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Overview

The Internet and the World Wide Web

Every day you see references to the Internet in the newspaper, in TV ads, in popular soaps and sitcoms and more. You would need to be living in the backwoods not to hear or see references to such things as e-mail. What does all this mean to you? It means that in the future how you learn, do business, shop, or play will be different. Through the Internet you will find amusement, companionship, information—and tremendous opportunity. In the future, not knowing how to use the Internet would have an effect similar to not knowing how to read today.

Definition of Internet

What is the Internet? It is a network of thousands of computer networks that allows computers to communicate with each other. The popular term for the Internet is the "information highway." Like a highway, the Internet connects thousands of computers throughout the world, making available more information than you could read in a lifetime.

In 1993 the Internet connected 45,000 networks. Today's estimates are that between 2 and 4 million computers in 156 countries are connected to the Internet, and 25 to 35 million people have access to the Internet. In the United States alone 7 to 15 million people have access. The Internet is expected to continue growing from about 3.2 million computers today to over 100 million machines on all six continents. By 2000, it is estimated that there will be over one million networks connecting one billion users, with the majority of these users to be through at-home connections.

Things You Can Do on the Internet

The uses for the Internet are many and varied, and include the following:

- *Send and receive e-mail.* The largest use of the Internet is to send e-mail (electronic mail) messages between users. E-mail is the process that allows you to send and receive messages along Internet pathways to and from users at other computer sites.
- *Transfer files between computers.* File Transfer Protocol or FTP allows you to send (upload) or receive (download) files between computers. The files are made available on the hard drive of computers and are similar to

an electronic library of information that can be accessed through the Internet by all users.

- *Interact with other computers.* Telnet is software that gives users the ability to log on to another computer and run programs. It is a utility that lets you run other search or information services. Other "client software" is available if you have Windows or a Mac that does not use Telnet and connects you to a search service.
- *Participate in discussion groups.* Newsgroups are databases of messages on a huge number of topics. Users participate in public discussions about the topic by sending e-mail messages to the newsgroup. Mailing lists are another type of discussion group consisting of a database of people interested in a particular topic. Your e-mail messages are mailed to the addresses of every participant in the mailing list. Chat groups, another type of discussion group, allow people to converse in real time.
- *Search the World Wide Web.* The World Wide Web, also called the WWW or Web, allows users to quickly jump from one information source to another related source. These sources of information may be on the same computer or different computers around the world.

About the World Wide Web

The World Wide Web consists of information organized into pages containing text and graphic images. But most importantly, a page contains hypertext links, or highlighted keywords and images, that lead to related information. Clicking on the links quickly transports you to the location where that information is stored. The links may take you to other pages, text files, graphic images, movies, or audio clips. The Web allows users to view millions of pages of information by jumping from one related source to another by clicking on links.

To access the WWW, you must have a browser software program. Browsers display text and images, access FTP sites, and provide in one tool an uncomplicated interface to the Internet and WWW documents. Browsers allow you to surf the net unencumbered by the complexity of how to access information on the Internet. Two popular browser programs are Netscape's Communicator and Microsoft's Internet Explorer.

How Does Information Travel on the Internet?

The Internet uses a standard set of protocols, or rules for communication between computers. Protocols are a set of rules that establish guidelines for methods of communication to ensure uniformity among users. This allows various computer systems to connect and communicate.

TCP/IP (Transmission Control Protocol/Internet Protocol) is the core protocol used on the Internet. It breaks the information that is being transmitted into small packets of several hundred bytes each, including the addresses of sending and receiving computers. Each packet travels independently to its destination. The packets are sent along the network until they reach a router. Routers are the

switchers of the system and are located at network intersections. Routers determine the best (fastest, most direct, least crowded) path for the packet to travel to reach its destination. There are many different paths to the same destination. As packets arrive at the destination, they are reassembled (they may arrive out of sequence). If a packet arrives damaged, it is requested to be sent again from the host. When reassembled, the source and destination address information are removed. The use of small packets helps the network to operate efficiently, so that load is distributed over the entire network, thereby avoiding overburdening any one part of the network.

