. Check the options in your e-mail program to see if the security level is set too high; be sure to check each message very carefully when you receive it before opening it as well as looking at the attachment file name to ensure you don't inadvertently activate a virus that has been attached to the message.

Inbox Overflow

The use of Internet e-mail has become ubiquitous. Many people suffer from *Inbox overflow* as a result. If you receive hundreds of e-mails every day, you simply don't have time to read them and respond if necessary. There is no time to clean out the Inbox by filing the necessary e-mail and deleting the junk mail. Inbox overflow needs to be addressed at several levels.

With the amount of spam or junk mail being delivered to everyone on a daily basis as well as the potential of infected messages, inboxes can become full very quickly. An indication that an Inbox may be full is if you receive an error message indicating the mailbox is currently unavailable. Try sending the message to the person again after a bit of time to given them a chance to clean out their inbox.

Individuals need to maintain their Inboxes on a regular basis and not allow them to get out of hand. The company or school should provide the individual with training on how to maintain the Inbox and what facilities the e-mail program has for archiving and filtering out junk mail.

Use the **Reply to All** feature with discretion. Do all the people in the e-mail really need to get your reply, or will it just contribute to their Inbox overflow?

Also look at whether you need to set up the **Received** or **Read Receipt** feature with every message. Having this feature activated means a message is sent to you each time a sent message is received and/or opened by the recipient. Do you really need to be notified every time a message you send is received or opened?

Companies can set up generic e-mail addresses, whenever feasible, to direct or manage user feedback or requests, e.g., info@ourcompany.com, sales@ourcompany.com, orders@ourcompany.com, feedback@ourcompany.com, etc. Then more than one individual can be assigned to manage the messages arriving.

Auto responders are useful for reducing the workload of individuals. E-mail servers can be set up to send an automatic reply to messages sent to generic e-mail addresses. In many cases the standardized reply is all the client needs. The auto response text should nevertheless give the client the option of contacting an individual if additional information is required. Be careful about using auto responders with individual e-mail addresses as these will also respond to junk mail you receive, telling them that your e-mail address is active.

Delivery Failures

There are usually two types of delivery failures: either the e-mail address doesn't exist at that domain, or there is a problem with that mail server for that domain. When you receive the delivery failure error message from your mail server, read the contents carefully to determine what the problem may be. The error message will identify whether the problem lies in the e-mail address used (i.e., mailbox not available, e-mail address doesn't exist, etc.) or if there is a problem with the domain mailbox (e.g., mailbox is being serviced, too much traffic at that mail server, domain does not exist, etc.).

Check the e-mail address and domain used to make sure they are spelled correctly. If the contact has changed their e-mail address or if the domain has changed, you will not know this without contacting the person to verify the e-mail address or domain name.

One of the other considerations is that with the number of people going online and messages being sent, it is possible that there will be a delay or conflict when the message is being sent and received at the mail server. This is especially true if a virus has been activated in one message and is now "flooding" mail servers with other infected mail based on the instructions in the virus program. In situations like this, it is very common for mailboxes to become full within minutes of deleting other messages, and as such, your message cannot be delivered due to the full mailbox.

If you are sure the e-mail address is correct and working, try sending the message again after a bit of time to see if it can be delivered. Chances are that if the mailbox is full, the IPS and user will be spending time trying to clean this up so valid e-mails can be delivered.

Garbled Messages

These are messages that appear to be garbled or mixed up when you receive them. Sometimes it may appear as if part of the message is missing. These types of problems stem from the mail format being used for sending or receiving messages. Many e-mail programs give you the flexibility to switch between plain text or HTML format. Using the plain text feature keeps messages small in size but they may not be very exciting to look at or read. Using HTML format displays messages in a similar manner to looking at a web page on the Internet. This format, however, can slow down the delivery of messages as well as how quickly the message displays.

Responding in Haste

Because e-mail is so fast and convenient, there is a tendency to quickly rush off an e-mail and then get on with your work. Such hasty replies frequently suffer from text that is not quite clear, or if you had taken the time to reflect or discuss with colleagues, your reply would have been different.

Most times a hastily composed e-mail is only inconvenient and reflects poorly on you. But in extreme cases, a hasty reply could lose the company business or even lead to litigation. Take the time to read a message completely before instantly replying; this will give you the best opportunity to understand the context of the information and decide what type of reply to make.

Communicating Appropriately

There is oftentimes a certain blurring of the line between professional and informal communication. The Internet is affecting our lives in many ways and it may well be that eventually the norms for professional communication may change. Companies and schools can have different approaches and this can be confusing. For instance, you may develop a friendship with someone working for one of your vendors or at another school. Informal messages between the two of you may seem inappropriate to others in your office or school. Also, sending jokes or quotes to your colleagues or friends may also be considered inappropriate or a form of spam, depending on company or school policies.

Be careful regarding the writing style and tone used in your messages. Always try to use a formal writing style and maintain a professional relationship when dealing with business. Even if the recipient is someone you know very well, refrain from using the acronyms, abbreviations or emoticons if sending a business e-mail. Remember that messages are often used as a paper trail and as such, when seen by others may be considered inappropriate and cast a different light on you and your company or school.

Watching for Potential Viruses in E-mails

One of the biggest dangers with attachments is that many viruses have been designed to spread when attachments sent with e-mail messages are opened. One can debate what it is that makes people design viruses but it is a fact of life when you "live online". There are some precautions you should take to minimize the possibility of getting a virus on your system via e-mail. Remember that the virus scenario is changing constantly and new viruses appear all the time.

A virus attachment has to be a program file and would have a file extension like ".exe" or ".bat". Picture files (".jpg" or ".gif"), text files (".txt") are not executable programs and cannot contain viruses. Word processing documents (".doc") should be virus-free; however, they can contain macro viruses.

The creators of viruses are very astute and can make an attachment look safe, e.g., *teddybear.jpg.vbs* or *budget figures.xls.   .exe*. In the first example, it appears to be a picture file with a different file type added to the end of the file name; it is the second file type that contains the virus. The same is true for the second example where there are spaces after the proper file name. Some e-mail programs do not show the entire attachment name and as such, it appears as if the file is correct and when you try to open the file, the virus in the .exe portion of the attachment now starts and infects your system.

Some precautions you can take include:

- Have an antivirus program installed and make sure you check frequently to ensure you have all the latest updates for this program.
- Use the feature in the antivirus protection program that scans new e-mail as well as your outgoing mail, in case there is a virus on your system that is sitting dormant until something activates it.
- Do not open attachments from people that you do not know.
- Some viruses appear to come from people you know. Do not open attachments even from people you do know where it is not totally clear from the e-mail message what the attachment is, e.g., a message with no content, suspicious subject matter, etc. Instead, call them directly or send an e-mail and ask about the attachment.

- Never install anything that an attachment tells you to do until you have scanned it with your antivirus program to ensure it is safe to install. If you are unsure, always check with a technical support person prior to proceeding with any installations.

There are frequent false virus warnings stating dire consequences and you are asked to forward the warning to all your friends and colleagues. The message may also say that the virus was not detected by any of the major virus protection programs (e.g. McAfee, Norton, Dr Solomon, etc.). This is because they are not actual viruses. These are examples of hoax viruses and are considered just as damaging as a real virus since they cause many people to begin sending messages to all their contacts to warn them of same. By the same virtue as an e-mail virus, mail servers then get clogged with all the traffic from these messages.

Fortunately, most of these hoax warnings are harmless enough. However, some hoax messages will ask you to search for the virus file on your computer and then to delete it, but the deleted file turns out to be an essential file that your computer needs.

If you are not sure of any virus threat, visit the web sites of the suppliers of antivirus software. They have extensive information on viruses and hoaxes.

Summary

In this lesson looked at electronic mail and basic e-mail fundamentals. You should now be familiar with the following:

- What electronic mail is
- Differences between internal & external e-mail
- The structure of an e-mail address
- Recognizing what to enter when creating a new message

- Using different e-mail options
- Understanding what attachments are
- How to use e-mail appropriately
- Advantages and disadvantages of using e-mail

Review Questions

1. List some benefits of using electronic mail (e-mail).

2. What's the difference between internal mail and Internet mail?

3. Explain what the following e-mail address means: j_smith@specialevents.org

4. Identify in the following image where the addressing field(s) may be:
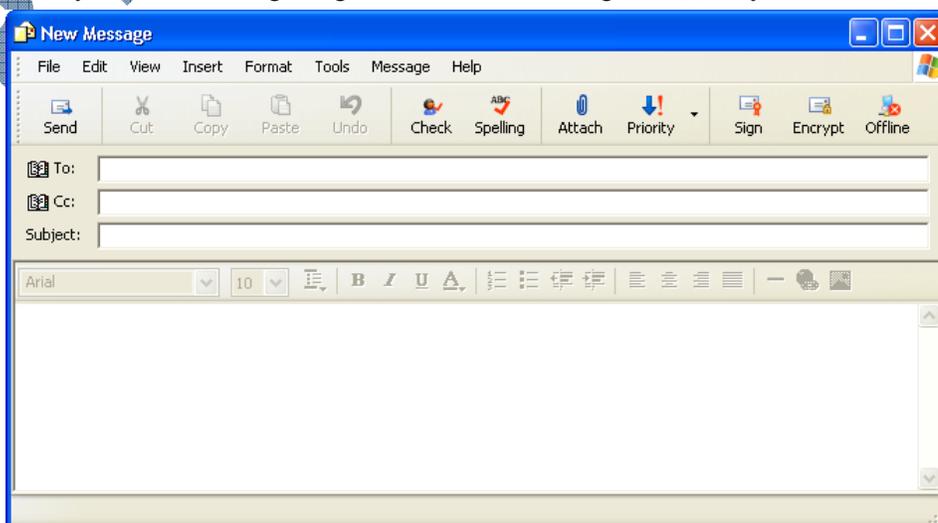
5. What's the difference between using Reply and Reply All?

   a. Reply sends a response back to the sender and Reply All sends a response to everyone who received the message

   b. Reply sends a response to everyone listed in the messages whereas Reply All sends a response to everyone in your contact list

   c. Reply sends a response back to the sender and Reply All sends a copy of everything included with the message back to the sender

   d. Nothing

6. When sending a business e-mail, what should you consider when writing the message?

   a. Writing style should be formal

   b. Subject text should clearly identify the topic for the message

   c. Keep the message brief and concise

   d. Avoid any personal, overly emotional, or using uppercase letters to represent shouting tones

   e. All of the above

7. What is spam?

8. How can you prevent an Inbox Overflow error message?

   a. Delete any junk or spam or older messages as soon as possible

   b. Use Reply or Reply to All with discretion

   c. Limit the number of read receipts you may want

   d. Use generic e-mail addresses when a lot of feedback or requests may be expected from other users

   e. Be careful about using auto responders

   f. All of the above

9. What are some precautions you can take to prevent being infected with a virus?

   a. Make sure the antivirus program is current

   b. Run regular scans on your system

   c. Do not open attachments from people you don't know

   d. Never install an attachment unless you know it is safe to do

   e. All of the above

   f. Only a, b, or c

10. What's the difference between a virus and a hoax?

Lesson 4: Using Microsoft Outlook Express

Objectives

In this lesson you will work with Outlook Express to send and receive messages, as well as enter contacts. On successful completion, you will be familiar with the following:

- What Outlook Express is
- Recognize elements on the screen
- How to send and receive messages
- How to reply or forward a message
- How to send an attachment with a message

- Work with attachments
- Sort and manage your messages
- Search for messages
- Work with the address book
- Understand mail maintenance options

> The following exercises are designed for Outlook Express and assume you are connected to an internal or external mail server. Please check with your instructor to determine the e-mail address you will be using in the class to perform the exercises. If you are using another e-mail program other than Outlook Express, please note that the concepts remain the same although the commands will vary in name, location where the command can be found, or how they can be activated.

What is Outlook Express?

Outlook Express is a program primarily used for e-mail and to set up contacts. As it is included with Windows, you need only to set up how e-mail will be handled on your system with an Internet Service Provider (ISP) or the network administrator. One of the advantages of using Outlook Express is that it also allows you to subscribe or sign up to newsgroups and forums, as well as take advantage of instant messaging using the Microsoft Windows Messaging program. The Windows Messaging program is similar to MSN Messenger and must be set up for access on your network. Outlook Express is sometimes referred to as OE.

As Outlook Express is available on all Windows-based computers, the program has been designed to be used by multiple users on this computer such as a family. Different e-mail accounts can be set up so that each family member can retrieve or send their own messages instead of using a global family account.

Outlook Express shares some of the features available in Microsoft Outlook but these are not the same programs. Microsoft Outlook is part of the Microsoft Office suite of programs and allows more flexibility and features as a result. Outlook Express was designed to allow you to quickly set up and communicate with others without needing a further program. Microsoft Outlook is generally used in an office environment where Word and Excel are also required.

To start Outlook Express, use one of the following methods:

- Click **Start**, **All Programs**, **Outlook Express**.
- Double-click on the **Outlook Express** icon on your desktop.
- Click on the ⬛ icon from the Quick Launch bar on the taskbar.

Once Outlook Express is started, the following screen appears. It is important to become familiar with these screen components for easy navigation and use.
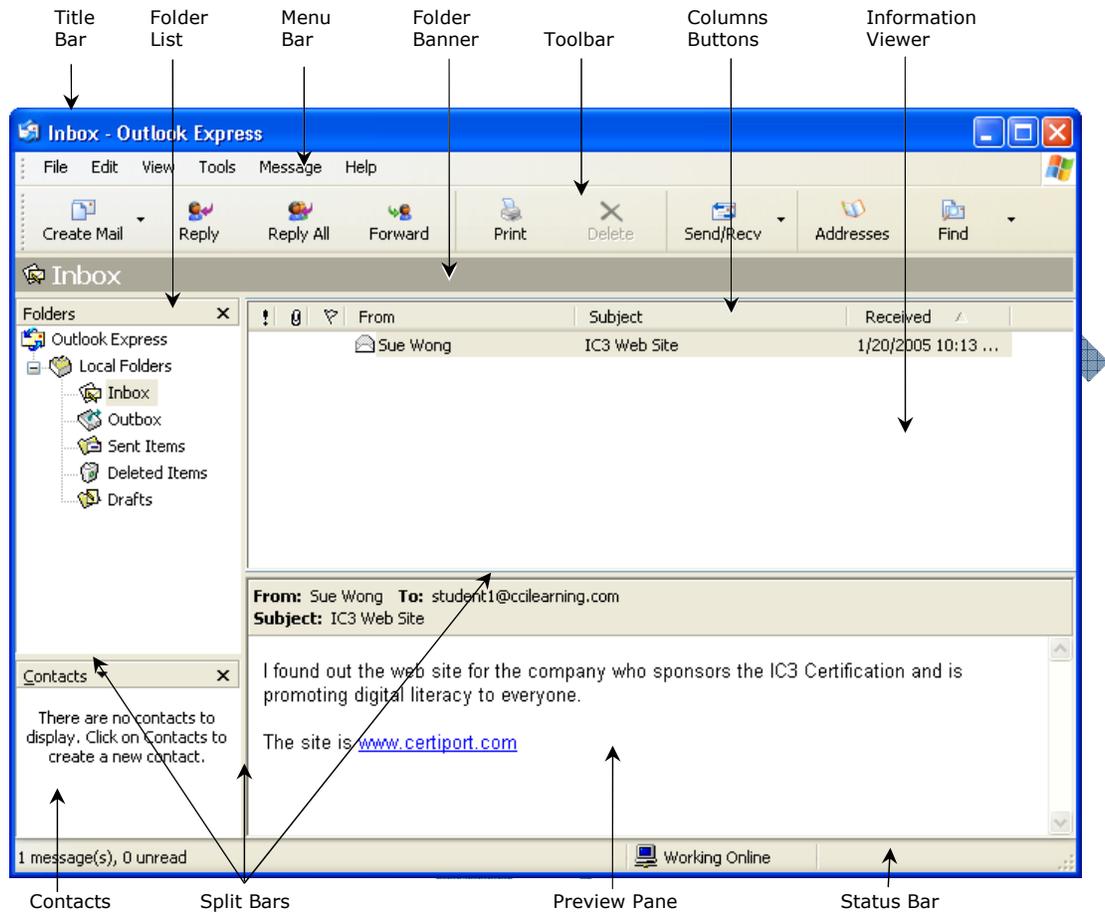
Title Bar	Located at the top of the screen, the title bar indicates the contents of the window (e.g., Inbox - Outlook Express).
Menu Bar	Found below the title bar, this bar contains the names of menu items (**File**, **Edit**, **View**, etc.). Each of the displayed menu items contains a different set of commands.
Toolbar	When activated, the toolbar is located below the menu bar. It gives you quick access to frequently used commands.
Folder Banner	Located above the Information Viewer, this bar displays the current components or folder activated in Outlook Express.
Folder List	Displays a list of folders.
Contacts	Displays your contact list.
Split Bar	When you place the mouse over the bar, the pointer becomes a double-headed ($\updownarrow$ or $\leftrightarrow$) arrow. Drag this bar to adjust the size of the Outlook Bar, Folder List, Contact List, or Preview Pane.
Column Buttons	These buttons organize information displayed in the information viewer.
Information Viewer	The main area below the column buttons and displays information for the selected component or folder.
Preview Pane	Displays the content of the selected item.
Status Bar	Located at the bottom of the window, the status bar provides information on the number of items stored in the folder.

Using the Folder List

The list of folders at the left side of the Outlook Express window is designed to help you organize your messages, as required.

Inbox   All new or opened messages are displayed in this folder.

Outbox   All messages to be sent are displayed in this folder.

Sent Items   Copies of the messages you sent are displayed in this folder.

Deleted Items Messages that have been deleted from any of the other folders or contacts from the address book are displayed in this folder.

Drafts   Unfinished messages or messages you don't want to send yet are displayed in this folder.
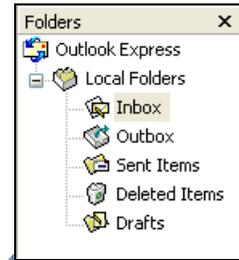
These are the default folders that Outlook Express provides for managing your messages or other items in Outlook Express. You can also create new folders to help organize or manage the amount of messages you receive or send.

To create a new folder, click on the folder where the new folder will be placed and then use one of the following methods:

- Select **File**, **Folder** and then **New**.

- Press Ctrl+Shift+E.

- Right-click on the selected folder and then click on **New Folder**.
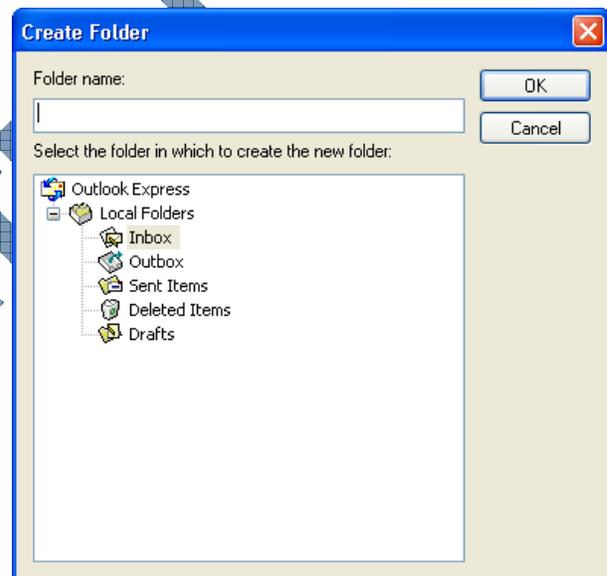
When you no longer want a folder, you can delete it to the Deleted Items folder. To delete a folder, select the folder and then use one of the following methods:

- Select **File**, **Folder** and then **Delete**.

- Click on the ✕ Delete button from the toolbar.

- Press the Delete key

📖 Exercise

1   Click on **Start, All Programs, Outlook Express**.

2   Click on the Inbox folder in the Folders List pane.

3   Select **File, Folder, New**.

4   Ensure that Inbox is selected in the list and then type your name in the **Folder name** field.

5   Click on **OK**.

The folder list should then appear similar to:

```
Folders                    ×
📠 Outlook Express
  📁 Local Folders
     📥 Inbox
        📁 Student
     📤 Outbox
     📁 Sent Items
     🗑 Deleted Items
     📁 Drafts
```
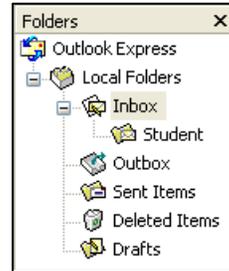
> We have used Student for the name of the folder in this exercise. Whenever you see this folder shown in a screen or mentioned in an exercise, change this to your name as per the instruction in step 4.

Sending Messages

IC³
2.2.1
2.2.2

The process to send a message is similar to the manual process for sending a letter. The main difference is that e-mail is done electronically from your computer. You need to be set up with an e-mail account before you can send or receive e-mail. The mail service you select will also depend on how quickly or often you may send or receive messages. Sending a message to someone takes the following steps:

1. Create a new mail message.

2. Address the message to the person(s) who will receive it.

   This should be the full e-mail address for the contact(s). If the contact exists in your address book, use the 📖 To: and 📖 Cc: buttons to open the address book and select the name(s).

3. Type the text for the message, applying any formatting changes as required (e.g., bold text, indented paragraphs, etc.). If you need to e-mail someone a file, you can attach it to the mail message.

4. Spell check and proof read your message to catch any spelling or grammatical errors.

5. Send the message.

Once the message is sent, it goes to the *Outbox* where it is temporarily stored until retrieved by the mail server for delivery to the intended recipients. This can be handy if you want to work offline (not connected to the Internet) and store all outgoing messages in the Outbox until you are ready to actively send the messages.

IC³
2.2.6

Rich Text (HTML) format is the default format for new mail messages. This generally allows you to see any other items included in the message other than regular text. To change the default option, select **Format** and then **Plain Text**, if required. When using plain text, you cannot apply any formatting; however, the recipient will be able to successfully open and read the message text, especially if they are using an older e-mail program. Unfortunately not all e-mail programs provide the same options for the message format and some programs only recognize the plain text format.

As such, be careful when choosing the mail format for your messages as your recipients may not be able to see the same features and will only see plain text. This is true regardless of which computer environment you are using, e.g., PC, Mac, Unix, etc.

To create a new message, use one of the following methods:

▪ Select **File**, **New** and then **Mail Message**.

▪ Click on the 📧 Create Mail button on the Standard toolbar.

▪ Press Ctrl + N .

▪ Select **Message** and then **New Message**.

Recipient(s) of
New Message

New Message
Toolbar

Message
Pane

Formatting
Toolbar
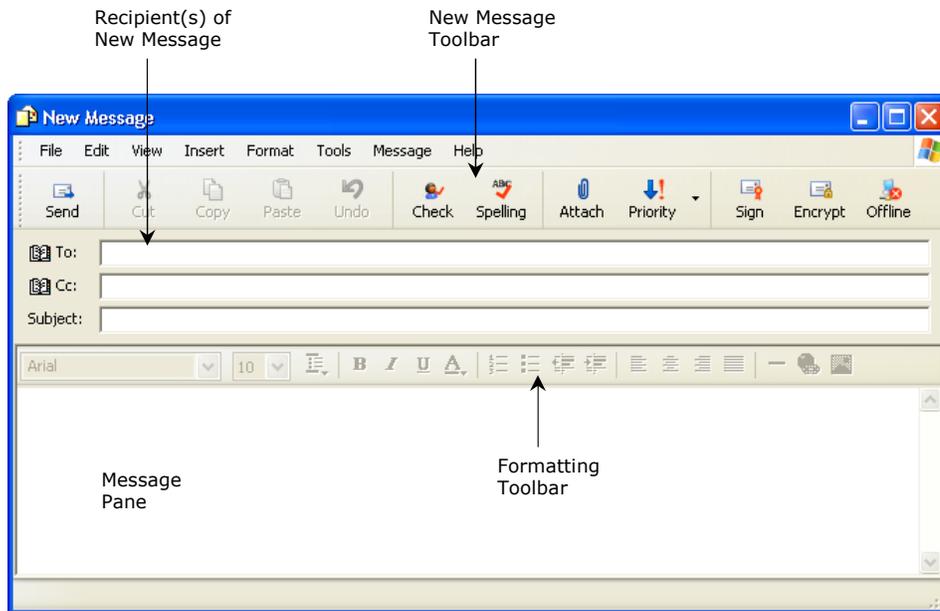
You can also click on the down arrow of the [Create Mail] button or select **Message, New Message Using** to add a background to the message text area. This can create a different effect in your message; be careful about the color or style you use and how the text for your message appears with the background. For example, notice how the background in the screen below has more color at the top than the rest of the background. If you start your text at the top, how easy can it be read?
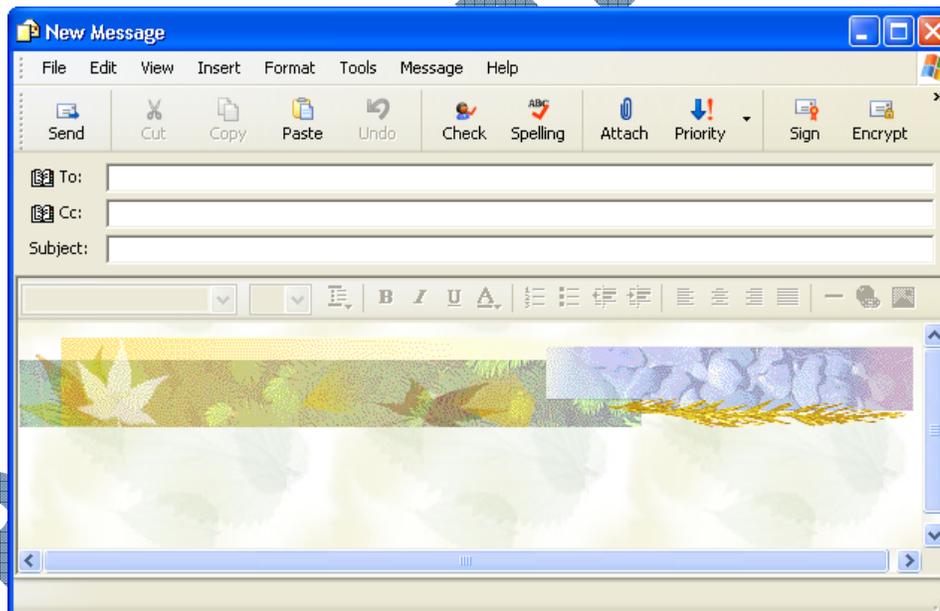
If you have other stationery available on your system or downloaded from Microsoft's web site, you can select one of these as an alternative.

Once the new message window appears on your screen, you will need to know the e-mail address for the people who you want to receive this message. In some cases you will know the e-mail address and want to type the address in directly. In other situations, you may want to choose a name for the list of contacts stored on your system.

To access the list of contacts from the new message window, click on the 📖 To: or 📖 Cc: buttons.
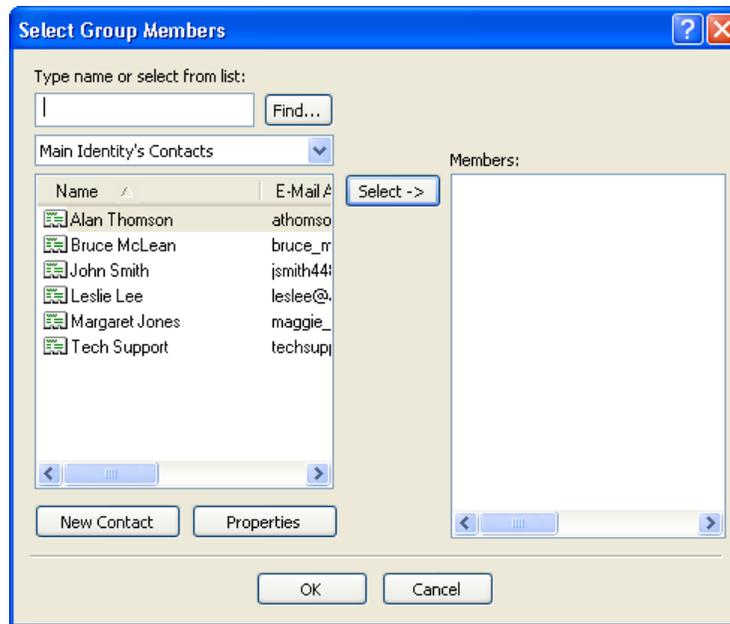
Use one of the following methods to select the contacts to receive the message and then click on the appropriate address button:

- To include everyone in a range of names, click on the first name in the list, press and hold the (Shift) key as you click on the last name in the list. Everyone from the first to the last name should now be selected.

- To select individual names anywhere in the list of contacts, click on the first person you want to receive the message, then press and hold the (Ctrl) key as you click on each contact to receive this message.

You need to select the names for each address field to be included with the message. For instance, once you select the contacts who are to receive this message, click on the **To** button. You will then need to select the contacts that will receive a copy of this message and then click the **Cc** button. If you want to select names to receive a blind carbon copy (Bcc) of the message, either select the names from this window, or select **View, All Headers**.

Remember to keep the text for the Subject field brief as you want the recipient to know what the content of the message is and to eventually read the entire message.

Formatting the Message Text

The Formatting toolbar is located above the message pane where you can enter the text for your message. This area works very similar to entering text into a word processing document. Formatting features can be applied either as you type or after the text is entered. If you choose to add the formatting after the text is typed, be sure to select the text first.

Applying formatting features gives the message a more professional appearance and can be used to emphasize different areas where you want to draw the recipient's attention. However, be careful about what and how many features you add as the message text can become very distracting quickly. As well, if the recipient is using the Plain Text mail format instead of Rich Text, they will not see any of the formatting features you applied to the text in the message.

Please refer to the Appendix at the back of this courseware for further details on the buttons in any of the Outlook Express toolbars.

Proofing Your Message

Outlook Express has a spelling feature that will check for misspelled words or those words which are not commonly found in a dictionary, e.g., names, computer terms, medical terms, abbreviations, etc. Outlook Express does not have a grammar check feature though, so the onus falls on the user to ensure that any messages you send out are clear, concise, and are the correct word. For instance, the spelling feature will check to make sure the word is spelled correctly but will not check the context of the sentence to ensure you have used "there" instead of "their", or the contraction "it's" to represent "it is", versus the possessive form for "its".

You should always try to maintain a professional manner in your messages, even if they are to people you know very well. This will project you in a positive light as well as your company or the product and service you provide to others.

To activate the spelling feature, use one of the following methods:

- Select **Tools** and then **Spelling**.
- Click on the ![Spelling] button in the New Message toolbar.
- Press F7.
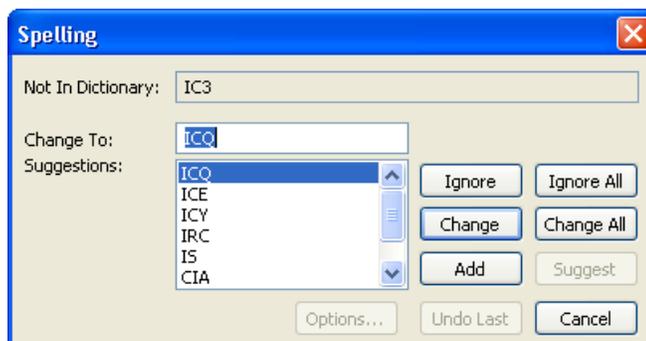
Not In Dictionary	The selected word in the message that Outlook Express does not recognize in the selected dictionary.
Change To	A suggested change based on the list of words in the **Suggestions** field. If you want to use another word from the list, click on the required word in the list.
Suggestions	A list of words that Outlook Express considers could be the correct spelling for the text shown in the **Not In Dictionary** field.
Ignore	Ignore this occurrence of the selected word. Use this when you want to keep this occurrence as is, and have Outlook Express find other occurrences where you might want to change the word or spelling.
Ignore All	Ignore all occurrences of the selected word. This could be used for company names, people names, etc.
Change	Change this occurrence only to whatever is selected in the **Change To** field.
Change All	Change all occurrences of this word to whatever is selected in the **Change To** field.
Add	Add this word to the current dictionary. Use this for words that may be specific to your business, industry, or needs so that Outlook will not mark it each time it finds it in any message.
Suggest	Suggest or show more spelling choices for the word in the **Change To** field.
Options	Similar to using the **Spelling** tab in the **Tools**, **Options** command, set up how the spelling feature should work.
Undo Last	Undo or reverse the last change made during the spell check.

📖 Exercise

1   Click on the [Create Mail] button on the toolbar.

    A new message window will be displayed on your screen.

2   Type in the e-mail address, provided by your instructor, for each of the other students in the class in the **To** field.

3   In the **Cc** field, type in the e-mail address for your instructor.

4   Type: IC3 Web Site in the **Subject** field.

5   Type the following text for your message (type the web site address without adding any underline as Outlook Express will automatically change it to a link the moment you enter the period):

> I found out the web site for the company who sponsors IC3 Certification and is promoting digital literacy to everyone.
>
> The site is www.certiport.com.

6   Click on the [Spelling] button to check for any spelling errors in your message.

7   Make corrections to any spelling errors that may exist in your message.

8   Click on the [Send] button.

📚 Practice Exercise

1   Press Ctrl + N.

2   Address the new message to everyone in the class.

3   Type: June 15 Meeting for the Subject text.

4   Click in the message area and type the following text:

> The agenda will be distributed shortly for the meeting on June 15th. We are still waiting to hear from a couple of the invited speakers before we can confirm the schedule for the meeting.
>
> We hope to be able to have the speakers give their presentations during the morning portion of the meeting, with workshop activities in the afternoon.
>
> We will notify you all as soon as possible.

5   Click on the [Spelling] button and correct any spelling errors in your message.

6   Click on the [Send] button.

Setting the Priority

On occasion you may need to send a message with high priority in order to ensure that the recipient notices the urgency of this message. With external e-mail there is no control as to how the priority messages are delivered if the general setup is no priority preference. However, an icon (❗ for high priority and ↓ for low priority) will appear with the message to indicate a setting has been made so it may help the recipient identify this.

▪   Select **Message**, **Set Priority**, **High**.

▪   Click the down arrow of the [Priority] button and then click on the appropriate priority level required.

📖 **Exercise**

1   Click on the ⬚ Create Mail button on the toolbar.

2   Address this message to everyone in the class.

3   Type: Answer Required Immediately! in the **Subject** field.

4   Type and format the following text for your message:

> We have been working with Outlook Express for a while now. Is there a chance we will get a short break soon to discuss and absorb the information?

> <Your Name>

5   Click the ⬚ Priority button and select **High Priority** for this message.

6   Press (F7) to check the spelling of your message.

7   Click on the ⬚ Send button.

8   Check to see if you have any new messages.

Notice how the new message arrives with the ❗ symbol next to it.

Receiving Messages

IC³
2.2.1

Received messages will be displayed in the Information Viewer and an *envelope* icon (✉) will be displayed next to any new unopened mail messages, as well as in the status bar. Outlook Express provides you with the option of opening messages in a separate window or using the preview pane to view the contents.

When you want to check if you have received any messages, use one of the following methods:

▪   Select **Tools**, **Send and Receive** and then **Send and Receive All**.

▪   Click on the ⬚ Send/Recv button from the main Outlook Express screen.

▪   Press (Ctrl)+(M) or (F5).

With the Send and Receive command, you can choose to only send all messages waiting in the Outbox folder, receive all the messages from the ISP mail server to your Inbox folder, or send and receive all messages at the same time.

When Outlook has finished sending and receiving all messages, the new messages appear in the Information Viewer area of the Outlook Express window. The Inbox folder also displays a number in brackets that indicates the total number of new messages just received.
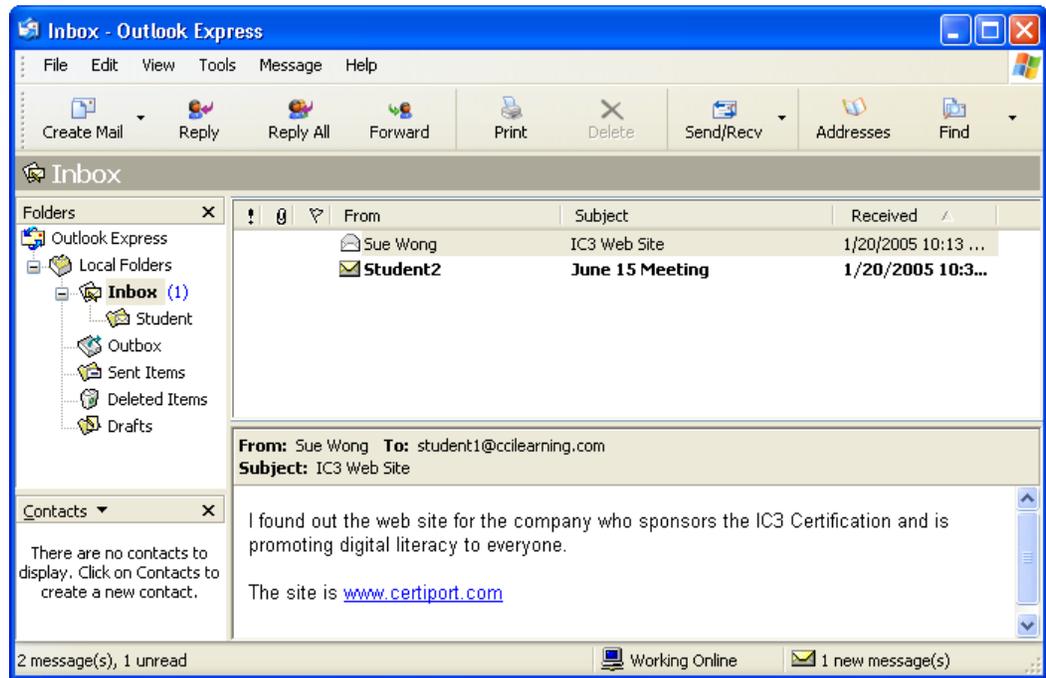
Notice that Outlook Express also shows you the contents of the first message in the list in the Preview Pane. If this was a new message just opened, the envelope icon changes from closed to open (📨). As you click on each message (or press the ⬇ key), each message will appear in the Preview Pane. This gives you the opportunity to see part of the message and decide whether to read the entire message or move onto another message. Use the split bar between the Information Viewer and the Preview Pane to show more of less of each.

You can also open a message to view the contents by double-clicking on it instead of using the Preview Pane. Opening a message can be advantageous if you want to see any notes that Outlook Express may provide with a message (e.g., whether the attachment was blocked, etc.).

Replying to a Message

Once you have read a message, you can choose to reply to the message, either to the person who sent it to you originally or to everyone who was addressed in the original message.

To reply to a message, use one of the following methods:

- Select **Message** and then **Reply to Sender**.
- Click on the [Reply] button.
- Press Ctrl + R.

To reply to everyone addressed in the original message, use one of the following methods:

- Select **Message** and then **Reply to All**.
- Click on the [Reply All] button.
- Press Ctrl + Shift + R.

After replying to a message, Outlook Express displays the 📧 icon next to the message in the Inbox to reflect that you replied to this message. The icon is the same regardless of whether you replied to the original sender or to everyone addressed in the message. Notice that the arrow in the icon points in the same direction as the command.

📖 **Exercise**

1   Click on the *IC3 Web Site* message to display it in the Preview Pane.

2   After reading the message, click the 🖳 Reply All button.
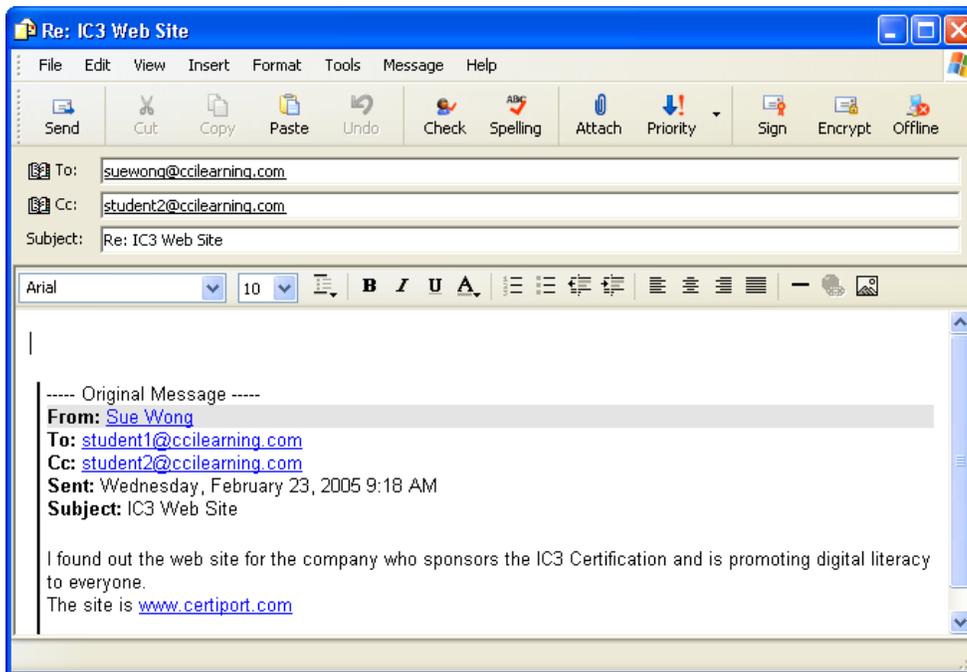
The reply will be addressed to the original sender and the original message will be displayed in the text area.

3   In the message area, type: Thank you for the information - I was given that information earlier this morning but having this link is helpful.

4   Click on the 🖳 Send button.

📖 **Practice Exercise**

1   Click on the *June 15 Meeting* message.

This message should now appear in the Preview Pane.

2   After reading the message, click the 🖳 Reply button.

3   In the message area, type: Thank you for the update. I look forward to receiving the agenda at your earliest convenience.

4   Click on the 🖳 Send button.

Forwarding a Message

IC³
2.2.1

Use the Forward option when you receive a message and it can be handled by someone else, or if you want to send a copy of this message to someone else who wasn't addressed in the original message.

To forward a message, use one of the following methods:

▪   Select **Message** and then **Forward**.

▪   Click on the 🖳 Forward button.

▪   Press Ctrl + F .

The message can also be forwarded as an attachment, requiring the recipient to double-click on the attachment file indicator in your message before they can see the contents of the message. This takes a bit longer on the recipient's part but does also provide a means of preventing others from seeing part of the contents when the message is received. It can also be handy if the recipient wants the option of being able to open the attachment at a later date.

After forwarding a message, Outlook Express displays the 📨 icon next to the message in the Inbox to reflect that you forwarded this message to someone else. Notice that the arrow in the icon points in the same direction as the command.

📖 Exercise

1   Click on the *IC3 Web Site* message to select it.

2   Click on the ⬜ button.

Notice how the response has no name in the **To** field and the original message is displayed in the text area. The **Subject** field now also shows the *FW:* text as a reminder that you are forwarding this message to someone else.

3   Address this to your instructor.

4   Type the following in the message area:

I will be checking out this web site to find out other information about this new digital literacy standard.

Let's set up a time to meet regarding this new standard next week.

5   Send the message.

Attaching Files

IC³
2.2.2
2.2.3

Occasionally you may want to send a file to an e-mail recipient for their reference or to supplement the information provided in the message. Most people will appreciate receiving a file they can read at their convenience rather than having to read a very long message.

The file can be any type of file available on your system; the only restriction is whether the recipient has the appropriate software to open the file. Be careful about the size of the file(s) and whether the total size of the message with the attachments can be sent or received at either location.

Before you can send or receive attachments, you will need to check the security level set for Outlook Express. As there are so many viruses that can be activated with an attachment, Microsoft has applied a number of security patches (and continues to do so on an ongoing basis) to try and prevent the possibility of a virus becoming active or someone, commonly known as hackers, trying to "break into" your system. If the security level is set too high, you will not be able to send or receive any attachments with messages. If the security is set too low, you will then become very vulnerable to viruses or hackers.

To check the security level set for your system, select **Tools, Options**, then click on the **Security** tab.

Before making any changes here, always check with the network administrator in your office or school (or instructor) to ensure this feature can be changed. If you are using Outlook Express on your own system, before making any changes, ensure you have an antivirus program installed and it is current and active to protect you against incoming mail that may be infected. Also set up your antivirus program to scan your outgoing mail so that it can also detect if any of your attachments or messages are infected.

Be sure to run a scan of your entire system on a weekly basis to ensure none of your files are infected; not all viruses come with e-mail! Some viruses can live in a variety of files in a dormant state until something triggers the virus and it begins to infect different areas of your system.

To attach a file with a message, use one of the following methods:

- Select **Insert** and then **File Attachment**.
- Click on the Attach button on the New Message toolbar.

You can then choose the location of the file to be attached and select it. You can attach one file at a time, or select multiple files at the same time.
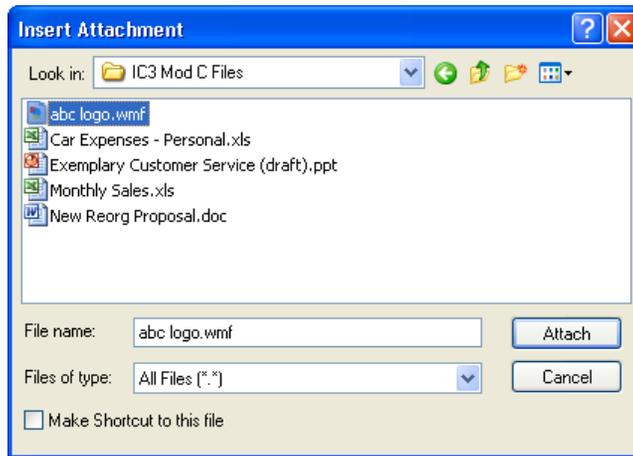
If you decide the attachment does not need to be sent, use one of the following methods to remove the attachment from the message:

- Select the file name in the **Attach** field and then press (Delete).
- Right-click on the file name in the **Attach** field and then click on **Remove**.

Opening Attachments

When you receive a message with an attachment, Outlook Express will display a 🔗 next to the new message in the Inbox. The Preview Pane will also display a 🖊 button at the far right of the message header row as a reminder that there is an attachment with this file.
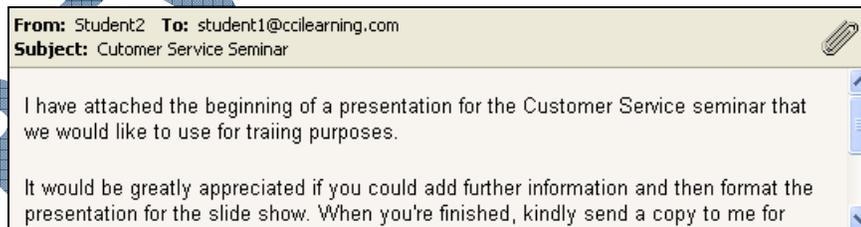
If the security on your system is set for high, you will not be able to access the attachment when you click on this button.

You will need to change the security before the **Attachment** button will display the attachment as available.

