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Discovering
THE INTERNET

COMPLETE

Fifth Edition

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Jennifer T. Campbell

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The Shelly Cashman Series® offers the finest textbooks in computer education. We are proud of the fact that our textbook series has been the most widely used series in educational instruction. *Discovering the Internet: Complete, Fifth Edition* continues with the innovation, quality, and reliability that you have come to expect from the Shelly Cashman Series.

In *Discovering the Internet: Complete, Fifth Edition*, you will find an educationally sound, highly visual, and easy-to-follow pedagogy that combines Internet concepts with step-by-step projects and corresponding screens. The Internet and the World Wide Web have changed the way people find information, communicate with others, and conduct business activities. The chapters and exercises in this book are designed to help students understand how the Internet and the web have changed today's world, understand the structure of the Internet and the web, and understand how to use both technologies to enrich their personal and professional lives.

Objectives of This Textbook

Discovering the Internet: Complete, Fifth Edition is intended for a course that provides comprehensive coverage of Internet and web concepts. No experience with the Internet or the web is assumed. The objectives of this book are:

- To teach Internet and web history and concepts
- To demonstrate how to use a browser and online search tools
- To introduce different types of online communication tools
- To develop an exercise-oriented approach that allows learning by doing
- To encourage independent study and help those who are working alone

Organization of This Textbook

Discovering the Internet: Complete, Fifth Edition provides basic coverage of Internet and web concepts. The material is divided into four chapters and three appendices.

CHAPTER 1 — INTO THE INTERNET In Chapter 1, students are introduced to basic Internet and web terminology, taught how the Internet and web are used, and familiarized with the history of the Internet and the web.

CHAPTER 2 — BROWSING THE WEB In Chapter 2, students are introduced to websites, webpages, web portals, web servers, and web browsers. Students learn to use web browser features, such as tabbed browsing, and learn about online risks and safeguards.

CHAPTER 3 — SEARCHING THE WEB In Chapter 3, students learn how to perform the search process and use various search tools to do basic and advanced web searches.

CHAPTER 4 — COMMUNICATING ONLINE In Chapter 4, students learn how to send and receive email using both an email client and a web-based email service. Students also learn about participating in other types of online communication, such as mailing

lists, newsgroups, wikis, and web-based discussion groups. Students are introduced to a variety of social media, such as blogs and social networks.

CHAPTER 5 — GETTING MORE OUT OF THE INTERNET   In Chapter 5, students explore getting more out of the Internet and the web including: visiting consumer, vertical, and industry portals; getting news, weather, and sports information; experiencing streaming media; using online reference tools; exploring special interest sites; managing their personal finances; and downloading and uploading files.

CHAPTER 6 — UNDERSTANDING INTERNET TECHNOLOGIES AND SECURITY   In Chapter 6, students learn about the networking technologies and communication services that make communicating over the Internet and accessing the web possible. Students also learn more about online security risks and safeguards.

CHAPTER 7 — UNDERSTANDING E-BUSINESS   In Chapter 7, students use real-world e-business examples to explore different e-business models.

APPENDIX A — EXPLORING OTHER BROWSERS   This appendix discusses the functionality differences among four additional browsers: Google Chrome, Firefox, Opera, and Safari. It also addresses the general differences in mobile browsers for tablets and smartphones.

APPENDIX B — UNDERSTANDING WEB DESIGN   This new appendix provides a brief presentation of the website planning and designing process.

APPENDIX C — EXPLORING THE CLOUD   This new appendix provides a brief presentation of web apps, storage, cloud security, and how cloud services can extend one's usage of the web.

Instructor Resources

The Instructor Resources include both teaching and testing aids and can be accessed online at www.cengage.com/login.

INSTRUCTOR'S MANUAL   Includes lecture notes summarizing the chapter sections, figures and boxed elements found in every chapter, teacher tips, classroom activities, lab activities, and quick quizzes in Microsoft Word files.

SYLLABUS   Contains easily customizable sample syllabi that cover policies, assignments, exams, and other course information.

FIGURE FILES   Illustrations for every figure in the textbook are available in electronic form. Figures are provided both with and without callouts.

POWERPOINT PRESENTATIONS   A one-click-per-slide presentation system provides PowerPoint slides for every subject in each chapter. Presentations are based on chapter objectives.

SOLUTIONS TO EXERCISES   Includes solutions for all end-of-chapter and chapter reinforcement exercises.

TEST BANKS   Test Banks include questions for every chapter, feature objective-based and critical-thinking question types, and include page number references and figure references, when appropriate.

DATA FILES FOR STUDENTS   Includes all the files that are required by students to complete the exercises.

ADDITIONAL ACTIVITIES FOR STUDENTS   Consists of Chapter Reinforcement Exercises, which are true/false, multiple-choice, and short answer questions that help students gain confidence in the material learned.

CourseNotes

Cengage Learning's CourseNotes are six-panel quick reference cards that reinforce the most important and widely used features of a software application or technology concept in a visual and user-friendly format. CourseNotes serve as a great reference tool for students, both during and after the course. CourseNotes are available for Adobe Dreamweaver CS6, HTML 5, Web 2.0, Buyer's Guide: Tips for Purchasing a New Computer, Best Practices in Social Networking, Hot Topics in Technology, and many more. Visit **www.cengagebrain.com** to learn more!