Other protocols that are used are PPP and SLIP. PPP (Point to Point Protocol) creates an Internet connection that checks data transfer over lines and resends if damaged. SLIP (Serial Line Internet Protocol) is similar to PPP, but does not provide damage check.

How Do You Connect?

Many schools and businesses have direct access to the Internet using special high-speed communication lines and equipment. Students and employees are typically provided access through the organization's local area network (LAN) or through personal computers acting as dumb terminals (a terminal that attaches directly to a mainframe or other large computer).

Another way to access the Internet is through an Internet Service Provider (ISP) such as America Online and Microsoft Network. To access the ISP, you use your personal computer, modem, and telecommunications software to log onto the online service. Your computer is the client that links to a larger computer called the server, which runs special software that provides access to the Internet. You pay a fee for use of their service.

You may have free access to the Internet through a nearby city, college, or corporation. The level of access through these sources varies, as explained below.

- *Local Bulletin Board Systems (BBS).* Many BBSs have limited access to the Internet, commonly e-mail, mailing lists, and newsgroups, and do not offer nearly the amount of information as is available through the Internet. Also, many offer information on specialized topics only. You can find BBS telephone numbers through computer magazines and local computer newsletters.
- *Campus Computer Systems.* If you are affiliated with a college or university with an internal computer network that is connected to the Internet, you may be able to get "free" access (no charge directly to you—however, someone is paying). Access from outside the organization is generally via modem.
- *Corporate Network.* If you are affiliated with a corporation that is connected to the Internet, you may be able to get "free" access, generally via modem, similar to campus computer systems.
- *Libraries.* College and university libraries and many public libraries have replaced card catalogs with computer terminals tied to a central database. When

colleges and universities connected to the Internet, the libraries were easily able to make their databases available. If they have the funds, public libraries may provide access to the Internet through their computer network.

- *Freenets.* Freenets are community-based bulletin boards whose area of concern is community related. All have the same basic structure in that they are set up like an electronic town. The setup allows you to stop at different buildings to collect information about the community. Users must register to use the freenet. This is usually free to the community resident. Also, you can register as a guest, which allows you to look around and explore the freenet with limited access time. Freenets are directly accessible by modem (you need to locate the phone number). Some freenets also provide access to the Internet.

Netscape Communicator 4

Netscape Communicator 4.0 is a browser suite that comes in a Standard version and a Professional version. The Standard version includes the six components described below.

Component	Use
Navigator	Browse the WWW.
Messenger	Send and receive e-mail.
Collabra	Participate in discussion group messaging.
Composer	Create a Web page
Conference	Participate in real-time audio conferences and chat sessions, sketch on a shared whiteboard, and exchange and collaborate on files.
Netcaster	Automatically delivers selected information to your desktop and updates your Web sites.

The Professional version includes the additional components described below.

Component	Use
Calendar	A group scheduling program.
IBM Host On-Demand	Access central data on an IBM 3270 host.
AutoAdmin	Allows Communicator to be centrally managed, distributed, and updated.

Internet Terminology

Browser: A software program used to access and display WWW pages.

Download: To copy or receive a file from another computer using FTP.

E-mail: The process that allows you to send and receive messages along Internet pathways to and from users at other computer sites.

FTP: File Transfer Protocol allows you to upload or download files between computers.

Hypertext link: A connection to another Web page or to another location on the current page.

Internet: A network of thousands of computer networks that allows computers to communicate with each other.

ISP: An Internet service provider is a company that provides access to the Internet for a fee.

Mailing list: A discussion group in which e-mail messages are sent directly to the e-mail address of every participant in the mailing list.

Newsgroup: A discussion group in which e-mail messages are stored on centralized computer sites.

PPP: Point to Point Protocol creates an Internet connection that checks data transfer over lines and sends it again if damaged.

Protocol: A set of rules that establishes guidelines for methods of communication between computers to ensure uniformity among users.

Router: Switches on the Internet network system that are located at network intersections and determine the best path for the packet to travel to reach its destination.

SLIP: Serial Line Internet Protocol is similar to PPP, but does not provide damage check.

TCP/IP: Transmission Control Protocol/Internet Protocol is the core protocol used on the Internet.

Telnet: A software program that gives users the ability to log on to another computer and run programs.

Upload: To send a file to another computer using FTP.