You can also choose to save the attachment by clicking on the **Save Attachments** command in the Attachments menu. This then allows you to view the attachment as a separate file later when required. Use the **Save To** field to determine the location where the attachment will be saved.
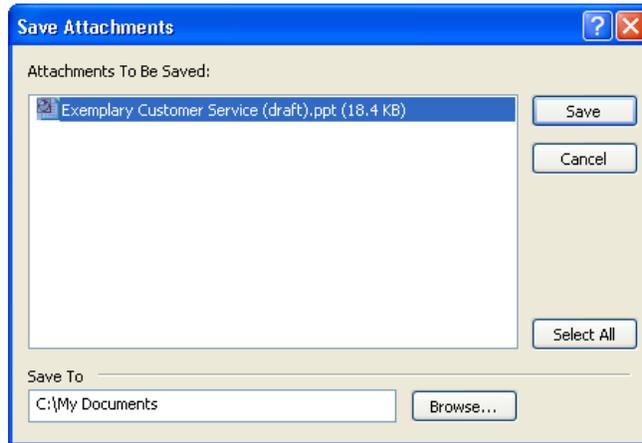
Alternatively, you can also open the message by double-clicking on it and choose to open or save the attachment from this view.
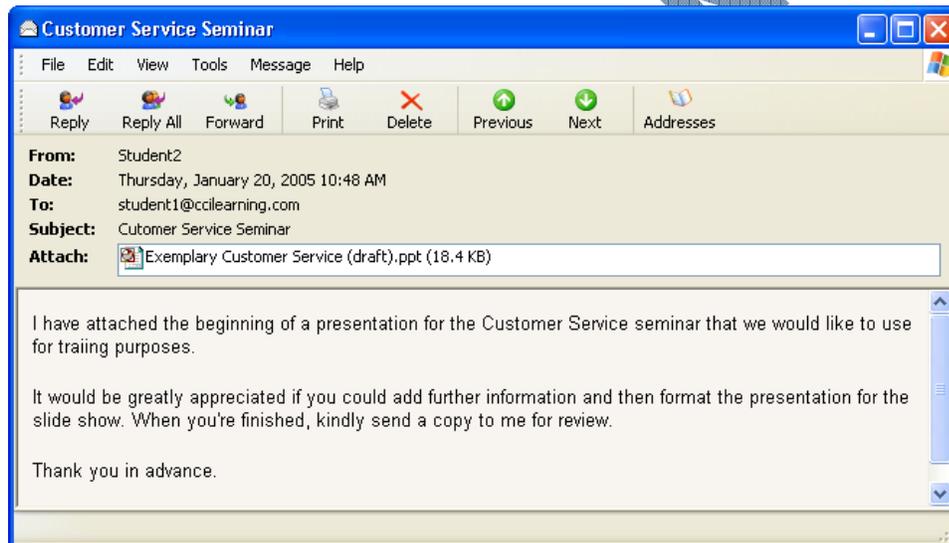
Notice how the attachment is displayed in a separate field with the name and size of the file displayed. Double-click on the attachment file to choose whether to open or save the attachment.

If you have the Service Pack 1 for Windows XP installed, you will see a window similar to the one at the right. You can choose to open the attachment now or cancel the request. In order to save the attachment with the message open, you need to right-click on the attachment file and then click on **Save As** in the shortcut menu.
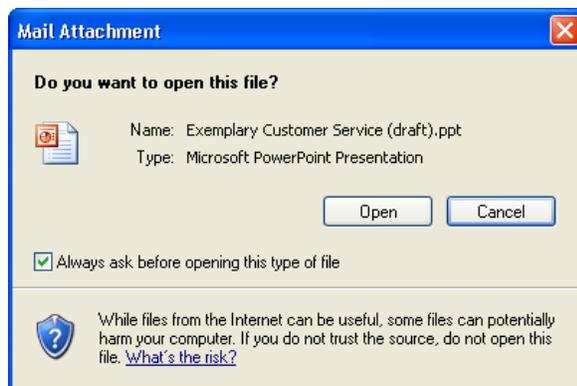
Opening the attachment now will display a preview of the attachment which can be a time saver if you want to see the information immediately. The file is opened temporarily for the preview; if you choose to save it within the application program at this point, the file would be saved in a temporary folder on your system unless otherwise specified.

If you choose to save the attachment (i.e., to scan the attachment for viruses and then open the file later), Outlook will prompt you for a location to store this attachment.
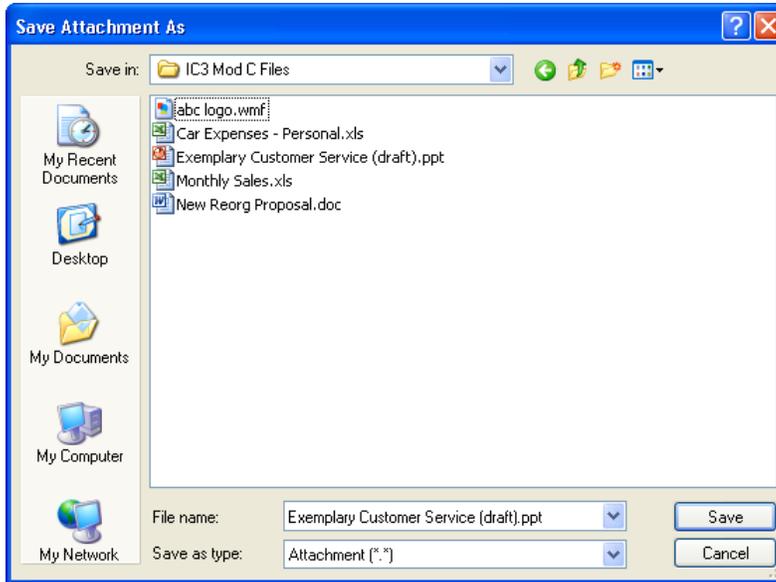
An attachment that has been saved to a specified location can be manipulated (edited) or deleted at a later date, as required, using the tools available in Windows or an application program.

📖 Exercise

> Check with your instructor prior to performing steps 1 to 3 in the following exercise to ensure that the antivirus program is active on the computer you are using.

1 Select **Tools, Options** and then click on the **Security** tab.
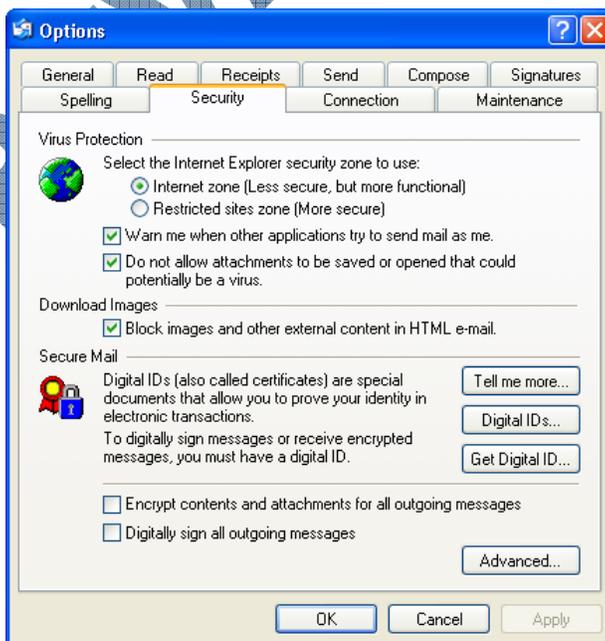
2   Click on the **Do not allow attachments to be saved or opened that can potentially be a virus** option to turn it off.

3   Click **OK** to leave the Options dialog box.

4   Click on the [Create Mail] button to create a new message.

5   Address the message to everyone in the class.

6   In the **Subject** field, type: Customer Service Seminar

7   Type the following text in the message area:

> I have attached the beginning of a presentation for the Customer Service seminar that we would like to use for training purposes.
>
> It would be greatly appreciated if you could add further information and then format the presentation for the slide show. When you're finished, kindly send a copy to me for final review.
>
> Thank you in advance.

8   Select the words, *Customer Service*, in the first paragraph and click on the [**B**] button. Then click on the [**A**] button and choose a color of your choice.

9   Click on the [Attach] button on the New Message toolbar.

10   Move to the location where the data files for this courseware are stored.

11   Click on the Exemplary Customer Service (draft) file and then click on the **Attach** button.
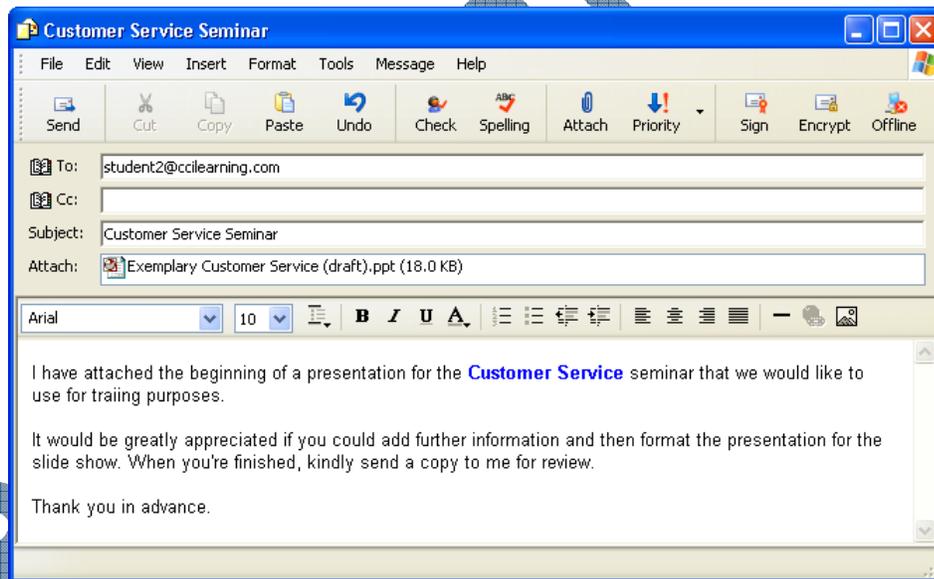
12   Send the message.

You will now look at the new message sent to you by others in the class.

13   Click on the [Send/Recv] button at the main Outlook screen.

When the new message appears, notice the new message shows both [📎] and [✉] icons as confirmation of the new message and an attachment with the new message.

14   Click on the new message to view the contents in the Preview Pane.

15   Click on the [📎] button and then click on the *Exemplary Customer Service (draft)* attachment.

The PowerPoint show should run within a few seconds.

16   Click to move from one slide to the next. Then press (Esc) to exit the show.

17 Click on the 📎 button and then click on the **Save Attachments** command.

18 Use the **Browse** button to move to where the folder with your name is located. Then click on the **Save** button.

📚 Practice Exercise

1 Press `Ctrl`+`N` to create a new message.

2 Address this message to the person on your right in the class.

3 Type: For Your Review in the **Subject** field.

4 In the message area, type the following text:

> I am sending you the draft of the revised logo received from the Art department yesterday. Please review and let me know what you think of this design.
>
> I am also sending the two files you requested previously: the Reorg Proposal form and the Car Expenses report for review.
>
> If you can send me a summary of your comments on the design by the end of the week, this will give me a chance to review all the managers' comments on the new logo.
>
> Thank you.

5 Select the *Reorg Proposal* text and then click on the *I* button. Apply italics for the *Car Expenses* text. Select the *by the end of the week* text, click on the A button and apply a color of your choice.

6 Click on the 📎 button on the New Message toolbar.

7 Move to the location where the data files for this courseware are stored.

8 Click on the abc logo file, press `Ctrl` and then click on the Car Expenses - Personal, Monthly Sales, and the New Reorg Proposal files. Then click on the **Attach** button.

Assume at this point you realize you attached a file by mistake.

9 Right-click on the Monthly Sales file in the **Attach** field and then click on **Remove**.

10 Send the message.

11 Click on the Send/Recv button at the main Outlook screen.

12 Click on the new message to select it, and then in the Preview Pane, scroll down to read the message and view the attachment.

Notice how only the picture is available for a quick view. You will still need to open or save the other two files in order to view them.

13 Double-click on the message in the Inbox.

14 Double-click on the New Reorg Proposal file in the **Attach** field.

15 Click on **Open**.

Microsoft Word should now open and display the contents of this file.

16 Close Microsoft Word.

17 Right-click on the Car Expenses - Personal file in the **Attach** field and then click on **Save As**.

18 Move to the location where the folder with your name is located and then save it here.

19 Close the message window.

Managing Messages

As you begin to receive more and more messages, you will need to decide how to keep them organized. Whenever possible, delete messages you don't need; however, you may wish to keep some messages.

There are a variety of options available to help manage your messages from moving them into specific folders, deleting them from folders or the Deleted Items folder, or looking at different ways to view the messages or folder items.

Selecting Items

Before you can do anything with any items in a folder, you need to select them first prior to activating an action, e.g., delete, copy, move, view, etc. Consider the following:

- To select one message, click on that message.
- To select multiple consecutive messages (listed one after the other), click on the first message to begin the selection list, press (Shift) and then click on the last message in the list. All messages between the first and last message are selected.
- To select multiple non-consecutive messages (anywhere in the list), click on one message, then press and hold (Ctrl) as you click on each of the subsequent messages to be selected.
- You can manage your messages with the existing folders provided in Outlook Express, or create new folders and move or copy messages into the appropriate folders.

Changing the View for Messages

The view you currently have with e-mail is the default option available with Outlook Express. You can also adjust the view by using the **Current View** command in the **View** menu. These views also are another way to organize the messages by keeping the Information Viewer "clean" to show only those messages you want to be listed.
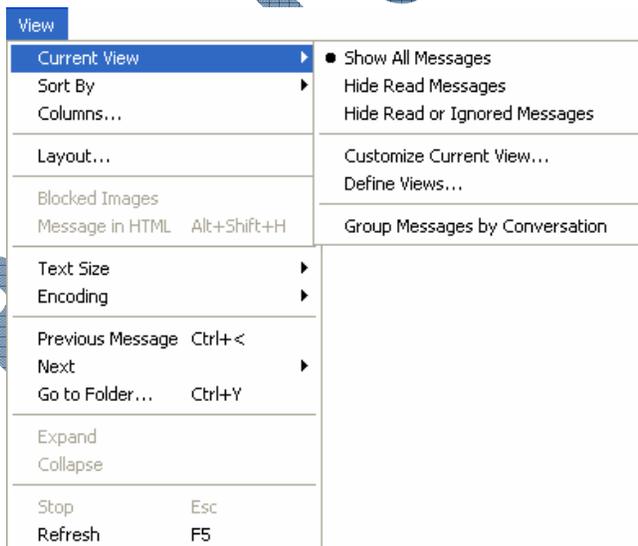
Show All Messages	Show all messages, regardless of whether they are new or previously read.
Hide Read Messages	Show only the new or unread messages.
Hide Read or Ignored Messages	Show only the new messages received since the last time you activated Send and Receive. You can apply a command that will ignore any messages related to a particular topic.

Customize Current View	Set up how Outlook can track your messages based on the type of message it is, e.g., flagged, watched, ignored, secure, or all.
Define Views	Set up how each folder will display the items for that folder. This method is faster than customizing the view.
Group Messages by Conversation	Organize or group messages based on the topic or conversation. For instance, any replies or further e-mails you send on a specific topic are grouped under the original message. You can then choose to view only the original message or expand that message to show all related messages for that message.

Sorting Messages

IC³
2.2.1

You can choose to sort your messages based on any of the column headings in the Inbox. To change the sort criteria for your messages, select **View** and then **Sort By**.
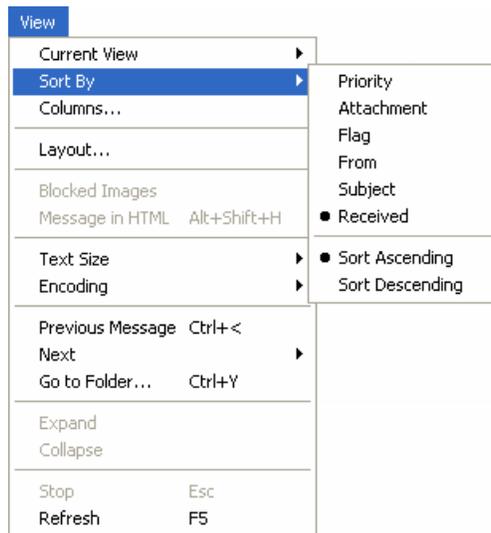
Alternatively, you can click on the column heading to be used for the sort criteria. The ▲ arrow indicates ascending order (A-Z or oldest message to most recent) and the ▼ arrow indicates descending order (Z-A or most recent to oldest).

📖 Exercise

1   Ensure the *Inbox* folder is selected in the Folder List.

2   Click on the **From** column header box.

     Your messages should now be arranged in descending order.

3   Click on the **From** column header box again.

     Your messages should now be sorted in ascending order.

4   Click on the **Received** column header box.

5   Click on the **Received** column header box once more to display the messages with most recent date and time to older date and time.

Marking Messages

IC3
2.2.4

Outlook Express gives you the opportunity to mark messages as being read or unread, regardless of whether you have actually performed that action. This can be handy when you have a lot of messages in your Inbox that you don't want to read. Once messages are opened or marked as read, the number next to the Inbox disappears, thereby giving you a more accurate number for new messages received.

An example of why you might want to mark a message as unread is as a reminder to read the message again. This could be used instead of flagging a message as well as allows you to sort new messages instead of flagged messages.

To mark a selected message as being read, use one of the following methods:

- Select **Edit** and then **Mark As Read**.
- Press Ctrl + Q .
- Right-click on the selected message(s) and then click on **Mark As Read**.

To mark all messages as being read, use one of the following methods:

- Select **Edit** and then **Mark All Read**.
- Press Ctrl + Shift + A .
- Right-click on the selected message(s) and then click on **Mark As Read**.

To mark a message as unread, select the message and then use one of the following methods:

- Select **Edit** and then **Mark as Unread**.
- Right-click on the message and then click on **Mark as Unread**.

📖 Exercise

1 Click on the first message in the Inbox that is new.

2 Press the Shift key and then click on the last new message in your list.

3 Select **Edit** and then **Mark All Read**.

Flagging Messages

IC3
2.2.4

You may find on occasion that you want to flag or put a reminder on a message for follow up or to request a reply to your message by a specific due date. Flags can be added to any message in any of your folders.

To flag a message, select **Message** and then **Flag Message**.

📖 Exercise

1 Click on the *IC3 Web Site* message forwarded earlier to the instructor.

2 Select **Message, Flag Message**.

You should now see a 🚩 icon next to that message. This is a visual indication that you need to follow up or review why this message was flagged.

3 Click on the *Answer Required Immediately!* message.

4 Select **Message, Flag Message**.

You should now have two flagged messages in the Inbox folder.

Practice Exercise

1   Click on the *For Your Review* message to select it.

2   Select **Message, Flag Message**.

     This message should now show a flag next to it to remind you about receiving comments from others or to schedule a meeting to discuss the new logo.

Copying Messages

There may be an occasion when you need to copy a message to a folder instead of moving it. For instance, you receive messages from others congratulating you on an excellent job for a project. In addition to having these messages in the folder with the project name, you also want a copy of these messages in a personal folder which you can then use to compare how well you succeeded in the goals set at the last performance appraisal.

It is more efficient to select a group of messages and copy (or move) them all at once rather than moving each message separately. Use the Ctrl key to select non-consecutive messages, or the Shift key to select consecutive messages.

To copy messages to a folder, after selecting the messages, use one of the following methods:

▪   Select **Edit** and then **Copy to Folder**.

▪   Right-click on the selected messages and then click on **Copy to Folder**.
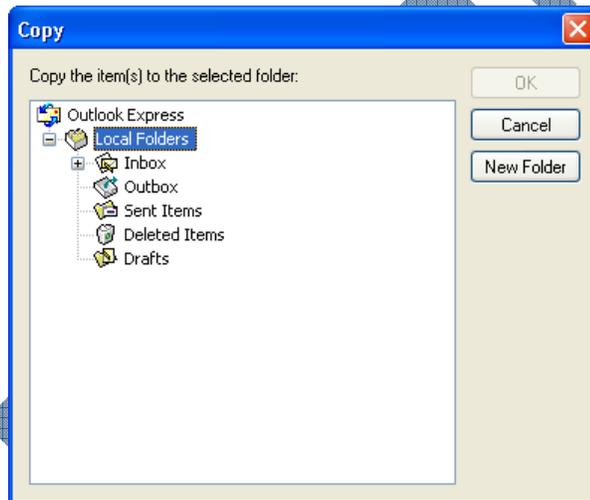
Alternatively, you can also select the messages to be copied, press Ctrl and then drag the selected messages overtop the required folder in the Folder List. Use the ⊞ and ⊟ buttons to expand or collapse the folder structure to show the required location where these messages will be placed. Notice that Outlook Express provides the option to create a new folder from the Copy dialog box as well.

Exercise

1   Ensure the *Inbox* folder is selected in the Folder List.

2   Right-click on the *Inbox* folder and then click on **New Folder**.

3   Type: Training as the name of the new folder and then click on **OK**.

4   Click on the *IC3 Web Site* message. Press the Ctrl key and then click on the *Answer Required Immediately!* and *Customer Service Seminar* messages.

5   Select **Edit** and then **Copy to Folder**.
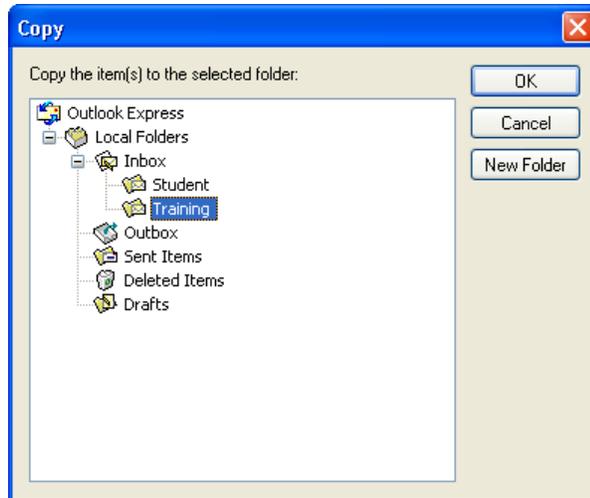
6   Ensure the *Training* folder is highlighted and then click **OK**.

7   Press Ctrl + A to select all the messages.

8   Select **Edit** and then **Copy to Folder**.

9   Click on the *Student* folder to select it and then click **OK**.

10   Click on the *Student* folder in the Folder List to see if there is a copy of all the messages in this folder.

11   Click on the *Training* folder in the Folder List to see how many messages you have in this folder.

        You should only have three messages in the *Training* folder.

Moving Messages

If you plan to keep important messages, consider moving them to a folder other than the Inbox folder. This will help to keep the Inbox clean and make it easier to locate new messages.

Once the message(s) is selected, use one of the following methods to move the message(s):

▪   Select **Edit** and then **Move to Folder**.

▪   Press Ctrl + Shift + V.

Alternatively, you can also select the messages to be moved and then drag the selected messages over top the required folder in the Folder List. Use the ⊞ and ⊟ buttons to expand or collapse the folder structure to show the required location where these messages will be placed. Notice that Outlook Express provides the option to create a new folder from the Move dialog box as well.

📖 Exercise

1   Click on the *Sent Items* folder in the Folder List.

2   Click in the Information Viewer area and then press Ctrl + A to select all the messages here.

3   Select **Edit** and then **Move to Folder**.

4   Click on the *Training* folder and then click **OK**.

5   Click on the *Training* folder in the Folder List and see the number of messages you have here.

Saving Messages

IC³
2.2.4

There may be times that you need to save a message in order to refer to it again at a later date, or to use the information in the message in a document.

To save a message, select **File**, **Save** as you would in any other program.

Outlook Express will save the message to the selected location, and give the file an extension corresponding to the message format, e.g., *.eml for Outlook Express format, *.txt for Plain Text or Unicode Text Files (can be read on non-PC systems), and *.htm for html format.
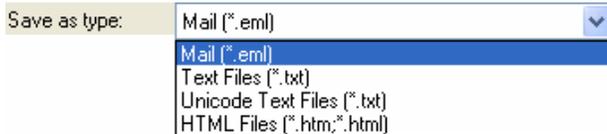
When you open the saved message, it will open in the corresponding Windows program, according to the file extension saved previously in Outlook Express: *.txt in Notepad, *.rtf in Word, and *.htm in your web browser program.

📖 **Exercise**

1 Double-click on the *IC3 Web Site* message in the *Training* folder.

2 Select **File** and then **Save As**.

3 Leave the file name as shown in the **File name** field.

4 Click on the down arrow for the **Save as type** field and then click on **Text Files (*.txt)**.

5 Change the location to where the folder with your name is located and then click on **Save**.

The message has now been saved as a text file in your folder so you could use the web address in another document such as a marketing brochure.

Finding Messages

IC³
2.2.1

Once you have been using e-mail for a while, you are likely to have many e-mails in the different folders and it may becomes quite difficult to find a message containing specific information. Outlook Express allows you to quickly find information by using the **Find** tool. You can be specific or general when setting up the search criteria to find a message. You may search on names, words or phrases.

To find a message in any of the folders in Outlook Express, use one of the following methods:

▪ Select **Edit**, **Find**. When the menu appears, click on the appropriate option to be found.

▪ Click on the 🔲 button in the Standard toolbar.

▪ Press [Ctrl]+[Shift]+[F].
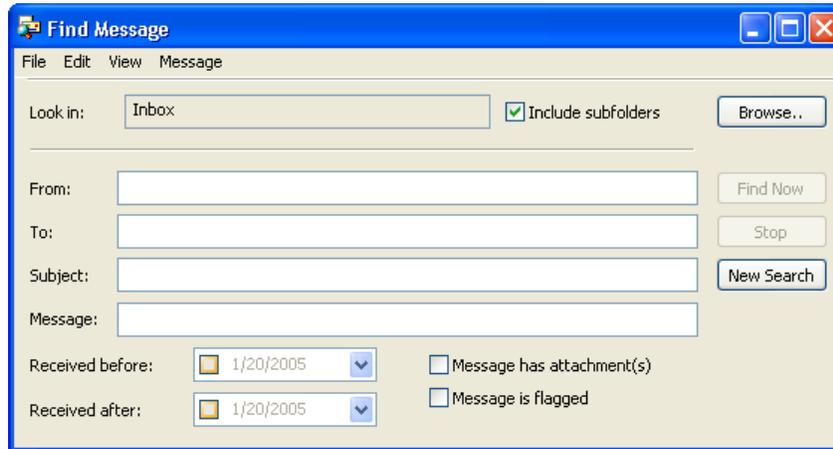
Enter search criteria for those fields that match what you are looking for in your Inbox. Multiple items can be entered into the search criteria by separating the items with a comma.

To find messages in the selected folder only, use one of the following methods:

- Select **Edit**, **Find** and then **Message in this Folder**.
- Press `Shift`+`F3`.
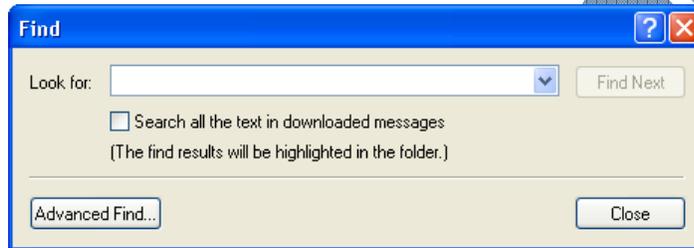
Outlook Express will search all the messages in this folder for the criteria and then display the first message in the Preview Pane that matches. You can then use **Edit**, **Find**, **Find Next** or press `F3` to move to the next message that has matching criteria.

📖 **Exercise**

1   Click on the *Inbox* folder in the Folder List.

2   Click on the [Find] button in the Standard toolbar.

3   In the **Subject** field, type: ic3 and then click on the **Find Now** button.
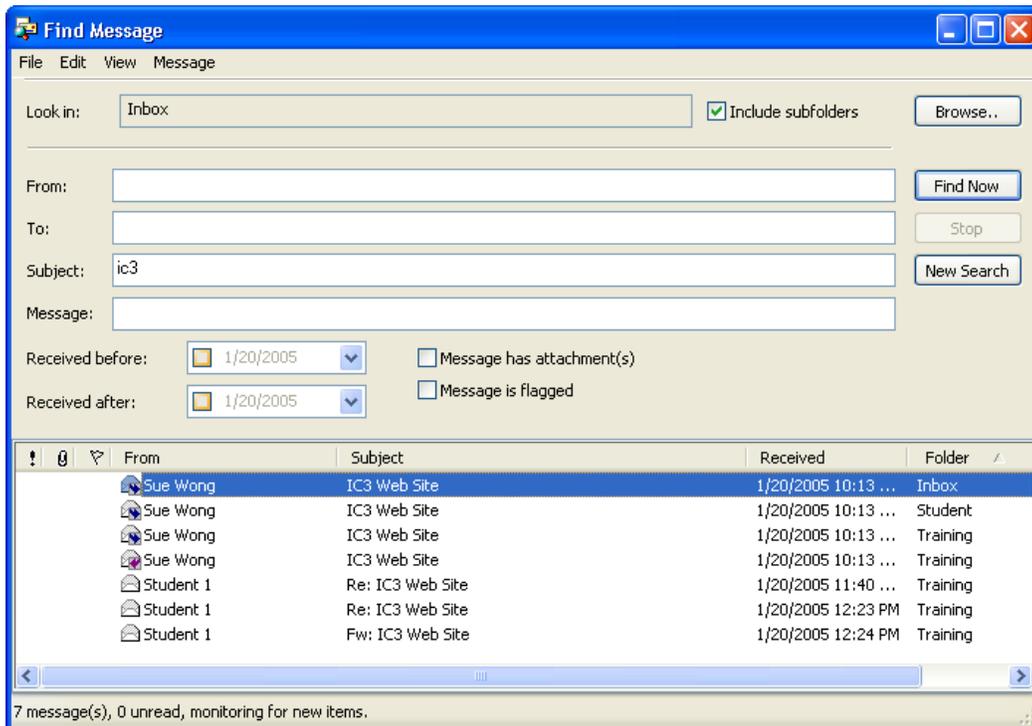
Outlook Express now displays all the matching messages it found with this text in the Subject field. Notice that Outlook searched for the messages, regardless of which folder they might have been stored in. This can be handy when you want to find a message and you're not sure which folder it might have been moved to previously.

To narrow down the search, you will now select one folder to find any matching criteria within that folder.

4   Click on the ☒ button to close the Find Message window.

5   Click on the *Student* folder in the Folder List.

6   Select **Edit**, **Find** and then **Message in this Folder**.

7   Type: ic3 in the **Look for** window and then click on **Find Next**.

Notice in this case, Outlook Express now highlights the first message in the Information Viewer that matches the criteria. The Preview Pane also displays the contents of this message.

8   Press F3 to move to the next message.

Deleting Messages

When you no longer need the messages, it is best to delete them from any of the folders in order to keep your Outlook file small. This should be done with all the folders in your Inbox group, not just the current messages. All deleted messages are placed in the *Deleted Items* folder which can be set to be emptied whenever you exit Outlook, or you can manually delete these messages from this folder.

As with copying or moving messages, you can delete single or multiple messages. If you no longer need a folder and its contents, you can delete the folder to accomplish this task. Outlook Express will prompt you with a warning message confirming that you want to delete the folder and all its contents.

To delete items from a folder, select the item(s) and then use one of the following methods:

▪   Select **Edit** and then **Delete**.

▪   Click on the ✗ Delete button in the Standard toolbar.

▪   Press Ctrl + D or Delete.

The item(s) will then be moved into the *Deleted Items* folder in the Folder List. This provides you with a resource to recover the deleted item at a later date. Items can be recovered from the Deleted Items folder by selecting the item in the *Deleted Items* folder and moving it back into its original location.

You can empty the contents of this folder manually or automatically.

- To empty the contents of the *Deleted Items* folder every time you exit Outlook Express, select **Tools**, **Options** and then in the **Maintenance** tab, click on the **Empty messages from the 'Deleted Items' folder on exit** option.

- To empty the contents of the *Deleted Items* folder manually, select **Edit** and then **Empty 'Deleted Items' Folder**.

Outlook Express

⚠ Are you sure you want to permanently delete the contents of the 'Deleted Items' folder?

Yes   No
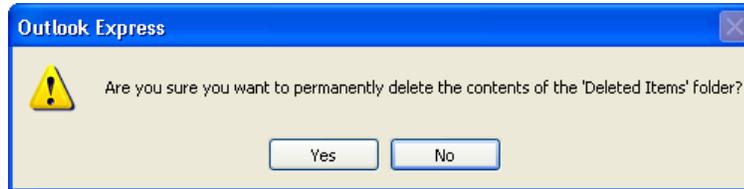
📖 **Exercise**

1 Click on the *Student* folder in the Folder List.

2 Click on the most recent message received and press Ctrl + D.

3 Click on the *Deleted Items* folder in the Folder List.

The deleted message should now appear here.

4 Click on the folder with your name and then press Delete.

Outlook Express

⚠ Are you sure you want to delete the 'Student' folder and move it to the 'Deleted Items' folder?

Yes   No
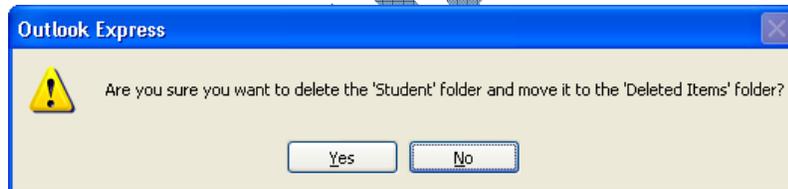
5 Click on Yes to confirm the deletion of the folder and its contents.

Your folder should now have been deleted with its contents into the *Deleted Items* folder.

6 Select **Edit** and then **Empty 'Deleted Items' Folder**.

7 Click on **Yes** at the prompt to empty the contents of this folder.

8 Click on the *Deleted Items* folder in the Folder List.

This folder should now be empty.

Blocking Messages

IC³
2.2.6

With the sheer number of junk types of messages you can receive on a regular basis, or if someone continues to e-mail you even though you've asked them not to, Outlook Express provides you with an option to block messages from specific senders. This works similar to using the Block feature available with telephone systems.

To block messages from an e-mail address, select the message, then select **Message**, **Block Sender**.

With this feature, you can specify e-mail addresses or domains. Setting up domains can be easier if you are dealing with junk mail where there may be a number of e-mail addresses from that domain that consistently sent you unwanted messages. Once you have set up an e-mail address or a domain in the Blocked Senders area, you can also manage this area to add or remove items, as required. This option can be accessed using **Tools, Message Rules, Blocked Senders List**.
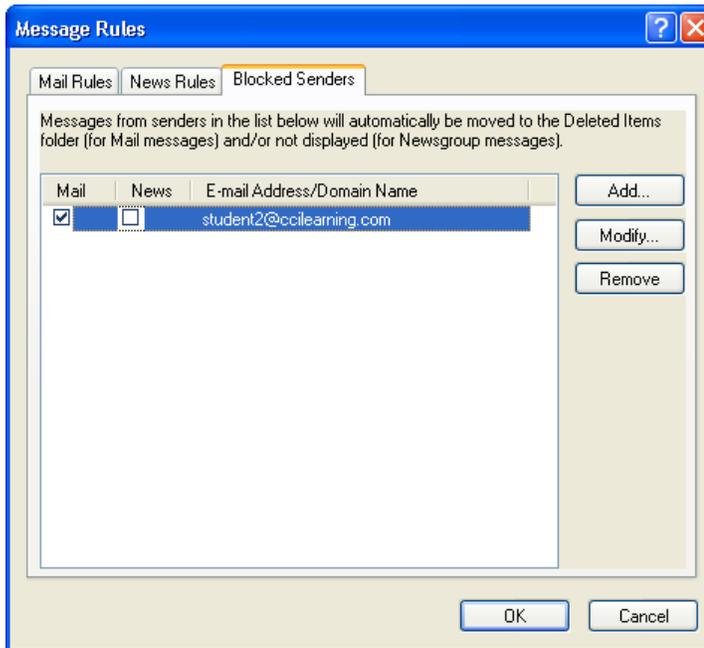
Use the **Modify** button to block messages and news from this e-mail address, or change it to block anything from the domain (e.g., aol.com, hotmail.com, etc.).

When you select to block the entire domain, you will find that you may have to do some individual maintenance for certain e-mail addresses.
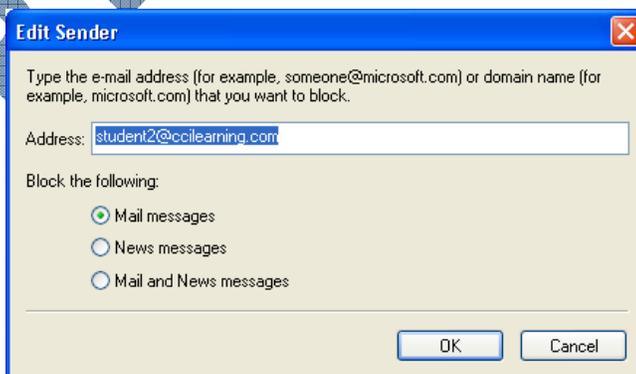
For example, Hotmail.com is a very popular domain for individuals as well as spammers who generate mass mailings in hopes of reaching a live address. Some people who have been using Hotmail.com for a long time will be blocked when sending messages to you. This is an unfortunate result of the current state for "living online". Until more laws are approved to prevent spam or junk mail, you may need to work with your ISP to block as much of the unwanted mail as possible, and then you will have to set up other options in your e-mail program to catch as much as you can when it reaches your Inbox.

Working with the Address Book

2.2.5

The Contacts portion of Outlook Express works as an address book or internal "rolodex". It is meant to be used with the e-mail aspect to help reduce the amount of time you may spend trying to remember or type in someone's e-mail address. In addition to adding a contact, you can also set up groups or distribution lists for those contacts to which you send a lot of messages. For instance, several of your contacts could be working on an event with you. Instead of entering each e-mail address separately, you can set up a group that contains all these names and you need only put in the group name in the message.

Adding a Contact

People can be added into the Contacts list regardless of whether you have a lot or minimal information for the contact. Outlook Express allows you to enter enough information to keep track of these contacts, or you can use the minimal information for e-mail purposes.

You can add a contact quickly by clicking on the down arrow for the Contacts ▼ button and then clicking on **New Contact**.

Alternatively, you can activate the Address Book to enter contact information or set up groups. Use one of the following methods to activate the Address Book:

- Select **Tools** and then **Address Book**.
- Click on the Addresses button on the Standard toolbar.
- Press Ctrl+Shift+B.
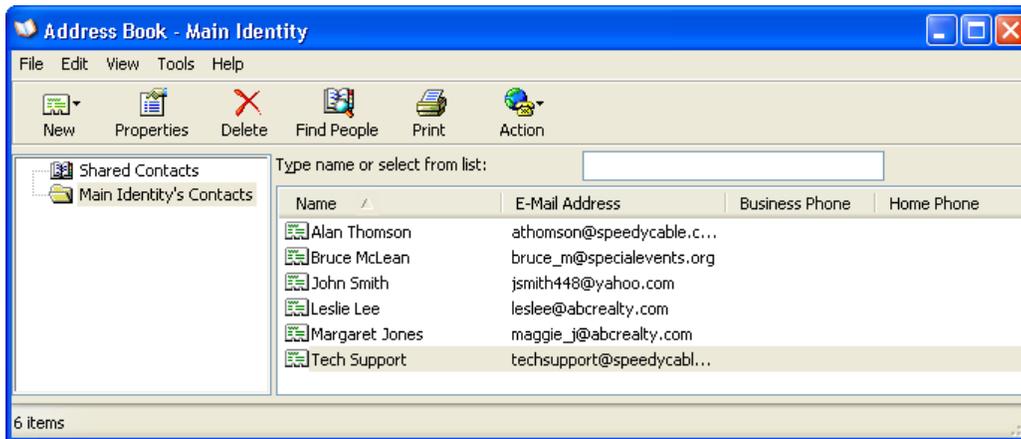
To add a new contact within the Address book, use one of the following methods:

- Select **File** and then **New Contact**.
- Click on the down arrow of the ⊞ New button and then click on **New Contact**.
- Press (Ctrl)+(N).
- Right-click on the *Main Identity's Contacts* folder and then click on **New, New Contact**.

📖 Exercise

> The following names are fictitious and created for this courseware only.

1   Click on the **Contacts** button and then click on **New Contact**.

2   Type the following information:

First:	John
Last:	Smith
E-mail:	jsmith448@yahoo.com

3   Click on **Add**. Then click **OK** to exit the New Contact dialog box.

Outlook Express has now added this contact to your list. In order to enter multiple contacts, you must enter them one at a time.

4   Repeat steps 1 and 2 to enter the following contacts:

First	Last	E-mail
Alan	Thomson	athomson@speedycable.com
Bruce	McLean	bruce_m@specialevents.org
Leslie	Lee	leslee@abcrealty.com
Margaret	Jones	maggie_j@abcrealty.com
Tech	Support	techsupport@speedycable.com

5   Click on the 📇 Addresses button on the Standard toolbar.

All the contacts should now be listed in the Address Book, in alphabetical order by first name. You can change the sort by clicking on the Name column heading. By adding these people to your contact list, you can address an e-mail to one of these people by using their actual name.

6   Close the Address Book window.

7   Click on the 📧 Create Mail button on the Standard toolbar.

8   Type: Tech in the **To** field.

Notice how Outlook Express completes the contact for you as a suggestion, given that you have a contact with these letters.

9   Close the new message without sending or saving it.

10   Click on the [Addresses] button on the Standard toolbar.

11   Click on the down arrow of the [New] button and then click on **New Contact**.

12   Enter information for yourself in the **Name** tab of the Properties window.

13   Click on the **Business** tab and enter information for your company here.

14   Click on the **Personal** tab and enter information as desired here.

15   Click **OK** when done.

Making Changes

2.2.5

Occasionally you may need to alter information or add more information for a contact. Changes can be made quickly after selecting the contact, using one of the following methods:

▪   Select **File** and then **Properties**.

▪   Click on the [Properties] button on the Address Book toolbar.

▪   Press (Alt)+(Enter).

▪   Double-click on the selected contact name in the list.

▪   Right-click on the *Main Identity's Contacts* folder and then click on **Properties**.

Outlook Express will then display the contact information, with a Summary sheet displayed as a quick glance at the information already entered for this contact. Move to the appropriate tab and field(s) to add or remove information.

📖 Exercise

1   Click on the *Alan Thomson* contact.

2   Click on the [Properties] button on the Address Book toolbar.

3   Click on the **Business** tab and then enter the following information:

4   Click **OK** to accept the new information.

Using Groups

Groups are essentially distribution lists that make it easy for you to enter the address for a number of people. This can be a time saver when the number of people you need to address in a message is large.

To set up a group, use one of the following methods:

- Select **File** and then **New Group**.
- Click on the down arrow of the ⊞ New button and then click on **New Group**.
- Press [Ctrl]+[G].
- Right-click on the *Main Identity's Contacts* folder and then click on **New, New Group**.
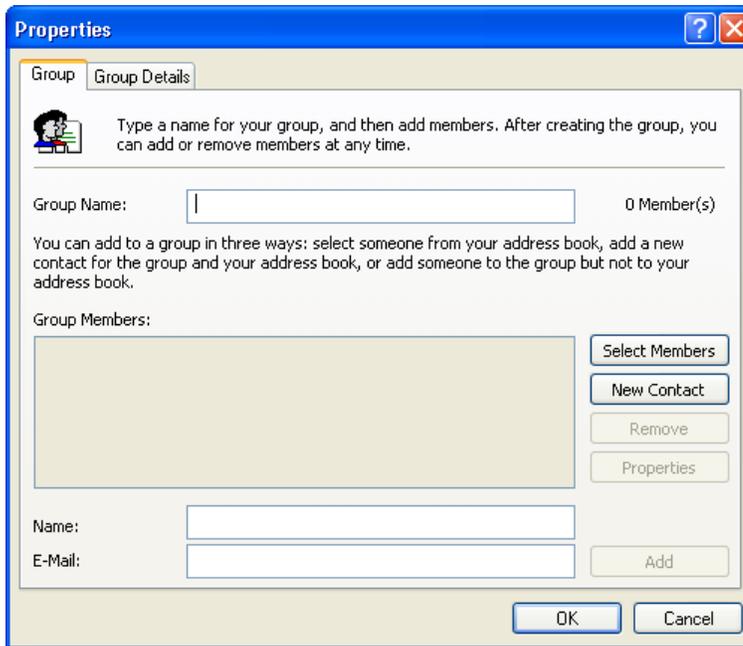
Group Name	Enter the name for this group.
Select Members	Click on this button to select members from your contact list. This screen is very similar to clicking on the **To** or **Cc** button when addressing an e-mail.
New Contact	Add a new contact not currently in your contact list.
Remove	Remove a contact from the member list.
Properties	Show the properties for this contact to ensure this contact should be a member of this group.
Name	Enter the name for a new contact who will be included in this group but not part of your address book, e.g., assistant to a member in the group who you may e-mail but only for the purpose of this group.
E-mail	Enter the e-mail address that corresponds with the name entered in the previous field.
Add	Becomes available when you enter text in the **Name** and **E-mail** fields so you can add this contact to the list only.

📖 Exercise

1 Ensure you are looking at the contacts in the Address book window.

2 Click on the ⊞ New button and then click on **New Group**.

3   Type: Business for the name of the new group.

4   Click on the **Select Members** button.
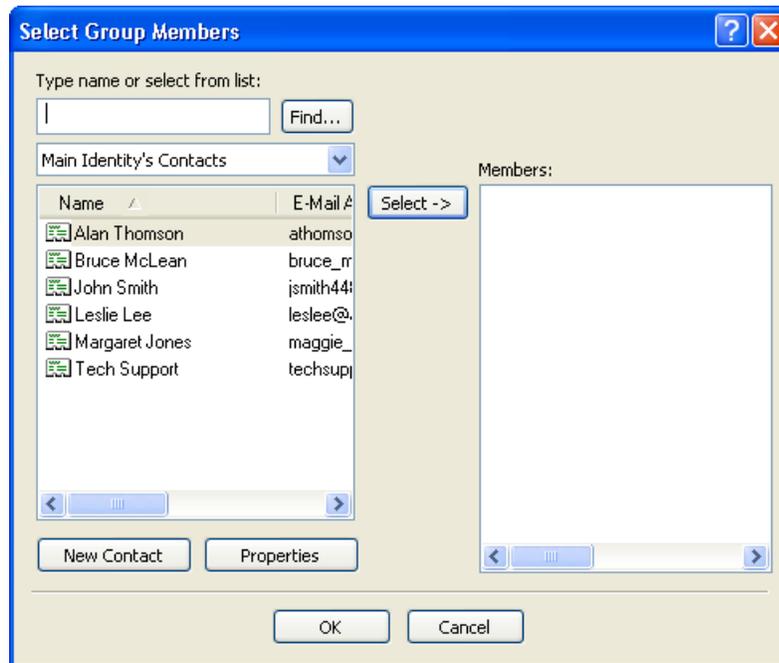
5   Click on the *Alan Thomson* contact, press Ctrl and then click on the *Tech Support* contact. Click
the **Select** button. Then click **OK** twice.

You should now have a new group in the left pane of the Address Book window.
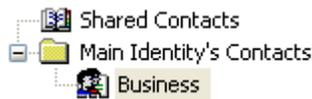
6   Click on the [New] button and then click on **New Group**.

7   Type: Charity Events for the name of the new group.

8   Click on **Select Members**. Include *Bruce McLean, Leslie Lee* and *Margaret Jones*.

9   Click **OK** to accept the changes in all dialog boxes.
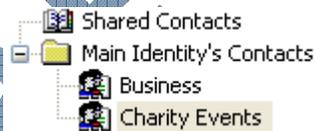
Assume at this point that you have been given the name of the new administrator for the latest
volunteer event. You want to add this person to the group but not as a contact in your address book.

10   Click on the *Charity Events* group in the left pane of the Address Book dialog box.

11   Click on the [Properties] button.

12   In the **Name** field, type: Anne Davies

13   In the **E-mail** field, type: annie55@hotmail.com

14   Click on the **Add** button and then **OK**.

15   Close the Address Book window.

16   Press Ctrl+N to create a new message.

17   In the **To** field, type: Char

      Notice how Outlook Express provided a suggestion based on the entry in your contact list. This is
      much easier than selecting individual names, especially once the contact list becomes large.

18   Close the new message window without saving or sending.

Deleting Contacts or Groups

When you no longer need a contact, you can delete it from the list very quickly and easily. Take note
that you cannot recover a deleted contact or group from the Deleted Items folder. Contacts and groups
are permanently deleted.

To delete a contact or group in the Contacts pane, select the contact or group and then use one of the
following methods:

- Click on the [X Delete] button in the Standard toolbar.
- Press (Delete).

To delete a contact or group in the Address Book, select the contact or group and then use one of the
following methods:

- Select **File** and then **Delete**.
- Click on the [X Delete] button in the Address Book toolbar.
- Press (Delete).

Address Book - Main Identity

⚠ Are you sure you want to permanently delete the selected item(s) ?