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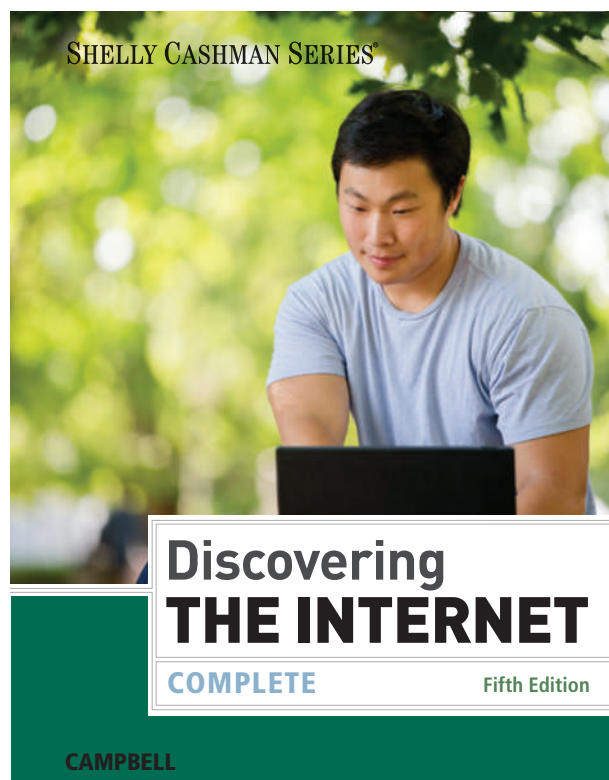
Textbook Walk-Through

DOWNLOADING AND UPLOADING FILES   One of the most useful Internet activities is downloading files from a server or uploading files to a server. A **server** is a computer on a network used to store files. As you learned earlier, a web server stores webpages. Other server examples are a mail server that stores email messages and a file server that stores electronic files. To **download** is to copy or transfer files from a server to your computer or device; to **upload** is to copy, post, or transfer files from your computer or device to a server. The Internet standard or protocol that you use to upload or download music, software, word processing, picture, and other files to a server is the **File Transfer Protocol (FTP)**.

FACTS @HAND   Peer-to-peer media file sharing became popular in the late 1990s by websites such as Napster that allowed individual users to upload music files and share them with others, without permission from, or reimbursement for, the copyright holder. Companies such as Rhapsody and Pandora offer subscription-based radio and downloadable music files that are licensed by the copyright holders and available to individual users.

CLOUD COMPUTING   Remote data access, storage, software access, and collaboration technologies are all aspects of **cloud computing**. Users of cloud computing can access a variety of software and storage methods by using a computer or mobile device with Internet access and browser software. Google Drive™ is an example of cloud computing. Google Drive includes Google Docs, a group of software products available online, including word processing (Figure 1-10), spreadsheet, and presentation software. When logged on to Google Drive, a user can use the software to create a document, such as a spreadsheet, save and store the document online, and share the document with others to collaborate on changes — all without installi... ...or device.

menus and toolbars provide a familiar user interface
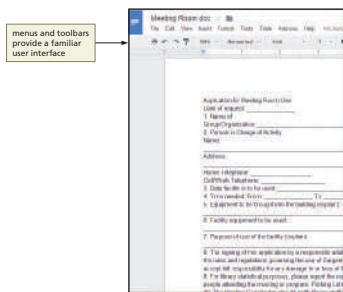
Figure 1-10   Google Docs allows users to ... online.

Facts@Hand
Each chapter contains multiple Facts@Hand tips that provide industry statistics or usage information relevant to the Internet and web concepts discussed in the chapter.

article. You also can copy a link and paste it into an email message or text message. When the message recipient clicks the link, his or her browser starts and opens the webpage.

Most browsers and websites enable you to share webpages and web content to social media and content sharing websites, such as Facebook, Twitter, Pinterest, and more. You can post a link to an article using the sharing or connectivity icons in the article or on the webpage (Figure 2-66). If you are using Pinterest, you can select which graphic on the webpage to display on your Pinterest board. You also can copy and paste a URL directly into a Facebook post or Twitter tweet.
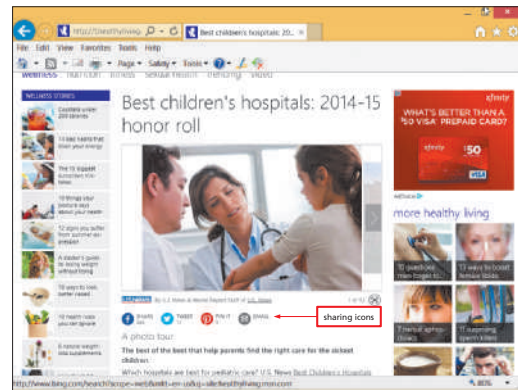
sharing icons

Figure 2-66   Sharing or connectivity icons enable you to share web content with your friends, family, or contacts.

Saving a Webpage Image

While browsing the web, you might find an image that you want to save. Be aware of ownership and copyrights when saving and using webpage images. Most webpage images are the property of their owners. U.S. copyright laws protect content owners from unauthorized copying and sharing of text, images, and other media. You cannot use copyright-protected images without permission from the owner or source. Some images, such as many images found at U.S. government websites, are in the public domain. You can use images in the public domain freely. You generally need to provide credit or source information about the source of public domain images. Many websites that offer public domain images also provide the wording for an image credit line.

Depending on your device or browser, you may be able to save an image, such as the one shown in Figure 2-67. If you are using a Windows laptop or desktop, right-click the image and then click the 'Save picture as' command on the shortcut menu. If you are using a Macintosh or mobile device, your steps will vary. For example, many mobile devices or computers with a touch screen will open a menu of commands, including the option to save web content or media if you press and hold the image or other content.

@SOURCE   For more information on U.S. copyright laws and how to ensure you are following them when saving or sharing web content and media, use a search engine to search for *U.S. copyright laws web content.*

@Source
Each chapter includes multiple @Source tips that encourage students to find more information on topics by providing keywords on which to search.

2

- Tap or click Bookmarks, or another similar command.
- Tap or click the Other folder link to open a new folder (Figure 2-42)
- In the Label text box, type **Textbook links** as the favorite name.

3

- Choose where to add the bookmark, if possible.
- Enter **Discovering the Internet** as the folder name.
- Tap or click the Create or Save button to create the new Discovering the Internet folder.
- Tap or click the Save or Add button or another appropriate button to add the favorite to the new Discovering the Internet folder.

