Chapter 2
The Internet and World Wide Web

Chapter 2 Objectives

- Discuss the history of the Internet
- Explain how to access and connect to the Internet
- Analyze an IP address
- Identify the components of a Web address
- Explain the purpose of a Web address
- Search for information on the Web
- Describe the types of Web sites
- Recognize how Web pages use graphics, animation, audio, video, virtual reality, and plug-ins
- Identify the steps required for Web publishing
- Describe the types of e-commerce
- Explain how e-mail, FTP, newsgroups and message boards, mailing lists, chat rooms, instant messaging, and Internet telephony work
- Identify the rules of netiquette
- Describe the types of e-commerce

The Internet

What are some services found on the Internet?

History of the Internet

How did the Internet originate?

- ARPANET: Networking project by Pentagon’s Advanced Research Projects Agency (ARPA)
- Goal: To allow scientists at different locations to share information
- Became functional September 1969

- Goal: To function if part of network were disabled
**History of the Internet**

*How has the Internet grown?*

- **Today**
  - More than 200 million host nodes
- **1984**
  - More than 1,000 host nodes
- **1969**
  - Four host nodes

**Who controls the Internet?**

- **World Wide Web Consortium (W3C)**
  - Oversees research, sets standards and guidelines
  - Tim Berners-Lee, director
- **Internet2 (I2)**
  - Internet-related research and development project
  - Develops and tests advanced Internet technologies

**How can you connect to the Internet?**

- **Slow-speed technology**
  - Dial-up access
  - Modem in your computer uses a standard telephone line to connect to the Internet
  - Connection must be established each time you log on.
  - Slow but inexpensive

- **High-speed connection**
  - Digital subscriber line (DSL), cable telephone Internet services (CATV), cable modem, fixed wireless, and satellite modems
  - Connection is always on—whenever the computer is running

**Video: Choosing a Broadband Provider**

Choose the broadband connection that will best meet your Internet connection needs:

- **Low quality** (click to start)
- **High quality** (click to start)
How the Internet Works

What are ways to access the Internet?
1. ISP, Regional or National
2. OSP (AOL and MSN, for example)
3. Wireless Internet Service Provider

How the Internet Works

How might data travel the Internet using a cable modem connection?

How the Internet Works

What is a domain name?
- Text version of Internet protocol (IP) address
  - Number that uniquely identifies each computer or device connected to Internet

IP address ——> 63.123.44.192
Domain name ——> www.scsite.com

top-level domain

The World Wide Web

What is the World Wide Web (WWW)?
- A worldwide collection of electronic documents
  - Also called the Web

- Each electronic document is called a Web page

- Can contain text, graphics, sound, video, and built-in connections

- A Web site is a collection of related Web pages
The World Wide Web

What is a Web browser?
- Program that allows you to view Web pages

- Microsoft Internet Explorer
- Netscape
- Safari
- Mozilla
- Opera

The World Wide Web

How does a Web browser display a home page?

- Step 1. Click the Web browser program name
- Step 2. If necessary, connect to the Internet
- Step 3. Connection to the Internet occurs, and a home page displays

The World Wide Web

What is a home page?
- The first page that a Web site presents
- Often provides connections to other Web pages

The World Wide Web

How do handheld computers and cellular telephones access the Web?
- Use a microbrowser that displays Web pages that contain mostly text
- Must be Web-enabled
What is downloading?
- The process of a computer receiving information
- Depending upon connection speed, downloading can take from a few seconds to several minutes

What is a URL?
- Unique address for a Web page
- A web server delivers the Web page to your computer

What is a link?
- Built-in connection to another related Web page location
  - Item found elsewhere on same Web page
  - Different Web page at same Web site
  - Web page at a different Web site
- Pointer changes to a small hand when you point to a link
- A link can be text or an image
- Text links are usually underlined and in a different color
The World Wide Web

What is a subject directory?
- Search tool with organized set of topics and subtopics
- Lets you find information by clicking links rather than entering keywords

What is a search engine?
- Program used to find Web sites and Web pages by entering words or phrases called search text
  - Also called a keyword

What is a hit?
- Any Web site name that is listed as the result of a search

What are the nine basic types of Web sites?
- Portal
- News
- Informational
- Business/Marketing
- Educational
- Entertainment
- Advocacy
- Blog
- Personal
The World Wide Web

What is a portal?
- A Web site that offers a variety of services from one, convenient location, usually for free
  - Searching, sports, e-mail, news, weather, auctions, Web communities (Web sites that join people with similar interests)

What is a news Web site?
- Contains newsworthy material
- Stories and articles relating to current events, life, money, sports, and the weather

What is an informational Web site?
- Contains factual information
- Created by organizations and government agencies

What is a business/marketing Web site?
- Contains content that promotes products or services
- Allows you to purchase products or services online
The World Wide Web

What is an educational Web site?
- Offers avenues for formal and informal teaching and learning
  - Some companies offer online training for employees
  - Some colleges offer online classes and degrees

The World Wide Web

What is an entertainment Web site?
- Offers an interactive and engaging environment featuring music, video, sports, games, and more

