SHELLY CASHMAN SERIES®

HTML, XHTML, AND CSS

Sixth Edition

INTRODUCTORY

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HTML, XHMTL, and CSS

Introductory

Sixth Edition

COURSE TECHNOLOGY
CENGAGE Learning™

HTML, XHTML, and CSS
Introductory, Sixth Edition
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HTML, XHMTL, and CSS

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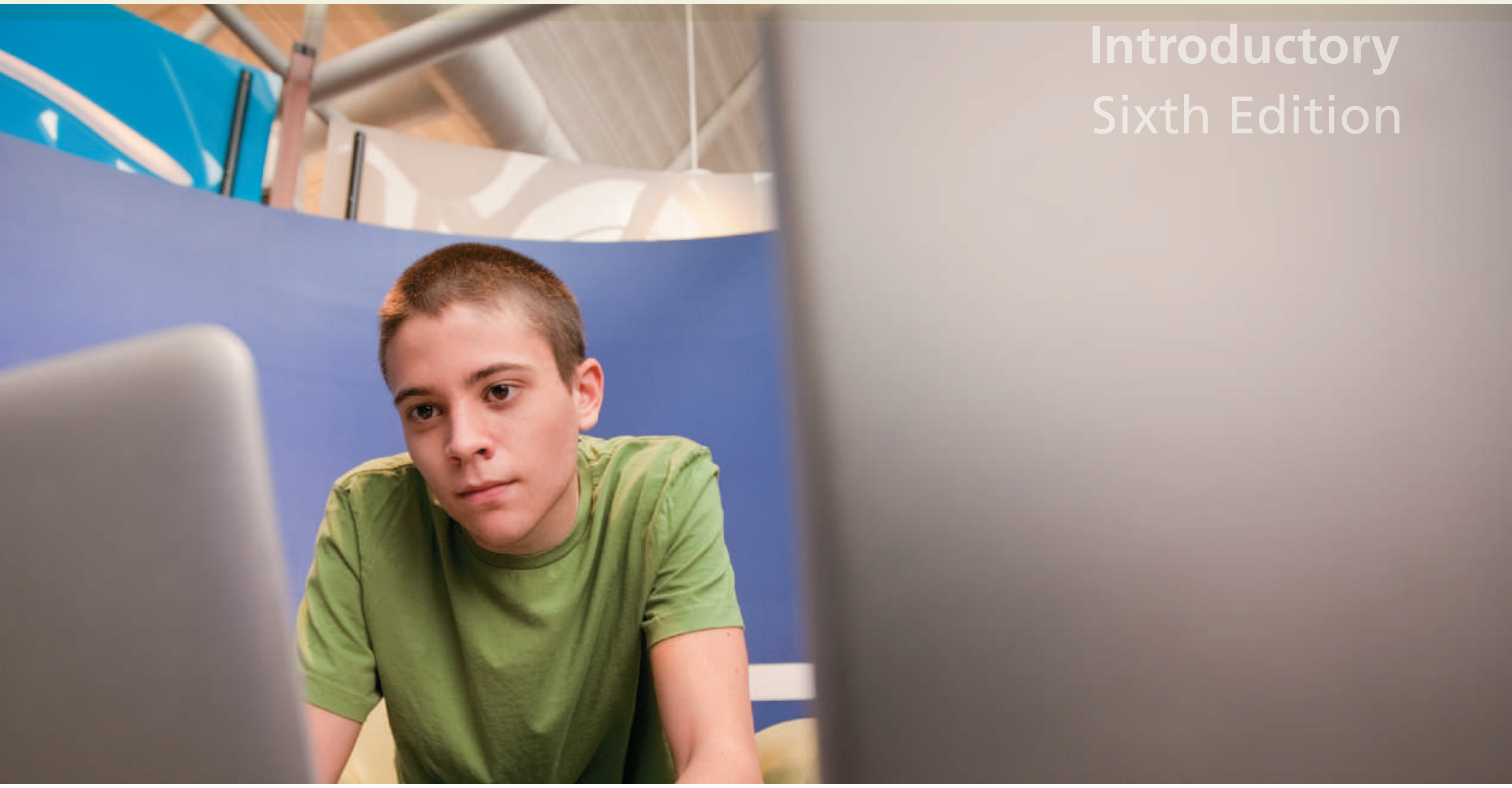

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COURSE TECHNOLOGY
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Contents

CHAPTER THREE
Creating Web Pages with Links, Images, and Embedded Style Sheets

CHAPTER FOUR
Creating Tables in a Web Site Using an External Style Sheet

SPECIAL FEATURE 1
Attracting Visitors to Your Web Site

Appendices

APPENDIX A
HTML Quick Reference

APPENDIX B
Browser-Safe Color Palette

APPENDIX C
Accessibility Standards and the Web

APPENDIX D
CSS Properties and Values

APPENDIX E
Publishing Web Pages to a Web Server

Preface

The Shelly Cashman Series® offers the finest textbooks in computer education. We are proud of the fact that our previous HTML books have been so well received. With each new edition of our HTML books, we have made significant improvements based on the comments made by instructors and students. The *HTML, XHTML, and CSS, Sixth Edition* books continue with the innovation, quality, and reliability you have come to expect from the Shelly Cashman Series.

In 2006 and 2007, the Shelly Cashman Series development team carefully reviewed our pedagogy and analyzed its effectiveness in teaching today's student. An extensive customer survey produced results confirming what the series is best known for: its step-by-step, screen-by-screen instructions, its project-oriented approach, and the quality of its content.

We learned, though, that students entering computer courses today are different than students taking these classes just a few years ago. Students today read less, but need to retain more. They need not only to be able to perform skills, but to retain those skills and know how to apply them to different settings. Today's students need to be continually engaged and challenged to retain what they're learning.

As a result, we've renewed our commitment to focusing on the user and how they learn best. This commitment is reflected in every change we've made to our HTML book.

Objectives of This Textbook

HTML, XHTML, and CSS: Introductory, Sixth Edition is intended for use in combination with other books in an introductory course on creating Web pages. This book also is suitable for use as a stand alone in a one-credit hour course or a continuing education course. No experience with Web page development or computer programming is required. Specific objectives of this book are as follows:

- To teach the fundamentals of developing Web pages using a comprehensive Web development life cycle
- To acquaint students with the HTML and CSS languages and creating Web pages suitable for course work, professional purposes, and personal use
- To expose students to common Web page formats and functions
- To promote curiosity and independent exploration of World Wide Web resources
- To develop an exercise-oriented approach that allows students to learn by example
- To encourage independent study and help those who are learning how to create Web pages in a distance education environment

Distinguishing Features

A Proven Pedagogy with an Emphasis on Project Planning Each chapter presents a practical problem to be solved, within a project planning framework. The project orientation is strengthened by the use of Plan Ahead boxes that encourage critical thinking about how to proceed at various points in the project. Step-by-step instructions with supporting screens guide students through the steps. Instructional steps are supported by the Q&A, Experimental Step, and BTW features.

A Visually Engaging Book that Maintains Student Interest The step-by-step tasks, with supporting figures, provide a rich visual experience for the student. Call-outs on the screens that present both explanatory and navigational information provide students with information they need when they need to know it.

Supporting Reference Materials (Appendices) The appendices provide additional information about HTML, XHTML, and CSS topics, with appendices such as the HTML Quick Reference, Browser-Safe Color Palette, and Publishing Web Pages to a Web Server.

Integration of the World Wide Web The World Wide Web is integrated into the HTML, XHTML, and CSS learning experience by (1) BTW annotations; and (2) the Learn It Online section for each chapter.

End-of-Chapter Student Activities Extensive end-of-chapter activities provide a variety of reinforcement opportunities for students where they can apply and expand their skills through individual and group work.

Organization of This Textbook

HTML, XHTML, and CSS: Introductory, Sixth Edition consists of four chapters on HTML, XHTML, and CSS, and five appendices. The Chapters and Appendices are organized as follows:

Chapter 1 – Introduction to HTML This introductory chapter provides students with an overview of the Internet, World Wide Web, Web pages, HTML, and Web development. Topics include the types and purposes of Web sites, Web browsers, HTML standards, and Document Object Model (DOM) and Extensible Hypertext Markup Language (XHTML) and their relationship to HTML. Additionally, Web editors, the five phases of the Web development life cycle, and the importance of validating and testing Web pages for usability are defined.

Chapter 2 – Creating and Editing a Web Page Using Inline Styles In Chapter 2, students are introduced to basic HTML tags and the various parts of a Web page. Topics include starting and quitting Notepad++ and a browser, entering headings and text into an HTML file, creating a bulleted list with HTML using Cascading Style Sheets and inline styles, adding an image and a horizontal rule, saving the HTML file and viewing it in the browser, validating the HTML code, viewing the HTML source code for a Web page, printing the HTML file and the Web page, and Web page design.

Chapter 3 – Creating Web pages with Links, Images, and Embedded Style Sheets In Chapter 3, students are introduced to linking terms and definitions. Topics include adding an e-mail link, linking to another page on the same Web site, linking to another Web site, setting link targets within a page, linking to targets, using absolute and relative paths, using different types of image files, specifying alternative text for images, defining image size, wrapping text around an image, inserting images onto Web pages, and using embedded style sheets.

Chapter 4 – Creating Tables in a Web Site Using an External Style Sheet In Chapter 4, students learn how to create tables using HTML tags. First, students assess table needs and then plan the table. Topics include table definitions and terms, table uses, creating borderless tables; inserting images into tables; vertical and horizontal alignment within a table, adding color to a cell, adding links to another page, adding an e-mail link, using the rowspan and colspan attributes, adding captions, spacing within and between cells, and creating and using an external style sheet.

Special Feature 1 – Attracting Visitors to Your Web Site In this feature, students learn how to advertise their Web pages. Topics include using meta tags and keywords, submitting Web pages to a search engine, publicizing Web pages, and finding Web site hosting sites.

Appendix A – HTML Quick Reference Appendix A includes an HTML quick reference that contains the most frequently used tags and their associated attributes.

Appendix B – Browser-Safe Color Palette Appendix B summarizes the 216 browser-safe colors that appear equally well on different monitors, operating systems, and browsers.

Appendix C – Accessibility Standards for the Web Appendix C provides an overview of Web accessibility issues and the Section 508 Web accessibility guidelines used by developers to create accessible Web sites.

Appendix D – CSS Properties and Values Appendix D provides a listing of Cascading Style Sheet (CSS) properties and values together with a description of use.

Appendix E – Publishing Your Web Site Appendix E provides a quick overview of how to publish Web pages to a Web host and also discusses how to choose a Web host and how to upload your Web files via FTP.

End-of-Chapter Student Activities

A notable strength of the Shelly Cashman Series HTML, XHTML, and CSS books is the extensive student activities at the end of each chapter. Well-structured student activities can make the difference between students merely participating in a class and students retaining the information they learn. The activities in the Shelly Cashman Series books include the following.

CHAPTER SUMMARY A concluding paragraph, followed by a listing of the tasks completed within a chapter together with the pages on which the step-by-step, screen-by-screen explanations appear.

LEARN IT ONLINE Every chapter features a Learn It Online section that is comprised of six exercises. These exercises include True/False, Multiple Choice, Short Answer, Flash Cards, Practice Test, and Learning Games.

APPLY YOUR KNOWLEDGE This exercise usually requires students to open and manipulate a file from the Data Files that parallels the activities learned in the chapter. To obtain a copy of the Data Files for Students, follow the instructions on the inside back cover of this text.

EXTEND YOUR KNOWLEDGE This exercise allows students to extend and expand on the skills learned within the chapter.

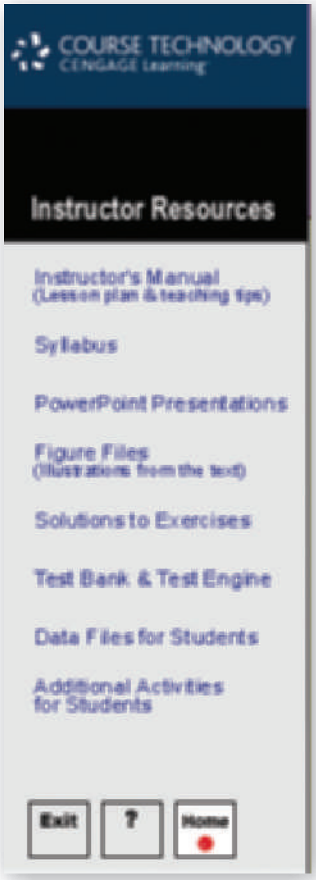
MAKE IT RIGHT This exercise requires students to analyze a document, identify errors and issues, and correct those errors and issues using skills learned in the chapter.

IN THE LAB Three in-depth assignments per chapter require students to utilize the chapter concepts and techniques to solve problems on a computer.

CASES AND PLACES Five unique real-world case-study situations, including Make It Personal, an open-ended project that relates to student's personal lives, and one small-group activity.

Instructor Resources CD-ROM

The Instructor Resources include both teaching and testing aids.



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 Easily customizable sample syllabi that cover policies, assignments, exams, and other course information.

FIGURE FILES Illustrations for every figure in the textbook in electronic form.

POWERPOINT PRESENTATIONS A multimedia lecture presentation system that provides slides for each chapter. Presentations are based on chapter objectives.

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

TEST BANK & TEST ENGINE Test Banks include 112 questions for every chapter, featuring objective-based and critical thinking question types, and including page number references. Also included is the test engine, ExamView, the ultimate tool for your objective-based testing needs.

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.

Content for Online Learning

Course Technology has partnered with the leading distance learning solution providers and class-management platforms today. To access this material, Instructors will visit our password-protected instructor resources available at www.cengage.com/coursetechnology. Instructor resources include the following: additional case projects, sample syllabi, PowerPoint presentations per chapter, and more. For additional information or for an instructor username and password, please contact your sales representative. For students to access this material, they must have purchased a WebTutor PIN-code specific to this title and your campus platform. The resources for students may include (based on instructor preferences), but not limited to: topic review, review questions and practice tests.

CourseNotes

Course Technology's CourseNotes are six-panel quick reference cards that reinforce the most important concepts and features of a software application in a visual and user-friendly format. CourseNotes serve as a great reference tool during and after the student completes the course. CourseNotes are available for software applications such as Microsoft Office 2007, Word 2007, Excel 2007, Access 2007, PowerPoint 2007, and Windows 7. There are also topic-based CourseNotes available for Best Practices in Social Networking, Hot Topics in Technology, and Web 2.0. Visit www.cengage.com/ct/coursenotes to learn more!

Guided Tours

Add excitement and interactivity to your classroom with "*A Guided Tour*" product line. Play one of the brief mini-movies to spice up your lecture and spark classroom discussion. Or, assign a movie for homework and ask students to complete the correlated assignment that accompanies each topic. "*A Guided Tour*" product line takes the prep-work out of providing your students with information on new technologies and software applications and helps keep students engaged with content relevant to their lives; all in under an hour!

About Our Covers

The Shelly Cashman Series is continually updating our approach and content to reflect the way today's students learn and experience new technology. This focus on student success is reflected on our covers, which feature real students from Westfield State College using the Shelly Cashman Series in their courses, and reflect the varied ages and backgrounds of the students learning with our books. When you use the Shelly Cashman Series, you can be assured that you are learning computer skills using the most effective courseware available.

Textbook Walk-Through

The Shelly Cashman Series Pedagogy: Project-Based — Step-by-Step — Variety of Assessments

Plan Ahead boxes prepare students to create successful projects by encouraging them to think strategically about what they are trying to accomplish before they begin working.

Step-by-step instructions now 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.

Plan Ahead

General Project Guidelines

When creating a Web page, the actions you perform and decisions you make will affect the appearance and characteristics of the finished page. As you create a Web page, such as the project shown in Figure 2–1 on the previous page, you should follow these general guidelines:

1. **Complete Web page planning.** Before developing a Web page, you must know the purpose of the Web site, identify the users of the site and their computing environments, and decide who owns the information on the Web page.
2. **Analyze the need for the Web page.** In the analysis phase of the Web development life cycle, you should analyze what content to include on the Web page. In this phase, you determine the tasks and the information that the users need. Refer to Table 1–4 on page HTML 15 for information on the phases of the Web development life cycle.
3. **Choose the content for the Web page.** Once you have completed the analysis, you need to determine what content to include on the Web page. Follow the *less is more* principle. The less text, the more likely the Web page will be read. Use as few words as possible to make a point.
4. **Determine the file naming convention that you will use for this Web page.** Before you start creating and saving files, you should decide on a standard way of naming your files. Should you use the .htm or .html extension? As explained later in the chapter, you use the .htm extension when the host Web server only allows short file names. You use .html when the host Web server allows long file names. What name should you give your file to indicate the file's content or purpose? For instance, naming a Web page page1.html does not describe what that Web page is; a more descriptive name is helpful in development of the Web site.
5. **Determine where to save the Web page.** You can store a Web page permanently, or **save** it, on a variety of storage media, including a hard disk, USB flash drive, CD, or DVD. Your instructor or the company for whom you are developing the Web page may have specific storage media requirements.
6. **Determine what folder structure to use on your storage device.** Once you have determined the storage media to use, you should also determine folder location, structure, and names on which to save the Web page. This should be done before you start to save any of your files.

ormat various elements of the Web page. The overall appearance of a cantly affects its ability to communicate clearly. Examples of how you ppearance, or **format**, of the Web page include adding an image, color horizontal rules.

graphical images. Eye-catching graphical images help convey the Web essage and add visual interest. Graphics can be used to show a product, benefit, or visually convey a message that is not expressed easily

to position and how to format the graphical images. The position and aphical images should grab the attention of passersby and draw them Web page.

ge for XHTML compliance. An important part of Web development is that your Web page follows XHTML standards. The World Wide Web C) has an online validator that allows you to test your Web page and ny errors.

nore specific details concerning the above guidelines are presented in the chapter. The chapter also will identify the actions performed egarding these guidelines during the creation of the Web page shown

To Save an HTML File

You have performed many steps in creating this project and do not want to risk losing the work you have done so far. Also, to view HTML in a browser, you must save the file. The following steps show how to save an HTML file.

1

- With a USB flash drive connected to one of the computer's USB ports, click File on the Notepad++ menu bar (Figure 2–15).

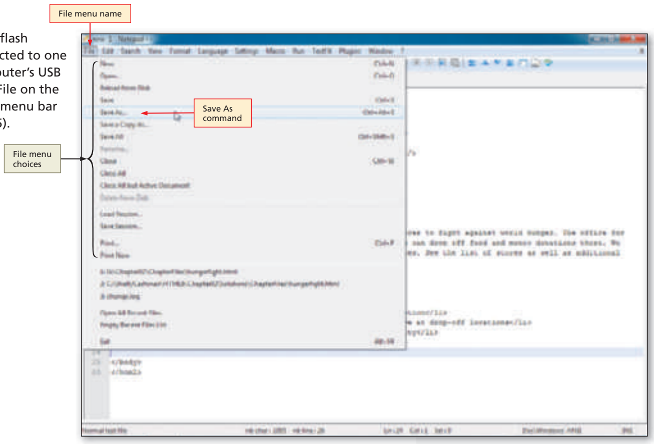


Figure 2–15

2

- Click Save As on the File menu to display the Save As dialog box (Figure 2–16).

Q&A

Do I have to save to a USB flash drive?

No. You can save to any device or folder. A folder is a specific location on a storage medium. Use the same process, but select your device or folder.

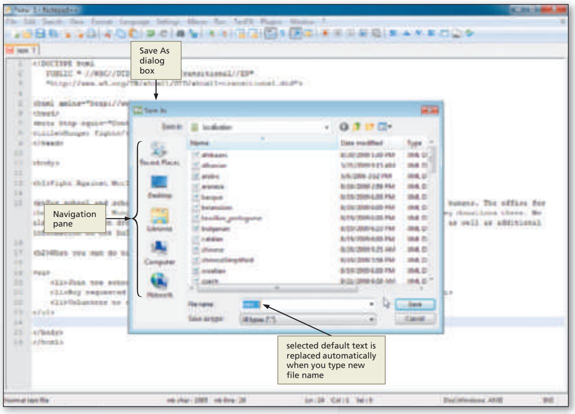

Save As dialog box
Navigation pane
selected default text is replaced automatically when you type new file name

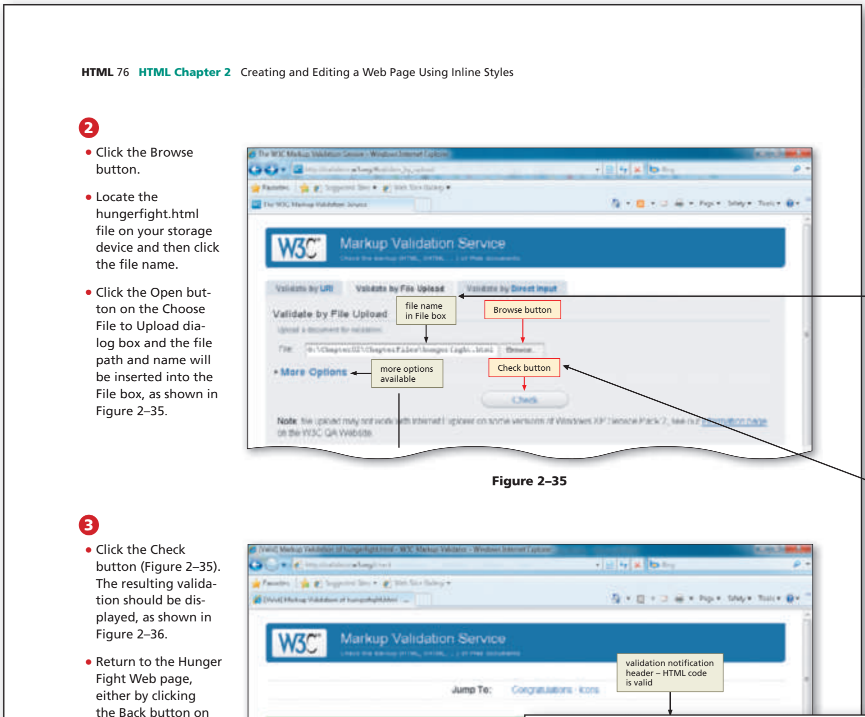
Figure 2–16

Textbook Walk-Through

BTW

Screen Shots

Callouts in screenshots give students information they need, when they need to know it. The Series has always used plenty of callouts to ensure that students don't get lost. Now, use color to distinguish the content in the callouts to make them more meaningful.



HTML 76 **HTML Chapter 2** Creating and Editing a Web Page Using Inline Styles

2

- Click the Browse button.
- Locate the hungerfight.html file on your storage device and then click the file name.
- Click the Open button on the Choose File to Upload dialog box and the file path and name will be inserted into the File box, as shown in Figure 2–35.

Figure 2–35

3

- Click the Check button (Figure 2–35). The resulting validation should be displayed, as shown in Figure 2–36.
- Return to the Hunger Fight Web page, either by clicking the Back button on your browser or by clicking the Internet Explorer button in the taskbar.

Markup Validation Service
validation notification header – HTML code is valid
Jump To:
This document was successfully
Result: Passed
HTML code passed validatio
charset identified in <meta /> tag
File
Encoding: utf-8
Doctype: XHTML 1.0 Transitional
Root Element: html
Root Namespace:
Options

Q&A How do I know if my HTML code is valid?

The notification header will be green, and in the Result area, you should see the word "Passed."

Q&A What can I do if my HTML code is not validated?

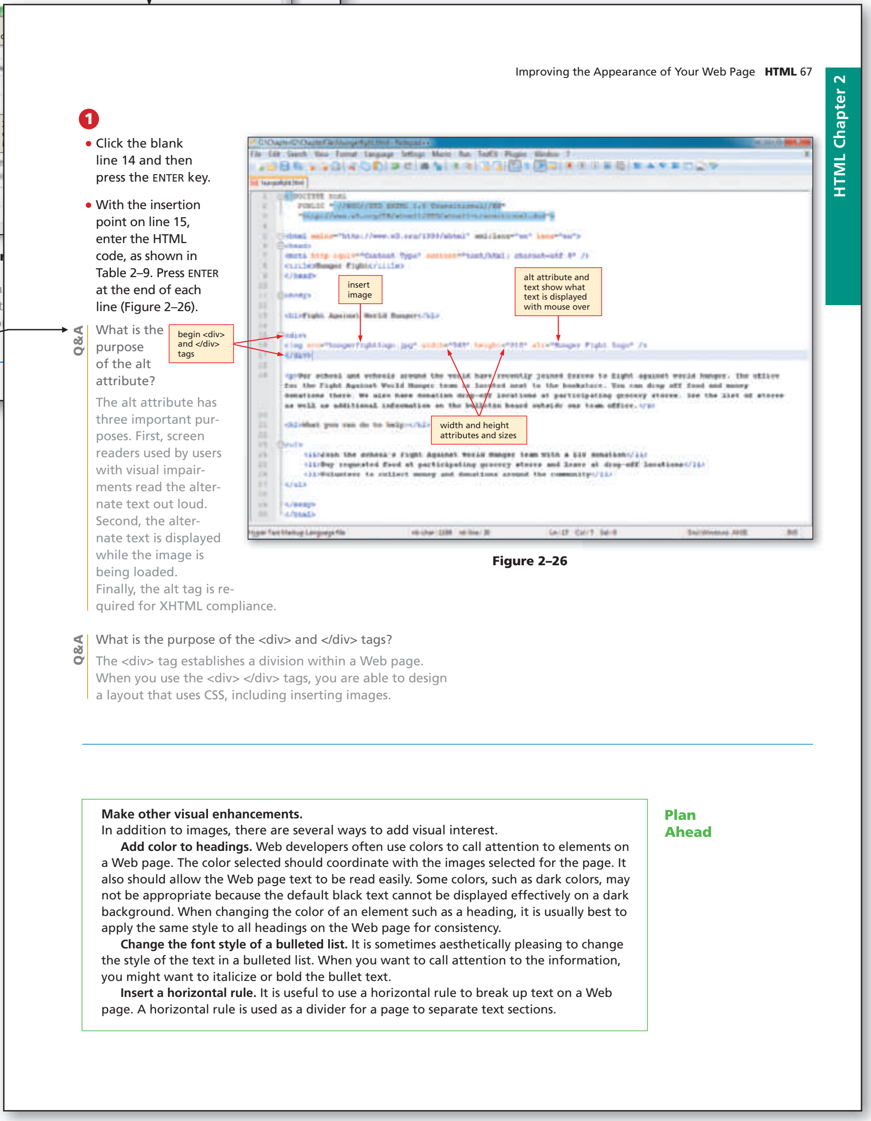
If your code has errors, edit your HTML file to correct the errors. The Ma
wrong with your code. Once you make the necessary changes and save t
the corrected HTML file, then scroll down and click the Revalidate butto

Figur

Explanatory callouts summarize what is happening on screen.

Navigational callouts in red show students where to click.

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



Improving the Appearance of Your Web Page **HTML 67**

HTML Chapter 2

1

- Click the blank line 14 and then press the ENTER key.
- With the insertion point on line 15, enter the HTML code, as shown in Table 2–9. Press ENTER at the end of line (Figure 2–26).

insert image
alt attribute and text show what text is displayed with mouse over
begin <div> and </div> tags
width and height attributes and sizes

Figure 2–26

Q&A What is the purpose of the alt attribute?

The alt attribute has three important purposes. First, screen readers used by users with visual impairments read the alternate text out loud. Second, the alternate text is displayed while the image is being loaded. Finally, the alt tag is required for XHTML compliance.

Q&A What is the purpose of the <div> and </div> tags?

The <div> tag establishes a division within a Web page. When you use the <div> </div> tags, you are able to design a layout that uses CSS, including inserting images.

Plan Ahead

Make other visual enhancements.

In addition to images, there are several ways to add visual interest.

Add color to headings. Web developers often use colors to call attention to elements on a Web page. The color selected should coordinate with the images selected for the page. It also should allow the Web page text to be read easily. Some colors, such as dark colors, may not be appropriate because the default black text cannot be displayed effectively on a dark background. When changing the color of an element such as a heading, it is usually best to apply the same style to all headings on the Web page for consistency.

Change the font style of a bulleted list. It is sometimes aesthetically pleasing to change the style of the text in a bulleted list. When you want to call attention to the information, you might want to italicize or bold the bullet text.

Insert a horizontal rule. It is useful to use a horizontal rule to break up text on a Web page. A horizontal rule is used as a divider for a page to separate text sections.

Textbook Walk-Through

HTML 60 **HTML Chapter 2** Creating and Editing a Web Page Using Inline Styles

2

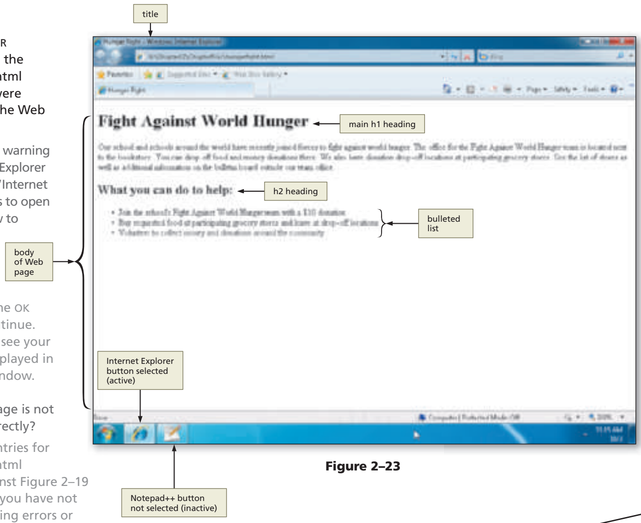
- Press the ENTER key to display the hungerfight.html page as if it were available on the Web (Figure 2–23).

Q&A What if I get a warning from Internet Explorer (IE) that says, "Internet Explorer needs to open a new window to display this webpage."?

If this happens, you should click the OK button to continue. You then will see your Web page displayed in another IE window.

Q&A What if my page is not displayed correctly?

Check your entries for hungerfight.html carefully against Figure 2–19 to make sure you have not made any typing errors or left anything out. Correct the errors, resave the file, and try again.


title
main h1 heading
h2 heading
bulleted list
body of Web page
Internet Explorer button selected (active)
Notepad++ button not selected (inactive)

Fight Against World Hunger

Our school and schools around the world have recently joined forces to fight against world hunger. The office for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional information on the bulletin board outside our team office.

What you can do to help:

- Join the school's Fight Against World Hunger team with a $10 donation
- Buy requested food at participating grocery stores and leave at drop-off locations
- Volunteer to collect money and donations around the community

Figure 2–23

Other Ways

1. In Windows Explorer, double-click HTML file name to open in default browser
2. In Windows Explorer, right-click HTML file name, click Open with, click browser name
3. Click Tools, Toolbars, Menu Bar if menu is not displayed; on Menu bar click File, Open, and browse to desired file

BTW **User Interface Design**
The user interface design is a very important aspect of a Web site. If a site is designed poorly, users may be unable to find the desired information or complete a task, which makes the Web site ineffective. There are many good Web sites available that discuss Web design principles.

Other Ways boxes that follow many of the step sequences explain the other ways to complete the task presented.

HTML 82 **HTML Chapter 2** Creating and Editing a Web Page Using Inline Styles

STUDENT ASSIGNMENTS

Apply Your Knowledge *continued*

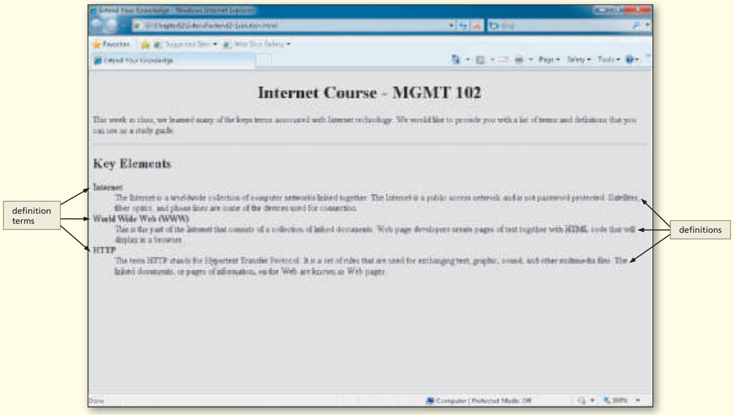
6. Save the revised HTML file in the Chapter02\Apply folder using the file name apply2-1solution.html.
7. Validate your HTML code at http://validator.w3.org/.
8. Enter g:\Chapter02\Apply\apply2-1solution.html as the URL to view the revised Web page in your browser.
9. Print the Web page.
10. Submit the revised HTML file and Web page in the format specified by your instructor.

Extend Your Knowledge

Extend the skills you learned in this chapter and experiment with new skills.

Creating a Definition List

Instructions: Start Notepad++. Open the file, extend2-1.html from the Chapter02\Extend folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files. This sample Web page contains all of the text for the Web page in bulleted list format. You will add the necessary tags to make this a definition list with terms that are bold, as shown in Figure 2–42.



Internet Course - MGMT 102

This week in class, we learned many of the key terms associated with Internet technology. We would like to provide you with a list of terms and definitions that you can use as a study guide.

Key Elements

Internet
The Internet is a worldwide collection of computer networks linked together. The Internet is a public access network and is not password protected. Satellites, fiber optics, and phone lines are some of the devices used for connection.

World Wide Web (WWW)
This is the part of the Internet that consists of a collection of linked documents. Web page developers create pages of text together with HTML code that will display in a browser.

HTTP
The term HTTP stands for Hypertext Transfer Protocol. It is a set of rules that are used for exchanging text, graphic, sound, and other multimedia files. The linked documents, or pages of information, on the Web are known as Web pages.

Figure 2–42

Perform the following tasks:

1. Using the text given in the file extend2-1.html, make changes to the HTML code to change the Web page from a bulleted list to a definition list by following the definition list code shown in Figure 2–14 on page HTML 52.

Extend Your Knowledge projects at the end of each chapter allow students to extend and expand on the skills learned within the chapter. Students use critical thinking to experiment with new skills to complete each project.

Make It Right **HTML** 83

HTML Chapter 2

STUDENT ASSIGNMENTS

2. Add the additional HTML code necessary to make the terms bold (see font-weight for style in Appendix D) and a background color of #e0e0e0 (see background-color in Appendix D).
3. Save the revised document in the Chapter02\Extend folder with the file name extend2-1solution.html, validate the Web page, and then submit it in the format specified by your instructor.

Make It Right

Analyze a document and correct all errors and/or improve the design.

Correcting the Friendly Reminder Web Page

Instructions: Start Notepad++. Open the file makeitright2-1.html from the Chapter02\MakeItRight folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files. The Web page is a modified version of what you see in Figure 2–43. Make the necessary corrections to the Web page to make it look like Figure 2–43. Format the heading to use the Heading 1 style center-aligned on the Web page (see the text-align property in Appendix D to center a heading). Add two size-10px horizontal rules, as shown in Figure 2–43. Save the file in the Chapter02\MakeItRight folder as makeitright2-1solution.html, validate the Web page, and then submit it in the format specified by your instructor.

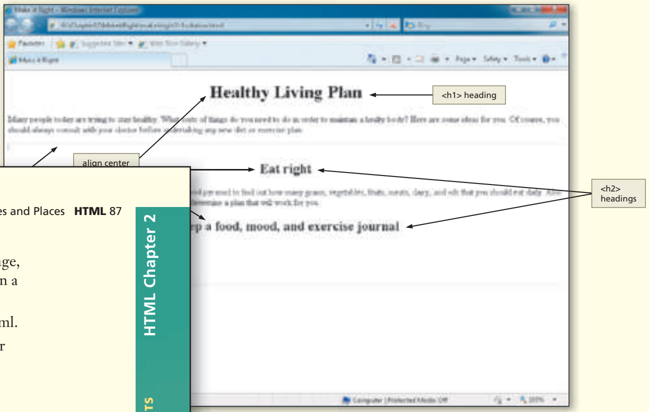


Figure 2–43

Make It Right projects call on students to analyze a file, discover errors in it, and fix them using the skills they learned in the chapter.

Cases and Places **HTML** 87

HTML Chapter 2

STUDENT ASSIGNMENTS

3. Insert the image file cloudy.jpg, stored in the Chapter02\IntheLab folder. Right-click the image, click Properties, and then click the Details tab to find out the image's dimensions, or open it in a graphics program. Note that the bullets used for the list are square in shape.
4. Save the HTML file in the Chapter02\IntheLab folder using the file name lab2-3solution.html.
5. Enter g:\Chapter02\IntheLab\lab2-3solution.html as the URL to view the Web page in your browser.
6. Print the Web page from your browser.
7. Submit the revised HTML file and Web page in the format specified by your instructor.

Cases and Places

Apply your creative thinking and problem-solving skills to design and implement a solution.

• Easier •• More Difficult

• 1: Add to the Food Drive Web Page

Mr. Wattigney, the director of the Community Food Bank, likes the Web page you created for Lab 2-1. Now that the Food Drive is over, he would like you to update the Web page with new information on upcoming community events. Before updating the page, search the Web to review the Web pages at other food banks or departments of community services for ideas on content to include or formatting to change. What do their Web sites look like? Are there changes you can make to the Lab 2-1 Web page that reflect what other places have done? Using the concepts presented in this chapter, include additional information or change the formatting to make the page more interesting and timely.

• 2: Create an Artist Web Site

You are creating a new Web site for a local photographer. The photographer has asked that you use descriptive alt attributes for images on the Web page, because many of the viewers of his Web page have very slow Internet connections and images often do not load quickly. Search the Web for information on adding useful, descriptive alt attributes for images. Also find information on using thumbnail images. Give suggestions for loading images faster. Create a document with a brief paragraph explaining the information that you found in your research. Make suggestions about how the photographer's Web site can be made more effective.

•• 3: Create a Web Page of CSS Properties

You have learned a lot about using Cascading Style Sheets (CSS) so far in the class. You still have some questions, though, about how to insert certain styles. Research information on the Web (don't forget to look at the W3.org site) to find Web sites that list CSS properties and values that complement Appendix D. In a Word document, add the URLs that you found to be very helpful. Under each URL write a brief paragraph that describes why you thought the site could be useful for new Web developers. Share your list of URLs with fellow students.

•• 4: Create a Personal Web Page

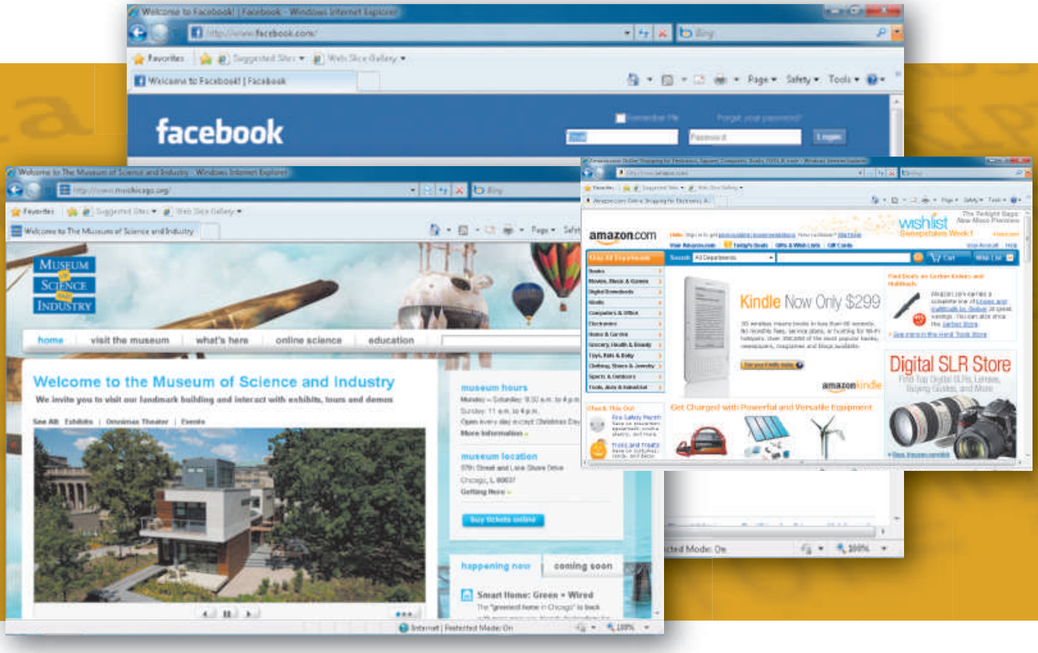
Make It Personal

Your class instructor wants to post all of the students' Web pages on the school server to show what his or her students are interested in. Create a Web page of personal information, listing items such as your school major, jobs that you have had in the past, and your hobbies and interests. To make your personal

Continued >

Found within the Cases & Places exercises, the **Make It Personal** exercises call on students to create an open-ended project that relates to their personal lives.

1 Introduction to HTML, XHTML, and CSS


facebook
Museum of Science and Industry
Welcome to the Museum of Science and Industry
amazon.com
Kindle Now Only $299
Digital SLR Store

Objectives

You will have mastered the material in this chapter when you can:

- Describe the Internet and its associated key terms
- Describe the World Wide Web and its associated key terms
- Describe the types and purposes of Web sites
- Discuss Web browsers and identify their purpose
- Define Hypertext Markup Language (HTML) and its associated standards used for Web development
- Discuss the use of Cascading Style Sheets (CSS) in Web development
- Define the Document Object Model (DOM) and describe its relationship to HTML
- Define Extensible Hypertext Markup Language (XHTML) and describe its relationship to HTML
- Identify tools used to create HTML documents
- Describe the five phases of the Web development life cycle
- Describe the different methods of Web site design and the purpose of each Web site structure
- Discuss the importance of testing throughout the Web development life cycle
- Explain the importance of being an observant Web user

1 Introduction to HTML, XHTML, and CSS

Introduction

Before diving into the details of creating Web pages with HTML, XHTML, and CSS, it is useful to look at how these technologies relate to the development of the Internet and the World Wide Web. The Internet began with the connection of computers and computer networks. This connectivity has had a huge impact on our daily lives. Today, millions of people worldwide have access to the Internet, the world's largest network. Billions of Web pages, providing information on any subject you can imagine, are currently available on the World Wide Web. People use the Internet to search for information, to communicate with others around the world, and to seek entertainment. Students register for classes, pay tuition, and find out final grades via this computer network. Stores and individuals sell their products using computer connectivity, and most industries rely on the Internet and the World Wide Web for business transactions.

Hypertext Markup Language (HTML) and more recently Extensible Hypertext Markup Language (XHTML) and Cascading Style Sheets (CSS) allow the World Wide Web to exist. In order to utilize these technologies effectively, you need to understand the main concepts behind the Internet and HTML. In this chapter, you learn some basics about the Internet, the World Wide Web, intranets, and extranets. You are introduced to Web browsers, definitions of HTML and associated key terms, the five phases of the Web development life cycle, and the tasks that are involved in each phase.

What Is the Internet?

Most people today have had exposure to the Internet at school, in their homes, at their jobs, or at their local library. The **Internet** is a worldwide collection of computers and computer networks that links billions of computers used by businesses, government, educational institutions, organizations, and individuals using modems, phone lines, television cables, satellite links, fiber-optic connections, and other communications devices and media (Figure 1–1).

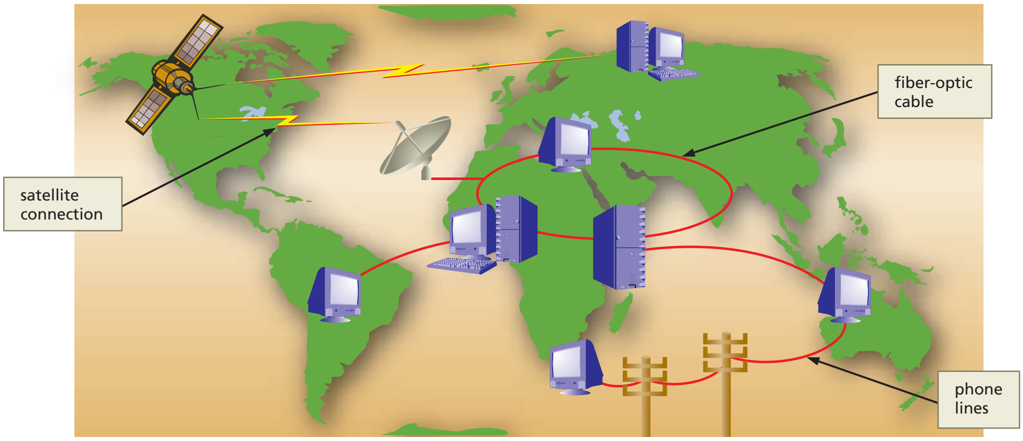


Figure 1–1 The Internet is a worldwide collection of computer networks.

A **network** is a collection of two or more computers that are connected to share resources and information. Today, high-, medium-, and low-speed data lines connect networks. These data lines allow data (including text, graphical images, and audio and video data) to move from one computer to another. The **Internet backbone** is a collection of high-speed data lines that connect major computer systems located around the world. An **Internet service provider** (**ISP**) is a company that has a permanent connection to the Internet backbone. ISPs utilize high- or medium-speed data lines to allow individuals and companies to connect to the backbone for access to the Internet. An Internet connection at home generally is a DSL or cable data line that connects to an ISP.