Label text box

Other folder command

Figure 2-42

Step-By-Step Instruction

Step-by-step hands-on instructions provide a context beyond the point-and-click. Each step provides information on why students are performing each task, or what will occur as a result.
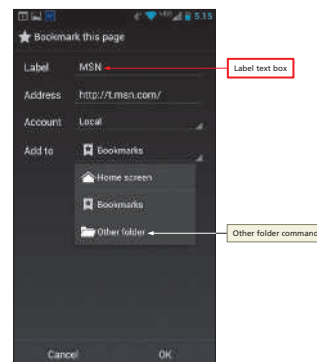
To Delete a Favorites Subfolder and Its Contents

When you no longer need a Favorites or Bookmarks subfolder or an individual favorite, you can delete it. The following steps delete the Discovering the Internet folder and its contents.

1

- Click the Favorites button or Bookmarks button, or open your browser and open the browser menu if you are using a mobile device.
- Display your list of favorites and subfolders.

'Discovering the Internet' folder

© 2014 Dell
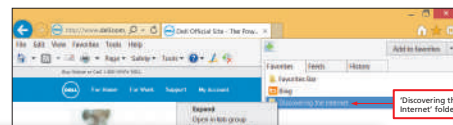
2

- Right-click the folder if necessary, then tap or click Delete, or a similar command (Figure 2-44).
- Click the Yes button, if necessary, to confirm the deletion.
- Close the browser.

Q&A

Can I organize my favorites or bookmarks? Depending on your device or browser, you likely can reorganize them. Use a search engine to search for steps to organize favorites or bookmarks for your browser or device.

© 2014 Dell
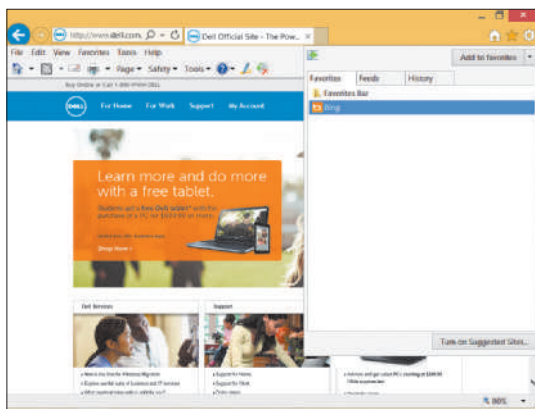
Figure 2-44

Q&A

Q&A boxes identify questions students may have when working through the steps and provide additional information about what they are doing, right where they need it.

History

Another easy way to revisit a webpage is to use a history of the websites and webpages you have visited during a specific number of days.

A **History list** displays a list of past browsing data. Your History list might contain icons for websites visited several weeks ago, last week, and every day of the current week, including today, depending on your settings. When you tap or click one of these icons, a list of webpage folders might appear, or the website may open automatically. Each folder represents a website visited during that time period. You can expand each website folder to view links to the individual webpages viewed at the website.

You also can reorganize your view of the History list. Depending on your device or browser, you might have options to view the History list by website, most visited, order visited today, or more. Additionally, you may be able to search for previously viewed webpages.

Using a Webpage Search Feature and Clicking Links

Many websites include a keyword search feature to allow you to find a specific webpage within a website. You can enter keywords in the search feature's text box and then tap or click a Search button to find webpages at the website that contain those keywords. You will learn more about keyword searches in Chapter 3. Some websites, such as The Weather Channel, have special search tools designed to find information organized by common categories, such as ZIP code, city, or state (Figure 2-17). Others, such as Cengage.com, allow you to enter general information, such as a topic or author name, or narrow your results to be more specific, such as by typing an ISBN, which is the unique number assigned to every book.
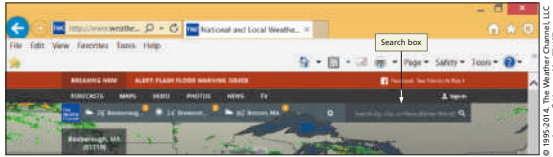
Figure 2-17

@ISSUE

Web Ads

As you browse the web or use web or mobile apps, you may notice a barrage of advertisements. Web advertisements can appear in pop-up windows in front of the webpage or app currently displayed or in pop-under windows that appear behind the browser window or app. Although advertising revenue does offset many costs associated with creating webpages, ads are generally considered inconvenient and bothersome by web users. Some advertisements with attention-grabbing sounds and animation, called **rich media ads**, even appear right in the middle of or floating across the webpage or app you are viewing. Most visitors consider these approaches to web advertising increasingly invasive, distracting, and bothersome.

For these reasons, you may want to block ads. Blocking or filtering ads is important

particularly for children. According to research by Dr. Jakob Nielsen, a web usability pioneer, children are less able than adults to distinguish between web ads and content. When a child sees a cartoon character in an ad, for example, he or she likely will click the ad expecting to see more cartoons. Using an ad filter or blocker can help reduce the likelihood that children will click ads and navigate to webpages selling products and services. Many ads contain malicious content that can introduce viruses, spyware, or other harmful programs or apps onto your computer or device.

Most current browsers include a feature that blocks pop-up ads; however, other kinds of ads, including rich media ads, may still appear. Check your browser's settings to turn o[...]

@Issue
Each chapter includes one or more @Issue sections that provide additional discussion of important Internet and web issues.

Chapter Review
A review of the Internet and web concepts discussed in the chapter.

Like other types of Internet connections, digital satellite has some disadvantages. Snow, rain, wind, or even clouds may affect the clarity of the signal. Furthermore, the lengthy distance to the orbiting satellites can create a significant lag in the response time. The lag is not noticeable while browsing webpages; but for communications such as instant messaging or chat, which take place simultaneously, or in **real time**, the lag may be noticeable.

Chapter Review

The Internet is a worldwide network of networks that individuals, institutions, and businesses use to communicate, share information, and conduct business transactions. Using the Internet enables people to acquire useful information; send and receive email and text messages; exchange thoughts, photos, files, and links with others using social media; and take advantage of the convenience e-commerce allows them when shopping and paying for items. Businesses conduct business transactions with their customers, vendors, and employees over the Internet, and use social media to build a community and share information.

The World Wide Web, also known as the web, is a subset of the Internet that supports webpages, which can include text, graphics, animation, sound, or video. A website is a collection of related webpages. Webpages connect to each other through hyperlinks, which enable a user to move from one webpage to another, on the same or another website. A browser allows users to access and view webpages, while a search tool allows users to find specific web-based resources.