The World Wide Web

What is an advocacy Web site?
- Contains content that describes a cause, opinion, or idea

The World Wide Web

What is a blog?
- Uses a regularly updated journal format to reflect the interests, opinions, and personalities of the author and sometimes site visitors
What is a personal Web site?
- Web page maintained by private individual
- Reasons: sharing life experience with the world or job hunting

What are the guidelines for evaluating the value of a Web site?
- Affiliation
- Audience
- Authority
- Content
- Currency
- Design
- Objectivity

What is multimedia?
- Application integrating text with other media elements
  - Graphics
  - Animation
  - Audio
  - Video
  - Virtual reality

What graphics formats are used on the Web?
- BMP
- GIF (pronounced JIFF)
- JPEG (pronounced JAY-peg)
- PNG (pronounced ping)
- TIFF
The World Wide Web

What is a thumbnail?
- Small version of a larger graphic—used to improve Web page display time
  - Usually click on thumbnail to display larger graphic

The World Wide Web

What is animation?
- Appearance of motion created by displaying a series of still images in sequence

The World Wide Web

What is audio?
- Music, speech, or any other sound
- Individual compressed sound files that you download from the Web to your computer
  - Common Web audio file formats are AA, AAC, AIFF, ASF, MP3, WAV, WMA, RA, and QT
- Once downloaded, you can play (listen to) the contents of the files

The World Wide Web

What is streaming audio?
- The process of transferring audio in a continuous and even flow
- Enables you to listen to music as it downloads to your computer
What is video?
- Consists of full-motion images that are played back at various speeds
- MPEG (Moving Pictures Experts Group) is popular video compression standard

What is virtual reality (VR)?
- Use of computers to simulate real or imagined environment
- Appears as a three dimensional (3-D) space
  - Used for games and many practical applications

What are plug-ins?
- Programs that extend the capability of a browser
- You can download many plug-ins at no cost from various Web sites

What is Web publishing?
- Development and maintenance of Web pages
E-Commerce

What is E-commerce?
- Short for electronic commerce
- Business transaction that occurs over the Internet

Business to consumer (B2C)
Sale of goods to general public

Consumer to consumer (C2C)
One consumer sells directly to another

Business to business (B2B)
Business providing goods and services to other businesses

Other Internet Services

What is E-mail?
- Short for electronic mail
- The transmission of messages and files via a computer network
  - Messages can consist of simple text or can contain attachments, such as documents, graphics, or audio/video clips
  - Internet access providers usually provide an e-mail program
  - Some Web sites—such as MSN Hotmail and Yahoo!—provide free e-mail services
- One of the original services on the Internet

How do you send an e-mail message?

Step 1.
Start an e-mail program (Microsoft Outlook, for example)

Step 2.
Click the New Mail Message button

Step 3.
Enter the recipient’s e-mail address, the subject, and the message

Step 4.
Click the Insert file button if you want to attach a picture, for example, and click Send

Step 5.
The recipient opens the message

Video: E-mail Basics
Learn how to use e-mail quickly and efficiently

low quality (click to start)

high quality (click to start)
Other Internet Services

What is an e-mail address?
- Unique name that consists of a user name and domain name that identifies the user

What is FTP?
- File Transfer Protocol—Internet standard that allows you to upload and download files with other computers on the Internet

How does an e-mail message travel?
Step 1. Using e-mail software, you create and send message.
Step 2. Your software contacts software on your ISP’s outgoing mail server.
Step 3. Software on outgoing mail server determines best route for data and sends message, which travels along Internet routers to recipient’s incoming mail server.
Step 4. When recipient uses e-mail software to check for e-mail messages, the message transfers from incoming mail server to recipient’s computer.

What are newsgroups and message boards?
- Newsgroup
  - Online area where users discuss a particular subject
- Message board
  - Type of discussion group
  - Many Web sites use message boards because they are easier to use
Other Internet Services

What is a mailing list?
- Group of e-mail addresses given a single name
- When a message is sent to the mailing list, everyone on the list receives the message
- To add your name to a mailing list you must subscribe to it; to remove your name you must unsubscribe

Other Internet Services

What is a chat?
- Real-time typed conversation that takes place on a computer
- Chat room is location on server that permits users to discuss topics of interest

Other Internet Services

What is instant messaging (IM)?
- A real-time Internet communications service that notifies you when one or more people are online and allows you to exchange messages or files

Step 1. Login to the IM server

Step 2. The server determines if any of your established friends, family, or coworkers, called buddies, are online

Step 3. You send instant messages to an online buddy

Step 4. Your instant Message travels through a messaging server and then to the online buddy

Other Internet Services

What is internet telephony?
- Enables users to speak to other users over the Internet using their computer
Netiquette

What is netiquette?
- Code of acceptable behaviors users should follow while on the Internet

Golden Rule: Treat others as you would like them to treat you.

Summary of the Internet and World Wide Web

- History and structure of the Internet
- Electronic commerce
- The World Wide Web
- Other Internet services
- Web Publishing
- Netiquette

Chapter 2 Complete