Millions of people in most countries around the world connect to the Internet using computers in their homes, offices, schools, and public locations such as libraries. Users with computers connected to the Internet can access a variety of services, including e-mail, social networking, online shopping, and the World Wide Web (Figure 1–2).

facebook
myspace
Selena Gomez is 'Under Pressure'
Follow Selena as she creates her debut album
Gmail

Figure 1–2 The Internet makes available a variety of services such as e-mail and the World Wide Web.

What Is the World Wide Web?

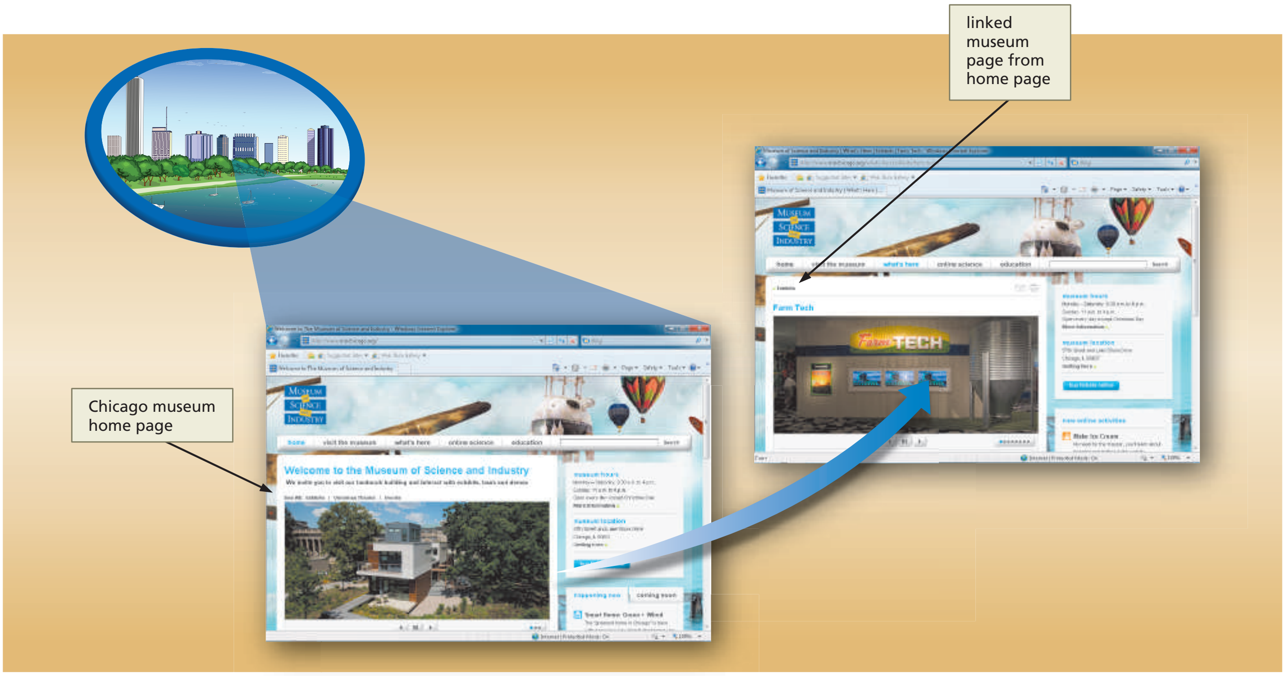
The **World Wide Web**, also called the **Web**, is the part of the Internet that supports multimedia and consists of a collection of linked documents. To support multimedia, the Web relies on the **Hypertext Transfer Protocol** (**HTTP**), which is a set of rules for exchanging text, graphic, sound, video, and other multimedia files. The linked documents, or pages of information, on the Web are known as **Web pages**. Because the Web supports text, graphics, sound, and video, a Web page can include any of these multimedia elements. The Web is ever-changing and consists of billions of Web pages. Because of the ease of creating Web pages, more are being added all the time.

BTW

Internet and WWW History

The World Wide Web Consortium (W3C or w3.org), the de facto organization that governs HTML, provides a particularly rich history of the Internet and the World Wide Web. Search on "Internet history" or "WWW history" in your browser for many additional sources.

A **Web site** is a related collection of Web pages that is created and maintained by an individual, company, educational institution, or other organization. For example, as shown in Figure 1–3, many organizations, such as the Museum of Science and Industry in Chicago, publish and maintain Web sites. Each Web site contains a **home page**, which is the first document users see when they access the Web site. The home page often serves as an index or table of contents to other documents and files displayed on the site.



linked museum page from home page

Chicago museum home page

Welcome to the Museum of Science and Industry
Farm Tech
Museum of Science and Industry

Figure 1–3 A Web site is a related collection of Web pages that is created and maintained by an individual, company, educational institution, or other organization.

Web Servers

Web pages are stored on a **Web server**, or **host**, which is a computer that stores and sends (serves) requested Web pages and other files. Any computer that has Web server software installed and is connected to the Internet can act as a Web server. Every Web site is stored on, and runs from, one or more Web servers. A large Web site may be spread over several servers in different geographic locations.

In order to make the Web pages that you have developed available to your audience, you have to publish those pages. **Publishing** is copying the Web pages and associated files such as graphics and audio to a Web server. Once a Web page is published, anyone who has access to the Internet can view it, regardless of where the Web server is located. For example, although the Chicago Museum of Science and Industry Web site is stored on a Web server somewhere in the United States, it is available for viewing by anyone in the world. Once a Web page is published, it can be read by almost any computer: whether you use the Mac, Windows, or Linux operating system, with a variety of computer hardware, you have access to billions of published Web pages.

Web Site Types and Purposes

The three general types of Web sites are Internet, intranet, and extranet. Table 1–1 lists characteristics of each of these three types of Web sites.

Table 1–1 Types of Web Sites

Type	Users	Access	Applications
Internet	Anyone	Public	Used to share information such as personal information, product catalogs, course information with the public
intranet	Employees or members	Private	Used to share information such as forms, manuals, organization schedules with employees or members
extranet	Select business partners	Private	Used to share information such as inventory updates, product specifications, financial information with business partners and customers

An **Internet site**, also known as a **Web site**, is a site generally available to the public. Individuals, groups, companies, and educational institutions use Web sites for a variety of purposes. Intranets and extranets also use Internet technology, but access is limited to specified groups. An **intranet** is a private network that uses Internet technologies to share company information among employees. An intranet is contained within a company or organization's network, which makes it private and only available to those who need access. Policy and procedure manuals usually are found on an intranet. Other documents such as employee directories, company newsletters, product catalogs, and training manuals often are distributed through an intranet.

An **extranet** is a private network that uses Internet technologies to share business information with select corporate partners or key customers. Companies and organizations can use an extranet to share product manuals, training modules, inventory status, and order information. An extranet also might allow retailers to purchase inventory directly or to pay bills online.

Companies use Web sites to advertise or sell their products and services worldwide, as well as to provide technical and product support for their customers. Many company Web sites also support **electronic commerce** (**e-commerce**), which is the buying and selling of goods and services on the Internet. Using e-commerce technologies, these Web sites allow customers to browse product catalogs, comparison shop, and order products online. Figure 1–4 shows Amazon.com, which is a company that sells products only online. Many company Web sites also provide job postings and announcements, a frequently asked questions (FAQs) section, customer feedback links to solicit comments from their customers, and searchable technical support databases.

BTW

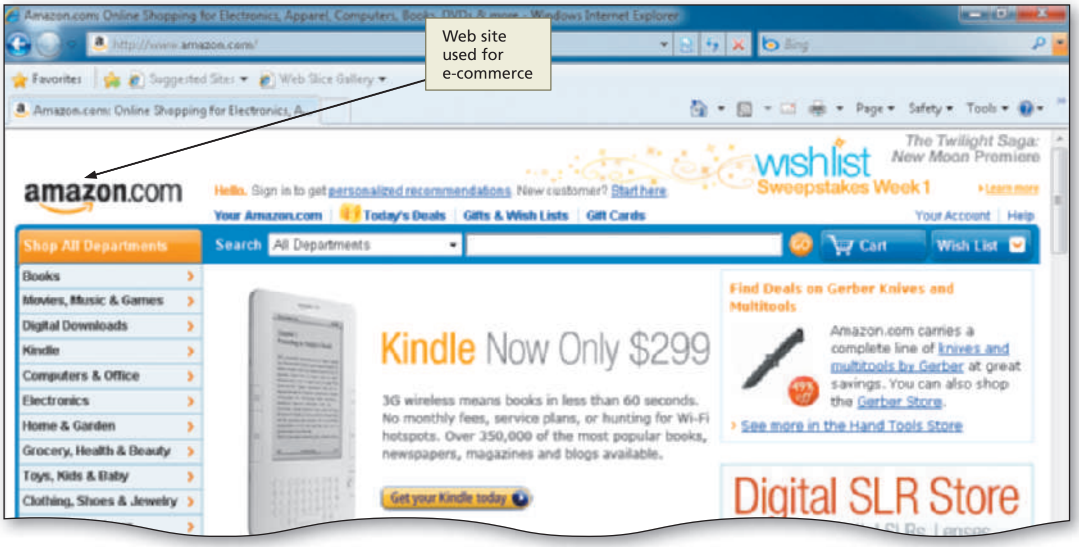
Intranets and Extranets

There are many Web sites that discuss ideas for intranets and extranets. Many companies are already using these technologies and share their "best practice" techniques. The CIO Intranet/Extranet Research Center provides valuable information on building and maintaining an intranet or extranet, along with additional resources.

BTW

E-Commerce

Today, e-commerce is a standard part of doing business. E-commerce technologies, however, continue to change, offering new applications and potential uses. Several online magazines are dedicated to providing an in-depth look at e-commerce. Many print magazines also provide useful information about this important way to do business.



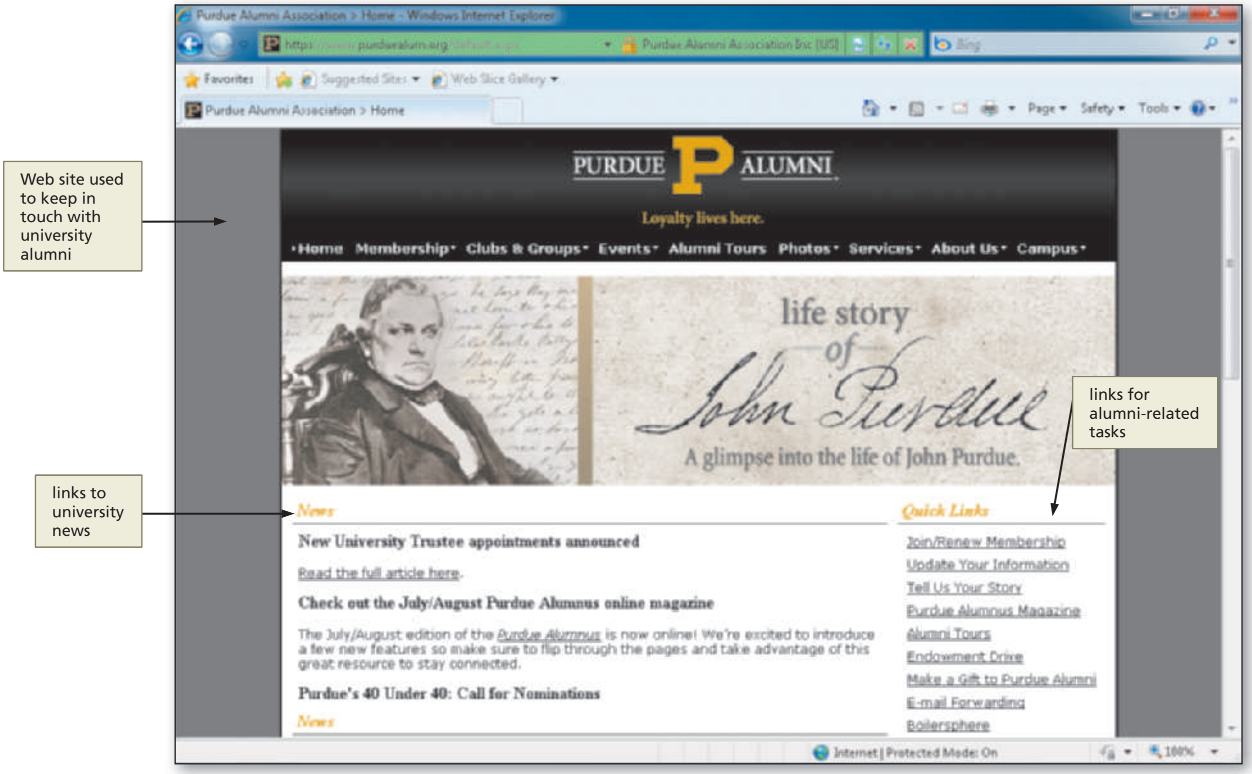
3G wireless means books in less than 60 seconds. No monthly fees, service plans, or hunting for Wi-Fi hotspots. Over 350,000 of the most popular books, newspapers, magazines and blogs available.

Amazon.com carries a complete line of knives and multitools by Gerber at great savings. You can also shop the Gerber Store.

Web site used for e-commerce

Figure 1–4 Amazon.com is a company that operates online only.

Colleges, universities, and other schools use Web sites to distribute information about areas of study, provide course information, or register students for classes online. Instructors use their Web sites to issue announcements, post questions on reading material, list contact information, and provide easy access to lecture notes and slides. Many instructors today use the course management software adopted by their respective schools to upload course content. Using a standard course management product across a university makes it easier for students to find information relative to their various courses. Many course management tools allow instructors to write their own Web content for courses. With many systems, instructors can use Web pages to provide further information for their students within the structure of the course management tool provided by the school. In addition to keeping in contact with current students via the Web, universities also utilize the Web to keep in touch with their alumni, as shown in Figure 1–5.



New University Trustee appointments announced

Read the full article here.

Check out the July/August Purdue Alumnus online magazine

The July/August edition of the *Purdue Alumnus* is now online! We're excited to introduce a few new features so make sure to flip through the pages and take advantage of this great resource to stay connected.

Purdue's 40 Under 40: Call for Nominations

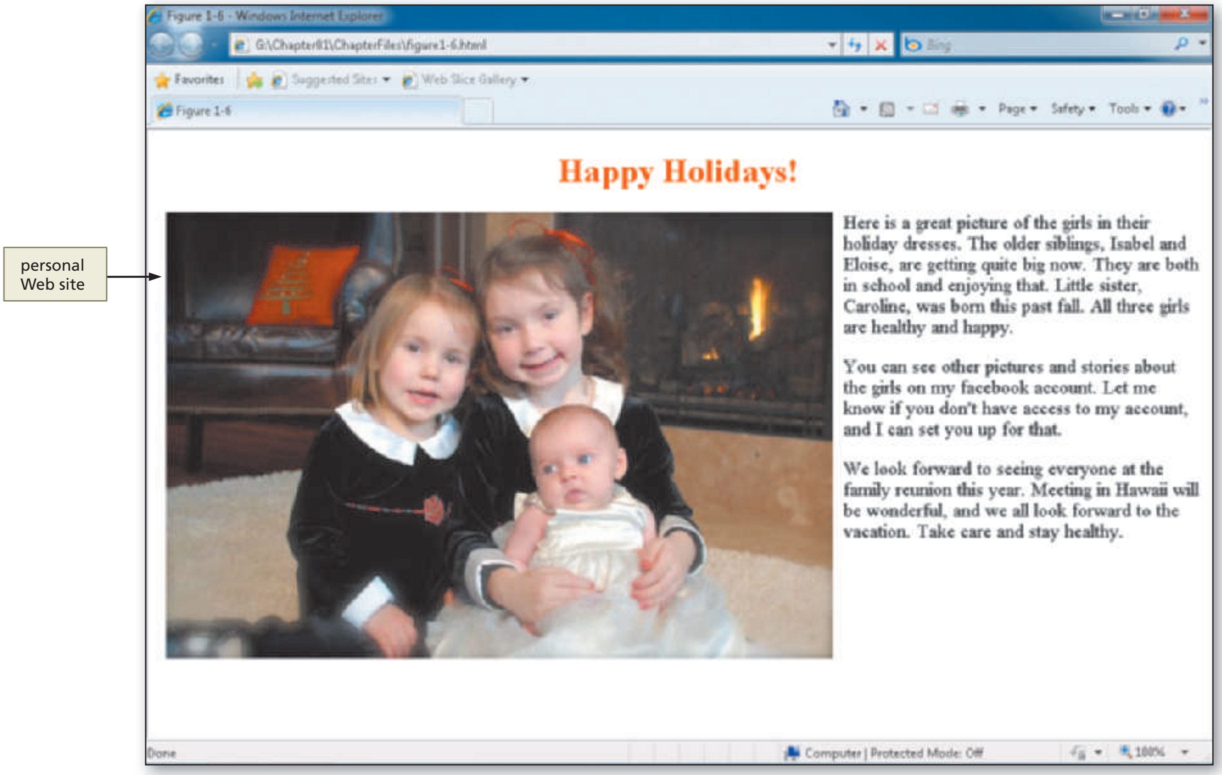
Web site used to keep in touch with university alumni

links to university news

links for alumni-related tasks

Figure 1–5 Many universities have alumni Web sites.

In addition to the use of the Internet by companies and educational institutions, individuals might create personal Web sites that include their résumés to make them easily accessible to any interested employers. Families can share photographs, video and audio clips, stories, schedules, or other information through Web sites (Figure 1–6). Many individual Web sites allow password protection, which makes a safer environment for sharing information.



personal Web site
Figure 1-6 - Windows Internet Explorer
G:\Chapter01\ChapterFiles\figure1-6.html
Bing
Favorites
Suggested Sites ▾
Web Slice Gallery ▾
Figure 1-6
Page ▾
Safety ▾
Tools ▾
Done
Computer | Protected Mode: Off
100%

Happy Holidays!

Here is a great picture of the girls in their holiday dresses. The older siblings, Isabel and Eloise, are getting quite big now. They are both in school and enjoying that. Little sister, Caroline, was born this past fall. All three girls are healthy and happy.

You can see other pictures and stories about the girls on my facebook account. Let me know if you don't have access to my account, and I can set you up for that.

We look forward to seeing everyone at the family reunion this year. Meeting in Hawaii will be wonderful, and we all look forward to the vacation. Take care and stay healthy.

Figure 1–6 Personal Web sites are used to communicate with family and friends.

Web Browsers

To display a Web page on any type of Web site, a computer needs to have a Web browser installed. A **Web browser**, also called a **browser**, is a program that interprets and displays Web pages and enables you to view and interact with a Web page. Microsoft Internet Explorer, Mozilla Firefox, and Apple Safari are popular browsers today. Browsers provide a variety of features, including the capability to locate Web pages, to link forward and backward among Web pages, to add a favorite or bookmark a Web page, and to choose security settings.

To locate a Web page using a browser, you type the Web page's Uniform Resource Locator (URL) in the browser's Address or Location bar. A **Uniform Resource Locator** (**URL**) is the address of a document or other file accessible on the Internet. An example of a URL on the Web is:

http://www.scsite.com/html6e/index.html

The URL indicates to the browser to use the HTTP communications protocol to locate the index.html Web page in the html6e folder on the scsite.com Web server. Web page URLs can be found in a wide range of places, including school catalogs, business cards, product packaging, and advertisements.

Hyperlinks are an essential part of the World Wide Web. A **hyperlink**, also called a **link**, is an element used to connect one Web page to another Web page that's located on the same server or used to link Web pages located on a different Web server located anywhere in the world. Clicking a hyperlink allows you to move quickly from one Web page to another, and the user does not have to be concerned about where the Web pages reside. You also can click hyperlinks to move to a different section of the same Web page.

With hyperlinks, a Web site user does not necessarily have to view information in a linear way. Instead, he or she can click the available hyperlinks to view the information in a variety of ways, as described later in this chapter. Many different Web page elements, including text, graphics, and animations, can serve as hyperlinks. Figure 1–7 shows examples of several different Web page elements used as hyperlinks.

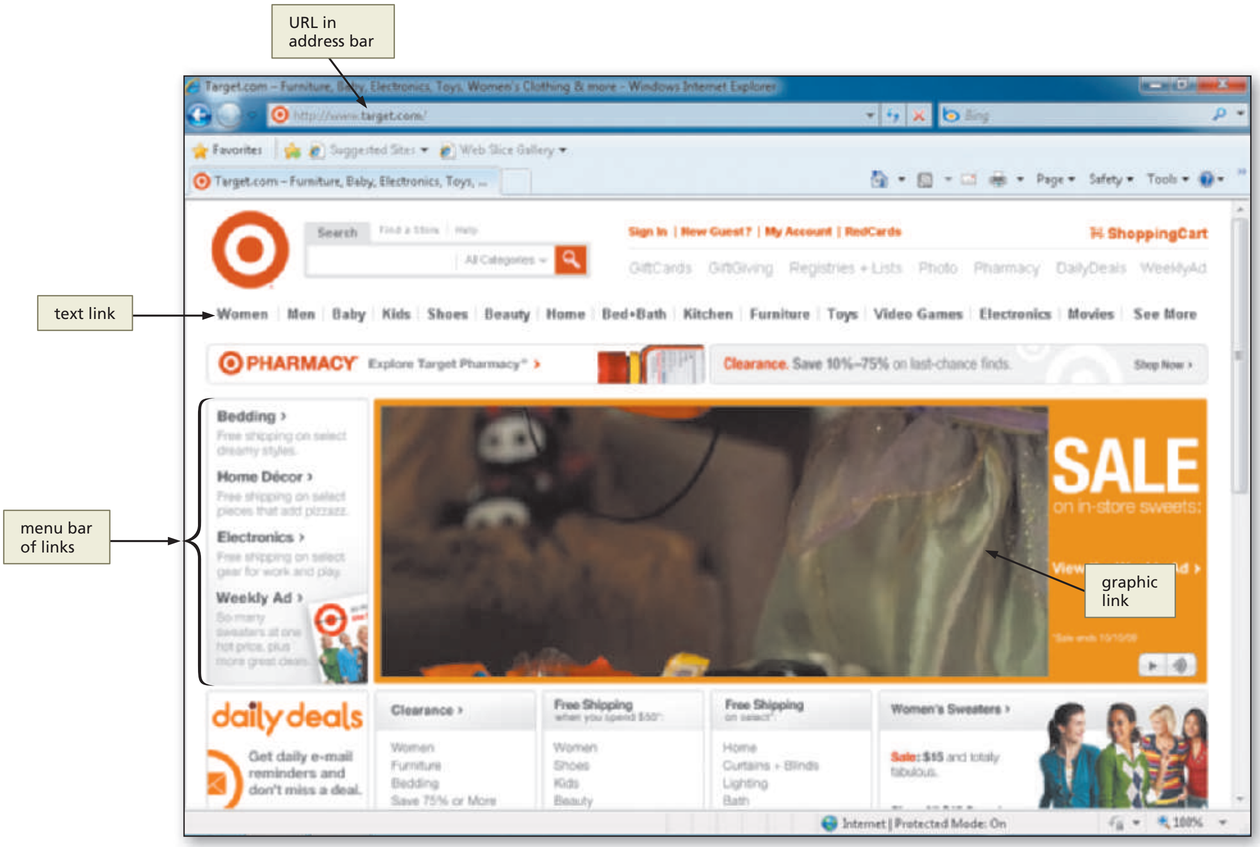
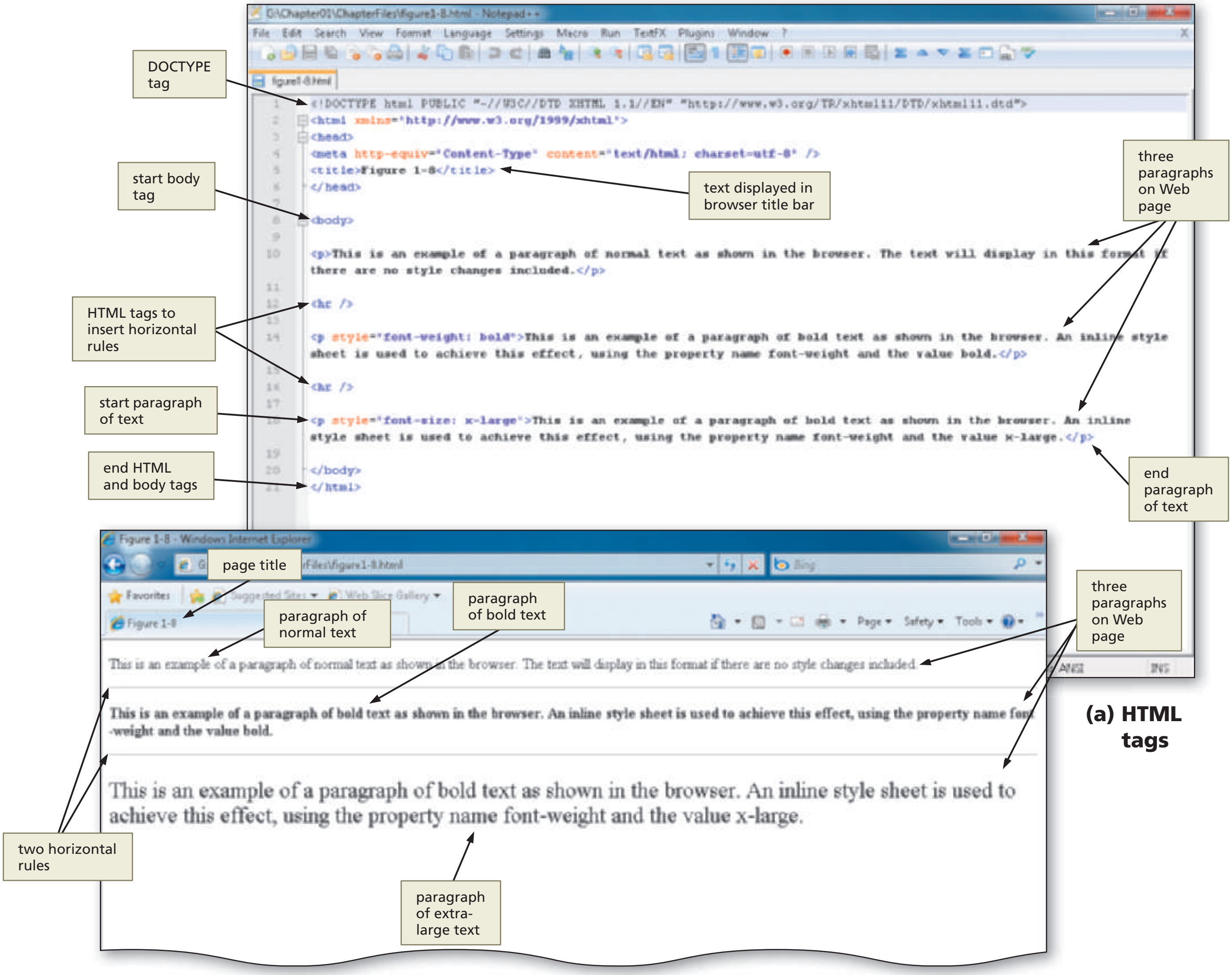

URL in address bar
text link
menu bar of links
graphic link
Target.com – Furniture, Baby, Electronics, Toys, Women's Clothing & more – Windows Internet Explorer
http://www.target.com/
Favorites
Suggested Sites
Web Slice Gallery
Page
Safety
Tools
Women | Men | Baby | Kids | Shoes | Beauty | Home | Bed+Bath | Kitchen | Furniture | Toys | Video Games | Electronics | Movies | See More
PHARMACY
Bedding
Home Décor
Electronics
Weekly Ad
SALE
on in-store sweets
daily deals
Internet | Protected Mode: On

Figure 1–7 A Web page can use many different Web page elements as hyperlinks.

What Is Hypertext Markup Language?

Web pages are created using **Hypertext Markup Language** (**HTML**), which is an authoring language used to create documents for the World Wide Web. HTML uses a set of special instructions called **tags** or **markup** to define the structure and layout of a Web document and specify how the page is displayed in a browser.

A Web page is a file that contains both text and HTML tags. HTML tags mark the text to define how it should appear when viewed as a page on the Web. HTML includes hundreds of tags used to format Web pages and create hyperlinks to other documents or Web pages. For instance, the HTML tags <p> and </p> are used to indicate a new paragraph with a blank line above it, <table> and </table> are used to indicate the start and end of a table, and <hr /> is used to display a horizontal rule across the page. Figure 1–8a shows the HTML tags needed to create the Web page shown in Figure 1–8b. You also can enhance HTML tags by using attributes, as shown in Figure 1–8a. **Attributes** define additional characteristics such as font weight or style for the HTML tag.



```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Figure 1-8</title>
</head>

<body>

<p>This is an example of a paragraph of normal text as shown in the browser. The text will display in this format if
there are no style changes included.</p>

<hr />

<p style="font-weight: bold">This is an example of a paragraph of bold text as shown in the browser. An inline style
sheet is used to achieve this effect, using the property name font-weight and the value bold.</p>

<hr />

<p style="font-size: x-large">This is an example of a paragraph of bold text as shown in the browser. An inline
style sheet is used to achieve this effect, using the property name font-weight and the value x-large.</p>

</body>
</html>
```

This is an example of a paragraph of normal text as shown in the browser. The text will display in this format if there are no style changes included.

This is an example of a paragraph of bold text as shown in the browser. An inline style sheet is used to achieve this effect, using the property name font-weight and the value bold.

This is an example of a paragraph of bold text as shown in the browser. An inline style sheet is used to achieve this effect, using the property name font-weight and the value x-large.

G:\Chapter01\ChapterFiles\figure1-8.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
figure1-8.html
Figure 1-8 - Windows Internet Explorer
Favorites
Suggested Sites
Web Slice Gallery
Figure 1-8
Page
Safety
Tools
Bing
ANSI
INS

DOCTYPE tag

start body tag

HTML tags to insert horizontal rules

start paragraph of text

end HTML and body tags

text displayed in browser title bar

three paragraphs on Web page

end paragraph of text

(a) HTML tags

page title

paragraph of normal text

paragraph of bold text

three paragraphs on Web page

two horizontal rules

paragraph of extra-large text

(b) Resulting Web page

Figure 1–8 A Web page is a file that contains both text and HTML tags.

HTML is **platform independent**, meaning you can create, or code, an HTML file on one type of computer and then use a browser on another type of computer to view that file as a Web page. The page looks the same regardless of what platform you are using. One of the greatest benefits of Web technology is that the same Web page can be viewed on many different types of digital hardware, including mobile devices like smart phones.

HTML Elements

HTML combines descriptive tags with special tags that denote how a document should appear in a Web browser. HTML elements include headings, paragraphs, hyperlinks, lists, images, and more. Most HTML elements consist of three parts: a start tag, content, and an end tag. For example, to specify that certain text should appear bold in a Web page, you would enter the following HTML code:

```
<bold>this is bold text</bold>
```

where <bold> is the start bold code and </bold> is the end bold code. Table 1–2 on the next page shows examples of some HTML elements.

Table 1–2 HTML Elements

Element	Tag	Purpose
Title	<title>...</title>	Indicates title to appear on the title bar in the browser
Body	<body>...</body>	Specifies what appears on the Web page; all Web page content is inserted within the start <body> tag and end </body> tag
Paragraph	<p>...</p>	Inserts a blank line before paragraph text
Line Break	<br />	Inserts a line break before the next element without a blank line

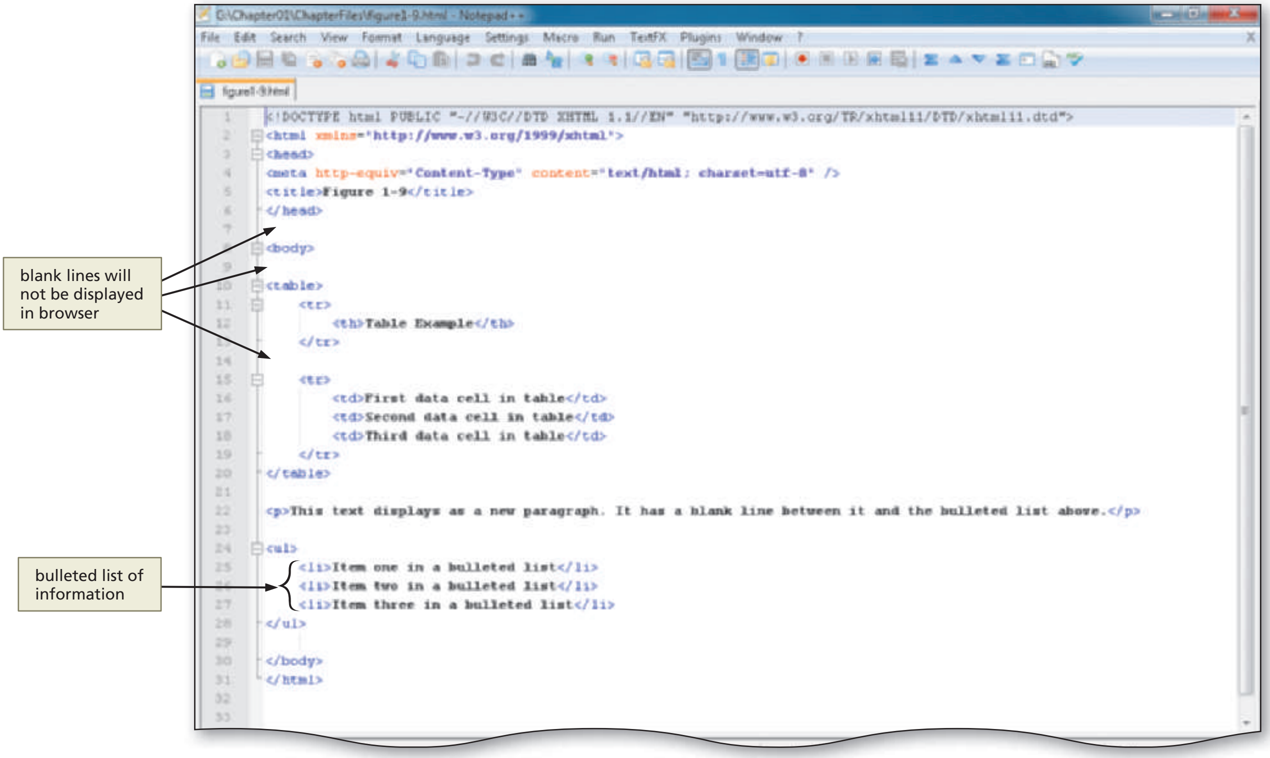
BTW

HTML Elements
Numerous sources of information about HTML elements are available. The World Wide Web Consortium (w3.org) provides the most comprehensive list of tags and attributes together with examples of their use. One of the main goals of the W3C is to help those building Web sites understand and utilize standards that make the Web accessible to all.

HTML Coding Practices

Similar to all programming languages, HTML has a set of coding practices designed to simplify the process of creating and editing HTML files and ensure that Web pages appear correctly in different browsers.

When creating an HTML file, you should separate sections of the HTML code with spaces and by using the Tab key. Adding space between sections, either with blank lines or by tabbing, gives you an immediate view of the sections of code that relate to one another and helps you view the HTML elements in your document more clearly. HTML browsers ignore spaces that exist between the tags in your HTML document, so the spaces and indentations inserted within the code will not appear on the Web page. Figure 1–9 shows an example of an HTML file with code sections separated by blank lines and code section indentations. Another developer looking at this code can see immediately where the specific sections are located in the code.


G:\Chapter01\ChapterFiles\figure1-9.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
figure1-9.html
blank lines will not be displayed in browser
bulleted list of information

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Figure 1-9</title>
</head>

<body>

<table>
    <tr>
        <th>Table Example</th>
    </tr>

    <tr>
        <td>First data cell in table</td>
        <td>Second data cell in table</td>
        <td>Third data cell in table</td>
    </tr>
</table>

<p>This text displays as a new paragraph. It has a blank line between it and the bulleted list above.</p>

<ul>
    <li>Item one in a bulleted list</li>
    <li>Item two in a bulleted list</li>
    <li>Item three in a bulleted list</li>
</ul>

</body>
</html>
```

Figure 1–9 Adding spaces to HTML code separates sections to make reading easier.

HTML Versions

HTML has gone through several versions, each of which expands the capabilities of HTML. Although HTML version 5.0 is under development, it has not yet been released. The most recent version of HTML is HTML 4.01, although most browsers still support HTML versions 3.2 and 2.0. To ensure that browsers can interpret each new version of HTML, the World Wide Web Consortium (W3C) maintains HTML standards, or specifications, which are publicly available on its Web site. As described later in this chapter, it is important to verify that Web pages are displayed as intended in a variety of browsers during the testing phase of development.

Cascading Style Sheets

This book has taken a new direction with the 6th edition by eliminating deprecated tags and attributes. **Deprecated** tags and attributes are tags and attributes that are no longer recommended in the latest W3C standard. In Appendix A, deprecated tags and attributes are highlighted with an asterisk. In an effort to eliminate deprecated HTML tags, the chapter projects utilize Cascading Style Sheets (CSS) to alter the style (or look) of a Web page. Although HTML allows Web developers to make changes to the structure, design, and content of a Web page, it is limited in its ability to define the appearance, or style, across one or more Web pages. **Cascading Style Sheets** (**CSS**) allow you to specify styles for various Web page elements. A **style** is a rule that defines the appearance of a Web page element. A **style sheet** is a series of rules that defines the style for a Web page or an entire Web site. With a style sheet, you can alter the appearance of a Web page or pages by changing characteristics such as font family, font size, margins, and link specifications, as well as visual elements such as colors and borders. CSS is not used to add any content to your Web site; it just makes your content look more stylish.

BTW

CSS, DHTML, and XHTML

The w3.org Web site has an extensive amount of information and tutorials about Cascading Style Sheets (CSS), Dynamic HTML (DHTML), and Extensible HTML (XHTML). The standards suggested in the W3C Web site are the ones that most Web developers follow.

With CSS you can specify the style for an element within a single Web page or throughout an entire Web site. For example, if you want all text paragraphs on a Web page to be indented by five spaces, you can use a style sheet to handle the indenting, rather than coding each paragraph with an indentation. And, if you decided you wanted to change the indent to three spaces, you would change just one style sheet line rather than changing the coding for each paragraph. So you can see that using CSS saves a lot of time and makes it much easier to make style changes.

CSS is not HTML; it is a separate language used to enhance the display capabilities of HTML. The World Wide Web Consortium (W3C), the same organization that defines HTML standards, defines the specifications for CSS. Appendix A at the back of this book and available online provides a list of HTML tags and corresponding attributes that will allow you to alter the Web page elements as needed, and Appendix D has complete information on the properties and values associated with different CSS elements.

Document Object Model (DOM)

HTML can be used with other Web technologies to provide additional Web page functionality. For example, the term **Document Object Model** (**DOM**) describes a combination of HTML tags, CSS, and a scripting language such as JavaScript. DOM allows JavaScript and other languages to manipulate the structure of the underlying document to create interactive, animated Web pages. This is a model in which the Web page (or document) contains objects (elements, links, etc.) that can be manipulated. This allows a Web developer to add, delete, or change an element or attribute. Web pages enhanced with

DOM can be more responsive to visitor interaction than basic HTML Web pages. Not all interactive Web pages require DOM, but if you have a need for extensive interactivity, then this might be a model to consider. CSS, JavaScript, and DOM are covered in later chapters in the Comprehensive (12-chapter) version of this book.

Extensible Hypertext Markup Language (XHTML)

As you have learned, HTML uses tags to describe how a document should appear in a Web browser, or the Web page format. **Extensible Markup Language** (**XML**) is a markup language that uses tags to describe the structure and content of a document, not the format. **Extensible Hypertext Markup Language** (**XHTML**) is a reformulation of HTML formatting so it conforms to XML structure and content rules. By combining HTML and XML, XHTML combines the display features of HTML and the stricter coding standards required by XML.

If you create a Web page in HTML and do not follow XHTML coding standards exactly (for example, by not using an end </p> tag), the Web browser on your computer can still interpret and display the Web page correctly. However, newer types of browsers, such as those for mobile phones or handheld computers, cannot interpret HTML code that does not meet XHTML standards. Because XHTML has such strict coding standards, it helps ensure that Web pages created in XHTML will be readable by many different types of applications. An important step in Web development is to check that your Web pages are XHTML compliant. You will validate your Web pages starting in Chapter 2 and continue that process throughout the book.

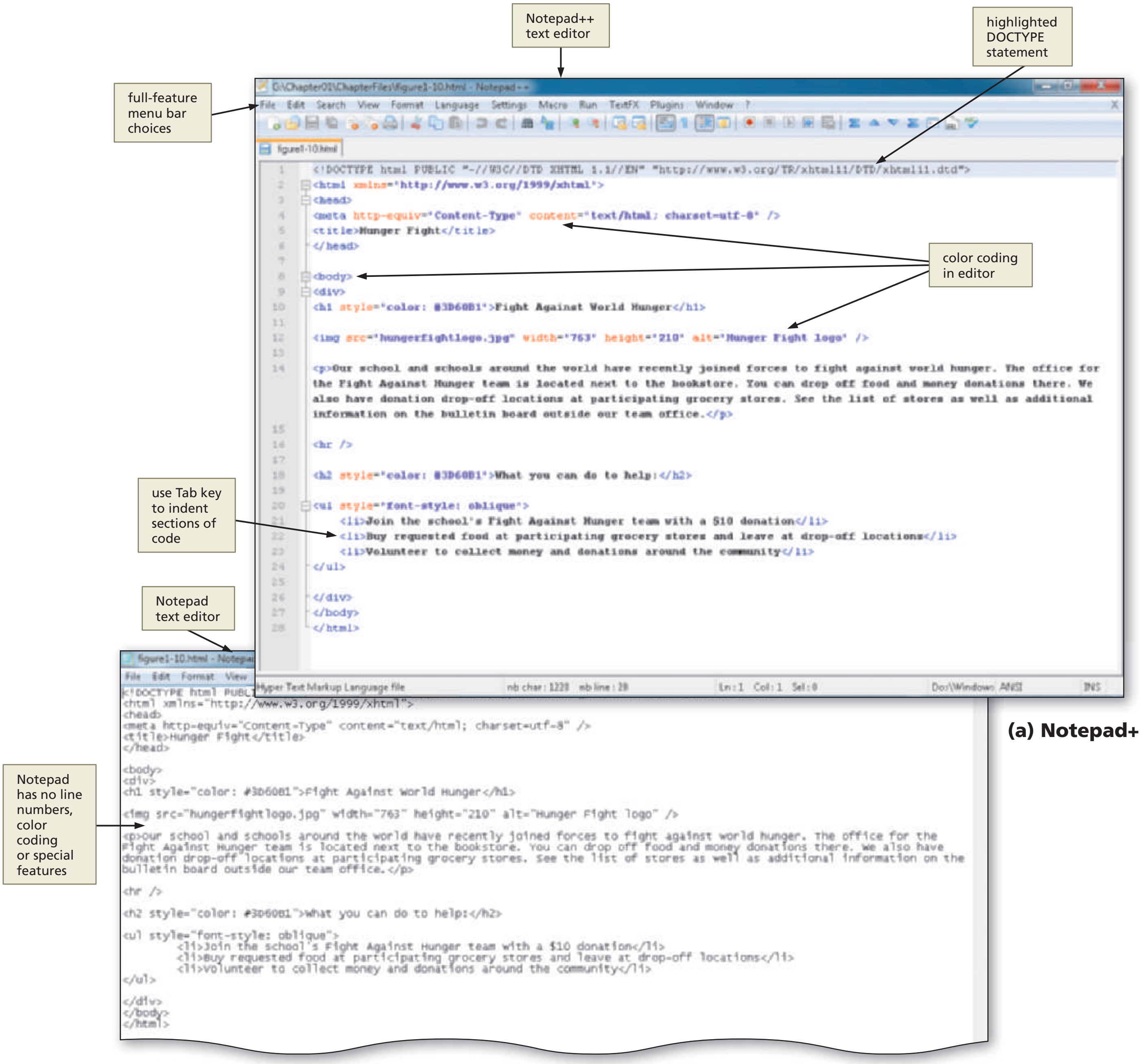
Table 1–3 lists some of the XHTML coding rules that Web developers should follow to ensure that their HTML code conforms to XHTML standards. All of the projects in this book follow XHTML standards (as discussed in Chapter 2) and adhere to the rules outlined in Table 1–3. The specifics of each rule are explained in detail when used in a project.

Table 1–3 XHTML Coding Practices

Practice	Invalid Example	Valid Example
HTML file must include a DOCTYPE statement	<html> <head><title>sample Web page</title>	<!DOCTYPE html PUBLIC ”-//W3C//DTD XHTML 1.0 Transitional//EN” “http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd”> <html> <head><title>sample Web page</title> </head>
All tags and attributes must be written in lowercase	<TABLE WIDTH=”100%”>	<table width=”100%”>
All attribute values must be enclosed by single or double quotation marks	<table width=100%>	<table width=”100%”>
All tags must be closed, including tags such as img, hr, and br, which do not have end tags, but which must be closed as a matter of practice	 <hr> <p>This is another paragraph	<br /> <hr /> <p>This is another paragraph</p>
All elements must be nested properly	<p><strong>This is a bold paragraph</p></strong>	<p><strong>This is a bold paragraph</strong></p>

Tools for Creating HTML Documents

You can create Web pages using HTML with a simple text editor, such as Notepad++, Notepad, TextPad, or SimpleText. A **text editor** is a program that allows a user to enter, change, save, and print text, such as HTML. Text editors do not have many advanced features, but they do allow you to develop HTML documents easily. For instance, if you want to insert the DOCTYPE tags into the Web page file, type the necessary text into any of the text editors, as shown in Figure 1–10a and Figure 1–10b. Although Notepad (Figure 1–10b) is an adequate text editor for Web development, note its differences from Notepad++. Notepad++ is a more robust text editor that uses color schemes for HTML code as it is entered.