The Internet has its roots in ARPANET, a research and defense initiative of the U.S. government in collaboration with technology firms and universities. In 1990, NSFNet superseded ARPANET as the main government network linking universities and research facilities. The U.S. Congress opened the Internet to commercial use in 1992. Tim Berners-Lee's development of the Web in 1991 caused Internet usage to explode. Berners-Lee developed the use of hyperlinks between different files, HTML to create web documents, the addressing scheme, and the original WorldWideWeb browser. In 1994, the first commercial web browser allowed businesses and individuals to discover the possibilities available online, and the use of the Internet expanded rapidly.

Individuals and businesses use cable broadband, phone lines, or wireless connections to access the Internet through a wide array of methods with varying speeds and costs.

Terms To Know
A listing of the keywords emphasized in the chapter, including a page number reference for each keyword.

Test Your Knowledge
Ten true/false and ten multiple-choice questions, including a page number reference for each question.

Exercises
Trends, @Issue, Hands On, and Team Approach exercises require students to use the Internet and the web to research issues or solve problems.

TERMS TO KNOW

After reading this chapter, you should know each of these Key Terms.

accelerator (63)
add-on (63)
adware (83)
aggregator (64)
Atom (64)
AutoComplete (68)
big data (81)
bookmark (56)
browser sniffing (37)
client (37)
client/server computing (37)
cookie (82)
country-code top-level domain (ccTLD) (39)
display area (42)
domain name (38)
Domain Name System (DNS) (39)
dynamic IP address (38)
extension (63)
favorite (56)
feed reader (64)
firewall (77)
hacker (76)
History list (60)
home page (34)
information privacy (81)
Internet Corporation for Assigned Names and Numbers (ICANN) (39)

Internet filter (80)
IP address (Internet Protocol address) (38)
malicious website (81)
name server (38)
offline (71)
personally identifiable information (PII) (82)
portal (35)
privacy statement (82)
rich media ad (46)
RSS (Really Simple Syndication) (64)
secure connection (79)
Secure Sockets Layer (SSL) (79)
server (37)
spyware (83)
static IP address (38)
tabbed browsing (50)
top-level domain (TLD) (39)
Tracking Protection List (TPL) (79)
Uniform Resource Locator (URL) (39)
virus (77)
web address (39)
web bug (83)
web content filter (80)
web feed (64)
web portal (35)
zooming (80)

TEST YOUR KNOWLEDGE

Complete the Test Your Knowledge exercises to solidify what you have learned in the chapter.

True or False
Mark T for True and F for False. (Answers are found on page numbers in parentheses.)

1. A client is an application that runs on a computer, such as a personal computer, and requests resources or services from another computer. (37)
2. Advertisements with attention-grabbing sounds and animation are called adware. (46)
3. The protocol (http://) and the domain name in a URL are case sensitive. (40)
4. An ad...
   select...
5. A coo...
   such a...
6. A com...
   infect...
7. A pri...
   webp...

TRENDS

Investigate current Internet developments with the Trends exercises.

Write a brief essay about each of the following trends, using the web as your research tool. For each trend, identify at least one webpage URL used as a research source. Be prepared to discuss your findings in class.

1 | Responsive Web Design

Responsive web design (RWD) strategies optimize websites to be viewable on multiple device types and screen sizes. Research guidelines and techniques for responsive web design. Submit your findings in the format requested by your instructor.

2 | HTML

Research the updates to each version of HTML, starting with the original version and including major releases up to HTML 4.01. List two characteristics that differentiate each version, and find out (or guess) why the changes were made. List three expected changes for HTML 5. Submit your findings in the format requested by your instructor.

@ISSUE

Challenge your perspective of Internet technology with the @Issue exercises.

Write a brief essay in response to the following issues, using the web as your research tool. For each issue, identify at least one webpage URL used as a research source. Be prepared to discuss your findings in class.

1 | Impact on Lifestyle

With developments in technology such as smartphones, people are able to stay connected constantly. Whether by phone calls, text messages, alerts from websites about new content, or social networking websites such as Facebook and Twitter, technology provides many distractions. How do these developments enhance daily life? How have they changed daily life from 5 or 10 years ago? What is a negative impact? Discuss the impact of technology on your lifestyle and that of those around you.

2 | Social Networking

Summarize the use of social networking tools among your peers.

1. Survey five students who have accounts with at least one social networking website (Facebook, Twitter, LinkedIn, or other websites).
2. Ask them to list the social networking websites they use.
3. Ask them the frequency with which they interact with each website: daily, weekly, or multiple times per day.

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1 Into the Internet
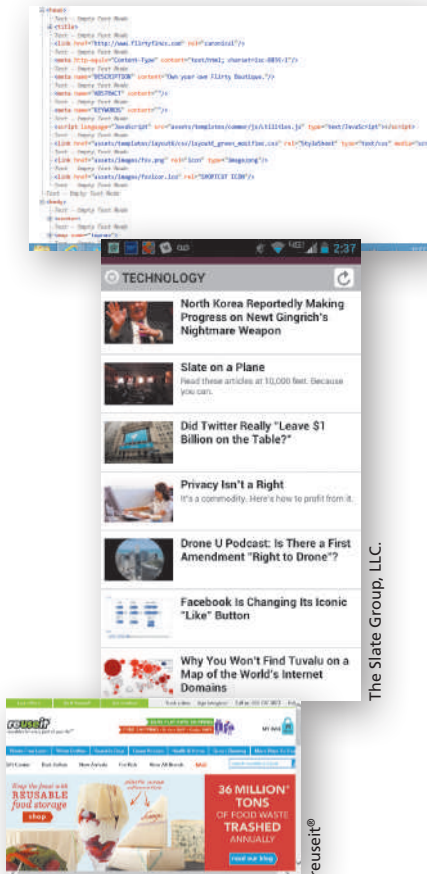
FlirtyFinds

The Slate Group, LLC.

reuseit®

Introduction

Internet. Email. Web. Wi-Fi. RSS. VoIP. GPS. Hotspots. Blog. Cloud computing. Social network. You most likely have heard and used many of these terms and technologies. New developments constantly are emerging that affect the way people communicate and collaborate with others, access information, and purchase products and services.

