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English
ON THE
INTERNET
A Prentice Hall Guide

ANDREW T. STULL

Adapted for English by **Emily Thiroux**

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on the Internet
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A Prentice Hall Guide

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Preface
Change!

The artist picks up the message of cultural and technological challenge decades before its transforming impact occurs.*

Change! The original edition of this manual gasped its first breath at 7:22 p.m. on July 23, 1995. Since then, a great deal about the World Wide Web and the world at large has changed. Our world is louder, faster, and more complex than the one experienced by earlier generations. In terms of information transfer, we might be described as a techno-generation; our parents, as a paper-generation. The World Wide Web has changed as well, and it will probably continue to do so; our online future is likely to be chaotic but exciting. Prepare to revel in the difference that tomorrow will bring.

Reading this manual won't teach you all there is to know about the World Wide Web, but it will help you to teach yourself. In the future you will need to find information for yourself rather than relying solely on others, who may bear outdated knowledge. If you are successful, your skills in "cruising" the Internet will allow you to deal with ongoing change. By the end of this manual, you should be comfortable and resourceful in navigating the complexity of the Internet, from its back eddies to its thriving thoroughfares.

This manual has four chapters. In the Introduction, *O' Brave New World*, we will describe the origin of and the innovations behind the Internet. In Chapter 1, *What Makes It Tick?*, we will explain the use of a Web browser and describe how you can connect to the Internet. The boxed and end-of-chapter exercises will give you practice in using your browser as well as introduce you to some of the wonderful places on the Internet.

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*After each major heading, you'll see a quote from *Understanding Media, The Extensions of Man* (MIT Press, Cambridge, MA, 1964) by Marshall McLuhan. See also "McLuhan Meets the Net," by Larry Press, Communications of the ACM, July 1995.

In Chapter Two, *Hitting the Road*, you'll learn more about how to use your browser in order to cruise the endless byways of the Internet. Also, you will be introduced to resources and strategies for information searching. The boxed and end-of-chapter exercises will reinforce your navigational skills and give you practice in searching for some of the great English and English-related sites on the Internet. These resources, along with related newsgroups, appear in Appendix I.

In Chapter Three, *Traveling in Style*, you will learn how to customize your Web browser to make it more responsive to your needs. You will find yourself changing from an observer into an enthusiastic Internet participant. The boxed and end-of-chapter exercises will help you contact others on the Internet.

In Chapter Four, *A Unique Online Study Resource*, you will learn about an additional Web resource that is available with many Prentice Hall books. The text-specific websites allow you to take practice tests, to link directly with other websites relating to the topic being studied, and to share ideas with others studying the same subject.

Internet resources are listed in Appendix I, and Appendices II and III discuss documenting and evaluating online sources. Finally, a glossary defines the buzzwords.

Introduction
O' Brave New World
Brief Internet History

As electrically constructed, the globe is no more than a village.

This thing that we now call the Internet has been evolving ever since it was first developed over twenty-five years ago. Many people have compared the Internet to a living creature because of the way it grows and changes. You may find its history quite interesting.

In the late 1950s and early 1960s, scientists and engineers realized the importance of sharing information and communicating through their computers. Many different groups attempted to develop computer network languages that would enable computers to exchange information with one another. But unfortunately, all of these computer systems used different languages—people on different systems still had difficulty communicating with one another. It was like the Tower of Babel all over again.

The Internet was born as the solution to this problem. The U.S. government paid for the development of a common network language, called a protocol, which was eventually shared freely. Over time, many formerly isolated networks from all over the world adopted this language. Thus, the best description of the Internet is that it is not a network, but a network of networks. However, the Internet is independent of governments and regulation—there is no central Internet agency. Change is spurred by the common needs of the people that use the Internet.

Admittedly, this type of network system isn't the most graceful—but it works. If you saw a diagram of this great big computer network, you might find it resembles a spider's web. On this web, information can travel between any two points along any one of many possible paths.

Originally, the chief purpose of the Internet was to provide a distribution system for scientific exchange and research. Gradually, however, the Internet also became a digital post office, enabling people to

send mail and transfer computer files electronically. Although the Internet is still used extensively by scientists, the commercial sector is currently the most powerful force behind its growth.

As technology changed, the speed with which information could be transferred and the way we viewed information changed. In 1991, an important new user interface was developed at the University of Minnesota: the *Gopher*. *Gopher* is a visually-oriented search tool for the Internet that allows users to locate information found on other computers. Because of *Gopher*, and other, more sophisticated *graphical user interfaces* developed since 1991, it is now possible to search through vast stores of information on computers all over the world. Once the desired information is found, it can be easily downloaded to the user's computer. Amazing if you think about it! You could be on your computer in Shepherdstown, West Virginia, and view information from London, Mexico City, or Tokyo without even realizing it. Wham! And no airline tickets!