```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hunger Fight</title>
</head>

<body>
<div>
<h1 style="color: #3D60B1">Fight Against World Hunger</h1>

<img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />

<p>Our school and schools around the world have recently joined forces to fight against world hunger. The office for the Fight Against Hunger team is located next to the bookstore. You can drop off food and money donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional information on the bulletin board outside our team office.</p>

<hr />

<h2 style="color: #3D60B1">What you can do to help:</h2>

<ul style="font-style: oblique">
	<li>Join the school's Fight Against Hunger team with a $10 donation</li>
	<li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
	<li>Volunteer to collect money and donations around the community</li>
</ul>

</div>
</body>
</html>
```

(a) Notepad++

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hunger Fight</title>
</head>

<body>
<div>
<h1 style="color: #3D60B1">Fight Against World Hunger</h1>

<img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />

<p>Our school and schools around the world have recently joined forces to fight against world hunger. The office for the
Fight Against Hunger team is located next to the bookstore. You can drop off food and money donations there. We also have
donation drop-off locations at participating grocery stores. See the list of stores as well as additional information on the
bulletin board outside our team office.</p>

<hr />

<h2 style="color: #3D60B1">What you can do to help:</h2>

<ul style="font-style: oblique">
	<li>Join the school's Fight Against Hunger team with a $10 donation</li>
	<li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
	<li>Volunteer to collect money and donations around the community</li>
</ul>

</div>
</body>
</html>
```

(b) Notepad

Figure 1–10 With a text editor such as Notepad++ or Notepad, you enter HTML tags and text that create a Web page.

You also can create Web pages using an HTML text editor, such as EditPlus or BBEdit (for Macintosh). An **HTML text editor** is a program that provides basic text-editing functions, as well as more advanced features such as color-coding for various HTML tags, menus to insert HTML tags, and spell checkers. An **HTML object editor**, such as Eiffel Software object editor, provides the additional functionality of an outline editor that allows you to expand and collapse HTML objects and properties, edit parameters, and view graphics attached to the expanded objects.

Many popular software applications also provide features that enable you to develop Web pages easily. Microsoft Word, Excel, and PowerPoint, for example, have a Save as Web Page feature that converts a document into an HTML file by automatically adding HTML tags to the document. Using Microsoft Access, you can create a Web page that allows you to view data in a database. Adobe Acrobat also has an export feature that creates HTML files. Each of these applications also allows you to add hyperlinks, drop-down boxes, option buttons, or scrolling text to the Web page.

These advanced Web features make it simple to save any document, spreadsheet, database, or presentation to display as a Web page. Corporate policy and procedures manuals and PowerPoint presentations, for example, easily can be saved as Web pages and published to the company's intranet. Extranet users can be given access to Web pages that allow them to view or update information stored in a database.

BTW

Free HTML WYSIWYG Editors
There are a number of popular WYSIWYG editors that are being used by many novice Web developers to create well-designed, interactive Web sites. You can find these by searching for "WYSIWYG HTML editor" in most search engines.

You also can create Web pages using a WYSIWYG editor such as Adobe Dreamweaver, Amaya, or CoffeeCup HTML Editor. A **WYSIWYG editor** is a program that provides a graphical user interface that allows a developer to preview the Web page during its development. WYSIWYG (pronounced wizzy-wig) is an acronym for What You See Is What You Get. A WYSIWYG editor creates the HTML code for you as you add elements to the Web page, which means that you do not have to enter HTML tags directly. The main problem with WYSIWYG editors is that they often create "puffed-up" HTML code (HTML tags with many lines of unnecessary additional code surrounding them).

Regardless of which type of program you use to create Web pages, it is important to understand the specifics of HTML so you can make changes outside of the editor. For instance, you may be able to create a Web page with Dreamweaver, but if you want to make some minor changes, it is very helpful to know the HTML tags themselves. It also is important to understand the Web development life cycle so the Web pages in your Web site are consistent and complete.

Web Development Life Cycle

For years, university and college information technology courses have stressed the importance of following the Systems Development Life Cycle when designing and implementing new software to ensure consistency and completeness. The Web development process should follow a similar cycle. Comprehensive planning and analysis ensure that developers will provide what the users want. If you start to code your Web pages without thorough planning and analysis, you run the risk of missing pertinent information. It is much less expensive to make corrections to a Web site in the early phases of project development than it is to alter Web pages that are completed.

The Web development life cycle outlined in this section is one that can be utilized for any type or size of Web development project. The **Web development life cycle** is a process that can be used for developing Web pages at any level of complexity. The Web development life cycle includes the following phases: planning, analysis, design and development, testing, and implementation and maintenance. Table 1–4 lists several questions that should be asked during each phase in the Web development life cycle. Throughout this book, you will follow this systematic cycle as you develop your Web pages.

Table 1–4 Web Development Phases and Questions

Web Development Phase	Questions to Ask
Planning	• What is the purpose of this Web site? • Who will use this Web site? • What are the users' computing environments? • Who owns and authors the information on the Web site? • Who decides if/where the information goes on the Web site?
Analysis	• What tasks do the users need to perform? • What information is useful to the users? • What process considerations must be made?
Design and Development	• How many Web pages will be included in the Web site? • How will the Web pages be organized? • What type of Web site structure is appropriate for the content? • How can I best present the content for ease of use? • What file naming convention will be employed for this Web site? • What folder structure will be used for the Web page files? • How do I apply XHTML standards throughout the development process? • What forms of multimedia contribute positively to the Web site? • How can accessibility issues be addressed without limiting usability? • Will there be an international audience?
Testing	• Do the Web pages pass the World Wide Web Consortium (W3C) validation process as XHTML compliant? • Is the Web site content correct? • Does the Web site function correctly? • Are users able to find the information they need to complete desired tasks? • Is navigation clear and easy to use?
Implementation and Maintenance	• How is the Web site published? • How can users be attracted to visit and revisit the Web site? • How is the Web site updated? • Who is responsible for content updates? • Who is responsible for structure updates? • How will users be notified about updates to the Web site? • Will the Web site be monitored?

Web Site Planning

Web site planning, which is the first phase of the Web development life cycle, involves identifying the goals or purpose of the Web site. The first step in the Web site planning phase is to answer the question "What is the purpose of this Web site?" As you have learned, individuals and groups design and publish Web sites for a variety of purposes. Individuals develop Web sites to share their hobbies, to post résumés, or just to share ideas on personal interests. Organizations create Web sites to keep members informed of upcoming events or to recruit new members. Businesses create Web sites to advertise and sell products or to give their customers 24-hour online support. Instructors publish Web sites, or add information to their courses using the school's online course management software, to inform students of course policies, assignments, and due dates, as well as course requirements. Until you adequately can identify the intended purpose of the Web site, you should not proceed with the Web development project.

In addition to understanding the Web site's purpose, you also should understand who will use the Web site and the computing environments of most of the users. Knowing the makeup of your target audience — including age, gender, general demographic background, and level of computer literacy — will help you design a Web site appropriate for all users. Understanding users' computing environments will determine what types of Web technologies to use. For example, if most users have low-speed Internet connections, you would not want to create pages with large graphics or multimedia elements.

A final aspect to the Web site planning phase is to identify the content owners and authors. To determine this, you need to ask the questions:

- Who owns and authors the information on the Web site?
- Who decides if/where the information goes on the Web site?

Once you have identified who will provide and authorize the Web site content, you can include those individuals in all aspects of the Web development project.

Web Site Analysis

During the analysis phase, you make decisions about the Web site content and functionality. To help define the appropriate Web site content and functionality, you first should identify the tasks that users need to perform. Answering that question allows you to define necessary content to facilitate those tasks and determine useful information for the users. Extraneous content should be eliminated from the Web site because it does not serve any purpose.

In the analysis phase, it also is important to consider the processes required to support Web site features. For example, if you determine that users should be able to order products through the Web site, then you also need to define the processes or actions to be taken each time an order is submitted. For instance, after an order is submitted, how will that order be processed throughout the back-office business applications such as inventory control and accounts payable? Will users receive e-mail confirmations with details about their orders? The analysis phase is one of the more important phases in the Web development life cycle. Clearly understanding and defining the desired content and functionality of the Web site will direct the type of Web site that you design and reduce changes during Web site development.

BTW

Accessibility Standards
Creating a Web site that is accessible to all users allows your Web site to reach the widest audience. Further, under Section 508 law, any Web site or technology used by a U.S. federal agency must be usable by people with disabilities. See Appendix C for Section 508 guidelines.

Web Site Design and Development

After determining the purpose of the Web site and defining the content and functionality, you need to consider the Web site's design. Some key considerations in Web site design are defining how to organize Web page content, selecting the appropriate Web site structure, determining how to use multimedia, addressing accessibility issues, and designing pages for an international audience. One of the most important aspects of Web site design is determining the best way to provide navigation on the Web site. If users cannot easily find the information that they are seeking, they will not return to your Web site.

Many ways to organize a Web page exist, just as many ways to organize a report or paper exist. Table 1–5 lists some organizational standards for creating a Web page that is easy to read and navigate.

Table 1–5 Web Page Organizational Standards

Element	Organizational Standard	Reason
Titles	Use simple titles that clearly explain the purpose of the page	Titles help users understand the purpose of the page; a good title explains the page in the search engine results lists
Headings	Use headings to separate main topics	Headings make a Web page easier to read; simple headlines clearly explain the purpose of the page

Table 1–5 Web Page Organizational Standards (continued)

Element	Organizational Standard	Reason
Horizontal Rules	Insert horizontal rules to separate main topics	Horizontal rules provide graphical elements to break up Web page content
Paragraphs	Use paragraphs to help divide large amounts of text	Paragraphs provide shorter, more readable sections of text
Lists	Utilize bulleted or numbered lists when appropriate	Lists provide organized, easy-to-read text that readers can scan
Page Length	Maintain suitable Web page lengths	Web users do not always scroll to view information on longer pages; appropriate page lengths increase the likelihood that users will view key information
Information	Emphasize the most important information by placing it at the top of a Web page	Web users are quick to peruse a page; placing critical information at the top of the page increases the likelihood that users will view key information
Other	Incorporate a contact e-mail address; include the date of the last modification	E-mail addresses and dates give users a way to contact a Web site developer with questions; the date last modified helps users determine the timeliness of the site information

Web sites can use several different types of structures, including linear, hierarchical, and webbed. Each structure links, or connects, the Web pages in a different way to define how users navigate the site and view the Web pages. You should select a structure for the Web site based on how users will navigate the site and view the Web site content.

A **linear** Web site structure connects Web pages in a straight line, as shown in Figure 1–11. A linear Web site structure is appropriate if the information on the Web pages should be read in a specific order. For example, if the information on the first Web page, Module 1, is necessary for understanding information on the second Web page, Module 2, you should use a linear structure. Each page would have links from one Web page to the next, as well as a link back to the previous Web page. There are many cases in which Web pages need to be read one after the other.

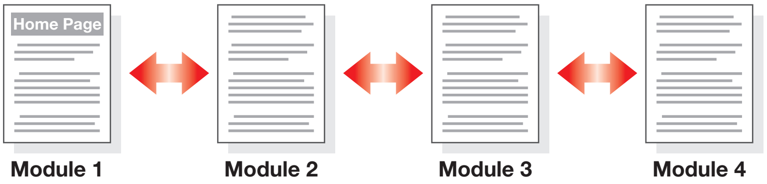


Figure 1–11 Linear Web site structure.

A variation of a linear Web site structure includes the addition of a link to the home page of the Web site, as shown in Figure 1–12. For some Web sites, moving from one

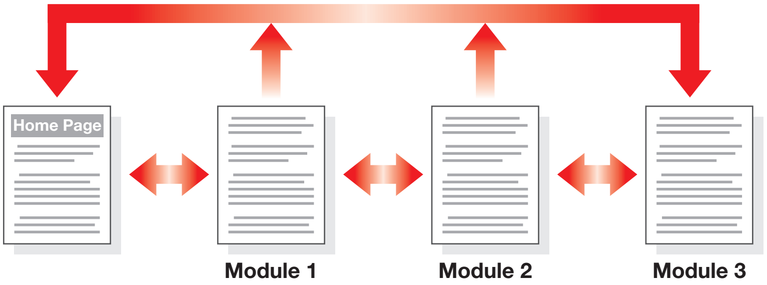


Figure 1–12 Linear Web site structure with links to home page.

module to the next module is still important, but you also want to provide users with easy access to the home page at any time. In this case, you would still provide links from the module Web pages to the previous and next module, but each Web page would also have a link back to the home page. In this way, the user does not have to click the previous link multiple times in order to get back to the home page.

BTW

User Interface Design
The user interface design is an important aspect of a Web site. If a site is designed poorly, users may be unable to find the desired information or complete a task, which makes the Web site ineffective.

A **hierarchical** Web site structure connects Web pages in a treelike structure, as shown in Figure 1–13. A hierarchical Web site structure works well on a site with a main index or table of contents page that links to all other Web pages. With this structure, the main index page would display general information, and secondary pages would include more detailed information. Notice how logically the information in Figure 1–13 is organized. A Web page visitor can easily go from the home page to any of the three modules. In addition, the visitor can easily get to the Module 3 Quiz by way of the Module 3 link. One of the inherent problems with this structure, though, is the inability to move easily from one section of pages to another. As an example, to move from Module 1 Page 2 to the Module 3 Summary, the visitor would have to use the Back button to get to the Home Page and then click the Module 3 link. This is moderately annoying for a site with two Web pages, but think what it would be like if Module 1 had 100 Web pages!

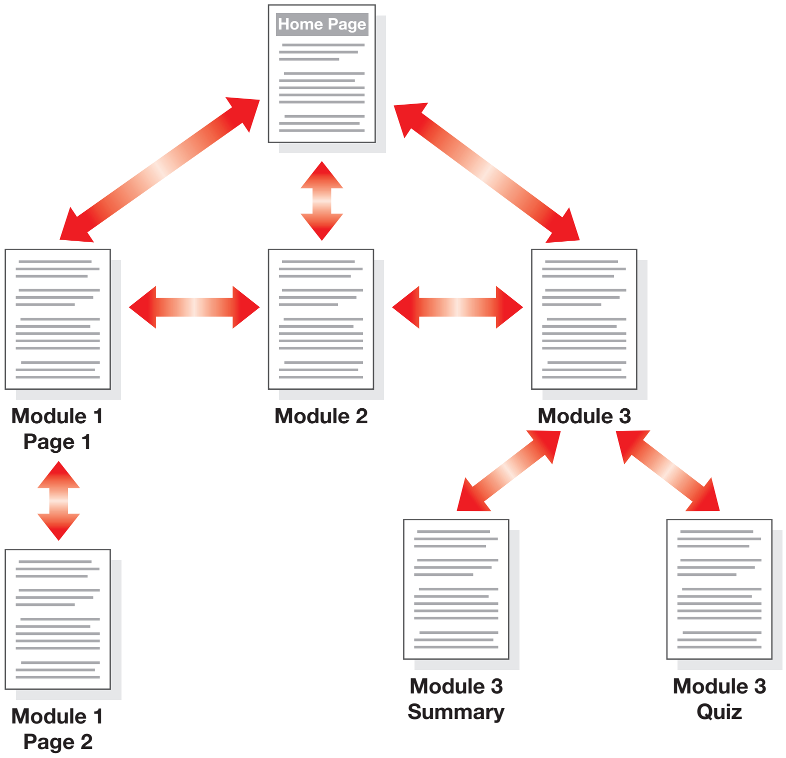


Figure 1–13 Hierarchical Web site structure.

To circumvent the problems with the hierarchical model, you can use a webbed model (Figure 1-14). A **webbed** Web site structure has no set organization, as shown in Figure 1–14. A webbed Web site structure works best on sites with information that does not need to be read in a specific order and with many navigation options. The World Wide Web uses a webbed structure, so users can navigate among Web pages in any order they choose. Notice how the Web site visitor can more easily move between modules or module summaries with this structure. With this model, you most often provide a link to the Home Page from each page, resulting in an additional arrow going from each individual Web page back to the home page (which is difficult to depict in these small figures). Many Web sites today utilize a graphical image (usually the company or institutional logo) in the top-left corner of each Web page as a link to the home page. You will use that technique later in the book.

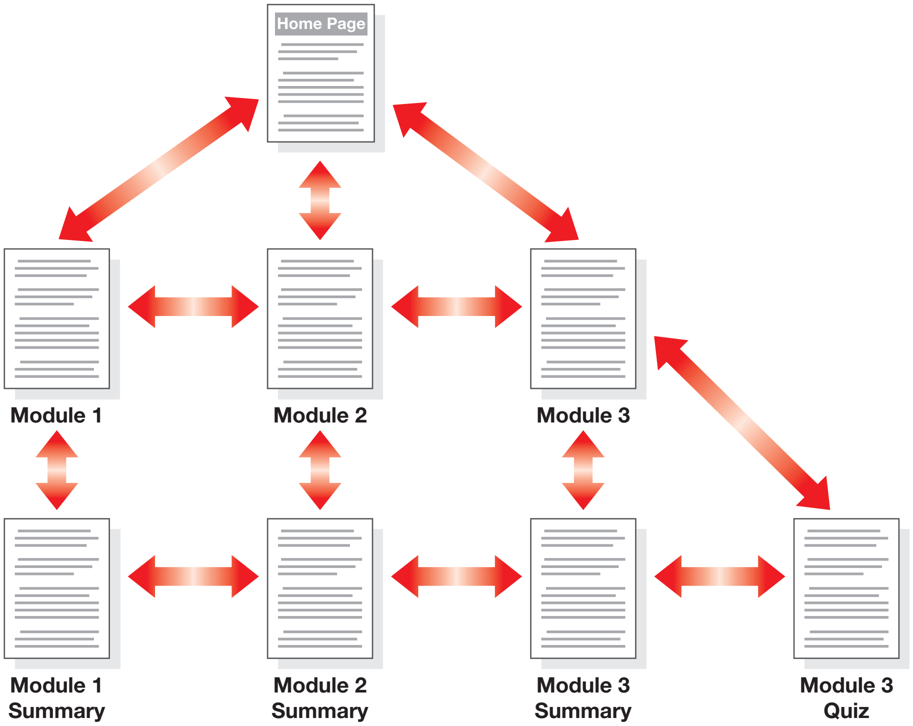


Figure 1–14 Webbed Web site structure.

Most Web sites are a combination of the linear, hierarchical, and webbed structures. Some information on the Web site might be organized hierarchically from an index page, other information might be accessible from all areas of the site, and still other information might be organized linearly to be read in a specific order. Using a combination of the three structures is appropriate if it helps users navigate the site easily. The key is to get the right information to the users in the most efficient way possible.

Regardless of the structure or structures that you use, you should balance the narrowness and depth of the Web site. A **broad Web site** is one in which the home page is the main index page, and all other Web pages are linked individually to the home page (Figure 1–15).

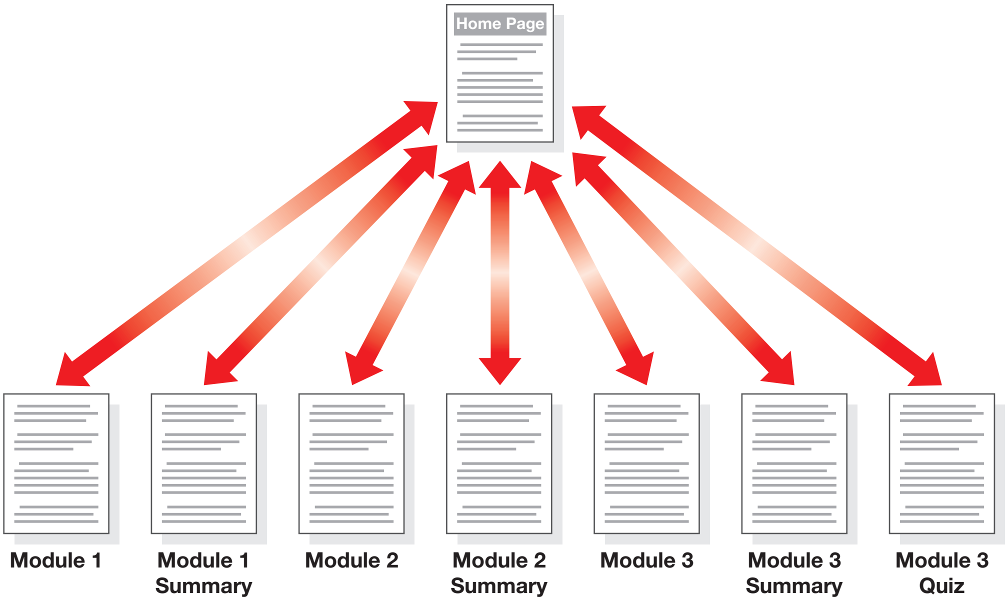


Figure 1–15 Broad Web site.

By making the other Web pages accessible only through the home page, a broad Web site forces the user to return to the home page to move from one Web page to another. The structure makes navigation time-consuming and limiting for users. A better structure would present a user with navigation alternatives that allow for direct movement between Web pages.

A **deep Web site** is one that has many levels of pages, requiring the user to click many times to reach a particular Web page (Figure 1–16). By requiring a visitor to move through several Web pages before reaching the desired page, a deep Web site forces a user to spend time viewing interim pages that may not have useful content. As an example, note the difference between finding the Module 3 Summary in Figure 1–13 on page HTML 18

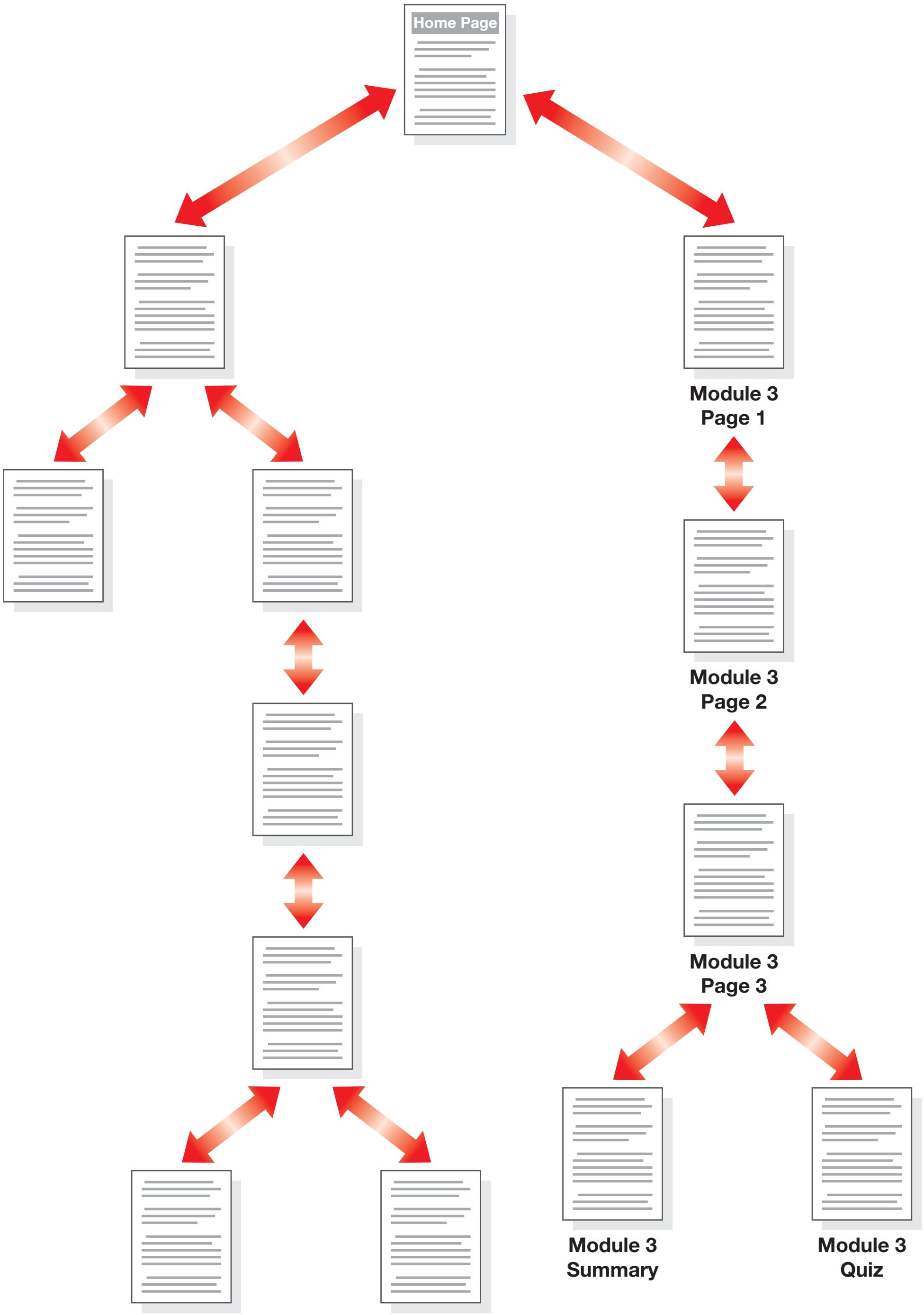


Figure 1–16 Deep Web site.

as compared to finding the same Web page (Module 3 Summary) in Figure 1–16. Assume that the user went through the Figure 1–13 Web site once to study the Module 3 material. When the user returns to the Web site using the Figure 1–16 structure, however, to review the Module 3 Summary Web page and then take the Module 3 Quiz, the user would have to go completely through the Module 3 material, Web page by Web page, in order to get to the Module 3 Summary page. You probably want to give users easier access to that Web page.

As a Web developer, you must select an appropriate structure for the Web site and work to balance breadth and depth. Users go to a Web site looking for information to complete a task. Good design provides ease of navigation, allowing users to find content quickly and easily. In addition to planning the design of the Web site itself, a Web developer should always plan the specifics of the file naming and storage conventions early on in the design phase. Once you determine the structure of the Web site and the approximate number of pages necessary to fulfill the site purpose, then you need to identify what standards to use with file naming and the folder structure. For instance, saving your Web pages with names such as page1.html and page2.html does not tell you the purpose of those Web pages. A better option would be to name the Sabatina Pizza Web site's home page sabatinahome.html or sabatinas.html, and the Web page with the user order form could be named orderform.html. Those file names tell the developer, as well as future developers maintaining the Web site, the purpose of those Web pages.

The same principle applies to the folder structure that you use in your Web development. The projects in this book have so few Web page files and graphic files that all content (Web pages and graphics) is stored together in one folder. With a large Web site, however, you may want to put the Web page files in a separate folder from the graphics files. Larger, more complex Web sites might also require a folder just to store video or audio clips. Where you store the files will affect how you access those files in your HTML code. Determining a good folder structure in the planning phase of the Web development life cycle is important. You'll learn more about effective folder structures in Chapter 3.

BTW

Web Page Structure

There are many resources available on the Web that further discuss Web site structures. In addition to general design information, there are a number of tools available for sale or free download that can help you design your Web sites. Enter the phrase "Web site structure" into a search engine to find many valuable design sources.

During the design and development phase, you also should consider what, if any, types of multimedia could contribute positively to the Web site experience. For instance, adding a video message from the company CEO might be useful, but if the computing environment of your users cannot accommodate video playback, then the video serves no purpose. In general, do not use advanced multimedia technologies in a Web site unless they make a positive contribution to the Web site experience. Today, more Web sites are using audio and video content. These new additions sometimes enhance the overall purpose of the Web site, but they sometimes detract from the message.

Finally, consider accessibility issues and internationalization. A Web developer should always design for viewing by a diverse audience, including physically impaired and global users. A key consideration is that the software used by physically impaired individuals does not work with some Web features. For instance, if you use graphics on the Web site, always include alternative text for each graphic. To support an international audience, use generic icons that can be understood globally, avoid slang expressions in the content, and build simple pages that load quickly over lower-speed connections.

The design issues just discussed are only a few of the basic Web page design issues that you need to consider. Throughout this book, design issues will be addressed as they relate to each project. Many excellent Web page design resources also are available on the Internet.

Once the design of the Web site is determined, Web development can begin. The rest of the chapters in this book discuss good Web page standards, in addition to the actual development of Web pages. You will learn many development techniques, including links, tables, graphics, image maps, and Web forms. The umbrella that covers all of the development techniques taught in this book is the use of Cascading Style Sheets (CSS).

BTW

Web Site Testing

Testing should be done on all pages in a Web site. You should also test the links within the Web page, to other Web pages in the Web site, and to external Web sites. Testing is an important part of Web development and assures that your Web pages work as intended.

Web Site Testing

A Web site should be tested at various stages of the Web design and development processes. The testing process should be comprehensive and include a review of Web page content, functionality, and usability. Web sites with broken links, missing graphics, and incorrect content create a poor impression. You want to attract users to your Web site and maintain their interest. If visitors find that your Web site is poorly tested and maintained, they will be less likely to return. You cannot get your message out if users don't frequently visit the Web site. Some basic steps to test content and functionality include:

- Validating each Web page by running it through the W3C markup validation service
- Proofreading page content and titles to review for accurate spelling and grammar
- Checking links to ensure they are not broken and are linked correctly
- Checking graphics to confirm they appear properly and are linked correctly
- Ensuring that accessibility and internationalization issues are addressed
- Testing forms and other interactive page elements
- Testing pages to make sure they load quickly, even over lower-speed connections
- Printing each page to check how printed pages look

Usability is the measure of how well a product, such as a Web site, allows a user to accomplish his or her goals. **Usability testing** is a method by which users of a Web site or other product are asked to perform certain tasks in an effort to measure the product's ease-of-use and the user's perception of the experience. Usability testing for a Web site should focus on three key aspects: content, navigation, and presentation.

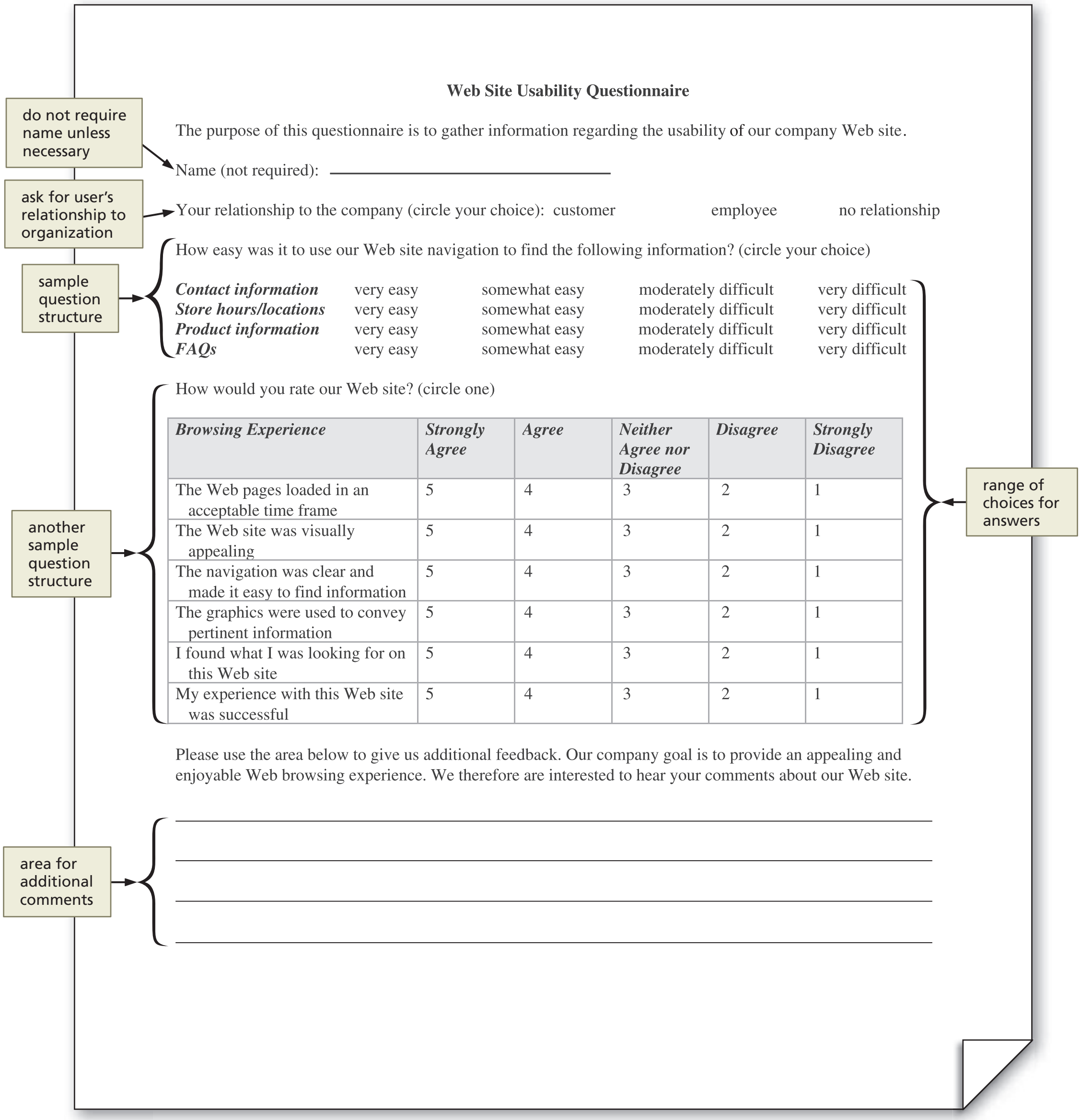
Usability testing can be conducted in several ways; one effective way is to directly observe users interfacing with (or using) the Web site. As you observe users, you can track the links they click and record their actions and comments. You even can ask the users to explain what tasks they were trying to accomplish while navigating the site. The information gained by observing users can be invaluable in helping identify potential problem areas in the Web site. For example, if you observe that users have difficulty finding the Web page that lists store locations and hours of operation, you may want to clarify the link descriptions or make the links more prominent on the home page.

Another way to conduct usability testing is to give users a specific task to complete (such as finding a product price list) and then observe how they navigate the site to complete the task. If possible, ask them to explain why they selected certain links. Both of these observation methods are extremely valuable, but require access to users.

Usability testing also can be completed using a questionnaire or survey. When writing a questionnaire or survey, be sure to write open-ended questions that can give you valuable information. For instance, asking the yes/no question "Is the Web site visually appealing?" will not gather useful information. If you change that question to use a scaled response, such as, "Rate the visual appeal of this Web site, using a scale of 1 for low and 5 for high," you can get more valuable input from the users. Make sure, however, that the scale itself is clear and understandable to the users. If you intend that a selection of 1 equates to a "low" rating, but the users think a 1 means "high," then your survey results are questionable. A usability testing questionnaire always should include space for users to write additional explanatory comments.

Figure 1–17 shows some examples of types of questions and organization that you might include in a Web site usability testing questionnaire.

In addition to content, functionality, and usability testing, there are other types of testing. For a newly implemented or maintained Web site, two other types of tests should be conducted: compatibility testing and stress testing. **Compatibility testing** is done to verify that the Web site works with a variety of browsers and browser versions. Initially, test using the browsers that your audience is most likely to use. Different browsers display some



Web Site Usability Questionnaire

The purpose of this questionnaire is to gather information regarding the usability of our company Web site.

Name (not required): ________________________

Your relationship to the company (circle your choice): customer employee no relationship

How easy was it to use our Web site navigation to find the following information? (circle your choice)

Contact information	very easy	somewhat easy	moderately difficult	very difficult
Store hours/locations	very easy	somewhat easy	moderately difficult	very difficult
Product information	very easy	somewhat easy	moderately difficult	very difficult
FAQs	very easy	somewhat easy	moderately difficult	very difficult

How would you rate our Web site? (circle one)

Browsing Experience	*Strongly Agree*	*Agree*	*Neither Agree nor Disagree*	*Disagree*	*Strongly Disagree*
The Web pages loaded in an acceptable time frame	5	4	3	2	1
The Web site was visually appealing	5	4	3	2	1
The navigation was clear and made it easy to find information	5	4	3	2	1
The graphics were used to convey pertinent information	5	4	3	2	1
I found what I was looking for on this Web site	5	4	3	2	1
My experience with this Web site was successful	5	4	3	2	1

Please use the area below to give us additional feedback. Our company goal is to provide an appealing and enjoyable Web browsing experience. We therefore are interested to hear your comments about our Web site.

____

____

____

____

do not require name unless necessary

ask for user's relationship to organization

sample question structure

another sample question structure

range of choices for answers

area for additional comments

Figure 1–17 Web site usability testing questionnaire.

aspects of Web pages differently, so it is important to test Web pages in several different browsers to verify they appear correctly in each browser. If you have used technologies that are not supported by older browsers or that require plug-ins, consider changing the content or providing alternative Web pages for viewing in older browsers. If your audience uses both PC and Macintosh computers, you need to test the Web pages using browsers on both platforms. You also may want to test the Web pages in several versions of the same browser (usually the two most recent versions), in the event users have not yet upgraded.

Stress testing determines what happens on your Web site when greater numbers of users access the site. A Web site with 10 users accessing it simultaneously may be fine. When 100 users use the Web site at once, it may operate at an unacceptably slow speed. Stress testing verifies that a Web site runs at an acceptable speed with many users. There are many cases in which companies did not effectively stress test their Web sites. The results of this lack of testing have been disastrous, with Web sites locking up when too many users tried to access the same Web site function. Especially in the case of Web sites used for e-commerce, it is imperative for the Web site to stay online. A crashed or locked-up Web site will not sell products or services, and the company stands to lose a lot of money.

Web Site Implementation and Maintenance

Once Web site testing is complete and any required changes have been made, the Web site can be implemented. Implementation of a Web site involves the actual publishing of the Web pages to a Web server. Many HTML editors and WYSIWYG editors provide publishing capabilities. You also can use FTP software, such as WS_FTP or CuteFTP, to publish your Web pages to a Web server. After you publish a Web site, you should test the Web pages again to confirm no obvious errors exist such as broken links or missing graphics.

After a site is tested and implemented, you need to develop a process to maintain the Web site; users will undoubtedly request changes and timely content will require updates. You need to ensure, however, that updates to the Web site do not compromise the site's integrity and consistency. For example, if you have several different people updating various Web pages on a large Web site, you might find it difficult to maintain a consistent look on pages across the Web site. You should plan to update your Web site on a regular basis to keep content up-to-date. This could mean hourly, daily, weekly, or less often, depending on the site's purpose. Do not allow your content to become stale, outdated, or include broken links to Web pages that no longer exist. As a user looking for information related to a specific topic, how likely are you to believe the information found on a Web site that says "Last update on December 10, 1998" comes from a reliable source?

To help manage the task of Web site maintenance, first determine who is responsible for updates to content, structure, functionality, and so on. Then, limit update responsibilities to specific users. Be sure the implementation is controlled by one or more Web developers who can verify that the Web pages are tested thoroughly before they are published.

As updates and changes are made to a Web site, consider notifying users with a graphic banner or a "What's New" announcement, explaining any new features and how the features will benefit them. This technique not only keeps users informed, but also encourages them to come back to the Web site to see what is new.

Finally, Web site monitoring is another key aspect of maintaining a Web site. Usually, the Web servers that host Web sites keep logs of information about Web site usage. A **log** is the file that lists all of the Web pages that have been requested from the Web site. Web site logs are an invaluable source of information for a Web developer. Obtaining and analyzing the logs allow you to determine such things as the number of visitors, browser types and versions, connection speeds, pages most commonly requested, and usage patterns. With this information, you can design a Web site that is effective for your targeted audience, providing visitors with a rich and rewarding experience.

BTW

Quick Reference
For a list of HTML tags and their associated attributes, see the HTML Quick Reference (Appendix A) at the back of this book, or visit the HTML Quick Reference Web page (scsite.com/HTML6e/qr).

Be an Observant Web User

As you embark on this course, and perhaps start your Web development career, one useful practice is to be an observant Web user. Most of us use the Web several times a day (or more often) to complete our daily tasks. As a Web developer, you should review the Web pages that you access with an eye on functionality and design. As described in the first In the Lab exercise at the end of the chapter, you can bookmark Web sites you think are effective and ineffective, good and bad, and use them as references for your own Web development efforts. Watch for trends on the Web as you search for information or make online purchases. For example, running banners used to be very popular on the Web, but now other design techniques have taken over. Being an observant Web user can help you become a more effective Web developer.

Chapter Summary

In this chapter, you have learned about the Internet, the World Wide Web, and associated technologies, including Web servers and Web browsers. You learned the essential role of HTML in creating Web pages and reviewed tools used to create HTML documents. You also learned that most Web development projects follow a five-phase life cycle. The items listed below include all the new concepts you have learned in this chapter.

1. Describe the Internet (HTML 2)
2. Describe the World Wide Web (HTML 3)
3. Define Web servers (HTML 4)
4. Describe the Internet, intranets, and extranets (HTML 5)
5. Discuss Web browsers (HTML 7)
6. Define Hypertext Markup Language (HTML 8)
7. Describe HTML elements (HTML 9)
8. List HTML coding practices (HTML 10)
9. Explain HTML versions (HTML 11)
10. Describe Cascading Style Sheets (HTML 11)
11. Define the Document Object Model (HTML 11)
12. Define Extensible Hypertext Markup Language (XHTML) (HTML 12)
13. Describe tools for creating HTML documents (HTML 13)
14. Discuss the Web development life cycle (HTML 14)
15. Describe steps in the Web development planning phase (HTML 15)
16. Explain the Web development analysis phase (HTML 16)
17. Discuss Web design and development (HTML 16)
18. Describe various Web site structures (HTML 17)
19. Discuss the importance of Web site testing, including usability testing, compatibility testing, and stress testing (HTML 22)
20. Discuss Web site implementation and maintenance (HTML 24)
21. Explain the importance of being an observant Web user (HTML 24)

Learn It Online

Test your knowledge of chapter content and key terms.

Instructions: To complete the Learn It Online exercises, start your browser, click the Address bar, and then enter the Web address `scsite.com/html6e/learn`. When the HTML Learn It Online page is displayed, click the link for the exercise you want to complete and read the instructions.

Chapter Reinforcement TF, MC, and SA

A series of true/false, multiple choice, and short answer questions that test your knowledge of the chapter content.

Flash Cards

An interactive learning environment where you identify chapter key terms associated with displayed definitions.

Practice Test

A series of multiple choice questions that test your knowledge of chapter content and key terms.

Who Wants to Be a Computer Genius?

An interactive game that challenges your knowledge of chapter content in the style of a television quiz show.

Wheel of Terms

An interactive game that challenges your knowledge of chapter key terms in the style of the television show *Wheel of Fortune*.

Crossword Puzzle Challenge

A crossword puzzle that challenges your knowledge of key terms presented in the chapter.

Apply Your Knowledge

Reinforce the skills and apply the concepts you learned in this chapter.

Understanding Web Page Structures

Instructions: Figure 1–18 shows the Web site of a popular retailer, Costco. As you learned in this chapter, three common Web site structures include linear, hierarchical, and webbed. Based on that information, determine the structure used in the Costco.com Web site. Review other similar Web sites and determine which Web site design features are beneficial to a user. Incorporate those ideas into a new Web site design for Costco.com. Use paper to sketch the new Web site design for the Costco.com Web site.