In this chapter, you will learn the meaning of these and many other Internet-related terms. You will discover some of the many ways people and businesses use the Internet. You also will review the history of the Internet and learn about the companies, technologies, and organizations that control the Internet. Finally, you will learn how individuals and businesses connect to the Internet.

Objectives

After completing this chapter, you will be able to:

1. Define the Internet

2. Describe how individuals, businesses, educational institutions, and organizations use the Internet

3. Discuss the developments of the Internet and the World Wide Web

4. Explain how individuals and businesses connect to the Internet

Defining the Internet

The **Internet** is a global network of computers and mobile devices that allows individuals and businesses around the world to share information and other resources and conduct business transactions. More specifically, the Internet is an interconnected network of networks, where each **host** — a computer directly connected to the Internet — has a number of other computers and devices connected to it (Figure 1-1). When a user connects to the Internet to access or share information and services, he or she is **online**.

Figure 1-1   The Internet is the largest computer network, connecting millions of computers and devices around the world.

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All computers and mobile devices, including smartphones, tablets, home and business personal computers, and supercomputers used by government and researchers, share a common method of communicating known as a protocol. A **protocol** is a standard or set of rules that computer network devices follow when transmitting and receiving data. Every computer and device connected to the Internet uses **Transmission Control Protocol/ Internet Protocol (TCP/IP)**. TCP/IP makes it possible for data to be transmitted to any Internet-connected computer or device, regardless of operating system or device type. You will learn more about TCP/IP and other Internet technologies in later chapters.

Internet communications travel across high-speed networks that connect networks around the world using fiber-optic cables, satellites, and other technologies. Communication carriers operate these high-speed networks, which provide the Internet framework.

Q&A

Who owns the Internet?

No single organization owns or controls the Internet. Several groups, such as the Internet Corporation for Assigned Names and Numbers (ICANN), the Internet Assigned Numbers Authority (IANA), and the Internet Society (ISOC), oversee and standardize the development of Internet technologies and manage some Internet processes. To learn more about each of these organizations, use a search engine to search for ICANN, IANA, or ISOC.

Using the Internet

The Internet and the web significantly have influenced the way the world communicates, educates, entertains, and conducts business. People use the Internet to search for information, conduct academic or scientific research, conduct business, communicate, share information or media, check news or weather, keep up with sports statistics, participate in online training, shop, play games, and download books, music, or videos (Figure 1-2).

Figure 1-2   People around the world use the Internet in daily activities, such as accessing information, sending and receiving email messages, and conversing with others from their computers and mobile devices.

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Who Uses the Internet?

People in all occupations and stages of life use the Internet: students and teachers, businesspeople and professionals, homemakers, children, and retirees. Individuals can use the Internet to search for information on almost any topic — entertainment, sports, politics, science, art, history, and so forth. Medical professionals use the Internet to research new drugs and current treatments, as well as to communicate with patients and to transfer records electronically to other physicians. Families synchronize electronic calendars, send text messages, find recipes, and schedule appointments. Politicians, celebrities, and other public figures use social media and webpages to share news, events, and other information with a community of followers. Consumers shop online, pay bills, make bank deposits and transfers, and complete and submit their taxes online. Businesspeople and professionals use the Internet to communicate with clients and colleagues whether at home or on the road using email, text, chat, social networking, or video conferencing; work on office computers from their laptops or mobile devices while traveling or telecommuting; view up-to-the-minute business news; and check stock prices.

FACTS @HAND

As part of research to mark the 25th anniversary of the World Wide Web, in 2014 the Pew Research published the following statistics: Nearly all Americans who meet one or more of the following criteria have access to the Internet: those who live in households earning $75,000 or more, young adults ages 18–29, and those with college degrees.

Q&A

Is the Internet's societal influence all good?
Being constantly connected has its price. In the past, employees' workdays were finished when they physically left the office, but now they can be expected to keep on top of work-related communication during what used to be personal, family, or leisure time. The compulsion to constantly check social media, sports scores, or text messages can have a negative effect on human relationships. To learn more, use a search engine to search for *Internet's negative effect*.

People also use the Internet to publish **blogs**. Blogs can cover any topic, such as humor or news. Many corporations and organizations use blogs to share news with interested parties. Individuals or groups of individuals create general interest blogs to share humorous stories or pictures, or write about current events. Millions of people go online to share ideas and information by hosting and participating in blogs — a process called **blogging**. Many blogs enable and encourage users to add comments to posts. **Video sharing** websites, sometimes called **video blogging** websites, such as YouTube and Vimeo, allow users to share and comment on personal and professional videos. **Microblogging** is sending brief text messages to subscribers, such as by using Twitter or other services to share status updates, links to articles, photos, and more.

New uses of the Internet continually are evolving, providing new and improved technologies for individuals and businesses.

Internet Activities

The Internet supports a wide range of activities, including the following:

- Browsing and searching for information
- Communicating with others through email, text or video chat, social networking, instant messaging, mailing lists, blogs and microblogs, and other media
- Downloading and uploading files
- Accessing remote computers or servers
- Conducting business activities
- Online shopping and bill payment

The following sections define and describe each of these activities:

THE WORLD WIDE WEB   The **World Wide Web**, commonly called the **web**, is a subset of the Internet. The web includes a vast collection of documents called **webpages**, which can include text, pictures, sound, animation, or video. A **website** is a collection of related webpages. Website examples (Figure 1-3) include college and university websites; corporate websites; websites for companies that sell products or services, such as Thirty-One; websites for nonprofit organizations, such as the Red Cross; and personal websites such as blogs.

retail website

nonprofit website

Figure 1-3   Websites include college and university, corporate, retail, nonprofit, and personal sites.