In 1992, researchers in Switzerland helped to create a new format for information exchange that led to the explosive growth of the World Wide Web (WWW). Information on the Web is posted as a "page" that may contain text, images, sounds, and even movies. The organization of a page is much like any printed page in a book. However, Web pages make use of *hypermedia*. Hypermedia involves the use of words and images as links, or connecting points, between different texts, images, sounds, or movies on other computers throughout the world. *Hypertext* Web pages contain links only to other text documents.

However, the introduction of the Web created a dilemma: It was a great place to go, but there was no easy way to get there. We still lacked a convenient software program that would allow users to access the Web easily. In 1993, a program called *Mosaic* was developed by the National Center for Supercomputing Applications (NCSA). It allowed the user to browse Web pages as well as use other Internet resources such as electronic mail (e-mail).

In 1991, around 700,000 people were using the Internet. After the introduction of *Mosaic*, users increased to around 1.7 million. Upon the release of Netscape *Navigator*, users were estimated at 3.2 million. Since then, the growth hasn't slowed much—various estimates suggest that the number of people who have access to the Internet ranges from 20 million to 100 million.

Just listen to the popular media. When was the last time you saw a television program, heard a radio commercial, or read a magazine with-

out encountering something about the Internet? Today, you have access to animation, video clips, audio files, and even virtual reality worlds. Imagine all the new ways we will be able to view tomorrow's digital world.

For those of you who already have some Web experience, here are a few Web addresses discussing the history and growth of the Internet. Simply type the address into your Web browser exactly as it appears below. If you are just beginning to learn about the Internet, you might want to visit these sites after you learn more about Web browsers and Internet addresses in Chapter 2.

BBN Timeline
BBN includes an Internet history timeline. It places the important Internet events in context with other historical events and throws in plenty of social commentary to give you perspective.
Address: http://www.bbn.com/timeline/

Hobbes' Internet Timeline
Hobbes' site offers a great deal about the Internet, the people who use it, and online culture.
Address: http://info.isoc.org/guest/zakon/Internet/History/HIT.html

Netizens: On the History and Impact of Usenet and the Internet
This is a comprehensive collection of essays about the history, nature, and impact of the Internet.
Address: http://www.columbia.edu/~hauben/netbook/

Contents

Chapter 1
What Makes It Tick?
The Basics

An Indian is the servomechanism of his canoe,
as the cowboy of his horse or the executive of his clock.

Many of you reading this manual have a lot of experience with computers, while others have little or none. In the first section of this chapter, we will briefly describe the basic computer setup you'll need, how to use a modem, and choose an Internet Service Provider (ISP). Many of you may have computers on your campus that are set up to allow Internet access. In case you don't, we'll list the minimum in terms of systems, connections, and services that you'll need for the Internet.

In the second section of this chapter, we will explain some of the idiosyncrasies of the Internet and describe the general features of most Internet browser software. A popular Web browser, Netscape *Navigator* or *Communicator*, is used to illustrate discussions. Another popular browser is Microsoft *Internet Explorer*. We will refer to the 4.0 version of both browsers; they are the two clear frontrunners in user popularity. However, as of March 18, 1999, Microsoft announced the release of its 5.0 version of *Internet Explorer*; *Navigator* is sure to respond with its own updated version soon enough. But as of now the 4.0 versions are stable, widely accepted, and *free* to students. We don't advocate any particular browser; you will probably want to try various browsers and make up your own mind. Although our illustrations focus on *Navigator*, fear not; browsers share many of the same features. When necessary, we will point out the particulars of *Internet Explorer*. We are going to describe the features of both browsers as they pertain to the PC versions. The Macintosh versions of *Navigator* and of *Internet Explorer* have slightly different menus and layouts, but once you've learned the basic techniques, it's easy to switch back and forth between browsers and platforms.

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Section 1.1
Springs, wheels, and dials—Connecting

What is the difference between a Rolex and a Timex? Without much consideration, the main difference is the price. But if we consider how well each of these watches meets our basic need for being on time, the two watches are very similar. The same goes for computers and networks. The simple no-frills components will save you money; the high-gloss gear will transform your cash into dash and make your Internet browsing only a little more enjoyable.

To get started, you'll need a *computer*, a *modem*, an *Internet connection*, and *browser software*. The descriptions that follow will help you understand each component and its function to access the Internet.

The Computer

Be careful how you approach this issue if you ask someone for advice on which computer to buy. Many people have strong opinions about the differences between Macintosh and PC-compatible systems. The best advice that we can give to you is to test them both at a computer store. Choose the one that you can pay for and are most comfortable using.