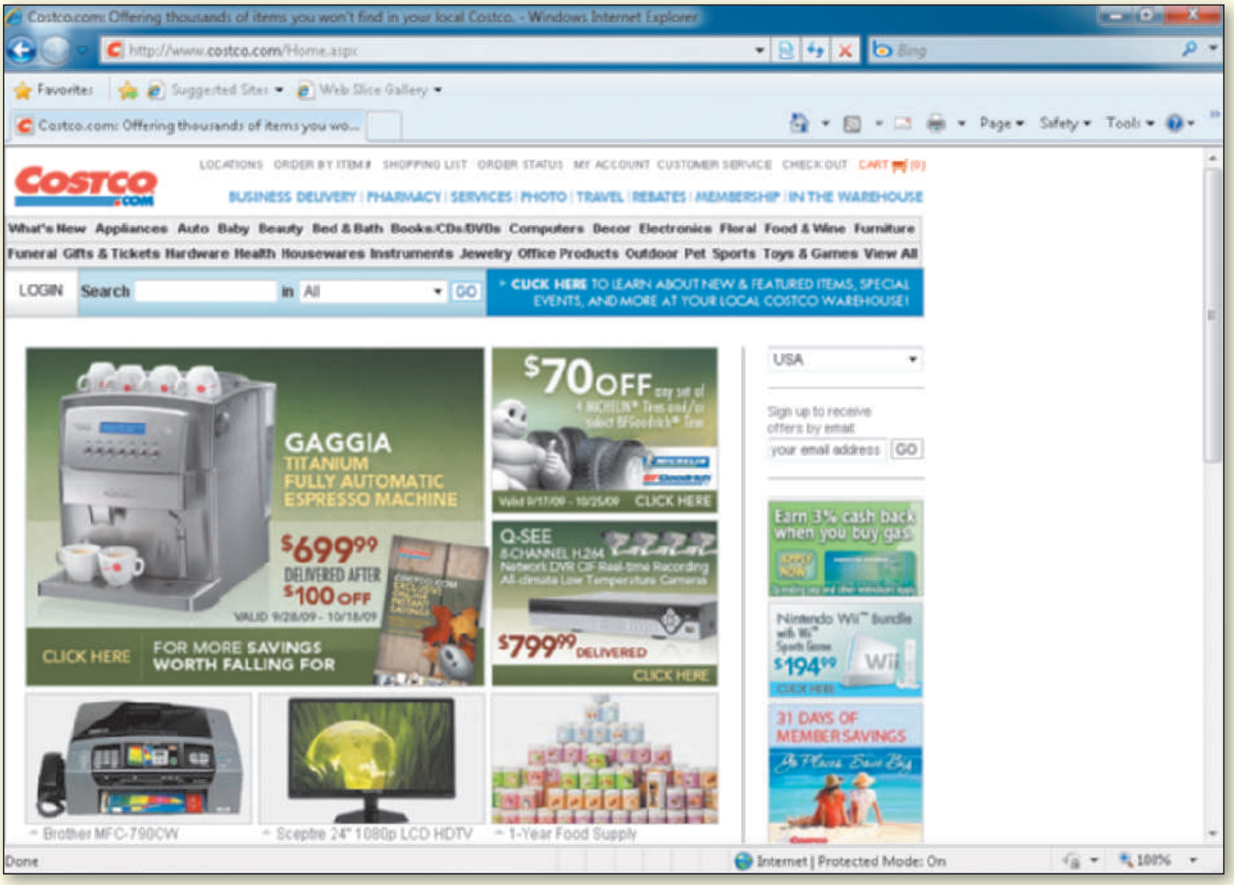

Costco.com: Offering thousands of items you won't find in your local Costco. - Windows Internet Explorer
http://www.costco.com/Home.aspx
Bing
Favorites
Suggested Sites
Web Slice Gallery
Costco.com: Offering thousands of items you wo...
Page
Safety
Tools
COSTCO .COM
LOCATIONS ORDER BY ITEM # SHOPPING LIST ORDER STATUS MY ACCOUNT CUSTOMER SERVICE CHECK OUT CART (0)
BUSINESS DELIVERY | PHARMACY | SERVICES | PHOTO | TRAVEL | REBATES | MEMBERSHIP | IN THE WAREHOUSE
What's New Appliances Auto Baby Beauty Bed & Bath Books/CDs/DVDs Computers Decor Electronics Floral Food & Wine Furniture
Funeral Gifts & Tickets Hardware Health Housewares Instruments Jewelry Office Products Outdoor Pet Sports Toys & Games View All
LOGIN Search in All GO
CLICK HERE TO LEARN ABOUT NEW & FEATURED ITEMS, SPECIAL EVENTS, AND MORE AT YOUR LOCAL COSTCO WAREHOUSE!
GAGGIA TITANIUM FULLY AUTOMATIC ESPRESSO MACHINE
$699.99 DELIVERED AFTER $100 OFF
VALID 9/28/09 - 10/18/09
CLICK HERE FOR MORE SAVINGS WORTH FALLING FOR
$70 OFF any set of 4 MICHELIN Tires and/or select BFGoodrich Tires
Valid 9/17/09 - 10/25/09 CLICK HERE
Q-SEE 8-CHANNEL H.264 Network DVR CIF Real-time Recording All-climate Low Temperature Cameras
$799.99 DELIVERED
CLICK HERE
USA
Sign up to receive offers by email
your email address GO
Earn 3% cash back when you buy gas
APPLY NOW
Nintendo Wii Bundle with Wii Sports Game $194.99
CLICK HERE
31 DAYS OF MEMBER SAVINGS
Brother MFC-790CW
Sceptre 24" 1080p LCD HDTV
1-Year Food Supply
Done
Internet | Protected Mode: On
100%

Figure 1–18

Perform the following tasks:

1. Start your browser. Open the Costco.com Web site in your browser. Print the home page by clicking Print on the File menu or by clicking the Print icon.
2. Explore the Costco.com Web site, determine the structure that the Web site utilizes (linear, hierarchical, or webbed), and then write that on the printout.
3. Find two other online retail store Web sites. Print the home pages for each of those sites. Navigate these Web sites to identify any design features that are beneficial to a user.
4. Using ideas from the online retail Web sites that you found in Step 3, sketch a new Web site structure and design for the Costco.com site on paper.
5. Write your name on the printouts and the sketch and hand them in to your instructor.

Extend Your Knowledge

Extend the skills you learned in this chapter and experiment with new skills.

Evaluating a User Survey

Instructions: Start your word-processing program. Open the document extend1-1.doc from the Chapter01\Extend folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files. This sample Web site survey shows various questions that could be asked in gathering feedback on Web site usability. It is important to assess the usability of your Web site, as mentioned in the chapter.

You will evaluate the user survey and modify the questions or add new questions that apply to the Web site that you have chosen. You then will ask five people to take your survey.

Perform the following tasks:

1. Connect to the Internet and identify one Web site that you think is confusing, difficult to use, or unattractive.
2. Make changes to the user survey by following some of the guidelines provided in Figure 1–17 on page HTML 20 and save the file as extend1-1solution.doc. Add questions to the survey that will help you determine a user's opinion of the selected Web site. Remember that the purpose of using surveys is to improve a Web site. Your questions therefore have to provide you with information that can help you achieve that goal.
3. Print five copies of your edited survey and distribute those printed copies to at least five family members or friends. Have them complete the survey relative to the Web site that you chose in Step 1. Collect their survey responses.
4. Determine what you learned from the results of the surveys. How helpful was the survey in determining needed improvements to the selected Web site? Were there other questions or other types of questions that you could ask that could have provided more valuable information about the Web site?
5. Identify what you can do to improve your Web site survey. Using a word processor, type your analysis at the bottom of your extend1-1solution.doc document, and then submit it in the format specified by your instructor.

Make It Right

Analyze a document and correct all errors and/or improve the design.

Correcting the Web Site Type Table

Instructions: Start your word-processing program. Open the file makeitright1-1.doc from the Chapter01\MakeItRight folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files. The document, shown in Table 1–7 on the next page, is a modified version of Table 1–5 (on page HTML 17). The table, which intentionally contains errors, lists the Web page organizational standards discussed in Chapter 1. Without referring to Table 1–5, make the necessary corrections to Table 1–7 by identifying the correct organizational standard and reason for each of the seven elements listed. Save the revised document as makeitright1-1solution.doc and then submit it in the form specified by your instructor.

Continued >

Make It Right *continued*

Table 1–7 Types of Web Sites

Element	Organizational Standard	Reason
Titles	Use these to separate main topics	These provide graphical elements to break up Web page content
Headings	Use simple ones that clearly explain the purpose of the page	These provide shorter, more-readable sections of text
Horizontal Rules	Utilize these in bulleted or numbered format when appropriate	Web users do not always scroll to view information on longer pages; appropriate page lengths increase the likelihood that users will view key information
Paragraphs	Maintain suitable Web page lengths	Web users are quick to peruse a page; placing critical information at the top of the page increases the likelihood that users will view key information
Lists	Insert these graphical elements to separate main topics	These provide organized, easy-to-read text that readers can scan
Page Length	Use these to help divide large amounts of text	Titles help users understand the purpose of the page; a good title explains the page in the search engine results lists
Information	Emphasize the most important information by placing it at the top of a Web page	These make a Web page easier to read; simple headlines clearly explain the purpose of the page

In the Lab

Design and/or create a document using the guidelines, concepts, and skills presented in this chapter. Labs are listed in order of increasing difficulty.

Lab 1: Evaluating Web Sites

Problem: In Chapter 1, you learned the importance of being an observant Web user, which can help you become a more effective Web developer. To further develop that concept, find and then discuss “good” and “bad” (“effective” and “ineffective”) Web sites. Start your browser and your word-processing program. Open the file lab1-1.doc from the Chapter01\IntheLab folder of the Data Files for Students. See the inside back cover of this book for instructions for downloading the Data Files for Students, or contact your instructor for information on accessing the required files for this book.

Instructions: Perform the following steps using your browser and the file listed.

1. Browse the Internet and find one “good” (i.e., effective) or one “bad” (i.e., ineffective) Web site. Determine, based on your own opinion, what is “good” and what is “bad” in these Web sites. You will identify the specific reason for your opinion in Step 2 below.
2. Using the lab1-1.doc file, rate the usability of the good and bad Web sites that you selected. Be sure to add additional comments in the survey to specifically identify your positive or negative feelings about the Web site. Save the documents using the file names lab1-1goodsolution.doc and lab1-1badsolution.doc.
3. Team up with one other student and discuss your survey results while reviewing the Web sites that you selected. Also review your student partner’s Web site and surveys.
4. Open the word-processing document named lab1-1comparison.doc and note any differences of opinion in your survey results and the opinion of your student partner. Make sure to include the

URLs of the four Web sites that you and your partner reviewed in this new document. Save the document using the file name lab1-1comparison.doc.

5. Submit your own solutions (lab1-1goodsolution.doc and lab1-1badsolution.doc) and the team document (lab1-1comparison.doc) in the format specified by your instructor.

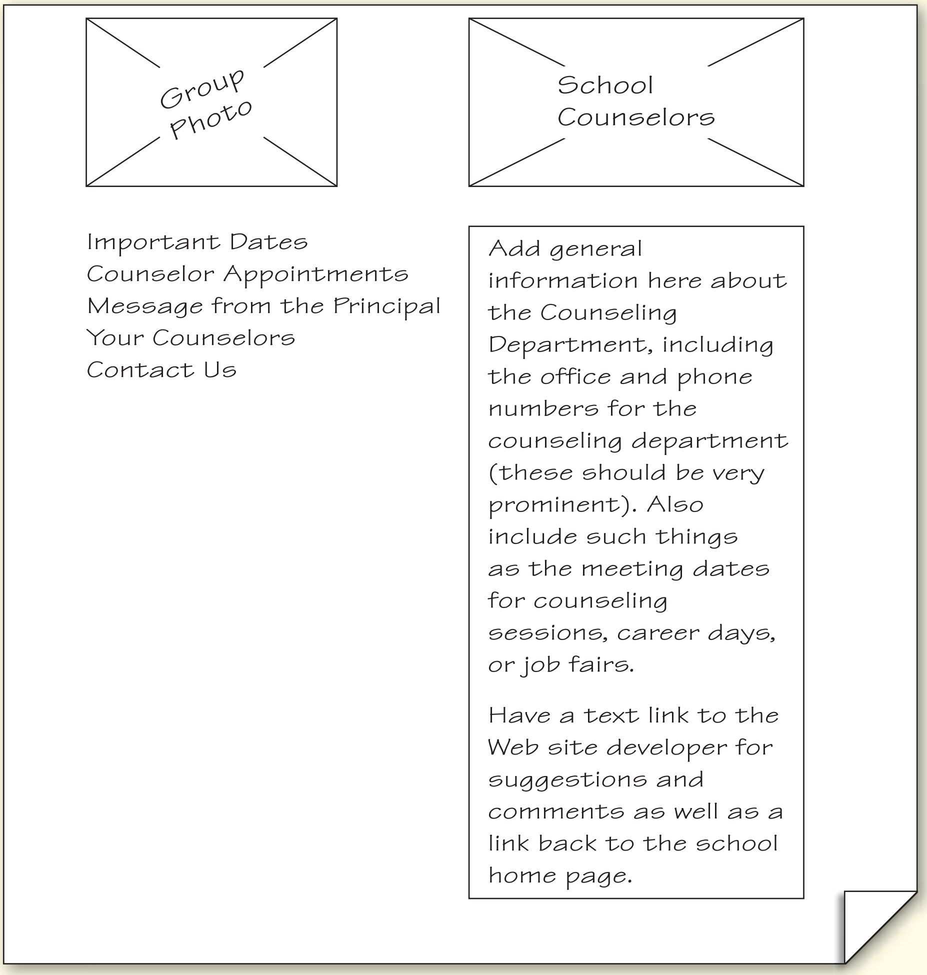
In the Lab

Lab 2: Designing a Web Site for the School Counselors

Problem: Your school's counseling department wants you to design a Web site to link to/from the school's main Web site. To do this, you must complete the planning and analysis phases by answering such questions as:

- What tasks do students want to complete on the Web site?
- What tasks will the school counselors want to complete on the Web site?
- What types of information should be included?
- Who will provide information on the Web site content?

Interview several students of the school and determine the answers to these questions. Based on that information, you will draw a sketch of a design for the home page of the counseling department's Web site, such as the design shown in Figure 1–19.



Add general information here about the Counseling Department, including the office and phone numbers for the counseling department (these should be very prominent). Also include such things as the meeting dates for counseling sessions, career days, or job fairs.

Have a text link to the Web site developer for suggestions and comments as well as a link back to the school home page.

Figure 1–19

Continued >

In the Lab *continued*

Instructions: Perform the following tasks using your word-processing program and paper.

1. Review the questions in the planning and analysis phases of the Web development life cycle, as shown in Table 1–4 on page HTML 15.
2. Assess the value of those questions listed in the table. Add other questions that you think are relevant to the planning and analysis of a counseling department Web site.
3. Start your word-processing program. If necessary, open a new document. Enter the questions you will use for planning and analysis. Save the document using the file name lab1-2solution.doc. Print the document.
4. Using the questions that you developed, interview school counselors to determine what information should be included in the Web site, who will provide the information, and so on.
5. After gathering the required information, sketch a design for the home page of the Web site on paper.
6. Share your design sketch with students of the school and some of the counselors to get their opinions on your design.
7. Redraw the design on paper, making any changes based on the input from the students and counselors.
8. Write Original Design on the first design sketch.
9. Write Second Design on the second design sketch.
10. Write your name on the lab1-2solution printout and sketches and hand them in to your instructor.

In the Lab

Lab 3: Asking Planning Phase Questions: Internet, Intranet, and Extranet Designs

Problem: Three different types of Web sites were discussed in this chapter — Internet, intranet, and extranet. Each type of Web site is designed for a different target audience. Think of a business (for example, a restaurant, library, or card store) that you frequently visit and how that business might use an Internet, intranet, and extranet site. The Planning phase questions found in Table 1–4 on page HTML 15 have been reproduced in Table 1–8. Determine the answers to these questions and enter your ideas in the table. If there are questions that are difficult/impossible to answer directly (for example, What are users' computing environments?), list ways that you can find the answers to those questions.

Table 1–8 Planning Phase Questions

Type Of Business			
Planning Question	**Internet**	**Intranet**	**Extranet**
What is the purpose of this Web site?			
Who will use this Web site?			
What are users' computing environments?			
Who owns and authors the information on the Web site?			
Who decides if/where the information goes on the Web site?			

Instructions: Start your word-processing program. Open the file lab1-3.doc from the Chapter01\IntheLab folder of the Data Files for Students. See the inside back cover of this book for instructions for downloading the Data Files for Students, or contact your instructor for information on accessing the required files. Perform the following tasks using your word-processing program.

1. Enter the type of business in the first row of the table. Determine the answers to the first question for all three types of Web sites and then enter the answers in the appropriate table cells. If the business you choose has no reason to maintain one of the three types of Web sites (Internet, intranet, or extranet), thoroughly identify in your answer why they would not need it.
2. Continue answering the other four questions.
3. Save the file using the file name lab1-3solution.doc and then submit it in the format specified by your instructor.

Cases and Places

Apply your creative thinking and problem-solving skills to design and implement a solution.

• Easier •• More Difficult

• 1: Learn More About Web Access Issues

Your company wants to offer online courses to employees. Several employees have physical challenges, and it is imperative that the online courses be accessible to everyone. Your manager has asked you to learn more about accessibility guidelines to determine what changes are needed to make the company's online courses accessible to those with physical challenges. Research accessibility issues on the Web and determine what needs should be considered to satisfy accessibility requirements. Make sure to visit the W3.org Web site. Consider the following questions when doing your research: What types of physical challenges do you have to consider when developing Web pages? What recommendations do the Web sites make for accessibility? Why is this important to you as a Web developer?

• 2: Determine Web Site Structure

You have recently started a job as a Web developer at Triple-Tom Design. In your new job, you often are asked to restructure clients' existing Web sites to make them more user friendly and easier to navigate. Find a Web site that utilizes more than one Web site structure (linear, hierarchical, and/or webbed). Is the information conveyed on the Web site displayed in the appropriate structure? Does the structure effectively support the information communicated? Print the home page of the Web site that you found. On a blank sheet of paper, sketch a design that you think might be more appropriate for the message. Use a word-processing program to create a document that explains why your new design is more effective.

•• 3: Learn More About CSS

This chapter introduced the use of Cascading Style Sheets (CSS) in Web development. You will utilize CSS throughout this book, so it is important that you become familiar with it. Visit the W3Schools Web site (*w3schools.com*) to learn more about CSS. Find three other sources of information about CSS on other Web sites. Using a word-processing program, create a document that briefly describes CSS and how you can best utilize it for Web development.

Continued >

Cases and Places *continued*

•• 4: Design a Web Site for Your Sister

Make It Personal

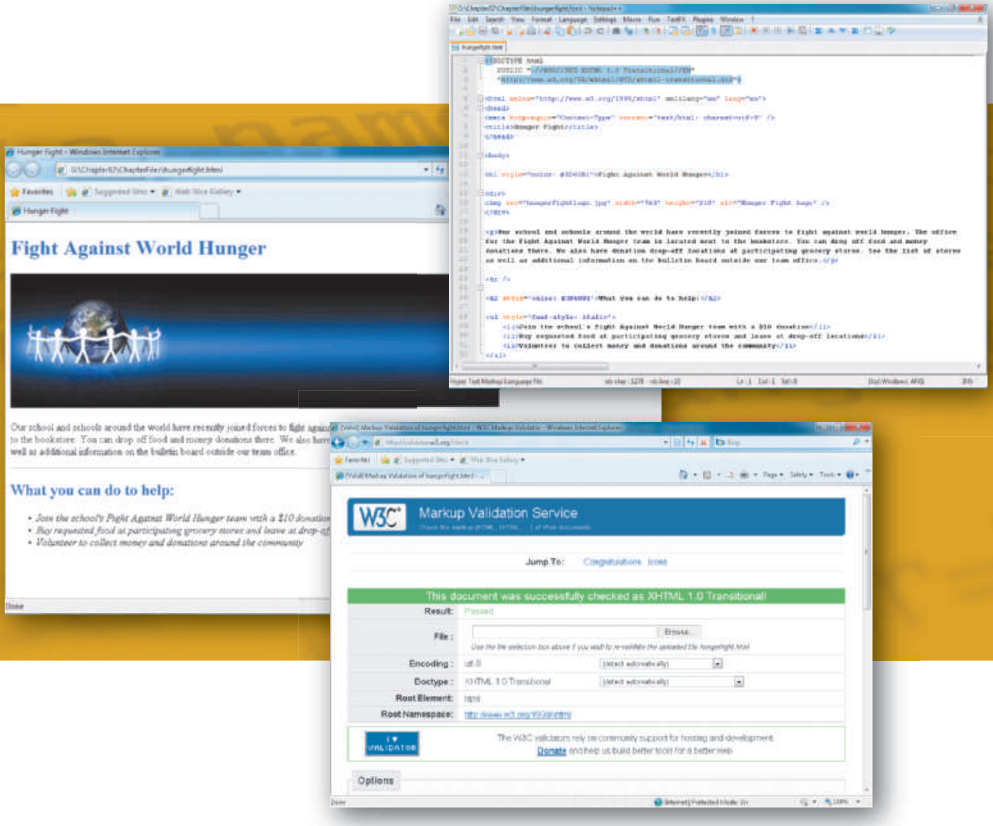
Your sister would like to sell the jewelry that she makes online. You would like to develop a Web site for her that can display her jewelry and be a means for sales transactions. Thoroughly investigate the Web sites of other online jewelers and print home pages from three of them. Before starting on the design, you decide to create a list of Web design principles to which the Web site will adhere. Search the Web for more information about Web site design. Find three Web sites that give information about Web design principles. In a word-processing document, take the ideas presented in this chapter together with the ideas presented in the other Web sites and make a comprehensive list of Web design principles. Determine whether or not the Web sites that you printed comply with good design principles. Where appropriate, identify any conflicting design principles discussed in the Web sites.

•• 5: Create a Usability Survey

Working Together

Your school recently updated its Web site. The school administration has selected a team to develop a usability survey or questionnaire that you can give to a group of users (including students, parents, and teachers) to evaluate the new Web site. What types of information do you hope to gain by distributing this survey or questionnaire? How can you convey information on the survey or questionnaire so it clearly identifies what you are asking? Create a usability survey using your word-processing program. Give the survey or questionnaire to at least five people, including at least one from each group identified above. Allow participants to complete the survey or questionnaire and then look at the results. If possible, ask the users what they thought the various questions conveyed. Is that what you wanted to convey? If not, think of clearer, more relevant questions and redistribute the survey to another group of participants.

2 Creating and Editing a Web Page Using Inline Styles


hungerfight.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
hungerfight.html
Hunger Fight - Windows Internet Explorer
Hunger Fight
W3C Markup Validation Service - Windows Internet Explorer
W3C Markup Validation Service
Jump To: Congratulations Icons
Options

```
<!DOCTYPE html
  PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hunger Fight</title>
</head>

<body>

<h1 style="color: [illegible]">Fight Against World Hunger</h1>

<div>
<img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />
</div>

<p>Our school and schools around the world have recently joined forces to fight against world hunger. The office
for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money
donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores
as well as additional information on the bulletin board outside our team office.</p>

<hr />

<h2 style="color: [illegible]">What you can do to help:</h2>

<ul style="font-style: italic">
    <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
    <li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
    <li>Volunteer to collect money and donations around the community</li>
</ul>
```

This document was successfully checked as XHTML 1.0 Transitional!

Result: Passed

File:

Encoding: utf-8

Doctype: XHTML 1.0 Transitional

Root Element: html

Root Namespace: http://www.w3.org/1999/xhtml

The W3C validators rely on community support for hosting and development.
Donate and help us build better tools for a better web.

Objectives

You will have mastered the material in this chapter when you can:

- Identify elements of a Web page
- Start Notepad++ and describe the Notepad++ window
- Enable word wrap in Notepad++
- Enter HTML tags
- Enter a centered heading and a paragraph of text
- Create an unordered, ordered, or definition list
- Save an HTML file
- Use a browser to view a Web page
- Activate Notepad++
- Identify Web page image types and attributes
- Add an image, change the color of headings on a Web page, change bulleted list style, and add a horizontal rule using inline styles
- View the HTML source code in a browser
- Print a Web page and an HTML file
- Quit Notepad++ and a browser

2 Creating and Editing a Web Page Using Inline Styles

Introduction

With an understanding of the Web development life cycle, you should have a good idea about the importance of proper Web site planning, analysis, and design. After completing these phases, the next phase is the actual development of a Web page using HTML. As discussed in Chapter 1, Web pages are created employing HTML, which uses a set of special tags to define the structure, layout, and appearance of a Web page. In this chapter, you create and edit a Web page using basic HTML tags.

Project — Fight Against World Hunger Web Page

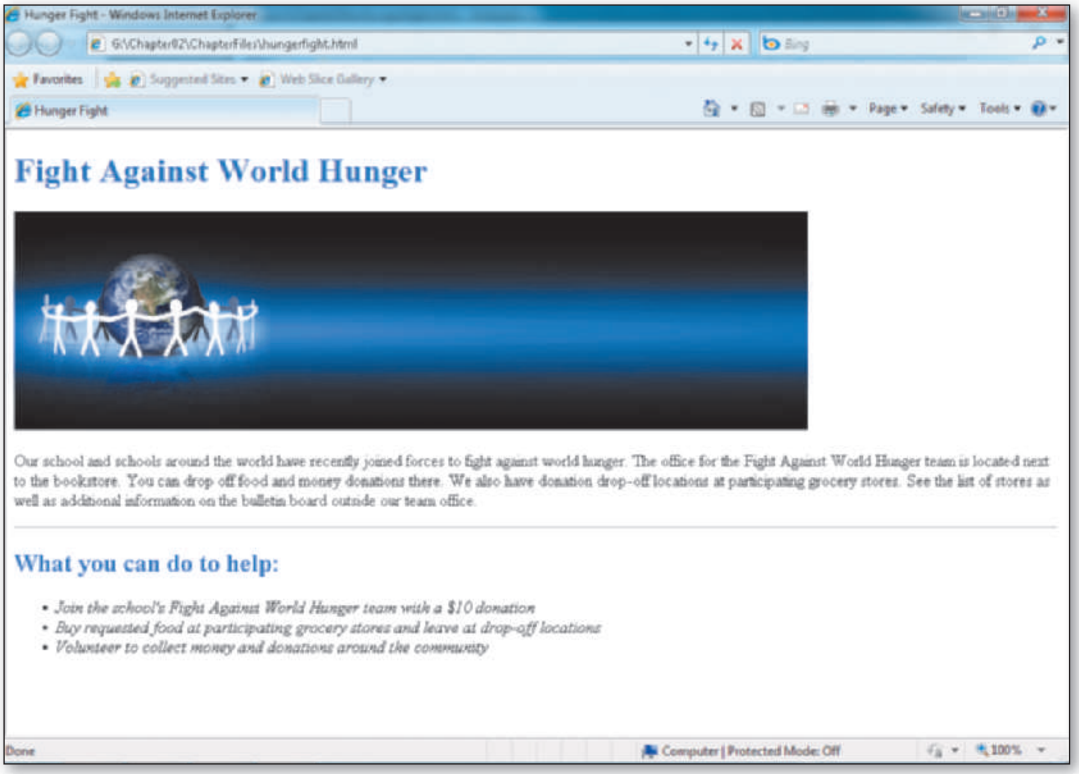
Chapter 2 illustrates how to use HTML to create a Web page for the school's Fight Against World Hunger team, as shown in Figure 2–1a. The team is joining other students around the world to collect donations and money. Because you are the only Web development major in the group, team members have asked for your help in developing a Web page to advertise the team's cause. The Fight Against World Hunger Web page will include general information about the team, along with information on how to donate and participate.

To enter text and HTML tags used to create the Web page, you will use a program called Notepad++, as shown in Figure 2–1b. **Notepad++** is a basic text editor you can use for simple documents or for creating Web pages using HTML. Previous editions of this book used Notepad, a text editor that is a part of the Windows operating system. Notepad worked well to enter the HTML elements and Web page content, but Notepad++ is a more sophisticated text editor with more features. Notepad++ has line numbering, which is very helpful when reading code. It also is color-coded for the text that is entered, as you will see later in the chapter. Because of this added versatility, Notepad++ is the chosen text editor for this edition. You will use the Microsoft Internet Explorer browser to view your Web page as you create it. By default, Internet Explorer is installed with Windows, and Notepad++ can be downloaded for free on the Web. If you do not have Notepad++ or Internet Explorer available on your computer, other text editor or browser programs will work.

Overview

As you read this chapter, you will learn how to create the Web page shown in Figure 2–1 by performing these general tasks:

- Enter HTML code into the Notepad++ window.
- Save the file as an HTML file.
- Enter basic HTML tags and add text to the file.
- Organize the text by adding headings and creating a bulleted list.
- Enhance the Web page's appearance with inline styles.
- View the Web page and HTML code in your browser.
- Validate the Web page.
- Print the Web page.



Hunger Fight - Windows Internet Explorer
G:\Chapter02\ChapterFiles\hungerfight.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Hunger Fight
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

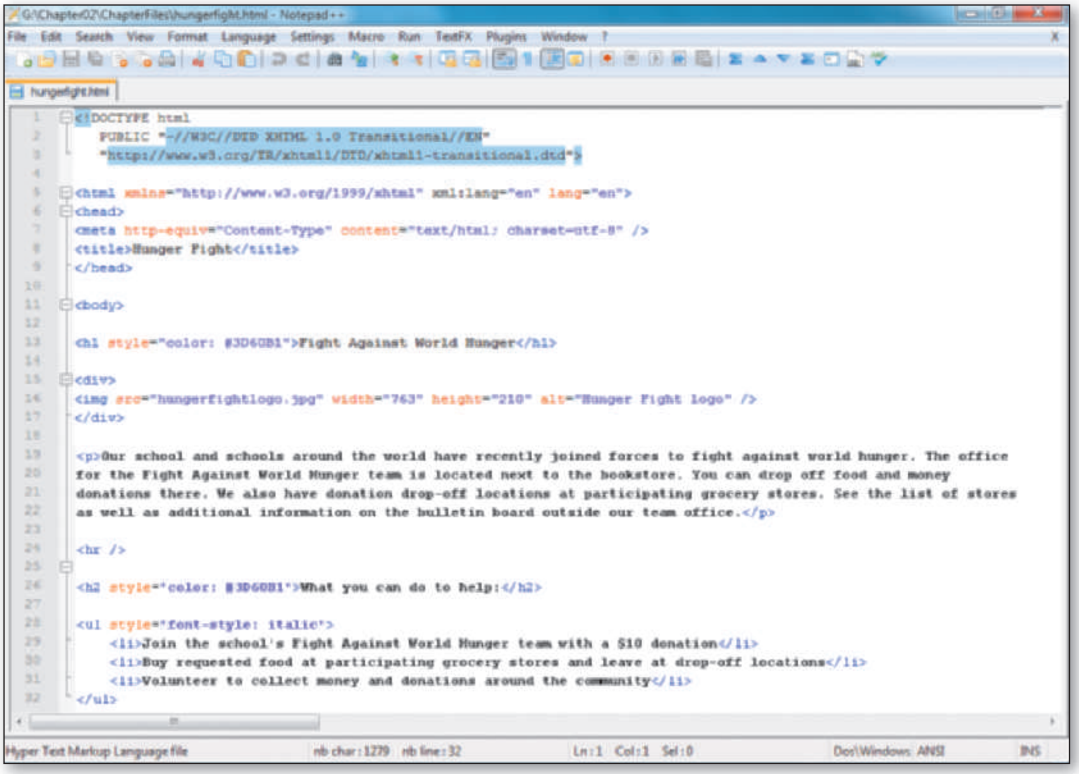
Fight Against World Hunger

Our school and schools around the world have recently joined forces to fight against world hunger. The office for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional information on the bulletin board outside our team office.

What you can do to help:

- *Join the school's Fight Against World Hunger team with a $10 donation*
- *Buy requested food at participating grocery stores and leave at drop-off locations*
- *Volunteer to collect money and donations around the community*

(a) Fight Against World Hunger Web page.



```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hunger Fight</title>
</head>

<body>

<h1 style="color: #3D60B1">Fight Against World Hunger</h1>

<div>
<img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />
</div>

<p>Our school and schools around the world have recently joined forces to fight against world hunger. The office
for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money
donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores
as well as additional information on the bulletin board outside our team office.</p>

<hr />

<h2 style="color: #3D60B1">What you can do to help:</h2>

<ul style="font-style: italic">
   <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
   <li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
   <li>Volunteer to collect money and donations around the community</li>
</ul>
```

(b) HTML code used to create the Web page.

Figure 2–1

Plan Ahead

General Project Guidelines

When creating a Web page, the actions you perform and decisions you make will affect the appearance and characteristics of the finished page. As you create a Web page, such as the project shown in Figure 2–1 on the previous page, you should follow these general guidelines:

1. **Complete Web page planning.** Before developing a Web page, you must know the purpose of the Web site, identify the users of the site and their computing environments, and decide who owns the information on the Web page.
2. **Analyze the need for the Web page.** In the analysis phase of the Web development life cycle, you should analyze what content to include on the Web page. In this phase, you determine the tasks and the information that the users need. Refer to Table 1–4 on page HTML 15 for information on the phases of the Web development life cycle.
3. **Choose the content for the Web page.** Once you have completed the analysis, you need to determine what content to include on the Web page. Follow the *less is more* principle. The less text, the more likely the Web page will be read. Use as few words as possible to make a point.
4. **Determine the file naming convention that you will use for this Web page.** Before you start creating and saving files, you should decide on a standard way of naming your files. Should you use the .htm or .html extension? As explained later in the chapter, you use the .htm extension when the host Web server only allows short file names. You use .html when the host Web server allows long file names. What name should you give your file to indicate the file's content or purpose? For instance, naming a Web page page1.html does not describe what that Web page is; a more descriptive name is helpful in development of the Web site.
5. **Determine where to save the Web page.** You can store a Web page permanently, or **save** it, on a variety of storage media, including a hard disk, USB flash drive, CD, or DVD. Your instructor or the company for whom you are developing the Web page may have specific storage media requirements.
6. **Determine what folder structure to use on your storage device.** Once you have determined the storage media to use, you should also determine folder location, structure, and names on which to save the Web page. This should be done before you start to save any of your files.
7. **Identify how to format various elements of the Web page.** The overall appearance of a Web page significantly affects its ability to communicate clearly. Examples of how you can modify the appearance, or **format**, of the Web page include adding an image, color to headings, and horizontal rules.
8. **Find appropriate graphical images.** Eye-catching graphical images help convey the Web page's overall message and add visual interest. Graphics can be used to show a product, service, result, or benefit, or visually convey a message that is not expressed easily with words.
9. **Establish where to position and how to format the graphical images.** The position and format of the graphical images should grab the attention of passersby and draw them into reading the Web page.
10. **Test the Web page for XHTML compliance.** An important part of Web development is testing to assure that your Web page follows XHTML standards. The World Wide Web Consortium (W3C) has an online validator that allows you to test your Web page and clearly explains any errors.

When necessary, more specific details concerning the above guidelines are presented at appropriate points in the chapter. The chapter also will identify the actions performed and decisions made regarding these guidelines during the creation of the Web page shown in Figure 2–1a.

Elements of a Web Page

Today, many people — individuals, students, teachers, business executives, Web developers, and others — are developing Web pages for personal or professional reasons. Each person has his or her own style and the resulting Web pages are as diverse as the people who create them. Most Web pages, however, include several basic features, or elements, as shown in Figure 2–2.

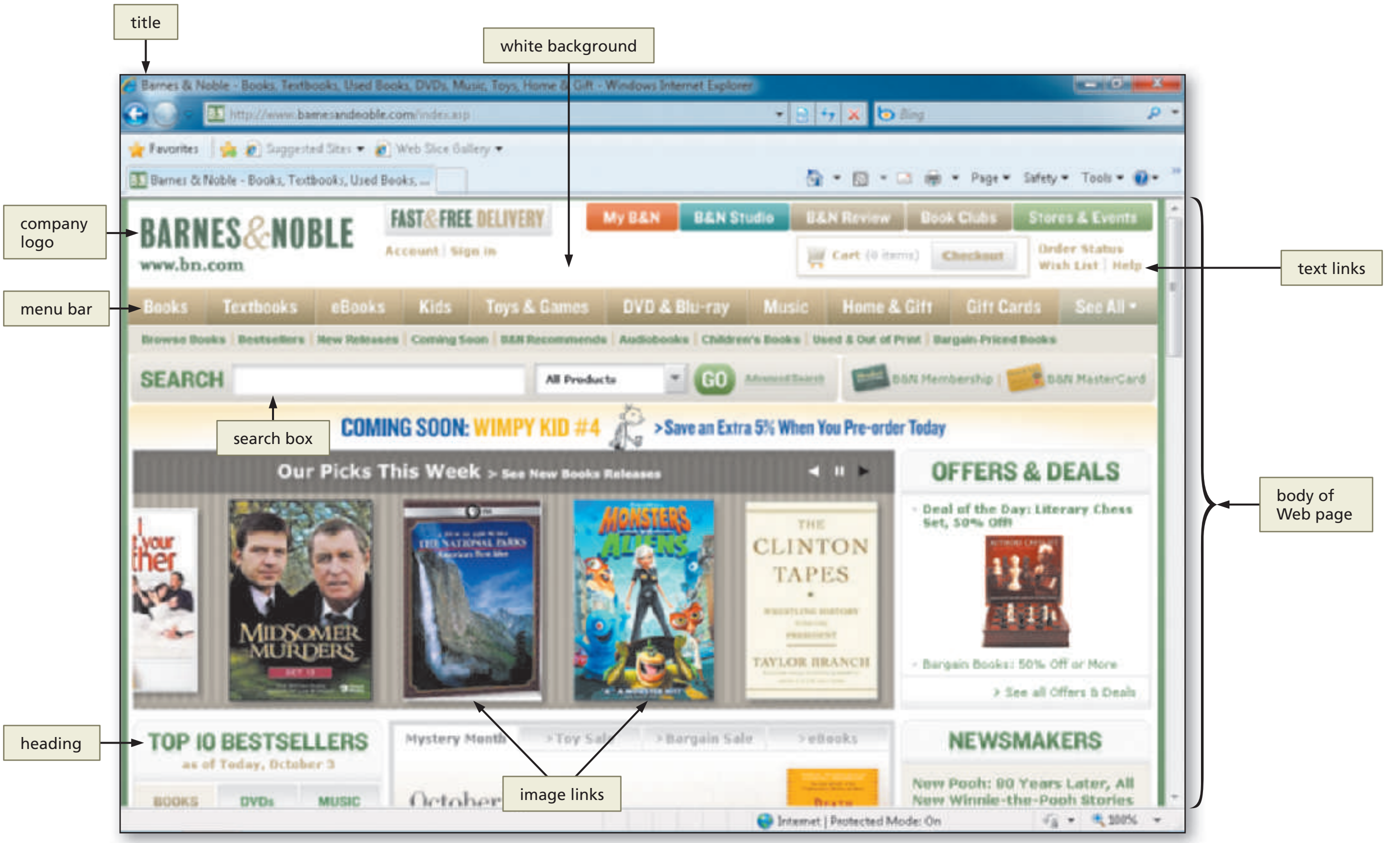


Figure 2–2 Elements of a Web page.

Window Elements

The **title** of a Web page is the text that appears on the title bar and taskbar of the browser window when the Web page appears. The title also is the name assigned to the page if a user adds the page to the browser's list of **favorites**, or **bookmarks**. Because of its importance, you always should include a title on your Web page. The title, which usually is the first element you see, should identify the subject or purpose of the page. The title should be concise, yet descriptive, and briefly explain the page's content or purpose to the visitor.

The **body** of the Web page contains the information that is displayed in the browser window. The body can include text, graphics, and other elements. The Web page displays anything that is contained within the <body> (start body) and </body> (end body) tags. The **background** of a Web page is a solid color, a picture, or a graphic against which the other elements on the Web page appear. When choosing your background, be sure it does not overpower the information on the Web page. As you surf the Web, watch for background colors or images that do not allow the content of the Web page to show through. This is certainly a "what not to do" guideline for Web developers.

BTW

Favorites and Bookmarks

Internet Explorer and Mozilla Firefox have a feature that allows you to add Web pages to a list so you quickly can access them in the future. Internet Explorer refers to these as Favorites, while Firefox calls them Bookmarks. Web developers need to make sure that they include a descriptive title on their Web pages because that is the title that is shown in the bookmark or favorite.

BTW

HTML Resources
The Web has many wonderful sources of information on HTML and Web page development. One of the better sources is the HTML Goodies Web site, which has primers and tutorials on a variety of topics as well as free downloads and discussion areas. To learn more about this Web site, search for the term "HTML Goodies" in a search engine.

Text Elements

Normal text is the default text format used for the main content of a Web page. Normal text can be used in a standard paragraph or formatted to appear as: bold, italic, or underlined; in different colors; and so on. You can also use inline cascading style sheets (CSS) to alter the format of the text, an approach used throughout this book. Normal text also can be used in a series of text items called a **list**. Typically, lists are bulleted or numbered. Various attributes of lists can be altered. For example, you might want to have square bullets rather than the default round bullets, or to have your list text in italic or bold.

Headings are used to set off paragraphs of text or different sections of a page. Headings are a larger font size than normal text and often are bold or italic or a different color than normal text. Heading sizes run from 1 (the largest) to 6 (the smallest). You generally go from one heading size to the next smallest when setting up a Web page.

Image Elements

Web pages typically use several different types of graphics, or images, such as an icon, bullet, line, photo, illustration, or other picture. An image used in a Web page also is called an **inline image**, which means the image or graphic file is not part of the HTML file. Instead, the Web browser merges the separate graphic file into the Web page as it is displayed in the browser window. The HTML file contains <img> tags that tell the browser which graphic file to request from the server, where to insert it on the page, and how to display it.

Web pages typically use several different types of inline images. An **image map** is a special type of inline image in which you define one or more areas as hotspots. A **hotspot** is an area of an image that activates a function when selected. For example, each hotspot in an image map can link to a different Web page. Some inline images are **animated**, meaning they include motion and can change in appearance.

Horizontal rules are lines that are displayed across a Web page to separate different sections of the page. Although the appearance of a horizontal rule can vary, many Web pages use an inline image as a horizontal rule. Alternatively, you can use the horizontal rule tag (<hr />) to add a simple horizontal rule, such as the one used in this chapter project.

Hyperlink Elements

One of the more important elements of a Web page is a hyperlink, or link. A **link** is text, an image, or another Web page element that you click to instruct the browser to go to a location in a file or to request a file from a server. On the Web, links are the primary way to navigate between Web pages and among Web sites. Links point not only to Web pages, but also to graphics, sound, video, program files, e-mail addresses, and parts of the same Web page. Text links, also called hypertext links, are the most commonly used hyperlinks. For example, the text "Order Status" in Figure 2–2 links to the status of the user's orders. When text identifies a hyperlink, it usually appears as underlined text, in a color different from the rest of the Web page text. Image links are also very common. For example, there are two image links identified in Figure 2–2. Clicking either of those image links sends (or links) the user to another Web page that contains further information about those items. A company logo often serves as an image link to a home page or corporate information.

Defining Web Page Structure

To create an HTML document, you use a text editor to enter information about the structure of the Web page, the content of the Web page, and instructions for how that content should be displayed. This book uses the Notepad++ text editor to enter the HTML elements and content for all projects and exercises.

Before you begin entering the content for this project, you must start by entering tags that define the overall structure of the Web page. You do this by inserting a <!DOCTYPE> tag and five tags (<html>, <head>, <meta />, <title>, and <body>) together with the closing tags (</html>, </head>, </title>, and </body>). These tags define the structure of a standard Web page and divide the HTML file into its basic sections: header information and the body of the page that contains text and graphics.

The **<!DOCTYPE>** tag is used to tell the browser which HTML or XHTML version and type the document uses. The World Wide Web Consortium (W3C) supports three document types for HTML or XHTML: strict, transitional, and frameset. The **strict** document type is specified when you want to prohibit the use of deprecated tags. **Deprecated tags** are tags that the W3C has earmarked for eventual removal from their specifications, because those tags have been replaced with newer, more functional tags. The **transitional** document type allows the use of deprecated tags. The **frameset** document type, which is used to support frames on a Web page, also allows the use of deprecated tags. The <!DOCTYPE> tag includes a URL that references a Document Type Definition found on the w3.org Web site. Although this book does not use deprecated tags, the projects do use the XHTML 1.0 transitional document type, because the projects use a few tags (e.g., name) that are not supported by the XHTML 1.1 standard. A **Document Type Definition** (**DTD**) is a file containing definitions of tags and instructions for how they should be used in a Web page. The project in this chapter uses the transitional document type.

BTW **The DOCTYPE Tag**
The W3Schools Web site provides additional information about the DOCTYPE tags used for the strict, transitional, and frameset document types. To learn more about the DOCTYPE tag, visit the W3C Web site. It provides a wealth of information on this and other HTML tags.

Defining the HTML Document

The first set of tags beyond the <!DOCTYPE> tag, **<html>** and **</html>**, indicates the start and end of an HTML document. This set of tags contains all of the content of the Web page, the tags that format that content, and the tags that define the different parts of the document. Software tools, such as browsers, use these tags to determine where the HTML code in a file begins and ends.

The Header The next set of tags, **<head>** and **</head>**, contains the Web page title and other document header information. One of the tags inserted into the <head> </head> container is the meta tag. The **<meta />** tag has several functions. In this chapter, it is used to declare the character encoding UTF-8. The **Unicode Transformation Format** (**UTF**) is a compressed format that allows computers to display and manipulate text. When the browser encounters this meta tag, it will display the Web page properly, based on the particular UTF-8 encoding embedded in the tag. UTF-8 is the preferred encoding standard for Web pages, e-mail, and other applications. The encoding chosen also is important when validating the Web page. The meta tag has other purposes that are described in subsequent chapters of the book. The <title> tag is another tag inserted into the <head> </head> container. The **<title>** and **</title>** tags indicate the title of the Web page, which appears on the browser title bar and taskbar when the Web page is displayed in the browser window. The title also is the name given to the page when a user adds the page to a favorites or bookmarks list.

BTW **XHTML Compliance**
To make your HTML files compliant with XHTML standards, always enter tags in lowercase (with the exception of the <!DOCTYPE> tag, which is always uppercase). Throughout this book, the project directions follow these standards to help you learn good HTML and XHTML coding practices.

The Body The final set of tags, **<body>** and **</body>**, contains the main content of the Web page. All text, images, links, and other content are contained within this final set of tags. Table 2–1 on the next page lists the functions of the tags described so far, as well as other tags that you use in this chapter.