WWW: The World Wide Web is a part of the Internet that consists of information organized into pages containing text and graphic images and hypertext links.

Case Study for Labs 1–5

As a recent college graduate, you have accepted your first job as a management trainee for The Sports Company. The Sports Company is a chain of discount sporting goods stores located in large metropolitan areas throughout the United States. The management trainee program emphasis is on computer applications in the area of retail management and requires that you work in several areas of the company.

In this series of labs, you are working in the marketing department. You have recently helped with setting up The Sports Company Web site. As part of your continued involvement in this project, you are using Netscape Communicator 4.0 to find information, send e-mail, and create a Web page.

Lab 1 The first WWW lab introduces you to Netscape Communicator's Navigator component. You will learn basic techniques for navigating the WWW and how to save and print pages.

Lab 2 This lab continues with the Navigator component and demonstrates how to use the search features to make finding information on the WWW much easier and more efficient.

Lab 3 In this lab you use the Messenger component of Netscape Communicator. You learn how to compose, send, reply to, forward, and delete e-mail messages. In addition, you learn how to create a personal address book.

Lab 4 This lab demonstrates the Collabra component, through which you learn how to find, read, and communicate with newsgroups. You will also learn how to subscribe and unsubscribe to a mailing list. In addition, you will learn how to use Yahoo's chat client to participate in online discussions.

Lab 5 In the last lab you use the Composer component to create a Web page.

Appendix Finally, the Appendix gives a short demonstration of three additional Internet tools: FTP, Telnet, and Gopher.

Before You Begin

To the Student:

The following resources are needed to complete these labs:

- Netscape Communicator 4 must be installed on your computer system. If the version of Netscape Communicator you are using is different from that used in this book, the menu selections and instructions in this manual may be slightly different.
- You need to have an Internet account with your school and an e-mail address.

- The data files required to complete this series of labs are provided by your instructor and should be copied to a new floppy disk.
- It is helpful if you are already familiar with how to use Windows-based applications.

In addition, you will learn while using the WWW that it is in a state of constant change. One day you can connect to a site and the next day you cannot. The information on a site may change from week to week. New sites are added and others are removed. There is no guarantee that the information you found one day will be there the next . . . however, you may just as easily find something new. Because things constantly change on the Internet, you need to be open to trying and searching. You may get lost, but you can always get home.

To the Instructor:

The following assumptions have been made:

- The version of Netscape on your computer system is Communicator 4.
- The Messenger component preferences are cleared when Netscape is exited. This allows the Mail and Discussion Group Setup Wizard to appear when Messenger is first accessed. If your setup is different and the wizard does not appear, students will need to set their preferences using Edit/Preferences. Students will need e-mail addresses prior to setting Messenger preferences. Some systems allow the preferences to be saved for each student. If this is the case at your school, students will not need to re-enter their preferences each time they use Messenger.
- The default preferences are in effect each time Netscape is loaded.
- Accessing Telnet through Netscape requires that Netscape be appropriately configured.

Instructional Conventions

This text uses the following instructional conventions:

- Steps that you are to perform are preceded with a bullet (■) and are in blue type.
- Command sequences you are to issue appear following the word "Choose." Each menu command selection is separated by a /. If the menu command can be selected by typing a letter of the command, the letter will appear bold and underlined.
- Commands that can be initiated using a button and the mouse appear following the word "Click." The menu equivalent and keyboard shortcut appear in a margin note when the action is first introduced.
- Anything you are to type appears in bold text.