These are the *minimum* system configurations that you'll need:

PC-Compatible
- Intel 486
- Windows 3.1
- VGA monitor
- 16 MB of RAM
- 8 MB of free disk space for browser software

Macintosh
- 68030
- MacOS 7.0
- 256 color monitor
- 16 MB of RAM
- 8 MB of free disk space for browser software

If you are purchasing a new computer, the minimum may not be readily available and therefore is not recommended. Stepping up to a Power-Mac (with MacOS 7.6 or higher) or a Pentium-based PC (with Windows 9x) would be more desirable.

A new innovation is the Network Computer, or NC. An NC is a computer without all of the software that you expect in an ordinary computer: word processing, drawing, graphing, and number crunching. Because these features may be helpful to you, you should consider the purchase of an NC carefully. An NC (a box that sits on top of your TV) will allow you to connect your television directly to the Internet. *Web*TV is currently the most popular, but we suspect that you'll see many different brands in the future. The advantage of such products is that they are much cheaper than an ordinary (but more capable) computer. Also, you don't have to be a computer whiz to use them.

The Modem

You probably want to know why you need a modem if you already have a computer. A modem is a device that MOdulates and DEModulates—that is, it translates a computer signal into a telephone signal, and vice versa. Although computers and telephones were set up to speak different "languages," you can use a modem to translate between your computer and another computer across your telephone line. Modems come in different "sizes," so don't just go out and buy the cheapest one on sale. Definitely don't buy one from a garage sale unless you really know what you're doing. Because modem technology changes so quickly, older equipment may be useful only as a doorstop. The number one thing that you need to know about a modem is its speed of transmission. Modem speeds are referred to in units called baud (a bit is a basic unit of digital information and a baud is the speed of transmitting 1 bit in 1 second). At one time a modem speed of 2600 baud was considered adequate. However, the minimum speed requirements have been steadily increasing as users demand more information at faster rates. You should purchase a modem with a speed of at least 28,800 baud (28.8K baud). With a 28.8K baud modem you can expect that it will take a few seconds to transfer a typical Web page. However, keep in mind that manufacturers will continue to introduce newer and faster modems as pages become more complex and as users demand faster speeds. If you are about to purchase a modem, the standard speed as of this writing is 56k. Connect to **http://www.miningco.com** and punch in the word "modems" into the search engine for the latest on buying a new modem. (We'll talk more about search engines a bit later but this site is very useful for all types of research.)

You also need to make sure that your modem will work with your computer's operating system. Generally, this isn't a big deal, as all modems are basically the same and top manufacturers produce software

for all of the major operating systems. Just remember to read the box to make sure it contains the software you need. Included with the software is an installation manual and a phone number to a help desk. If you run into trouble, don't hesitate to try both. As for which brand of modem to purchase, buy what you can afford. Your Internet Service Provider or your campus computer administrator may recommend a particular brand of modem. Take this suggestion seriously. The technicians within your ISP or campus are likely to be familiar with the recommended modem and will be able to help you if problems arise.

The word modem may also refer to a device that allows you to connect your computer or television to a service line. By the time this guide is published, you will undoubtedly hear of things called ISDN modems and cable modems. An ISDN modem is a classic misnomer because the ISDN signal is already understood by computers and isn't modulated and doesn't need to be demodulated. The cable modem refers to a box that connects between your cable TV line (not your telephone line) and your computer or television.

The Internet Connection

Your campus may already be using the Internet as a teaching and learning tool. If not, there are many resources to help you set up a connection from home.

Some campuses, although lacking a walk-in lab, have made arrangements for students to dial into the campus computer system and connect to the Internet with a modem. If this is the case, search out the campus computer guru and ask for help.

Another option is to subscribe to a company such as *America Online*, *CompuServe*, *Microsoft Network*, or one of the many independent Mom and Pop companies currently offering monthly access to the Internet. It is a buyer's market and you should shop around. Test drive everything before you buy. This will save you a great deal of frustration. Here are a few things to consider when choosing an Internet Service Provider:

Does the ISP have a local number for your area? You need to call the provider each time you access the Internet. Paying a toll call every time you do so will become costly if you use the Internet regularly.

Can their system handle a large number of simultaneous connections? Ask them how many users they can handle at one time and how many subscribers they have. Although they may

have a reasonable price and a local number, it doesn't mean much if you can't get on to use it. If after you subscribe you find that you are never able to connect or that the only available access is late at night or early in the morning, find a new ISP.