[Yes]   [No]
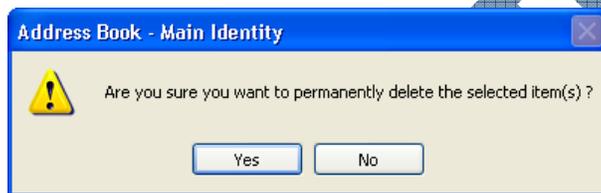
📖 Exercise

1   Click on the [Addresses] button to open the Address Book.

2   Select all of the contacts and groups in the list.

3   Click on the [X Delete] button in the Address Book toolbar.

4   Click on **Yes** to the message.

      All your contacts and groups are now deleted.

Performing Some Maintenance

With every e-mail program, there will be times when you need to take action against specific types of
e-mail that arrives in your Inbox, or you may just want to ensure you are doing what you can to protect
your messages against both outsiders as well as any hardware failures on your system.

Not all e-mail programs are created alike; many of them share the most common types of maintenance
tools and obviously some will contain more than others or offer more features within these tools. You
will need to decide whether you want to use another e-mail program if you begin to spend a large
amount of time maintaining your messaging system.

This courseware covers the most common maintenance tools available in all e-mail programs. If you
are using another e-mail program or want more details on what else may be available in Outlook
Express, please refer to the online help or the User's Guide available for the e-mail program.

Automating Tools

Automation tools can save you time and effort as they can be set to occur on a scheduled basis or automatically when you perform a particular task. They include features such as:

- emptying the Deleted Items folder whenever you exit
- displaying the Inbox folder when you start Outlook Express
- running spell check before sending a message
- having Outlook Express check for new messages at a set interval
- cleaning up the Inbox automatically

Most of these features can be found in the **Options** command of the **Tools** menu.

Exercise

1   Select **Tools** and then **Options**.
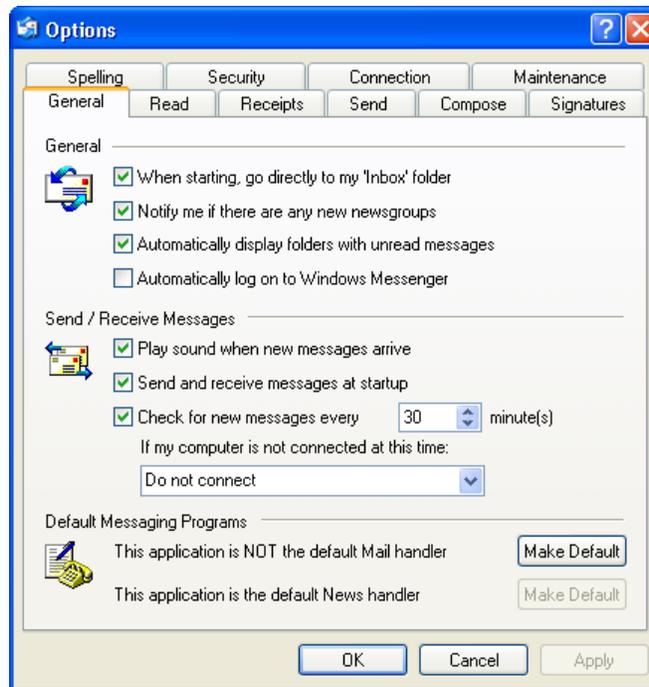
2   Click on the **When starting, go directly to my 'Inbox' folder** option to select it, if not already selected.

3   In the **Send / Receive Messages** area, click on the incremental buttons for the number of minutes and change this to **15**.

4   Click on the **Spelling** tab.
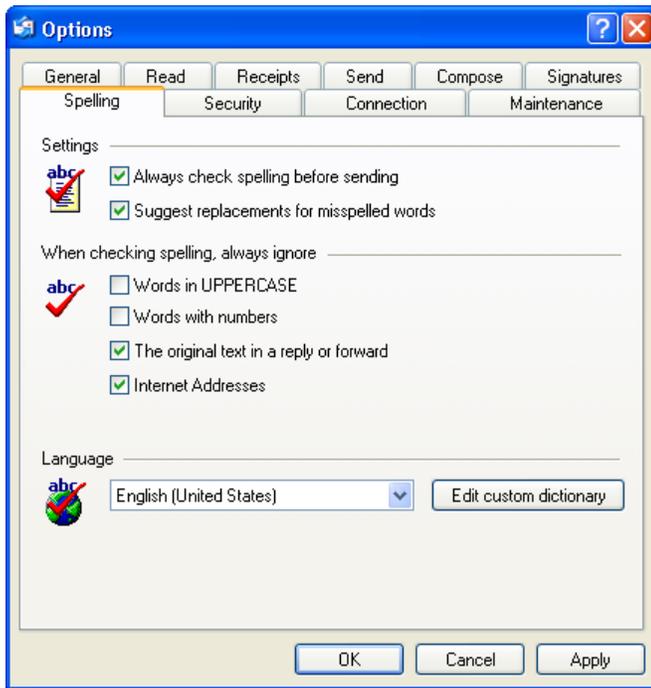
5   Click on **Always check spelling before sending** option, if not already activated.

6   Click on the **Maintenance** tab.
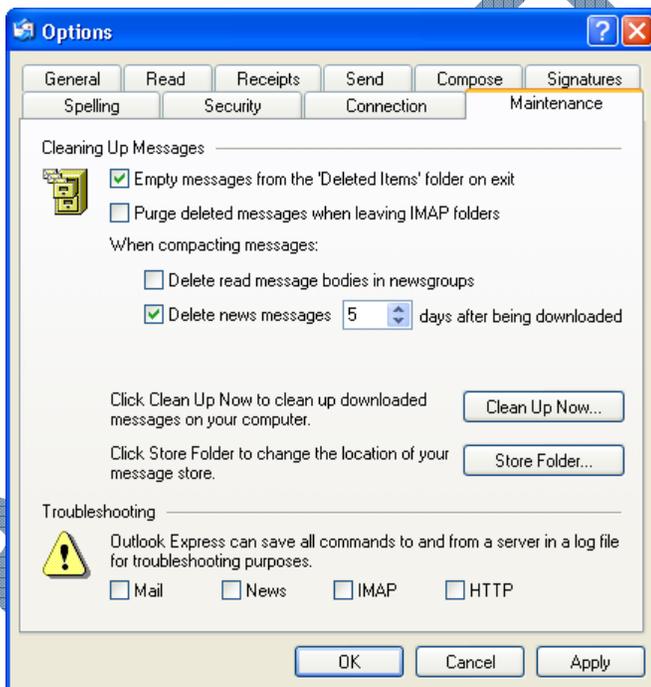
7   Click on the **Empty messages from the 'Deleted Items' folder on exit**.

8   Click on the **Clean Up Now** button.
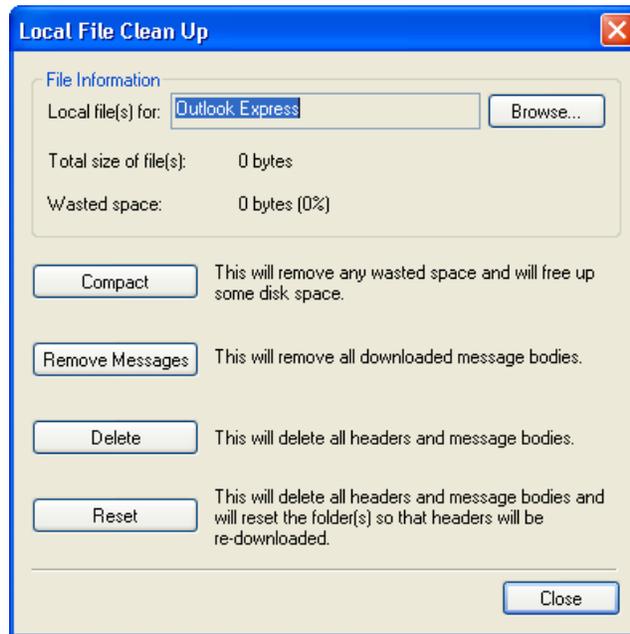
You may not need to use this option often. However, when you begin receiving a lot of messages and you store them all in folders within Outlook Express, you may find that you will need to compact or compress the size of the database being used by Outlook Express to store all items. A general rule to use is if you find it takes longer to send or receive mail, or if Outlook crashes a bit too often when you are trying to open it. It is recommended that you organize your messages and items and actually delete older messages/items no longer needed. However, if you need to save everything, you may want to consider looking at archiving or backing up your Outlook Express files in order to keep your e-mail program running at optimum usage.

9   Click on the **Compact** button.

10   When the database has been compacted, click on **Close**.

11   Click **OK** to leave the Options dialog box.

12   Delete the *Training* folder from your Inbox.

13   Exit Outlook Express and then start it again.

     Did Outlook Express start up with the Inbox display?

14   Click on the *Deleted Items* folder.

     Do you have any messages or folders in here?

❯ Check with your instructor as to whether you need to reactivate or turn off any features performed in the preceding steps in preparation for the next class.

Using Signatures

A *signature* is a piece of text that will automatically appear at the bottom of your messages whenever you create a new message. This saves you having to enter your name and information each time you send a message. You can create as many signatures as required, but only one can be set up as a default.

To create a signature, select **Tools, Options** and then click on the **Signatures** tab.
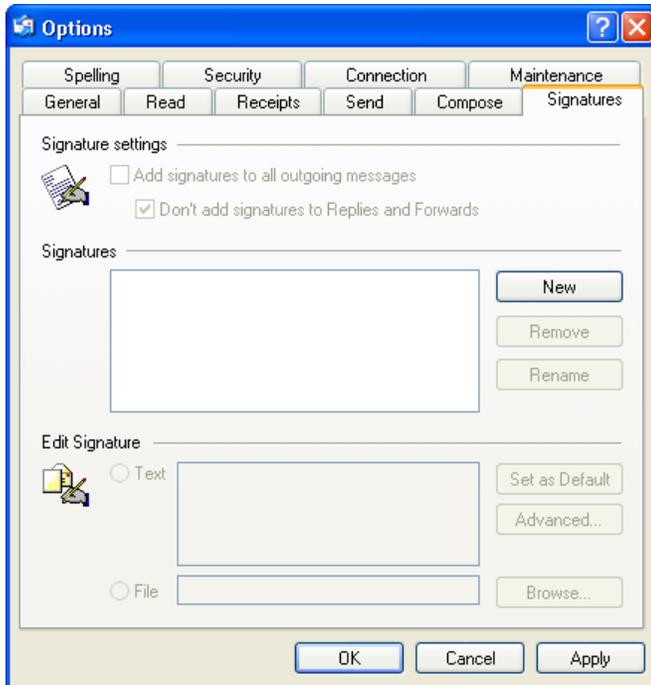
Signature settings	Select whether you want a signature to appear in all messages you send, as well as whether you want the signature to also appear when you reply or forward a message.
Signatures	When you click on the **New** button, Outlook Express will display the first signature and then list all others as they are created.
New	Create a new signature.
Remove	Remove this signature from the list.
Rename	Rename this signature to one that easily identifies what the contents of the signature may be, e.g., personal, business, event title, etc.
Edit Signature	Enter the text for the new signature, or make changes directly to the selected signature from the list.
Set as Default	If you have multiple signatures, Outlook Express will give you the chance to select which one will be the default one (business versus personal).
Advanced	Set up which accounts will use the signature, e.g., business, personal, family members, etc.
Browse	If you have a signature that was created in another file and is available in a format that can be used here, click on this button to find the file and select it.

Once you set up a signature as a default, whenever you create a new message, it will display that signature at the bottom of the message text window, similar to the following:
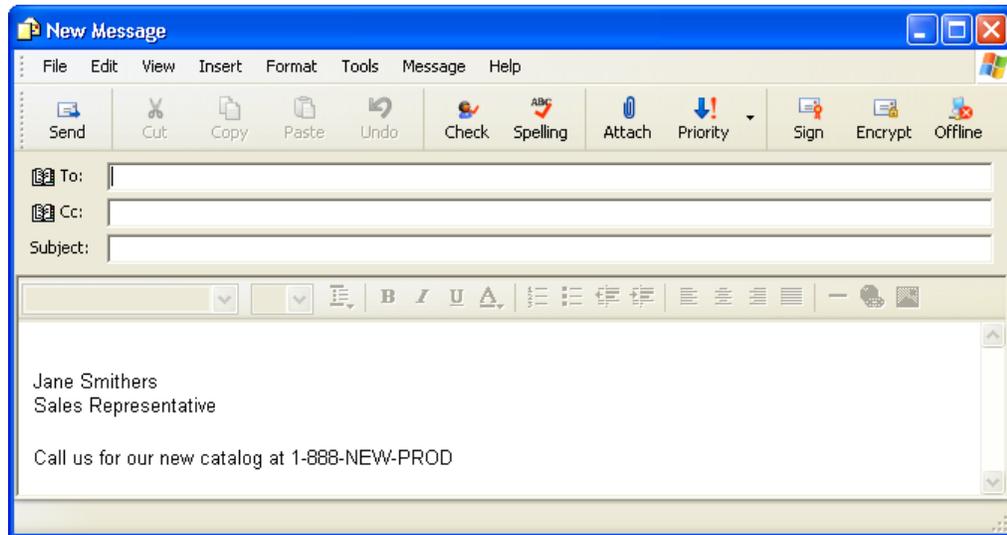
If you have multiple signatures set up, Outlook Express gives you the option to change the default signature or not use a signature on all outgoing messages at all.

To use a signature (or insert a different one) in the message, select **Insert** and then **Signature**. Outlook Express then displays a list of your signatures for selection. You will need to delete the existing signature before adding the new signature or there will be two signatures in the message.
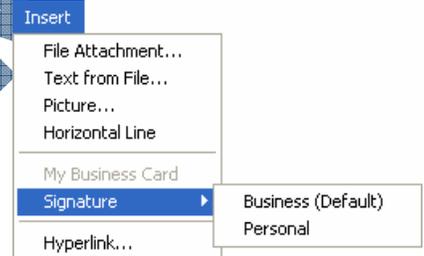
📖 Exercise

1   Select **Tools, Options** and then click on the **Signatures** tab.

2   Click on the **New** button.

3   In the **Edit Signature** area, type your name and press Enter twice.

4   Type: Have a great day!

5   Click on the **New** button again.

6   In the **Edit Signature** area, type the following text:

    <Your Name>
    Living Online
    Using Outlook Express

7   Click on **Signature #1** in the Signatures list and then click on the **Rename** button.

8   Type: Personal for the new name of this signature and press Enter.

9   Click on **Signature #2** in the Signatures list and then click on **Rename**.

10 Type: IC3 Class as the new name of this signature and press Enter.

11 Click **OK**.

12 Press Ctrl + N to create a new message.

13   Address this message to everyone in the class.

14   In the message area, type the following text:

> I am very pleased to learn how to use signatures in my messages. This will save me a lot of time from typing my name and title at the end of every message.

15   Press ⏎Enter twice at the bottom of the message text.

16   Select **Insert, Signature** and then click on the **IC3 Class** signature.

This signature should now have been inserted at the bottom of your message.

17   Send the message.

18   Select **Tools, Options** and then the **Signatures** tab.

19   Select each signature and then click the **Remove** button to delete each signature.

20   Click **OK**.

Sending Out-of-Office Notices

As a business practice and courtesy, if you are planning to be away from the office for a period of time (longer than a day), consider sending a message to those you deal with on a regular basis to inform them of same. Even if you plan to retrieve your messages during the time you are away, it is courtesy to let people know that you are not in your office during this time and who they can be referred to as required.

Setting up groups can be handy for this purpose. For instance, you can set up a group that contains the names of all the people in your department or the company. When you need to send an out-of-office notice, you can then address the message to that group. Other groups can also be addressed in the same message.

Provide details regarding the dates you will not be in the office and who will be handling your work during your absence. It is not necessary to provide any other details without a specific reason, e.g., letting the project team know you will be away at the construction site for two days and will have pictures for them to review on return. Try to send the notice out at least two days prior to when you leave the office so that your contacts are aware of the change.

Whether you choose to send an away notice to personal contacts is at your discretion. Most people will not automatically let their personal contacts know if they will be away for a length of time. Use your own discretion for these notices.

Some e-mail programs and mail servers have the option that can send a response automatically. In this scenario, you set up the option from your system for the mail server to check for incoming messages to your system during this time away, and when it detects an incoming message it will automatically generate a response back to the sender that you are out of the office. This can be very advantageous in that you set it up once and everyone who sends you a message during the time you are away will be notified of your absence.

The major downside to this is that it will send the response regardless of who the sender is; in other words, it could be responding to junk or spam mail that then detects the e-mail address they used is valid.

Redirecting Mail

IC³

2.2.6

Once you have sent an out-of-office notice, consider then forwarding your messages to someone else or give them access to your system to check and download any urgent messages during this time. There are known concerns for using either method.

In the first option, if you will be away for a length of time from your office, it is prudent to have someone manage your workload during your absence. For example, if you designated John to handle your workload during your absence, you may want to set up an out-of-office notice and also have all your messages forwarded to John during this time. However, by activating these two options, this can potentially create more junk mail for you and John as the automatic response and redirect action verify to others that your e-mail address is valid as well as informs the sender of John's e-mail address. All your messages are also forwarded to John, regardless of whether it is related to any of the projects or not. On your return, you will also need to coordinate with John to get copies of all of these messages, regardless of whether he responded or handled all of them.

The second option allows all your messages to be checked and downloaded to your system only. However, you will be required to give your passwords to someone else who will log onto your computer and e-mail program on a daily basis using your network id. This can pose two security risks in that your system will be logged onto the network all day until someone logs you off the network, and anyone who can see your system has full access to whatever is on your computer as well as those programs or areas on the network assigned to your login id. On your return, you may need to change your passwords to ensure no one else can access your files or e-mail.

The method you choose to redirect your mail will depend on the size and confidentiality requirements of your company or your own requirements. Be sure to choose an option that ensures your mailbox (inbox) does not become full during your absence, nor do you wind up with more messages after your return due to the nature of being online, e.g., receiving junk messages from people who got your out-of-office notice validating your e-mail address.

Look at all the options available to you and work with your network administrator or ISP to find a viable solution to prevent security issues as well as preventing further spam or junk messages.

Backing Up Your E-mail Items

IC³

2.2.4

When you create messages, Outlook Express saves the information in a *data file* on your computer. As you begin to keep more and more items in Outlook Express, this database file can grow significantly. Depending on the amount of RAM available on your system as well as the hard drive storage space, you may begin to encounter problems with the data file.

Accordingly, you may want to look different options in order to save the items in Outlook Express. One option is to try compacting the data file; this is similar to pushing all the file folders and their contents to a side of a filing cabinet drawer to try and get some space in this drawer for more file folders and paper copies. As you can imagine, this will only work for a certain time before you will need to look at another option.

One other option which can help, and is also a good procedure to adopt, is to make a backup copy of the data file. While this requires a bit more time on your part, the backup copy can become invaluable if anything should happen to your computer or if you need to find an older message.

The process you follow for this is similar to performing an archive command. Some e-mail programs provide you with an Archive feature that will handle this process for you on a set interval. Outlook Express does not have this feature so you will need to consider the following steps:

1. Create a new folder in an area on your system and give it a name that indicates the folder is designed to handle backup copies of your Outlook Express data file.

2. Locate where the data file for Outlook Express is currently found (you can either do a search for any files with a .dbx file type, or ask your network administrator to help you).

3. Copy this file to the Backup folder on your system.

4. Rename the copied file in the Backup folder with a date to indicate when the copy was made.

5. Start Outlook Express and delete as much of the older items as you can, including what may be in the Deleted Items folder. This will make the data file much smaller and easier to manage from within Outlook Express. Remember that you will be making a copy of the "new" items at the next backup schedule.

6. Repeat on a regular interval if you keep a lot of items in Outlook Express.

If the data files are quite large, after a set interval, consider writing these files to a CD as your archive copy. Then delete the files from your hard drive to give you more space on your system.

Regardless of which e-mail program you use, consider the preceding information about making "backup" copies of your e-mail data file. This can become very crucial if you don't have a backup procedure being performed on your system (or network) on a regular basis, as well as if you are running low on space on your computer.

Summary

In this lesson you used Outlook Express to send and receive messages, as well as enter contacts. You should now be familiar with the following:

- What Outlook Express is
- Recognize elements on the screen
- How to send and receive messages
- How to reply or forward a message
- How to send an attachment with a message

- Work with attachments
- Sort and manage your messages
- Search for messages
- Work with the address book
- Understand mail maintenance options

Review Questions

1. How can you start Outlook Express?

    a. Start, All Programs, Outlook Express
    b. Double-click on the Outlook Express icon on the desktop
    c. Click on the Outlook Express icon in the Quick Launch toolbar
    d. Any of the above

2. Describe briefly what the following folders contain:

    a. Inbox
    b. Sent Items
    c. Outbox
    d. Deleted Items
    e. Drafts

3. You cannot create folders in Outlook Express to store your messages.

    a. True
    b. False

4. How can you create a new message?

    a. Select File, New, Mail Message
    b. Click on the ☐ Create Mail button
    c. Press Ctrl + N
    d. Select Message, New Message
    e. All of the above
    f. Only a, b, or c

5. How can you check for new messages as well as send any messages in the Outbox folder?

    a. Select Tools, Send and Receive, Send and Receive All
    b. Click on the ☐ Send/Recv ▾ button
    c. Press Ctrl + M
    d. Press F5
    e. Any of the above
    f. Only a, b, or c

6. If you cannot send or receive attachments with any message, what could be the problem?

7. In order to delete the contents of the Deleted Items folder each time you exit, you have to select everything in the folder each time you use Outlook and make sure the items are deleted before you exit.

    a. True
    b. False

8. Adding a contact in Outlook Express helps to reduce the amount of time spent entering e-mail addresses in messages.

    a. True
    b. False

9. A group is basically a distribution list consisting of names from your contact list so you can send messages to everyone in this group at the same time instead of having to type each name individually.

    a. True
    b. False

10. Why would you want to make a backup copy of your Outlook Express data file?

Unit 2: Using the Internet

This unit will explain why the Internet is so popular, introduce some common uses of the Internet and then provide some precautions to keep in mind while working on the Internet.

Lesson	Topic
1	Getting Started
2	Looking at Web Browsers
3	Using Microsoft Internet Explorer
4	Using Information From the Web
5	Searching for Information
6	Qualifying the Information
7	The Risks of Computing

Lesson 1: Getting Started

Objectives

Suggested Timing: 1 Hour

In this lesson you will prepare for going on the Internet by reviewing some basic online terminology, as well as learn about different types of organizations that may be online. On successful completion, you will be familiar with the following concepts:

- What the world wide web is
- What a web browser program is
- How to find information on the Internet
- What a web site is
- Recognize how HTML works with a web site

- Understand what URL or HTTP is
- Understand what a hyperlink is
- Understand what a cookie is
- Understand how encryption works
- Recognize common abbreviations used on the Internet

Understanding Basic Terminology

IC³
3.1.1

There is a lot of terminology that is used by people who are online to the Internet. Many of these terms are simple once you understand what they are and how they work. The best place to start is with a short review of the Internet and how information is shared.

Looking at the Information on the Internet

There are millions of computers interconnected via the Internet. Computers fall into two groups: those that provide the service (*servers*) and those that make use of the services (*users* or *clients*). There are many types of services; the diagram shown is a simple example of how servers and clients interact when communicating on the Internet.
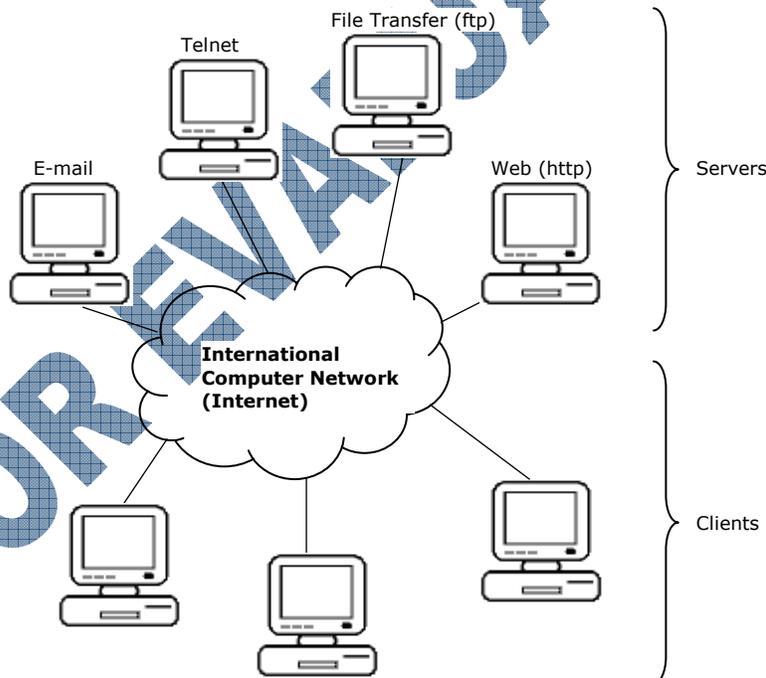
Each computer in the Servers area represents one type of service that can be accessed once you are online to the Internet.

Each of the computers in the Clients area essentially represents one user who has access to the Internet and can then use those services provided by the servers.

Understanding the World Wide Web

IC³
3.1.2

A *web server* (generally an ISP) provides the service of hosting or storing a company's or a person's web site. A *web site* is a collection of pages containing information, similar to a promotional booklet about a company. In order for a web server to be able to communicate with other computers, it must use the *hypertext transfer protocol* (HTTP).

A web server typically hosts many web sites. The collection of all web sites hosted by all the web servers connected to the Internet is referred to as the *World Wide Web*, often referred to simply as "The Web".

"Hypertext" refers to the technique of accessing the web pages using *hyperlinks*. In essence, these hyperlinks allow you to link to other web pages on the same web site or another web site where you will find other text, pictures, media, etc.

Part of the popularity of the Web is due to the attractive way that web pages are displayed — web pages use color, graphics and photographs. The interesting feature of the Web is that the web pages stored on a web server have no formatting. The software on the user's computer (called a *browser*) has to format the page before it is displayed on the screen. The formatting instructions are included in the text of the web page and are written in a language called *HyperText Markup Language* (*HTML*).

Recognizing Web Page Elements

A typical web page will contain some standard elements, as shown in the following screen:
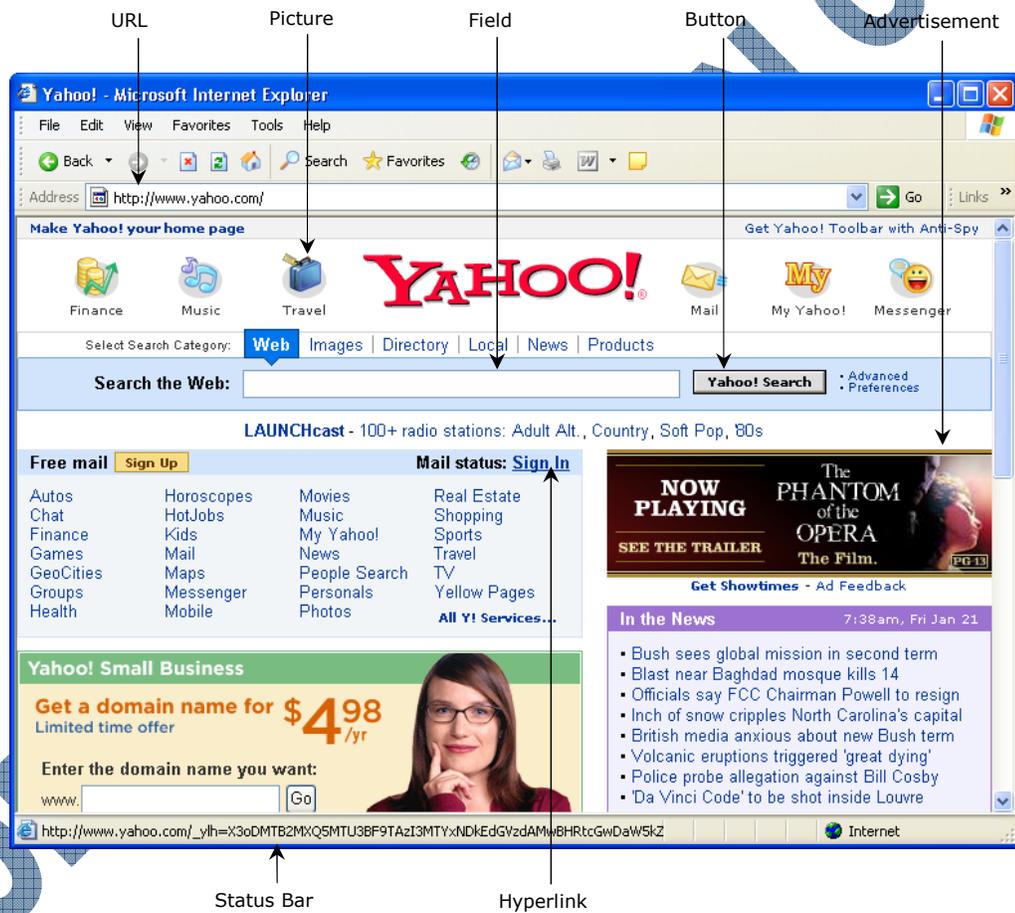
URL	The *Uniform Resource Locator* identifies where you can find information (the web site address to go to), or you can enter text to display a list of matching web sites.
Picture	Web pages can contain pictures that are either graphics or photographs. Some pictures are set up to be static (always shows and stays in this location), others may animate, or are hyperlinks to other web pages, web sites, or another action such as run a video.

Field	Many web pages contain forms where you can enter information into the fields on the form. The information in the fields will then be sent to the web server for processing. Most web pages contain at least one field (usually designed to help you search for an item on that web site).
Button	An interactive graphic that when clicked, an action will take place. In this example, clicking on the button will send the search information to the server.
Advertisement	Companies pay for the privilege of advertising on a popular web page (i.e., gets many "hits"). These ads are typically graphics and often animated. The intent is that you will click on the graphic to view the advertising company's web page.
Status Bar	The status bar tells you what the software is busy doing or which web page or site is displayed if you click on a specific hyperlink. You can use this bar as a visual clue to whether the web browser has completed the display for the web page or if you are no longer connected to the Internet.
Hyperlink	Text or a graphic that has a URL associated with it. In general, when you place the mouse pointer over a hyperlink, the pointer changes to a pointing hand (🖑). If you then click with the mouse on the link, the web browser software will then try to connect to the server corresponding to the URL and retrieve the information or web page. Some hyperlinks are underlined, usually with the intent of getting your attention quickly to click on that link, as required. Other hyperlinks appear with underline or another effect such as if a light was turned on only when you move the mouse and hover over the text or picture. Most web sites will also display a hyperlink in another color to show you have already visited this link (site).

Although most web pages will have one or more pictures, the pictures are not strictly part of the page. The pictures are stored separately on the web server. The web page only contains place holders where the pictures are to be placed on the web page. When the browser receives a web page from a web server, it first formats the text of the page using the HTML instructions included on the page. The pictures take longer to arrive from the server, so they are placed on the page by the browser after the page has already been formatted, sometimes several seconds will go by before all the pictures have displayed.

A web site is actually a collection of web pages together with the associated pictures or other media used on the web pages.

Using the Uniform Resource Locator (URL)

IC³

3.1.3
3.2.1

There are many computers connected to the Internet, and a computer can communicate with any other computer provided that 1) you know the address (number) of the other computer, and 2) that both computers speak the same protocol (language). The Uniform Resource Locator (URL) consists of these two parts.

For example, if you want to view the Netscape web site, the URL would be:

<div align="center">

http://www.netscape.com

Server Protocol   Domain Name

</div>
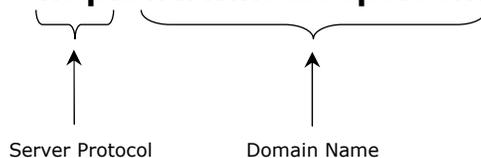
If you want to view Microsoft's file transfer server, the URL would be:

ftp://www.microsoft.com

Server Protocol   Domain Name
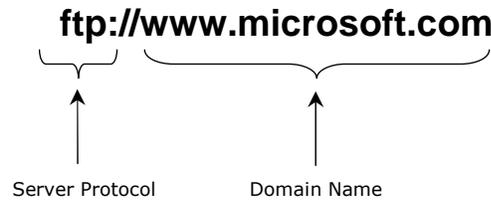
A web browser software is used to communicate with any type of server connected to the Internet. The browser uses the protocol portion of the URL to set up its internal configuration so that it can connect and communicate with the type of server selected. In the examples shown here, it was a web server in the first example, and an ftp server in the second example.

In most cases, when entering an URL with a "www" in the web address (e.g., www.ccilearning.com), you do not need to type in the protocol portion if you want to go to that web server. The URL, by default, will automatically try to find the web server for that web site address if the www is not entered. However, if you want to go to a specific type of server, it is crucial that you enter the protocol at that time.

Looking at the Home Page

IC³
3.1.3
3.2.2

In the previous examples, the URL consisted only of the protocol and the domain name. The server would, in this case, return the top level page called the *home page* or an index page. The home page acts like a springboard from where you can access the other information located on the server.
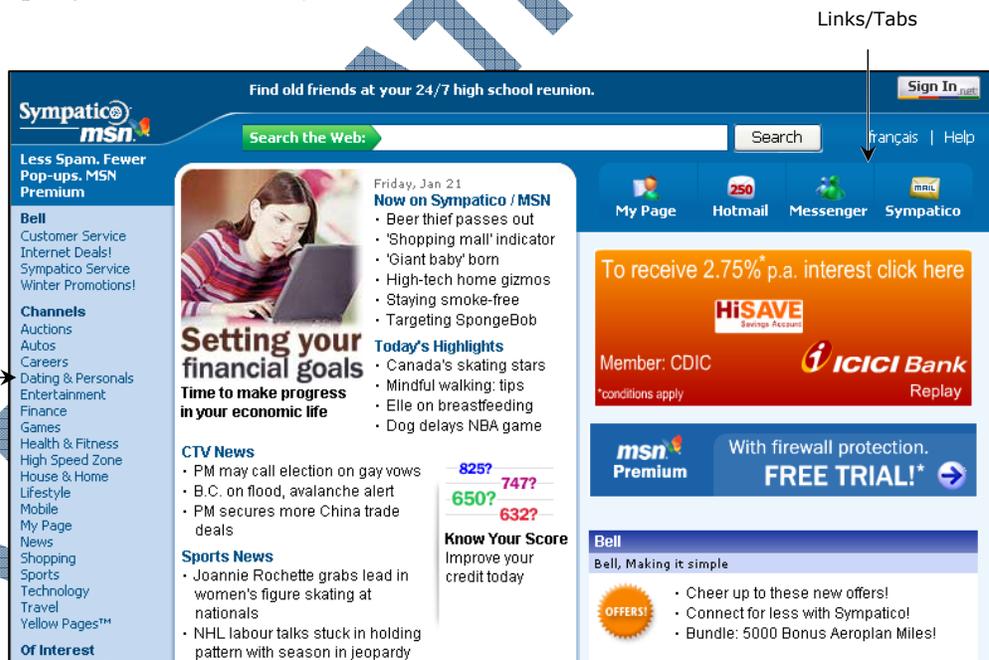
Links/Tabs

Banner →

The home page for most web sites will contain a banner down the left side that is similar to a table of contents for the site. This may also be called a *site map*. Across the top of the home page are generally some tabs or links that the company has set up to help you navigate through the home page. Depending on the web site, the information displayed is usually set up with the latest or most popular information near the top with general information further down the page.

All web browsers also contain a button that will quickly take you back to the home page, regardless of how many web sites you may have visited. These can also be changed to a specific site (like a company's web site) instead of the general ones that appear once the web browser is active (e.g., the ISP's web site, MSN, etc). In Internet Explorer, the Home button appears as 🏠 in the toolbar near the top of the screen.

When you want to locate a page or file other than the home page, the URL must contain the path to the particular file, as in the following example:

Path — http://office.microsoft.com/en-us/default.aspx
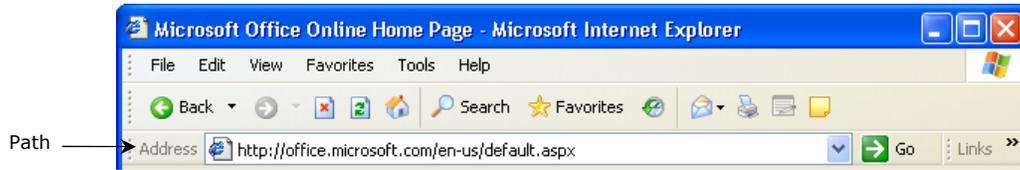
In this case, the URL is http://office.microsoft.com/en-us/default.asp. The server will use the path in the URL to locate the file to send back to the browser that had requested the page. The page on Microsoft Office (default.asp) is located in the *en-us* folder, which is a subfolder within a folder for Office at *microsoft.com*.

Understanding the Domain Name Format

IC³
3.1.4
3.2.1

A domain name consists of three labels separated by dots as shown below:

www.ccilearning.com

Server Name | Name of Organization | Domain Category

Server Name	The server name label is useful to identify the server and its type at the organization as many organizations have several servers at their site. Traditionally, this label also indicates the type of server, i.e., www for web servers, ftp for ftp servers, but this is not mandatory.
Name of Organization	This label is used to identify the organization owning the server. It does not have to be the full formal name of the organization but a short version is chosen that is easy to remember, e.g., ftp.ibm.com. In many cases, a label is used to represent the type of information or service that is available from the server, e.g., www.internet.com, www.dictionary.com, etc.
Domain Category	This label is also called the *Top Level Domain* and identifies the server's information domain.

Top-Level Domains

The Internet was originally established in the U.S. to facilitate research and development of military projects. A set of domain categories were defined to distinguish the different groups involved in these projects. These domains are usually called the "original top-level domains":

.mil	U.S. military
.gov	U.S. government
.com	commercial companies
.edu	universities
.org	organizations
.net	network sites

Country Codes

The original top-domain categories were adequate for their original purpose but soon became inadequate when the Internet became international. The top-level domains were expanded to include two letter country codes. The following are examples:

.au	Australia
.ca	Canada
.de	Germany
.uk	United Kingdom

Larger countries may expand their domain names to indicate the region within the country, e.g., www.pittmeadows.bc.ca is located in British Columbia, a province of Canada, whereas www.kde.state.ky.us is located in the state of Kentucky in the United States.

Other countries use an expansion similar to the original domain names, e.g., www.amazon.co.uk is a commercial company in the UK.

Most of the country codes can be guessed as they are similar to their names but you do have to be careful. For example, .ch is not the country code for China but actually Switzerland (Confederation Helvetique); the country code used for many web sites related to China is .cn.

Proposed New Domains

Several new top-level domains have been proposed and may be available by the time this courseware goes to print. The list below gives a selection:

.aero	Air-transport industry
.biz	Businesses
.coop	Cooperatives
.ecom	Electronic commerce
.info	Unrestricted use
.museum	Museums
.name	For registration by individuals
.new	News-related sites
.pro	Accountants, lawyers, and physicians

Recognizing Types of Domains

Web sites whose domain name ends with *.com* are usually *commercial* web sites, i.e., belonging to companies that sell products and services. *Academic* web sites can be recognized by the *.edu* in the domain name ending. Not-for-Profit *organizations* and Non-Government-Organizations (NGOs) would normally use *.org* in the domain name — their web sites tend to be largely informational.

However, web sites can be designed to achieve many different objectives. As web pages contain information, one obvious objective would be to inform, but web sites can do many other things:

- inform
- entertain
- sell products
- form opinions
- create brand awareness
- educate
- gather information
- solicit support

Any particular web site will typically be designed to do reach at least one of the above objectives.

For example, a *university web site* can be used to provide distance education courses, to inform students of lecture room locations on campus, or gather information about student sport preferences.

Similarly, a *commercial company's* site might inform customers of a new product range, gather feedback on the company's support service, and training on the maintenance of a specific product.

Looking at Online Databases

It takes time to create a web page. Some organizations have information that changes frequently. Examples would be a travel company that constantly changes the vacations that it offers, or a society whose membership is constantly changing. It would be very time-consuming to create a new web page every time the information changes.

The solution is to put the information in a database. When someone requests information, the server will search the database, extract the appropriate information. The server then puts the information on a pre-designed page dynamically, and returns the page to the user that requested it.
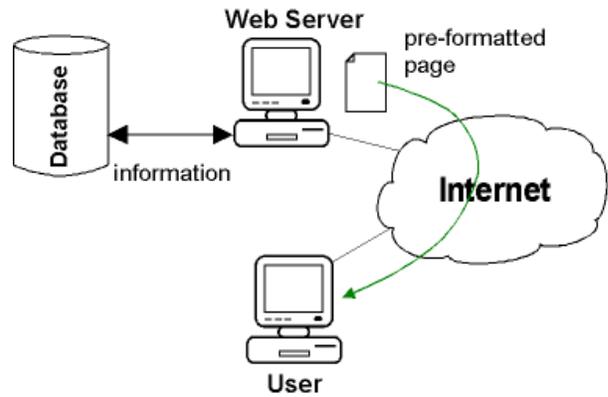
The most frequently used example of this would be the database of a search engine company such as Google, MSN, AltaVista, or Yahoo, which contains records containing the URL, Title, Description, and Keywords of web pages. When a user wants to search for information, they would enter *keywords* (i.e., specific words to narrow the search) into the search engine page and click the Search button. The keywords are sent to the search engine web server where it scans through the database to find records to match the keywords. The web server then creates a page made up of information from the database and returns that page to the user who requested it.

The following screen shows the results of keywords entered by a user looking for information on rainforest butterflies:
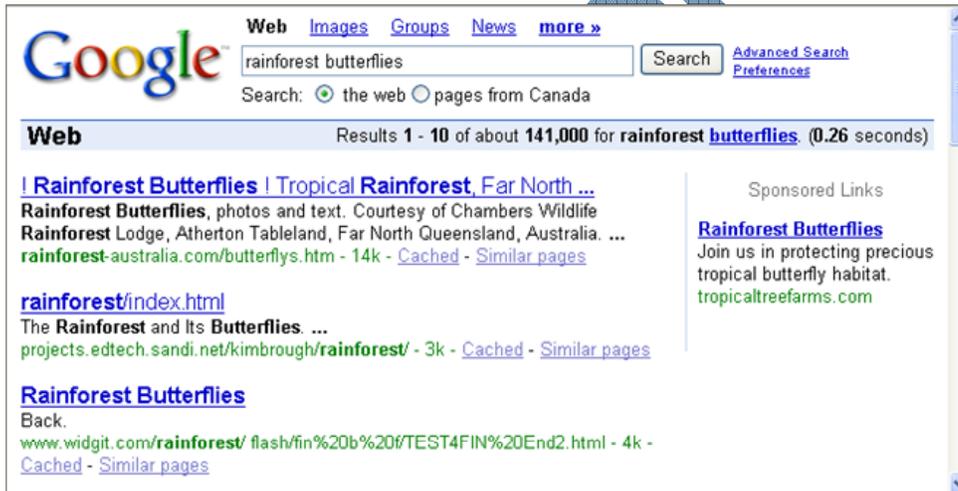
Another example is the General Motors dealership database where a user is looking for a dealer in the Seattle, Washington area. This web site was designed with fields to help the user narrow the search from within the General Motors database to find the information they seek.
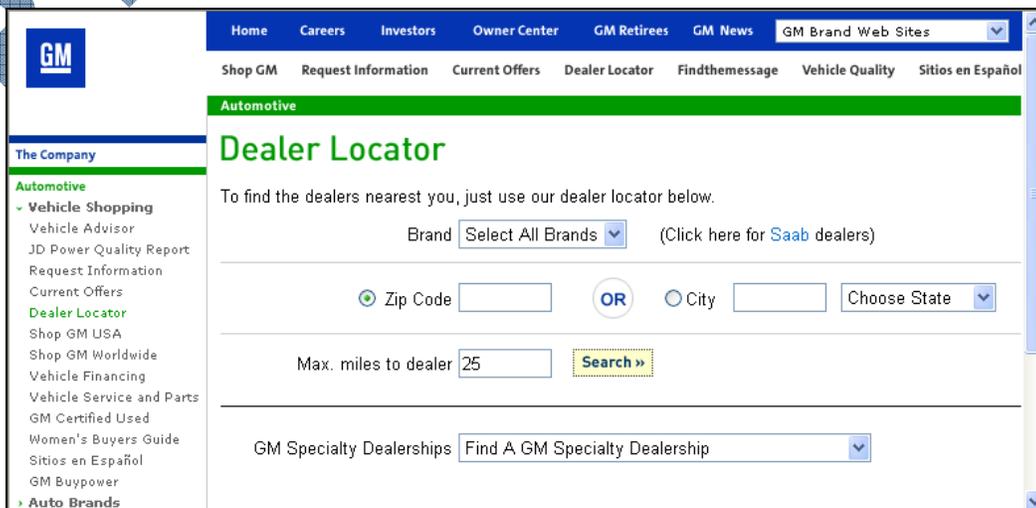
The resulting page returned was similar to the following:
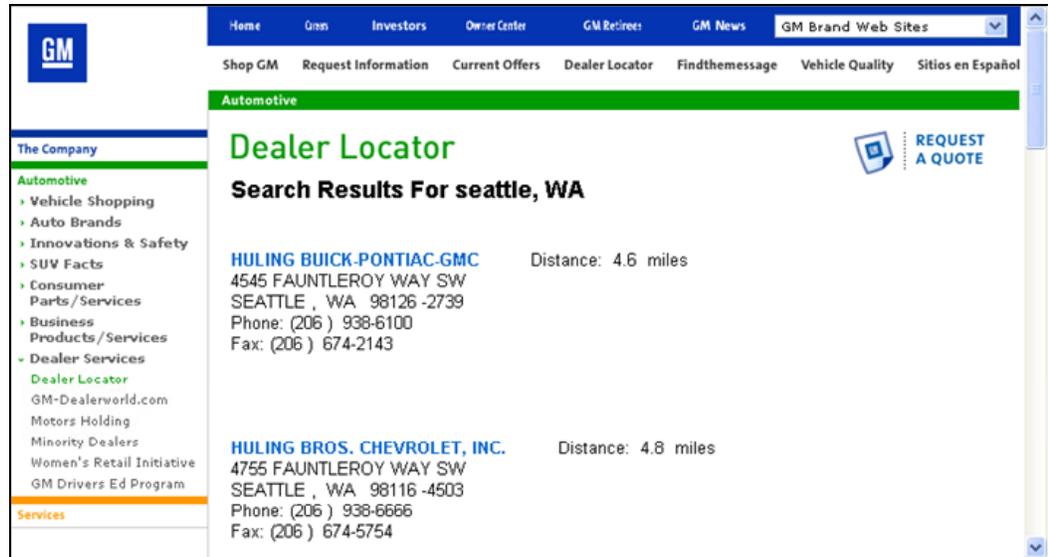
Identifying Other Elements

IC³
3.1.1
3.1.5

There are other elements that may appear when you are on different web sites on the Internet. Some of these include cookies, plug-ins, downloads, or security concerns.

Whenever you go to a web site that allows you to shop for products, this web site has encryption software built into the web site to protect you and their database once you submit your order using the online form. This encryption software provides a security level for the customer (you) against someone being able to obtain any personal information as well as any financial transaction information submitted with the order.

Encryption can also take place if a cookie is added to your system from this web site. A cookie is a piece of text that can be stored on your hard drive and allows a web site to retrieve information about which sites you have been to and what information interests you. The cookie consists of two parts:

▪ an identifier which could be a name you set up in order to get information from the site, or it could be a generic id value assigned by the web site

▪ the web site address

If a web site asked you to register on their site in order to find information, they may have also asked you for a password. This password is then encrypted so that companies or people cannot see what the password is and try to log into that web site as you.

Companies generally set up cookies to try and determine statistics on who is really visiting their web sites as a first time visitor, a return visitor, or someone who got there by mistake. The id assigned to you by the web site is used in their database to keep track of the number of "hits" on the web site and by whom. Another reason for cookies is the issue of e-commerce or shopping online. The id and password assigned by the web site helps to identify that you are a valid shopper. Other web sites may set up cookies to help customize the web site to your preferences, e.g., instead of always going to the home page, your preference could be set to always go to the page containing downloads for that site.