1 Navigating the Web

COMPETENCIES

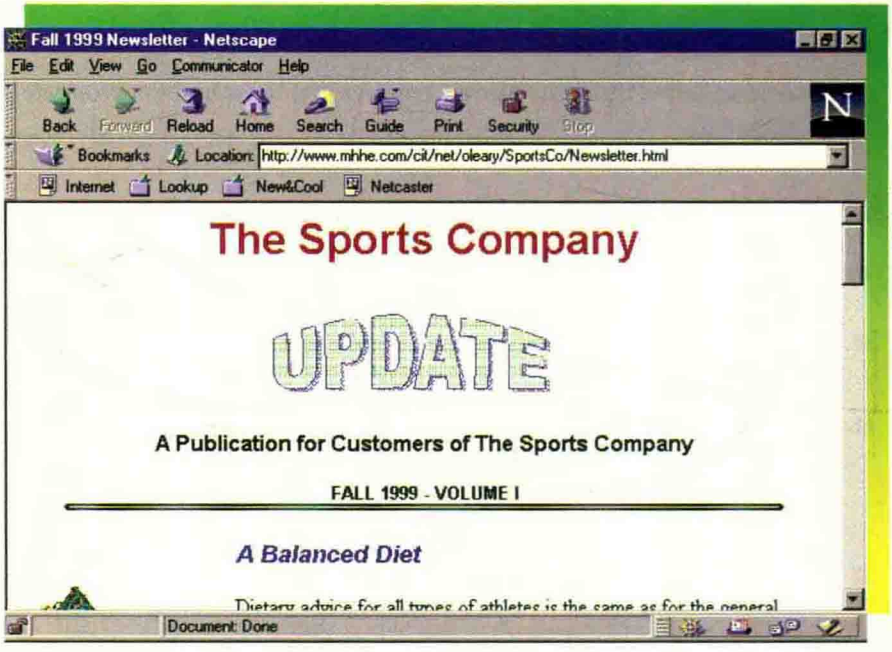
After completing this lab, you will know how to:

1. **Enter a URL.**
2. **Select links.**
3. **Use the history list.**
4. **Create and organize bookmarks.**
5. **View the HTML source code.**
6. **Save pages and images.**
7. **Use a form.**
8. **Print pages.**

Case Study

The Sports Company has recently decided to take advantage of the Internet by creating a site on the WWW to market their products and advertise the company. In addition to the traditional commercial aspects of the site, such as a catalog of products, online order forms, and location information, they have included the first issue of *The Sports Company Update,* the monthly newsletter, to provide customers with health and fitness related information.

Your supervisor has asked you to look at the online newsletter and to make suggestions for improvements that would take better advantage of the Web.



Concept Overview

The following concepts will be introduced in this lab:

1. Web Page	A Web page is a text file that has been created using a special programming language, called HyperText Markup Language, and that contains links to other Web pages and graphics.
2. Uniform Resource Locator	A Uniform Resource Locator (URL) provides location information that is used to navigate through the Internet to access a page.
3. Hypertext Link	A hypertext link, also called a hyperlink or simply a link, is a connection to another Web page or to another location on the current page.
4. Frame	Frames divide the Web browser's display into windows. Each window is a frame that can contain a separate, scrollable page.
5. Cache	A cache is a location in your computer system that stores the page information when it is downloaded from the network.
6. Bookmark	A bookmark permanently stores the URL of a page so that you can easily retrieve the page again.
7. HyperText Markup Language	All Web pages are written using a programming language called HyperText Markup Language (HTML).
8. Security	Security is low on transmissions of information over the Internet. To make transmissions secure, certificates, encryption, decryption, and digital signatures are used.

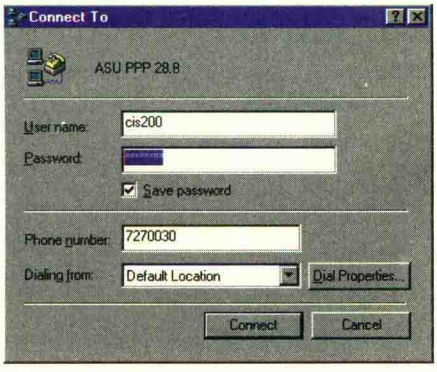
Exploring the Navigator Window

To view the newsletter on the WWW, you will use the **Navigator** component of the Netscape Communicator software application. Navigator is a **browser** program that is used to move to and display information located on the WWW.

- If necessary, turn on your computer.
- Double-click Netscape Communicator.

If the Netscape shortcut is not on your desktop, choose Start/Programs/Netscape/Netscape Navigator to load the program, or follow the directions provided by your school.

If a Connect To dialog box appears, you will need to provide the required information to establish your Internet connection. This may require that you enter a user ID and password.



- If necessary, enter the information needed by your school to establish your Internet connection.
- Click Connect.

Your screen should be similar to Figure 1-1.