A **markup language** is a coding system that uses tags to provide instructions about the appearance, structure, and formatting of a document. Webpages use markup languages to define the layout and/or content of the pages. Web designers use **Hypertext Markup Language (HTML)** codes to define the layout and structure of a webpage. The HTML markup language uses predefined codes called **HTML tags** to define the format and organization of webpage elements (Figure 1-4). For example, the <html> ….</html> tag pair indicates the beginning and the end of a webpage, respectively. The …. HTML tag pair indicates the text between the tags is set in bold.

website in browser

HTML markup for website
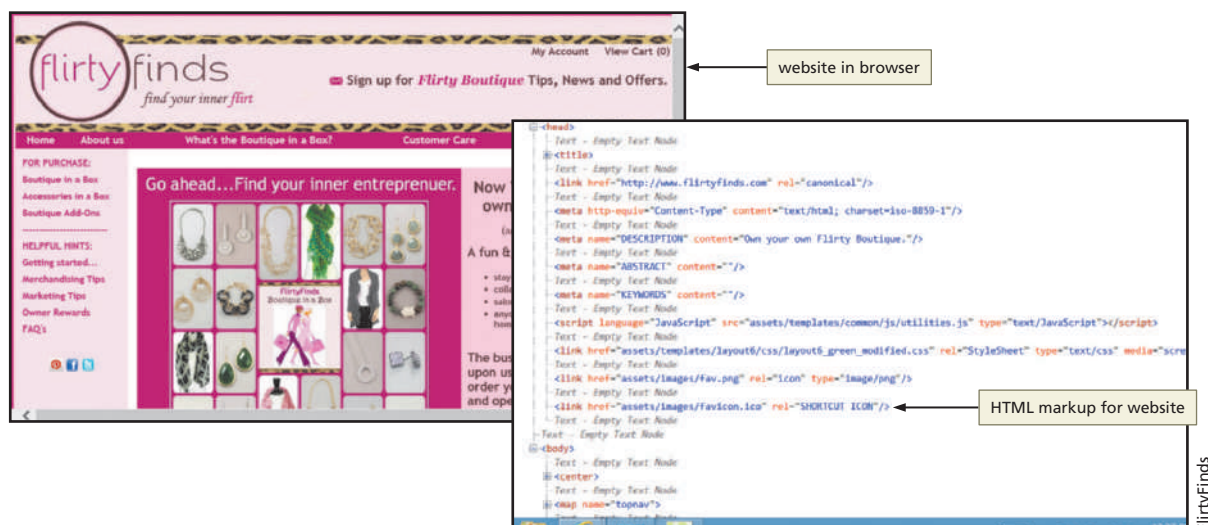
Figure 1-4   HTML tags define webpage elements.

Although some people use the terms *Internet* and *web* interchangeably, the Internet and the web are not one and the same. The Internet is a worldwide public network that links private networks. The Internet gives users access to a variety of resources for communication, research, file sharing, and commerce. The web, a subset of the Internet, is just one of those resources.
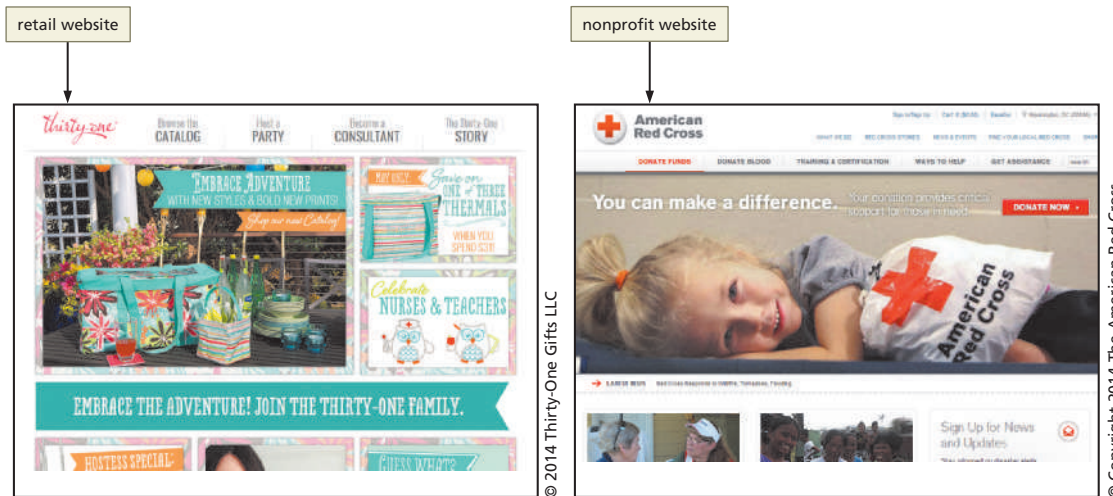
When a webpage downloads into a browser, the browser reads and interprets the HTML tags to display the page with organized and formatted text, images, and links. **Cascading style sheets (CSS)** are documents that specify design aspects of a webpage, such as fonts and colors. Other markup languages include XML, XHTML, and WML (Figure 1-5).

Markup Languages

Language	Description
Extensible Markup Language (XML)	Uses both predefined and customized tags to facilitate the consistent sharing of information, especially within large groups. Whereas HTML defines the appearance and organization of webpage content, XML defines the content itself. For example, using XML, a programmer can define the custom tag <serialnum> to indicate that the information following the tag is a product serial number.
Extensible Hypertext Markup Language (XHTML)	A family of XML markup languages that mirrors or extends versions of HTML. Webpages created using XHTML look better than HTML-coded webpages when viewed on smartphones or other handheld computers, or by users of assistive technologies.
Wireless Markup Language (WML)	An XML-based markup language used to design webpages specifically for mobile browsers. WML uses Wireless Application Protocol (WAP) to allow Internet access by wireless devices.

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Figure 1-5 Additional webpage markup languages.