Take note that cookies do not give out any information about your system other than what was logged in the folder containing the cookies. The biggest concern about cookies comes from the fact that spammers or companies who use programs to gather information for marketing purposes can gain access to these database lists, either from the company directly or via harvesting programs indirectly. Cookies can lead to a large amount of junk or spam mail that most people do not want, especially if "profiles" can be set up from this information to target your specific needs.

Cookies are not the only way where a login id and password are generated. If you got to a site to download information (e.g., freeware, trial copies of programs, etc.), the company generally requires you to register first in order to have access to any of these files. This includes any FTP (File Transfer Protocol) sites you may visit where a large amount of files can be uploaded (copied to the FTP server) or downloaded (copied from the FTP server).

A plug-in is a program that can be downloaded to your system and then installed before you can view the item on the web site. For instance, many web sites give you the option to download the Adobe Reader plug-in before you can view any of the PDF files on their web site. The Flash plug-in allows you to view animation or video from a web site.

When someone speaks about cache on the Web, they are talking about another way to increase the speed of your bandwidth (connection) to the Internet. Some ISP's offer a web caching service that will speed up the connection from your computer to other computers on the Internet as well as manage the traffic flow of requests for information at a reasonable cost.

Pop-up ads (commonly referred to as pop-ups) can either appear on your screen as a separate window to the web browser, or be designed to appear similar to a window on the actual web page. These are basically advertisements by companies who have paid to have them appear whenever anyone accesses the web site, or in some cases, using an application program that has been downloaded from the Internet, such as Kazaa for music files. Pop-ups are not dangerous to your system as much as they are annoying to deal with (i.e., closing each window before you can view the web site). The more places you visit on the Internet, the more likely you are to begin seeing more pop-up ads on your screen. There are a number of companies who sell programs to help you eliminate these pop-up ads in addition to setting the Windows alert system off. Windows XP SP2 includes an option to block and/or temporarily enable pop-up windows and this may be suitable for your needs.

Summary

In this lesson you will prepared for going online by reviewing some basic terminology, as well you learned about different types of organizations that may be online. You should now be familiar with the following concepts:

- What the world wide web is
- What a web browser program is
- How to find information on the Internet
- What a web site is
- Recognize how HTML works with a web site
- Understand what URL or HTTP is
- Understand what a hyperlink is
- Understand what a cookie is
- Understand how encryption works
- Recognize common abbreviations used on the Internet

Review Questions

1. What are the two types of computers that make up the Internet?

   a. _____   b. _____

2. What is a web server? Give an example of someone who might have a web server.

3. What does URL stand for and what does it do?

4. Identify the server protocol and domain name areas in the following address:

   http://www.ccilearning.com

   Protocol Server
   Domain Name

5. What is the home page?

   a. Your company's web site

   b. A specific search engine's web site

   c. The page you want to see first whenever you start the web browser

   d. A personal web site

6. In the www.ccilearning.com web address, the .com represents the type of domain it is; in this case, this is a commercial company.

   a. True   b. False

7. What is a cookie?

8. Explain what a plug-in product is and give an example of when you might install one.

9. When someone refers to cache on the web, what are they referring to?

10. A popup window is generally an advertisement for a product or service.

    a. True   b. False

Lesson 2: Looking at Web Browsers

Objectives

Suggested Timing: 1 Hour

In this lesson you will look at what a web browser is and how it can be used to view web sites on the Internet. On successful completion, you will be familiar with the following:

- What a web browser is
- The purpose of a web browser
- Some of the popular browsers
- Identifying common elements found in all browsers
- Identifying a secure versus non-secure site

- Understanding what a mailing list is
- How a mailing list works
- Understanding what a newsgroup is
- How a newsgroup works

Using a Web Browser

IC³
3.1.2
3.2.3
3.2.4
3.2.12

To access web documents, you need a software program called a *web browser*. As with many other types of software, there are many World Wide Web browsers. Web browsers are interactive access programs utilized to see data on the web with graphical interfaces to display pictures, text and animations. Additionally, applications viewed through browsers become "point and click" applications. Some of the popular web browsers include:

Microsoft Internet Explorer   http://www.microsoft.com/ie/
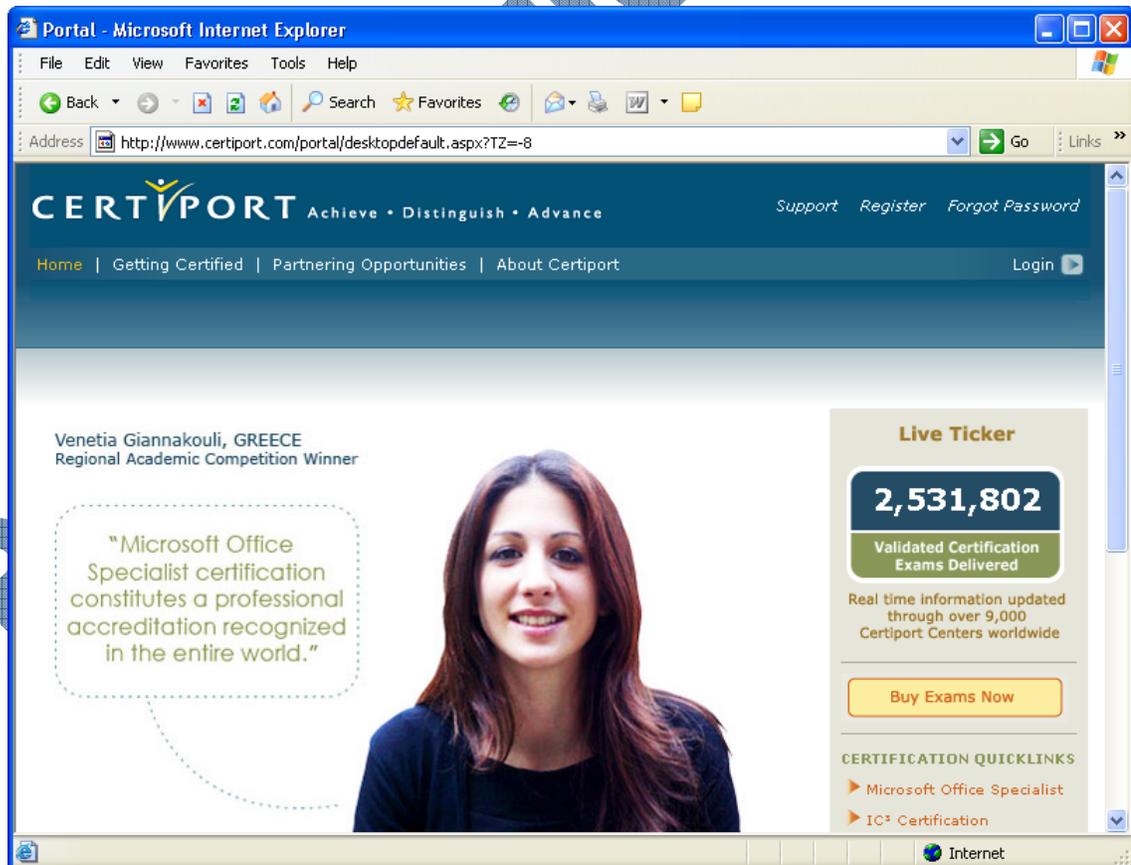
Netscape   http://www.netscape.com
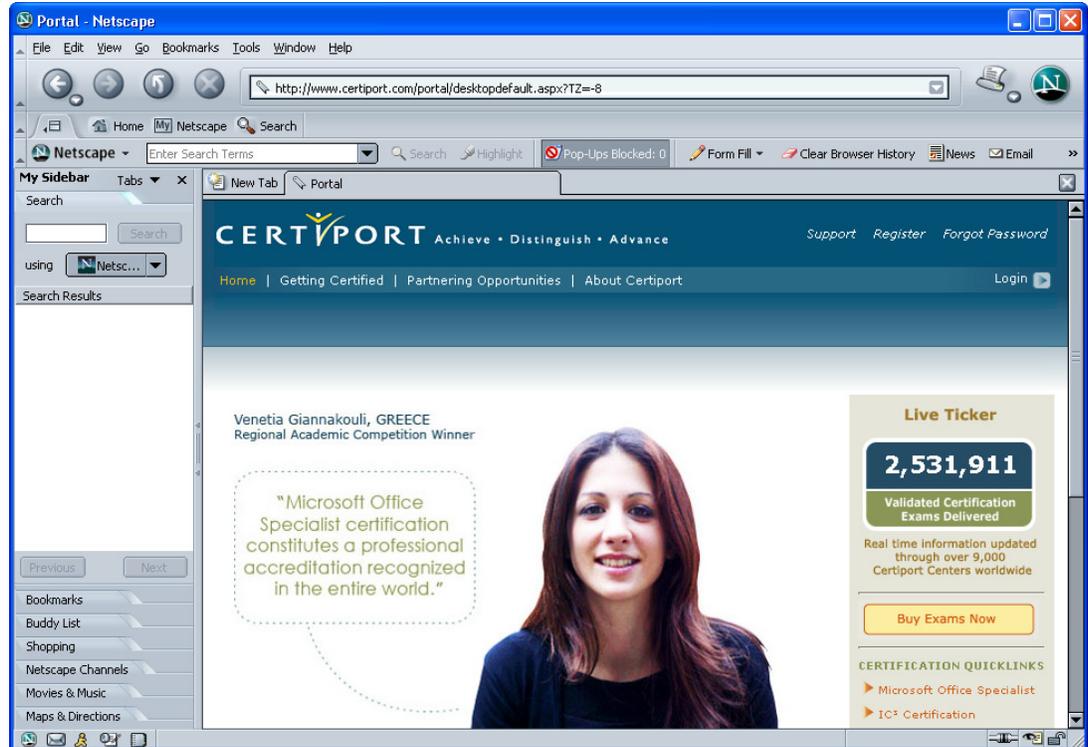
Opera   http://www.opera.com
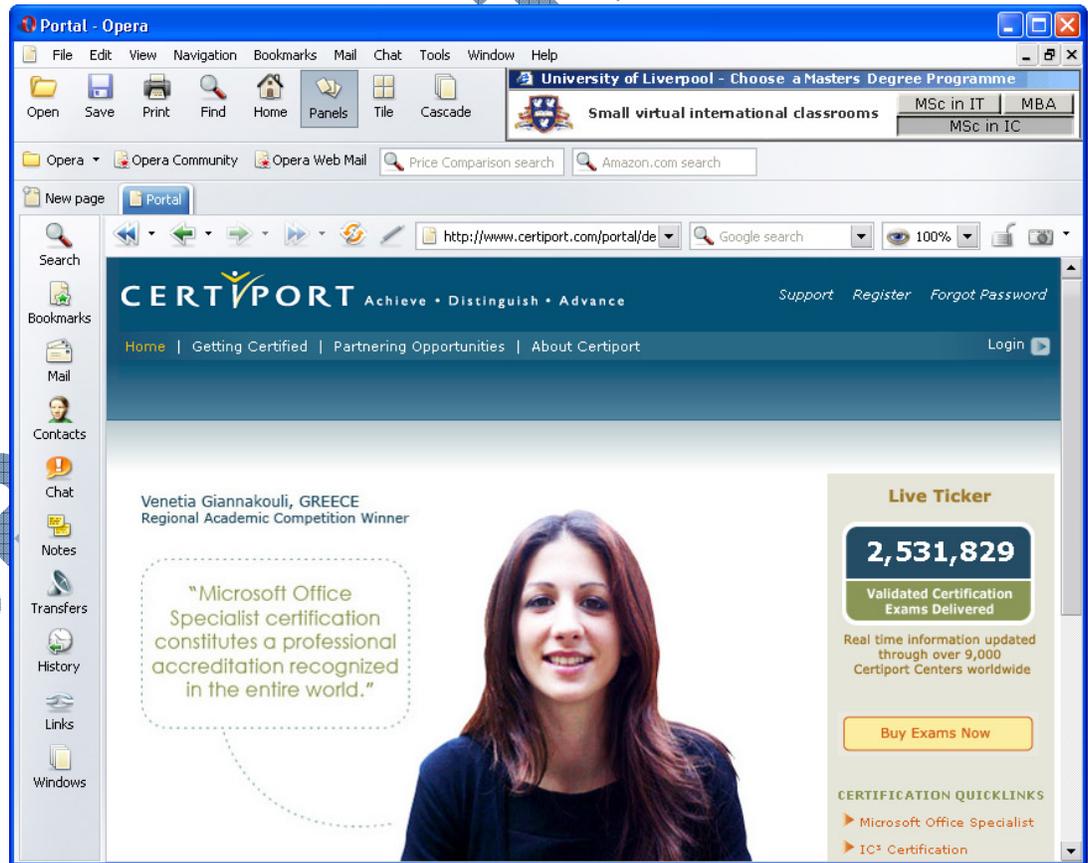
These popular browsers are available for download (copy to your computer and install) from the Internet, with Internet Explorer and Netscape Navigator already installed on newer computers. Newer versions of the software have a lot of extra features including an e-mail client or newsreaders, the ability to view embedded MPEGS, or an HTML editor. They also include new and improved options with a more attractive interface. You will find other browsers as you begin to *surf the net*.

Before activating or working with a browser, you will need to review some terminology.

A home page is the first page that you see every time you go to a web site, using the main address for that web site only, e.g., www.ccilearning.com, www.microsoft.com, www.sears.com, etc. In most cases, when you want to go to the first or home page for a site, you don't need to enter anything in the URL field other than the web site address. In general, the home page works as a table of contents or index for other pages that are stored on that web site.

Once you begin to access different web sites, you may find that additional windows open up during the time that the site being requested is loading to the screen. These additional windows usually advertise something. Sometimes it is an additional page for that web site and they want you to be aware of a new feature or new information; other times it may be a company who has paid to advertise on this web site. You can either close these windows or click on the links in these windows to go to those pages.

As you click on links to find other pages in a web site, it is referred to as "*drilling down*". When you are following links that simply interest you, but you are not looking for specific information, it is called "surfing".

Once you access a web site, you will find there are many similar elements that exist on a web page. Not all web pages will have the same elements; some web sites may also display these elements in a different format, e.g., advertising window versus a banner, hyperlink is a button instead of underlined text, etc. The following items are additional items not discussed in Lesson 1, using a different web page to illustrate these new items:

Table of Contents   Banner   Search Field

Advertisement Window

Table of Contents or Index	This usually appears on the left or right side of the web site, giving you a listing of what other pages or areas you can go to while on this site. These are generally set up as hyperlinks. There may also be a table of contents or index at the bottom of each page of the web that allows you to move around this web site, e.g., Home, Top, Products, Contact Us, etc.
Banners	Most web pages have a banner. A banner is located at the top of an organization's web pages and will typically contain the logo and name of the organization. The banner may also include links to general functions such as Search, Contact Us, etc.
Search Field	Most web sites will have a blank box with the word "Search" next to it that allows you to search for a specific item on this web site. The name of the Search field and the accompanying button to activate the search will vary between web sites, e.g., Search the Web and Go, Search for and Search, etc.
Advertisement Windows	These are separate windows that may appear near the top of the web page that open at the same time you access a web page. These windows may advertise a different product, feature, or information.

3.2.3
3.2.12

You may also find that some web sites take a bit longer to display than others. The more items the web site has on any of their pages, the longer it will take to display on the screen. Occasionally you may find that a web page only displays part of the page, showing ⊠ in square or rectangular boxes. This generally is an indication that a problem occurred in trying to download or display the entire page on the screen. You can click on the 🔃 or **Refresh** button to refresh the display of the web site. If you still continue to see any ⊠ on the screen, this indicates there's a problem at the web site location in being able to display these graphics or links.

3.2.4

As you move through the World Wide Web, the web browser will keep track of where you've been, essentially creating a history for reference. This can be very handy in that you can move to a previous web site accessed a couple of days ago without having to remember or re-enter the web site address. Use the 🕘 or **History** button to open a pane to show you the sites and when you visited them.

You will also have the option of clearing the history, as required. This can be done within the options or preferences of the web browser program. It is a good idea to clean out the history on a regular basis to prevent too long a list to search. In most cases, if there is a web site you like, consider adding a bookmark (discussed later in Lesson 3) to return to this page anytime versus leaving it in your history and trying to find it again at a later date.

Identifying Secure Sites

3.1.5

When you visit a web site that requests information from you via an online form, there is the possibility that the information can be intercepted and used for undesirable purposes. You could use a *handle* or alias name without providing your personal information if you want to prevent the web site from knowing your real name. This handle or code name could also be set up with your ISP/online service for mail purposes; providing your actual e-mail address could result in you receiving numerous unsolicited e-mail.

Another example is when you are making an online purchase using your credit card, the card information could be stolen and used for illegal purposes.

On the Internet one uses encrypted transfer for online transactions where your private information needs to be protected.

Understandably many consumers are still hesitant about providing credit card and other personal information over the Internet. A full treatment of Internet security is outside of the scope of this courseware but the main features will be discussed and will provide you with pointers to where you could obtain more detailed information.

Basically, Internet security boils down to three issues:

- be sure that the e-commerce web site you are visiting really belongs to the company it says it does,

- will the information you submit be "captured" enroute by other parties to use for other illicit purposes, and

- will the e-commerce company itself use your information for other purposes than just the current e-commerce transaction?

Using Digital Certificates

Digital certificates are a technique used to positively identify the parties in an e-commerce transaction. For example, when you download software from a company, you need to know that the software is genuine — the company's digital certificate gives you the confidence.

Digital certificates are obtained from "Certification Authorities" who issue, manage and track digital certificates according to strict international standards. See www.verisign.com for an example of a Certification Authority. Digital Certificates depend on *encryption* technology.

Using Encryption and Secure Socket Layer (SSL)

When you submit your personal information to an e-commerce site, you are connected over a *secure connection.* This is indicated by a lock (🔒) on the status bar and the URL now has an "*s*" added (https).
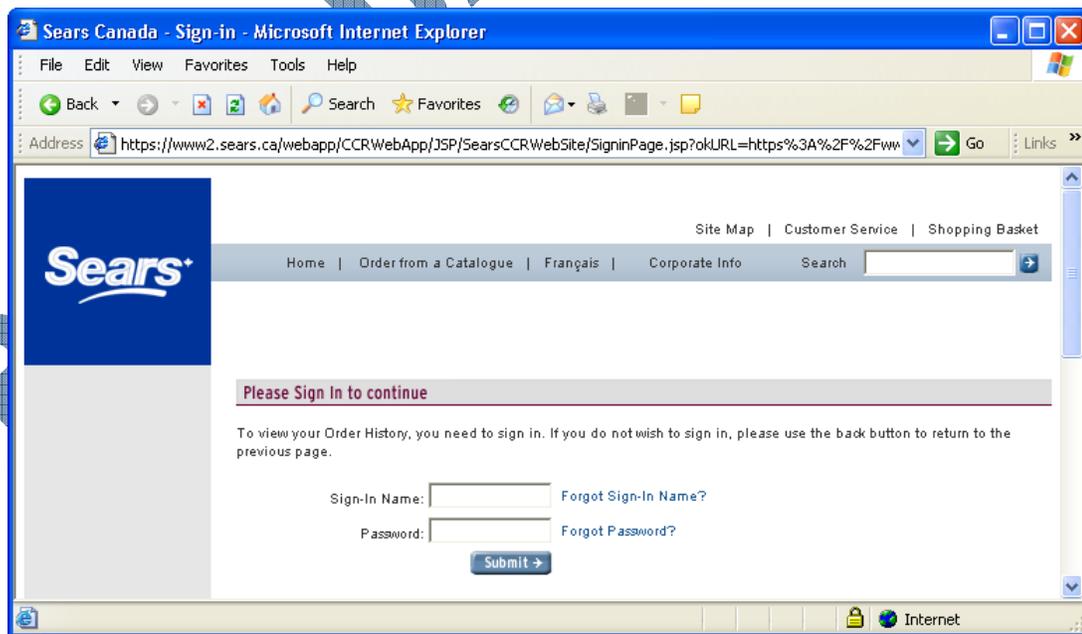
This indicates that you now have a *Secure Socket Layer (SSL)* connection and that the transfer will make use of *encryption*.

When electronic information (e.g., a web page or an e-mail) is encrypted, you apply a *key* to the text to transform it into another document where the text is rendered unreadable by scrambling it. When the other party receives the encrypted document, they need to apply the key to the document to *decrypt* (unscramble) to get the original document.

If you send the key with the document over the Internet so that the other party could decrypt the document, the key and the document could be intercepted and the document read by someone else. This would defeat the purpose of using encryption. The Internet makes use of *Asynchronous Encryption*. Asynchronous Encryption makes use of two keys, a *public* key and a *private* key. These two keys are related in a very complex mathematical manner. A document is encrypted using the public key and decoded at the other end using the private key. So even if the document is intercepted together with the public key, it cannot be decoded without the private key. The private key is never sent over the Internet.

Keys can be encrypted with different levels of security. This is described by the number of bits used in the encryption: 40-bit and 128-bit keys are typically used. You should use the highest encryption level possible. Most browsers support 128-bit encryption. If your browser does not, you should update to a version that supports at least 40-bit encryption.

Looking at E-commerce and Encryption

IC³
3.1.5

The encryption process in an e-commerce transaction is illustrated in the following diagrams. Once you have added the products that you want to buy to your shopping cart and selected to "check out", the web server will typically send you a page with a form to capture your personal information. As discussed previously, this is done over a secure connection (SSL - https://). Behind the scenes, the server has sent the page and a public key.
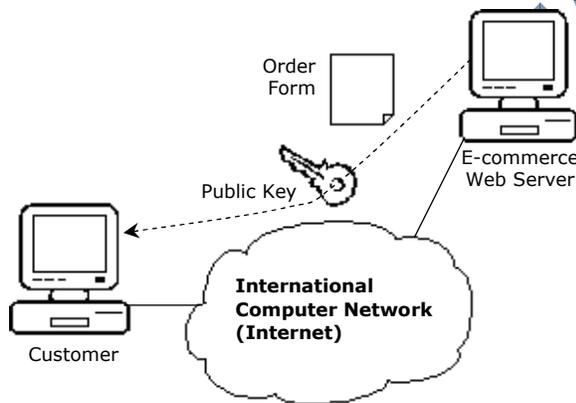
Once you complete the form and submit it, your browser will first encrypt the form information using the public key. If the order form containing your personal information and credit card data were intercepted at this point, it would be meaningless because you need the private key to decrypt the information.
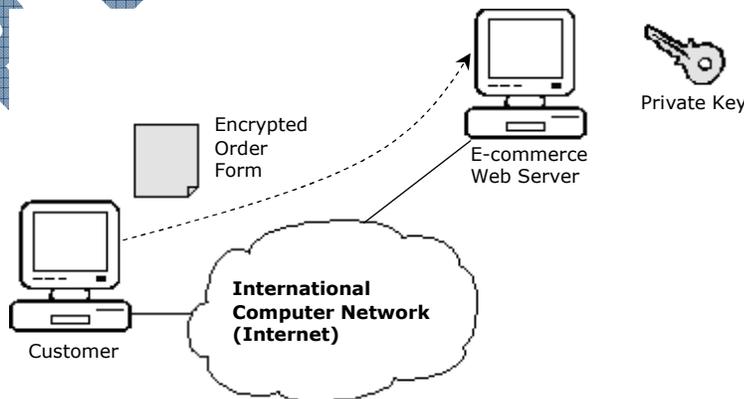
The e-commerce web server will then use its matching private key to decrypt the form information so that the company can process your order.

Understanding Privacy Policy Statements

IC³
3.1.5
4.3.4

Once an organization or company has captured your information using a secure connection, there is still another concern: will the company use your information for purposes other than for the purchase you made?

Most reputable companies recognize this concern. They want to ensure that you will continue to be a customer. So they promise to protect the privacy of your information and restrict its use. The company's privacy policy is usually available on their web site, and should provide you information about what they plan to do with any information they capture about you.
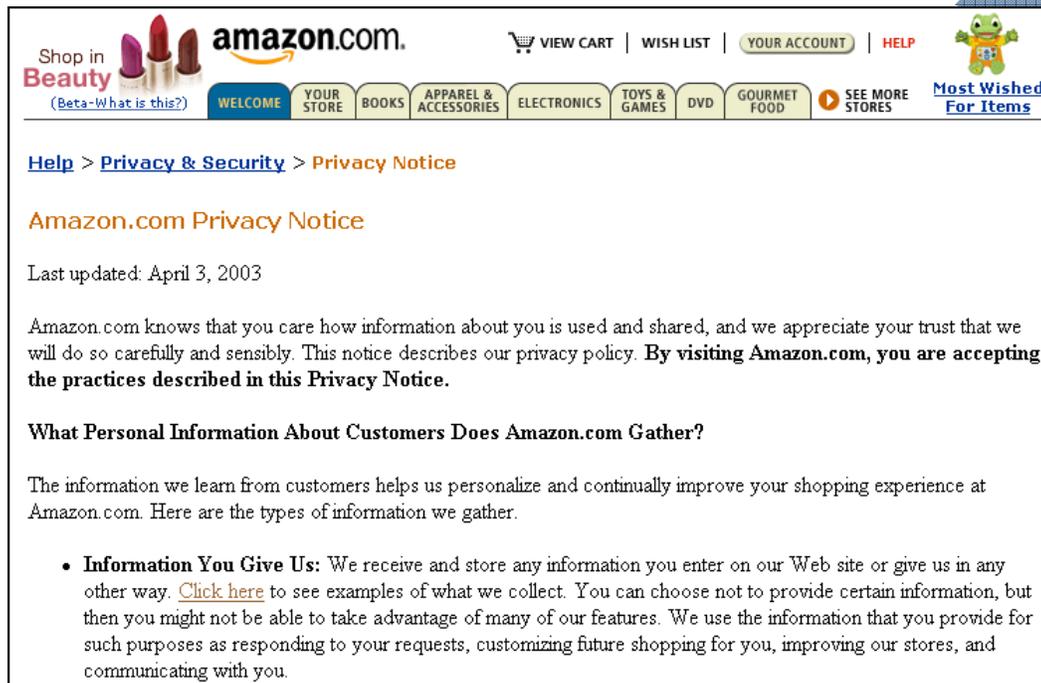
Be sure to read this privacy statement prior to filling out any forms on that web site. If you are sure you want to proceed, consider using an alternate e-mail address such as one from a web-based e-mail program instead of the one you may use for other personal mail.

Looking at Mailing Lists

IC³
3.1.6

A *mailing list* is a virtual online discussion area using e-mail. A list has a number of members and is devoted to a specific topic or profession. If you are a member, you can send or post an e-mail message to the list, and the list server will resend your message to all the members. This is similar to a group of people who share a common interest being together in one room. If a member says something, all the other members will hear it and anyone can reply.

Mailing lists are very convenient. The members of a list can be located anywhere in the world. All you need to participate is an e-mail account and an e-mail program.

If you are passionate about the orange zebra-striped butterfly, you would join the orange zebra-striped butterfly list. You can then stay in touch with the 30 people world-wide who share your interest. You form a veritable online community.

In the business environment there are many lists dealing with specific subjects that would be of interest to your company. There are lists for specific disciplines and sub-disciplines.

You may choose to set up a temporary mailing list for a specific project.

Subscribing

You need to be a member of a list before you can post or receive messages. The process of becoming a member is called *subscribing*. When you subscribe to a list, your name and e-mail address is stored on the mailing list server. Unsubscribing removes your information from the list server.

A mailing list server can host many lists. Each list on the server will have a unique name. The list will have two e-mail addresses, one for administrative messages (like subscribing) and one that you will use to send (post) messages to the list.

Once you have sent an e-mail to the list administrative address to subscribe, the server will send you a confirmation e-mail, confirming that you are now a member of the list. It will also give you the instructions on how to use the other features of the list.

The screen here shows a typical e-mail that you would send to subscribe to a list:

In this example, the list server is owned by a company whose domain name is property.com. The instructions for the list server are in the body of the message: you are telling the list server that you want to subscribe to a list called *realestate-finance* and that the e-mail address that you are providing to them to use is peterpiper@acompany.com.

There are three makes of list servers in common use: listserv, listproc, and majordomo. The method of subscribing is slightly different for each. The example shown above is for a listserv type.

Moderated versus Unmoderated Lists

A *moderated list* employs filtering and only those messages that conform to the set of list rules are distributed to the members. In a moderated list all messages are reviewed by the *list moderator*.

Moderated List	you receive less e-mails
	messages are approved by a human moderator
Unmoderated List	all messages are sent to the members
	the process is automated, there is no human intervention
	the list can be affected by off-topic messages, junk mail, viruses
	the daily volume of messages can become unmanageable

Mailing List Databases

How do you find out if there is a mailing list covering the topic that you are interested in? There are several *mailing list databases* that keep track of lists, the topic and target audience, and subscribe/unsubscribe information. An example of a mailing list database is www.liszt.com (now owned by Topica):

Most of the mailing list databases arrange the lists in a directory that you can browse. They also have a search facility like a search engine (discussed later in this section) where you can use keywords to search for a list covering your topic.

Subscribing to a Newsgroup (Usenet)

A newsgroup is a public Internet messaging service. It covers nearly 100,000+ forums. A newsgroup forum is similar to a list in that each forum is dedicated to a specific topic. A newsgroup forum differs from a list in that you do not automatically receive all posts — you actually have to go to the forum and read the posts. A newsgroup may also be called a bulletin board as it provides a common area for people to post or read information.

You do need special software, called a newsgroup reader, to read the posts. Most e-mail programs will also include a newsgroup reader.

There is a hierarchical convention for naming forums and subforums. For example, comp.security.miscellaneous is a subforum of the security topic and deals with miscellaneous security issues. The security topic is part of the main topic which covers all forums related to computer topics. There are ten main Usenet topics:

Alt	Collection of newsgroups	Sci	Scientific research groups
Biz	Business related subjects	Soc	Social issues groups
News	Usenet newsgroup	Talk	Controversial topics
Rec	Hobby, recreational groups	Humanities	Art discussion groups
Comp	Computer-related groups	Misc	Groups that do not belong to any of the above

As with e-mail, you need an account with a Newsgroup server (that uses Network News Transfer Protocol or NNTP). Your ISP will typically include a newsgroup account when you sign up. Usually the ISP will only have a subset of the 40,000 newsgroup forums available on their newsgroup server.
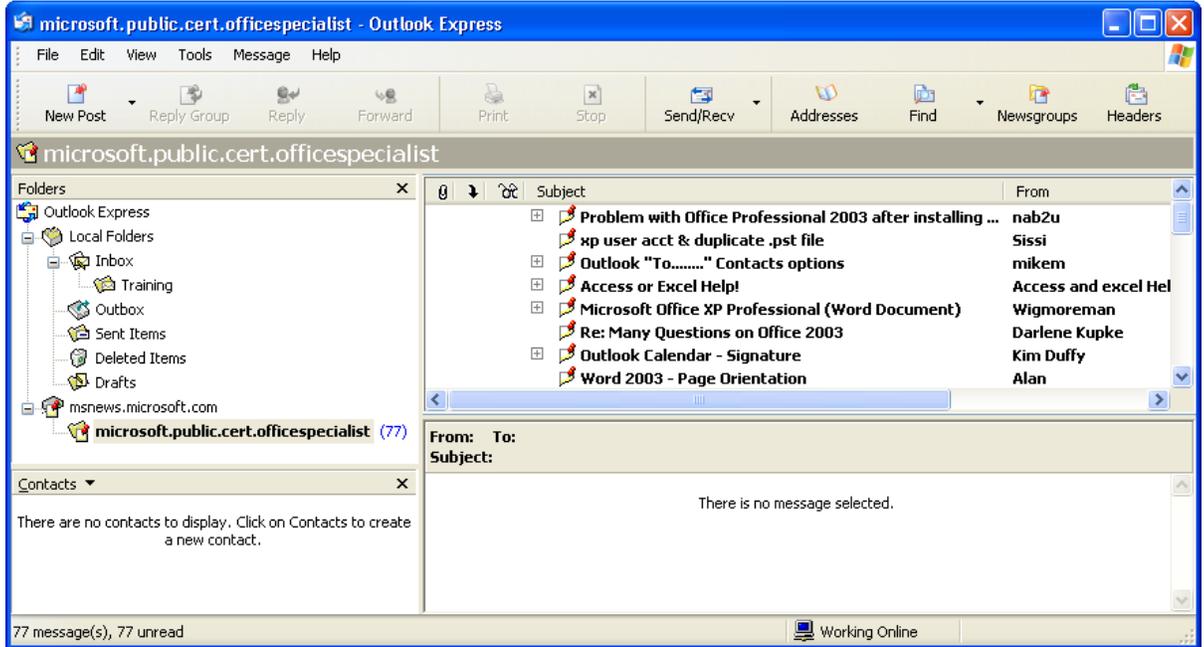
This screen shows a typical newsgroup reader screen. The folder list on the left lists the forums where the individual has subscribed as a member.

The following figure shows the Information Viewer. It lists all the posts to the microsoft.public.cert.officespecialist newsgroup (a forum focused on topics regarding the Microsoft Office Specialist certification or programs within the certification program).
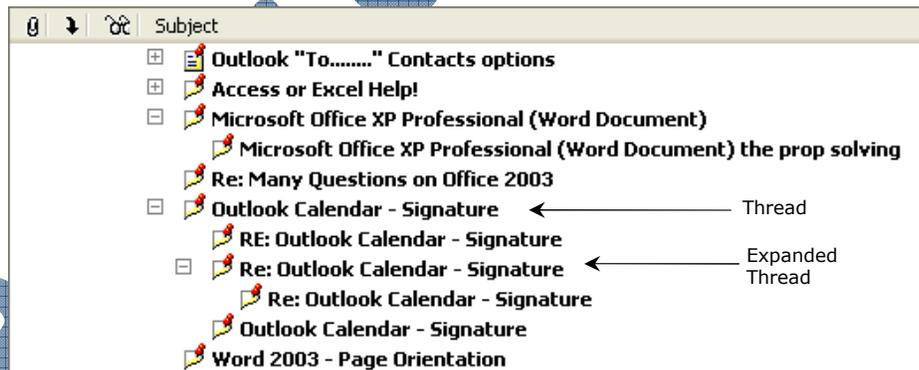
When a specific post has received a reply, it is called a *thread*. A "+" sign in front of a post indicates that it is a thread. In the figure above, the thread on *what the group is about* has been expanded, showing all the messages. You can follow a thread by clicking on the first message to read it, then the next one, and so on. This type of forum is also called a *bulletin board* or a *discussion group*.

The World Wide Web is a relatively new Internet technology. Because of the ease of navigation and the attractiveness of web pages, the web has become very popular. Many mailing lists, newsgroups and bulletin boards can now be accessed with a web browser.

Summary

In this lesson you looked at what a web browser is and how it can be used to view web sites on the Internet. You should now be familiar with the following:

- What a web browser is
- The purpose of a web browser
- Some of the popular browsers
- Identifying common elements found in all browsers
- Identifying a secure versus non-secure site

- Understanding what a mailing list is
- How a mailing list works
- Understanding what a newsgroup is
- How a newsgroup works

Review Questions

1. The home page for a web site usually contains a table of contents or index to show you what is available on that web site.

   a. True   b. False

2. Identify the banner on the following image:

3. If you see an icon similar to [×] , what does this mean?

    a. You need to close the window before going further.

    b. A link of some sort is missing at this location, e.g., picture, ad, etc.

    c. You need to stop the downloading of this page and then reenter the URL to display everything.

    d. Nothing. The problem lies at the web server.

4. When you visit a web site that wants information from you in a form, you can provide a handle or alias name instead of your own to cut down on any junk mail you might receive.

    a. True   b. False

5. Provide an example of when you might want encryption on a secure site.

6. A company's privacy statement usually states what they plan to do with any information they capture on you when you visit their site.

    a. True   b. False

7. What is a mailing list?

    a. The names in your Contact Lists in your e-mail program.

    b. A public Internet messaging service.

    c. A virtual online discussion area.

    d. When you place your name on a list to receive marketing material.

8. What's the difference between a moderated and an unmoderated list?

9. In order to access information in a newsgroup, you need to set up an account with that newsgroup.

    a. True   b. False

10. What is a thread?

    a. A request made for information.

    b. A reply made by someone to a specific post in the newsgroup.

    c. The process of being able to drill down to find information.

    d. Another name for a forum.

Lesson 3: Using Microsoft Internet Explorer

Objectives

Suggested Timing: 2 Hours

In this lesson you will look at how to use a web browser to go to different web sites and navigate a web page. On successful completion you will be familiar with the following:

- Starting Internet Explorer
- Looking at the home page
- Entering in a web site address
- Using hyperlinks to move around
- Working with bookmarks

Getting Started

IC³
3.2.2
3.2.4

In order to go online to the Internet, you need to have a web browser installed on your system. Every machine that comes with Windows installed also has Internet Explorer installed. To start Internet Explorer, use one of the following methods:

- Click on **Start**, **All Programs**, and then **Internet Explorer**.
- Double-click on the *e* icon on the desktop.
- Click on the *e* icon on the Quick Launch toolbar.

Once the web browser starts, the first page you should see is the home page. The default setting for Internet Explorer is www.msn.com but this can be changed to a different web page (e.g., your company's web site) using the **Tools, Internet Options** command.

Exercise

1 Double-click on the *e* icon on the desktop.

2 Wait for the browser to start and load your home page.
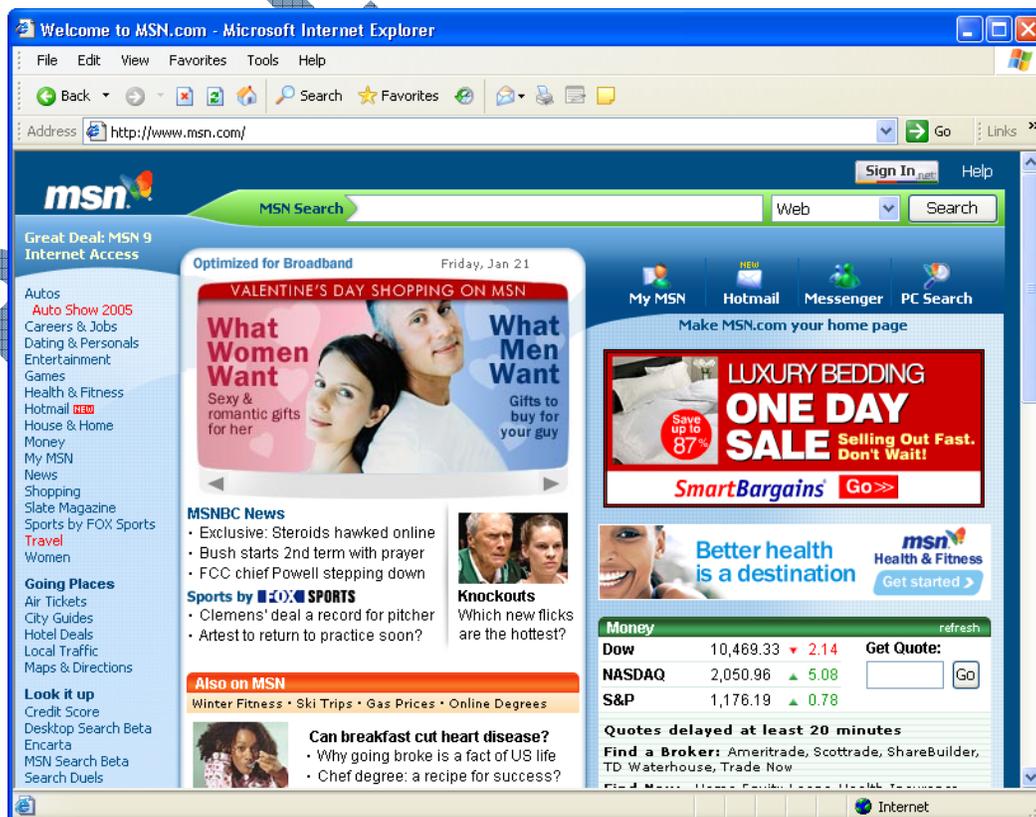
The content of the screen you see may be different based on which web site was set for your browser's home page.

Try these steps to learn how to start your browser and then enter an address in the browser.

3   Insert the CCI Learning Solutions URL by clicking in the **Address** line and typing: www.ccilearning.com

4   Press the Enter key.

5   Wait for the page to load.

6   Click in the **Address** field and type: www.msn.com and press Enter .

Looking at the Screen

It is important to recognize the various components of a browser's window.

Control Icon   Select this icon to drop down the Control Menu to perform functions such as sizing, moving and closing windows.

Minimize Button   Use to reduce the window down to the smallest size possible (a button on the taskbar) while still letting the program run in the background.

Maximize Button   Makes the window take up the maximum amount of space possible on the screen. You usually do this to avoid anything distracting in the background.

Restore Button	When a window is maximized, the Maximize button changes to a Restore button to indicate that you can restore the window back to the original size.
Close Button	Use this button to close the window. Closing an application window terminates the program.
Title Bar	Located along the top of a window and indicates by its name what the contents of the window are. The title bar also changes color to indicate whether it is active (bright color) or inactive (gray).
Menu Bar	A menu of commands. This is usually the easiest place to find an action you want to perform. Each item on the menu bar usually has a drop-down menu with additional choices on it. Menu choices can be accessed with the keyboard or the mouse.
Toolbar	This can be text, icons, or both. This bar can only be used with the mouse. The buttons provide a shortcut access to frequently used menu choices.
Action	An animated graphic on the right side of your menu bar that indicates your program is actually doing something. It is usually in the shape of the logo, e.g., Windows flag, Compaq logo, etc.
Search Pane	Displays when you activate the Search option. Use this to type in the search criteria of the web pages you want to find. If you have Windows XP SP2 installed on your system, you may see the Search Companion instead of the classic search pane shown in the previous screen.
Status Bar	This indicates what is happening during any given moment in the browser window. It shows progress of connection and loading pages being accessed. It may also show if you are accessing secure or insecure documents, or if you have to check your mail when the browser has an e-mail component.
Web (Home) Page	The first web page that appears when you start the web browser. The web site can be changed using the **Tools, Internet Options** command.
Scroll Bar	The bars are used to scroll through a page when using the mouse to navigate in the web page.

Using the Address Field

The line below the toolbar is the *Address bar*. It is used to locate resources on the World Wide Web. A resource is usually a home page that has information that you are seeking. It will appear similar to the following:

| Address | http://www.msn.com/ | Go | Links » |

Address	Indicates the web site currently being viewed or you can enter an address to go to a new site.
Go	Click this button, after entering the web site address, to go to that site.
Links	This is a shortcut menu you can use to quickly go to those web sites noted in the **Favorites, Links** submenu.

You will find that the home page contents of many web sites will change on a regular basis. This keeps the web site fresh and current, especially if they have new products or services they want you to know about. For the most part, it is usually the information to the right of the banner at the left that will change on a consistent basis. The banner serves as a table of contents for you to use to navigate on the web site; occasionally a web site may have links across the top of the page to help you navigate to other areas of the web site.

If a web site address changes, the company or organization for that web site will generally display a page indicating what the new address is and in most cases, redirect you to that new site automatically. In a situation where you visit this site frequently, you may want to either join their mailing list so you can receive updates on the web site, or mark this site with a bookmark (discussed later) so you can move to it later without having to enter the address each time.

There may also be times when you enter an address and a screen similar to the following is displayed:
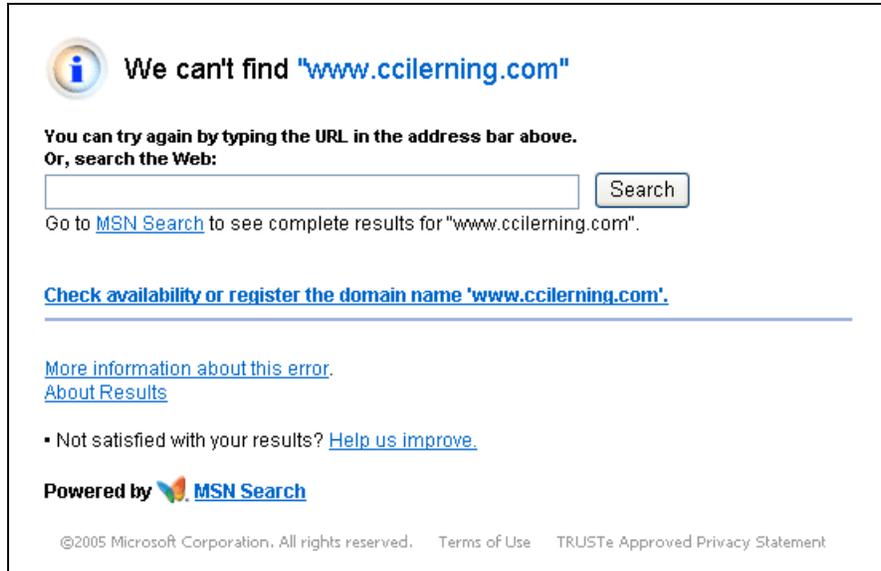
This type of message is an indicator that you have typed the web site address incorrectly. This could be a spelling error in the name or you do not have the correct protocol or domain type. In the above example, the domain name was entered incorrectly. Another example of how you could enter a web address incorrectly is when the wrong punctuation or characters are used, as with http//ww.microsoft,com\office when the correct entry should be http://www.microsoft.com/office.

On other occasions you may see an error message similar to the following:
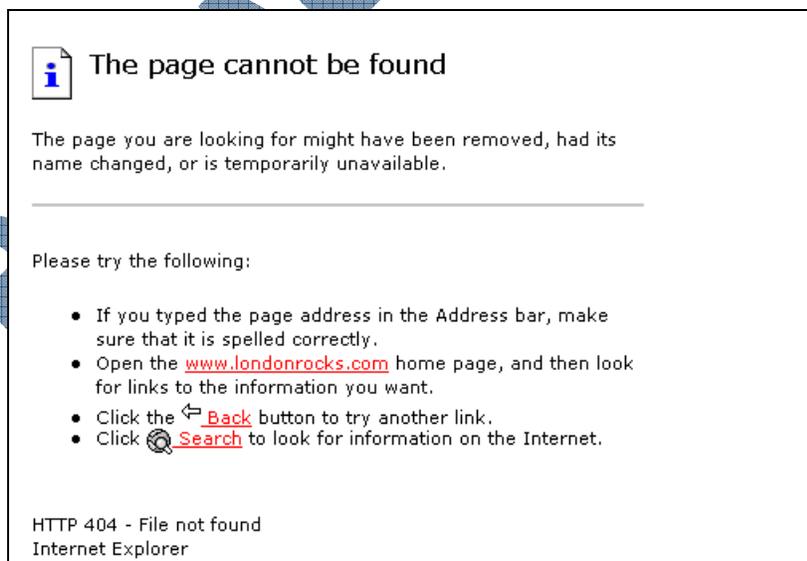
This type of error indicates that the web site or web page you want to go to no longer exists. The web page displayed gives you a few options regarding how to fix the error. In some instances you may not be able to find a solution if the web site no longer exists.

📖 Exercise

1   Activate your web browser, if not already open.

2   Highlight any text in the **Address** field and replace with www.microsoft.com

3   Click on the **Go** button.

> Whenever you enter a web site address in the **Address** field, you can also press the Enter key to go to that site as an alternative to using the **Go** button.

You should see a web page similar to the following:

Navigating with the Toolbar

The toolbar can be used to help you move around or navigate quickly between the web sites you visit.

IC³
3.2.2
3.2.3
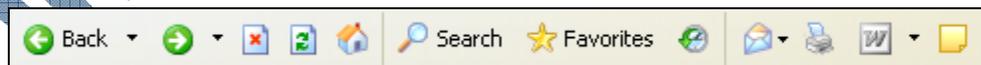
Back ▾	Use this button to move back one page at a time.
⊙ ▾ **(Forward)**	Use this button to move ahead one page at a time.
(Stop)	This button allows you to stop a page while it is loading. If you find that a page is taking too long to load or you have just made another choice you can use the Stop button to halt loading the page. If you want to use a bookmark or type in a new URL, use the Stop button first.