FIGURE 1-1

If necessary, click ▢ to maximize the window.

The Navigator component of Netscape Communicator launches by default on startup. The information displayed in the Navigator window on your screen will most likely be different from that shown in Figure 1-1. Your screen will probably display information about your school. This is because Netscape can be customized to display on startup different information than is specified in the program's setup procedure. In a few moments you will learn how to change the information displayed in Navigator so that it is the same as the figures in the text. Even though at present your screen displays different information, the components of the Navigator window are the same.

As in other Windows 95 applications, the Navigator window has a title bar, minimize ▁ and maximize/restore ▢ buttons, close button ✕, menu bar, toolbars, status bar, and scroll bars. The large center area of the window is the **content area** where the contents of a Web page are displayed.

Concept 1: Web Page

A **Web page** is a text file that has been created using a special programming language called HyperText Markup Language, and that contains links to other Web pages and graphics. The Web page is stored on a computer called a **server**, where it can be accessed and displayed using a browser program. A server may contain several Web sites. Each **Web site** consists of interconnected pages that have a common theme and design. Each Web page is designed by the people at the Web site and will contain information unique to that site.

Web pages are different from other types of text documents in two ways. First, they are interactive. This means the user can send information or commands to the Web site, which control a program running on the Web server, and receive a response from the site. Second, Web pages can use multimedia. This includes the ability to include animation on a page, display video, and run audio files.

When Navigator first loads, it displays the **startup home page**. This is a page that the Netscape program has been set to load by default. As mentioned earlier, most likely this is your school's home page. A **home page** is the first page of information for a Web site. Generally, home pages include a brief welcome with information about the site and a table of contents that will take you to other pages of information within the Web site.

You will learn more about HyperText Markup Language later in the lab.

The title bar displays the name of the page you are currently viewing. The six pull-down menus below the title bar when selected display Navigator commands that allow you to control the screen appearance and how Navigator performs, as well as provide Help information and general file utilities such as saving and printing. The general features in each menu are described below.

Menu	Use
File	Used to open, save, print, and perform other tasks related to files as well as perform tasks related to Communicator windows.
Edit	Used to cut, copy, paste, and search within the displayed window as well as to set preferences for customizing Communicator.
View	Controls the display of onscreen features such as toolbars, fonts, images, page content, and page information.
Go	Used to navigate among pages.
Communicator	Used to switch among Communicator components.
Help	Provides documentation and support services for using Communicator.

The toolbar buttons activate the most commonly used Navigator features. By default, the three toolbars, Navigation, Location, and Personal, are displayed when Navigator is first opened. Notice the bar to the left of each toolbar. This is

called a **tab**. When you point to the tab, the name of the toolbar is displayed in a screen tip. In addition, dragging the tab allows you to change the order of the toolbars, and clicking it hides the toolbar to allow more space to display page content. When the toolbars are hidden, a single slim tab button is displayed for each hidden toolbar. Clicking the tab button redisplays the toolbar.

- Point to each toolbar's tab to identify it.
- Click on each toolbar's tab to hide all three toolbars.
- Redisplay the three toolbars.

You can completely hide and then redisplay the toolbars and tabs using the Hide/Show commands on the View menu.

You can also drag the toolbars to change their position.

The Navigation toolbar buttons, described below, are shortcuts for the most widely used commands, including those used to navigate among pages. To the right of the Navigation toolbar is the Netscape Company logo N. Clicking N will display Netscape's home page. It also animates whenever a page transfer is in progress.

Pointing to a button displays a screen tip of information about that feature.

Button	Action
Back	Returns to previous page viewed.
Forward	Displays next page after using Back.
Reload	Accesses and redisplays page you are viewing.
Home	Displays home page.
Search	Displays a directory listing of Internet search engines.
Guide	Displays a menu containing links to Internet tools and information.
Print	Prints content of currently displayed page.
Security	Allows you to specify security related settings.
Stop	Interrupts transfer of incoming data.

The Location toolbar is used to access specific Web pages. It contains a Bookmarks button and a Location field text box. The Bookmarks button is used to store the location information to a page to make it easy to return to that page in the future. The Location field text box is used to enter the WWW address location of a page you want to display in the content area of the window. Currently the