You can create a webpage using a simple text editor program, such as Notepad, or using WYSIWYG (What You See Is What You Get) **web authoring software**, such as Adobe Dreamweaver or an online content management system, such as WordPress. Web authoring software automatically generates the appropriate HTML and CSS tags as the user creates individual webpages that become part of a websites. To share a webpage or website with others, you must upload, or **publish**, it to a web server so that other users may access it. A **web server** is a computer that stores webpages. A content management system, like web authoring software, also provides tools to generate webpages without requiring the web designer to know how to code using HTML and CSS. In addition, a content management system can provide access to a web server, and provide tools to market a website and integrate website content with social networking platforms.

Q&A
What is the current HTML standard?
The most current HTML standard is HTML 4.01, which specifies, among other things, that HTML tags must be in lowercase, surrounded by brackets, and inserted in pairs. HTML 5 is in draft format and is on schedule for stable recommendation by the end of 2014.

Q&A
What is the role of the W3C?
The **World Wide Web Consortium (W3C)** sets standards for the web. The W3C, through an HTML working group, continues to pursue advancements in the HTML standard. To learn more, use a search engine to search for *W3C*.

You can access and view webpages, such as Slate, using a software program called a **web browser**, or **browser** (Figure 1-6). Popular browsers for laptops and PCs include Google Chrome™, Mozilla Firefox®, Microsoft® Internet Explorer®, and Apple® Safari®. Mobile web browsers often are proprietary to the device on which they reside.
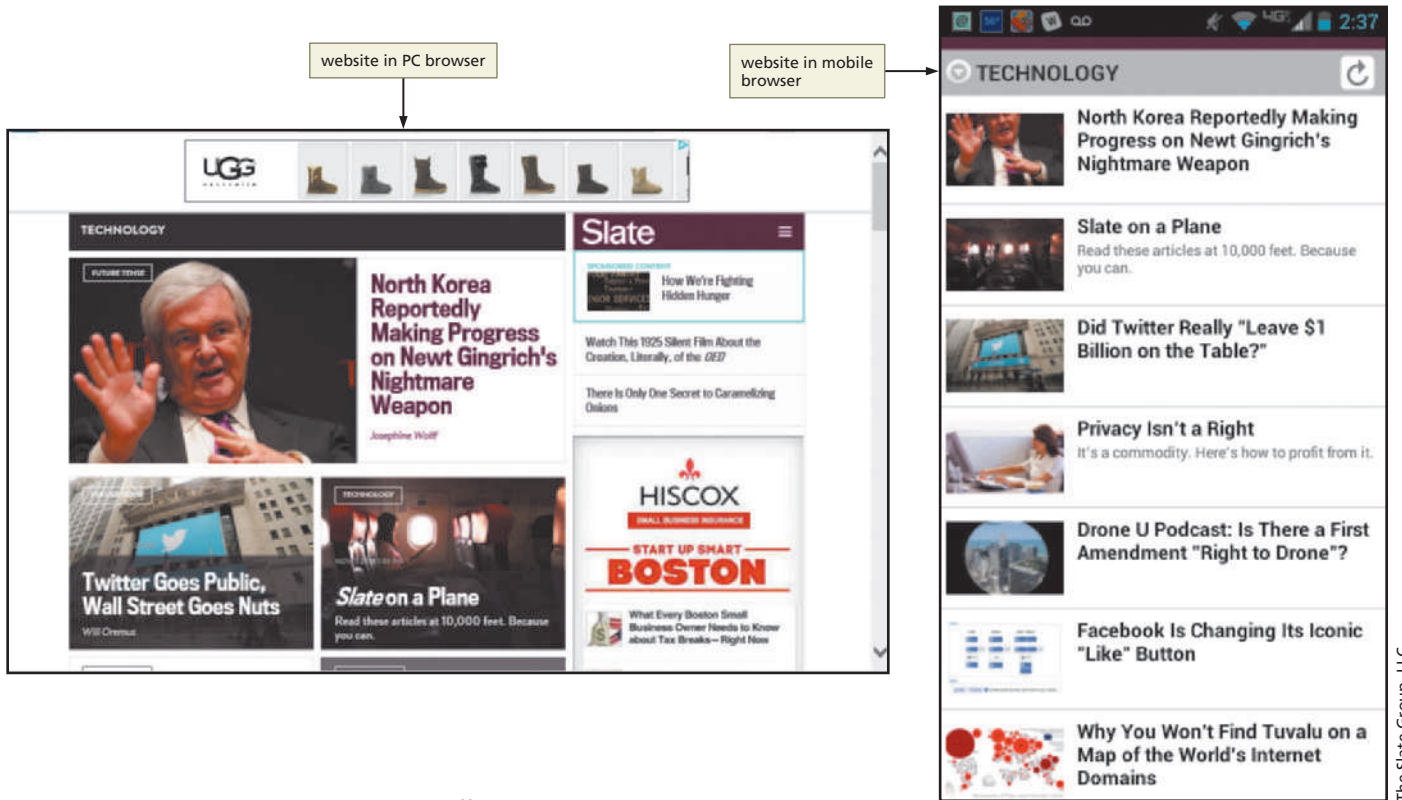
Figure 1-6 The same webpage viewed in different browsers.

Q&A

What is RWD?

Responsive web design (RWD) is a web design strategy. The goal of RWD is to create websites that adjust layout and, in some cases, content, to the device and screen displaying the webpages.

Webpages connect to other webpages using hyperlinks. A **hyperlink**, or **link**, is text or a picture on a webpage, such as Gourmet.com, that you tap or click to view a different location on the same webpage, another webpage at the same website (Figure 1-7), a webpage at a different website, or to an email address, or PDF document.

Figure 1-7 Webpages at the same website or across different websites are connected by links.

Exploring the web by moving from one webpage to another is sometimes called **browsing** or **surfing the web**. For example, when planning a trip, you might first visit an airline webpage and book a flight. Quite possibly, the airline webpage contains links to other travel-related websites, so you could tap or click a link on the airline webpage to visit a hotel webpage and book your accommodations. Finally, you tap or click a link on the hotel webpage to view a webpage containing yet more links to restaurants and entertainment venues near the hotel. When reading an article on a webpage, you often can find background information or articles on related topics by tapping or clicking links within the text of the article, or in a sidebar or list beside or below the article. In Chapter 2 you will learn how to use a web browser to access webpages and how to tap or click hyperlinks to view other webpages.