Table 2–1 Basic HTML Tags and Their Functions

HTML Tag	Function
<!DOCTYPE>	Indicates the version and type of HTML used; includes a URL reference to a DTD
<html> </html>	Indicates the start and end of an HTML document
<head> </head>	Indicates the start and end of a section of the document used for the title and other document header information
<meta />	Indicates hidden information about the Web page
<title> </title>	Indicates the start and end of the title. The title does not appear in the body of the Web page, but appears on the title bar of the browser.
<body> </body>	Indicates the start and end of the body of the Web page
<h*n*> </h*n*>	Indicates the start and end of the text section called a heading; sizes range from <h1> through <h6>. See Figure 2–8a on page HTML 46 for heading size samples.
<p> </p>	Indicates the start and end of a new paragraph; inserts a blank line above the new paragraph
<ul> </ul>	Indicates the start and end of an unordered (bulleted) list
<li> </li>	Indicates that the item that follows the tag is an item within a list
<hr />	Inserts a horizontal rule
<br />	Inserts a line break at the point where the tag appears

Most HTML start tags, such as <html>, <head>, <title>, and <body>, have corresponding end tags, </html>, </head>, </title>, and </body>. Note that, for tags that do not have end tags, such as <meta />, <hr />, and <br />, the tag is closed using a space followed by a forward slash.

BTW

WordPad
WordPad is a text editor included with Windows that you can also use to create HTML files. To start WordPad, click the Start button on the taskbar, point to All Programs on the Start menu, point to Accessories on the All Programs submenu, and then click WordPad on the Accessories submenu. WordPad help provides tips on how to use the product.

To Start Notepad++

With the planning, analysis, and design of the Web page complete, you can begin developing the Web page by entering HTML using a text editor.

The following steps, which assume Windows 7 is running and Notepad++ is installed, start Notepad++ based on a typical installation. You may need to ask your instructor how to download, install, and start Notepad++ for your computer.

1

- Click the Start button on the Windows taskbar to display the Start menu.
- Click All Programs at the bottom of the left pane on the Start menu to display the All Programs list.
- Click the Notepad++ folder in the All Programs list (Figure 2–3).

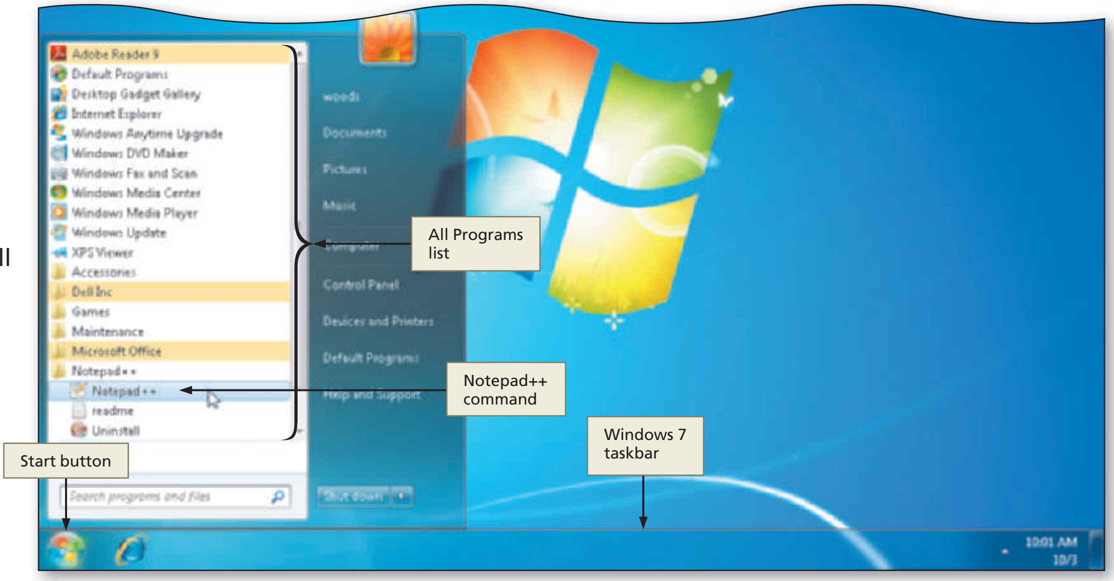


Figure 2–3

2

- Click Notepad++ in the list to display a blank Notepad++ window (Figure 2–4).
- If the Notepad++ window is not maximized, click the Maximize button on the Notepad++ title bar to maximize it.

Q&A

What is a maximized window?

A maximized window fills the entire screen. When you maximize a window, the Maximize button changes to a Restore Down button.

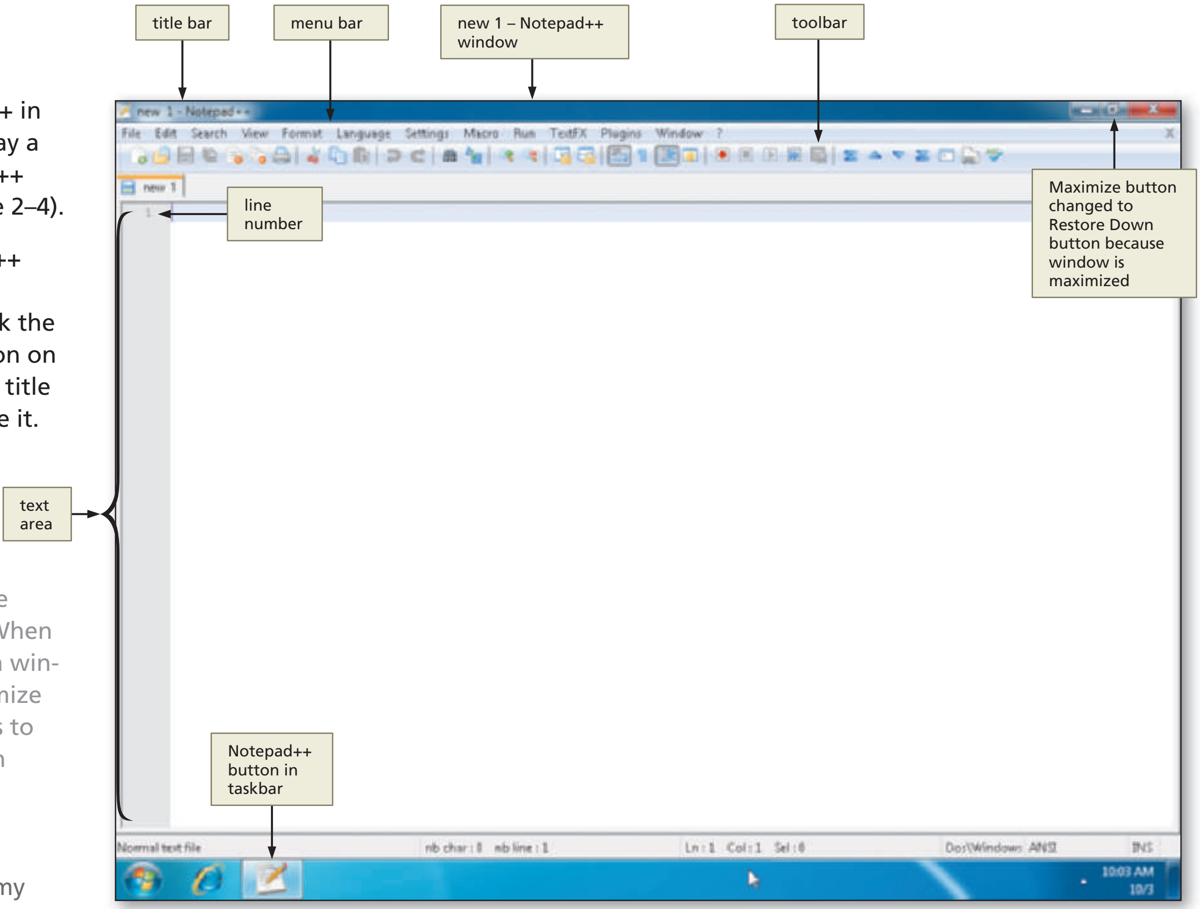


Figure 2–4

Q&A

How can I add Notepad++ to my Start menu or the taskbar?

To add Notepad++ to the Start menu or taskbar, complete Step 1 above. Right-click Notepad++, then click Pin to Start menu or Pin to taskbar.

Other Ways

1. Double-click Notepad++ icon on desktop, if one is present
2. Click Notepad++ on Start menu, if it is present

BTW

Notepad++ Help

Notepad++ has a wealth of help information available. There is Notepad++ Help internal to the program as well as help facilities online. NpWiki is the wiki for Notepad++ that you can access. The primary aim of this wiki is to be a storehouse for all information about Notepad++.

To Enable Word Wrap in Notepad++

In Notepad++, the text entered in the text area scrolls continuously to the right unless the word wrap feature is enabled, or turned on. **Word wrap** causes text lines to break at the right edge of the window and appear on a new line, so all entered text is visible in the Notepad++ window. With paragraphs of text and word wrap enabled, the text all appears on one logical line number even though it may display on multiple physical lines in Notepad++. Word wrap does not affect the way text prints. The following step shows how to enable word wrap in Notepad++.

1

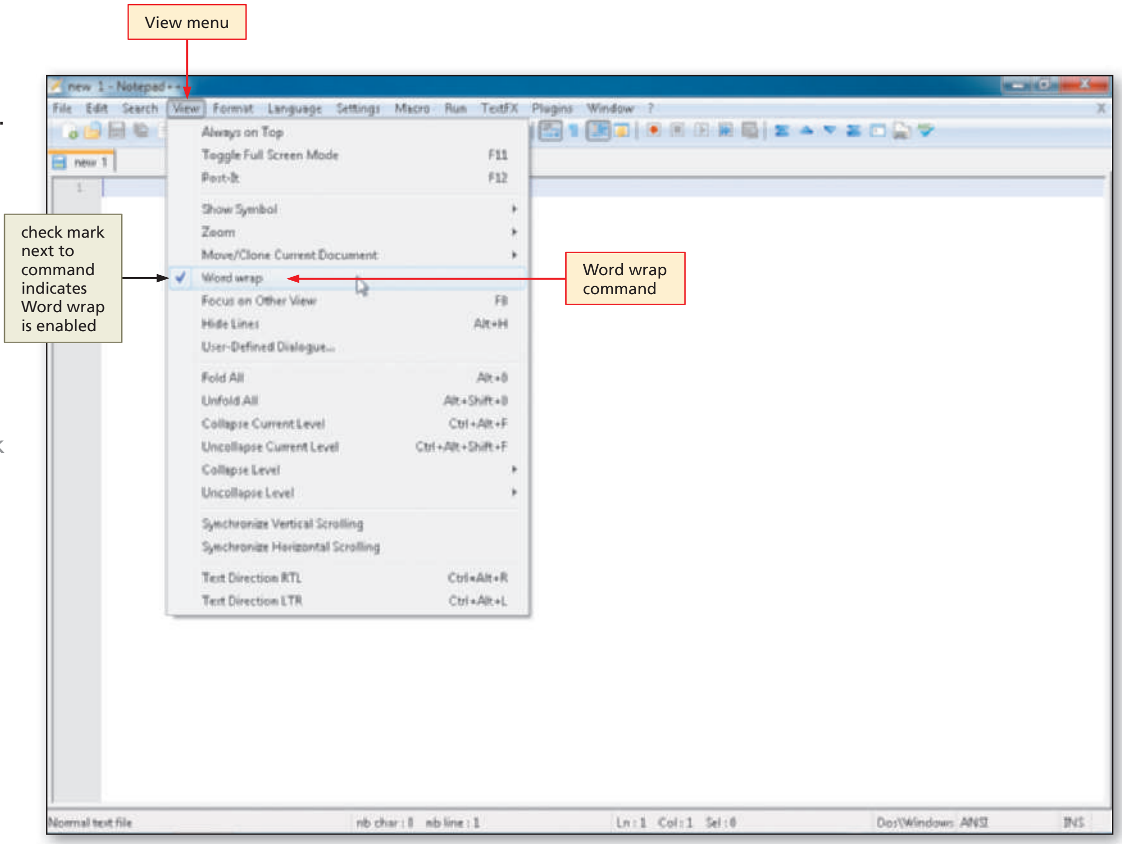
- Click View on the menu bar (Figure 2–5).
- If Word wrap does not have a check mark next to it, click Word wrap.

Q&A How do I know if Word wrap is enabled?

When Word wrap is enabled, a check mark precedes the Word wrap command on the View menu, and when you type, your words remain on the screen.

Q&A What happens to the text if Word wrap is not enabled?

The text of a paragraph would appear all on one line in Notepad++ and scroll off the screen, though the Web page would still be displayed correctly in the browser. For readability in Notepad++, you should enable Word wrap.



View menu

check mark next to command indicates Word wrap is enabled

Word wrap command

Figure 2–5

To Define the Web Page Structure Using HTML Tags

The first task is to enter the initial tags that define the Web page structure. Table 2–2 contains the HTML tags and text used to create the Web page shown in Figure 2–1a on page HTML 35. In this chapter and throughout this book, where large segments of HTML code or text are to be entered, you will find this code or text in tables with line number references, rather than within the steps. The steps will direct you to enter the text shown in the tables.

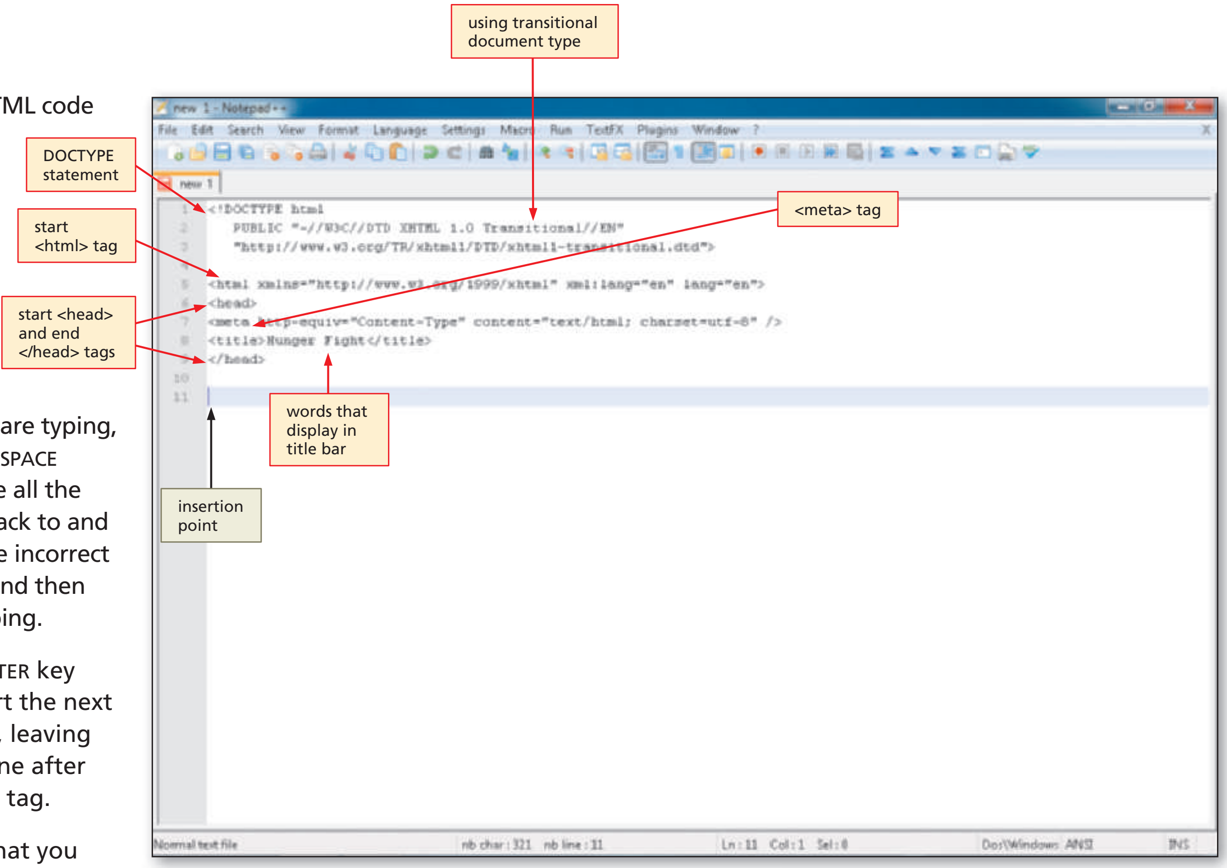
Table 2–2 Initial HTML Tags

Line	HTML Tag and Text
1	<!DOCTYPE html
2	PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN "
3	" http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd ">
4	
5	<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en " lang="en ">
6	<head>
7	<meta http-equiv="Content-Type " content="text/html;charset=utf-8 " />
8	<title>Hunger Fight</title>
9	</head>

The following steps illustrate how to enter the initial tags that define the structure of the Web page.

1

- Enter the HTML code shown in Table 2–2 (Figure 2–6). Press ENTER at the end of each line. If you make an error as you are typing, use the BACKSPACE key to delete all the characters back to and including the incorrect characters, and then continue typing.
- Press the ENTER key twice to start the next line of code, leaving one blank line after the </head> tag.
- Compare what you typed to Figure 2–6. If you notice errors, use your mouse pointer or arrow keys to move the insertion point to the right of each error and use the BACKSPACE key to correct the error.



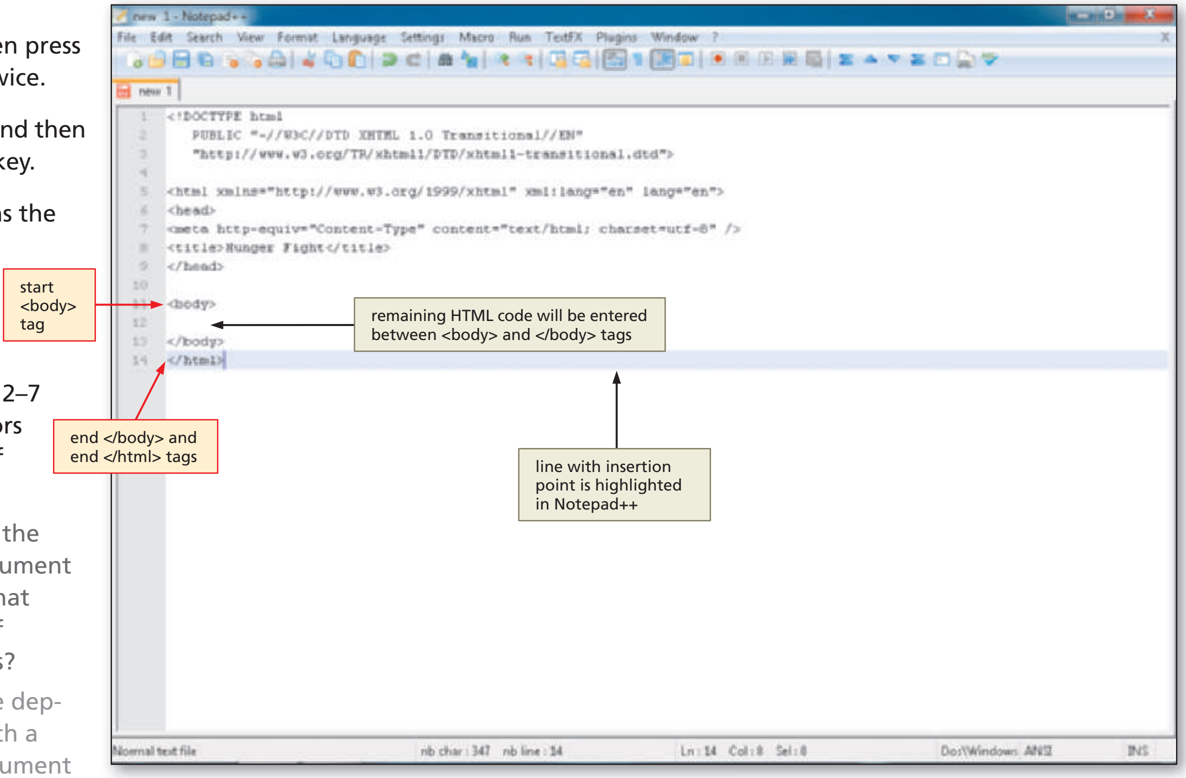
```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hunger Fight</title>
</head>
```

new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
Normal text file
nb char : 321 nb line : 11
Ln : 11 Col : 1 Sel : 0
Dos\Windows ANSI
INS
using transitional document type
DOCTYPE statement
start <html> tag
<meta> tag
start <head> and end </head> tags
words that display in title bar
insertion point

Figure 2–6

2

- On line 11, type `<body>` and then press the ENTER key twice.
- Type `</body>` and then press the ENTER key.
- Type `</html>` as the end tag (Figure 2–7).
- Compare what you typed to Figure 2–7 and correct errors in your typing if necessary.



new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
Normal text file
nb char : 347 nb line : 14
Ln : 14 Col : 8 Sel : 0
Dos\Windows ANSI
INS

```
1  <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <title>Hunger Fight</title>
9  </head>
10
11 <body>
12
13 </body>
14 </html>
```

start <body> tag

remaining HTML code will be entered between <body> and </body> tags

end </body> and end </html> tags

line with insertion point is highlighted in Notepad++

Figure 2–7

Q&A

Why am I using the transitional document type? Doesn't that allow the use of deprecated tags?

Yes, you can use deprecated tags with a transitional document type. Some valid tags (e.g., name) cannot be used with the XHTML 1.1 standard, so this text uses XHTML 1.0 with the transitional document type.

Q&A

What is the difference between the <title> and <body> tags?

The text contained within the <title> </title> tags is what appears on the browser title bar when the Web page is displayed in the browser window. The text and graphics contained within the <body> </body> tags are what is displayed in the browser window.

Q&A

Do I have to type the initial HTML tags for every Web page that I develop?

The same initial HTML tags are used in many other chapters. To avoid retyping these tags, you can save the code that you just typed, and give it a new file name, something like structure.html or template.html. If you save this file at the root level of your folders, you will have easy access to it for other chapters.

Q&A

Can I use either uppercase or lowercase letters for my HTML code?

To make your HTML files compliant with XHTML standards, always enter tags in lowercase (with the exception of the <!DOCTYPE> tag, which is always uppercase). In this book, the project directions follow these guidelines to help you learn acceptable HTML and XHTML coding standards.

Plan Ahead

Identify how to format various elements of the text.
By formatting the characters and paragraphs on a Web page, you can improve its overall appearance. On a Web page, consider the following formatting suggestions.

- **Effectively utilize headings.** The main heading is generally the first line of text on the Web page. It conveys the purpose of the Web page, such as asking for help with the food drive. Heading size standards should be followed, as shown in Figure 2–8 on the next page. The main heading should be size 1, and subtopics or subheadings should be size 2. It is generally not a good idea to jump from one heading size to a heading two sizes smaller. For instance, if your main heading is size 1, then the next heading down should be heading size 2, not heading size 4.
- **Use default text size when appropriate.** The body text consists of all text between the heading and the bottom of the Web page. This text highlights the key points of the message in as few words as possible. It should be easy to read and follow. While emphasizing the positive, the body text must be realistic, truthful, and believable. The default font size and style are appropriate to use for the body of text.
- **Highlight key paragraphs with bullets.** A **bullet** is a dot or other symbol positioned at the beginning of a paragraph. The bulleted list contains specific information that is more clearly identified by a list versus a paragraph of text.

Entering Web Page Content

Once you have established the Web page structure, it is time to enter the content of the Web page, including headings, informational text paragraphs, and a bulleted list.

Headings are used to separate text or add new topics on the Web page. Several styles and sizes of headings exist, indicated by the tags <h1> through <h6>, with <h1> being the largest. Generally, you use the Heading 1 style for the main heading. Figure 2–8a on the next page shows a Web page using various sizes of headings. A Web page usually has only one main heading; therefore, the HTML file for that Web page usually has only one set of <h1> </h1> tags. One method of maintaining a consistent look on a Web page is to use the same heading size for headings at the same topic level (Figure 2–8b). Notice that the paragraphs of text and the bulleted lists are all separated by size 2 headings in Figure 2–8b. This separation indicates that the text (i.e., two paragraphs plus one bulleted list) is all at the same level of importance on the Web page.

Web pages generally contain a significant amount of text. Because you turned Word wrap on (Figure 2–5 on page HTML 42) in Notepad++, you will see all of the text that you type in one Notepad++ window. Breaking the text into paragraphs helps to separate key ideas and makes the text easier to read. Paragraphs are separated with a blank line by using <p> (start paragraph) and </p> (end paragraph) tags. Putting too much text on one Web page is not a good choice. Your audience can get lost in large amounts of text. If you find that you have to press the Page Down key dozens of times to get to the bottom of the Web page, you need to think about restructuring your Web page. You can split up large pieces of information under more headings, which will be more manageable and more readable.

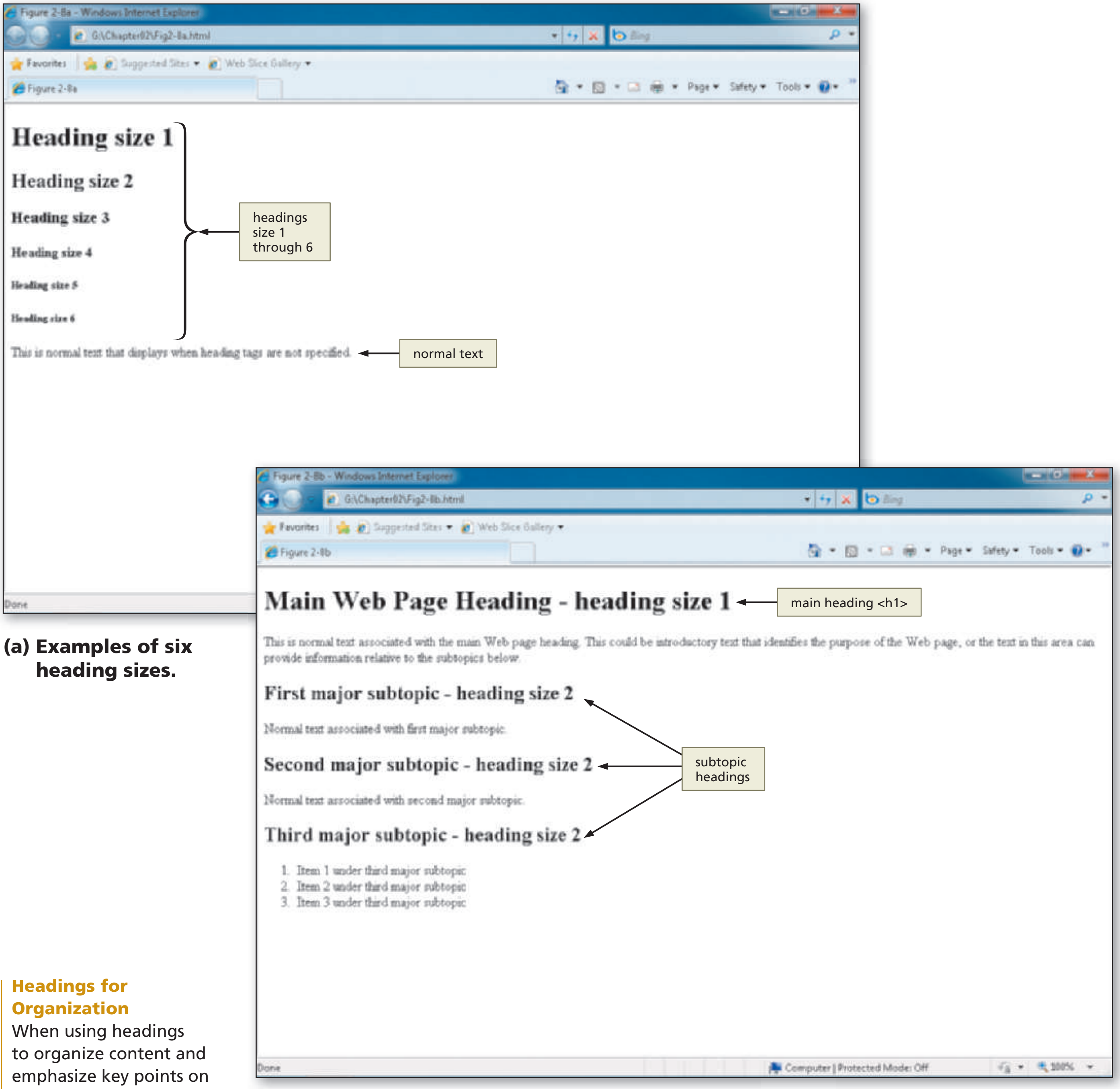


Figure 2-8a - Windows Internet Explorer
G:\Chapter02\Fig2-8a.html
Favorites
Suggested Sites
Web Slice Gallery
Figure 2-8a
Page
Safety
Tools
Done
Figure 2-8b - Windows Internet Explorer
G:\Chapter02\Fig2-8b.html
Figure 2-8b
Computer | Protected Mode: Off
100%

Heading size 1

Heading size 2

Heading size 3

Heading size 4

Heading size 5

Heading size 6

This is normal text that displays when heading tags are not specified.

headings size 1 through 6

normal text

(a) Examples of six heading sizes.

Main Web Page Heading - heading size 1

This is normal text associated with the main Web page heading. This could be introductory text that identifies the purpose of the Web page, or the text in this area can provide information relative to the subtopics below.

First major subtopic - heading size 2

Normal text associated with first major subtopic.

Second major subtopic - heading size 2

Normal text associated with second major subtopic.

Third major subtopic - heading size 2

1. Item 1 under third major subtopic
2. Item 2 under third major subtopic
3. Item 3 under third major subtopic

main heading <h1>

subtopic headings

(b) A consistent use of headings can help organize Web page content.

Figure 2–8

BTW

Headings for Organization

When using headings to organize content and emphasize key points on a Web page, be sure to use them consistently. That is, if you use a Heading 2 (<h2>) style for a specific level of text, you always should use a Heading 2 style to break up information at that level. Also, do not skip levels of headings in your document. For example, do not start with a Heading 1 (<h1>) style and then use a Heading 3 (<h3>) style.

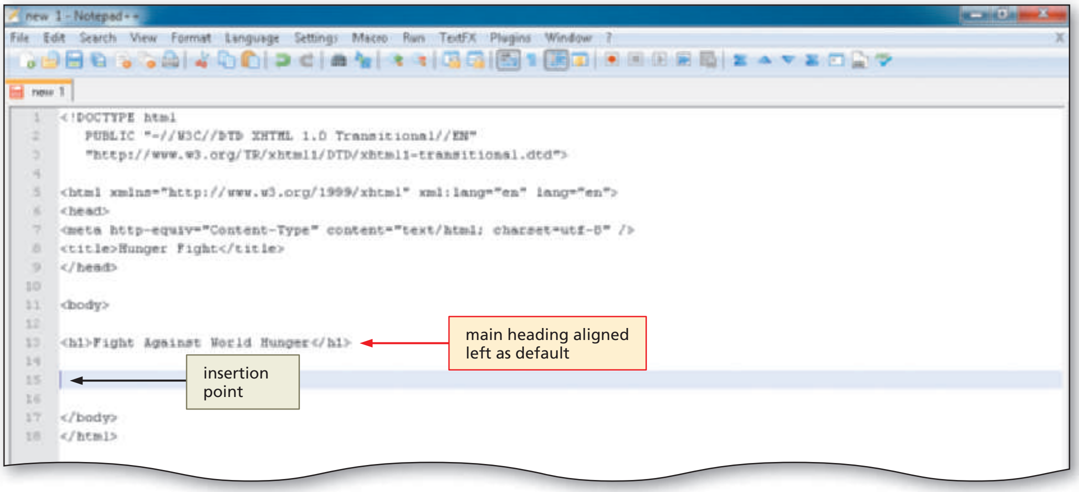
Sometimes text on a Web page is easier for users to read and understand when it is formatted as a list, instead of as a paragraph. HTML provides several types of lists, but the most popular are unordered (bulleted) and ordered (numbered) lists. During the design phase of the Web development life cycle, you decide on the most effective way to structure the Web content and format the text on the Web page. Your main goal is to give Web page visitors an effective way to find the information that they need. If users cannot easily find what they need, they will not revisit your Web site.

To Enter a Heading

The heading, Fight Against World Hunger, is the main heading and indicates the main message of the Web page. To draw attention to this heading, you will use the <h1> tag for the heading. The following step illustrates how to enter a heading on the Web page.

1

- With the insertion point on line 12, press the ENTER key once, leaving a blank line after the <body> tag.
- Type `<h1>Fight Against World Hunger</h1>` in the text area, and then press the ENTER key twice (Figure 2–9).


new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1

```
1  <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <title>Hunger Fight</title>
9  </head>
10
11 <body>
12
13 <h1>Fight Against World Hunger</h1>
14
15
16
17 </body>
18 </html>
```

main heading aligned left as default
insertion point

Figure 2–9

Q&A

Why did you put an additional line in the HTML code after the <body> tag and the heading?

An additional line space was inserted for readability. This blank line will not be displayed on the Web page.

To Enter a Paragraph of Text

After you enter the heading, the next step is to add a paragraph of text using the <p> tag. When the browser finds a <p> tag in an HTML file, it starts a new line and inserts a blank line above the new paragraph. The </p> end tag indicates the end of the paragraph. When you enter this paragraph of text, do not press the ENTER key at the end of each line. Because Word wrap is turned on, your text will wrap to the next line even without pressing the ENTER key. Table 2–3 contains the HTML tags and text used in the paragraph.

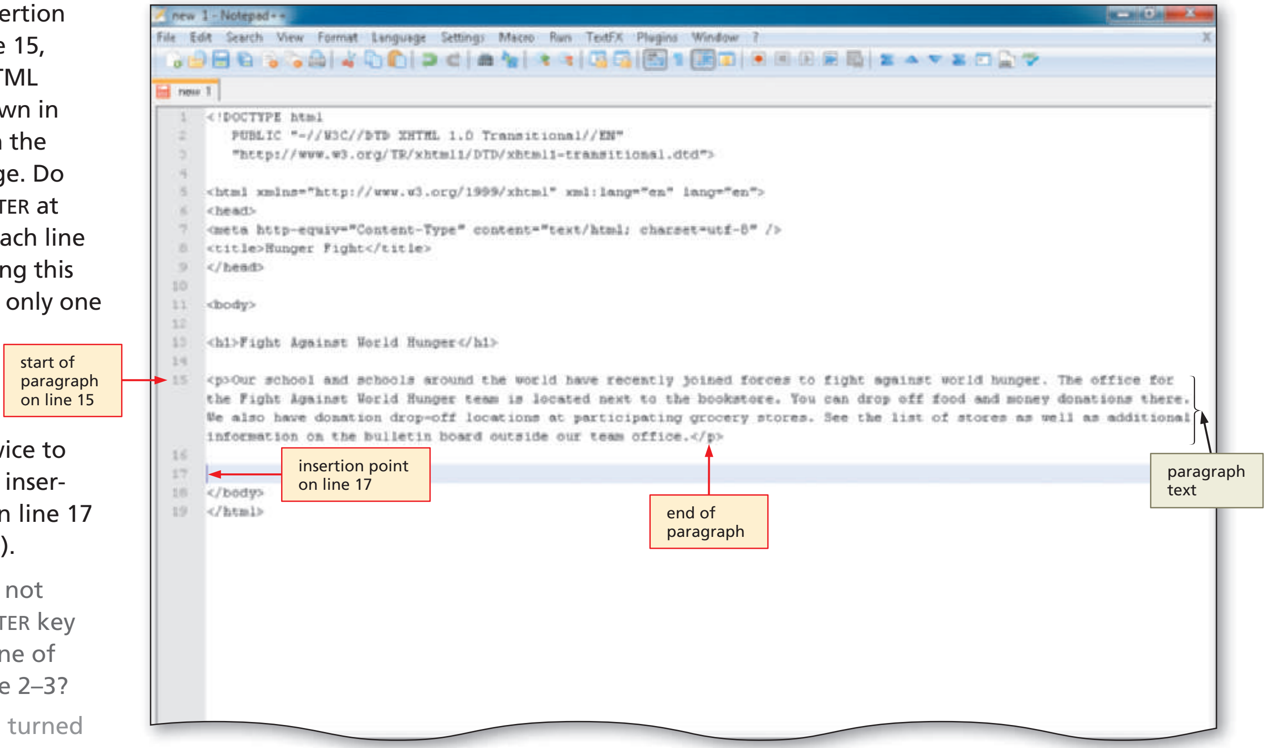
Table 2–3 Adding a Paragraph of Text

Line	HTML Tag and Text
15	`<p>Our school and schools around the world have recently joined forces to fight against world hunger. The office for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional information on the bulletin board outside our team office.</p>`

The following step illustrates how to enter a paragraph of text in an HTML file.

1

- With the insertion point on line 15, enter the HTML code, as shown in Table 2–3 on the previous page. Do not press ENTER at the end of each line when entering this text and use only one space after periods.
- Press the ENTER key twice to position the insertion point on line 17 (Figure 2–10).



new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
start of paragraph on line 15
insertion point on line 17
end of paragraph
paragraph text

```
1  <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <title>Hunger Fight</title>
9  </head>
10
11 <body>
12
13 <h1>Fight Against World Hunger</h1>
14
15 <p>Our school and schools around the world have recently joined forces to fight against world hunger. The office for
   the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money donations there.
   We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional
   information on the bulletin board outside our team office.</p>
16
17
18 </body>
19 </html>
```

Figure 2–10

Q&A

Why do you not press the ENTER key after each line of code in Table 2–3?

Because you turned on Word wrap right after you started Notepad++, the text that you enter as the paragraph will automatically wrap to the next line. The text goes to the end of the Notepad++ window and then wraps. If you had not turned on Word wrap, your text would continue scrolling to the right as you type, and text to the left would scroll off the screen. With Word wrap on, all text remains visible in the Notepad++ window.

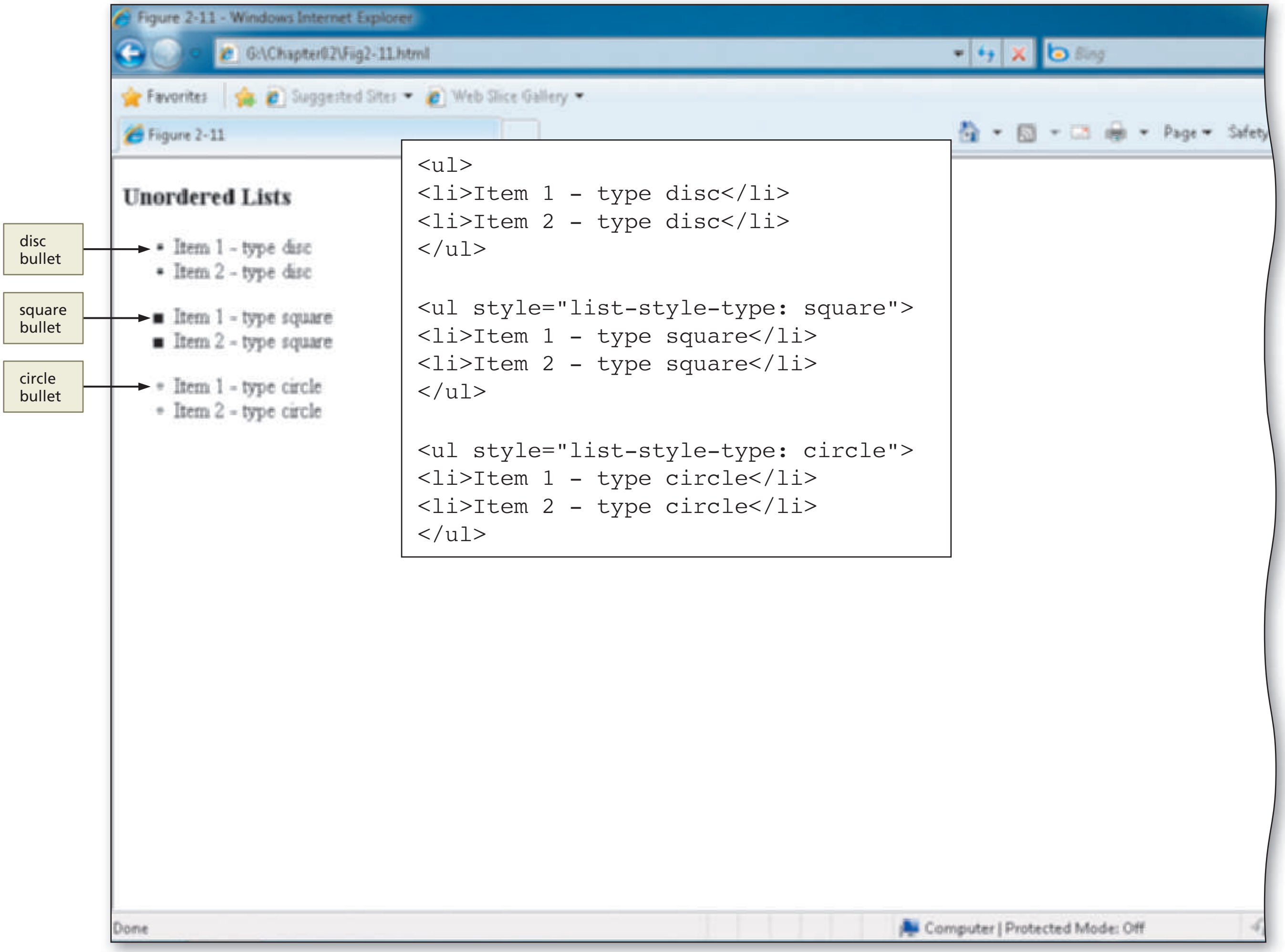
BTW

List Styles

It is helpful sometimes to structure the text of a Web page in a list. There are several list options that you can use. The Web page purpose determines which would be more effective. See Appendix D List Styles for style options that can be used with lists.

Using Lists to Present Content

Lists structure text into an itemized format. Typically, lists are bulleted (unordered) or numbered (ordered). An **unordered list**, which also is called a **bulleted list**, formats information using small images called bullets. Figure 2–11 shows Web page text formatted as unordered, or bulleted, lists and the HTML code used to create the lists.



```
<ul>
<li>Item 1 – type disc</li>
<li>Item 2 – type disc</li>
</ul>

<ul style="list-style-type: square">
<li>Item 1 – type square</li>
<li>Item 2 – type square</li>
</ul>

<ul style="list-style-type: circle">
<li>Item 1 – type circle</li>
<li>Item 2 – type circle</li>
</ul>
```

Figure 2–11

An **ordered list**, which also is called a **numbered list**, formats information in a series using numbers or letters. An ordered list works well to organize items where order must be emphasized, such as a series of steps. Figure 2–12 on the next page shows Web page text formatted as ordered, or numbered, lists and the HTML tags used to create the lists.

The **<ul>** and **</ul>** tags must be at the start and end of an unordered or bulleted list. The **<ol>** and **</ol>** tags are used at the start and end of an ordered or numbered list. Unordered and ordered lists have optional bullet and number types. As shown in Figure 2–11, an unordered list can use one of three different bullet options: disc, square, or circle. If no type is identified, the default, disc, is used. An ordered list can use numbers, letters, or Roman numerals, as shown in Figure 2–12. The default option is to use Arabic numbers, such as 1, 2, and 3.

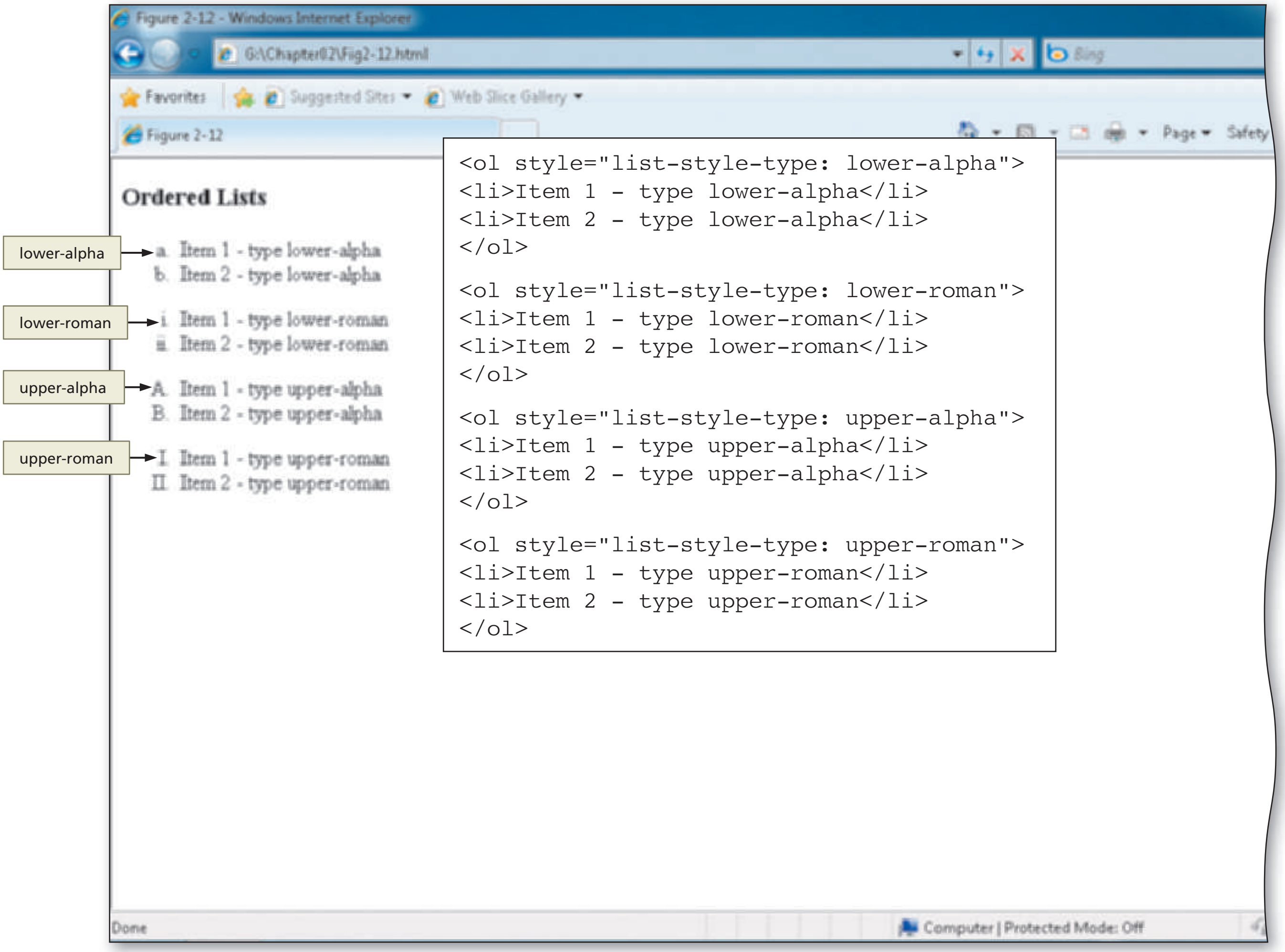


Figure 2-12 - Windows Internet Explorer
G:\Chapter02\Fig2-12.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Figure 2-12
Page
Safety
Ordered Lists
a. Item 1 - type lower-alpha
b. Item 2 - type lower-alpha
i. Item 1 - type lower-roman
ii. Item 2 - type lower-roman
A. Item 1 - type upper-alpha
B. Item 2 - type upper-alpha
I. Item 1 - type upper-roman
II. Item 2 - type upper-roman
lower-alpha
lower-roman
upper-alpha
upper-roman
Done
Computer | Protected Mode: Off

```
<ol style="list-style-type: lower-alpha">
<li>Item 1 – type lower-alpha</li>
<li>Item 2 – type lower-alpha</li>
</ol>

<ol style="list-style-type: lower-roman">
<li>Item 1 – type lower-roman</li>
<li>Item 2 – type lower-roman</li>
</ol>

<ol style="list-style-type: upper-alpha">
<li>Item 1 – type upper-alpha</li>
<li>Item 2 – type upper-alpha</li>
</ol>

<ol style="list-style-type: upper-roman">
<li>Item 1 – type upper-roman</li>
<li>Item 2 – type upper-roman</li>
</ol>
```

Figure 2–12

After the <ul> or <ol> tag is entered to define the type of list, the **<li>** and **</li>** tags are used to define a list item within an ordered or unordered list.