Do they offer SLIP/PPP connections? This is the type of connection that you'll need if you want to use a graphical browser like Navigator or Internet Explorer. Some ISPs only offer shell accounts. Shell accounts require you to type in each command as you would with a command-line interface such as provided in DOS. It is somewhat like driving a horse and buggy when everyone else has an automobile.

Do they have a reasonable monthly subscription fee? Cheapest is not always best. The added features and the staffing support are important points to consider when choosing a service. Some Internet Service Providers offer you unlimited monthly connect time for a flat fee and others charge for a specific number of hours per month (with hourly rates thereafter). Estimate your expected usage and purchase accordingly. Ask if there is a fee to upgrade your service if you find that you need more time. If you have a roommate, consider upgrading the service and splitting the cost. This may save you money.

Does your ISP include the Internet browser software in the price? You'll find that not all do. Most ISPs have an agreement with either Netscape or Microsoft to bundle their browser software. The provided software may also be partially configured to work on the ISP's system. Moreover, the technicians will be better able to help you with a problem.

Is the ISP a regional or local company? This may not be important to everyone, but some of you may go home during holidays and vacations. If the ISP covers a wider area, then you can still check your e-mail and cruise the Net when you are away from school.

Do they have a help line in case you need technical assistance to set up your connection? Call the help line before you subscribe and make sure you get a real person. Although you may be asked to leave your name and number, you should expect to get a return call within 24 hours. If they don't return your call within this period, then the service is probably understaffed or poorly managed.

Does the ISP offer both newsgroup and e-mail access in addition to a connection to the Web? This is usually standard but there are always exceptions.

Does it cost you extra for additional e-mail addresses? If you have a roommate, then you may find that it is more affordable to split the cost of a subscription and pay for an additional e-mail account.

Will your ISP add newsgroups at your request? Most ISPs subscribe to a small fraction of the available newsgroups and you may find that they don't include some of the basic, academic groups that your instructors may recommend. It shouldn't cost anything for the ISP to add these groups to their list.

Does the ISP offer you space for your own Web page? Often, one of the features offered in the basic package is the option of posting your own homepage. A limited amount of memory will be provided by the ISP.

The most important thing to remember when using an ISP is to expect courteous and prompt service. If you don't like what you are paying for, then cancel and go somewhere else. There are plenty of competitors willing to offer you better service.

The Browser Software

A descriptive name for software such as *Navigator* or *Internet Explorer* is *browser* software, because that is what most people do with it. It is used to browse or wander, sometimes aimlessly, through the Internet.

Many Web browsers are on the market today, and new ones frequently enter the race to capture your dollar.

All browsers have advantages and disadvantages. You should evaluate several and choose the one that is most comfortable for you. (However, when choosing a browser, remember that seeing over the dashboard is all that is really important. Don't get wrapped up in features that you'll never use.) *Navigator*, *Internet Explorer*, and many of the other browsers are free for student use! Don't be afraid to look at several. At the end of the chapter you will find several Web addresses that offer such software. Of course, if you purchase the browser at the store, you also get a user's manual, which you don't get with the free, educational copy.

If you have all of these basic elements and they've been put together correctly, you should be ready to surf. (See the activity at the end of this chapter, *The Starting Line*.) The rest of this manual is devoted to guid-

ing you through some of the wonderful places that will allow you to enjoy the depth and scope of English.

Section 1.2
Putting the pieces together—Organizing

The software that you'll use to access the Net is commonly called a *client* or a Web *browser*. It functions according to an information exchange model called the *client-server model* (Figure 1.1). In this way, a *client* (your Web browser software) communicates with a server (a computer with Web server software) on the Internet to exchange information. When referring to the Web, the information that your browser receives from the server is called a *page*.

What really appears on these Web pages? The best way to find out is to see for yourself. Sit down in front of a computer, start your browser software, and connect to the Internet. Your browser is probably already set to start at a specific page. This start page is often referred to as a *homepage*. Web pages usually include both text and images. Some also use sounds and videos. The use of different information types is called multimedia. A basic rule of the road is that anything that can be saved or recorded onto a computer can be distributed on the Internet through a Web page.

When you choose a page it will be sent to your computer. After the requested information has been sent by the server, your computer will display it for you. However, sometimes the Internet is not as responsive as you'd like. (Why do you think some people refer to the World Wide Web as the World Wide Wait?) A few analogies and real-world considerations may help you see why this is so.

Patchwork Quilts
The patchwork quilt you might use during cold nights is one analogy. The quilt may have been crafted by your grandmother. Or in another
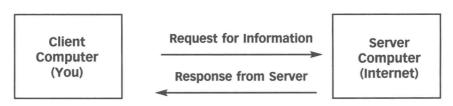

Figure 1.1. The client requests information from the server. The requested information is displayed on the client computer.