(Refresh)	Use this button to refresh or reload the web page again. Sometimes you may find that a web page is slow to display or seems to have stopped displaying. Clicking this button will load the page as if you just activated this web address.
(Home)	Use this button to take you back to the designated home page for your browser. This is the page that loads when you activate your web browser program. You can change this address using the **Tools**, **Internet Options** command.
Search	Activates the Search pane where you can enter text to search the World Wide Web for matches. A list of links will then be displayed with matches that you can click on to move to a suitable site.
Favorites	Displays a list of your favorites in a small pane. This is the same list that you see when you activate the **Favorites** menu.
(History)	Displays a list of calendar days at the left in a small pane, giving you a chance to review the history of which sites were visited over the past period. Click on the day to see the sites. When you want to go to a particular site, click on that site link.
(Mail)	Activates the electronic mail program. You can use this e-mail command to send and receive messages from the Internet.
(Print)	Allows you to print the contents of this web page.
(Edit)	Allows you to edit this web page using Microsoft Word or Microsoft FrontPage, if installed. Changes made affect only your copy of this web page; you cannot change that company's original content. If you do not have Word or FrontPage installed on your system, Internet Explorer will display ⬜ as the **Edit** button.
(Discuss)	Allows you to enter a discussion group on the existing web page, if available. A new toolbar will also display for you to insert comments on the web page.
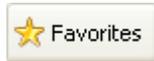
You may have other buttons on your toolbar, depending on what is installed on your system. For example, if you have Real Player installed, you may have an extra button that allows you to go directly to their web site.

📖 Exercise

1   Click on the ⬅ Back ▾ button to move back one page.

2   Click on the ➡ ▾ button to move forward to the Microsoft home page.

3   Click on the ⭐ Favorites button.

Notice you now have a list on the left side listing the favorite web sites for this system. Note also that this list is displayed in a separate pane, similar to the Search feature.

4   In the **Address** field, type: www.microsoft.com/office and press (Enter).

5   Click on the ✖ button.

Depending on how fast your Internet connection is, the amount of text on the web site will vary at the time you stopped the download.
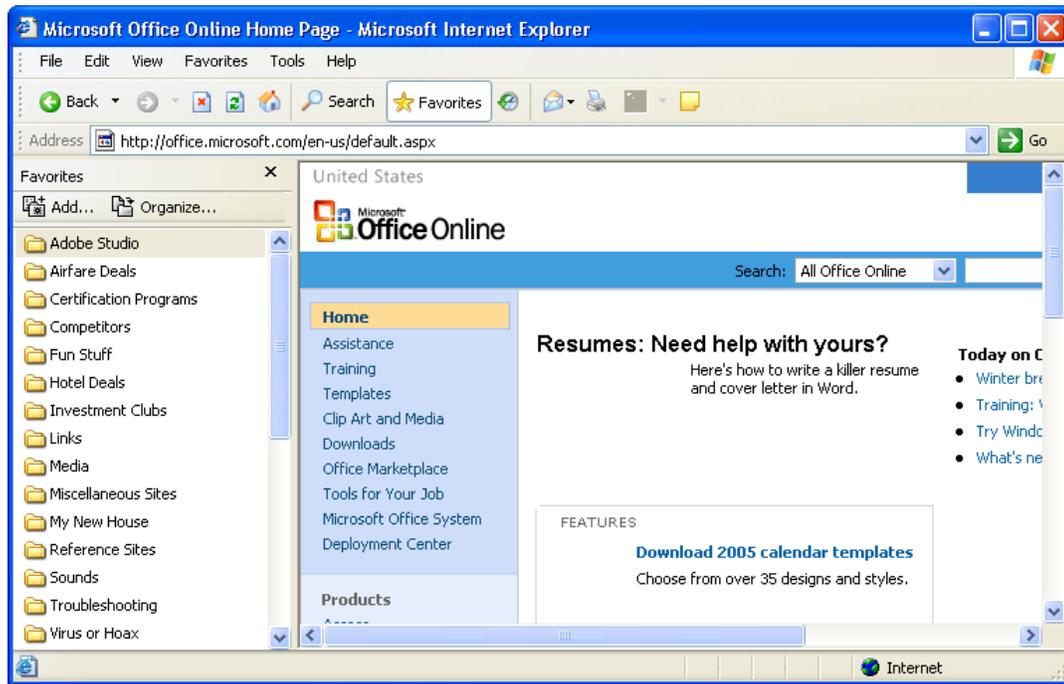
6 Click on the ![icon] button.

Once you let the entire page load, you will then see the entire web page. Occasionally you may go to a web site and see an icon such as ![icon], instead of pictures. This usually means the web page cannot find the graphic, either from the originator's web server or a link (some people have the graphics linked to another web site). Refreshing the screen sometimes redisplays the graphic. If the graphic still doesn't show, this is generally because the link for the graphic file is broken.

7 Click on the ![icon] button to return to the Home page.

Notice how you are now returned to the same screen you saw when you started Internet Explorer.

8 Click on the ![Favorites] button to turn off the display.

Understanding Hyperlinks

When you reach a web page, you will notice some text that appears different from the majority of the text on the screen. Often it is a phrase that is a different color or is usually underlined. Some web pages have links that may not appear visible immediately on the screen until you point the mouse on it. Hyperlinks might appear similar to the following:

When you point your mouse overtop of the link, you will see the mouse cursor change from an arrow to a pointing hand. This is a clear indicator that there is a link to another page or site. Also, the URL (Uniform Resource Locator) will appear on the status bar indicating the link's address.

The term *"Surfing the Net"* comes from the ability to use these links to move quickly to other areas of the Internet. After you enter a few web addresses, you will appreciate the ease of using a link to jump from site to site. When you see links like the ones in the examples, it means that by taking your mouse pointer and clicking on a link you will surf your way to that new location without having to do any typing. Occasionally, you may need to click on several links (pages) in order to find the information you're seeking.

📖 **Exercise**

1   In the **Address** field, type: www.kraft.com and press ⌷Enter⌷.
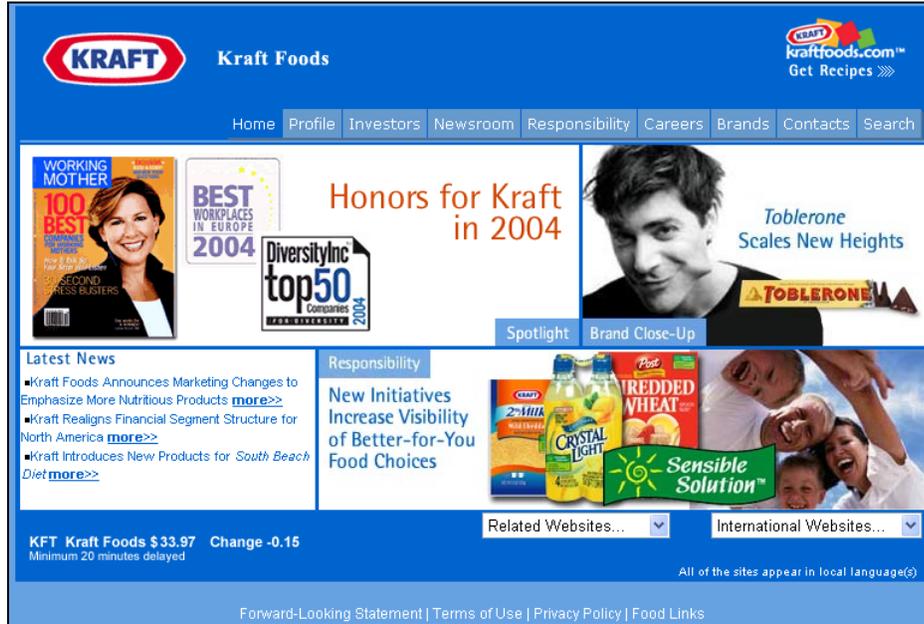
Take a few moments to look at the different links and types of links on this page. Notice how Kraft has links that are both text as well as graphics.

2   Position the mouse pointer on the *Get Recipes* link at the top right side of the screen.

This site is one that changes on a frequent basis. Depending on when you access this web site, you may need to search the screen to find the links mentioned in these steps.

3   Observe the URL address on the status bar. Then click on the link.
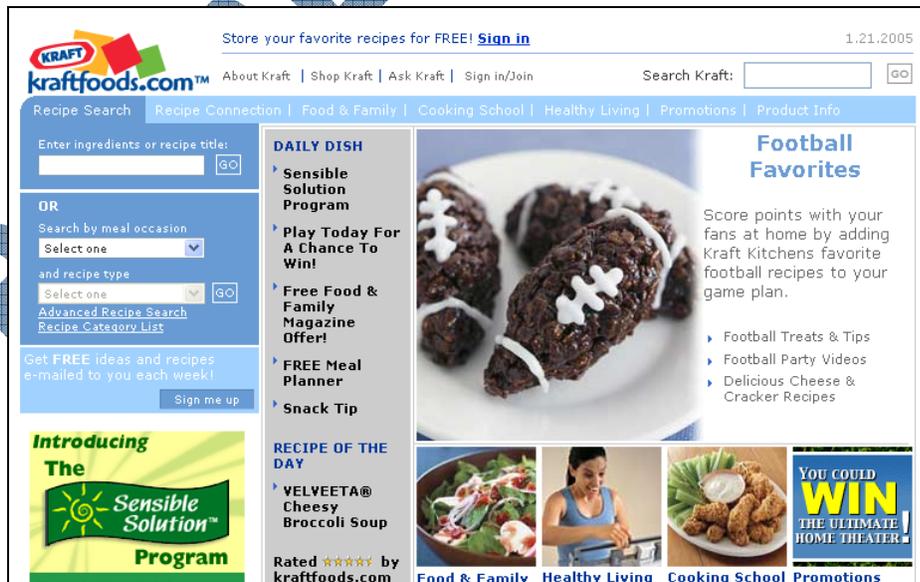
Once you move to another page, the 🔙 Back ▾ and ➡ ▾ buttons on the toolbar will appear, giving you the option to move backwards or forward a page at a time. Alternatively, you can click on the down arrow next to that button and select a particular page (appears only when you have moved through several pages).

4   Click on the ◯Back ▾ button to go back one page.

5   Click on the ➡▾ button and then click on the *Food & Family* tab to move to a new page.

Notice how the Back and Forward buttons both appear so you can move to the different pages you've seen.

📖 Practice Exercise

1   Make sure that your browser is activated.

2   Modify the Address to read: http://www.peanuts.com and then press Enter .
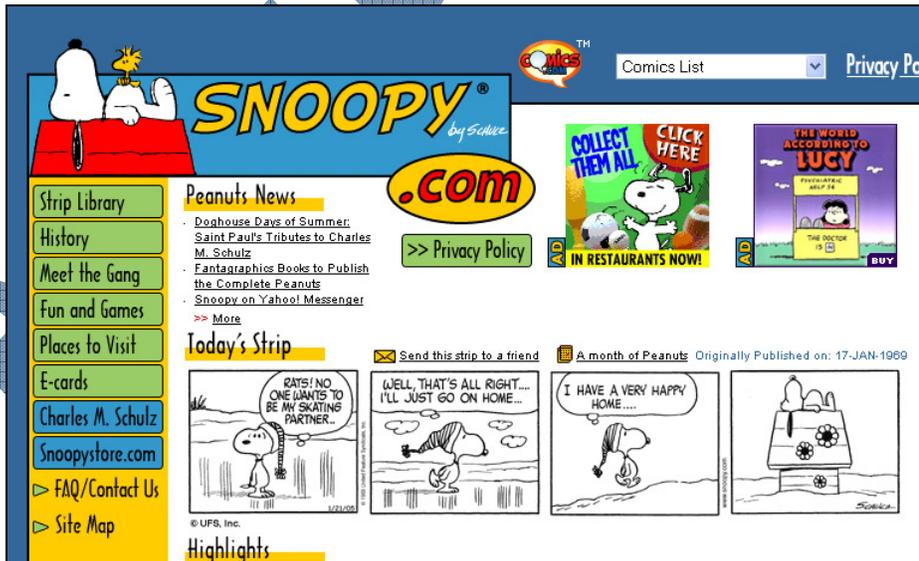
3   Click on any link on this page.

4   Click on other links and see where you go.

5   Try the ◯Back ▾ and ➡▾ buttons.

6   In the **Address** field, type: www.cnn.com and press Enter .
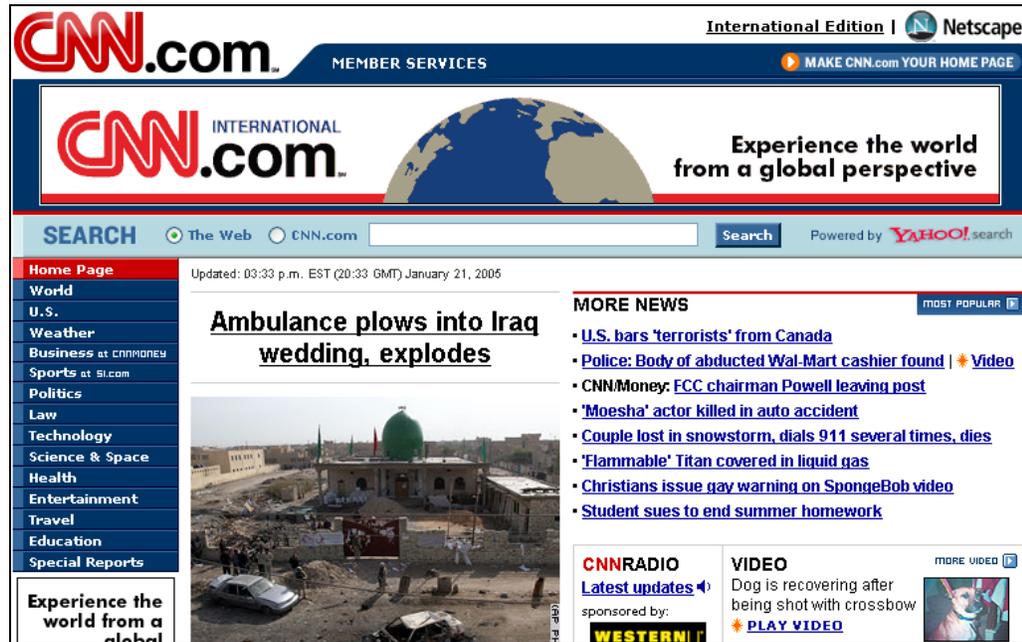
7   Click on the *Weather* link from the banner at the left side of the web page.
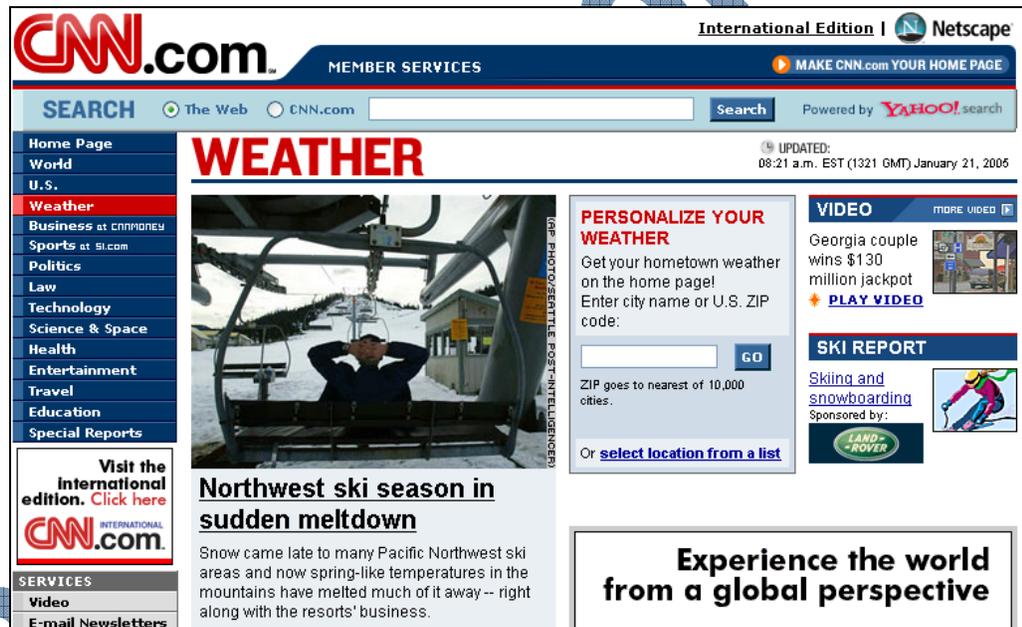
8   Click on other links to explore this sight.

Using the Menus

The menu choices are available with the mouse or the keyboard. You can access them with the keyboard by using the shortcut key combination displayed to the right of the menu choice.

You can also press the (Alt) key and then the underlined letter. Once the menu has dropped down, you do not need to hold down the (Alt) key any longer. Additional choices can be made simply by pressing the underlined letter. You can move around in the menus by using the arrow keys, selecting a choice and pressing the (Enter) key.

Most people will use the mouse to point and click on the menu choices. There are some choices on the menus that will not work very well and others that will not work at all unless you are online with your Internet Service Provider.

A drop-down menu in the web browser appears and works in the same manner as any drop-down menu in another application program in Windows. Many of these commands will also be available on the toolbar or as a keyboard shortcut. The example at the right shows different **File** menu options.

As you look through the menus, you will see many choices. Learning what they all do comes with using the program and using the Help section to find out how to accomplish certain tasks. Depending on what other software programs are installed on your system, you may see other commands or settings not found in the default web browser menus (e.g., list of favorite sites, how the Search option has been set up, etc.).

Exercise

1   Click on the **View** menu in the menu bar.

2   In the submenu that appears, click on the **Go To** command.
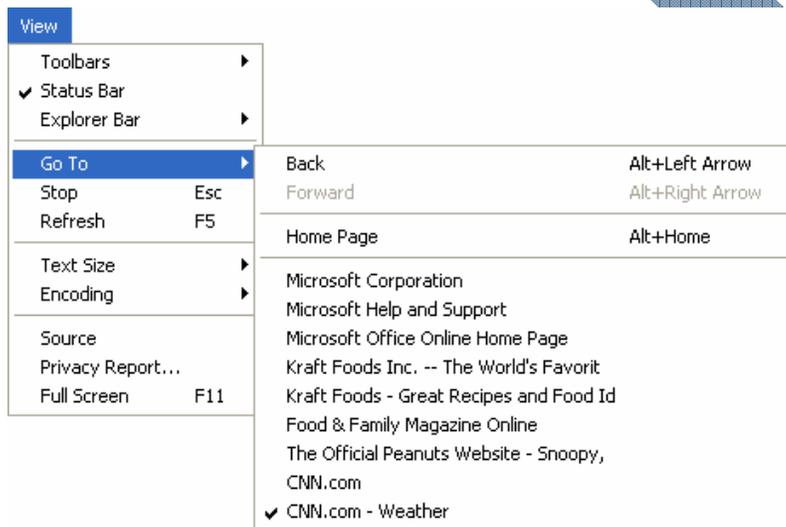
Notice how the submenu also shows you the different web pages you have visited.

3   Click on the Microsoft Corporation option in the list.

You should now be at www.microsoft.com home page.

You could have also seen a history of the sites you have visited by clicking on the button and then using the pane that displays at the left when this button is active.

Adding a Bookmark to Your Favorites List

3.2.6
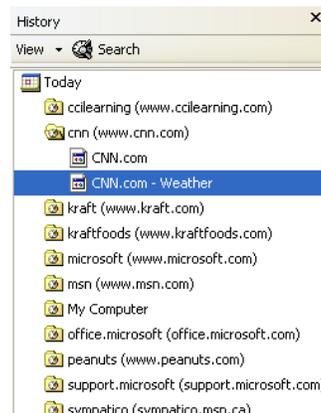
Many times you will come across places that you want to return. As you surf through all of the interconnecting links, it is very easy to find an interesting site, and then later forget where it was. Surveys have shown that one of the largest complaints about using the World Wide Web is that people cannot find their way back to a page they visited during a previous session.

Internet Explorer gives you the ability to add bookmarks in the **Favorites** menu. By recording a web page, you can return to it by selecting it from a list.

Places you want to return to are kept in a menu in the program. When the menu drops down you might see something similar to the menu displayed on the following page.

The number of folders or web sites displayed on this menu will vary, depending on which version of Internet Explorer you are using, and if other users have bookmarked different web sites previously. In addition to displaying these ones, Internet Explorer gives you the option to organize the bookmarks by creating folders, moving web sites into these folders, or simply to reorganize the order of the folders and web sites in the list.

Once a web site has been added to the Favorites list, you can access it any time by clicking on it from the Favorites list.

📖 Exercise

1 In the **Address** field, type: www.monster.com and press ⌐Enter¬.

2 Select **Favorites**.

3 Click on **Add to Favorites**.
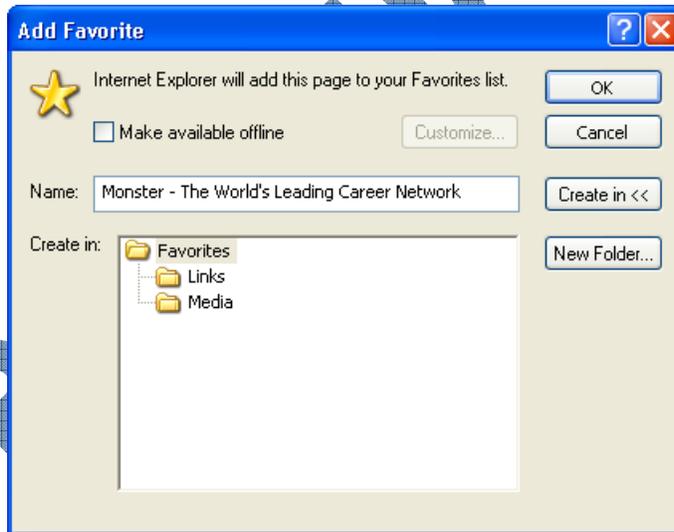
4 Click on the **Create in <<** button.
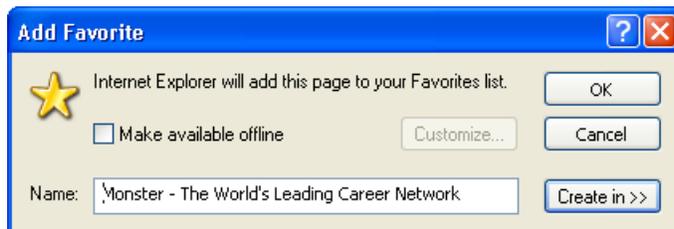
5 Click on **Create in >>** and then click on **New Folder** to create a new folder for this web site
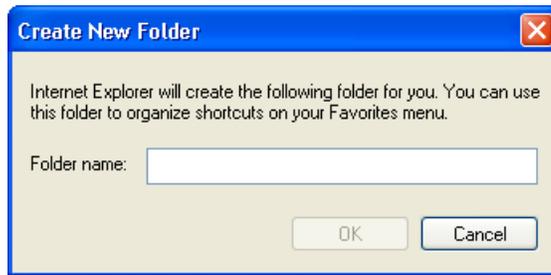
6   Type: Job Opportunities as the name of the new folder and press Enter.
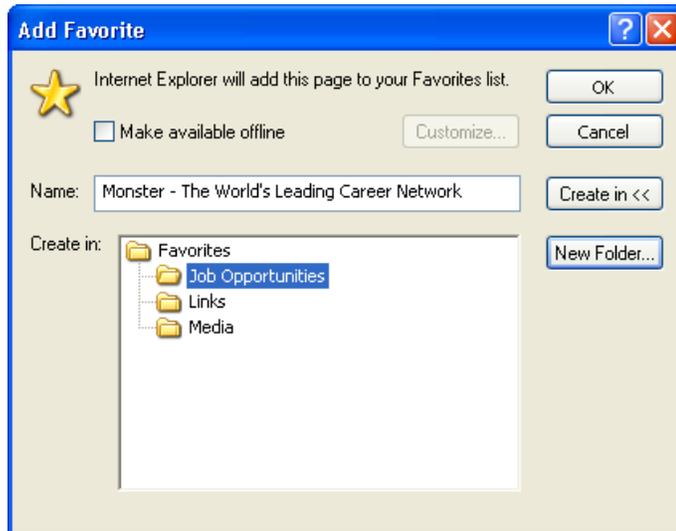
Notice the new folder that exists in the list now.

7   Click **OK**.

The web site has been added to your list of favorite sites.

8   In the **Address** field, type: www.headhunters.com and press Enter.

9   Select the **Favorites** menu.

10   Click on the *Job Opportunities* folder in the list and then click **OK**.

11   Select the **Favorites** menu and then click on **Job Opportunities**.

Notice how both web sites are now bookmarked for later use.

12   Select **Favorites**, click on the *Job Opportunities* folder and than then click on the Monster site.

📚 Practice Exercise

1 In the **Address** field, type: www.e-cards.com and then press [Enter].

2 Select **Favorites** and then **Add to Favorites**.

3 Click on the **New Folder** button.

4 Type: E-cards as the name of the new folder and then press [Enter].

5 Ensure the *E-cards* folder is highlighted and then click **OK**.

6 Select **View, Go To** and then click on the Peanuts web page.

7 Click on the **E-cards** link at the left side of the page.

8 Select **Favorites** and then **Add to Favorites**.

9 Click on the *E-cards* folder and then click **OK**.

Organizing the Favorites

Once the sites have been recorded, you can use them by accessing the menu item and clicking on the choice you want. Most of these lists can be categorized and placed within sub-groupings. Before you organize your URL list, the ones you have recorded will appear in a chronological order on the list.

📖 Exercise

1 Select **View, Go To** and then click on the Microsoft web site.

2 In the list of links across the bottom of the web page, click on the **Careers** link.

3 Select **Favorites**, **Add to Favorites** and then click on **OK**.

4 In the **Address** field, type: www.easports.com and press [Enter].

5 Scroll to the bottom of this page and then click on the **Jobs** link.

6   Select **Favorites**, **Add to Favorites** and then click **OK**.

7   Select **Favorites** and then **Organize Favorites**.
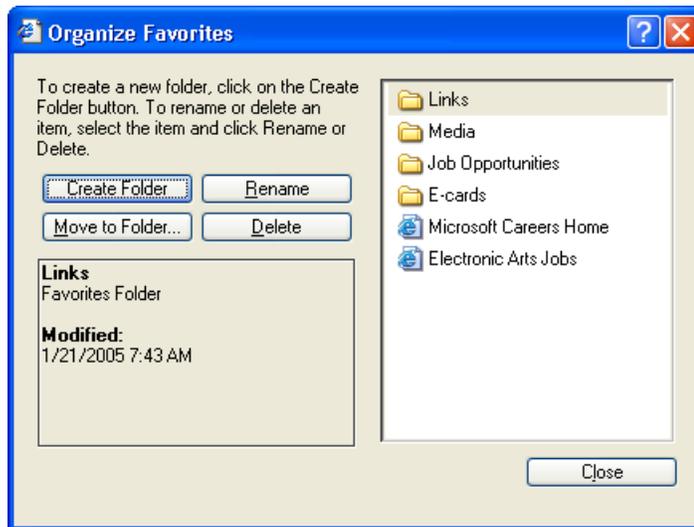
8   Click on the *Electronic Arts Jobs* in the list and then click on the **Move to Folder** button.

9   Click on the *Job Opportunities* folder and then click on **OK**.

10   Repeat steps 8 and 9 for the *Microsoft Careers Home* link in the list.

11   Close the Organize Folders window.

Re-organizing the Folders

3.2.6

If you want to reorganize the order of the Favorites list, you can drag the item to the desired location. For example, if you wanted the sites to be in alphabetical order, you need only to drag the folder or web site to the desired location.

📖 **Exercise**

1 Select **Favorites** and then click on the *E-Cards* folder.

2 Drag it to its proper location in alphabetical order in the Favorites list.
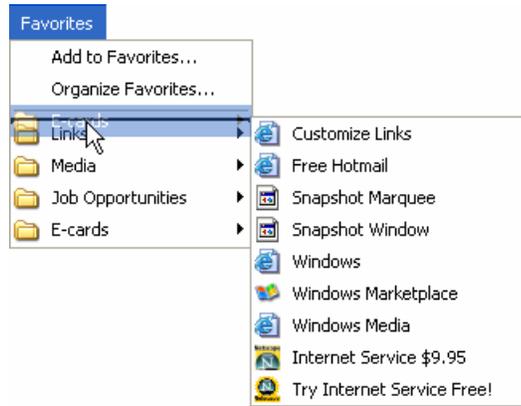
The horizontal black bar indicates where the folder will be placed. Folders or web site links can also be reorganized within a folder.

3 Select **Favorites** and then click on the *Job Opportunities* folder.

4 Click on the *Electronic Arts Jobs* link and then drag it to above the first link in the submenu.

5 Repeat step 4 to move the Microsoft link above the Monster link.

The submenu for the Job Opportunities folder should appear similar to:

Summary

In this lesson you looked at how to use a web browser to go to different web sites and navigate a web page. You should now be familiar with the following:

- Starting Internet Explorer
- Looking at the home page
- Entering in a web site address
- Using hyperlinks to move around
- Working with bookmarks

Review Questions

1. How can the Address field be used?

2. If you see a screen similar to the following message, what does this mean?

   > (i) We can't find "www.ccilearing.com"

3. Which tool would you use from the following toolbar to check the history for the sites you've visited recently?

   > Back ▼ | ⊙ ▼ | ⊠ | 🗃 | 🏠 | 🔎 Search | ☆ Favorites | ⊕ | 🔗 ▼ | 🖨 ▼ | W ▼ | 🗌

4. The Media button will display a pane where you can choose to play a radio station or show a video.

   a. True   b. False

5. A hyperlink is an object on the web page that jumps you to another web page or site when you click on it. You can tell a hyperlink by the pointing hand that appears when you place the mouse overtop of it.

   a. True   b. False

6. A hyperlink appears as underlined text only.

   a. True   b. False

7. To access a command in a menu, you need only to press the (Alt) key in order to access the menu and then the command.

   a. True   b. False

8. What is a bookmark?

   a. A paper clip symbol that you can assign to a web site to mark your place.

   b. An addition to your Favorites menu so you can go back quickly to this site later.

   c. A link that you can set up on the web page to go to your home page quickly.

   d. A link you can use to access help.

9. You cannot set bookmarks on your own without getting permission from the network administrator.

   a. True   b. False

10. Once bookmarks have been set, you cannot rearrange them without deleting them first and re-adding them to the list.

    a. True   b. False

Lesson 4: Using Information From the Web

Objectives

<div align="right">**Suggested Timing: 1 Hour**</div>

In this lesson you will look at different ways that you can retrieve information from a web site as well as some options to customize the web browser. On successful completion, you will be familiar with how to:

- Save a web page
- Copy and paste information from a web site into a document
- Print a web page

- Download information from a web site
- Customize the web browser options

Retrieving Information from a Web Page

Often there is a need to use the information that you've accessed via the Internet. For example, information or pictures needed to complete an essay or you need to include information in a report or proposal. The browser makes accessing and using Internet information easy.

You can only use text and pictures in documents that will be printed. If the information is to be viewed online, you can use any information from the Internet as long as your workstation can display that format.

There are several ways that you can obtain information from a web page:

- copy and paste text or images
- do a screen capture
- save images to a disk
- save web page to a disk
- print a hard copy of a web page

4.3.2

A word of caution about *copyright* — all material on the Internet is automatically copyright protected (belongs to the web site owner) unless the site specifically gives permission for its information to be used. If you have found some text or a picture that you'd like to use but you are not sure whether you may, you can simply request permission. Most sites will have an e-mail link that allows you to contact someone at that site. Remember to state clearly for what purpose you intend to use the information.

Saving a Web Page

3.2.7

The contents of a web page can be saved to a location on your hard drive or network, as needed. This could be for the purpose of reviewing or comparing how other web sites display their information, or to work with the web site when you are offline (i.e., not connected to the Internet). Remember that if you save the contents of someone else's web site that you may be infringing on their copyright; this is especially crucial to remember if you plan to use the information elsewhere, e.g., your web site, an essay paper, etc. Copyright is discussed in the next lesson.

Internet Explorer provides four different formats for saving a web page:

Save as type:	Web Page, complete (*.htm;*.html)
	Web Page, complete (*.htm;*.html)
Encoding:	Web Archive, single file (*.mht)
	Web Page, HTML only (*.htm;*.html)
	Text File (*.txt)
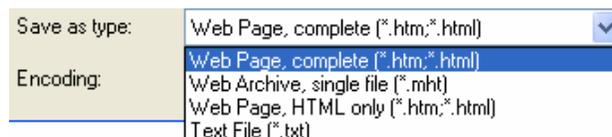
Web Page, complete (*.htm, *.html)

Saves the entire web page with any required folders to hold the graphics or other links that may exist on the page in its original format. When the web page is opened in a program that recognizes html format, the web page looks very similar to the way it did in the browser.
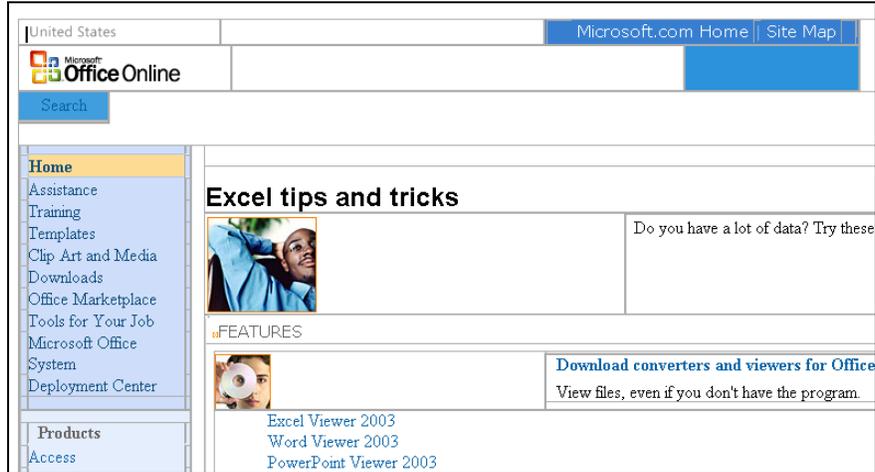
Web Archive, single file (*.mht)

Save the web page with the graphics and text set up as one page for the purpose of being able to publish it as one page. This format is similar to taking a picture of the entire page.
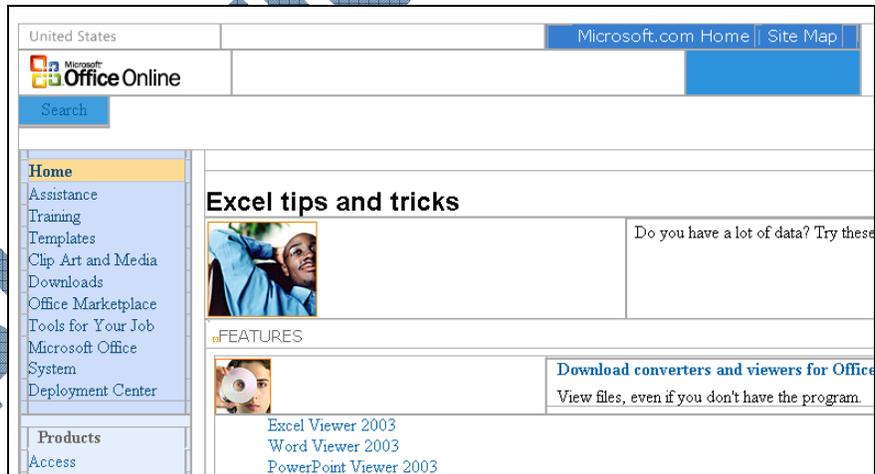
Web Page, HTML only (*.htm, *.html)

Save this page only in an html format so it can be opened either on another web browser or offline. No graphics or other media linked in the original page is saved.
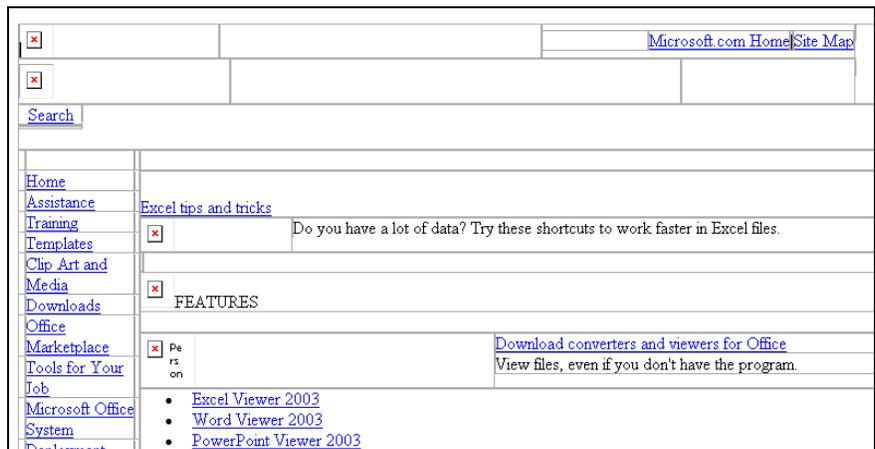
Text File (*.txt)   Saves as a text file only, meaning the web page displays as text only with no graphics or formatting of the text.

```
Microsoft Office Online Home Page  Microsoft.com
                    Home |Site Map




                 Search: All Office Online  Assistance  Training
                  Templates  DownloadsClip art and mediaOffice
                  MarketplaceAll Microsoft.com




                     Home
                     Assistance
                     Training
                     Templates
                     Clip Art and Media
                     Downloads
                     Office Marketplace
                     Tools for Your Job
                     Microsoft Office System
                     Deployment Center
```
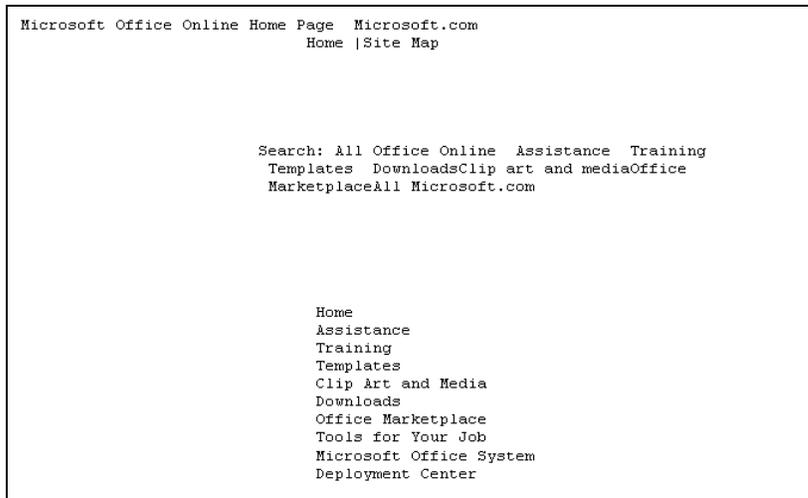
📖 **Exercise**

1 In the **Address** field, type: www.certiport.com and press ⌈Enter⌋. Then click on the **IC3 Certification** link in the banner at the right.

> This site is updated on a regular basis and as such, the links mentioned in the upcoming exercises will exist on the home page for this site but may not always be in the same location as noted at the time of development. Be sure to check the general areas where this link will primarily be located.

2 Select **File** and then **Save As**.

3 In the **Save as type** field, click on the down arrow and then click on **Web Page, complete (*.htm, *.html)**.

4 Move to where the data files for this courseware are located.

5 Type: *IC3 Information* for the name of the file and then click on **Save**.

6 Minimize Internet Explorer and start Microsoft Word.

7 Click on the 📂 button from the Standard toolbar.

8 Move to where the data files are located and then double-click on the *IC3 Information* file.

Notice how some areas do not appear although the majority of formatting from the web page was included. If this was a file you actually wanted to use in your promotional material, you could now delete those items you don't want and apply formatting to those that you do want, as needed. Alternatively, if this should be a document on the company intranet with the links intact, you could reformat the page and leave the links as is so that other users can jump to the appropriate pages on Certiport's web site to obtain more information.

9 Close Microsoft Word.

Using Copy and Paste

Using copy and paste with web pages is the same procedure as with application software programs. You must select the item(s) prior to activating the copy commands.

To copy selected items from a web page, use one of the following methods:

- Select **Edit** and then **Copy**.
- Press `Ctrl`+`C`.
- Right-click on the selected item and then click on **Copy**.

To paste the selected items from a web page into a blank document in another application, open the application with a new blank document and then use one of the following methods:

- Select **Edit** and then **Paste**.
- Press `Ctrl`+`V`.
- Right-click in the new location and then click on **Paste**.

Remember that when you use copy and paste of items from a web site that you get permission or clearly state on your report where the information was obtained.

📖 Exercise

The following exercise provides an example of how you could copy and paste an item from a web site into a new promotional piece to be created with Word.

1   In the **Address** field, type: www.certiport.com and press `Enter`. Then click on the *IC3 2005* link at the bottom of the page.

2   Position the cursor at the beginning of the first paragraph and drag down to select all the text.

3   Select **Edit, Copy**.

4   Click on **Start**, **All Programs**, **Microsoft Word**.

5   Type: The 2005 IC3 Certification Standard for the title and then press `Enter` three times.

6   Select **Edit, Paste**.

The 2005 IC3 Certification Standard

The IC³ standard is an internationally developed and recognized symbol of digital literacy. Developed by a team of subject matter experts from around the globe, IC³ accurately and thoroughly represents the digital literacy skills needed in today's fast-paced technology world.

Several important changes have been made to IC³ resulting in the 2005 Standard. This model outlines those changes and updates.

IC³ – A Dynamic Standard
Because technology changes and advances, the IC³ standard is updated to stay current. This evolution ensures that IC³ will always be a valid and relevant tool to measure proficiency in the latest key technologies for school, work, and life.

IC³ 2005 Standard
IC³ is considered by many as the industry standard for digital literacy, and Certiport works hard to keep it current with changes in technology. To help facilitate this, the Global Digital Literacy Council (GDLC, www.gdlcouncil.org) conducted a two-year review of IC³ which resulted in several updates to the standard. The new 2005 Standard exams reflect the skills and technology needed in today's classroom and workplace environments.

---

7 Type the following below the inserted text from the web site:

> * Excerpt from http://www.certiport.com/Portal/Common/PageLibrary/IC32005.htm

8 Click on the Internet Explorer button on the taskbar to switch back to the web browser.

9 Right-click on the picture of the certificate and then click on **Save Picture As**.

10 Move to the location of your data files, leave the file name as is and then click on **Save**.

11 Click on the Microsoft Word button on the taskbar to switch to your document.

12 Select **Insert, Picture, From File**.

13 Move to the location where the data files are and then double-click on the picture you just saved.

14 Save the file as The 2005 IC3 Certification Standard - Student and then close it.

15 Close Microsoft Word.

Practice Exercise

1 Start your web browser and enter this URL: www.microsoft.com/office and press Enter.

2 Right-click on the Microsoft Office image at the top left corner and then click on **Copy**.

3 Click on **Start**, **All Programs**, **Accessories**, **Paint**.

4 Press Ctrl + V.
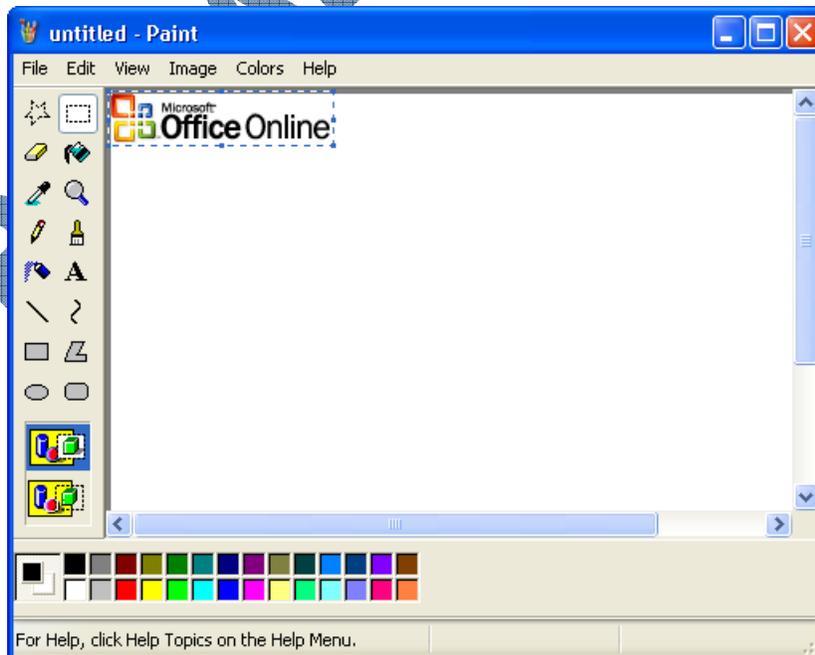
5 Select **File**, **Save**.

6 Type: Office logo as the file name and click on **Save**.

You could now manipulate the colors or other elements of this image, if required. If you had another graphic program with more features in it, you could paste the image into that program and make the changes as needed.

7   Click on the ⊠ button to exit Paint. Do not save any changes.

Printing a Web Page

IC³

3.2.9

You can also print a web page. This is particularly useful if the page is long and it is difficult to read on screen.

To print a web page, use one of the following methods:

- Select **File** and then **Print**.

- Click on the 🖨 button on the toolbar.

- Press Ctrl + P .

Depending on the printer installed on your system, the number and type of tabs available to you for setting up the printer will vary. The printer shown here only has two tabs for general printing options and the **Preferences** button must be used in order to set up the layout for the printed document. Other printers may have all options for printing set up as tabs. The options shown here are meant as demonstration only; be sure to check the options for the printer you want to use.
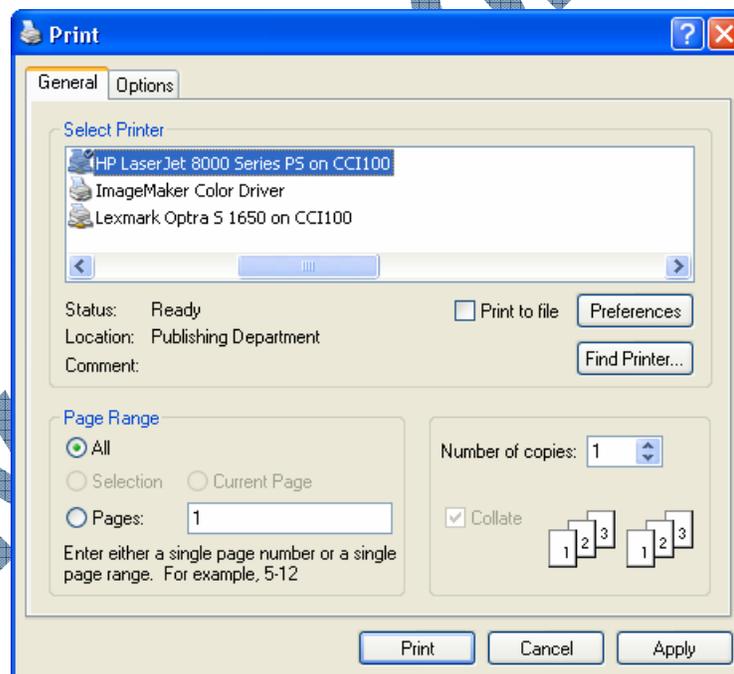
General   Select the printer to use for printing the web page, the number of copies to be printed, or what is to be printed.