To Create an Unordered List

To highlight what Web site visitors can do to help the Fight Against World Hunger, you will create a bulleted (unordered) list using the HTML tags and text shown in Table 2–4. Remember that each list item must start with <li> and end with </li>.

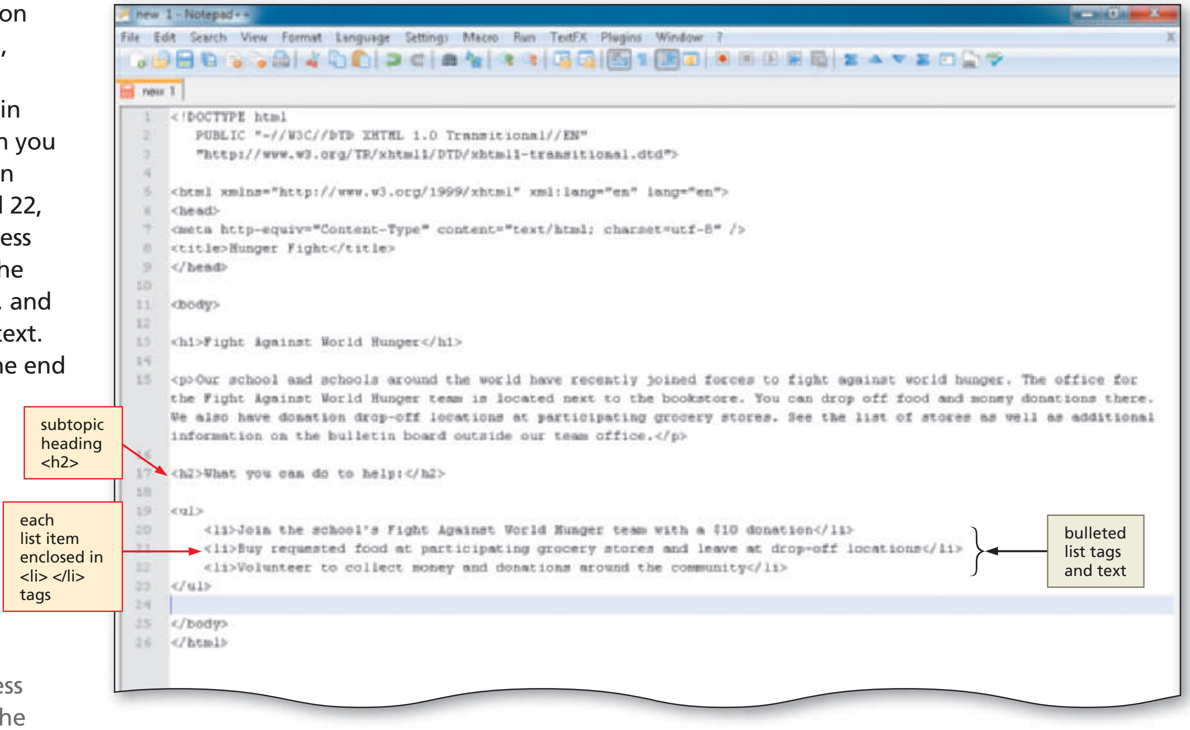
Table 2–4 Adding an Unordered List

Line	HTML Tag and Text
17	<h2>What you can do to help:</h2>
18	
19	<ul>
20	<li>Join the school's Fight Against World Hunger team with a $10 donation</li>
21	<li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
22	<li>Volunteer to collect money and donations around the community</li>
23	</ul>

The following step illustrates how to create an unordered, or bulleted, list using the default bullet style.

1

- With the insertion point on line 17, enter the HTML code, as shown in Table 2–4. When you enter the text on lines 20, 21, and 22, make sure to press the TAB key at the start of the line, and then enter the text. Press ENTER at the end of each line.
- Press the ENTER key after typing line 23, leaving a blank line on 24 (Figure 2–13).


new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
subtopic heading <h2>
each list item enclosed in <li> </li> tags
bulleted list tags and text

```
 1  <!DOCTYPE html
 2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
 3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
 4
 5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
 6  <head>
 7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
 8  <title>Hunger Fight</title>
 9  </head>
10
11  <body>
12
13  <h1>Fight Against World Hunger</h1>
14
15  <p>Our school and schools around the world have recently joined forces to fight against world hunger. The office for
    the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money donations there.
    We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional
    information on the bulletin board outside our team office.</p>
16
17  <h2>What you can do to help:</h2>
18
19  <ul>
20     <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
21     <li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
22     <li>Volunteer to collect money and donations around the community</li>
23  </ul>
24
25  </body>
26  </html>
```

Figure 2–13

Q&A

Why do you press the TAB key at the start of the lines with the <li> (list item) code?

Using the TAB key (to indent) when you enter list items helps format the text so that you can easily see that this text is different from the paragraph of text. Indenting text helps the Web developer see that certain segments of code are related to each other.

Q&A

What types of bullets will this list contain?

Because the code does not specify a type attribute, the list uses the default disc bullet. Other bullet options are square, circle, numbers, letters, and Roman numerals. You can also use a graphical image as a bullet, which you will do in later chapters.

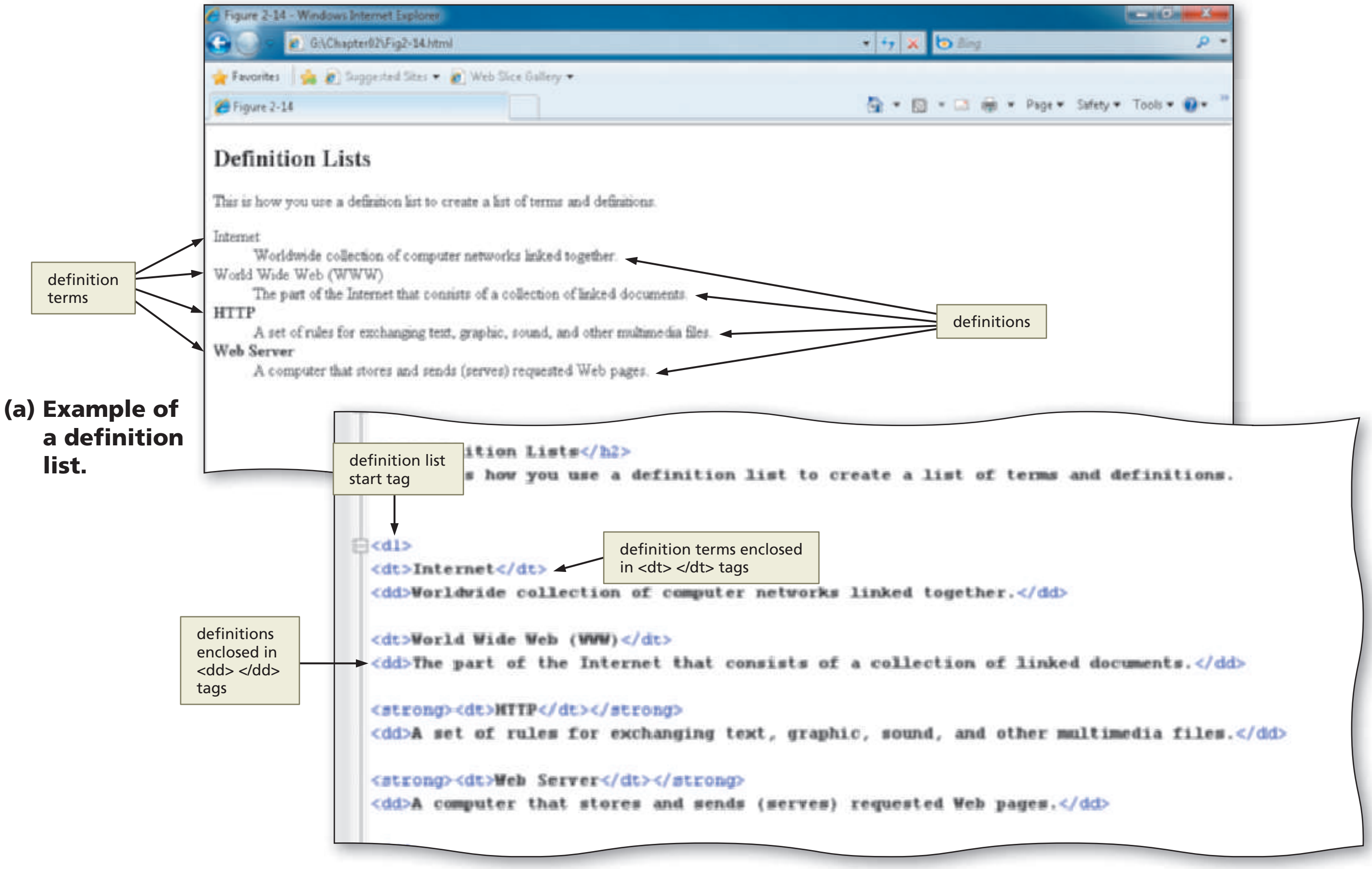
More About List Formats

If you use the <ul> or <ol> start tags without attributes, you will get the default bullet (disc) or number style (Arabic numerals). To change the bullet or number type, the **list-style-type** property is entered within the <ol> or <ul> tags. To create a list with square bullets, you would type the line

```
<ul style="list-style-type: square">
```

as the inline style (CSS) code. You can find other list style properties and values in Appendix D.

In addition to ordered and unordered lists, there is a third kind of list, called a **definition list**, which offsets information in a dictionary-like style. Although they are used less often than unordered or ordered lists, definition lists are useful to create a glossary-like list of terms and definitions, as shown in Figure 2–14a on the next page. Figure 2–14b shows the HTML code used to create the definition list.



Definition Lists

This is how you use a definition list to create a list of terms and definitions.

Internet
    Worldwide collection of computer networks linked together.
World Wide Web (WWW)
    The part of the Internet that consists of a collection of linked documents.
HTTP
    A set of rules for exchanging text, graphic, sound, and other multimedia files.
Web Server
    A computer that stores and sends (serves) requested Web pages.

definition terms

definitions

(a) Example of a definition list.

```
ition Lists</h2>
s how you use a definition list to create a list of terms and definitions.

<dl>
<dt>Internet</dt>
<dd>Worldwide collection of computer networks linked together.</dd>

<dt>World Wide Web (WWW)</dt>
<dd>The part of the Internet that consists of a collection of linked documents.</dd>

<strong><dt>HTTP</dt></strong>
<dd>A set of rules for exchanging text, graphic, sound, and other multimedia files.</dd>

<strong><dt>Web Server</dt></strong>
<dd>A computer that stores and sends (serves) requested Web pages.</dd>
```

definition list start tag

definition terms enclosed in <dt> </dt> tags

definitions enclosed in <dd> </dd> tags

(b) HTML code used to create a definition list.

Figure 2–14

The syntax for definition lists is not as straightforward as the <ul>, <ol>, or <li> structure that is used in the unordered and ordered list styles. With definition lists, you use the **<dl>** and **</dl>** tags to start and end the list. A **<dt>** tag indicates a term, and a **<dd>** tag identifies the definition of that term by offsetting the definition from the term. Table 2–5 lists the elements of a definition list and their purposes.

Table 2–5 Definition List Elements and Purposes

Definition List Element	Purpose
<dl> </dl>	Start and end a definition list
<dt> </dt>	Identify a term
<dd> </dd>	Identify the definition of the term directly above

As shown in Figure 2–14, by default, the definition term is left-aligned on the line and the definition for each term is indented so it is easily distinguishable as the definition for the term above it. In order to more clearly identify the definition term, you may want to make the term bold, as shown in the last two definitions (HTTP and Web Server) in Figure 2–14. You could do this by using an inline style that includes the following code:

```
<dt style="font-weight: bold">
```

Saving and Organizing HTML Files

Before you can see how your HTML file looks in a Web browser, you must save it. It also is important to save your HTML file for the following reasons:

- The document in memory will be lost if the computer is turned off or you lose electrical power while the text editor is open.
- If you run out of time before completing your project, you may finish your document at a future time without starting over.

To save your file, you use the Notepad++ File, Save command. When you save a file, you give your file a name and follow that with the file extension. As mentioned earlier in the book, file names should always make sense relative to their purpose. For instance, naming a file page1 does not indicate the purpose of that file. Naming the file hungerfight immediately identifies that this file has something to do with that topic. The Web page files in this book are always named with all lowercase letters and with no spaces. This is a standard that is followed throughout the book.

HTML files must end with an extension of **.htm** or **.html**. Many older Web page servers can only display pages with the .htm extension, or short file names (i.e., file names that are only up to eight characters in length). HTML files with an extension of .html can be viewed on Web servers running an operating system that allows long file names (i.e., file names that can be up to 255 characters in length). Almost all current operating systems allow long file names, including Windows 7, Windows Vista, Windows XP, Windows Server 2003/2008, Windows 2000, Macintosh, and Linux. For Web servers that run an operating system that does not accept long file names, you need the .htm extension. In this book, all files are saved using the .html extension.

You will use a very simple folder structure with all the projects in this book. It is therefore important to organize your files in folders so that all files for a project or end-of-chapter exercise, including HTML code and graphical images, are saved in the same folder. If you correctly downloaded the files from the Data Files for Students (see the inside back cover of this book), you will have the required file structure. When you initially save the hungerfight.html file, you will save it in the ChapterFiles subfolder of the Chapter02 folder. The graphical image used in Chapter 2, hungerfightlogo.jpg, will be stored in that same folder — Chapter02\ChapterFiles. Because the chapter projects in this book are relatively simple and use few images, images and HTML code are stored in the same folder. In real-world applications, though, hundreds or thousands of files might exist in a Web site, and it is more appropriate to separate the HTML code and graphical images into different subfolders. You will learn more about organizing HTML files and folders in Chapter 3.

BTW

HTML File Names
HTML files have an extension of .html or .htm. The home page of a Web site is often called index.html, index.htm, default.html, or default.htm. Check with the service provider to find out which name they use.

BTW

Saving Your Work
It is a good idea to save your HTML file periodically as you are working to avoid the risk of losing your work completed thus far. You could get into the habit of saving your file after any large addition (i.e., a paragraph) of information. You might also want to save the file after typing in several HTML tags that would be difficult to re-do.

Plan Ahead

Determine where to save the Web page.
When saving a Web page, you must decide which storage medium to use.

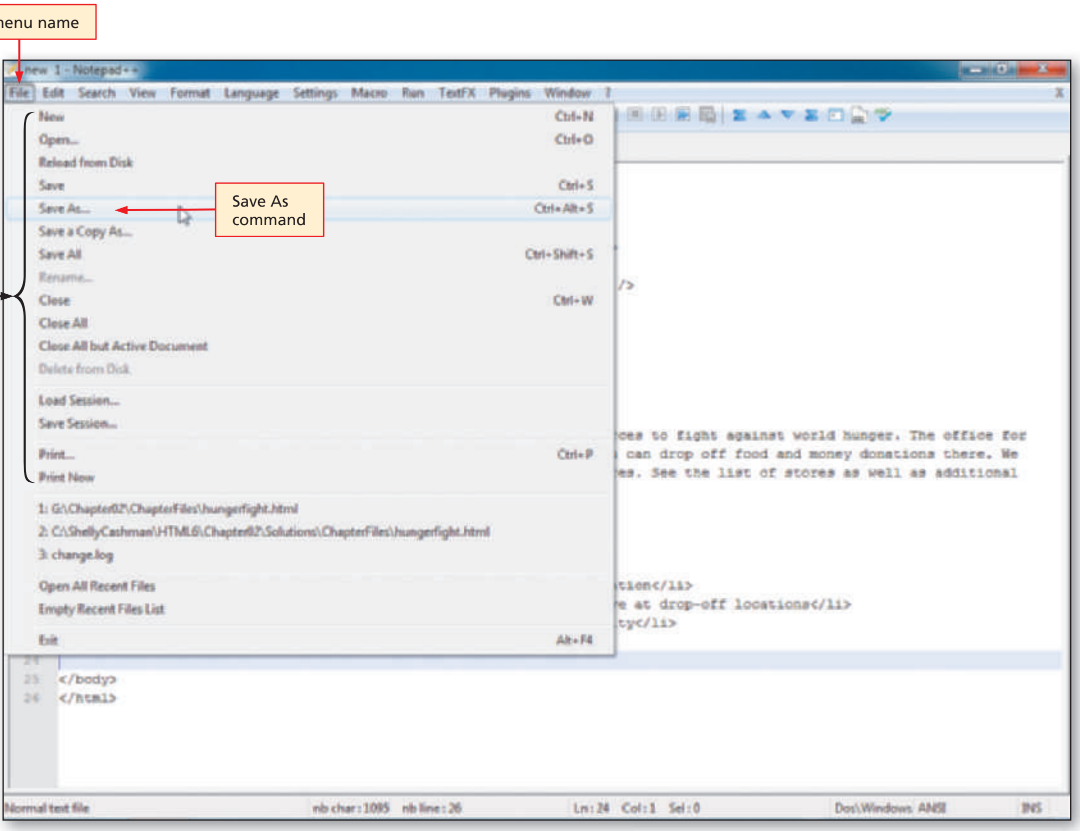
- If you always work on the same computer and have no need to transport your projects to a different location, then your computer's hard drive will suffice as a storage location. It is a good idea, however, to save a backup copy of your projects on a separate medium in case the file becomes corrupted or the computer's hard disk fails.
- If you plan to work on your projects in various locations or on multiple computers, then you should save your projects on a portable medium, such as a USB flash drive or CD. The projects in this book use a USB flash drive, which saves files quickly and reliably and can be reused. CDs are easily portable and serve as good backups for the final versions of projects because they generally can save files only one time.
- The above are general guidelines about saving your files. Your instructor may give you specific instructions for saving your work that differ from the steps that follow.

To Save an HTML File

You have performed many steps in creating this project and do not want to risk losing the work you have done so far. Also, to view HTML in a browser, you must save the file. The following steps show how to save an HTML file.

1

- With a USB flash drive connected to one of the computer's USB ports, click File on the Notepad++ menu bar (Figure 2–15).


new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
New Ctrl+N
Open... Ctrl+O
Reload from Disk
Save Ctrl+S
Save As... Ctrl+Alt+S
Save a Copy As...
Save All Ctrl+Shift+S
Rename...
Close Ctrl+W
Close All
Close All but Active Document
Delete from Disk
Load Session...
Save Session...
Print... Ctrl+P
Print Now
1: G:\Chapter02\ChapterFiles\hungerfight.html
2: C:\ShellyCashman\HTML6\Chapter02\Solutions\ChapterFiles\hungerfight.html
3: change.log
Open All Recent Files
Empty Recent Files List
Exit Alt+F4
Normal text file nb char : 1095 nb line : 26 Ln : 24 Col : 1 Sel : 0 Dos\Windows ANSI INS

```
/>
ces to fight against world hunger. The office for
 can drop off food and money donations there. We
es. See the list of stores as well as additional
tion</li>
e at drop-off locations</li>
ty</li>

</body>
</html>
```

File menu name

File menu choices

Save As command

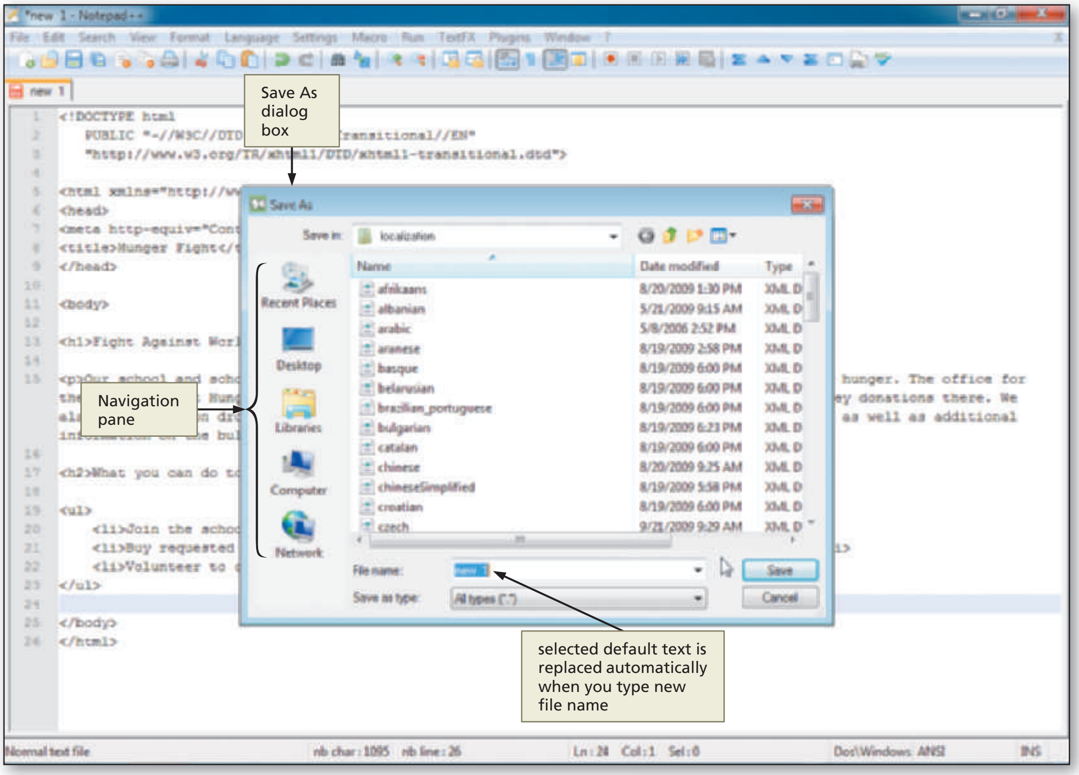
Figure 2–15

2

- Click Save As on the File menu to display the Save As dialog box (Figure 2–16).

Q&A Do I have to save to a USB flash drive?

No. You can save to any device or folder. A folder is a specific location on a storage medium. Use the same process, but select your device or folder.


*new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
Save As
Save in: localization
Recent Places
Desktop
Libraries
Computer
Network
File name: new 1
Save as type: All types (*.*)
Save
Cancel
Normal text file nb char : 1095 nb line : 26 Ln : 24 Col : 1 Sel : 0 Dos\Windows ANSI INS

```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD          ransitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://w
<head>
<meta http-equiv="Cont
<title>Hunger Fight</t
</head>

<body>

<h1>Fight Against Worl

<p>Our school and scho                                   hunger. The office for
the             Hung                                   ey donations there. We
als            n dir                                   as well as additional
information on the bul

<h2>What you can do to

<ul>
   <li>Join the schoo
   <li>Buy requested                                   i>
   <li>Volunteer to
</ul>

</body>
</html>
```

Name	Date modified	Type
afrikaans	8/20/2009 1:30 PM	XML D
albanian	5/21/2009 9:15 AM	XML D
arabic	5/8/2006 2:52 PM	XML D
aranese	8/19/2009 2:58 PM	XML D
basque	8/19/2009 6:00 PM	XML D
belarusian	8/19/2009 6:00 PM	XML D
brazilian_portuguese	8/19/2009 6:00 PM	XML D
bulgarian	8/19/2009 6:23 PM	XML D
catalan	8/19/2009 6:00 PM	XML D
chinese	8/20/2009 9:25 AM	XML D
chineseSimplified	8/19/2009 5:58 PM	XML D
croatian	8/19/2009 6:00 PM	XML D
czech	9/21/2009 9:29 AM	XML D

Save As dialog box

Navigation pane

selected default text is replaced automatically when you type new file name

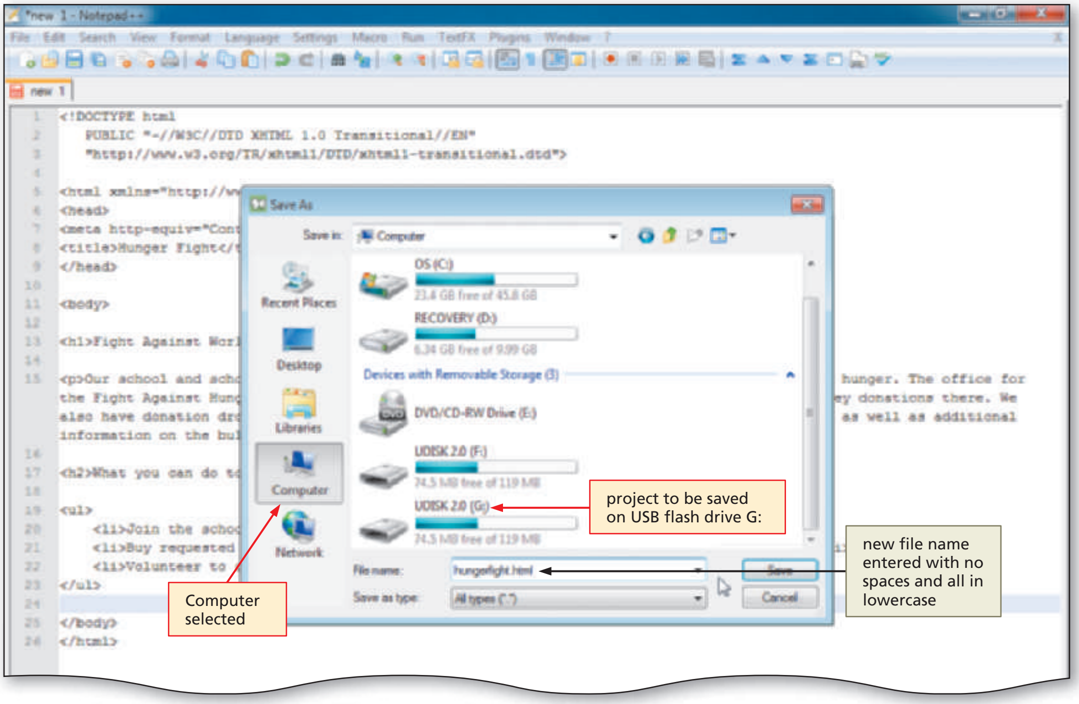
Figure 2–16

3

- Type `hungerfight.html` in the File name text box to change the file name. Do not press ENTER after typing the file name.

- Click Computer in the left side of the dialog box to display a list of available drives (Figure 2–17).

- If necessary, scroll until your USB flash drive, such as UDISK 2.0 (G:), appears in the list of available drives.



```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://w
<head>
<meta http-equiv="Cont
<title>Hunger Fight</t
</head>

<body>

<h1>Fight Against Worl

<p>Our school and scho                                  hunger. The office for
the Fight Against Hung                                 y donations there. We
also have donation dri                                  as well as additional
information on the bul

<h2>What you can do to

<ul>
    <li>Join the schoo
    <li>Buy requested
    <li>Volunteer to
</ul>

</body>
</html>
```

Save in: Computer

File name: hungerfight.html

Save as type: All types (*.*)

Figure 2–17

Q&A

Why is my list of files, folders, and drives arranged and named differently from those shown in the figure?

Your computer's configuration determines how the list of files and folders is displayed and how drives are named.

Q&A

How do I know the drive and folder in which my file will be saved?

Notepad++ displays a list of available drives and folders. You then select the drive and/or folder into which you want to save the file.

BTW

Storing Your Files

Many schools provide students with space on a Web server to store their Web pages. However, saving your Web pages to another medium (e.g., a USB flash drive) assures that you have a backup copy of the files that you created. Saving Web page files to the hard drive on a computer in a school lab runs the risk of it not being there the next time you are in that lab. Many schools delete all files other than those installed by the lab technician at the start-up of each computer.

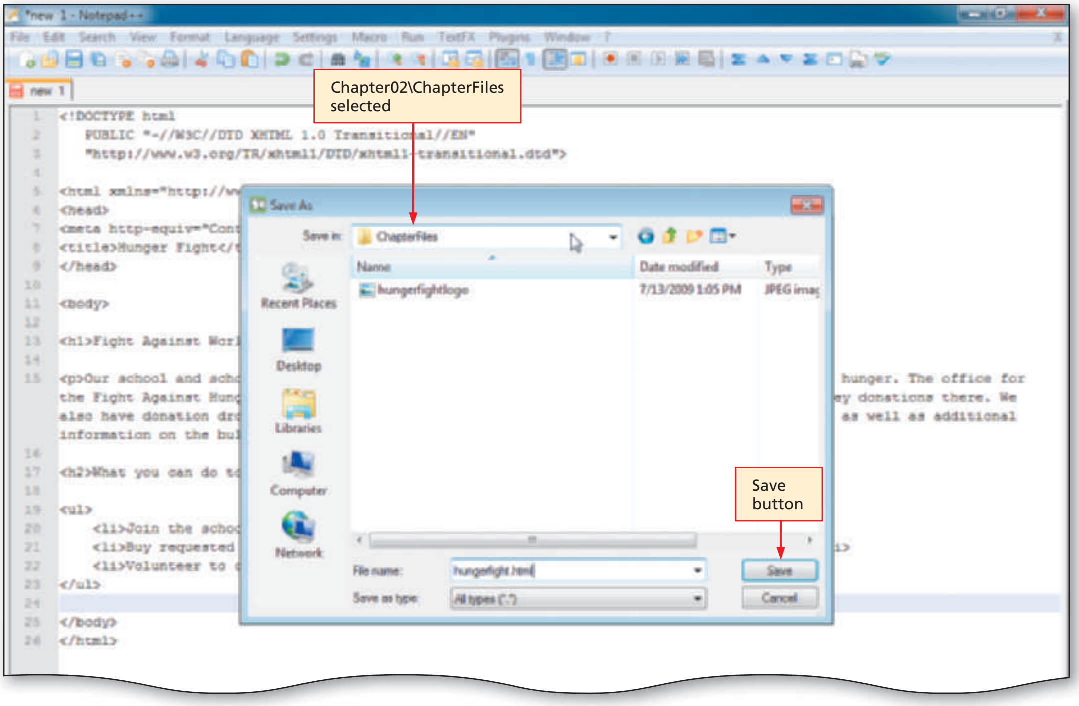
4

- Double-click UDISK 2.0 (G:) (or your storage device) in the Computer list to select the USB flash drive, drive G in this case, as the new save location.

Q&A What if my USB flash drive has a different name or letter?

It is likely that your USB flash drive will have a different name and drive letter and be connected to a different port. Verify that the device in your Computer list is correct.

- If necessary, open the Chapter02\ChapterFiles folder (Figure 2–18).



Chapter02\ChapterFiles selected

Save button

Save in: ChapterFiles

Name	Date modified	Type
hungerfightlogo	7/13/2009 1:05 PM	JPEG imag

File name: hungerfight.html

Save as type: All types (*.*)

```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://ww
<head>
<meta http-equiv="Cont
<title>Hunger Fight</t
</head>

<body>

<h1>Fight Against Worl

<p>Our school and scho                                     hunger. The office for
the Fight Against Hung                                    ey donations there. We
also have donation dr                                      as well as additional
information on the bul

<h2>What you can do t

<ul>
    <li>Join the schoo
    <li>Buy requested                                     i>
    <li>Volunteer to c
</ul>

</body>
</html>
```

Figure 2–18

Q&A What if my USB flash drive does not have a folder named Chapter02\ChapterFiles?

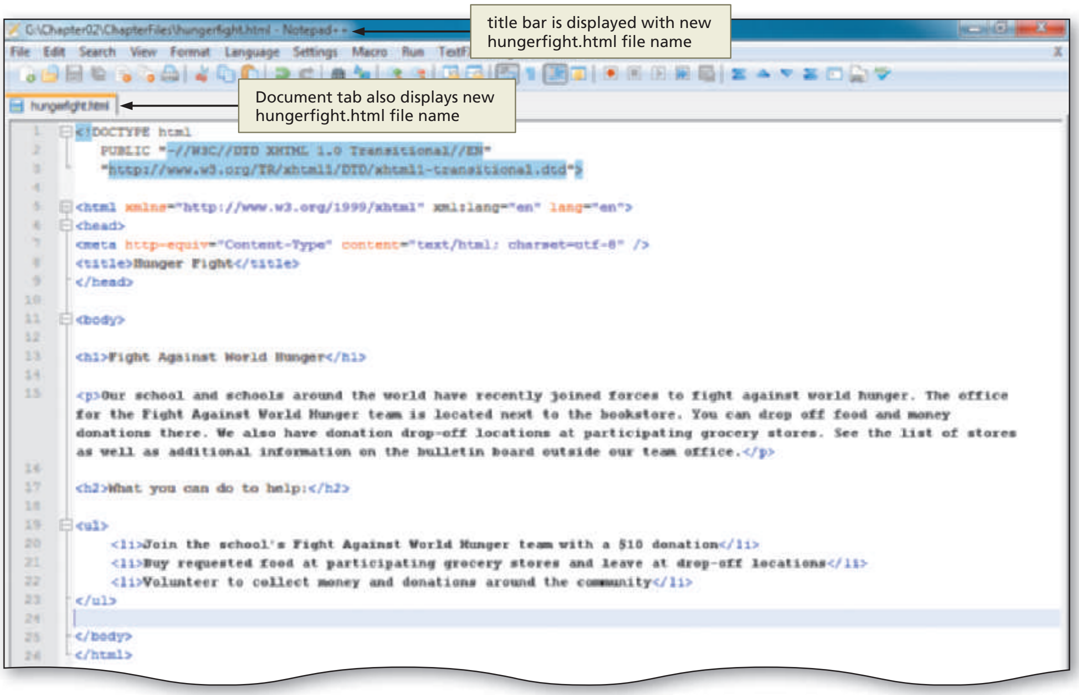
If you followed the steps to download the chapter files from the Data Files for Students, you should have a folder named Chapter02\ChapterFiles. If you do not, check with your instructor.

5

- Click the Save button in the Save As dialog box to save the file on the USB flash drive with the name hungerfight.html (Figure 2–19).

Q&A Is my file only on the USB drive now?

No, although the HTML file is saved on a USB drive, it also remains in memory and is displayed on the screen (Figure 2–19). Notepad++ displays the new file name on the title bar and on the document tab.


G:\Chapter02\ChapterFiles\hungerfight.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextF
hungerfight.html

title bar is displayed with new hungerfight.html file name

Document tab also displays new hungerfight.html file name

```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hunger Fight</title>
</head>

<body>

<h1>Fight Against World Hunger</h1>

<p>Our school and schools around the world have recently joined forces to fight against world hunger. The office
for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money
donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores
as well as additional information on the bulletin board outside our team office.</p>

<h2>What you can do to help:</h2>

<ul>
    <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
    <li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
    <li>Volunteer to collect money and donations around the community</li>
</ul>

</body>
</html>
```

Figure 2–19

Other Ways

1. Press CTRL+ALT+S, type the file name, click Computer, select drive or folder, click the Save button

Using a Browser to View a Web Page

After entering code in the HTML file and saving it, you should view the Web page in a browser to see what the Web page looks like up to this point. The HTML file is displayed in the browser as if the file were available on the Web. In general, viewing the Web page periodically during development is good coding practice, because it allows you to see the effect of various HTML tags on the text and to check for errors in your HTML file.

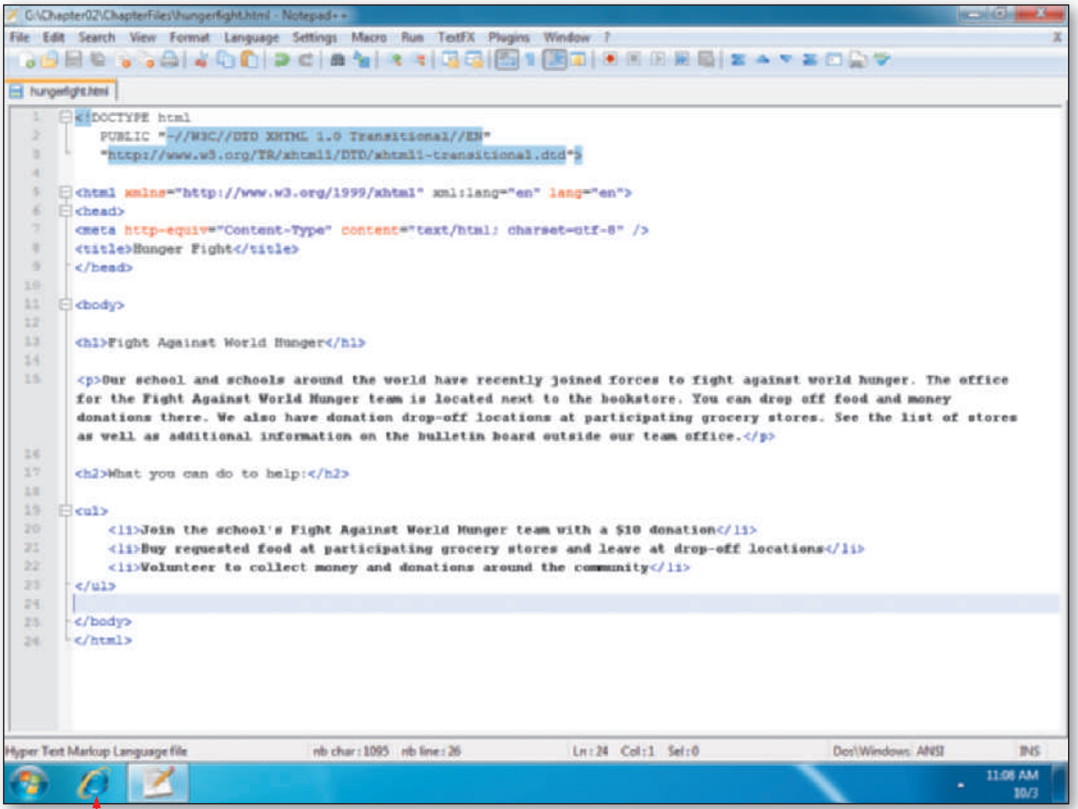
If your computer is connected to the Internet when the browser window opens, it displays a **home page**, or **start page**, which is a Web page that appears each time Internet Explorer starts.

To Start a Browser

With the HTML file saved on the USB drive, the next step is to view the Web page using a browser. Because Windows is **multitasking**, you can have more than one program running at a time, such as Notepad++ and your browser. The following steps illustrate how to start a browser to view a Web page.

1

- Click the Internet Explorer icon on the taskbar (Figure 2–20).


G:\Chapter02\ChapterFiles\hungerfight.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
hungerfight.html
Hyper Text Markup Language file
nb char : 1095 nb line : 26
Ln : 24 Col : 1 Sel : 0
Dos\Windows ANSI
INS
11:08 AM
10/3

```
<!DOCTYPE html
    PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hunger Fight</title>
</head>

<body>

<h1>Fight Against World Hunger</h1>

<p>Our school and schools around the world have recently joined forces to fight against world hunger. The office
for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money
donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores
as well as additional information on the bulletin board outside our team office.</p>

<h2>What you can do to help:</h2>

<ul>
    <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
    <li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
    <li>Volunteer to collect money and donations around the community</li>
</ul>

</body>
</html>
```

Internet Explorer icon in taskbar

Figure 2–20

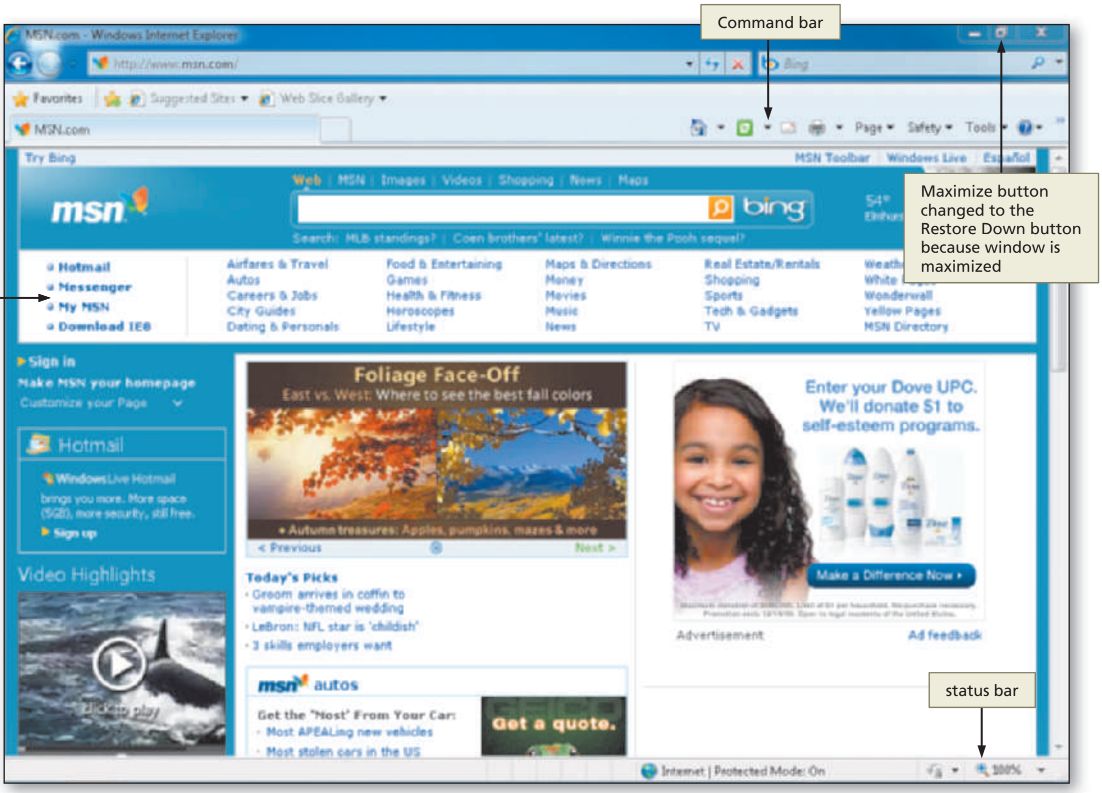
2

- If necessary, click the Maximize button to maximize the browser window (Figure 2–21).

Q&A

Why does my browser display a different window?

Because it is possible to customize browser settings to change the Web page that appears as the home page, the home page that is displayed by your browser may be different. Schools and organizations often set a main page on their Web sites as the home page for browsers installed on lab or office computers.



Command bar

Maximize button changed to the Restore Down button because window is maximized

MSN home page; your home page may differ

status bar

Figure 2–21

Other Ways

1. Click Start, All Programs, Internet Explorer
2. Double-click Internet Explorer icon on desktop, if one is present

BTW

Developing Web Pages for Multiple Browsers

When developing Web pages, you must consider the types of browsers visitors will use, including Internet Explorer and Mozilla Firefox for Windows or Safari or Internet Explorer for Mac OS. The Apple Web site provides suggestions for creating Web pages that will work in a wide range of browsers. Part of thorough testing includes bringing your Web pages up in different versions of different browsers.

To View a Web Page in a Browser

A browser allows you to open a Web file located on your computer and have full browsing capabilities, as if the Web page were stored on a Web server and made available on the Web. The following steps use this technique to view the HTML file, hungerfight.html, in a browser.