Q&A　What is a scripting language?
Scripting languages are programming languages used to write short programs, called scripts, that execute in real time at the server or in the web browser when a webpage downloads. **Scripts** make webpages dynamic and interactive by adding such features as multimedia, animation, and forms or by connecting webpages to underlying databases.

Q&A　What is an app?
An **app** (short for application) is a software program. The term, app, typically refers to programs that run on mobile devices (mobile apps), or the web (web apps). Apps are an integral part of Internet technology.

Q&A　What is Web 2.0?
Web 2.0 technologies and practices are designed to make users' web experiences interactive by incorporating social media and user-driven content into web pages.

A **search tool** is a web-based resource that helps you find specific information on the web. One type of search tool is a search engine, such as Google or Bing, which you can use to search for webpages that contain specific keywords or phrases. Figure 1-8 illustrates a Google search results webpage. You will learn how to use search tools in Chapter 3.
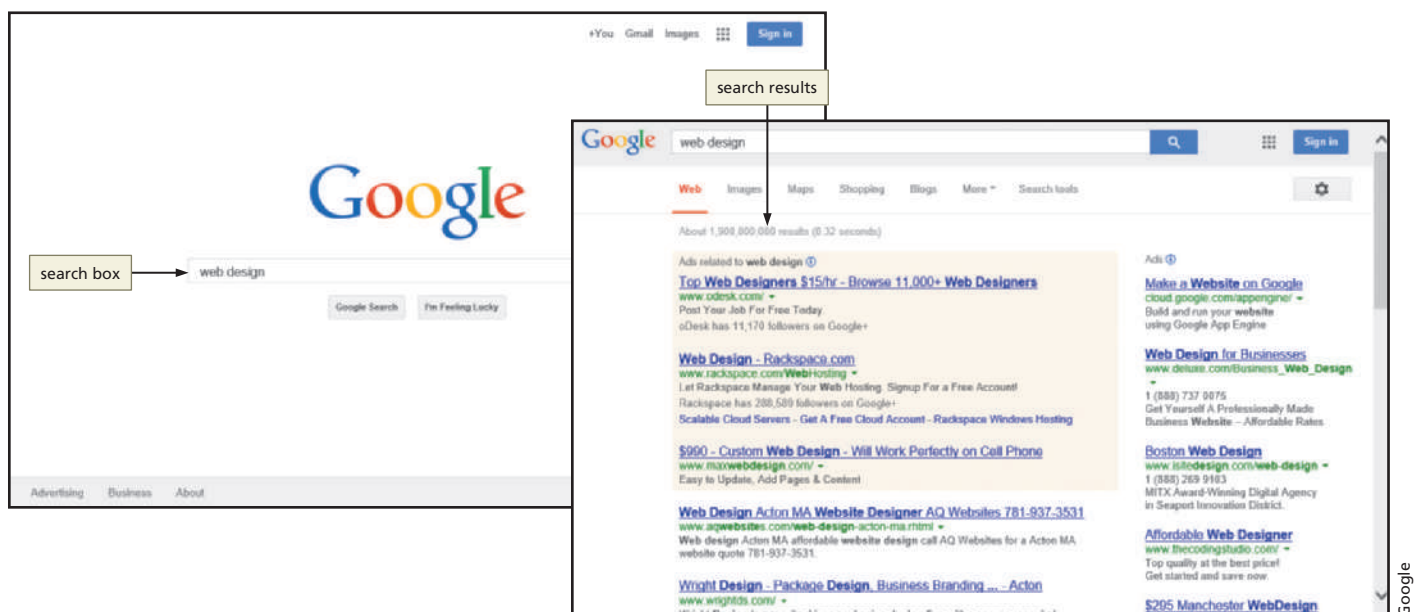

Figure 1-8　Search tools allow users to find information on the web.

EMAIL AND OTHER COMMUNICATIONS TOOLS Individuals and organizations of all types use websites to communicate ideas and information. Web communication technologies include email, blogging, social networking, social bookmarking, chat, instant messaging, virtual meetings and collaborative workspaces, video sharing, VoIP, interactive gaming, and 3D virtual worlds. **Email** allows Internet users to send and receive messages and files over a local computer network or the Internet. Sending an email message is inexpensive, fast, and useful when compared to sending print mail or making a phone call. You can send email when it is convenient for you, and the recipient can read it and respond when it is convenient for him or her. You use an **email program**, such as Microsoft Outlook® or web-based email, such as Gmail™ to create, send, receive, and manage email.

In addition to email, the Internet offers several other ways for individuals and groups to communicate (Figure 1-9), including texting, instant messaging (IM), mobile instant messaging (MIM), Internet Relay Chat (IRC), mailing lists, wikis, collaborative workspaces, massively multiplayer online games (MMOGs), social networking, and social bookmarking. These communications tools allow Internet users to connect with others online to converse about a topic or an activity of interest, share information, conduct business, and play games. You will learn more about email and other online communications tools, including various online tools categorized as social media, in Chapter 4.

Internet Communication Methods

Online Communication	Description	Must users be online at the same time?
Email	Users send and receive text with or without attached files	No
Instant messaging (IM) and mobile instant messaging (MIM)	Two or more users take turns exchanging brief messages	Yes
Internet Relay Chat (IRC) or chatting	Users type text into a chat window; all users can see what other users type	Yes
Massive multiplayer online games (MMOGs)	Many users play online games simultaneously, and can compete and interact with people all over the world	Yes
Newsgroups and mailing lists	Users subscribe to a newsgroup discussion or mailing list on a certain topic and receive messages about that topic	No
Social bookmarking	Users share web links to articles, videos, photographs, and webpages, and can use tags to organize their bookmarks	No
Social networking	Users share status updates, microblogs, photos and video, links, and personal commentary using a variety of online tools	No

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Figure 1-9 The Internet offers many ways for people to communicate.

FACTS @HAND

Perhaps the first person to send an email message who was not a computer scientist was Queen Elizabeth II, who sent an email message on March 26, 1976 from an Army base.