Options   Select the layout for the web page, as appropriate. If the web page was designed with frames (blocks of text or images), the preview will indicate same.
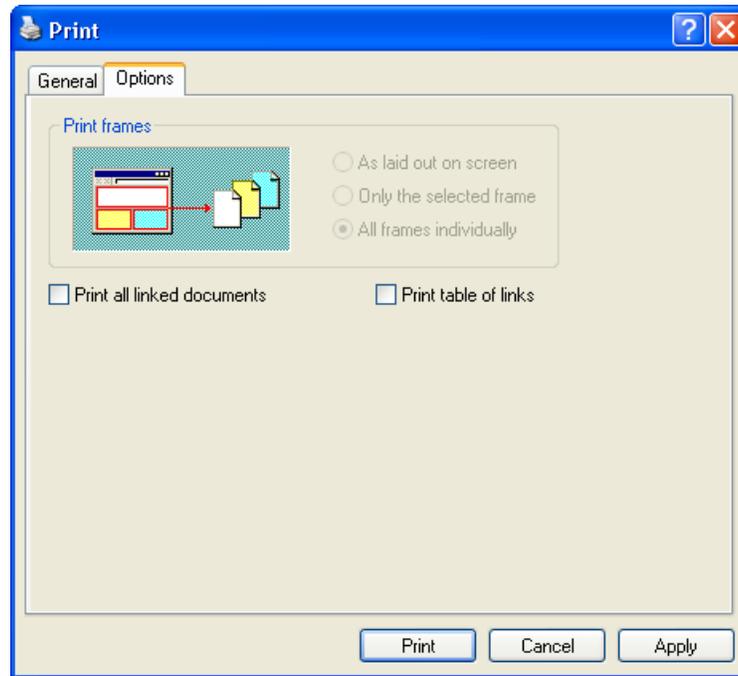
Layout   Set up options for your printer as to how the web page should print. For instance, depending on the text width, you may want to set up a landscape orientation instead of the traditional portrait. These options will vary depending on the printer selected to print the web page.
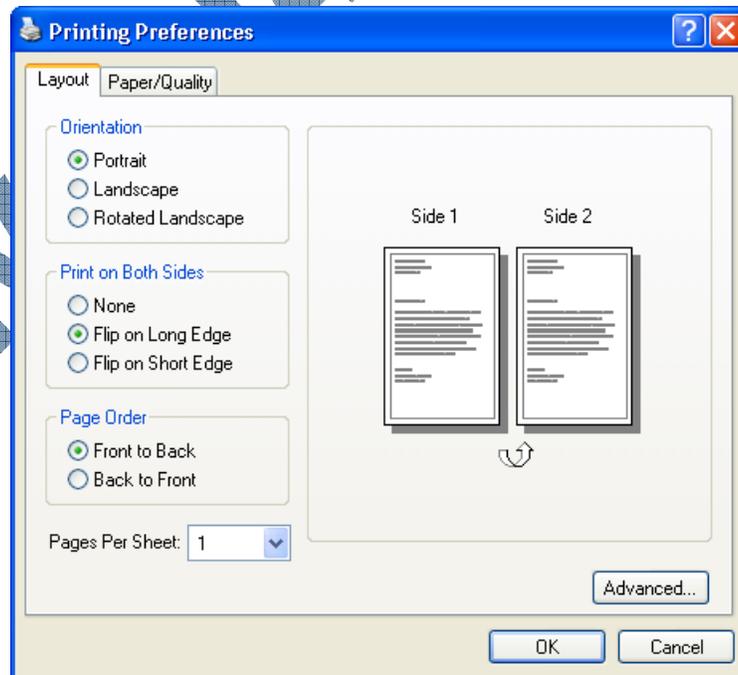
Paper/Quality   Set up which tray contains the paper to be used by the printer.
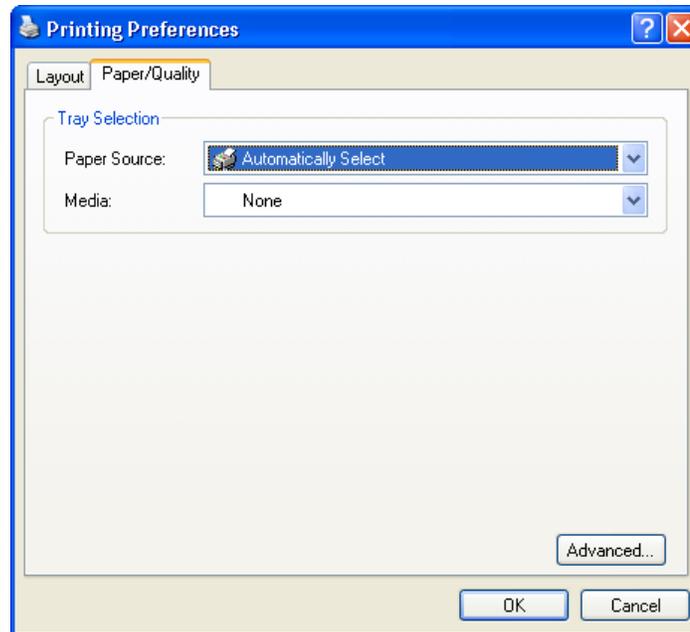
You may occasionally find that when you send the document to print, the hard copy may be missing certain elements that appeared on screen. This is usually due to the way the web page was designed or the print engine used for the web browser. Before printing the web page, consider using the **Print Preview** command from the **File** menu to preview how the web page will appear when it is printed. You will be able to tell, with this display, whether the entire contents of the web page will print or not. This option automatically displays a dialog box for how the web page should be set up for previewing as well as printing.
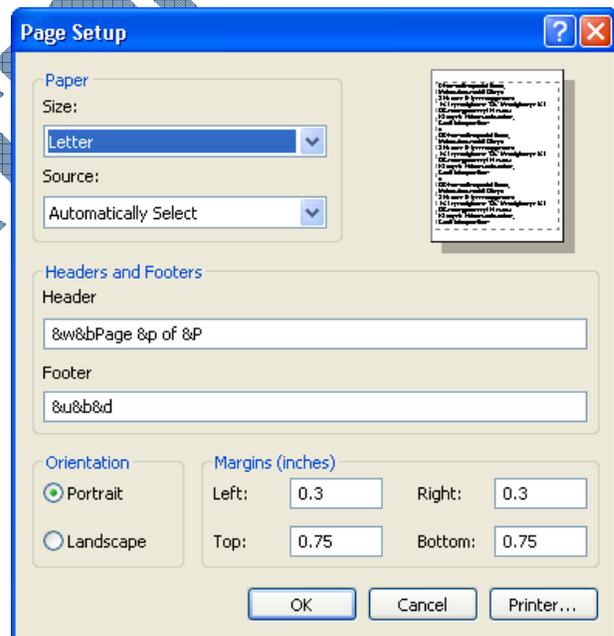
Paper   Select which paper size and which tray contains the paper that the printer will use.

Headers and Footers   These fields display codes to represent the type of information that will appear across the top or bottom of every page. The header information generally is the name of the web page and the current page of total number of pages. The footer information generally shows the URL or web address and the date the web page was printed.

Orientation   Select whether you want the web page to be displayed in portrait or landscape mode.

Margins   Set up the margins for the web page to be printed. This affects only your printout, not the actual web page.

Once you have made your selections in the Page Setup dialog box, Internet Explorer then displays the web page with your selections in the same way it will appear when you send the document to print. Alternatively, you can also use **File**, **Print Preview**.
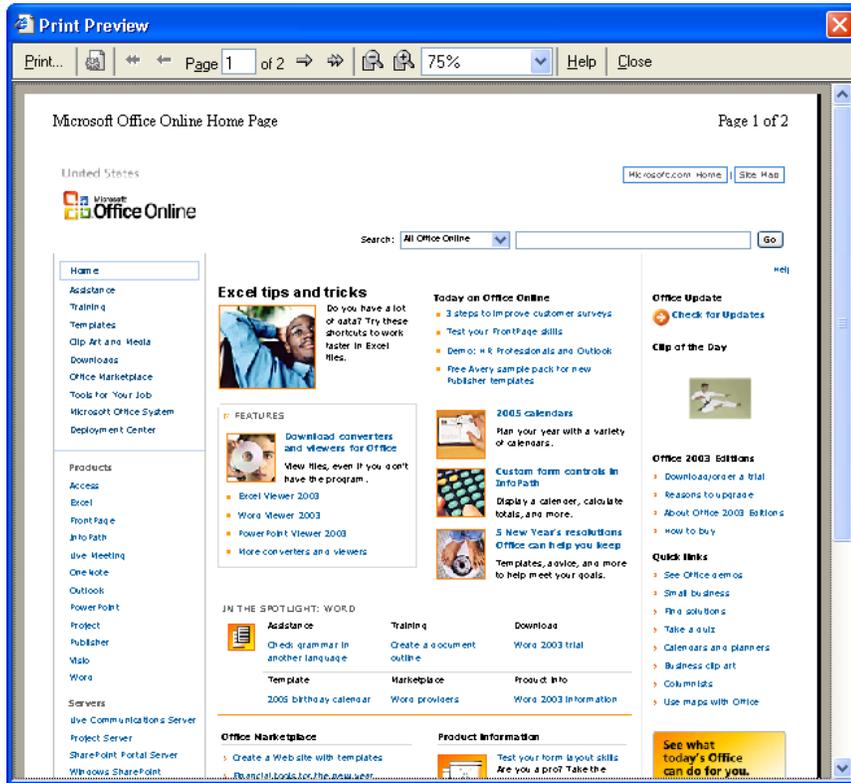
Notice the new toolbar available for working with the previewed web page. Please refer to the appendix at the back of this book for further details on the buttons in this toolbar.

Sometimes you may only need a printed copy of a portion of the page. This is faster than printing the entire web page if the whole page is not needed. Be sure to select the portion of the page to be printed prior to activating the Print command and then click on the **Selection** option in the Print dialog box.

📖 Exercise

1   Open your browser and type: www.loc.gov/copyright/resces.html and press ⟨Enter⟩.

2   Select **File**, **Print Preview**.

3   Click on the 🖼️ button.

4   Click in the **Left** margin field and change the measurement to be 0.5". Repeat for the **Right** margin. Click **OK**.

5   Click on the ➡️ button to display the next page.

6   Click on the down arrow for the `75%` button and click on **100%**.

7   Use the 🔍 to zoom out and see more of the web page.

8   Click on the `Print...` button to send the web page to print.

9   Click on **Close** to leave the preview mode.

10   Select the text starting from the title, *Copyright Internet Resources*, to the end of the WIPO line.

11   Select **File**, **Print**. Click on the **Selection** option and then click **OK**.

The printer now only prints the text. However, the browser still includes the URL and the date at the bottom of the page so that you can still identify where the page is from.

Downloading Information

Downloading refers to the process of copying a file from another computer to your computer. You can download numerous items from the Internet from music files to software programs to data files. Depending on what you are downloading, many web sites will require you to register or fill out some information prior to the download starting. This process gives the company some general information about you such as your age group or position in a company for marketing purposes, as well as indicates you are serious about downloading this file.

Some considerations regarding downloading information on the Internet:

▪ Set up a separate folder to store all the downloaded files. This will give you a central location to manage the downloaded files, as well as one area where you can delete files if you need space on your hard drive (or when performing general file maintenance).

▪ When asked whether to open or save a program file, consider saving the file to the folder where your downloads are stored. This gives you the option of installing the program at a later date, or if you need to reinstall the program, you have a copy of it without having to go back onto the Internet and download it again.

▪ Always run a scan on the downloaded file prior to installing it! This will protect your system against any potential viruses that may have been packaged with the downloaded file.

▪ If a downloaded file comes with a Read Me text file, be sure to read this file prior to installing or using the downloaded file. These files usually contain information about the file that may impact the configuration or suggest tweaks you may need to do in order for the file to work correctly.

▪ Some downloads do not require you to actually download a copy of the file to your system. Web sites that include media such as video may display a separate page where you can view the download, which essentially comes from their server onto this page. This process is much faster than downloading a large file to your own system as a copy of the file is actually downloading into RAM memory so you can view it. These types of downloads will display a progression bar on the screen to show how much of the file has been downloaded to the screen. Depending on the web site and the file, the media may begin playing automatically after a certain percentage has been downloaded, or it may wait for the entire file to be downloaded and you can then click on the **Play** button to start the media. The file is not actually saved on your drive and will remove itself when you choose another video or exit the web browser.

📖 **Exercise**

1   In the **Address** field of the browser, type: www.winzip.com and press ⌈Enter⌉.

2   Click on the *WinZip* link in the Downloads area of the banner at the left of the screen.

3   Click on the **Download Evaluation** button.

4   Click on the *Download WinZip 9.0 SR-1 Evaluation Version* link.

5   Click on the **Save** button.
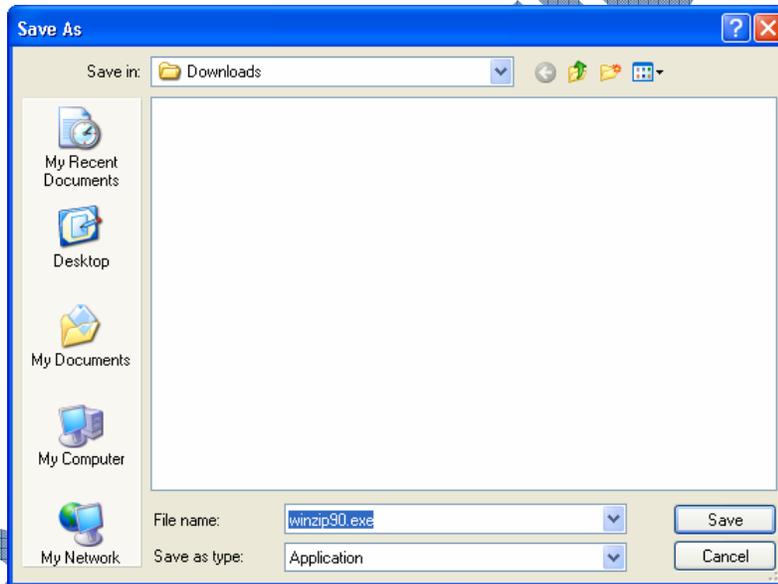
6   Move to the location where the data files are located. Keep the file name as is and then click on the **Save** button.

Windows now begins the download of this file onto your system. Once the download is complete, the window will close automatically provided you have the **Close this dialog box when download completes** option selected. Alternatively, you can close the window when complete.

![books icon] **Practice Exercise**

1   In the **Address** field, type: www.apple.com and press [Enter].

2   Click on the **QuickTime** tab at the top of the screen.

3   Click on the *Movie Trailers* link at the left side.

4   Scroll in the page to find a movie you are interested in viewing and then click on it.

> Depending on which movie you select, you may also see an additional prompt asking you to select the size of the window to preview the movie trailer. Select the appropriate size for your monitor.
>
> You may also be prompted to install the QuickTime Player if it has not been installed previously. Check with your instructor prior to installing any programs to check that this can be done on the system.

After a few seconds, a screen should appear with a window that has a bar across the bottom of it. This is where the movie trailer will play. The left corner of the status bar will show you the web site address where this file is being downloaded.

As you begin to watch the movie trailer, notice that the progression bar continues to download the rest of the video for you.

5   When the movie trailer has completed, click on the [Back] button to go back to the page with the list of movie trailers.

Customizing the Web Browser

3.2.11

Every web browser comes with features to help you customize or personalize the web browser features. For example, you can reset the home page from the default used by this browser to one that may be used more frequently by you, e.g., your company's web site at work. The number of features you can change or set will vary with the web browser. To change or customize Internet Explorer, select **Tools** and then **Internet Options**.

3.2.4

With the **General** tab, you can change the web site address set up as the home page, as well as perform some basic management of files for sites you have visited. The options in the **Temporary Internet files** area may become more crucial to you as you begin to receive more unwanted mail or see more popup windows. Use this area to perform maintenance on the web browser.

Also use the **History** area to clear the list showing which sites you have visited over a time period (e.g., current, last week, two weeks ago, etc.) after a specific number of days. This can prevent spam harvesters from finding sites that match their marketing criteria; the downside is that you will also lose an interesting site address that you may have visited and did not bookmark.

Use the **Security** tab to help you set up which options you can see while on the Internet such as ActiveX controls or JavaScript items, both of which may contain potentially dangerous files (viruses) that can harm your computer. If the security is set too high, you will not be able to view or download certain files, as well as some animated or media types of elements on a web page may not display. Be sure to check with the network administrator (or someone who is familiar with security settings) before making changes to these options to ensure that you can see or activate items when requested per your requirements.
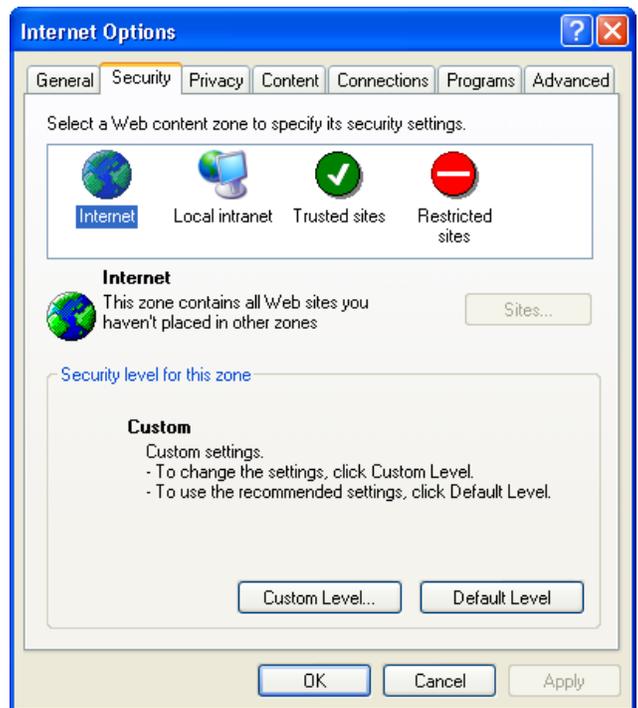
The **Privacy** tab can help you set up how much information can be gathered or harvested from your system. Do not set this for anything lower than Medium although High will give you the most protection against cookies that are designed to provide marketing information to other web sites. Again, check with the network administrator or someone who is familiar with this option before making any changes.

📖 **Exercise**

1 Select **Tools** and then **Internet Options**.

2 In the **Address** field of the Home page area, type: www.microsoft.com and press Enter.

3 Click on the 🏠 button on the toolbar.

Your web page should now display the Microsoft main page.

4 Select **Tools** and then **Internet Options**.

5 Click on the **Delete Cookies** button in the Temporary Internet files area.

6 Click **OK**.

Windows has now cleared out all the cookies in the Temporary Internet Files folder on your system. The only downside to doing this is that any information recorded (e.g., login id and password) for a web site you visit frequently has also been deleted and you will need to log in with your id and password the next time you visit this site.

7 Click on the **Delete Files** button in the Temporary Internet files area.
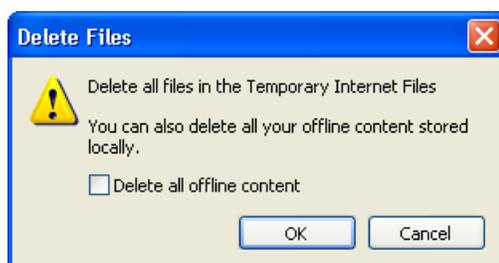
This option can be handy when you want to keep your system clean, especially if you have visited a large number of web sites.

8   Click on the **Delete all offline content** option and then **OK**.

You will now delete the history list for sites visited by users on your system.

9   Click on the **Clear History** button near the bottom of the Internet Options dialog box.
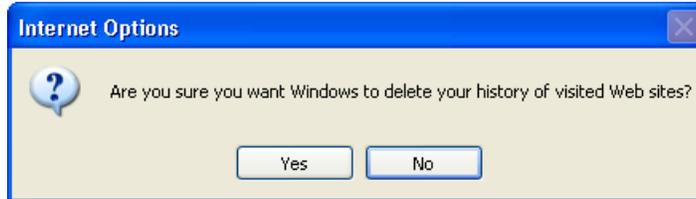
10   Click on **Yes**.

11   Click on the **Security** tab.

12   Click on the **Custom Level** button.
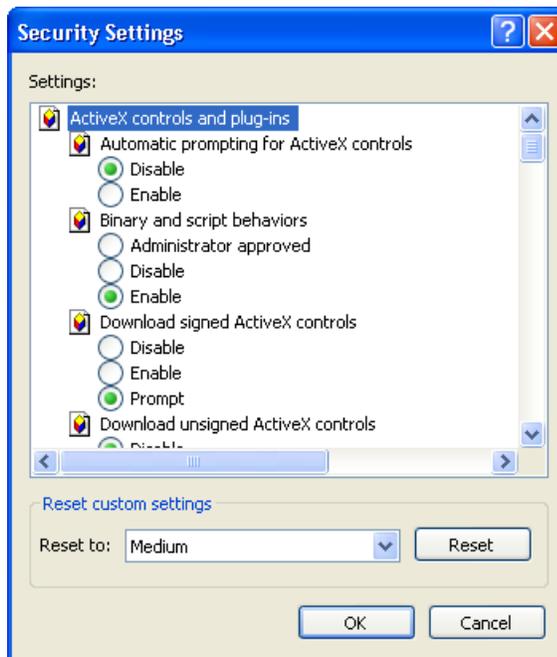
13   If the setting in the **Reset to** field shows **High**, click on the down arrow to change this to **Medium**.

For security purposes, try not to make any changes in the listed options unless you have someone who can explain what these options are.

14   Click on the **Privacy** tab.

15   If the setting is **Medium** or lower, click on the button in the slider and drag up to between Medium and High.

16   Click **OK** to leave the Internet Options dialog box.

Summary

In this lesson you looked at different ways that you can retrieve information from a web site as well as options available to customize the web browser. You should now be familiar with how to:

- Save a web page
- Copy and paste information from a web site
- Print a web page
- Download information from a web site
- Customize the web browser options

Review Questions

1. How can you obtain information from a web page?
   - a. Copy and paste the text or images
   - b. Capture the screen
   - c. Save the pictures to a disk
   - d. Save the web page to a disk
   - e. Print a copy of the web page
   - f. All of the above

2. When you save a web page, you can save it only to a location on your local drive.
   - a. True
   - b. False

3. When you copy items from a web page, you must copy everything before you can paste it into a document.
   - a. True
   - b. False

4. Items can only be copied from a web page and pasted into a Word document.
   - a. True
   - b. False

5. What could be the problem if you print a web page and certain elements are missing? Is there any option you can use to check how much of the web page will be printed, and if so, what is it?

6. There is no way you can adjust the width of the web page to show more of the web page when it is printed.
   - a. True
   - b. False

7. What does downloading refer to?

8. Anything that requires you to download means you need to have space on your hard drive in order to save it.
   - a. True
   - b. False

9. Why would you want to use any of the options in the Temporary Internet files area?

10. What should you consider before customizing the Security or Privacy tab?
    - a. Speak to the network administrator about what changes should be made
    - b. How low or high the settings should be based on what you want to see
    - c. How much maintenance will be required if you change these options to Low
    - d. All of the above
    - e. Only a or b

Lesson 5: Searching for Information

Objectives

In this lesson you will look at different ways to enter search criteria to find information on the Internet. On successful completion, you will be familiar with the following:

- What surfing the Internet means
- How to look for specific web sites
- Recognize different types of search methods
- Narrow the search by using Boolean terms
- Recognize some other search tools available

"Surfing" the Internet

IC³

3.3.1

There are millions of web servers connected via the Internet. On average, each server will host a thousand or more web pages. Clearly that represents a very large source of information.

There is no overseeing body that monitors the information on the World Wide Web. The result is that there is both good and questionable information. The Internet relies on individuals using their own discretion for what is appropriate viewing or information. There have been some general talks in recent years to try and address some questionable content on the Internet but this has been difficult to regulate. More success has been garnered by looking at solutions for the large amount of spam on the Internet although at the time of writing, no regulations have been set up as yet.

It has become somewhat of a cliché to say the Internet is growing rapidly. First it was hundreds of sites being added every month, then thousands, and so on. The net result is that it has become increasingly difficult to find the right information you need. Searching for information has become like looking for a needle in a haystack. The trick is then to use techniques that result in a smaller haystack — in other words, to reduce the amount of possible information down to a more manageable level.

"Finding information" really implies the process of finding the URL for a site that contains the information or service required. The following steps outline a general methodology that can be applied when searching for information. You start from the simplest (usually the fastest) method and gradually move to the more sophisticated methods, as required.

Steps

1   Guess
2   Ask
3   Use a directory
4   Use a portal site
5   Simple search with a search engine
6   Advanced search with a search engine

Guess

As it implies, this method is basically the process of "taking your best guess". Most organizations and companies have a web site where you can access their information and other Internet services. The URL of this web site usually reflects the name of the organization. For example, if you are looking for information about IBM, the URL would be *www.ibm.com*. The other option is when you are looking for information about a specific subject, you could use that when guessing the URL. For example, if you are looking for information about JavaScript and Flash you could try *www.JavaScript.com* and *www.flash.com*.

Ask	You may spend hours using advanced search techniques when somebody you know has the answer already. So ask your colleagues in the office, or friends who have similar interests as you do. Another option is to send off an e-mail to your colleagues or friends. That way you can ask many people at the same time and save yourself a lot of effort.
Directories	Directories are lists of URLs that have been classified according to subject matter. In other words, somebody has already taken the trouble to sift out information and place it in smaller haystacks — one little haystack for each subject. Search engine companies provide directories based on topics of general interest. However, there are also organizations like libraries, government departments, and universities that compile directories for more specialized subjects.
Portal Site	Portal sites are web sites that are specialized to a narrow subject field. The result is that a portal site contains extensive information and services of the field of interest — the result is a small haystack!
Search Engine	These companies collect information in a database about sites on the Internet. The simplest search method is using one or more keywords describing the information you are searching. The Search Engine will scan through the information in their database and return a list of sites matching your keywords. The process is simple, and often provides useful information. The downside is that it can produce too much information, and it is possible to miss the correct information.
Advanced Search	Most search engine companies provide an advance search option. Instead of using only keywords, you can compile a search using Boolean logic. This usually reduces the amount of information returned to a smaller more relevant amount, or a small haystack.

Searching a Specific Web Site

One of the fastest ways of trying to search for information is to use the Search field found on all web sites. Which web site you use will determine the results you see; however, when visiting a specific web site and you want to narrow the search to a particular product or service that company offers, the easiest method to gain the information is to use the Search field for this company.

Alternatively, check the links that have been set up on a particular web site to see if you can quickly find the information using one of these links. Most web sites provide you with an index or table of contents either at the left side or across the top of the screen for easy access.

Exercise

1   Type the URL: www.microsoft.com and press Enter.

2 Click on the **Office** link in the left banner, under the Product Families category.

You should now be at the main page for the Microsoft Office products. You could then select one of these items for further information. Suppose you wanted to find information on any updates to Word 2003.

3 In the **Search** text field, type: updates to Word 2003 and then click on **Go**.
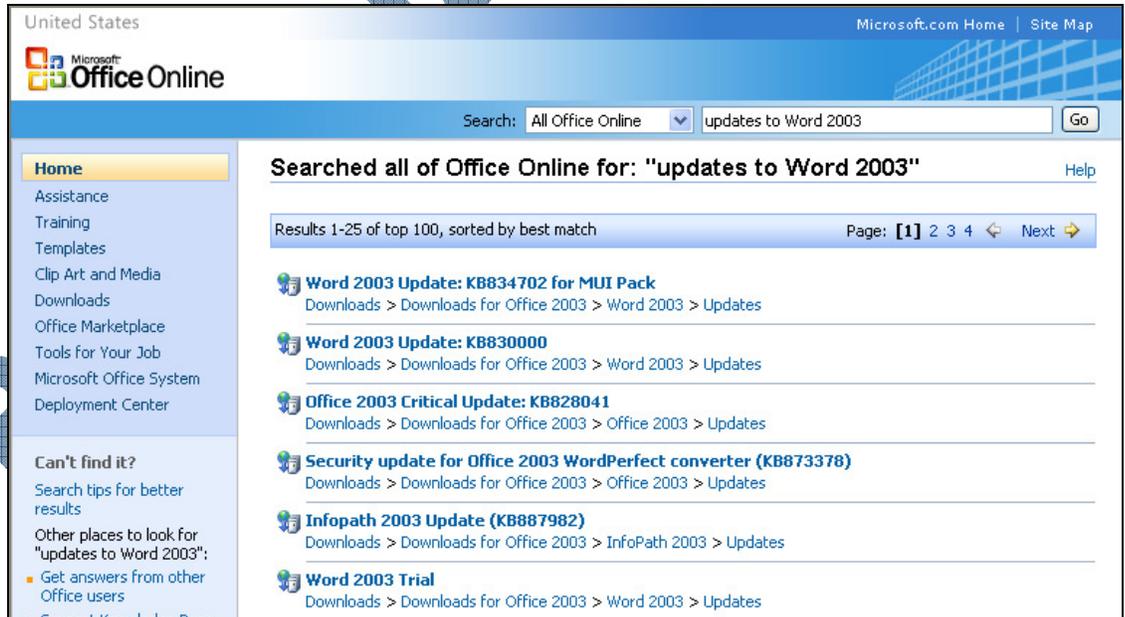
4 Click on one of these results to see the information for your search.

Using Directories

Directories are lists of URLs that have been compiled and classified according to subject matter. In other words, someone has already done the work for you.

This list of directories is primarily directed at web sites in the U.S. You can use a general search engine to look for directories in your country. This will be covered later in the lesson.

Each directory has a search field in addition to the lists of categories on the front page. You can use the search field to find information or click on one of the categories to locate information for that category.

📖 Exercise

1 Launch the browser and type the following URL: www.lycos.com

2 Click on the **More** link in the Lycos Sites list.

This is the directory list.

3   Explore the different links.

4   Type the following URL: www.altavista.com
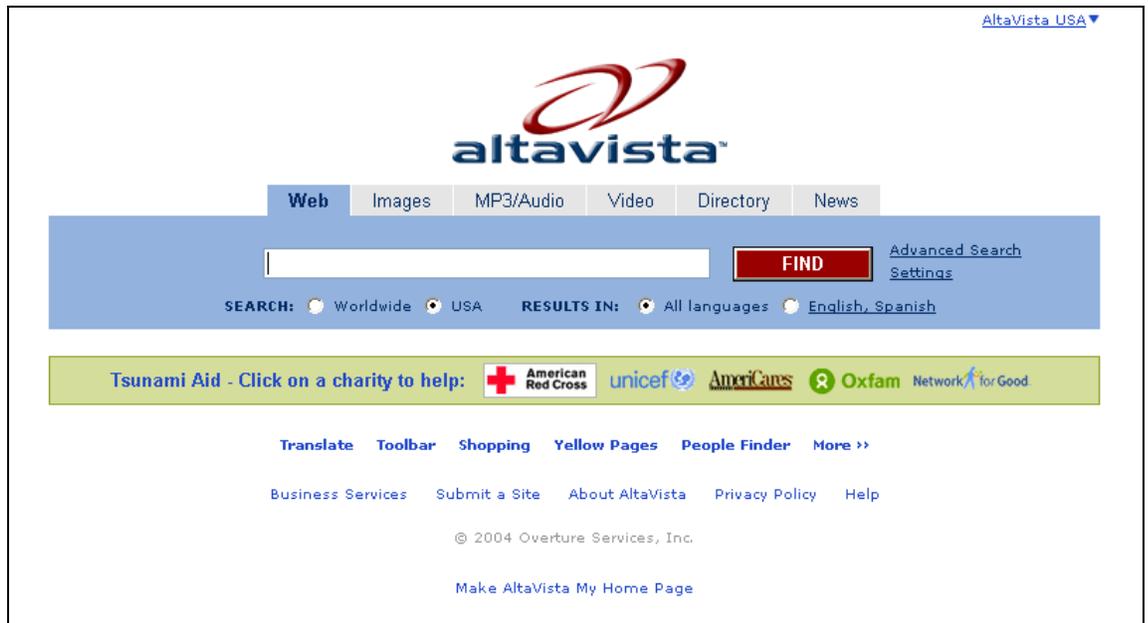
5   Click on the **Directory** tab.
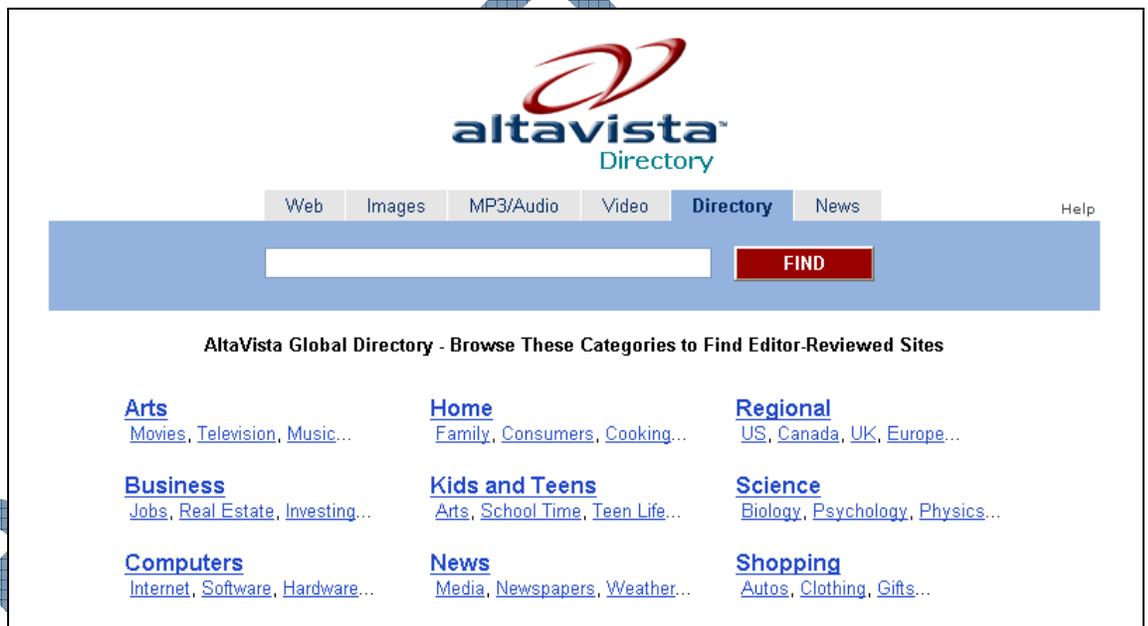
6   Compare the topics with those you saw on Lycos. Explore some links.

       Do they contain the same information as Lycos?

Practice Exercise

1   Start your browser and type the following URL: www.atnetworld.com

2   Click on the **Directories** link at the right side of the screen.

3   Explore some of these categories to see the type of information they provide.

Using Portal Sites

Portal sites are web sites that are specialized to a narrow subject field. This allows you to search for information in a small haystack.

Portal sites are available for both subject and geographic location. For example, if you are a dentist and are looking for information or products related to your industry/field, then you need a dental portal. On the other hand, if you are looking for a local restaurant then you need a portal site serving your town.

📖 Exercise

1   Start your browser and type the following URL: www.e-dental.com

Note that all the links relate to dental subjects.

2   Explore some of the links.

Practice Exercise

1   Start your browser, type: www.sanfrancisco.com in the URL field and press ⎣Enter⎦.

2   Locate and click on the **San Francisco Dining** link.

3   Click on the down arrow for the **What do you want to eat?** field and click on **Continental**.

4　　Next, go to the following URL: www.canada.com.

5　　Type: skiing in the **Searchword** field and click on **Go**.

6　　Explore some of the links.

Using Search Engine Technology

3.3.1
3.3.3

You may hear people often say that they "used a search engine" to find information. But what does that really mean? There are companies that specialize in facilitating Internet searches. They are commonly referred to as search engine companies. Examples are Lycos, Yahoo, Excite, and many more.

Although the services provided by these companies differ, they use similar technology. In essence, the company maintains a database of Internet URLs. Each record in the database contains the URL, a description, a title, keywords, and other site information. Users access the URL database via the company's web site. This is shown schematically in the diagram at the right.

3.3.2
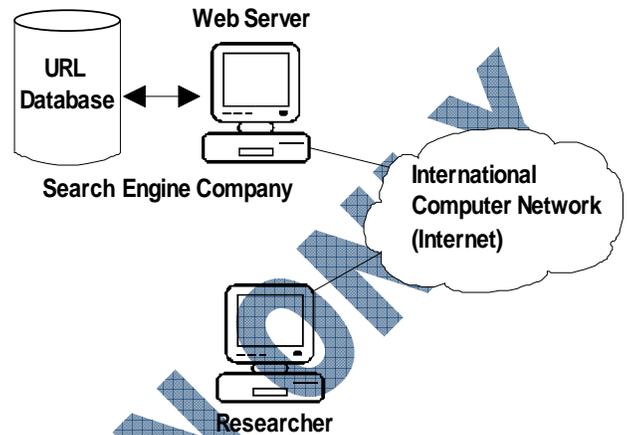
There is a search field on the home page of the search engine company's web site where researchers can enter keyword information. When you click on the **Search** button (sometimes also called **Go** or **Find**), the browser submits the keyword information to the web server. The web server uses the keyword information to scan through the database, compiles a list of URL records that match your keyword requirements, and then returns the list for viewing as a web page. The list is typically organized as follows:

1 **Title**
Description
URL

2 **Title**
Description
URL

The title is also a hyperlink to the site. Most search engines will order the URLs in the list according to the degree that each URL matches the keywords. Sometimes these may contain hidden keywords or tags associated with the site; as such, they may appear in the list of results even though they may not seem to be related to the search criteria entered.

Although the search engine companies have millions of URLs in their respective databases, they only have a fraction of all possible URLs. In the early days, the companies would use special software called *spiders* to "crawl the web" and capture the relevant information. The Internet is now too big for this to be realistic so companies rely on site owners/developers to submit their information to the database.

📖 **Exercise**

1 Start your browser and type the following web site: www.excite.com

2 Type the following keywords in the search field: Africa, elephant and click **Search**.

The browser will display the web page containing the resulting list of URLs.

Remember that the result page does not exist as such on the search engine web site, but is created automatically each time a visitor submits keyword information. Note the information returned by Excite.

3 Type the following URL: www.altavista.com and enter the same keyword information in the search field.

What results were displayed? How does the structure differ from those found on the Excite search engine? Do they contain the same URLs?

Practice Exercise

1   Try searching for the following items using the different search engines listed.

Search Criteria
        Mpeg4 devices
        fishing lodges in Vermont
        highest grossing movies of all time
        swiss watchmakers
        shoe fashions in 1850's

Search Engines
        yahoo.com
        lycos.com
        excite.com
        msn.com
        hotbot.com
        google.com
        altavista.com
        mamma.com
        dogpile.com

2   What kind of results do you get with each? Are there any similarities?

Looking at Search Engine Features

IC³
3.3.1
3.3.3

Although search engine companies (SECs) use similar technology as discussed earlier, they differ in the features they offer and in search effectiveness. By being aware of these differences, you can select the site with the best search engine results for your specific research requirements.

One of the main differences is in the content in their databases. To some extent this is determined by how the companies capture the URL information. The standard process is for the site owner to submit the URL to the SEC. The SEC will in turn use their software to extract the information automatically from the site. The number of URLs in their database depends on the diligence of site owners and developers to submit their URLs for inclusion in the database.

Some SECs, like Yahoo, use human operators rather than automatic software to extract the URL information. This is a slower process but may result in more accurate information. It also allows them to compile directories.

The search service provided by most SECs is free. The companies get their income from advertising. There are a few that charge a small amount per link used. Similarly there generally is no charge for registering your URL with their database. However, many are now charging a fee for submitting your URL but promise higher ranking for your URL in their database.

Like the Internet, the search engine scenario is changing constantly. The subject of search engine technology is out of the scope of this course so only the main points will be discussed. However, there are a number of "industry watchdogs" for the search engine industry where you can always get the latest information. You can find more information on these watchdogs by searching for ones in your region using the Search feature in your web browser or with other search engines such as Google or Yahoo.

📖 Exercise

1 Type the following URL: www.yahoo.com

2 In the search field, type: great wall of china and then press Enter .

3 Scroll to the bottom of the results page until you see text similar to the following:

Yahoo gives you the opportunity to send them some feedback on the types of results you received, thereby helping them to filter out items that may not be relevant or review items not currently included in the results list.

4 Type the URL: www.google.com, type: great wall of china in the search field and press Enter .

Notice how the results vary, as well as the options for the results. For example, when you used Yahoo to find the results, a small icon appeared at the end of the result that would open this result in its own window. Google does not offer that same feature.

5   Scroll to the bottom of the results page to see if Google offers you a chance to provide feedback.

📚 **Practice Exercise**

1   Go to the URL: www.mamma.com

2   Type: merry melodies cartoons in the search field and then click on **Search**.

Notice how each result shows the search engine the site is registered with; Mamma was able to gather all matching results from these search engines to generate the results list for you.

3   Go to the URL: www.dogpile.com

4   Type: low carb diets in the search field and press (Enter).

Notice the different display this search engine provides. The search engine the results came from are displayed across the top of the results list and each result shows whether the information is on a sponsored site or their own site.

Narrowing the Search

3.3.4

Search engines provide a tool to find items on the Internet. However, depending on the amount and type of text entered into the Search fields, the results may not always be useful. For instance, typing in one or two keywords will tell the search engine to look for all matches for either of these words, unless other criteria is entered. This other criteria could be using the options provided with the search engine or special characters you can type in with the keyword text.

Punctuation   One way to reduce the number of matches in the search is to use punctuation. Most search engines will interpret characters like the comma, period, or slash as a space character, and return matches for either keyword entered. Others will interpret it as a phrase to be searched. This method, while simple, is not as helpful as some of the following methods, especially in newer search engines.

Quotation Marks   If you enter *yellow* and *tuna* as search terms, the search engine will return URLs that contain *yellow* or *tuna* or both. If you are looking for yellow tuna specifically, you could enter "*yellow tuna*" in quotation marks. The search engine will only return URLs containing the phrase.

Plus and Minus Signs   Using plus and minus signs allow you to include (+) or exclude (-) certain keywords from your inquiry. If you are looking for tuna but are not particularly interested in yellow tuna, then you can exclude this variety by using the - sign, e.g., tuna - yellow.

Casing   The safest way to search is to use lowercase for your keywords. Using lowercase will result in a URL list that also includes capitalized keywords. However, there are cases where a general keyword could also be a proper name, which is capitalized. For example, you may be looking for information on the politician, Bob Dole, but you will also get URLs that contain the phrase to dole out or being on the dole. In this case you capitalize the first letter Dole as your search term. This will result in a more precise match.

Wildcard Characters	If a keyword can have more than one spelling or conjugation, you could use only a portion of the keyword and *wildcard characters* for the rest. This tells the search engine that it must match the keyword portion and the rest does not matter. For example, if you want sites that have both *color* and *colour* as keywords, you could enter *colo******. However, this may give surprising results as the search engine will also return *colon* and *colombia* as matches.

To search for a single letter, use *?* instead, e.g., the search term for color/colour would be *colo?r*. The search engine will search for both colour and color.

📖 Exercise

1 Activate your browser and type the URL: www.dogpile.com

2 Type: hockey statistics in the search field and click **Go Fetch**.

Observe the number of matches that are returned — too many to manage effectively.

3 Now narrow the search by entering the following in the search field: "hockey"+"statistics". Click **Go Fetch** and observe the result.

Depending on the search criteria entered, in most cases the results will be a shorter list as you exclude general topics relating to the search criteria. In this situation, notice how the results in the second search is smaller and more targeted focus on just statistics for the sport of hockey only.

4   Move to the URL: www.google.com

5   Type: pyramids in the search field and then click on **Google Search**.

Notice how the results show primarily the pyramids in Egypt. You could scroll through the list to see if other pyramids appear but it may be easier to enter a specific search criteria to narrow the search.

6   In the **Search** field, type: mayan+pyramids and press [Enter].

Practice Exercise

1   Start your browser and go to the www.mamma.com web site.

2   Type: aquarium as the search term, click **Search** and observe the number of matches returned.

3   Repeat step 2 but use "aquariums+national" as your search term. Observe the result.

4   Repeat step 2 again but now use "aquariums+national+dolphins" as the search term and compare the results.
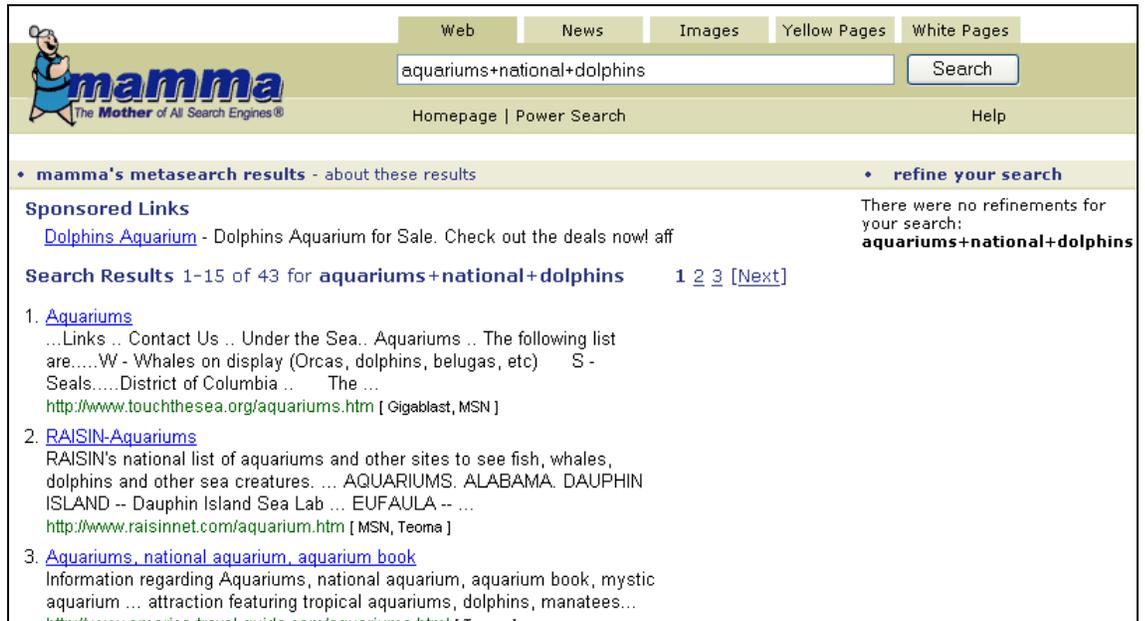
Notice how as you enter more parameters in the search criteria, the results are getting smaller or more specific to the information being sought.

Using Boolean Terms

Boolean terms are similar to the plus and minus that we have seen above, but allow much more powerful searches. The most often used Boolean terms are *AND, OR, NOT*, and *NEAR*. These terms are often written in uppercase so that they stand out better from the keywords but lowercase will yield the same results.

Searching with AND

AND works like the plus sign. You can use it when you are searching for multiple terms in a single document. Your search will include only documents with all your search terms. Take a look at the following examples:

> Recipes AND salmon
> Recipes AND salmon AND grilled

You can also combine Boolean terms with punctuation:

> Tile AND "interior design"
> "ceramic tile" AND "interior design"

You can also type "/&" instead of the word "AND" to activate the same feature.

Searching with OR

Use *OR* to search for documents that include one or another of your search terms, e.g., *cnet* OR *"the computer network"*; *"big blue"* OR *"IBM"*. There are two types of OR functions:

- OR is considered an inclusive search option. This option will find and include any links that match either value.

- XOR or EOR is considered an exclusive search option. This option will find and exclude any links that match either value.

You can also type "/^" instead of the word "OR" to activate the same feature.

Searching with NEAR

Using *NEAR* in your query will look for terms in the same document that are within ten words of each other. For example, *cancer* NEAR *breast* will return documents containing "studies on breast cancer" and also "studies of cancer of the breast".

You can combine NEAR with other Boolean terms. For example, *gold* NEAR *silver* AND *platinum* will return documents containing "gold" located close to "silver" with "platinum" all in the same document.

Searching with NOT

NOT is used in conjunction with AND. It is similar to the minus sign we saw earlier. For example, *tennis* AND NOT *Wimbledon* will return documents on "tennis" but do not contain "Wimbledon".

Using Parentheses

You can use parentheses in advanced searches to group terms together and prioritize your results. For example, (*coffee* OR *decaf*) AND *cream*.

You can combine parentheses with other terms. For example, *symptoms* AND NOT (*shingles* NEAR *roof*) will eliminate non-medical documents about roofing shingles.