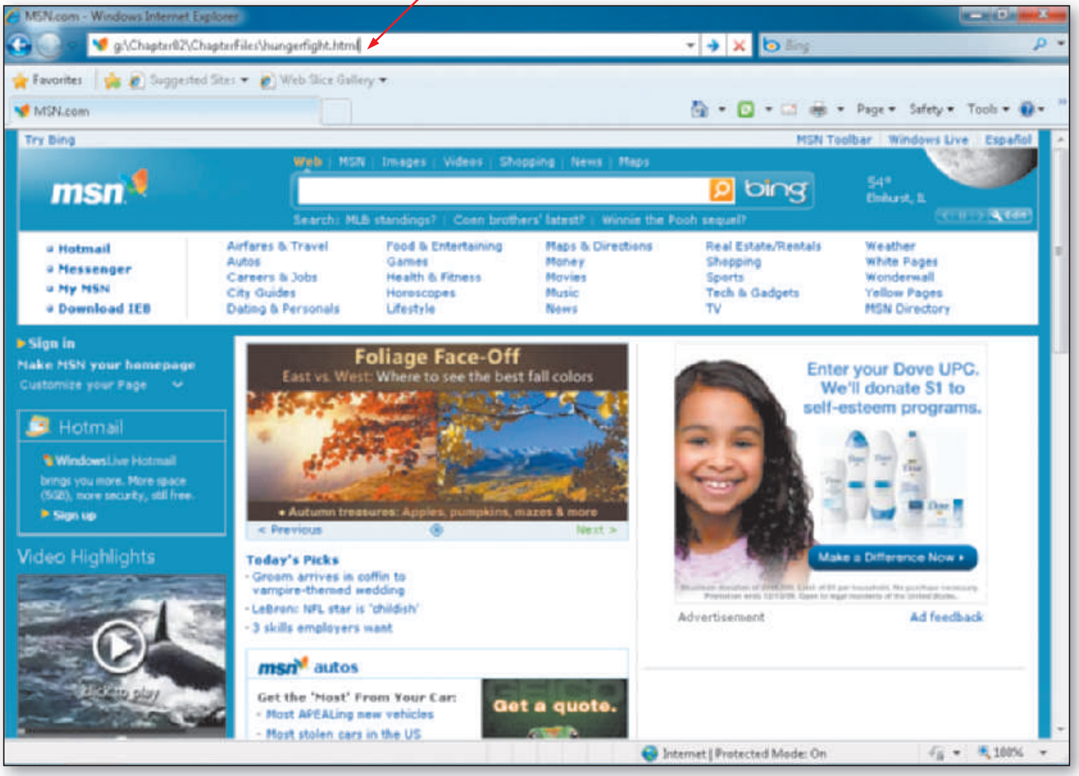
1

- Click the Address bar to select the URL on the Address bar.
- Type `g:\Chapter02\ChapterFiles\hungerfight.html` to display the new URL on the Address bar (Figure 2–22). The Web page is not displayed until you press the ENTER key, as shown in the next step.

Q&A How can I correct the URL on the Address bar?

The URL is displayed on the Address bar. If you type an incorrect letter or symbol on the Address bar and notice the error before moving to the next step, use the BACKSPACE key to erase all the characters back to and including the one that is incorrect, and then continue typing.

URL of Web page entered on Address bar



g:\Chapter02\ChapterFiles\hungerfight.html

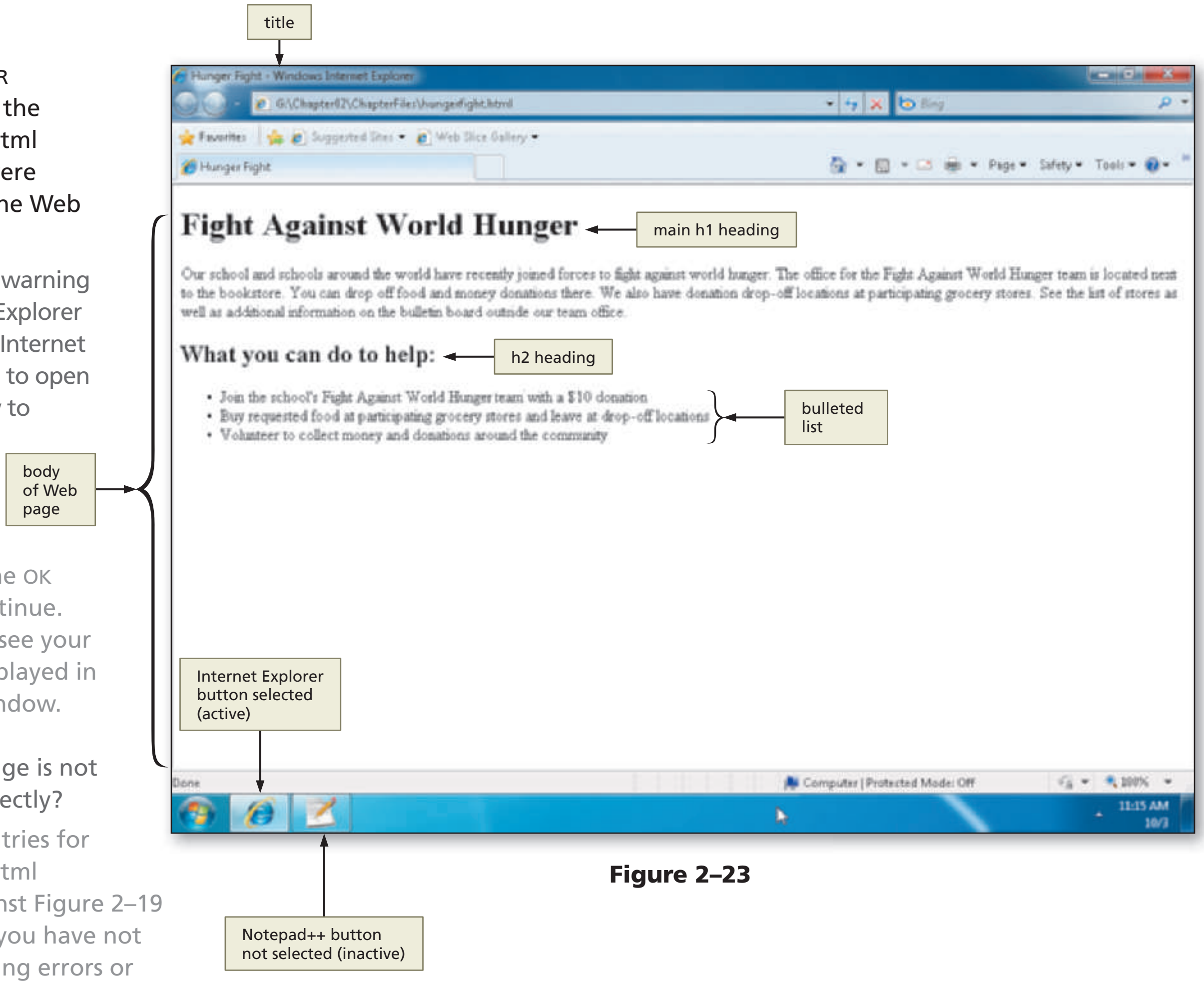
Figure 2–22

Q&A What if my file is in a different location?

You can type in the path to your file in the Address bar, or browse to your file, as shown in Other Ways on the next page.

2

- Press the ENTER key to display the hungerfight.html page as if it were available on the Web (Figure 2–23).


title
Hunger Fight - Windows Internet Explorer
G:\Chapter02\ChapterFiles\hungerfight.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Hunger Fight
Page
Safety
Tools
main h1 heading
h2 heading
bulleted list
body of Web page
Internet Explorer button selected (active)
Done
Computer | Protected Mode: Off
100%
11:15 AM
10/3
Notepad++ button not selected (inactive)

Fight Against World Hunger

Our school and schools around the world have recently joined forces to fight against world hunger. The office for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional information on the bulletin board outside our team office.

What you can do to help:

- Join the school's Fight Against World Hunger team with a $10 donation
- Buy requested food at participating grocery stores and leave at drop-off locations
- Volunteer to collect money and donations around the community

Figure 2–23

Q&A

What if I get a warning from Internet Explorer (IE) that says, "Internet Explorer needs to open a new window to display this webpage."?

If this happens, you should click the OK button to continue. You then will see your Web page displayed in another IE window.

Q&A

What if my page is not displayed correctly?

Check your entries for hungerfight.html carefully against Figure 2–19 to make sure you have not made any typing errors or left anything out. Correct the errors, resave the file, and try again.

Other Ways

1. In Windows Explorer, double-click HTML file name to open in default browser
2. In Windows Explorer, right-click HTML file name, click Open with, click browser name
3. Click Tools, Toolbars, Menu Bar if menu is not displayed; on Menu bar click File, Open, and browse to desired file

BTW

User Interface Design

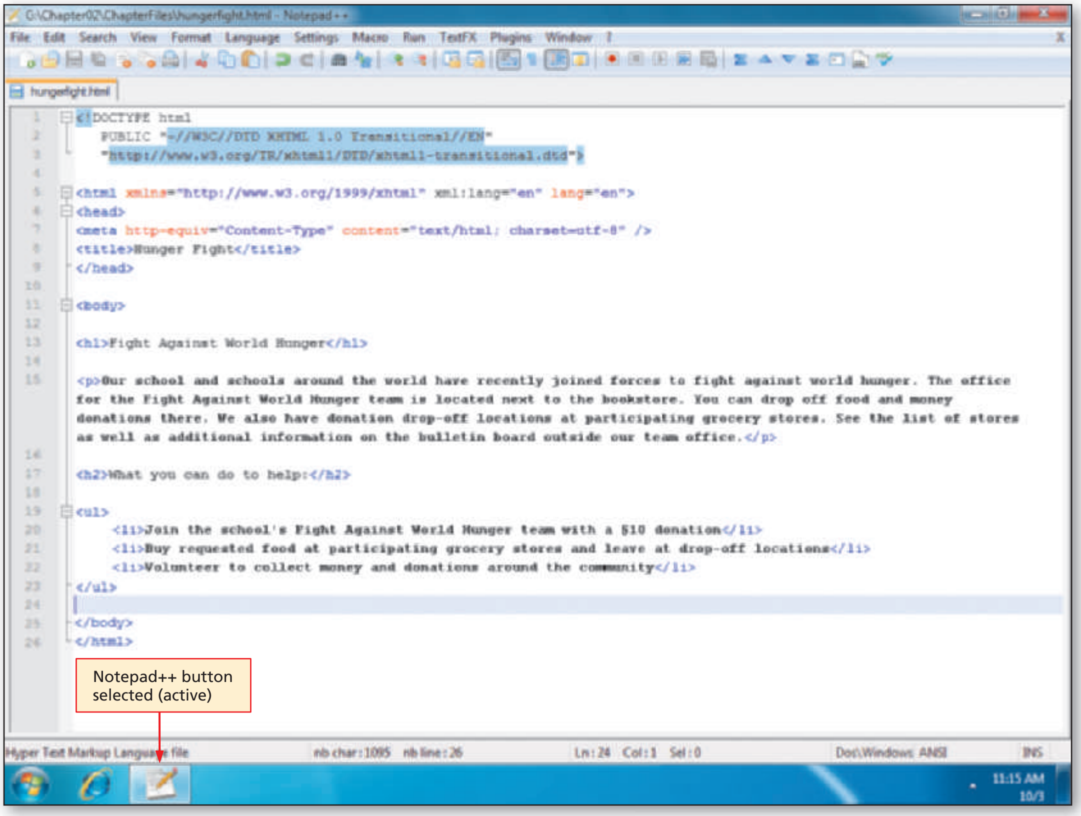
The user interface design is a very important aspect of a Web site. If a site is designed poorly, users may be unable to find the desired information or complete a task, which makes the Web site ineffective. There are many good Web sites available that discuss Web design principles.

To Activate Notepad++

After viewing the Web page, you can modify the Web page by adding additional tags or text to the HTML file. To continue editing, you first must return to the Notepad++ window. The following step illustrates how to activate Notepad++.

1

- Click the Notepad++ button on the taskbar to maximize Notepad++ and make it the active window (Figure 2–24).


G:\Chapter02\ChapterFiles\hungerfight.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
hungerfight.html
Hyper Text Markup Language file
nb char : 1095 nb line : 26
Ln : 24 Col : 1 Sel : 0
Dos\Windows ANSI
INS
11:15 AM
10/3

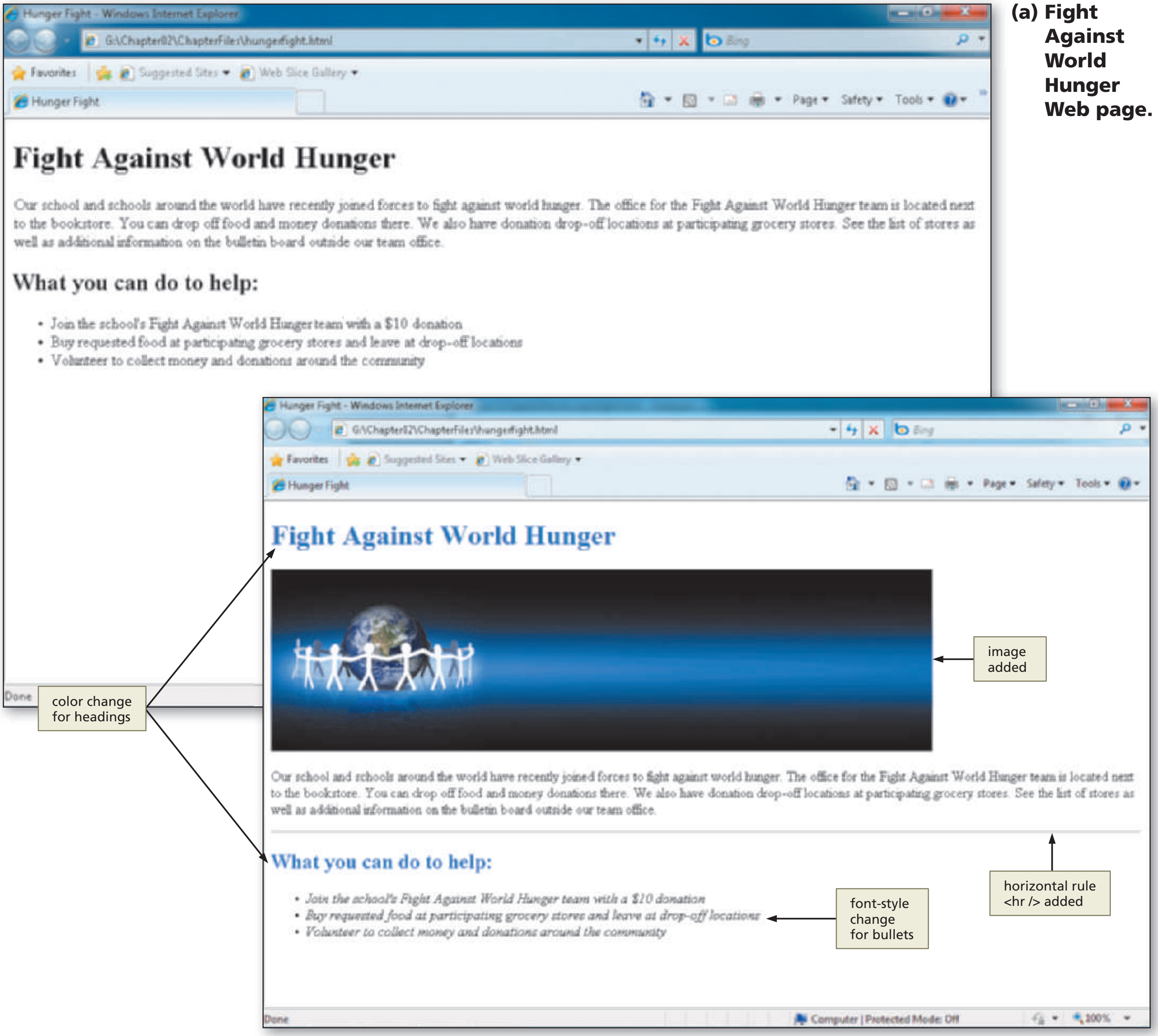
```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hunger Fight</title>
</head>

<body>

<h1>Fight Against World Hunger</h1>

<p>Our school and schools around the world have recently joined forces to fight against world hunger. The office
for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money
donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores
as well as additional information on the bulletin board outside our team office.</p>

<h2>What you can do to help:</h2>

<ul>
     <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
     <li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
     <li>Volunteer to collect money and donations around the community</li>
</ul>

</body>
</html>
```

Notepad++ button selected (active)

Figure 2–24

Improving the Appearance of Your Web Page

One goal in Web page development is to create a Web page that is visually appealing and maintains the interest of the visitors. The Web page developed thus far in the chapter is functional, but lacks visual appeal. In this section, you will learn how to improve the appearance of the Web page from the one shown in Figure 2–25a to the one shown in Figure 2–25b by adding an image, adding a color to the headings, adding a horizontal rule, and changing the font style of the bulleted list. Many of these tasks can be accomplished by using style sheets.


Hunger Fight - Windows Internet Explorer
G:\Chapter02\ChapterFiles\hungerfight.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Hunger Fight
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

Fight Against World Hunger

Our school and schools around the world have recently joined forces to fight against world hunger. The office for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional information on the bulletin board outside our team office.

What you can do to help:

- Join the school's Fight Against World Hunger team with a $10 donation
- Buy requested food at participating grocery stores and leave at drop-off locations
- Volunteer to collect money and donations around the community

(a) Fight Against World Hunger Web page.

color change for headings

image added

horizontal rule <hr /> added

font-style change for bullets

(b) Fight Against World Hunger Web page formatted to improve appearance.

Figure 2–25

Using Style Sheets

Although HTML allows Web developers to make changes to the structure, design, and content of a Web page, HTML is limited in its ability to define the appearance, or style, across one or more Web pages. As a result, style sheets were created.

As a review, a **style** is a rule that defines the appearance of an element on a Web page. A **style sheet** is a series of rules that defines the style for a Web page or an entire Web site. With a style sheet, you can alter the appearance of a Web page or pages by changing characteristics such as font family, font size, margins, and link specifications.

CSS supports three types of style sheets: inline, embedded, and external (or linked). With an **inline style**, you add a style to an individual HTML tag, such as a heading or paragraph. The style changes that specific tag, but does not affect other tags in the document. With an **embedded style sheet**, you add the style sheet within the <head> tags of the HTML document to define the style for an entire Web page. With a linked style sheet, or **external style sheet**, you create a text file that contains all of the styles you want to apply, and save the text file with the file extension .css. You then add a link to this external style sheet on any Web page in the Web site. External style sheets give you the most flexibility and are ideal to apply the same formats to all of the Web pages in a Web site. External style sheets also make it easy to change formats quickly across Web pages. You will use inline styles in this chapter's project to enhance the styles of the headings (change the color) and the bulleted list (change the font style).

Style Sheet Precedence As shown in Table 2–6, the three style sheets supported by CSS control the appearance of a Web page at different levels. Each style sheet type also has a different level of precedence or priority in relationship to the others. An external style sheet, for example, is used to define styles for multiple pages in a Web site. An embedded style sheet is used to change the style of one Web page, but overrides or takes precedence over any styles defined in an external style sheet. An inline style is used to control the style within an individual HTML tag and takes precedence over the styles defined in both embedded and external style sheets.

BTW

Inline Styles
Using an inline style is helpful when you want to alter the appearance (or style) of a single HTML element. Appendix D contains the Cascading Style Sheet Properties and Values supported by most browsers. The inline styles used in this chapter can be found in the appendix. For more information on inline styles, look at w3.org.

Table 2–6 Style Sheet Precedence

Type	Level and Precedence
Inline	• To change the style within an individual HTML tag • Overrides embedded and external style sheets
Embedded	• To change the style of one Web page • Overrides external style sheets
External	• To change the style of multiple pages in a Web site

Because style sheets have different levels of precedence, all three types of style sheets can be used on a single Web page. For example, you may want some elements of a Web page to match the other Web pages in the Web site, but you also may want to vary the look of certain sections of that Web page. You can do this by using the three types of style sheets.

Style Statement Format No matter what type of style sheet you use, you must use a **style statement** to define the style. The following code shows an example of a style statement used in an inline style:

```
<h1 style="font-family: Garamond; font-color: navy">
```

A style statement is made up of a selector and a declaration. The part of the style statement that identifies the page elements is called the **selector**. In this example, the selector is h1 (header size 1). The part of the style statement that identifies how the element(s) should appear is called the **declaration**. In this example, the declaration is everything between the quotation marks: the font-family and font-color properties and their values (Garamond and navy, respectively). A declaration includes at least one type of style, or **property**, to apply to the selected element. Examples of properties include color, text-indent, border-width, and font-style. For each property, the declaration includes a related **value**, which specifies the display parameters for that specific property.

Each property accepts specific values, based on the styles that property can define. The property, font-color, for example, can accept the value, navy, but cannot accept the value, 10%, because that is not a valid color value. In the next section of this chapter, you will change the heading color to blue for both the h1 and h2 headings. Using inline styles in this case is appropriate because there are only two headings to change on the Web page. If you had many headings to change, an embedded or external style sheet would be more appropriate. This will be discussed in later chapters.

Inline Styles An inline style is used to define the style of an individual HTML tag. For example, to change the style of a single paragraph, you could add an inline style with the <p> (paragraph) tag as the selector and a declaration that defines new font style and style values for that paragraph, as shown here:

```
<p style="font-style: italic; font-size: 8pt">
```

Because they take precedence over the other types of style sheets and affect the style for individual HTML tags, inline styles are helpful when one section of a Web page needs to have a style different from the rest of the Web page. In this chapter's project, an inline style is used to change the color of the headings on the Web page and to change the font style in the bulleted list.

Now that you understand how style sheets and inline styles function, it is time to think about adding an image to enhance the appearance of your Web page.

Plan Ahead

Find appropriate graphical images.

To use graphical images, also called graphics, on a Web page, the image must be stored digitally in a file. Files containing graphical images are available from a variety of sources:

- Microsoft has free digital images on the Web for use in a document. Other Web sites also have images available, some of which are free, while others require a fee.
- You can take a picture with a digital camera and **download** it, which is the process of copying the digital picture from the camera to your computer.
- With a scanner, you can convert a printed picture, drawing, or diagram to a digital file.

If you receive a picture from a source other than yourself, do not use the file until you are certain it does not contain a virus. A **virus** is a computer program that can damage files and programs on your computer. Use an antivirus program to verify that any files you use are virus free.

Establish where to position and how to format the graphical image. The content, size, shape, position, and format of a graphic should capture the interest of passersby, enticing them to stop and read the Web page. Often, the graphic is the center of attraction and visually the largest element on a page. If you use colors in the graphical image, be sure they are part of the Web page's color scheme.

Identify the width and height of the image. The width and height (measured in pixels) of an image should always be identified in the <img> tag. These dimensions are used by the browser to determine the size to display the image. If you do not identify those attributes, the browser has to determine the size. This slows the process down for the browser.

Provide alternate text for the image. Alternate text should always be used for each image. This text is especially useful to users with visual impairments who use a screen reader, which translates information on a computer screen into audio output. The length of the alternate text should be reasonable.

Web Page Images

Images are used in many ways to enhance the look of a Web page and make it more interesting and colorful. Images can be used to add background color, to help organize a Web page, to help clarify a point being made in the text, or to serve as links to other Web pages. Images also are often used to break up Web page sections (such as with a horizontal rule) or as directional elements that allow a visitor to navigate a Web site.

Using Web Page Divisions

It is sometimes helpful to break up your Web page into divisions (or sections), which allows you to apply styles to different Web page elements. Throughout this book, you always use the start <div> and end </div> division tags as a container in which to insert images. Utilizing division tags allows you to add styles such as centering your image or adding background color to your images.

Image Types

Web pages use three types of files as images: GIF, JPEG, and PNG (Table 2–7). **Graphics Interchange Format** (**GIF**) files have an extension of .gif. A graphic image saved as a GIF (pronounced *jiff* or *giff*) uses compression techniques, called LZW compression, to make it smaller for download on the Web. Standard (or noninterlaced) GIF images are displayed one line at a time when loading. Interlaced GIF images load all at once, starting with a blurry look and becoming sharper as they load. Using interlaced GIFs for large images is a good technique, because a Web page visitor can see a blurred outline of the image as it loads. GIF is a patented format, however, and therefore widespread use is limited.

A second type of image file is **Portable Network Graphics** (**PNG**), which has a .png or .ping extension. The PNG (pronounced *ping*) format also is a compressed file format that supports multiple colors and resolutions. The World Wide Web Consortium developed the PNG format as a graphics standard and patent-free alternative to the GIF format. Most newer browsers support PNG images.

Finally, **Joint Photographic Experts Group** (**JPEG**) files have an extension of .jpg, .jpe, or .jpeg. A JPEG (pronounced *JAY-peg*) is a graphic image saved using a compression technique other than LZW. JPEG files often are used for more complex images, such as photographs, because the JPEG file format supports more colors and resolutions than the other file types.

BTW

Images

Images on Web pages are viewed in a variety of environments, including slow connections to the Internet and slower computers. Optimizing your images is important to increase the speed of download for all of your Web page visitors. Search the Web for more information on image optimization.

Table 2–7 Image Types and Uses

Image Type	Use
Graphics Interchange Format (GIF)	• Use for images with few colors (<256) • Allows for transparent backgrounds
Portable Network Graphics (PNG)	• Newest format for images • Use for all types of images • Allows for variation in transparency
Joint Photographic Experts Group (JPEG)	• Use for images with many colors (>256), such as photographs

If an image is not in one of these formats, you can use a paint or graphics-editing program to convert an image to a .gif, .jpg, or .png format. Some paint programs even allow you to save a GIF image as interlaced. A number of paint and graphics-editing programs, such Adobe Photoshop and Corel Paint Shop Pro, are available in the marketplace today.

BTW

Overusing Images
Be cautious about overusing images on a Web page. Using too many images may give your Web page a cluttered look or distract the visitor from the purpose of the Web page. An image should have a purpose, such as to convey content, visually organize a page, provide a hyperlink, or serve another function.

Image Attributes

You can enhance HTML tags by using attributes. **Attributes** define additional characteristics for the HTML tag. For instance, you should use the width and height attributes for all <img> tags. Table 2–8 lists the attributes that can be used with the <img> tag. In this chapter, the src and alt attributes are used in the <img> tag. Image attributes will be explained in detail, because they are used in later chapters.

Table 2–8 Image Attributes

Attribute	Function
alt	• Alternative text to display when an image is being loaded • Especially useful for screen readers, which translate information on a computer screen into audio output • Should be a brief representation of the purpose of the image • Generally should stick to 50 characters or fewer
height	• Defines the height of the image, measured in pixels • Improves loading time
hspace	• Defines the horizontal space that separates the image from the text
src	• Defines the URL of the image to be loaded
vspace	• Defines the vertical space that separates the image from the text
width	• Defines the width of the image, measured in pixels • Improves loading time

To Add an Image

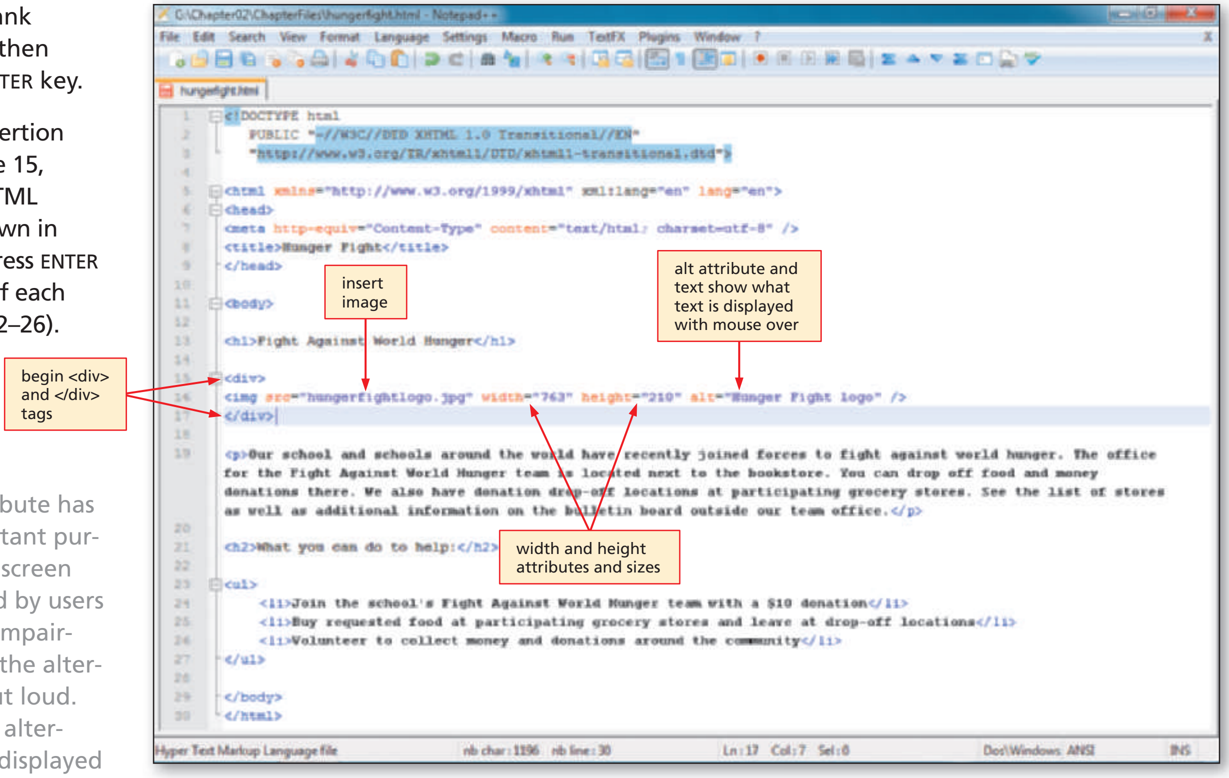
In the early days when the Web was used mostly by researchers needing to share information with each other, having purely functional, text-only Web pages was the norm. Today, Web page visitors are used to a more graphically oriented world, and have come to expect Web pages to use images that provide visual interest. The following step illustrates how to add an image to a Web page by entering an <img> tag in the HTML file using the tags and text shown in Table 2–9.

Table 2–9 Adding an Image

Line	HTML Tag and Text
15	`<div>`
16	`<img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />`
17	`</div>`

1

- Click the blank line 14 and then press the ENTER key.
- With the insertion point on line 15, enter the HTML code, as shown in Table 2–9. Press ENTER at the end of each line (Figure 2–26).


G:\Chapter02\ChapterFiles\hungerfight.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
hungerfight.html
begin <div> and </div> tags
insert image
alt attribute and text show what text is displayed with mouse over
width and height attributes and sizes
Hyper Text Markup Language file
nb char : 1196 nb line : 30
Ln : 17 Col : 7 Sel : 0
Dos\Windows ANSI
INS

```
1  <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <title>Hunger Fight</title>
9  </head>
10
11 <body>
12
13 <h1>Fight Against World Hunger</h1>
14
15 <div>
16 <img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />
17 </div>
18
19 <p>Our school and schools around the world have recently joined forces to fight against world hunger. The office
   for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money
   donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores
   as well as additional information on the bulletin board outside our team office.</p>
20
21 <h2>What you can do to help:</h2>
22
23 <ul>
24     <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
25     <li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
26     <li>Volunteer to collect money and donations around the community</li>
27 </ul>
28
29 </body>
30 </html>
```

Figure 2–26

Q&A

What is the purpose of the alt attribute?

The alt attribute has three important purposes. First, screen readers used by users with visual impairments read the alternate text out loud. Second, the alternate text is displayed while the image is being loaded. Finally, the alt tag is required for XHTML compliance.

Q&A

What is the purpose of the <div> and </div> tags?

The <div> tag establishes a division within a Web page. When you use the <div> </div> tags, you are able to design a layout that uses CSS, including inserting images.

Plan Ahead

Make other visual enhancements.

In addition to images, there are several ways to add visual interest.

Add color to headings. Web developers often use colors to call attention to elements on a Web page. The color selected should coordinate with the images selected for the page. It also should allow the Web page text to be read easily. Some colors, such as dark colors, may not be appropriate because the default black text cannot be displayed effectively on a dark background. When changing the color of an element such as a heading, it is usually best to apply the same style to all headings on the Web page for consistency.

Change the font style of a bulleted list. It is sometimes aesthetically pleasing to change the style of the text in a bulleted list. When you want to call attention to the information, you might want to italicize or bold the bullet text.

Insert a horizontal rule. It is useful to use a horizontal rule to break up text on a Web page. A horizontal rule is used as a divider for a page to separate text sections.

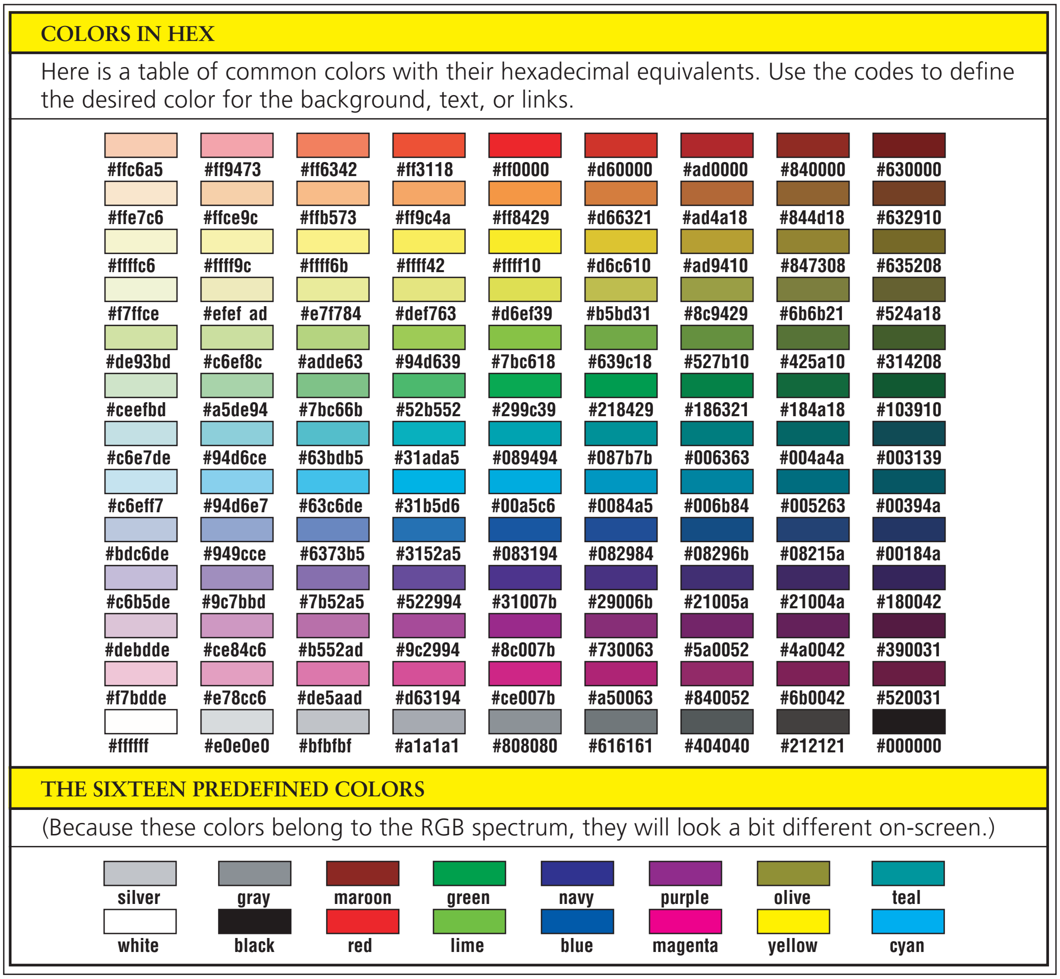
BTW

Colors

Figure 2–27 does not list all possible Web colors. Many other colors are available that you can use for Web page backgrounds or text fonts. For more information about colors, see Appendix B or search the Web for browser colors.

Other Visual Enhancements

One way to help capture a Web page visitor's attention is to use color. Many colors are available for use as a Web page background, text, or link. Figure 2–27 shows colors often used on Web pages, with the corresponding six-digit number codes. The six-digit number codes can be used to specify a color for a background, text, or links. The headings on the Fight Against World Hunger Web page are currently black (the default color). You will spruce up the Web page by adding color to the headings using inline styles.



COLORS IN HEX

Here is a table of common colors with their hexadecimal equivalents. Use the codes to define the desired color for the background, text, or links.

#ffc6a5	#ff9473	#ff6342	#ff3118	#ff0000	#d60000	#ad0000	#840000	#630000
#ffe7c6	#ffce9c	#ffb573	#ff9c4a	#ff8429	#d66321	#ad4a18	#844d18	#632910
#ffffc6	#ffff9c	#ffff6b	#ffff42	#ffff10	#d6c610	#ad9410	#847308	#635208
#f7ffce	#efef ad	#e7f784	#def763	#d6ef39	#b5bd31	#8c9429	#6b6b21	#524a18
#de93bd	#c6ef8c	#adde63	#94d639	#7bc618	#639c18	#527b10	#425a10	#314208
#ceefbd	#a5de94	#7bc66b	#52b552	#299c39	#218429	#186321	#184a18	#103910
#c6e7de	#94d6ce	#63bdb5	#31ada5	#089494	#087b7b	#006363	#004a4a	#003139
#c6eff7	#94d6e7	#63c6de	#31b5d6	#00a5c6	#0084a5	#006b84	#005263	#00394a
#bdc6de	#949cce	#6373b5	#3152a5	#083194	#082984	#08296b	#08215a	#00184a
#c6b5de	#9c7bbd	#7b52a5	#522994	#31007b	#29006b	#21005a	#21004a	#180042
#debdde	#ce84c6	#b552ad	#9c2994	#8c007b	#730063	#5a0052	#4a0042	#390031
#f7bdde	#e78cc6	#de5aad	#d63194	#ce007b	#a50063	#840052	#6b0042	#520031
#ffffff	#e0e0e0	#bfbfbf	#a1a1a1	#808080	#616161	#404040	#212121	#000000

THE SIXTEEN PREDEFINED COLORS

(Because these colors belong to the RGB spectrum, they will look a bit different on-screen.)

silver	gray	maroon	green	navy	purple	olive	teal
white	black	red	lime	blue	magenta	yellow	cyan

Figure 2–27

BTW

Browser-safe Colors

Web developers used to have to make sure that they used browser-safe colors (Appendix B). The trend for monitors today is to display "true color" which means that any of 16 million colors can be displayed on the monitor. Few people use 8-bit monitors anymore, so you generally do not have to limit yourself to browser-safe colors.

The color codes and names shown in Figure 2–27 can be used for background, text, and link colors. The color property is used in the <h1> and <h2> tags to specify the color for these headings. The color #3D60B1 will be used for these headings because it is one of the colors found in the graphical image inserted in the steps above.

Another way to visually enhance the Web page is to change the style of some of the text. This calls attention to that particular text on the Web page. In this section, you change the text in the bulleted list to an italic style using an inline style. This change helps call attention to the three points in that bulleted list.

Finally, you add a horizontal rule to further enhance this Web page. As discussed earlier in the chapter, horizontal rules are lines that act as dividers on a Web page to provide a visual separation of sections on the page. You can use an inline image to add a horizontal rule, or you can use the horizontal rule tag (<hr />) to add a simple horizontal rule, as shown in the following steps. Figure 2–28 shows examples of a variety of horizontal rules and the HTML code used to add them. The default horizontal rule is shown in the first rule on the page. Dimension is added to a horizontal rule by increasing the number of pixels that are displayed.

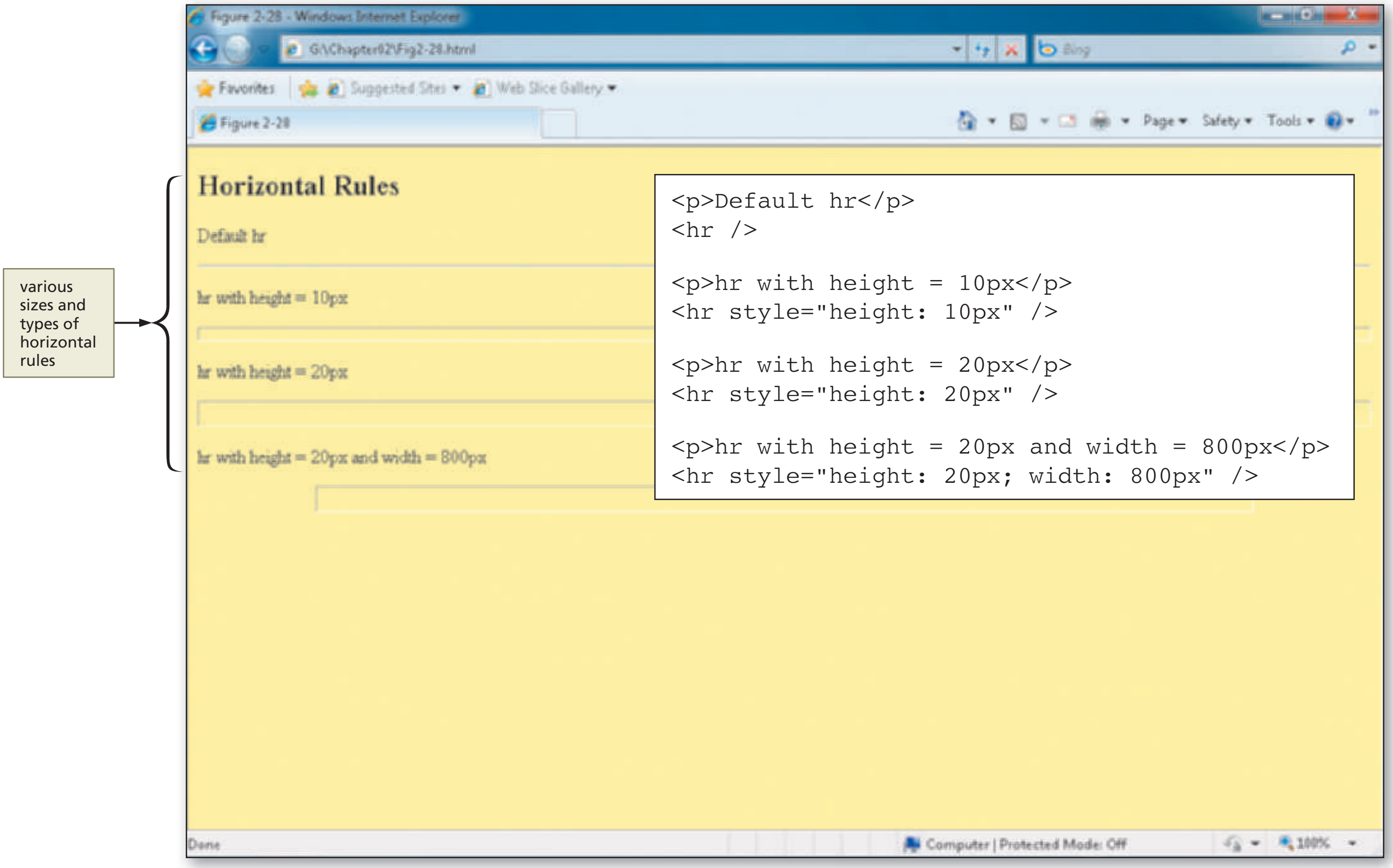


Figure 2-28 - Windows Internet Explorer
G:\Chapter02\Fig2-28.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Figure 2-28
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

various sizes and types of horizontal rules

Horizontal Rules

Default hr

hr with height = 10px

hr with height = 20px

hr with height = 20px and width = 800px

```
<p>Default hr</p>
<hr />

<p>hr with height = 10px</p>
<hr style="height: 10px" />

<p>hr with height = 20px</p>
<hr style="height: 20px" />

<p>hr with height = 20px and width = 800px</p>
<hr style="height: 20px; width: 800px" />
```

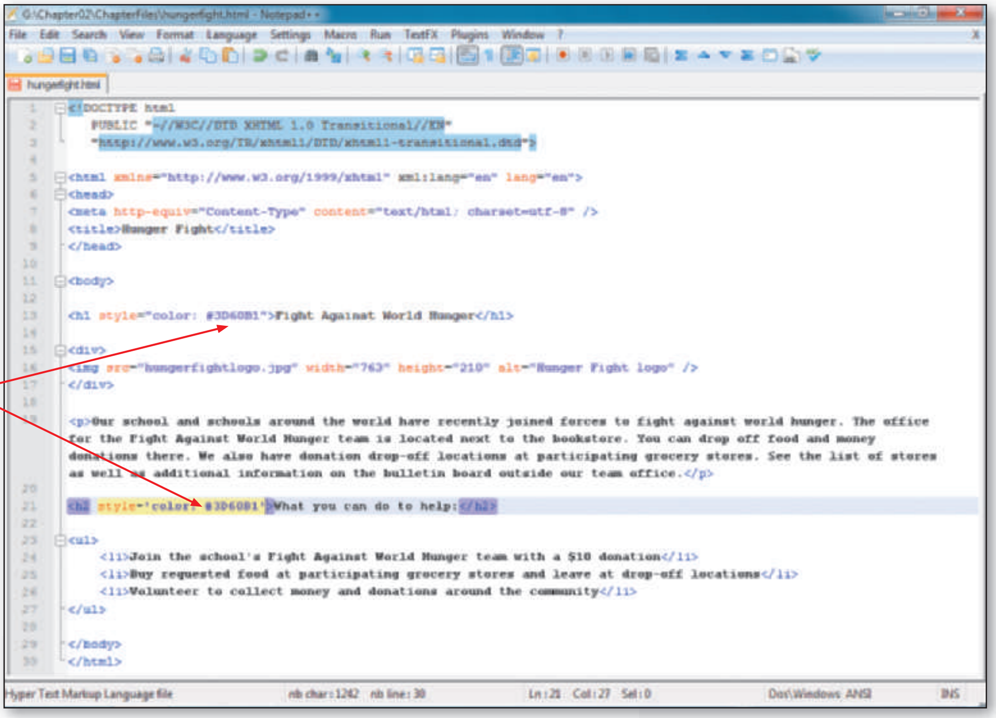
Figure 2–28

To Add Color to Web Page Headings

To change the color of headings on a Web page, the color property must be added in the <h1> and <h2> tags of the HTML file. The **color** property lets you change the color of various elements on the Web page. The following step shows how to add a color using the color property in an inline style.