📖 Exercise

1   Start your browser and go to www.yahoo.com

2   Type: hockey in the search field and click **Search**. Observe the number of returns.

3   Next, type: hockey AND Kariya in the search field and observe the result.

4   Change your search to *Kariya AND NOT hockey*.

5   Now make the search: Kariya AND NOT (hockey OR Paul)

Notice how you can combine your Boolean terms to find more specific results.

Practice Exercise

1 Go to the URL: www.msn.com

2 In the search field, type: kings and press ⟨ Enter ⟩

You should receive results on a number of kings, not just royalty. Assuming your report is on royalty, you now need to narrow the search.

3 In the search field, type: kings AND royalty and press ⟨ Enter ⟩.

Since there seem to be quite a number of royal kings, narrow the search to show you a list of kings in countries other than Europe.

4   In the search field, type: kings AND royalty NOT Europe and press ⌷Enter⌷.

Notice how the search has narrowed down a bit for you but there are also some results that don't quite fit all the search criteria. Assume you now decide you want a list of kings in the South Pacific to select from for your report.

5   In the search field, type: kings AND royalty NOT Europe AND South Pacific and press ⌷Enter⌷.

As you narrow down the search using a mixture of Boolean terms, you can refine the results to show the information for what you are seeking.

Other Search Tools

HTML Objects

Because most of the information searched comes in the form of web pages using HTML (hypertext markup language), it is possible to use some of the HTML objects in searches. Some examples would be:

anchor   *anchor:wimbledon tennis* will find pages with hyperlinks to wimbledon tennis.

host   *host:cnet.com* will find pages with the phrase "cnet.com" in the host name of the web server.

image   *image:comet.jpg* will find web pages containing images called comet.jpg.

link   *link:wyoming.com* if you are planning a trip to Wyoming. You will get pages that have your destination in their hyperlinks.

title   *title:"The Wall Street Journal"* lists pages that have the phrase "The Wall Street Journal" as the page title.

applet *applet:NervousText* will locate Java applets by that name.

📖 **Exercise**

1   Start your browser and go to www.google.ca

2   In the search window enter: host:cajun and click **Search**.
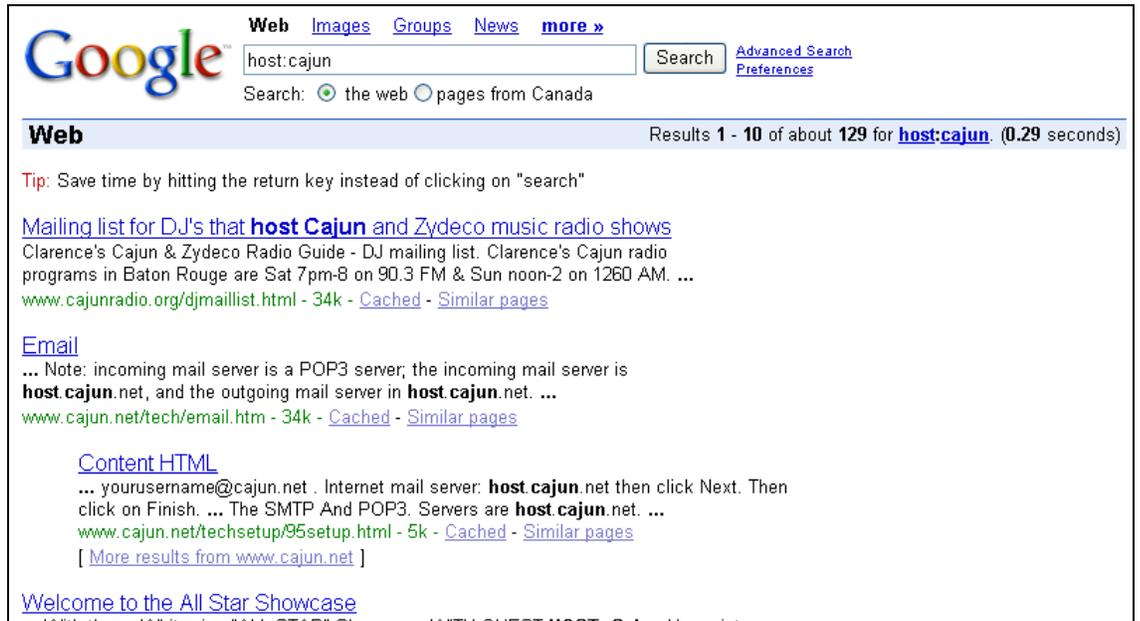
Note the results.

3 Modify the search criteria to each of the following:

> anchor:cajun
> image:cajun
> title:cajun

4 Compare the results.

Practice Exercise

1 Start your browser and go to www.excite.com

2 Type: applet:* in the search field and click **Search**.
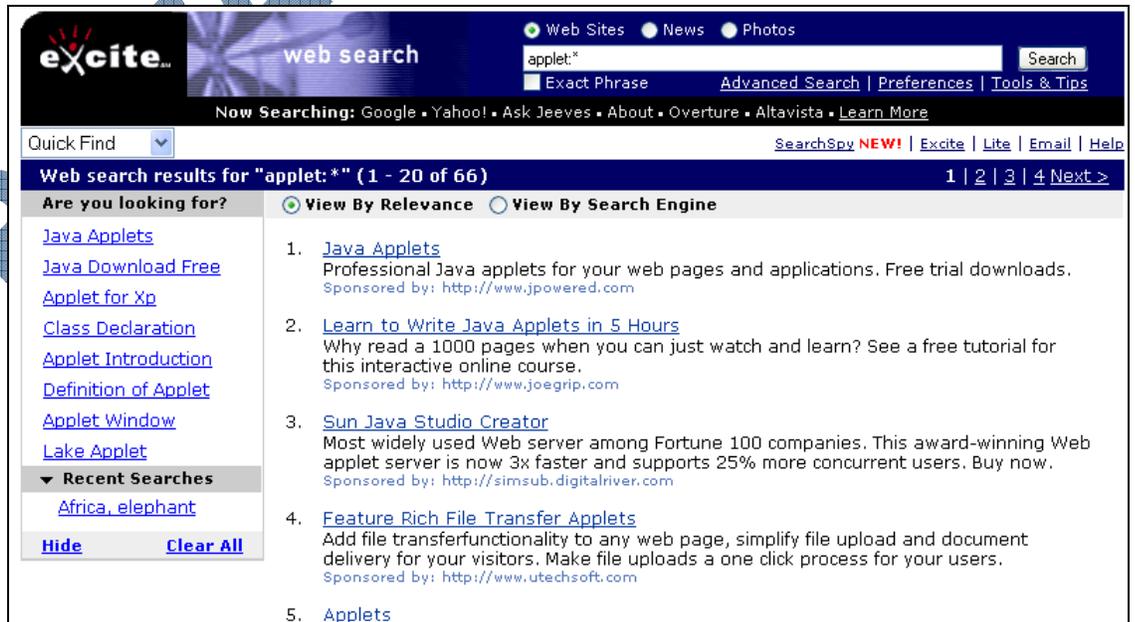
3 Explore the information that is now available to you about Java applets.

Summary

In this lesson you looked at different ways to enter search criteria to find information on the Internet. You should now be familiar with the following:

- What surfing the Internet means
- How to look for specific web sites
- Recognize different types of search methods
- Narrow the search by using Boolean terms
- Recognize some other search tools available

Review Questions

1. As there is no overseeing governing body for the Internet, there is both good and questionable information on the Internet.

    a.   True   b.   False

2. What are directories?

3. What is a search engine?

4. When looking for information on a web site, what is the easiest method to find that information?

    a.   The Search button   c.   Click on a link from the table of contents
    b.   The Search field   d.   Click on the About Us link

5. Portal sites are available for both subject fields and geographic locations.

    a.   True   b.   False

6. When the search engine displays the list of web sites that match your search criteria, which part of the web site information is a link to that web site?

    a.   Title   c.   URL
    b.   Description   d.   All of the above

7. List at least three different ways you can narrow the search for information:

    a.   _____   d.   _____
    b.   _____   e.   _____
    c.   _____   f.   _____

8. What does Boolean Terms refer to? Provide an example of at least one Boolean Term.

9. If you used "saving the environment" AND (whales or rainforest), what are you searching for?

    a.   All information on whales and rainforest
    b.   All information related to whales and the rainforest
    c.   All information related to saving the whales or rainforest
    d.   Any information on saving the environment and whales or the rainforest

10. You could use HTML objects in the search in order to narrow down the search by using the HTML code used in a web page.

    a.   True   b.   False

Lesson 6: Qualifying the Information

Objectives

Suggested Timing: 1 Hour

In this lesson, you will look at how to evaluate the information obtained from the Internet and how information found on the Internet can be used in different aspects of life. On successful completion, you will be familiar with the following concepts:

- Identifying information for accuracy, authenticity, objectivity or currentness

- Assessing a web site to validate the information found on that site

- How computers can be used in work, home, or school environments

- How computers are used in different types of systems found in various industries

- How e-commerce can change how a company does business

- How technology can support or open up opportunities for everyone, including the disabled or disadvantaged

Evaluating the Information

IC³
3.3.5
3.3.6

With new software, it is very easy to create and publish information on a web site. There is no international body that oversees the information published to the Web or applies quality control. It is therefore up to the user to evaluate the information found, on any web site, on their own.

The web sites of reputable, well-known, organizations and companies are, as a general rule, very accurate as they have their reputation at stake. But even here there can be problems with bias, or omission of opposing views.

When researching information on the Internet, always evaluate the information on several sites before compiling the information. Similar to shopping for a large item for your home, you will want to compare a number of retailers before making a decision on what to buy. Never use the information from a web site without having assessed it for validity first. This may include making a trip to the local library to find original documents, sources, journals, or reference materials to help with the research or to validate the information found on the Internet.

The evaluation of information on the Internet is a big subject and some guidelines are available to use in your evaluation. If you are interested in studying the subject more fully, the following sites may be good resources to use:

Internet Detective (DESIRE Project) is an interactive online tutorial teaching the skills required to critically evaluate the quality of an Internet resource, found at http://sosig.ac.uk/desire/internet-detective.html.

AlltheWeb is a search engine, similar to Google, that is very fast and reliable for finding information on what is available on the Internet. This site can also be very helpful finding out what other users may think or feel about a web site, or the information on a web site.

Another site where you can find information on how to evaluate a web site is the Librarians' Index to the Internet, found at http://lii.org. This site contains a number of descriptions that are annotated (explained or referenced) on different guides you can use to evaluate information found on the Internet.

How Accurate is the Information?

The information should be free of obvious factual errors, or grammatical and spelling errors. This is a good indicator of the effort that went into putting the site together. Read the site to determine the purpose of this web site and whether it was meant to inform the audience, market or sell product information, or share an opinion.

The information should be based on fact rather than just opinions. A bibliography or source list is a good indicator of the openness of the information. The site should provide links to other sites dealing with the subject rather than just links to its own pages.

Look for depth of coverage of the topic, backed up by other types of information that add substance to the content coverage. For example, if the web site discussed how the "low carb" diet is the best, does it provide information such as comparisons to other popular types of diet to substantiate this claim? What about recommendations or suggestions on what to include in daily menus? If you visit other sites about low carb diets, do they show the same type of information? Which sources were used in the statistics or content of the web site? Are the sources well known organizations such as the Heart Association or does it appear to be just the author's opinion based on their own experiences?

How Authentic is the Information?

Is the producer of the information qualified? For scientific work, the author of the page should be identified; then you can check his or her credentials. Has the author written anything else on this topic? How long has this author been working in this area?

Who was the publisher of these materials? Looking at who the publisher was will also give you an idea as to whether the information is authentic or not. Check the relationship between the author and publisher to help determine if the author has the appropriate credentials to be discussing this topic.

Use any links that may exist on a web site about the author, publisher, or company for this web site to find out more about who they are. These types of links could include text such as About Us, Our Mission, Philosophy, Corporate Profile, Background, etc. Look for links on the page that provide additional information related to this topic.

Use the web page and its URL as a guide to whether the content is one that is affiliated with a particular organization or company, or one published on an individual web site. This can also be useful if you suspect the information may have been reproduced from another source, or altered from an original publication. Check to see what copyright information exists on the page and whether the links lead to a legitimate source.

If you have any questions or doubts, it is very useful if you can contact the author or publisher directly. Check to see if the author or publisher can be contacted by phone and mail, as well as by e-mail.

How Objective is the Information?

The ideal would be that the information is objective, and does not contain any biases of any type. Many organizations have well known agendas and information on their web sites that could be prone to a bias, e.g., the Rifleman's Association, the Society of Petroleum Producers, etc. It does not necessarily mean that the information is inaccurate but rather that it is likely to emphasize a specific point of view. Therefore, you need to look at the purpose of the web site and how the information is conveyed.

Is the web site funded or supported by an organization with an agenda? Is there any advertising on the page? If so, is the advertiser independent of content?

Look to see if the arguments presented are supported (with documentation) or unsubstantiated. If the topic is controversial, the presentation should be balanced, giving both pro and con viewpoints.

Consider the tone of the information and what sort of message is it trying to convey. For example, is the page informing you of something or does it have more of a persuasion tone? Are they sharing information that has been documented with links to related sites or is it just the author's opinion? Was humor used effectively or is the tone more sarcastic or exaggerated?

How Current is the Information?

Like errors, how current a web site is provides a good indication of the effort that went into constructing the web site, and the likely quality of the information.

Assess how old the web site is, and how often it is updated. You can often tell by the site design how old the site is. Also, if you follow links provided on the site and they are no longer valid or have moved, you may want to use another web site that is more current for your report.

Check if the site shows a date of when it was last updated. Some web sites may not need to be updated on a regular basis whereas others may incorporate a new item every day. Look carefully at the web site before dismissing it if the date is not as current as it could be. For instance, a web site that sells seasonal products may not need to update their list of products on a daily or weekly basis, whereas a site that sells services such as a travel agency may change their web site to show daily or weekly specials.

Assessing the Site Design

Is the web site well organized and is it easy to navigate within the site? Is the general appearance appealing? Although these points have nothing to do with the information directly, a good site design can be an indicator of the seriousness of the owners and hopefully reflects the seriousness with which they have compiled the information.

Ranking	If the site has a good ranking in many search engines, it is again an indicator of effort. But search engine ranking alone is not a good indicator of information quality. Many organizations pay to get good rankings.
External Comparison	Compare the information found on a web site with other sources like books and scientific journals not found online. Also compare with other web sites; many search engines will give you links to "similar pages".

Look for links and contact information that give you quick access to other people related to this web site for communication and information. If the site does not provide this information, you may want to use caution when reviewing the information. Also ensure these links actually do take you to a web page with contact information or opens a new message window, rather than going to a web page or site that has nothing to do with what you were viewing previously.

Use the color scheme and overall design layout of the web site as a guide to who the author may be and how serious they are in promoting their message. Most large corporations will have a professional look on their site, using white as the primary background color and applying color selectively on their web pages. An individual who may have created a web site with the same type of information may use a variety of colors for the text and/or background.

Having an Impact on Society

3.1.6
4.1.1
4.1.2

Computing and the Internet have become part of almost every part of our lives, at work, at school, and at home. Knowledge of computing and the Internet has become essential for most jobs.

Even fields where one would traditionally not expect it, computers are being used. For example, an auto mechanic gets up from underneath the hood of the car, leans over to the PC on his work bench. After a few clicks he gets the latest upgrades for that model. The farmer uses Excel to calculate expenses and does an income projection to decide how to best manage his farm. A mobile battery technician, stops next to your stranded car, checks and replaces the battery. Then she types in the information on her laptop which is connected via a cell phone to the Internet. Moments later she prints out an invoice for you. In the meantime, her time sheet has been completed automatically and the warehouse computer updated with the details of the battery used.

Many items found in the home or school also use computers to communicate or collaborate with others or simply to make our lives easier. For example, just about every new appliance (washing machines, ovens, televisions, etc.) has computerized components built into the item to automate certain tasks, thereby freeing up your time to do something else.

Looking at Education

Education is probably the one field that has benefited the most. All the way through K-12, college and university, students are expected to use computers to do assignments.

E-learning (courses delivered via the Internet replacing the old paper-based distance education) is becoming increasingly popular. E-learning allows students to do the course any time of the day that suits their schedule. The courses are of a consistent high standard. The courseware uses web technology which makes it possible to enrich the courseware with multimedia and interactive techniques.

Technologies like mailing lists allow students to work together on joint assignments. Using e-mail and attachments, they can easily complete their final report.

Even administration is facilitated. Lecturers and students have access to the student record database using a web page interface.

Students have almost unlimited access to online information and resources for their studies. University students in particular have access to books and journals online via their university library.

There are several international initiatives to bring education to developing countries in an affordable way. These projects make use of the Internet and personal computers. A major PC manufacturer has donated computers and other infrastructure to support this initiative.

Many of the major Internet software companies have solutions dedicated to online learning. For more information, visit the links below:

Microsoft	http://www.microsoft.com/education
Macromedia	http://www.macromedia.com/resources/education
Adobe	http://www.adobe.com/education/main.html

One of the more important factors determining how computers can be used in a school environment is the promotion of critical thinking to solve "real world" problems within the courses. Being able to go online to find information or take courses is only the beginning of being able to resolve problems or issues that come up. Many curriculums include an assessment test before and after a course is taken to ensure that the student understands how the topics they learned in the course can be applied to a theoretical as well as a practical situation. These assessments can be in the form of case studies where the students may be required to interact with other people in different locations to share, analyze and evaluate the scenario. Depending on the situation itself, students learn how to break down the situation to find and assess the problem, distinguish between fact, fiction or emotion, apply life skills (such as working with others, being flexible, or keeping an open-mind), and staying focused on the task to find creative solutions to the situation.

Using Computers At Home

The personal computer has become as important as the TV in most North American homes. According to statistics*, there are on average two PCs per household. The range of applications of the Internet and computers in the home is enormous. With the cost of computers becoming very affordable and software programs becoming more user friendly, it isn't surprising that computers have become a valuable resource in the home.

Certainly playing games on the computer is high on the popularity list. *Interactive games* are played with others via the Internet. Card games like bridge and hearts are very popular with adults. Young people like to take part in *virtual reality* games where they can select an avatar, a graphical being, to represent them in the game. On the monitor they see their avatar as well as the avatars of other players. There are *educational* games that teach everything from spelling to mathematics.

Money is an important concern in most households. Computers with financial management software can be used to track household expenses. Via the Internet, users can track and manage their investment portfolio from home. Day trading is very popular as is online gambling. Almost all banks allow you to do your banking and pay bills using the Internet.

Telecommuting refers to the process of working from home using the Internet to communicate with the office. Some people telecommute part of the week which allows them more flexibility for looking after young children or doing continuing education studies.

Communicating via a chat line has opened the possibility of interacting with others without the need to meet or pay long distance charges. Chat lines have increased in popularity as the ability to have instant responses reduces the time and increases productivity of getting a task done. Students can use these lines of communication to discuss or verify homework or status of assignments from their own home. Many of these chat line programs are available on cellular phones or PDAs, thereby keeping the lines of communication open at any time using text messaging.

Many people work from home so the home office has become important. The home office is typically well stocked with computer equipment and an Internet connection. A home office has lower overheads and it allows the business to write off some of the household expenses for tax purposes. Office supply companies allow the home office to order office supplies via the Internet and the supplies are usually delivered the same day. Text messaging can also be handy here as employees can send instant information or requests to each other via their cellular phones, thereby not requiring people to be at their desktop computer. As well, with video conferencing capabilities, employees and customers can interact from their own locations directly as if they were in a typical meeting with everyone in one location.

* Statistic sources:

USA   http://www.activemedia-guide.com/computer_industry.htm

Canada   http://strategis.ic.gc.ca

Where Else Are Computers Used?

Computing plays a role in many applications "behind the scenes" that users are, for the most part, not even aware of. For example, there are microprocessors embedded in most household appliances like microwave ovens and VCR's.

Many new automobiles have several embedded microprocessors which make them more efficient, reduce air pollution, or provide guidance systems in different cities. Many busy traffic intersections are controlled by computer to manage or track the flow of traffic.

Most products used such as automobiles, hot tubs or aluminum foil are manufactured on automated production lines using robot technology, many of which are controlled by other computers. There is some human intervention to turn the systems off or manage quality control, but the actual manufacturing is pretty much handled by the robots.

Modern healthcare delivery depends entirely on computing. From the time you enter the hospital, your information is tracked in the patient record system. All the equipment in the Intensive Care Unit is computer controlled and your vital signs are tracked on the computer-based nursing information system. The modern imaging systems (e.g., CAT, MRI, and PET scanners) would not be possible without the built-in computers and software to handle the tasks.

Modern travel would not be possible without computing. Air traffic control is computer-based as is the international booking system to purchase tickets, book hotels, book events, etc. Planes and ships also use computers for navigation.

Banking has been revolutionized by computers and the Internet. Every teller now has a PC connected to the bank's network system. Your account details reside on a server on the network. When you withdraw money from an ATM, a built-in computer checks the magnetic strip and compares it with the personal identification number that you enter. The same is true for credit card or debit transactions in retail stores.

Telephones have benefited over recent years with the advent of technology for communications. The mechanical switching exchanges have been replaced by much smaller, more efficient computer-based systems. This allows for new services like caller ID due to an embedded microprocessor. Cellular phones are entirely computer-based. New cellular phone technology provides you with Internet access to send or receive e-mail, view web pages, or manage your banking.

Many reporting systems that require the most recent information have computerized their systems to help predict, forecast, or capture the latest information. For example, weather systems use specialized systems to monitor or predict the weather through readings on the wind, temperature, barometric pressure, etc., that are then transmitted to the specialized software to interpret these readings and data and produce a report.

Home inspectors no longer have to write their findings onto a form on a clipboard; they can use tablets installed with specialized software and touch-screen technology to enter the data. They also carry the printers with their units to produce very professional documents for you instantly. The data is stored on their system as a record so that additional copies could be made for you at a later date, as needed.

Shopping Online

Whenever you buy anything online, this is considered an e-commerce transaction. E-commerce essentially is any type of transaction where information is transferred regarding a purchase via the Internet, whether it be a retail business like Amazon.com or Walmart.com, an auction site like eBay, or an individual business who has a product or service to sell to the consumer. E-commerce has grown significantly in the past few years as the security for protecting personal information has become more advanced, and users are more comfortable with buying items online.

Shopping online is very convenient, especially as individuals, companies, and governments have instant access to specials in products and services. This also includes the ability to do comparison shopping with large and small companies alike online; you no longer have to plan your day driving from one store to another or using flyers to find the best deal for the item of purchase. If you are looking for a rare, unique, or hard to find item, using the Internet is very handy for searching companies who might carry or know who might carry this product or service. Some examples of items you can buy online include:

- Buying groceries online is useful for those who are restricted to their home, or even for a busy family. They can order their groceries online and later that day, their order is delivered without them having to leave the home. The service is certainly a bit more expensive than performing the shopping yourself but the convenience may be worth the extra expense.

- Music files for older recordings or just individual songs by specific artists is a very common purchase. This service allows users to create their own compilation of songs for their own listening pleasure. Many companies sell MP3 format files for as low as 99¢ per file.

- Tickets to a sold-out event can usually be found on eBay or other auction sites. You may end up paying more money for these tickets, but you will at least have the option of bidding on tickets that you cannot purchase elsewhere. Auction sites like eBay can be wonderful resources for hard to find items such as collectibles. It is certainly a lot easier for a collector to try and purchase an item on eBay than to spend time searching in antique stores for the item.

- Office supplies can sometimes be cheaper to buy online than in the actual store. On many occasions, retailers will offer specials just for the web site that are not available in the store. This can be true of many retailers who recognize that many of their customers are looking for methods of purchasing items in a convenient manner.

- Clothing from companies that do not have an outlet in your neighborhood or country are very popular e-commerce items. Alternatively, you can look for an item online in your size or color if the store has sold out of the same item. Many clothing companies also offer an area on their web site for discontinued, items that are marked down significantly, or "super deals" on items you cannot get in the store.

Payments for any purchases made online are generally made with credit cards or a financial transaction company such as PalPal or Verisign. In the case of a large company or a government, e-commerce companies will generally accept a purchase order and payment is made in traditional methods such as cheque.

Companies benefit from using e-commerce as it can be a cost savings by providing an option to purchase the product or service without the company investing in multiple sales locations. Inventory can also be kept to a minimum level based on previous sales. Payments are generally immediate which provides them with faster receivables than using traditional methods. Having an e-commerce site can be beneficial to medium and large companies but also to small or individual users who want to purchase directly from a company's web site instead of having to call or visit the company to make the purchase.

Benefits of Using Computers

A discussion of the benefits of the Internet and computing to society would fill several books. It has improved the speed, accuracy, and efficiency with which we can do many traditional activities. It has also resulted in new activities that were not possible without the Internet and computing.

Some of the benefits are more indirect. The speed of e-mail communication has improved business. It has allowed much better communication between different societies and nations and reduced the barriers that existed before. Web sites make information readily available for everyone who has access to the Internet.

The efficiency of many activities has been improved. For example, computer aided drafting has allowed better buildings to be designed in much shorter times. Computer simulation of aircraft and buildings has allowed problems to be detected and disasters avoided.

Computer technology has improved the quality of life of many people with disabilities. Quadriplegics can control devices in their homes. Sound and voice recognition help people with visual and verbal disabilities. Computer communication expands the world of disabled people who would otherwise be very limited in their ability to relate to other people. Online learning or e-books (books online) opens new possibilities for many disabled people. These will be less expensive or time-intensive than if they had to go to the different locations to handle the same type of transactions. E-commerce sites can be very beneficial to people who are not able to leave their home or restricted in any amount of travel.

Many technologies developed for disabled people can be found elsewhere. For example, a voice-controlled elevator allows a person carrying a large object to still operate the elevator.

Computers have also led to a growth industry of communities where people can share information or public services. For example, many cafés changed from being a traditional café to one that also offers Internet services to their clientele to pick up their e-mail from anywhere in the world, or to research information on the Internet. Other companies have started up a service business offering computer services to people who don't have a computer. These services could range from the ability to take e-learning courses, working on a resume or other types of documents, or job searching using online resources (employment agencies, career/employment opportunities, etc.). Many of these companies charge a relatively low rate per hour, a cost that is much lower than purchasing a new computer.

Summary

In this lesson, you looked at how to evaluate the information obtained from the Internet and how information found on the Internet can be used in different aspects of life. On successful completion, you should now be familiar with the following concepts:

- Identifying information for accuracy, authenticity, objectivity or currentness
- Assessing a web site to validate the information found on that site
- How computers can be used in work, home, or school environments

- How computers are used in different types of systems found in various industries
- How e-commerce can change how a company does business
- How technology can support or open up opportunities for everyone, including the disabled or disadvantaged

Review Questions

1. When you find the information you want on a particular web site, you no longer need to look any further.
   - a.   True
   - b.   False

2. When checking the accuracy of the information on a web site, what should you look for?
   - a.   Spelling or grammatical errors
   - b.   Information is fact based and not just opinions
   - c.   The depth of coverage on the information
   - d.   All of the above

3. How can you check the authenticity of information provided on a web site?
   - a.   Check who the author is
   - b.   Check who the publisher is
   - c.   Check for links to other sites about the author, publisher, or company
   - d.   Check for any affiliations associated with this web site
   - e.   Contact the author or publisher directly
   - f.   All of the above

4. Why would you want to check whether the information is objective?

5. Every web site owner should update their web site and be as current as possible at all times.

    a.   True   b.   False

6. How have computers made an impact in education?

    a.   Courses can be taken online instead of at the school's location

    c.   Critical thinking can be promoted to students as it gives them a chance to solve issues as if in the real world

    b.   Technology allows students to communicate with each other online instead of in person

    d.   All of the above

7. Give some examples of industries where computers are used other than education or at home.

8. E-commerce occurs whenever you purchase an item from a web site.

    a.   True   b.   False

9. How can you make a payment for a purchase made online?

    a.   Credit card   d.   Cheque

    b.   PayPal   e.   Any of the above

    c.   Verisign   f.   Either a, b, or c

10. Provide an example of how computers have been beneficial to disabled or disadvantaged people.

Lesson 7: The Risks of Computing

Objectives

In this lesson you will look at some of the risks of being online and steps you may be able to take in order to prevent damage to yourself or the computer. On successful completion, you will be familiar with the following:

- Looking at how to prevent loss or damage to the computer
- Establishing a safe working environment
- Using ergonomics to set up the correct workstation for yourself
- Understanding what you can do to prevent viruses from damaging your computer
- How you can secure specific types of data
- Performing backups of your data

Protecting Your Data or Computer

IC³ 4.2.3

Because lives have become so dependent on computing, users are vulnerable to computers or specific data on the computer, being stolen or damaged. The cost of repairing or replacing computer equipment is a concern. The interruption of services and the replacing of lost information often cost a lot more than the equipment. Having your data stolen is a big concern for users on the Internet, regardless of whether it is through someone "hacking" into a computer or a matter of copyright infringement.

Theft	There are many steps one can take to protect computer equipment against theft. There are systems whereby you can lock computers in special cabinets or, by using durable cables, tie them to the desk. Video camera surveillance is very effective for areas with a large number of computers like central offices and network rooms.
Damage	The same common sense rules apply as for any other equipment regarding physical damage. Make sure that computers and monitors are placed on stable surfaces. Hide all wiring so that people won't trip over it and pull the computer or monitor over.
Data Loss	Losing your data can occur through hackers, hardware failure, power spikes, accidental deletions, or disgruntled employees. If you provide a critical service, you should have an emergency plan in place to cope with the loss of your system. This includes having backup copies of the data offsite, access restrictions for network users, and security measures to prevent unauthorized people from entering your computer or network.
Backups	Your data should be backed up regularly and the backup copies stored in another location. Only the data needs to be backed up as the application programs can always be reinstalled from the original media. Also consider having backup copies of the application programs in case the original media is no longer available or works.
Power	Computers are vulnerable to two kinds of power problems: outages and surges. If there is a sudden loss of power, the computer will shut down but you are likely to lose the information that you have been working on since you have last saved your work. In most cases this is mainly an inconvenience. Having an uninterruptible power supply (UPS) can provide some protection against total data loss. The more crucial your data, the more features should be available with the UPS and you should also have an emergency power generator. These are usually diesel driven. For example, most hospitals, traffic systems, and business organizations like stock exchanges or air traffic control systems would have emergency generators.

Understanding Data Security

IC³ 4.2.3

In most cases, the data on computer systems is worth more than the computer equipment because it represents work that the organization has done. If a bank loses the data of its clients or an airline loses the data of its flight bookings, it would be catastrophic. Loss of data can have a long term effect on a company and the confidence of its clients. Data loss often has a ripple effect throughout other organizations that are related to, or do business with, your organization.

A *hacker* is someone who gets unauthorized access to another computer, generally with the purpose of "looking around", stealing, or corrupting data. Depending on who you speak to, this term was coined by the media to apply to anyone who created a program to break into a computer where they have no access rights. Some hackers refer to these people as "crackers" as they consider themselves to be very good with programming languages or computer systems, and they are writing programs to test the security of another system. Regardless of the term, take precautions to prevent anyone from entering your system who hasn't been authorized, as a hacker could:

- steal information (like designs or project information) to sell

- destroy information in order to damage your company's ability to deliver products, services, or projects on time

- change information to cause embarrassment or to affect the company's reputation negatively

- Hackers could enter your premises and use one of the workstations, either physically or online. Physical security including access control, identification tags, and video surveillance are important tools to counter hacker attack. If your network is connected to the Internet or some other WAN, it represents another way a hacker can get access to your data. The first level of protection is to use firewall technology.

- An important technique to protect data is to use *passwords*. You can limit access to critical information by placing it in a folder on the server that requires a user ID and password to access. One should have a strategy to make it difficult for hackers to guess your password:

    - Rather than use your nickname or your spouse's name, use logical but less obvious words, e.g., your first name and the current month.

    - Using a combination of letters and numbers is much harder to guess.

    - Passwords should be changed regularly.

    - If you're worried about remembering too many passwords, alternate between three and five passwords, and be sure to keep them in a safe location.

    - Try to use a different password for confidential files than the one you use for logging into the network or the Internet. This will ensure that the files remain protected, even if someone can guess your password to enter your system.

    - Check with your network administrator or the ISP about casing on passwords. Sometimes these may be restricted to all lowercase, or it may not matter which casing you use.

The importance of passwords should be impressed upon employees and that passwords should be used carefully. Although it is harder to remember, it may be a good strategy to use different passwords for different files, network access, and your Internet accounts.

The common image of a hacker is of a young individual, typing away frantically in a dark basement, etc. In reality, most hackers are very ordinary people. They normally gain access by getting the necessary user ID and password from an employee, friend, or disgruntled employee.

Data security is a very specialized field. Most companies will use a security consultant to do a risk assessment and recommend an appropriate security plan for the company. The plan should also include training for the employees.

Establishing a Safe Working Environment

4.2.1

The same general occupational health and safety principles apply in a computerized work environment. You need to avoid injury due to fire, electrical shock, chemical injury and physical injury (equipment falling on you). Some measures you can take to ensure your environment is safe include:

- Avoid temporary setups for the computer as they tend to last much longer than intended. A monitor placed on top of several telephone directories is not a safe location as the monitor can be knocked off its pedestal if someone bumps the desk. Place monitors on stable desks and position the wiring appropriately.

- Ensure your CPU is positioned somewhere where it is stable such as the floor or a very solid table, and that there is ample space behind the CPU for air circulation. Remember that the CPU has a fan that cools down the computer. On occasion you may also want to remove any dust buildup in the computer and the fan. Vacuums or air pressure tools designed for the computer can be purchased for these tasks.

- Consider using a power bar to connect your computer to the power outlet. A good power bar should also offer surge protection with it. Be careful about overloading the power bar as this may cause power fluctuations to the computer. For example, a laser printer should never be plugged into the same outlet as the computer as they will compete for power and the printer will usually win! In this scenario, consider plugging the computer into a power bar that then plugs into the wall outlet and plug the printer into a different wall outlet, either via another power bar or directly to that outlet.

- Protect yourself and others from accidentally tripping on any cables by using proper tools to keep them neat and out of the way. If you can, avoid having cables cross a walk-through area, but if necessary, ensure the cables are covered with an appropriate cover. Consider purchasing the appropriate ties to hold the cables together rather than using twist ties or elastics.

Using Ergonomics

4.2.2

Ergonomics, or human factor engineering, is the study of the human in the workplace. Ergonomic studies have identified a number of potential problems relating to extended computer use. When working on a computer, one tends to sit for long periods of time, looking at the computer screen, typing and using a mouse. We have probably all experienced back strain and eye strain while working with a computer. If you do this on an on-going basis, it could lead to a permanent disabling injury. By applying ergonomic principles and using proper equipment, the risk of injury can be greatly reduced.

There are three particular areas of concern: the wrist and hand, elbow and legs.

- In the wrist, all the nerves and blood vessels pass through a narrow tunnel in the wrist bones called the carpal tunnel. Under repeated stress this area becomes inflamed and very painful—this is referred to as carpal tunnel syndrome. Frequent rapid motion, such as typing or using the mouse can cause repetitive motion injury (RMI).

- A similar situation can arise at the elbow joint.

- Sitting for extended periods on incorrect seating constricts the blood flow in the legs and applies pressure on the nerves. This can lead to swollen feet, painful nerve damage, blood clots and blood vessel blockages.

This is a quick overview of how ergonomics can be a factor in how your workstation is set up. For more information you can visit the following web sites:

> **USA** www.osha.gov
>
> **Canada** www.ccohs.ca

Looking at Workstation Ergonomics

If you work at a computer for a few minutes a day, you need not really concern yourself too much with ergonomics other than your comfort. However, if you need to work for several hours per day, you need to keep ergonomics in mind.

The first thing to do is **never** to work without taking regular breaks. Get up about once every hour, stretch and walk about to get the circulation going.

The following will illustrate some of the main points to keep in mind when considering a computer workstation.
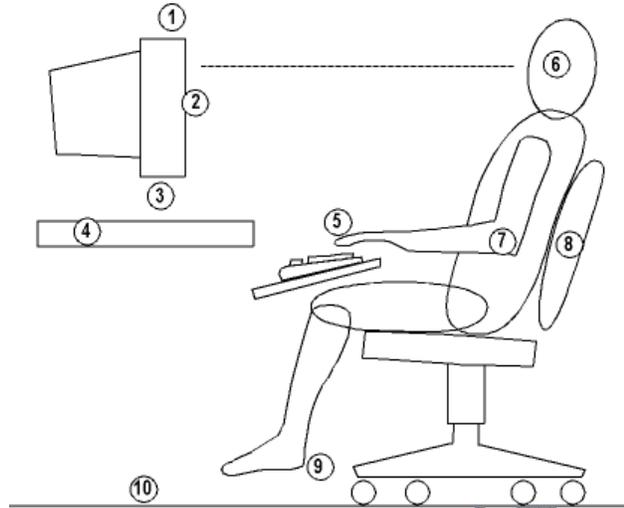
1   The monitor and keyboard should be directly in front of you. You should not have to look or type at an angle.

2   There should be no glare or reflections on the screen.

3   Place any documents that you will be typing from in a document holder next to the monitor.

4   The work surface should be stable.

5   Once seated comfortably, your wrists should be straight and flat.

6   The top of the monitor should be about 2-3″ above your eyes.

7   Your arms and elbows should be close to your body.

8   Use a good, adjustable ergonomic chair. Sit slightly back and not exactly upright. Sitting back in your chair in a reclined posture (with your back at around 110 degrees) is recommended for good lower back health.

9   Your feet should be flat on the floor when you are seated comfortably. Your upper legs should be more or less horizontal. If your feet cannot reach the floor then you need to use a foot rest.

10   Although not part of the workstation design, remember to take regular breaks – this will go a long way to avoiding injury!

Preventing Eye Strain

Once you have a proper workstation layout, consider the following points to avoid eye strain:

Viewing Distance   The monitor should be at a comfortable horizontal distance for viewing, which usually is around an arms length (sit back in your chair, raise your arm and your fingers should touch the screen).

Screen Quality	A good quality monitor can go a long way to reduce eye strain, such as a monitor with high resolution so the characters will be sharp. There should be no visible flickering of the screen while you work.
Bifocals and Progressive Lens	You should be able to see the screen without tilting your head back or craning your neck forwards, even if you wear special lenses, provided you have followed the workstation guidelines.
Proper Lighting	Natural light is always better for clarity as well as general health. However, it may also cause glare on the screen if you have the monitor facing the window, and of course, when the daylight leaves, you will need another source of lighting. Where possible, the lighting should be above or behind you, facing onto the monitor. If you are using a desk lamp, never have the light source pointing toward your eyes; it should be aimed towards the monitor and the desk to provide light for the screen and any papers being reviewed.
Eye Checkup	If you are experiencing eye strain, you should consult an eye professional.
Rest	Again, remember that regular breaks go a long way to avoiding problems. When you take a break, remember to look in the distance.

Using Notebooks

Notebooks are notoriously non-ergonomic because the screen and the keyboard are attached. If the screen is in a good position, then the keyboard isn't and vice versa.

If you are a casual user, then you should sit comfortably in a chair and place the notebook on your lap such that your hands are in a comfortable horizontal position. Then tilt the screen for the minimum bending of the neck.

If you are a full-time user, consider getting a separate keyboard and mouse in the location where you will predominantly work on the notebook. Try to emulate the workstation guidelines as far as possible.

Remember that many notebooks may not seem heavy, but they can cause strain if you have to carry them for long distances like at some airport terminals. A good ergonomic laptop bag is a good investment.

Ergonomic Products and Gadgets

There are many products sold as being ergonomic; some are more gadgets than ergonomic products. If you can, try out the product to see if it is comfortable over an extended period time. Consider the following when picking a product to assist you with working for long periods of time on a computer:

- Use your common sense. Do the product design and the manufacturer's claims make sense?
- Be suspicious of products that haven't been studied by researchers.
- What do ergonomics experts say about the product? If they don't recommend it, don't use it.

Understanding Viruses

IC³
4.2.4

There is only one way that you can have a virus infect your computer — you let it in! All viruses come into your computer on disks or files that you put onto your computer, either from e-mail attachments, or downloading from a network or the Internet.

On PC-type computers, viruses are very serious. There are literally thousands of viruses that affect systems. The number of viruses that affect the Macintosh system are in the hundreds. It doesn't matter how many or what kind of computer you have; a virus can cause just as much damage on any type of system that contains data.

Basically, a virus is a computer program that is able to move from computer to computer by attaching itself to other program files. In most cases, these viruses are not harmful to the computer directly; however, there are others that can be very destructive and destroy the data on your computer.

What many recent viruses will do is try to duplicate or replicate themselves in order to infect as many other computers as possible. For example, some of the more infamous viruses are sent via e-mail. The virus is attached to a file (i.e., picture) and when the user tries to open that picture, the virus file starts up and resends this same message to everyone who may be in the contact list or address book of your e-mail program. Another common virus appears as an e-mail that looks as if it is from someone with a valid e-mail address. The message appears to have an attachment with it making the message appear more valid. However, when you open the message, the attachment is actually a virus that now replicates itself to everyone on your contact list. These are not destructive viruses per se, but are meant to cause problems by making networks crash due to the volume of messages being handled by the network (similar to ten people asking you to perform twenty different things at the same time).

New virus programs are being created every day. As such, it becomes very crucial for you to understand what a virus is, how it works, and what you need to do to protect yourself against a virus or how to get rid of the virus if you have one.

At the same time, there are many hoaxes that begin with a notification from someone who heard it from someone else about how malicious this virus can be to systems and that antivirus vendors or Microsoft did not catch this virus on their systems. These types of messages create the same traffic flow problems as the e-mail type of virus as many people begin sending the warning message to all their contacts. The only way to know for sure whether a virus is a hoax is to check with your network administrator or a web site that lists different types of virus hoaxes before you send a warning message to anyone else. There are a number of sites that provide this information, including:

http://securityresponse.symantec.com/avcenter/hoax.html

www.trendmicro.com/vinfo/hoaxes/hoax.asp

http://us.mcafee.com/virusInfo/default.asp

www.truthorfiction.com (this site also contains information about scam programs)

Looking at the Types of Viruses

Essentially there are four basic types of viruses that could attack your system:

Boot Sector As the name implies, this type of virus will infect your system when it is read from an infected floppy disk that has been set up as a boot disk. The virus is then written to the master boot sector, the area the computer reads first before doing anything else. Once the infected file is in the master boot sector, it gets loaded into the computer's memory, thereby possibly infecting every file from there.

Program or File In this case, the virus is part of a file that can be used to start a program or action (e.g., batch file).

Macro This type of virus looks like a macro file that will run in a specific program that uses macro languages (i.e., Microsoft Word or Excel). This virus will attach to the default settings for that program, thereby infecting every new or opened file in this program.

Multipartite These viruses work similar to a boot or program virus except that these generally will infect both areas.

There are some other malicious viruses that exist, although they are not actually a virus (i.e., they do not actually fit into one of the previously mentioned types). Many of these can cause as much or more damage to a computer. The two most common types here are worms and Trojan horses.

Worms	These are virus programs that duplicate or replicate themselves through some means. Depending on the virus, it may be through infection of a program file, or as has been the case in recent years, through e-mail wherein they will re-send themselves to people in the recipient's contact or address list in their e-mail program.
Trojan Horses	These types of viruses are written to be "hidden" and appear harmless. However, they usually will activate when some action happens, e.g., on Friday the 13th when the program may blank the screen and move all the files to a hidden area of the computer.

Using an Antivirus Program

Since new viruses are being developed every day with different ways of hiding or spreading themselves, there is no way to absolutely guarantee you will never see one. There are, however, several easy steps you can take to minimize your exposure.

1   Purchase a copy of the latest version of an antivirus program and install it on your computer. All new computers automatically come with an antivirus program installed; however, older systems will need to be upgraded or have one installed in order for you to have protection against viruses.

2   Once the program has been installed (if not already done so) and before doing anything else (e.g., playing a game, starting Word, etc.), you must scan the computer for any possible viruses that could be resident on the computer.

3   Make sure you are subscribed to the antivirus program so that you can get notices of updates and patches to the program. Be absolutely sure to run these updates and patches to the antivirus program as well. It's not enough just to get the notice of these updates; you must apply them to the antivirus program to ensure you always have the latest protection files. If you are on a network, this may be done automatically for you every time you log in; therefore, make sure you log off each night so that you can be receive the latest patches accordingly when you next log into your computer.

4   Schedule a scan for viruses, to occur every time you start your computer.

5   When you choose to download items from the Internet, be sure to save them as a file in a folder other than your data folder. Then scan the file before you actually open the file; this is very important if the file is a program to be installed. Some file types are well known to contain viruses and you should be careful when looking at the name of the attachment; most text files do not contain viruses.

6   If you get a lot of e-mail with attachments, be sure to set up your antivirus program to scan your e-mail messages as they arrive into your Inbox. Be especially careful opening messages from people you do not know, but also be cautious of any messages with attachments from people you do know or what may appear to be a valid e-mail address, especially if you did not ask for any files.

Some of the more popular antivirus programs available include:

- McAfee
- Inoculan
- Internet Guard Dog
- Norton Utilities
- F-Secure
- PC-cillin

Once an antivirus program has been installed on your system, occasionally open the program to ensure your system is being updated and you have the most current virus pattern on your system. Obtaining the latest patches and updates is generally part of the subscription service. If you purchased the antivirus program for your home, you have paid for a yearly subscription that will need to be purchased on the anniversary date of purchase. Companies generally pay a much higher fee for the software which entitles them to continuous updates.

Maintaining a Virus Free System

You should be aware that if you are infected with a virus, even if the antivirus program detects it, you may not be entirely virus free without completing a full scan on the computer. Depending on the virus and severity of its nature, the antivirus program may not detect it right away or be able to clean it (i.e., save your files). This is one of the reasons it is extremely important to have an antivirus program installed on your computer and set up to run when the computer starts.

How do you know if you have a virus? While not an absolute indicator that you might have a virus, consider the following items that might indicate you have a virus:

- You see messages, prompts, or displays on your screen that you never saw before.
- You notice that the computer seems to be running a lot slower or problems with programs suddenly appear.
- Certain software applications no longer work.
- You hear sounds or music that you never heard before and they occur on a random basis.
- The names of your disk, volumes, or files seem to have changed, and you didn't make this change.
- Your computer now seems to contain a lot more (or a lot less) files than you used to have.
- You see a lot of error messages indicating that a file is missing. This could be for a program or a data file.
- You get messages with attachments from people you don't know.
- You suddenly begin to get a lot of messages with attachments from people you know but the subject line usually has a "RE:" or "FW" prefix, and you didn't send them anything previously.

If you are concerned that the antivirus program may not catch everything that comes onto your computer, here are some tips you can perform:

- Every time you start your computer, run the SCANDISK program and note if anything has changed, particularly the amount of Total and Available memory.
- When you put a floppy disk, zip disk, or CD into a drive on your computer, use the antivirus program to scan the disk, even if it's a disk with no programs on it. Even though a CD generally has a read-only setup for files on that CD, there may be a virus on one of these files at the time it was burned onto the CD. If you don't plan to write to the floppy or zip disk, make certain it is write-protected.
- If you receive e-mail with attachments, never open the attachment without first scanning it. Even if the message comes from someone you know, you still want to check the attachment (especially if you didn't ask for this file). One of the most common viruses are ones for e-mail where the virus replicates itself and then sends the message to everyone in the contact/address list.
- If you suspect you might have a virus on your system, try going onto the antivirus program's web site and run the online scan of your computer. The web site scan program will contain all the latest protection patterns and as such, be able to catch anything that may be on your system but not included in your antivirus program. Once the scan is complete, be sure to download the latest updates and protection patterns from the web site to your system.

These steps will help assure your computer stays clean. Again, there are no guarantees but reasonable precautions will go a long way to help.

Performing a Data Backup

Data can be lost as a result of power problems, computer breakdown, theft or hacking. The difficulty is that you never know when it is going to happen. Therefore, it becomes very important to find a strategy to protect your data that is best suited to your situation.

A *backup* is when you save your data elsewhere as well as the regular folder or hard drive. Then you can recover the data even if your computer was stolen, data corrupted or deleted, or if your computer is damaged by other means.

For example, one can become so engrossed in one's work that you don't realize you have been working for several hours. Then, suddenly, the office goes dark and your computer dies — all that work you have done is gone. The first strategy is to **save regularly** while you are working. Learn the habit! Many software programs can be set to do an automatic save at regular intervals — make use of that feature.

Alternatively, you may have saved the file previously and all your data was backed up to a CD. You no longer need the file and delete it from your hard drive. A few months later, you realize you want that file but it no longer exists on your computer. Having that backup copy on CD allows you to restore or copy it back onto your system from the backup copy.

To protect the data, all users regardless of whether you are connected to a network or not, should be required to log into the computer using a valid id and password. This will help to reduce any damage that could occur if someone is able to enter the computer or network without proper authorization. Network administrators will also tend to force the users to change their password on a frequent basis in order to prevent others from being able to use your password with your login id.

If the computer is stolen, then the data is lost whether you saved regularly or not. That is where backup procedures can come in handy.

Every organization has a backup strategy. Some key factors to consider include:

- The data is backed up on removable media like magnetic tape or CD.

- The more critical the data, the more regular the backups should be. Most network servers are backed up at least once daily. For example, the accounting data on your network is far more important and should be backed up on a daily basis whereas the software programs can be reinstalled from their original media and as such, don't need to be included in the backup.

- The removable backup media should be stored in another physical location so that in the case where you have a fire in the building and the computer systems are destroyed, at least your data backups are not be destroyed at the same time.

- If users store some of their data files on their local drive, encourage them to either make a copy on the server for a daily backup, or have them create backups of their own. This can sometimes be done using a zip/file compression file that can then be copied to the network for backup.

When making backups it is only the user-generated data that needs to be backed up as these often contain historical information you will not be able to replicate easily. Any down time you experience as a result of data loss can cost you and the company a lot of work, expense, and time delays. Many large companies build in backups as part of the disaster and recovery plans.

Summary

In this lesson looked at some of the risks of being online and steps you may be able to take in order to prevent damage to yourself or the computer. On successful completion, you should now be familiar with the following:

- Looking at how to prevent loss or damage to the computer

- Establishing a safe working environment

- Using ergonomics to set up the correct workstation for yourself

- Understanding what you can do to prevent viruses from damaging your computer

- How you can secure specific types of data

- Performing backups of your data

Review Questions

1. What are some concerns you may want to address regarding protecting your computer?

   a. Theft

   b. Data loss

   c. Power problems

   d. Backup of data

   e. Damage to the entire or parts of the computer

   f. All of the above

2. What does the term hacker refer to?

3. What are some strategies you can apply to prevent your password being discovered?

   a. Change it on a frequent basis

   b. Use a combination of letters or numbers

   c. Use a logical but less obvious word

   d. Use different passwords for files and login ids

   e. Any of the above

4. List a couple of ways you can set up a safe working environment:

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

   f. _____

5. What is ergonomics and why would you want to incorporate it?

6. List the three areas of concern when working with computers:

   a. _____

   b. _____

   c. _____

7. What types of viruses could attack your system?

   a. Boot sector

   b. Macro

   c. Multipartite

   d. Program or File

   e. Any of the above

   f. Only a, b or d

8. It is important to check with someone or the antivirus program's web site to determine if a virus is valid or a hoax when you receive notification of same via e-mail.

    a.   True   b.   False

9. What steps can you take to check for a virus at any time on your system to keep it clean?

    a.   Run the latest update or patch for the antivirus program to make sure you have the most current virus pattern

    b.   Run SCANDISK on the computer every time you start it up

    c.   Scan any disks or files you receive via e-mail before using that disk or opening that file

    d.   Run a scan of any files or disks using the antivirus program's web site instead of your own system

    e.   Any of the above

10. Why would you want to have backups performed on your data?

    a.   In the case of a fire disaster to your computer or office

    b.   For copies of data that have since been deleted

    c.   In case your system has been hacked

    d.   Any of the above

Lesson 8: Accessing the Internet in a Legal & Safe Manner

Objectives

In this lesson you will look at considerations for working on the Internet in a legal and safe manner. On successful completion, you will be familiar with the following:

- Restricting access to others outside your location or against types of information
- Understanding what intellectual property is and how it applies to each user
- Understanding what is considered personal information when using other computers
- Protecting yourself when conducting e-commerce or purchasing online

- Recognizing and adhering to policies for use of the Internet on other computers
- How to stay informed of new or changes in technology
- How to be a responsible user when working with computers or being online

Restricting Access

IC³
4.3.1
4.3.6

There is no quality control on the information that can be accessed via the Internet. Depending on the circumstances, it may be necessary to restrict access to specific information. For example, parents may want to prevent their children from visiting adult web sites or chat rooms with undesirable discussion topics, hospitals may restrict specific types of patient information to hospital staff, or e-commerce transactions handled by credit card may be limited to only the Accounts Receivable staff for processing.

In the work environment, a company could have policies regarding restricting Internet access. This would vary according to the nature of the company. Surfing the web can be time consuming and visiting non-work related sites should not be done on company time. As such, a company might restrict access for staff to sites that have downloads, online shopping, chat rooms, etc. This will not only prevent dangers such as hackers or viruses from entering the network, but it also limits any transactions on the Internet to business purposes.

Other companies may have a more liberal approach believing that the unrestricted access to the Internet is more valuable. The company then relies on more traditional monitoring of employee activity. Many of these computers then take advantage of technology to prevent unauthorized access, such as firewalls and network/login restrictions.

Firewall software is used to control access to resources on the company network from outside, but can also control employee access to Internet resources. Many networks also have built-in security features that can be set up to protect the server from unauthorized access by either internal or external users.
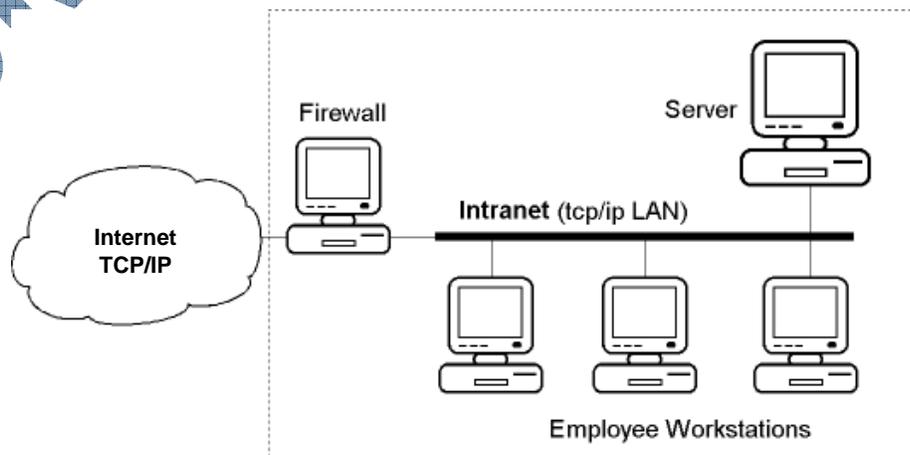
For the home or school user, there are several companies that provide special software to restrict access to the Internet, or at least to certain types of sites on the Internet. These software programs are Internet filter software that can be used to block access based on keywords entered into the software.

CYBERsitter, Net Nanny, CyberPatrol, or SurfControl are popular programs used by parents to control their children's Internet access. These programs can also be set up on schools to prevent students from accessing questionable sites (i.e., pornography, terrorist, racist, etc.) at any time using one of the school computers.

At a personal level, you can provide a certain level of access control by setting the options on your browser. While nothing is better than supervision by a parent or teacher, using Internet filter software and changing the security level for the browser can go a long way to protecting ourselves and our children from accessing areas or items they may not need.

Recognizing Copyright Issues

IC³
4.3.2

It is very easy to locate information via the Internet and then copy or download the information from someone else's site to your system. Add the fact that one has a sense of being anonymous when working on the Internet, there is a temptation to simply "take" and use the information.

However, information on the Internet is subject to the same copyright rules as information in any other media. So as a general rule, the information is copyright-protected. If you take it, it is a copyright violation and could be considered as theft.

Copyright refers to the protection of any material, published or unpublished, created by an individual. This extends not just to book material, but also to music, video, essays, white papers, pictures, software programs, web sites, etc. Essentially anything that was created by an individual is owned by that individual. You can only use that material if the creator grants you rights to use it. Depending on the material, you may be required to pay a royalty (a percentage portion of the sales you generate from use of this material) or the creator may only want recognition in your works. You need to negotiate with the creator to determine what is required before you can use any part of the original works.

When information is published on a web site, you are permitted to view the information but restrictions apply on specific uses of the information. This is considered "fair use" or the belief that you can use portions of the copyrighted information for the purpose of criticism or comments. For example, if you are writing an essay on the results of a particular court case and you want to comment on the judge's report, you can copy and paste the report from the site with quotes and a reference. It wouldn't matter whether your comments were positive or negative; the fair use principle protected you in that respect.

Another example of fair use is when Microsoft allows you to download clip art or media from one of their web sites for the express purpose of using them in your documents but you cannot resell these files to someone else or claim them as your own works.

Copyright laws also apply to trademarks. A trademark is an item that has been registered with an organization for the purpose of being able to distinguish you from your competitors. For example, a company may have a trademark on a name for one of their products which no one else can use in any manner, or it may be the way the product looks as in the case of the McDonalds arch. A trademarked item will display ™ symbol next to it.

Copyright implicitly belongs to the owner of the web site or published material, even if no copyright symbol (©) or text appears on the product. In some cases, the originator may also have a patent on the product or technology, meaning that person has the exclusive rights to make, use or sell this product or technology. They may choose to license or grant you specific rights to make or sell the product or technology, but you cannot advertise the product or technology as your own. An example of this would be the Apple Macintosh computer where Apple owns the patent for this computer and licenses out information on the computer to programmers who want to create software for this computer type.

Examples of illegal use of copyrighted or trademarked information would include downloading of songs, movies, pictures, presenting copyrighted information without citation (no reference to permission from the original site or source), etc.

If you want to use information and you are not sure about the copyright situation, send the web site owner an e-mail asking for permission to use the information. Be sure to describe how you intend to use the information and that you would give them credit.

Some web sites allow you to use the information freely provided that you quote the information accurately and that you give them credit. However, be careful about this in that the web site owner who you are asking permission from may not be the original creator of the information, and therefore does not have the legal right to give you permission.

The following is a list of some sources you can research for more information on copyright or trademark laws and what is applicable in your location:

> http://whatiscopyright.org
> www.copyright.gov (United States Copyright Office)
> www.copyright.com (Copyright Clearance Center, Inc.)
> www.mpaa.org/Anti-piracy (Motion Picture Assocation)
> www.tmexpress.com (Trademark Express)
> http://fairuse.stanford.edu/Copyright_and_Fair_Use_Overview (Copyright and Fair Use at Stanford University Libraries)
> http://strategis.gc.ca/sc_mrksv/cipo (Canadian Intellectual Property Office)

Many academic or educational institutions are offered a package deal for a product or service due to the volume they consume. Most companies will offer a bundled package with rights to print or make as many copies as often as they want or need. For example, most software companies offer academic versions of the full retail version that a company purchases; the academic version is generally a reduced version of the full retail version and is designed to serve the purpose of the school for their curriculum. This is a much more cost effective method for schools to afford a product or service and still have access to newer technologies or concepts.

Identifying Ethical Issues

The sense of anonymity that the Internet gives one has caused some people to do things that they would not do in ordinary circumstances. Consider some of the following as examples of being ethical and responsible while using the Internet:

Libel

Libel is when one makes an untrue statement in public that defames another person's character or reputation. The person who has suffered libel (slander) can sue you for damages. It does not matter whether the libelous statement was made verbally or in print. The same rules apply on the Internet.

People taking part in chat rooms or mailing lists can easily fall into the trap of being freer with what they say, particularly if they have logged in anonymously. Ethically, libel is wrong under any circumstances. Even when logged in anonymously, you can still be traced. Treat libel in the same manner as you would with rumors; don't start and don't listen or respond to any.

Plagiarism

There have been many cases in recent times where people have committed plagiarism in projects with dire consequences for their careers. Plagiarism is when you use information created by another person and present it as if it were your own, either in its entirety or with a few words changed randomly in the paper. There is so much information on the Internet and it is so easy to copy with apparent impunity. That is no excuse for not recognizing the source of your information.

As easy as it is to find the information on the Internet to include in your report, it is just as easy for a teacher (or other professional) to find that same information and catch you in the act of plagiarism as this is essentially a theft. It doesn't matter that it may only be text; it is still stealing intellectual property from someone else. If you must use the information from the Internet, consider using it in its original form and reference the site where you found the information. This shows others that you did some research and you are using fair use principles to comment on this topic.

Whenever you can, always try to cite the sources for where you found the information and the author of that product or service. Give credit where credit is due — with the originator! This can then protect you from being accused of copyright infringement.

Criminal Activity

The Internet is a communication medium; it can be used, for example, to send threats to other people or to make undue/unwanted advances, sexual or otherwise.

People can pretend to be someone else while working online as a way of committing crimes. Another type of crime is pretending to be a big organization, who then receive money for products and services that are never delivered.

The Internet can be used to exchange material like child pornography or racial brochures because it is more difficult to detect the source than with regular mail. Because information is posted onto a web site, in order to get the information, you must actually visit the site which means this is not unsolicited material being "forced" or sent to you.

Although the Internet is based on freedom of speech, hosting web sites that incite racial or religious hatred, or hatred against minority groups, is illegal in most countries and therefore constitutes a crime.

Hacking into another computer with the intent to destroy or cripple a company's business is also a crime. Creating viruses and sending them to people so that computers or information is destroyed, or simply to disrupt a company's business is considered criminal activity.

Unethical Behavior

There are some actions that are not directly illegal but are nevertheless considered unethical behavior. For example, there are sites that offer shareware software which can be downloaded for evaluation on the understanding that if you like it, you will pay the nominal fee for it. If you download the software knowing that you don't intend to pay, it is unethical.

Pranks can be funny if done in good taste but can so easily be hurtful and should be avoided. The Internet, because of the anonymity, is a prime target for pranksters. For example, a prankster could send someone an e-mail saying that the boss is not happy with whatever and wants to see you immediately. A while later, the prankster sends another e-mail saying that he or she was "just joking". Another example would be starting a hoax about a non-existing virus.

One should always keep the golden rule of Netiquette (and real life) in mind: do unto others as you would have them do unto you!

Protecting Yourself

4.3.3
4.3.5

There is also the question of who owns any original work that you may do on a public computer. For example, if you work on a resume at an Internet café, does the resume belong to you or to the café? Or if you attend night school while working full time, if you produce your essay using resources available to you at the company site, do you own that essay or does the company? And what about the a letter you write to the bank requesting transfer of funds for your mutual funds that you created and stored on the company notebook during your flight home from a business trip?

This issue is one that is debated and discussed by many people, and there is no absolute rule. Most companies recognize that employees will do some personal work on the company computer and are flexible about the employee storing the data on their server or local drive of the computer. In general, if you work on something that is personal during company time on a company computer, because the computer belongs to the company, the material you created also belongs to the company. You, as an individual, have more rights to the works if you create and store it on your own computer. The best way to handle this is to speak to your employer about this and find out up front what guidelines or policies are applicable in your firm.

If you are a student attending a school, the same principles apply in that the presumption is that any work you do on a school computer is related to the course you are enrolled in at that school, and this is an assignment for that course. This principle varies between schools, just as it varies between companies. Therefore, check with your instructor prior to beginning any work on a school computer that is not part of your official curriculum.

There are some general laws and rules that govern how information on the Internet can be used at work, school, or home. It is your responsibility as an end user to ensure you are not violating these rules in any way. For instance, if you violate one of the copyright laws, you could be putting your company in a very precarious position for stealing information. Conversely, if you use information from a known source in one of your papers, you could be sued by the author for copyright infringement or plagiarism. If you defame or insult someone via e-mail at work, that other person will look at the e-mail as a reflection on both you and the company, therefore opening up a potential lawsuit against both for defamation or libel.

You also need to consider ethics as a reflection of what you may be doing online. For example, if you download a song or video from the Internet, burn it onto a CD, and then copy several graphics from favorite web sites to use for your CD label or the jewel case, all during company time, you have to consider whether this is acceptable behavior from an employee who essentially has "stolen time" from the company by spending time working on a personal project.

If you are not aware of the rules and guidelines in your location, always ask someone who might have an answer or lead you to where you might find the information. For instance, the best place to start in a company is with the Personnel Director or the Network Administrator; at a school you may want to ask your teacher or the librarian. Most companies and schools have their policies set up as written documentation to confirm the decisions made by the administrators or managers of that company or school. Be sure to read these and understand them clearly before proceeding with going online in that location.

Buying Online

4.3.4

Whether you participate in e-commerce really comes down to a question of how safe you feel the transactions are when you buy something online. Many web sites that offer e-commerce will have taken the appropriate steps to ensure safety exists for themselves and their customers. No company wants to make it easy for someone to hack into their system to steal credit card information and/or customer information.

Some steps you can take to protect yourself when dealing with an e-commerce web site include:

- Do not ever give out your credit card information indiscriminately. Just as you would not give this information over the phone to a stranger, take the same care with a company.

- Be absolutely sure the web site is a valid company and one that has a good reputation, e.g., Amazon, General Motors, Lexmark, etc. If the company has a good reputation based on their retail stores, their sites will most likely be well protected for e-commerce. If the company is not known at all, be sure to do some research on the company before you purchase anything from them. Your research should also include information about others who may sell the same product or service.

- If the company offers a deal that seems too good to be true, be sure to do your research on that deal. Use the same steps you would take if someone made that offer to you in real life — would you give a large sum of money to this stranger without doing some research on the product or service?

- By the same token, if you receive an e-mail or see an advertisement in a popup window about contributing to a worthy cause, be absolutely sure to research and check the validity of this charity or cause. Do not ever send checks, money orders, offer credit card information, or use any electronic form of transferring monies to this organization unless you have absolute confirmation that this charity or cause is valid.

- Do not share any login ids or passwords with anyone else for any of the web sites where you may have registered or purchased items. Some of these sites will ask you to store the credit card information (or payment transaction type) automatically on their sites. Do not do this unless you are absolutely comfortable with that company. In most cases, this should be discouraged as even trustworthy companies are susceptible to hackers. If someone truly wants to break into a server, they will find a way, no matter how secure a company may make it.

- Be sure not to trade information with anyone you chat with online. Just because they appear to be ethical doesn't mean the possibility doesn't exist that they can cause damage to you by pretending to be you by using your login id and password.

- Try to switch between login id's and passwords with different sites where you may be registered or have purchased items. If someone knows you well, they may be able to determine your password, especially if you use one that can be easy guessed, e.g., your spouse's name, your first name, your children or pet's names, your birthdate, etc. Try to pick passwords that are unique and logical to you, but harder for someone to guess or know, e.g., your mother's maiden name, your first pet's name, your favorite hobby, etc.

- With sites where you may purchase items on a frequent basis, you may want to go online to that site every so often and change your profile information, specifically the password. This will ensure further protection for you by others trying to log into that web site and purchase items using your login and previous password.

Protecting Your Privacy

Privacy refers to any personal information about yourself that may be accessible to others online. Any time you visit a web site, some information about who you are is left on your computer. This information may be in the form of a cookie, temporary files for the web site, history of where you've been online, or index files. In all honesty, there is no such thing as total or absolute privacy when you surf the Internet.

Information can be tracked by others, including your ISP, whenever you visit any sites on the Internet. This information can be direct via online forms or indirect through cookies or your temporary Internet files. Some sites will track your activities during the time you are visiting their sites, e.g., which pages you went to, which links you click on when you visit their site, how often you visit, etc.

One of the best ways you can protect yourself is to read the Privacy statement set out on the web site. Any company who has a Privacy statement should clearly state what information they seek and how they plan to use it, if at all.

Some other steps you can take to protect your privacy include:

▪ Look for a privacy statement or policy on the web site and be sure to read it first before proceeding any further. Some web sites can gather information about the hardware and software on your computer, simply by asking you specific questions when you download an item or fill in a form on their site.

▪ Be sure not to fill in any forms unless you really want something from that web site. If you cannot go any further into the web site without registering, be sure that this is a reputable company, you have read their privacy statement or policy and understand how they plan to use the data. You can also write the company to ask them not to use your name in any manner although this may not be totally adhered to by the company.

▪ If you do register with a web site, be sure not to select any options that clearly indicate you would be interested in receiving e-mail from third party companies on related products or services. If the web site provides you with the option to share your information with their partners, consider carefully whether you want this to occur.

▪ Set up your browser to limit the type of information that can be tracked. For instance, Internet Explorer allows you to change the privacy level as well as set up whether to block third-party cookies from being accepted on your system when you visit certain sites. Cookies allow web sites to store information about you, and the information is on your own computer! The biggest advantage of cookies is that they remember your login id, password or preferences for a particular site, thereby saving you time from having to enter these when you next visit the site. However, some sites use these cookies as a way of gathering names for a mailing list to promote their product.

▪ Delete the cookies from your system if you begin to receive a lot of junk mail. Your web browser provides an option that will clear the cookies from your system. You may want to consider doing this on a frequent basis if you are on the Internet a lot.

▪ Delete the history for sites you have visited. Use the options in your web browser to either clear the history immediately or set a frequency period when the browser will clear the history automatically.

▪ Consider having a separate e-mail address for non-personal items, and use an alias instead of who you really are. Keep the information in your profile to a minimum or make it up (if preferred) so that marketers who use programs to track specific information on the Internet will not be able to include you in the group. For instance, set up an e-mail account with a web-based browser using a different age than what you may be and use a nickname or alias for yourself in the profile. Then, when asked for an e-mail account on a web site, provide the web based e-mail account. This will then help to keep junk mail at a minimum for personal e-mail but also other information that you may not be interested in will go to the web based e-mail account instead.

▪ Purchase third party software that directly addresses privacy issues. Many of these programs contain more features than what is available with your web browser.

Any time you are on the Internet, the easiest rule to follow is to use your common sense. Companies on the Internet operate very similar to the way they do in real life; any special offers or services that are not a direct part of the original service or product will lead to getting mail from other companies in which you may have no interest. At any time when you are asked for information that you are not comfortable giving or being a part of, follow your instincts and do not share that information with anyone else.

There is a wide range of sources on the Internet that discuss and explain privacy issues more thoroughly and offer suggestions as to what you can do to protect yourself and your children when living online.

Keeping Up with Technology

Even if you are not interested in technology, as an end user, it is important that you are aware of what the technological changes are and how they may possibly impact how you use the computer online. For instance, getting notices from Microsoft regarding updates or patches to the Windows program is much more important than purchasing a new PDA that allows you to sync to your e-mail program.

Updates to your operating system will enhance how your computer works and may prevent security breaches into your computer from outside sources. The PDA may be a handy tool to have but it will not protect your computer from problems related to the operating system.

Not all updates and patches are needed for the software programs but subscribing to any automated notices for the programs can be advantageous in that you will be notified of an update that could fix a problem you are experiencing. You can also choose to ignore the update but at least you are aware that there is an update, which you may choose to apply at a later date.

One of the most crucial updates you should be aware of is with your antivirus program and any other protection software you may have installed. The updates are designed specifically to protect you against the latest versions of viruses or other types of security risks. These should always be applied whenever you receive notification. If possible, schedule these programs to check for updates on a frequent basis and occasionally check for any updates manually.

While it is not necessary to upgrade your hardware or application software programs when a new technology is released, it can be interesting to find out what the newer versions or products are and how they might benefit you, the company, or the family. Some ways to become informed of advances in technology include:

- Subscribing to an online newsletter that deals with technology. Many of the periodicals and magazines you find in a retail store can be found online and come with a program that allows you to read them just as if you were holding the actual printed product.

- Purchase or subscribe to the printed versions of magazines or periodicals dealing with technological advances in the computer industry.

- Subscribe to an online newsletter generated by your local university or college on technology. These newsletters are generally free to subscribe and give you a chance to also discuss the changes with other people who receive this newsletter.

- Listen to the news reports or read the technology section of your local newspaper to see what products may be featured and read the expert opinions. This can be the first step to researching whether this product or service may be of any benefit to you.

Looking at Personal Responsibilities

There are some responsibilities that we all must share as end users of the computer and living online. This extends beyond what you may do with application programs or when on the Internet. These relate to how we take care of consumables for the computer, how we interact with others, and how we might share our knowledge with others.

Disposing of Consumables

Consumables refer to items such as ink cartridges, toner cartridges, paper, disks, CDs, non-working or old computer components, etc. Whenever possible, dispose of these consumables in the most environmentally friendly manner. For instance, recycle anything that is accepted at recycling depots such as paper. A number of companies deal with disposing of any types of cartridges or non-working computer components, including old cellular phones.

If you have an old computer that still works, consider donating it to a charitable organization who may be able to use it. The computer may not be very fast for processing documents but may be suitable for checking e-mail.

You may also want to look at refilling your ink cartridges on your own. There are companies that provide the service to refill the cartridges, or you can purchase kits and refill them yourself. Recycled cartridges are generally lower in cost than new ones and may be sufficient for personal use.

Before just throwing items away in a garbage container, check to see if there are any companies in your area that can recycle your old computer items safely. Some computer components may contain hazardous material that should be disposed of in a correct manner rather than just being dumped into a landfill.

Sharing Your Knowledge

One of the advantages of using the Internet is the ability to find information that has been shared by others. As you gain knowledge of the computer, application programs, or technology itself, consider sharing this knowledge with others. This could be through volunteering your time to teach courses to those who would otherwise not be able to afford to learn the computer, working with charitable organizations for data entry or technical support, teaching or supporting family and friends who are just getting started with computers, etc. You can also share information you have for managing the computer, disposing of consumables, or how to live and work online in a safe and legal manner; in general, how to be a responsible end user.

Summary

In this lesson you looked at considerations for working on the Internet in a legal and safe manner. On successful completion, you should now be familiar with the following:

- Restricting access to others outside your location or against types of information
- Understanding what intellectual property is and how it applies to each user
- Understanding what is considered personal information when using other computers
- Protecting yourself when conducting e-commerce or purchasing online

- Recognizing and adhering to policies for use of the Internet on other computers
- How to stay informed of new or changes in technology
- How to be a responsible user when working with computers or being online

Review Questions

1. Provide an example of why you might want to restrict access to certain aspects of the Internet.

2. What does copyright refer to?

3. What does fair use refer to:
   a. Permission to view the information
   b. Using portions of the copyrighted information for criticism or comments
   c. Complete use of the information if you get permission
   d. Only a or b

4. Copyright laws also apply to trademarked material, e.g., company logos, designs, etc.
   a. True
   b. False

5. What is plagiarism?
   a. When you use the original works of someone and take credit for it yourself
   b. When you take the original works of someone, reword it and take credit for the information
   c. When you take the original works of someone but also cite the source
   d. Any of the above
   e. Only a or b

6. When you create personal documents on a computer at school or work, the documents belong to you.
   a. True
   b. False

7. How can you protect yourself when buying items online?
   a. Check to make sure the e-commerce site is secure
   b. Do not share your login ids or passwords with others
   c. Change your password occasionally on a web site that you purchase items from frequently
   d. Any of the above

8. What does privacy refer to?

9. Why is it important to keep up with changes in technology where software is concerned?

10. As an end user, some responsibilities you have regarding the computer and being online include sharing your knowledge with others or proper disposal of computer items to protect the environment.
    a. True
    b. False

Appendices

Appendix A: Productivity Tools

Microsoft Outlook Express - Standard Toolbar

Create Mail	Reply	Reply All	Forward	Print	Delete	Send/Recv	Addresses	Find

Create Mail
Create a new message.

Reply
Reply to the sender of this message.

Reply All
Reply to all recipients of this message.

Forward
Forward message to someone else.

Print
Print the selected message(s).

Delete
Delete the message(s).

Send/Recv
Send and/or receive new and outgoing messages.

Addresses
Display names in the address book.

Find
Find a specific message.

Microsoft Outlook Express - New Message Standard Toolbar

Send	Cut	Copy	Paste	Undo	Check	Spelling	Attach	Priority	Sign	Encrypt	Offline

Send
Send the message.

Cut
Cut the selection from the message.

Copy
Copy the selection.

Paste
Paste the cut or copied item.

Undo
Undo the last action taken.

Check
Check the validity of the name(s) according to the Address Book.

Spelling
Check the spelling of text in the message.

Attach
Attach a file as an attachment.

Priority
Select a priority level.

Sign
Add a digital signature to verify your e-mail address.

Encrypt
Add or remove encryption (password) to this message.

Offline
Work on this message while offline and place it in the Outbox when the Send button is activated.

Microsoft Outlook Express - New Message Formatting Toolbar

Arial	10		B	I	U	A					

(Font)
Select a font for the text.

(Font Size)
Select a size for the font for the text.

(Paragraph Style)
Select a style for each paragraph.

(Bold)
Add boldface to the text.

(Italics)
Add italics to the text.

(Underline)
Add underline to the text.

(Font Color)
Select a color for the text.

(Formatting Numbers)
Add or remove numbers on the text.

(Formatting Bullets)
Add or remove bullets on the text.

(Decrease Indent)
Decrease the indent size for the text.

(Increase Indent)
Increase the indent size for the text.

(Align Left)
Align the text at the left margin.

(Center)
Center between left and right margins.

(Align Right)
Align the text at the right margin.

(Justify)
Align text at both the left and right margins.

(Horizontal Line)
Insert a horizontal line as a separator.

(Create Hyperlink)
Create or change a hyperlink in the message.

(Insert Picture)
Insert a picture in the message.

Microsoft Internet Explorer - Standard Buttons Toolbar

Back (Back) ·
Move back one page at a time.

(Forward)
Move ahead one page at a time.

(Stop)
Stop a page while it is loading.

(Refresh)
Refresh or reload the web page again.

(Home)
Go to the home page set for your browser.

Search
Display the Search pane to enter text to find information on the Web.
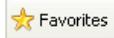
Favorites
Display a list of your favorites.

(History)
Display a list of calendar days to show visited sites over the past period.

(Mail)
Activate the electronic mail program.

(Print)
Print the contents of this web page.

(Edit)
Edit this web page using Microsoft Word, or if installed, Microsoft FrontPage.

(Discuss)
Enter a discussion group on the existing web page, if available.

Microsoft Internet Explorer - The Address Bar

Address http://sympatico.msn.ca/ Go

Microsoft Internet Explorer - Print Preview Toolbar

Print... | | Page 1 of 2 | 75% | Help | Close

Print...
Print the web page.

(Page Setup)
Open the page setup options to change how this web page will print (or preview).

(First Page)
Go to the first page of this web page.

(Previous Page)
Go to the previous page for this web page.

Page 2 of 2 (Page Status)
The current page being viewed.

(Next Page)
Go to the next page for this web page.

(Last Page)
Go to the last page for this web page.

(Zoom Out)
Zoom out from the web page at where the magnifying glass is on the preview.

(Zoom In)
Zoom into the web page where the magnifying glass is on the preview.

75% (Zoom)
Change the percentage for viewing the web page contents.

Help
Access the Help mode.

Close
Close the Print Preview mode.

Appendix B: Glossary of Terms

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.

Administrator – Also known as the Network 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.

Analog – Representation of data that is continuous when retrieved, e.g., sound.

Application Program – An application program is usually a collection of programs and data files that work together for a specific purpose.

Attachments – Files that can be included with an e-mail message.

Bookmark – Marks a location of an item such as a help topic so that you can quickly return to it at a later time.

Boolean Terms – These allow you to narrow your search by adding specific criteria to narrow down the search, such as AND, OR, NOT, NEAR, WITH.

Bridge – A network device used to connect network segments to handle network requests but do not analyze or re-route messages.

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.

Bus – An internal device that connects hardware to the motherboard.

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.

Copyright – The law that governs ownership of original works to the author or publisher, published or unpublished.

Digital – Representations of data that can be retrieved in intervals, e.g., data on a disk.

Directories – Contains a list of URLs that have been classified according to subject matter.

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.

Download – When you connect to another computer or web site and transfer files from there, to your own computer.

E-Commerce – The process of purchasing online from a web site.

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.

Ergonomics – The study of humans in a workplace environment and how to maintain or prevent workplace injuries.

Extranet – A server at a company that has been designed to allow internal and external users access to that server, e.g., to handle e-commerce.

FAQ – (Frequently Asked Questions) Many questions are asked repeatedly by new users especially of the Internet.

FTP Server – A computer location on the Internet that has files available for downloading to your computer.

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.

Gateway – A separate computer used to route information from or to the Internet within a company. Gateways may often be used as a proxy server or firewall as it checks the information flowing to or from the Internet.

Hacker – Someone who enters your computer without permission to look around, delete or corrupt files.

Header – Text that appears at the top of every page of a web page when printed.

Hoaxes – An e-mail sent by someone who indicates a virus was not caught by any of the anti-virus programs. This false virus can create as much damage as a real virus in that it will clog up a mail server based on everyone sending each other an e-mail notice of this so-called virus.

Home Page – The first web page of any web site or the first web page you see when you start the web browser.

HTML – (Hypertext Markup Language) A 'language' used to create/save web pages to the Internet. HTML creates a page with graphics, tables, hyperlinks and multimedia.

HTTP – (Hypertext Transfer Protocol) A protocol that determines how a program on one computer communicates with a program on another computer system 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.

Hub – A network device that connects PC's together to form a network where all users share equal transfer speeds from the total network connection speed.

Hyperlinks – Words or phrases, usually underlined, that indicate a location that can be accessed from the page you are currently viewing.

Instant Messaging – A program designed to allow people to chat to each other in real time, albeit one line at a time.

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.

Libel – The process of saying something untrue to defame or ruin someone's reputation.

Mailing List – A virtual online discussion area where people can post messages and anyone in the mailing list can respond to it. Some mailing list are moderated which means there is human intervention where messages are rerouted appropriately, and unmoderated mailing lists means everyone in the list receives the same message.

Menu – A list of items used to execute commands, display dialog boxes, or display another menu.

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. One computer in a network may be at the corporate head office, another in the next office. This transferring of data over wires can reduce paper and mail, and help to make the business run better.

Network Segments – Each network interface cards within a server designed to increase the flow of information to each segment.

Newsgroups – A public Internet messaging service dedicated to a specific topic.

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.

Plagiarism – The process of taking someone else's work and using it as your own.

Portal Site – Web sites that specialize in a particular subject.

Privacy – Protecting one's information when online. Check the privacy statements of web sites prior to giving any personal information to that site.

Protocol – The "language" spoken between computers to help them exchange information.

Router – Similar to bridges except they examine the destination address of the information and pass it on to the appropriate segment(s) only.

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.

Search Engine – A database program designed to work with a web browser to help find information. A search engine database will search for matching information from other search engines such as Yahoo, Excite, Google, Dogpile, etc.

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.

Switch – A network device that allows the full amount of the bandwidth for the network cabling system to be accessible by all users on that network.

Text Messaging – See Instant Messaging.

Title Bar – The horizontal bar located at the top of a window and containing the title of the window or program.

URL – (Uniform Resource Locator) The entire address that is recognized "universally" as the address for an Internet resource. Each resource on the Internet has a unique URL. URLs begin with letters that identify the resource type, such as http, ftp, etc. These types are followed by a colon and two slashes. Next, the computer's name is listed, followed by the directory and file name of the remote resource. The URL is usually typed in the address bar.

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.

Web Browser – Software needed to navigate through the web. For example, Internet Explorer, Netscape and Mosaic are web browsers.

Web Server – A server dedicated to hosting web sites, either at an ISP site or at the company site.

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.

WWW – (World Wide Web) A multimedia 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.

Appendix C: Index

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	
Domain 1.0: Networks and the Internet	*This domain includes the knowledge of common terminology associated with computer networks and the Internet, components and benefits of networked computers, the difference between different types of networks (for example, LAN and WAN), and how computer networks fit into other communications networks (like the telephone network and the Internet).*		

Objective 1.1	**Identify network fundamentals and the benefits and risks of network computing**	**Location**	**Page #**
IC³-3 1.1.1	Identify terminology relating to telecommunications, networks and the Internet	What is a Network?	2
IC³-3 1.1.2	Identify types of networks	Networking Fundamentals Networking Standards Recognizing Intranets and Extranets	2 3 22
IC³-3 1.1.3	Identify how networks work	Networking Fundamentals	2
IC³-3 1.1.4	Identify benefits of networked computing	Benefits of Networking	9
IC³-3 1.1.5	Identify the risks of networked computing	Disadvantages of Networking	11
IC³-3 1.1.6	Identify fundamental principles of security on a network	Disadvantages of Networking	11

Objective 1.2	**Identify the relationship between computer networks, other communications networks (like the telephone network) and the Internet**	**Location**	**Page #**
IC³-3 1.2.1	Identify the different ways the telephone system is used to transmit information	Introducing the Internet	15
IC³-3 1.2.2	Identify that telecommunication devices such as modems convert information from analog to digital and digital to analog formats	Connecting to the Internet	17
IC³-3 1.2.3	Identify the units used to measure data transmission rates	Looking at Internet Service Providers	18
IC³-3 1.2.4	Identify the Internet as a "super network" of smaller computer networks and that computers connect to the Internet via the "onramp" of a smaller computer network	Connecting to the Internet	17
IC³-3 1.2.5	Identify the hardware and software required to connect to the Internet	Connecting to the Internet	17, 23
IC³-3 1.2.6	Identify different types of Internet connections and the advantages and disadvantages of each connection type (such as connection speed, cost, and reliability)	Connecting to the Internet	19, 21
IC³-3 1.2.7	Identify the roles and responsibilities of an Internet Service Provider (ISP)	Connecting to the Internet	17

Domain 2.0: Electronic Mail	*This domain includes the knowledge and skills required to identify how electronic mail works, the makeup of an e-mail address and other communications methods such as instant messaging. The domain also includes the ability to use an electronic mail software package and to identify the "rules of the road" (i.e., "netiquette") regarding the use of electronic mail.*		

Objective 2.1	**Identify how electronic mail works**	**Location**	**Page #**
IC³-3 2.1.1	Identify how electronic mail works on a network and on the Internet	Internal Mail Internet E-mail Understanding an E-mail Address	26 26 27
IC³-3 2.1.2	Identify the components of an electronic mail message	Looking at E-mail Message Components	28, 33
IC³-3 2.1.3	Identify the components of an electronic mail address	Understanding an E-mail Address	27
IC³-3 2.1.4	Identify when to use different electronic mail options	Using E-mail Options	30
IC³-3 2.1.5	Identify different ways electronic mail is accessed	Receiving E-mail	31
IC³-3 2.1.6	Identify the difference between standard electronic mail and other forms of messaging, such as paging or Instant Messaging/Text Messaging delivered via computer, cellular telephone, handheld computer (PDA) or pager	What is Electronic Mail?	25, 31

Objective 2.2	Identify how to use an electronic mail application	Location	Page #
IC³-3 2.2.1	Read and send electronic mail messages	Using E-mail Options	30
		Sending Messages	47
		Receiving Messages	52
		Replying to a Message	53
		Forwarding a Message	54
		Finding Messages	66
		Sorting Messages	62
IC³-3 2.2.2	Identify ways to supplement a mail message with additional information	Attaching Files	33, 55
		Sending Messages	47
		Working with Attachments	37
IC³-3 2.2.3	Manage attachments	Attaching Files	33, 55
IC³-3 2.2.4	Manage mail	Using the Folder List	46
		Setting the Priority	51
		Marking Messages	63
		Flagging Messages	63
		Performing Some Maintenance	76
		Selecting Items	61
		Saving Messages	66
		Deleting Messages	68
		Backing Up Your E-mail Items	83
IC³-3 2.2.5	Manage addresses	Working with the Address Book	71
		Making Changes	73
		Deleting Contacts or Groups	76
IC³-3 2.2.6	Identify the purpose of frequently used mail-configuration options	Performing Some Maintenance	76
		Using Signatures	79
		Sending Out-of-Office Notices	82
		Redirecting Mail	83
		Blocking Messages	69
		Sending Messages	47

Objective 2.3	Identify the appropriate use of e-mail and e-mail related "netiquette"	Location	Page #
IC³-3 2.3.1	Identify the advantages of electronic mail	What is Electronic Mail?	25
IC³-3 2.3.2	Identify common problems associated with electronic mail	Identifying Common E-mail Problems	39
IC³-3 2.3.3	Identify the elements of professional and effective e-mail messages	Using E-mail Appropriately	34, 35
IC³-3 2.3.4	Identify when other forms of correspondence are more appropriate than e-mail (transmitting legal documents or other documents requiring a signature, security issues, etc.)	Working with Attachments	37
IC³-3 2.3.5	Identify when to include information from an original e-mail message in a response as a method of tracking the "history" of e-mail communication	Using References	36
IC³-3 2.3.6	Identify appropriate use of e-mail attachments and other supplementary information	Using References	36
		Working with Attachments	37
IC³-3 2.3.7	Identify issues regarding unsolicited e-mail ("spam") and how to minimize or control unsolicited mail	Managing Spam	37
IC³-3 2.3.8	Identify effective procedures for ensuring the safe and effective use of electronic mail	Watching for Potential Viruses in E-mails	41
		Understanding Bad Netiquette	38
		Identifying Common E-mail Problems	39

Domain 3.0: Using the Internet	This domain includes the knowledge and skills required to identify information and resources that are available on the Internet and use a Web browsing application. Elements include the ability to identify elements of Web pages and Web sites and how to determine the quality of information found online. Elements also include the ability to use a Web browsing application such as Microsoft Internet Explorer® to browse the Internet.

Objective 3.1	Identify different types of information sources on the Internet	Location	Page #
IC³-3 3.1.1	Identify terminology related to the Internet	Understanding Basic Terminology	88, 95
IC³-3 3.1.2	Identify the purpose of a browser in accessing information on the World Wide Web	Understanding the World Wide Web Using a Web Browser	88 98
IC³-3 3.1.3	Identify different elements of a Web site	Recognizing Web Page Elements Using the Uniform Resource Locator (URL) Looking at the Home Page	89 90 91
IC³-3 3.1.4	Identify different types of Web sites by their extensions, and the purposes of different types of sites	Understanding the Domain Name Format	92
IC³-3 3.1.5	Identify the difference between secure and unsecure Web sites (such as password-protected sites or sites secure for online transactions) and how to tell if a Web site is secure	Identifying Other Elements Identifying Secure Sites Looking at E-commerce and Encryption Understanding Privacy Policy Statements	95 101 103 104
IC³-3 3.1.6	Identify different ways of communicating and corresponding via the Internet	Looking at Mailing Lists Subscribing to a Newsgroup (Usenet) Having an Impact on Society	104 106 171, 173

Objective 3.2	Be able to use a Web browsing application	Location	Page #
IC³-3 3.2.1	Identify the make-up of a Web address/Uniform Resource Locator (URL)	Using the Uniform Resource Locator (URL) Understanding the Domain Name Format	90 92
IC³-3 3.2.2	Navigate the Web using a browser by specifying a URL or IP address in a Web browser, going to a Web page using text or graphic links, navigating using the Web browser's Forward and Back buttons and address bar, going to a Web site's home page, going to the home page for the browser	Using the Address Field Understanding Hyperlinks Navigating with the Toolbar Looking at the Home Page Getting Started	112 116 114 91 110
IC³-3 3.2.3	Reload/Refresh the view of a Web page	Using a Web Browser Using Microsoft Internet Explorer	98, 101 110, 114
IC³-3 3.2.4	Show a history of recently visited Web sites and delete the list of recently visited Web sites	Using a Web Browser Using Microsoft Internet Explorer Customizing the Web Browser	98, 101 110, 112 139
IC³-3 3.2.5	Find specific information on a Web site	Understanding Hyperlinks	116
IC³-3 3.2.6	Manage Bookmarked sites/Favorite sites	Adding a Bookmark to Your Favorites Lists Organizing the Favorites Re-organizing the Folders	121 123 124
IC³-3 3.2.7	Save the content of a Web site for offline browsing	Saving a Web Page	127
IC³-3 3.2.8	Copy elements of a Web site (including copying text or media to another application)	Using Copy and Paste	130
IC³-3 3.2.9	Print all or specified parts of a Web site	Printing a Web Page	132
IC³-3 3.2.10	Download a file from a Web site to a specified location	Downloading Information	136
IC³-3 3.2.11	Identify settings that can be modified in a Web browser application	Customizing the Web Browser	139
IC³-3 3.2.12	Identify problems associated with using a Web browser	Identifying Other Elements Using a Web Browser	96 98, 100

Objective 3.3	Be able to search the Internet for information	Location	Page #
IC³-3 3.3.1	Identify the ways a search engine classifies and looks for Web sites	"Surfing" the Internet Using Search Engine Technology	143 151, 153
IC³-3 3.3.2	Identify other ways of searching for information on the Web	Searching a Specific Web Site Using Directories Using Portal Sites	144, 151 146 148
IC³-3 3.3.3	Use a search engine to search for information based on specified keywords	Using Search Engine Technology	151, 153
IC³-3 3.3.4	Search effectively	Narrowing the Search Using Boolean Terms	157 161
IC³-3 3.3.5	Identify issues regarding the quality of information found on the Internet	Evaluating the Information	169
IC³-3 3.3.6	Identify how to evaluate the quality of information found on the	Evaluating the Information	169

Web

Domain 4.0: The Impact of Computing and the Internet on Society	*This domain includes the knowledge and skills required to identify the benefits and risks of computing and the role of the Internet in many areas of society, from home and work to school and recreation. Elements include the ability to identify how computers and the Internet are used in different aspects of work, school, and home and how these areas of society are impacted by the availability of computer technology and online resources.*

Objective 4.1	**Identify how computers are used in different areas of work, school and home**	**Location**	**Page #**
IC³-3 4.1.1	Identify how computers and the Internet are used	Having an Impact on Society	171
IC³-3 4.1.2	Identify the technology and processes involved with computers operating "behind the scenes" in everyday activities	Having an Impact on Society	171, 173
IC³-3 4.1.3	Identify the impact of electronic commerce (e-commerce) on business, individuals and governments	Shopping Online	174
IC³-3 4.1.4	Identify technologies that support or provide opportunities to the disabled and disadvantaged	Benefits of Using Computers	175

Objective 4.2	**Identify the risks of using computer hardware and software**	**Location**	**Page #**
IC³-3 4.2.1	Identify how to maintain a safe working environment that comply with legal health and safety rules	Establishing a Safe Working Environment	180
IC³-3 4.2.2	Identify injuries that can result from the use of computers for long periods of time	Using Ergonomics	180
IC³-3 4.2.3	Identify risks to personal and organizational data	Protecting Your Data or Computer Understanding Data Security Performing a Data Backup	178 179 186
IC³-3 4.2.4	Identify software threats	Understanding Viruses	182

Objective 4.3	**Identify how to use computers and the Internet safely, legally, ethically and responsibly**	**Location**	**Page #**
IC³-3 4.3.1	Identify reasons for restricting access to files, storage devices, computers, networks, the Internet or certain Internet sites	Restricting Access	189
IC³-3 4.3.2	Identify concepts related to intellectual property laws	Recognizing Copyright Issues Retrieving Information from a Web Page Identifying Ethical Issues	190 127 191
IC³-3 4.3.3	Identify the principles regarding when information can or cannot be considered personal, including the difference between computer systems owned by schools or businesses that may have rules and guidelines as to who owns data stored on the system, and computers owned by individuals where the owner of the computer has control over his or her own data	Protecting Yourself	193, 194
IC³-3 4.3.4	Identify how to avoid hazards regarding electronic commerce	Buying Online Understanding Privacy Policy Statements	193 104
IC³-3 4.3.5	Identify how to protect privacy and personal security online	Protecting Your Privacy	194
IC³-3 4.3.6	Identify how to find information about rules regarding the use of computers and the Internet, including laws, use policies at school, and company guidelines at places of employment	Restricting Access	189
IC³-3 4.3.7	Identify how to stay informed about changes and advancements in technology	Keeping Up with Technology	196
IC³-3 4.3.8	Identify how to be a responsible user of computers and the Internet	Looking at Personal Responsibilities	196