1

- Click after the "1" but before the closing bracket in <h1> on line 13 and then press the SPACEBAR.
- Type `style="color: #3D60B1"` as the color code for the Fight Against World Hunger heading (Figure 2–29).
- Click after the "2" but before the closing bracket in <h2> on line 21 and then press the SPACEBAR.
- Type `style="color: #3D60B1"` as the color code for the What you can do to help: heading (Figure 2–29).



color code #3D60B1 added to headings in <h1> and <h2> tags

G:\Chapter02\ChapterFiles\hungerfight.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
hungerfight.html

```
1  <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <title>Hunger Fight</title>
9  </head>
10
11 <body>
12
13 <h1 style="color: #3D60B1">Fight Against World Hunger</h1>
14
15 <div>
16 <img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />
17 </div>
18
19 <p>Our school and schools around the world have recently joined forces to fight against world hunger. The office
   for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money
   donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores
   as well as additional information on the bulletin board outside our team office.</p>
20
21 <h2 style="color: #3D60B1">What you can do to help:</h2>
22
23 <ul>
24     <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
25     <li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
26     <li>Volunteer to collect money and donations around the community</li>
27 </ul>
28
29 </body>
30 </html>
```

Figure 2–29

Q&A

Can I use any hexadecimal code or color name to change colors of headings?

Although you may use any of the hexadecimal codes or color names available, you have to make sure that the color is appropriate for the headings of your Web page. You do not want a heading that is too light in color or otherwise diminishes the headings.

Q&A

Could I have used the copy/paste process to copy the inline style from the <h1> tag to the <h2> tag?

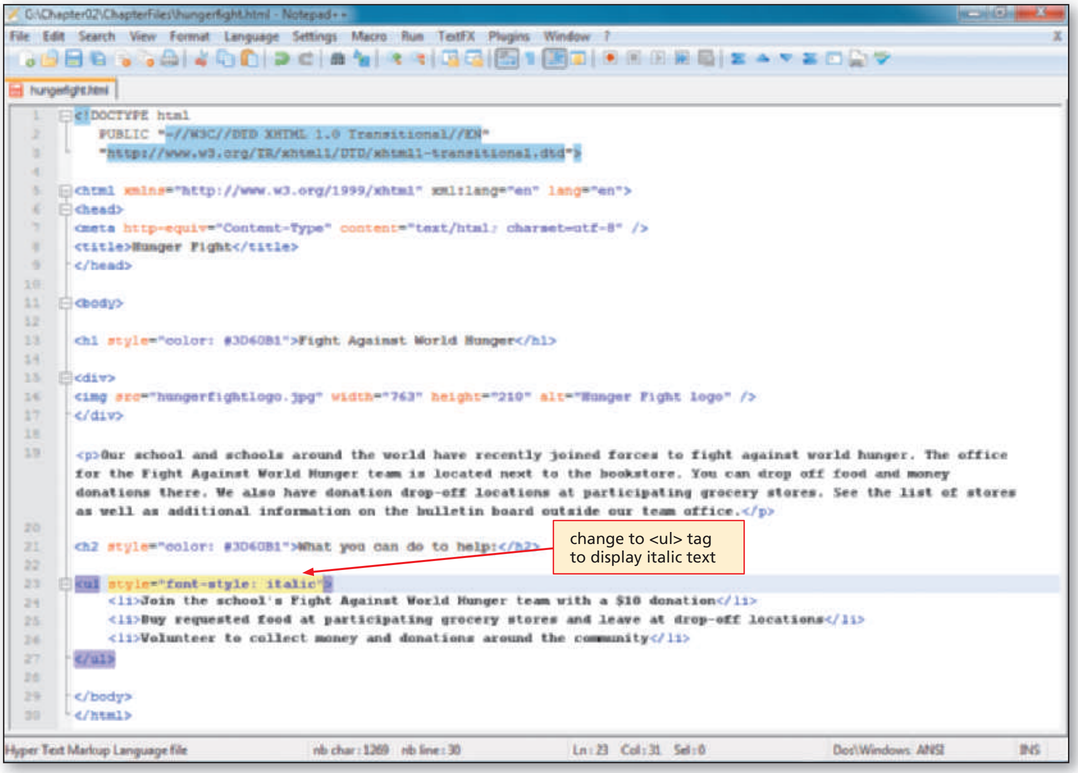
Yes, copying/pasting would have the same result. However, if you want to copy a style to all the headings on a Web page, it is easier to use embedded or external style sheets, which you learn about in the next two chapters.

To Change the Bulleted List Style

To change the style of the bulleted list, you again use an inline style with the font-style property. The **font-style** property lets you change the style of the font, or text, selected. There are three values for the font-style, normal, italic, and oblique, although only normal and italic are widely supported by the browsers of various properties of elements on the Web page. The following step shows how to add a color using the color property in an inline style.

1

- Click after the "l" but before the closing bracket in <ul> on line 23 and then press the SPACEBAR.
- Type `style="font-style: italic"` as the code (Figure 2–30).


G:\Chapter02\ChapterFiles\hungerfight.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
hungerfight.html
Hyper Text Markup Language file nb char : 1269 nb line : 30 Ln : 23 Col : 31 Sel : 0 Dos\Windows ANSI INS

```
1  <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <title>Hunger Fight</title>
9  </head>
10
11 <body>
12
13 <h1 style="color: #3D60B1">Fight Against World Hunger</h1>
14
15 <div>
16 <img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />
17 </div>
18
19 <p>Our school and schools around the world have recently joined forces to fight against world hunger. The office
   for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money
   donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores
   as well as additional information on the bulletin board outside our team office.</p>
20
21 <h2 style="color: #3D60B1">What you can do to help:</h2>
22
23 <ul style="font-style: italic">
24     <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
25     <li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
26     <li>Volunteer to collect money and donations around the community</li>
27 </ul>
28
29 </body>
30 </html>
```

change to <ul> tag to display italic text

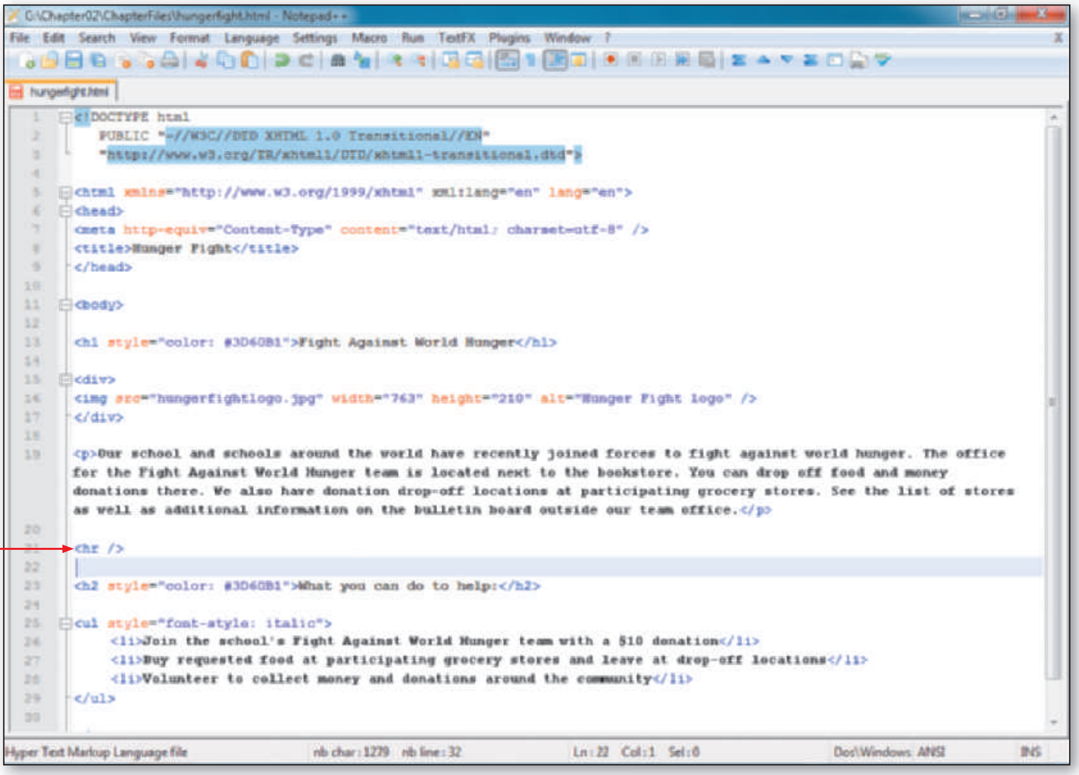
Figure 2–30

To Add a Horizontal Rule

The following step illustrates how to add a horizontal rule to a Web page.

1

- Click the blank line 20 and then press the ENTER key.
- Type `<hr />` as the HTML tag and then press the ENTER key (Figure 2–31).
- Click File on the menu bar and then click Save.


G:\Chapter02\ChapterFiles\hungerfight.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
hungerfight.html
Hyper Text Markup Language file
nb char : 1279 nb line : 32
Ln : 22 Col : 1 Sel : 0
Dos\Windows ANSI
INS

```
1  <!DOCTYPE html
2      PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <title>Hunger Fight</title>
9  </head>
10
11 <body>
12
13 <h1 style="color: #3D60B1">Fight Against World Hunger</h1>
14
15 <div>
16 <img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />
17 </div>
18
19 <p>Our school and schools around the world have recently joined forces to fight against world hunger. The office
   for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money
   donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores
   as well as additional information on the bulletin board outside our team office.</p>
20
21 <hr />
22
23 <h2 style="color: #3D60B1">What you can do to help:</h2>
24
25 <ul style="font-style: italic">
26     <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
27     <li>Buy requested food at participating grocery stores and leave at drop-off locations</li>
28     <li>Volunteer to collect money and donations around the community</li>
29 </ul>
30
```

add horizontal rule

Figure 2–31

BTW

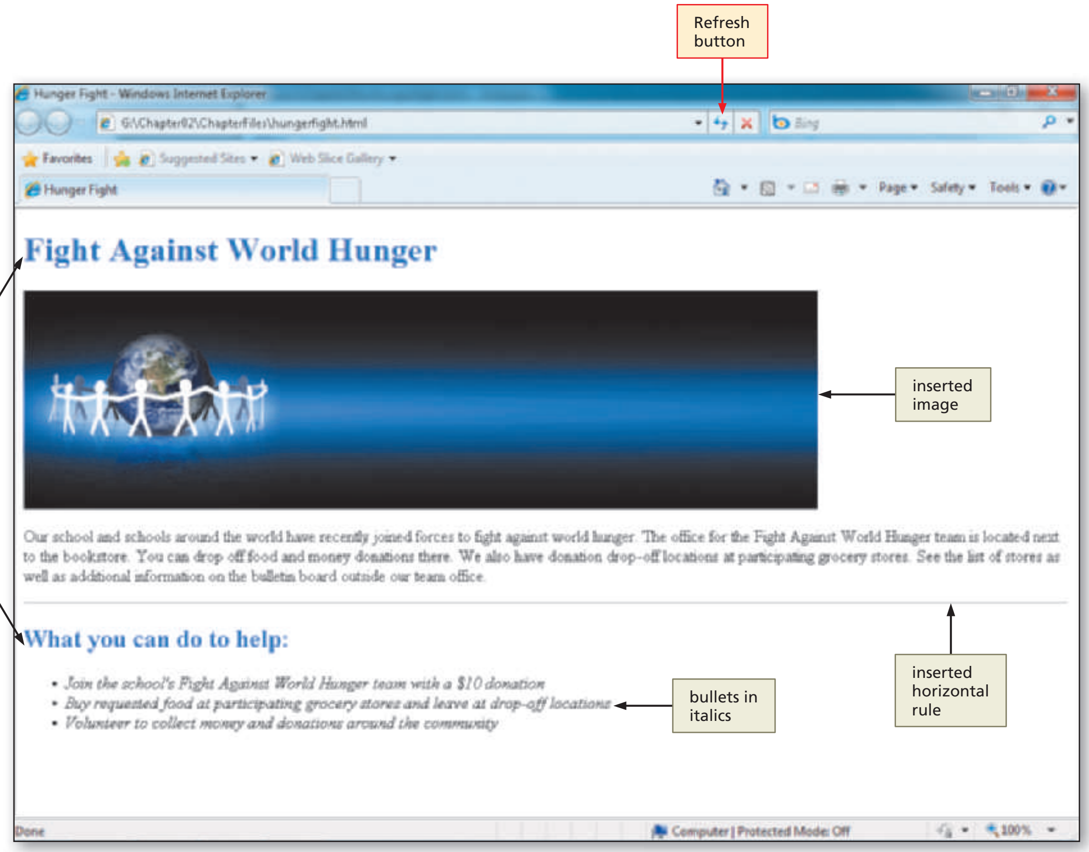
HTML and XHTML Tags
The Web has excellent sources that list HTML and XHTML tags. For more information about HTML and XHTML, search for "HTML tags" or "XHTML tags" in a search engine.

To Refresh the View in a Browser

As you continue developing the HTML file in Notepad++, it is a good idea to view the file in your browser as you make modifications. Be sure to click the Refresh button when viewing the modified Web page in the browser, to ensure the latest version of the Web page is displayed. The step on the next page shows how to refresh the view of a Web page in a browser in order to view the modified Web page.

1

- Click the Internet Explorer button on the taskbar to display the home page.
- Click the Refresh button on the Address bar to display the modified Web page (Figure 2–32).



Fight Against World Hunger

Our school and schools around the world have recently joined forces to fight against world hunger. The office for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional information on the bulletin board outside our team office.

What you can do to help:

- *Join the school's Fight Against World Hunger team with a $10 donation*
- *Buy requested food at participating grocery stores and leave at drop-off locations*
- *Volunteer to collect money and donations around the community*

Figure 2–32

Other Ways

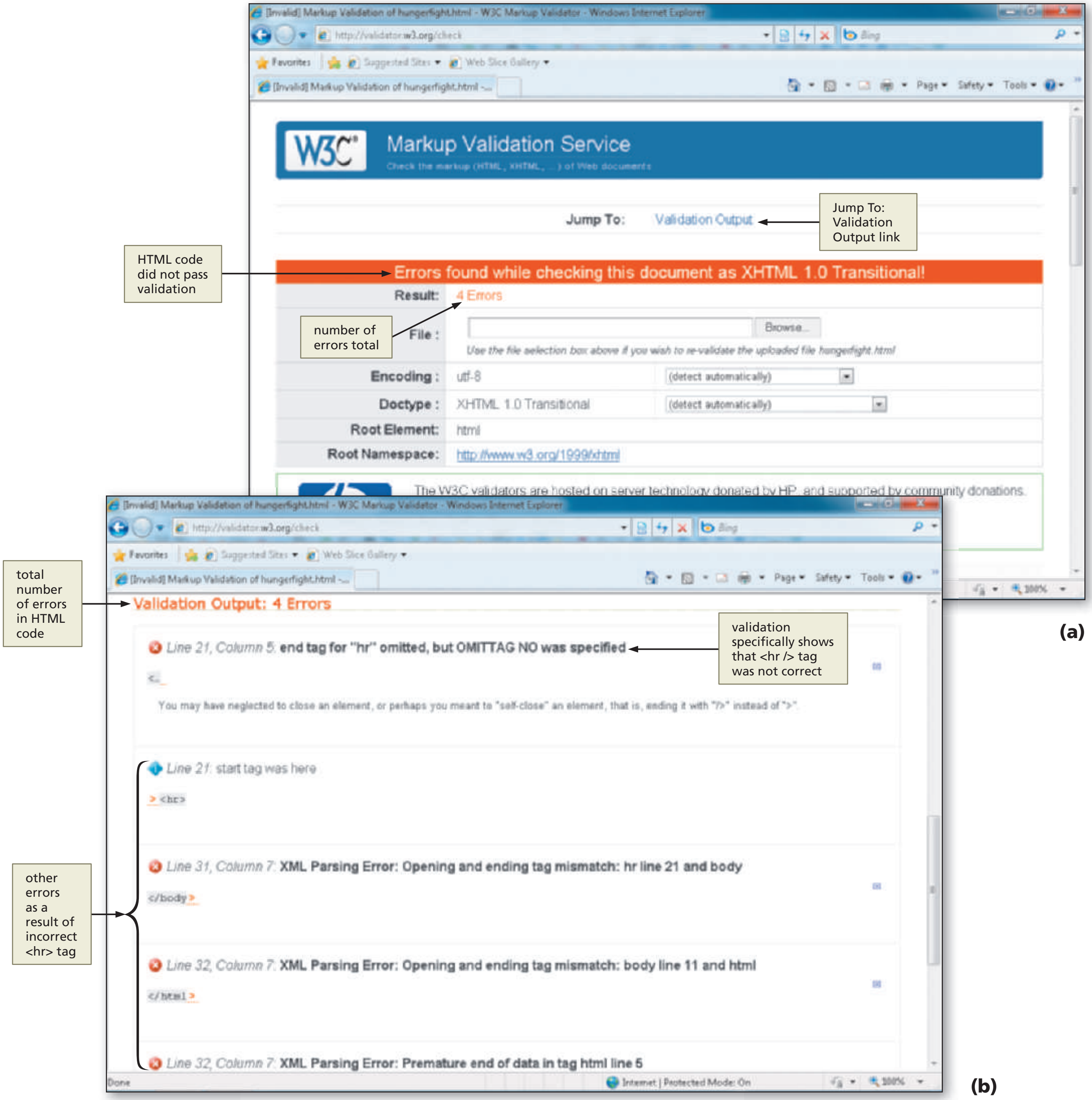
1. In Internet Explorer, press F5 to refresh

Validating and Viewing HTML Code

In Chapter 1, you read about validating your HTML code. Many validation services are available on the Web that can be used to assure that your HTML code follows standards. This should always be a part of your Web page testing. The validation service used in this book is the W3C Markup Validation Service (validator.w3.org). The XHTML validator looks at the DOCTYPE statement to see which version of HTML or XHTML you are using, and then checks to see if the code is valid for that version. In this chapter, the project uses Transitional code.

If validation detects an error in your HTML code, you see the warning “Errors found while checking this document as XHTML 1.0 Transitional!” in the header bar, which is red (Figure 2–33a on the next page). The Result line shows the number of errors that you have. You can scroll down the page or click the Jump To: Validation Output link to see detailed comments on each error.

It is important to note that one error can result in more errors. As an example, the <hr /> tag in the hungerfight.html file was changed to <hr> to show code with an error. Figure 2–33b shows that in this case, one initial error resulted in a total of four errors.



[Invalid] Markup Validation of hungerfight.html - W3C Markup Validator - Windows Internet Explorer

http://validator.w3.org/check

Markup Validation Service

Check the markup (HTML, XHTML, ...) of Web documents

Jump To: Validation Output

Errors found while checking this document as XHTML 1.0 Transitional!

Result: 4 Errors

File : Browse...

Use the file selection box above if you wish to re-validate the uploaded file hungerfight.html

Encoding : utf-8 (detect automatically)

Doctype : XHTML 1.0 Transitional (detect automatically)

Root Element: html

Root Namespace: http://www.w3.org/1999/xhtml

The W3C validators are hosted on server technology donated by HP, and supported by community donations.

Jump To: Validation Output link

HTML code did not pass validation

number of errors total

(a)

Validation Output: 4 Errors

Line 21, Column 5: end tag for "hr" omitted, but OMITTAG NO was specified

You may have neglected to close an element, or perhaps you meant to "self-close" an element, that is, ending it with "/>" instead of ">".

Line 21: start tag was here

> <hr>

Line 31, Column 7: XML Parsing Error: Opening and ending tag mismatch: hr line 21 and body

</body>

Line 32, Column 7: XML Parsing Error: Opening and ending tag mismatch: body line 11 and html

</html>

Line 32, Column 7: XML Parsing Error: Premature end of data in tag html line 5

Done Internet | Protected Mode: On 100%

total number of errors in HTML code

validation specifically shows that <hr /> tag was not correct

other errors as a result of incorrect <hr> tag

(b)

Figure 2–33

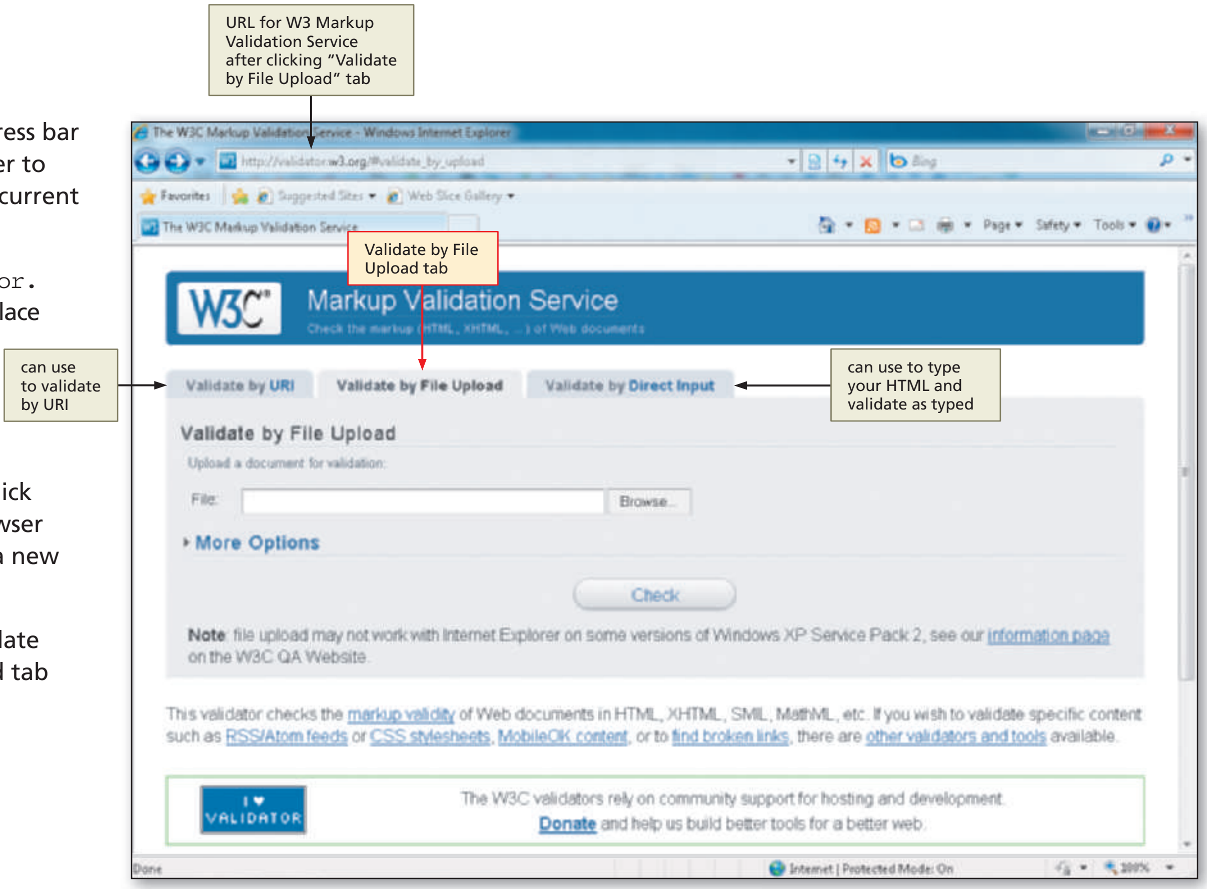
Source code is the code or instructions used to create a Web page or program. For a Web page, the source code is the HTML code, which then is translated by a browser into a graphical Web page. You can view the HTML source code for any Web page from within your browser. This feature allows you to check your own HTML source code, as well as to see the HTML code other developers used to create their Web pages. If a feature on a Web page is appropriate or appealing for your Web page, you can view the source to understand the HTML required to add that feature and then copy sections of the HTML code to put on your own Web pages.

To Validate HTML Code

Now that you have added all the basic elements to your Web page and enhanced it with images, color, italics, and rules, you need to validate your code. The following steps illustrate how to validate your HTML code using the W3 validator.

1

- Click the Address bar on the browser to highlight the current URL.
- Type `validator.w3.org` to replace the current entry, and then press the ENTER key.
- If necessary, click OK if the browser asks to open a new window.
- Click the Validate by File Upload tab (Figure 2–34).



URL for W3 Markup Validation Service after clicking "Validate by File Upload" tab

Validate by File Upload tab

can use to validate by URI

can use to type your HTML and validate as typed

The W3C Markup Validation Service - Windows Internet Explorer
http://validator.w3.org/#validate_by_upload
Favorites
Suggested Sites
Web Slice Gallery
The W3C Markup Validation Service
Page
Safety
Tools
W3C
Markup Validation Service
Check the markup (HTML, XHTML, ...) of Web documents
Validate by URI
Validate by File Upload
Validate by Direct Input
Validate by File Upload
Upload a document for validation:
File:
Browse...
More Options
Check
I ♥ VALIDATOR
Done
Internet | Protected Mode: On
100%

Note: file upload may not work with Internet Explorer on some versions of Windows XP Service Pack 2, see our information page on the W3C QA Website.

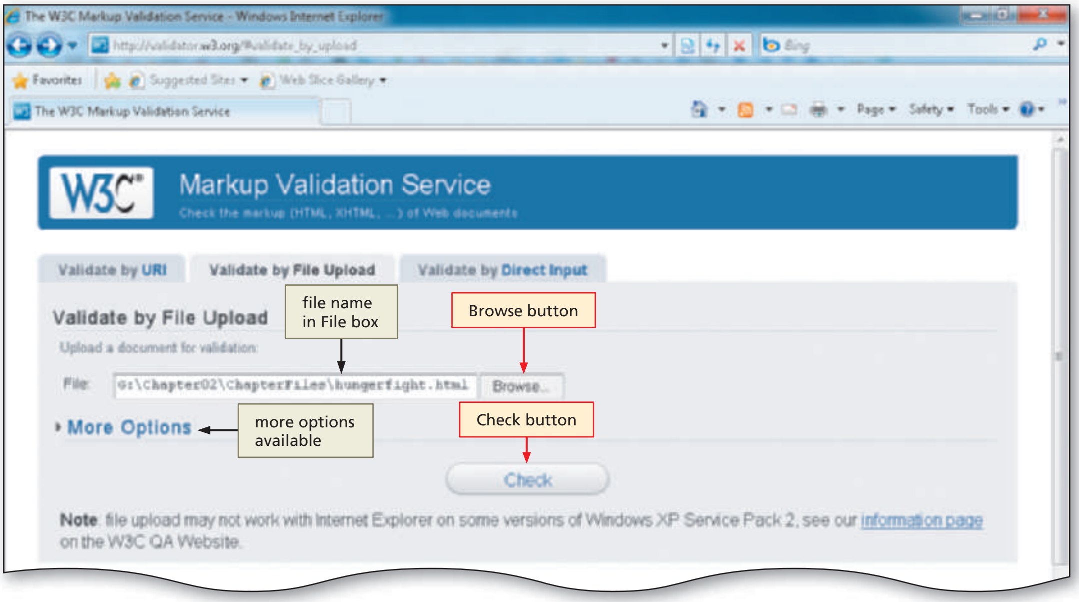
This validator checks the markup validity of Web documents in HTML, XHTML, SMIL, MathML, etc. If you wish to validate specific content such as RSS/Atom feeds or CSS stylesheets, MobileOK content, or to find broken links, there are other validators and tools available.

The W3C validators rely on community support for hosting and development. Donate and help us build better tools for a better web.

Figure 2–34

2

- Click the Browse button.
- Locate the hungerfight.html file on your storage device and then click the file name.
- Click the Open button on the Choose File to Upload dialog box and the file path and name will be inserted into the File box, as shown in Figure 2–35.



Markup Validation Service

Check the markup (HTML, XHTML, ...) of Web documents

Validate by File Upload

Upload a document for validation:

File: G:\Chapter02\ChapterFiles\hungerfight.html

More Options

Note: file upload may not work with Internet Explorer on some versions of Windows XP Service Pack 2, see our information page on the W3C QA Website.

file name in File box

Browse button

Check button

more options available

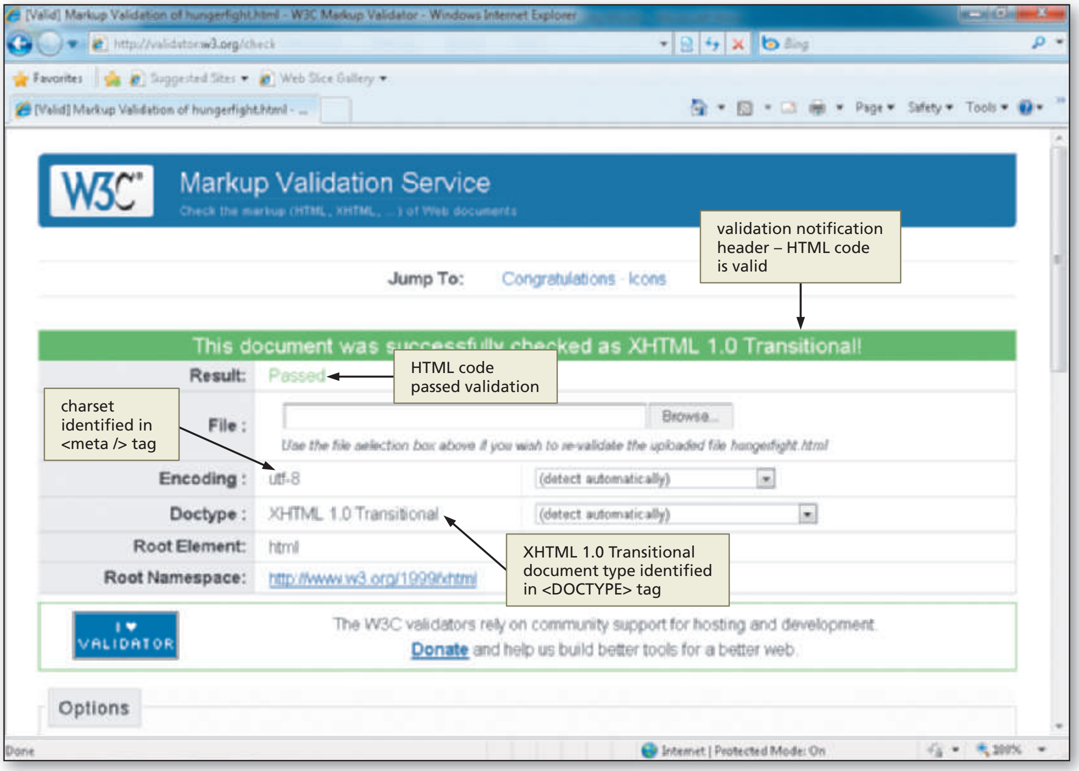
Figure 2–35

3

- Click the Check button (Figure 2–35). The resulting validation should be displayed, as shown in Figure 2–36.
- Return to the Hunger Fight Web page, either by clicking the Back button on your browser or by clicking the Internet Explorer button in the taskbar.

Q&A How do I know if my HTML code is valid?

The notification header will be green, and in the Result area, you should see the word "Passed."


[Valid] Markup Validation of hungerfight.html - W3C Markup Validator - Windows Internet Explorer
http://validator.w3.org/check
Bing
Favorites
Suggested Sites
Web Slice Gallery
[Valid] Markup Validation of hungerfight.html - ...
Page
Safety
Tools
W3C
Browse...
I ♥ VALIDATOR
Done
Internet | Protected Mode: On
100%

Markup Validation Service

Check the markup (HTML, XHTML, ...) of Web documents

Jump To: Congratulations · Icons

This document was successfully checked as XHTML 1.0 Transitional!

Result: Passed

File:

Use the file selection box above if you wish to re-validate the uploaded file hungerfight.html

Encoding: utf-8 (detect automatically)

Doctype: XHTML 1.0 Transitional (detect automatically)

Root Element: html

Root Namespace: http://www.w3.org/1999/xhtml

The W3C validators rely on community support for hosting and development. Donate and help us build better tools for a better web.

Options

validation notification header – HTML code is valid

HTML code passed validation

charset identified in <meta /> tag

XHTML 1.0 Transitional document type identified in <DOCTYPE> tag

Figure 2–36

Q&A What can I do if my HTML code is not validated?

If your code has errors, edit your HTML file to correct the errors. The Markup Validation Service report lists what is wrong with your code. Once you make the necessary changes and save the file, you can use the Browse button to open the corrected HTML file, then scroll down and click the Revalidate button to validate the changed code.

To View HTML Source Code for a Web Page

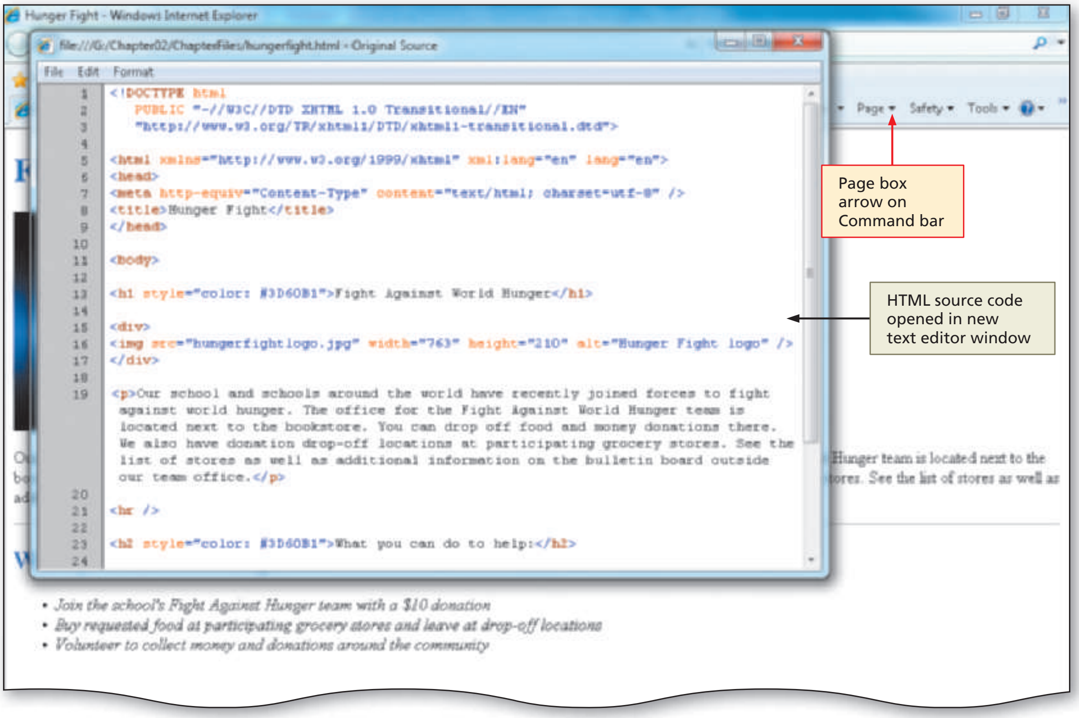
You can use your browser to look at the source code for most Web pages. The following steps show how to view the HTML source code for your Web page using a browser.

1

- Click Page on the Command bar (Figure 2–37).
- Click View Source to view the HTML code in the default text editor.

Q&A Do all browsers allow me to view the HTML source code in the same way?

Browsers such as Firefox or Safari differ from Internet Explorer and might use different buttons or menu options to access source code. For instance, in Mozilla Firefox, select View and then Page Source.


Hunger Fight - Windows Internet Explorer
file:///G:/Chapter02/ChapterFiles/hungerfight.html - Original Source
File Edit Format
Page Safety Tools
Page box arrow on Command bar
HTML source code opened in new text editor window

```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hunger Fight</title>
</head>

<body>

<h1 style="color: #3D60B1">Fight Against World Hunger</h1>

<div>
<img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />
</div>

<p>Our school and schools around the world have recently joined forces to fight
  against world hunger. The office for the Fight Against World Hunger team is
  located next to the bookstore. You can drop off food and money donations there.
  We also have donation drop-off locations at participating grocery stores. See the
  list of stores as well as additional information on the bulletin board outside
  our team office.</p>

<hr />

<h2 style="color: #3D60B1">What you can do to help:</h2>

```

- *Join the school's Fight Against Hunger team with a $10 donation*
- *Buy requested food at participating grocery stores and leave at drop-off locations*
- *Volunteer to collect money and donations around the community*

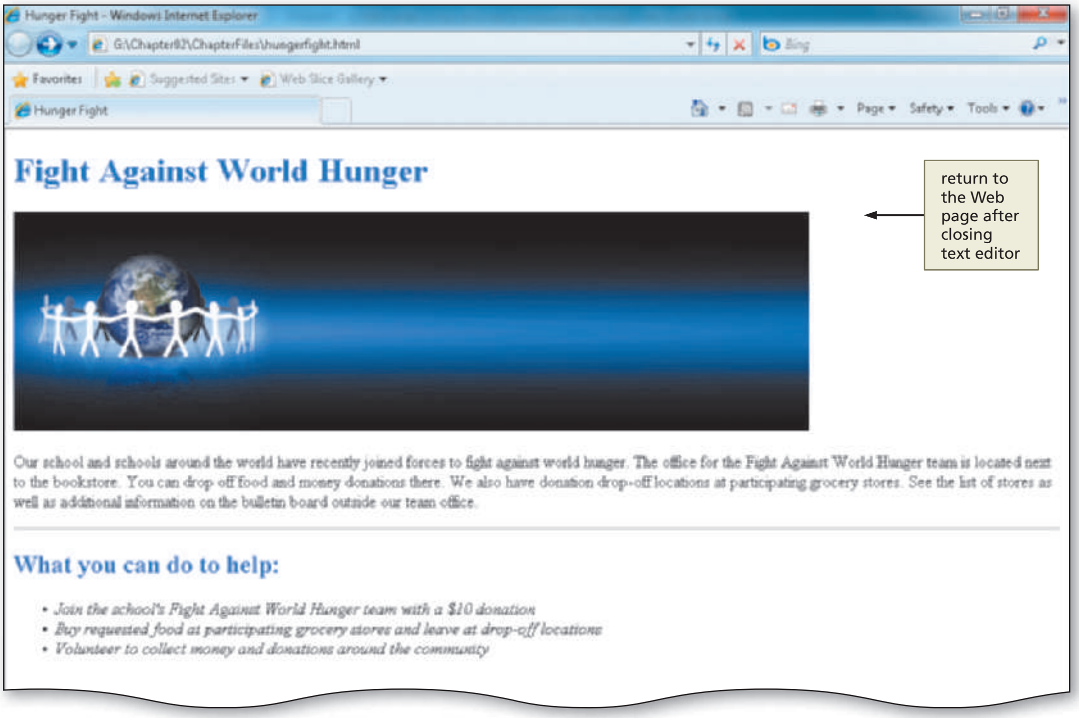
Figure 2–37

2

- Click the Close button on the text editor title bar to close the active text editor window (Figure 2–38).

Q&A What is the default text editor?

It is likely to be Notepad for Internet Explorer, but could be Notepad++ or another editor depending on your browser setup.


Hunger Fight - Windows Internet Explorer
G:\Chapter02\ChapterFiles\hungerfight.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Hunger Fight
Page Safety Tools
return to the Web page after closing text editor

Fight Against World Hunger

Our school and schools around the world have recently joined forces to fight against world hunger. The office for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional information on the bulletin board outside our team office.

What you can do to help:

- *Join the school's Fight Against World Hunger team with a $10 donation*
- *Buy requested food at participating grocery stores and leave at drop-off locations*
- *Volunteer to collect money and donations around the community*

Figure 2–38

To Print a Web Page and an HTML File

After you have created the HTML file and saved it, you might want to print a copy of the HTML code and the resulting Web page. A printed version of a file, Web page, or other document is called a **hard copy** or **printout**. Printed copies of HTML files and Web pages can be kept for reference or to distribute. In many cases, HTML files and Web pages are printed and kept in binders for use by others. The following steps show how to print a Web page and its corresponding HTML file.

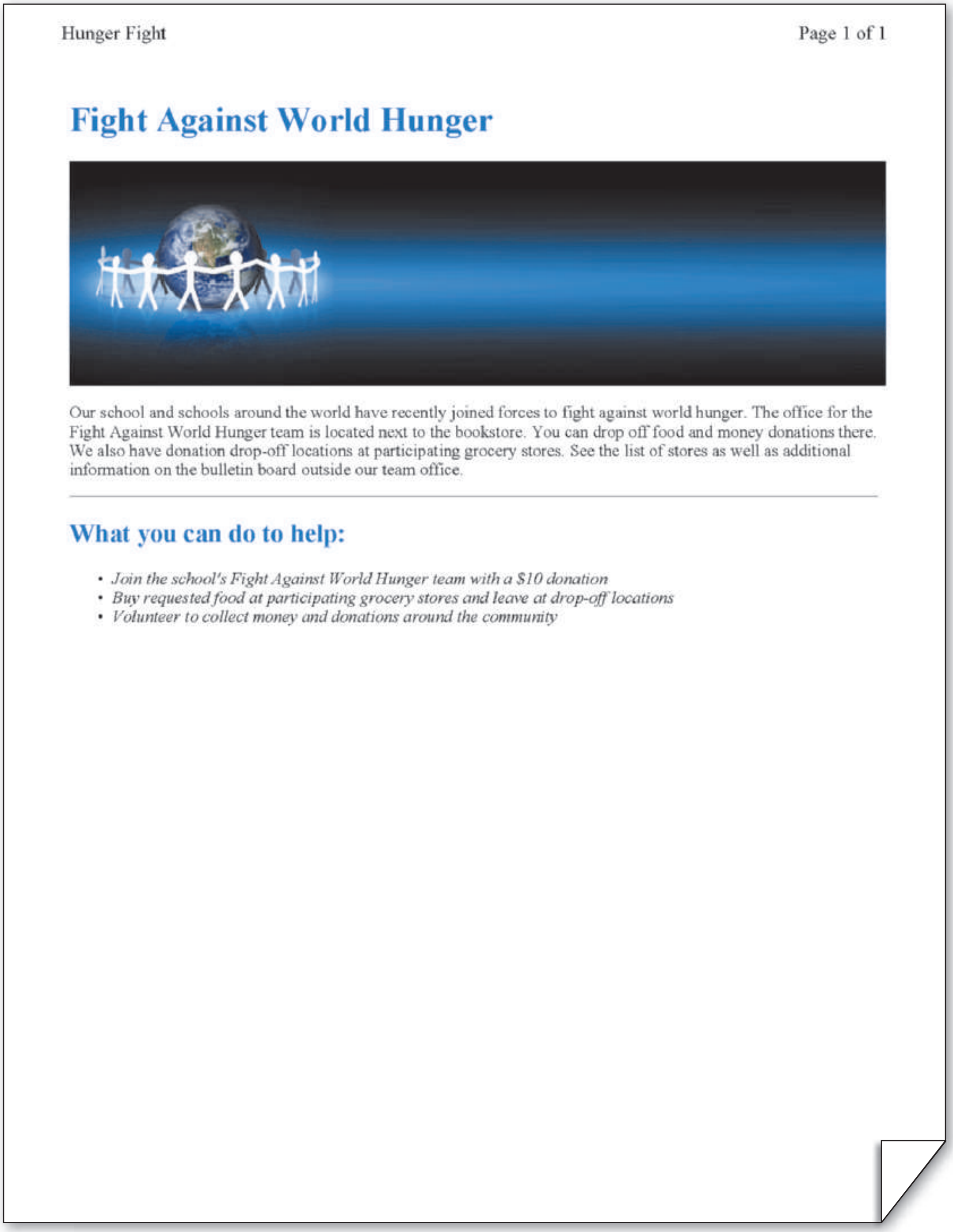
1

- Ready the printer according to the printer instructions.
- With the Fight Against World Hunger Web page open in the browser window, click the Print icon on the Command bar.
- When the Print dialog box appears, click the Print button.
- When the printer stops printing the Web page, retrieve the printout (Figure 2–39).

Q&A

Are there other ways to print a Web page?

Pressing CTRL+P opens the Print dialog box, where you can select print options. You can also use the File menu, Print option.



Hunger Fight

Page 1 of 1

Fight Against World Hunger

Our school and schools around the world have recently joined forces to fight against world hunger. The office for the Fight Against World Hunger team is located next to the bookstore. You can drop off food and money donations there. We also have donation drop-off locations at participating grocery stores. See the list of stores as well as additional information on the bulletin board outside our team office.

What you can do to help:

- *Join the school's Fight Against World Hunger team with a $10 donation*
- *Buy requested food at participating grocery stores and leave at drop-off locations*
- *Volunteer to collect money and donations around the community*

Figure 2–39

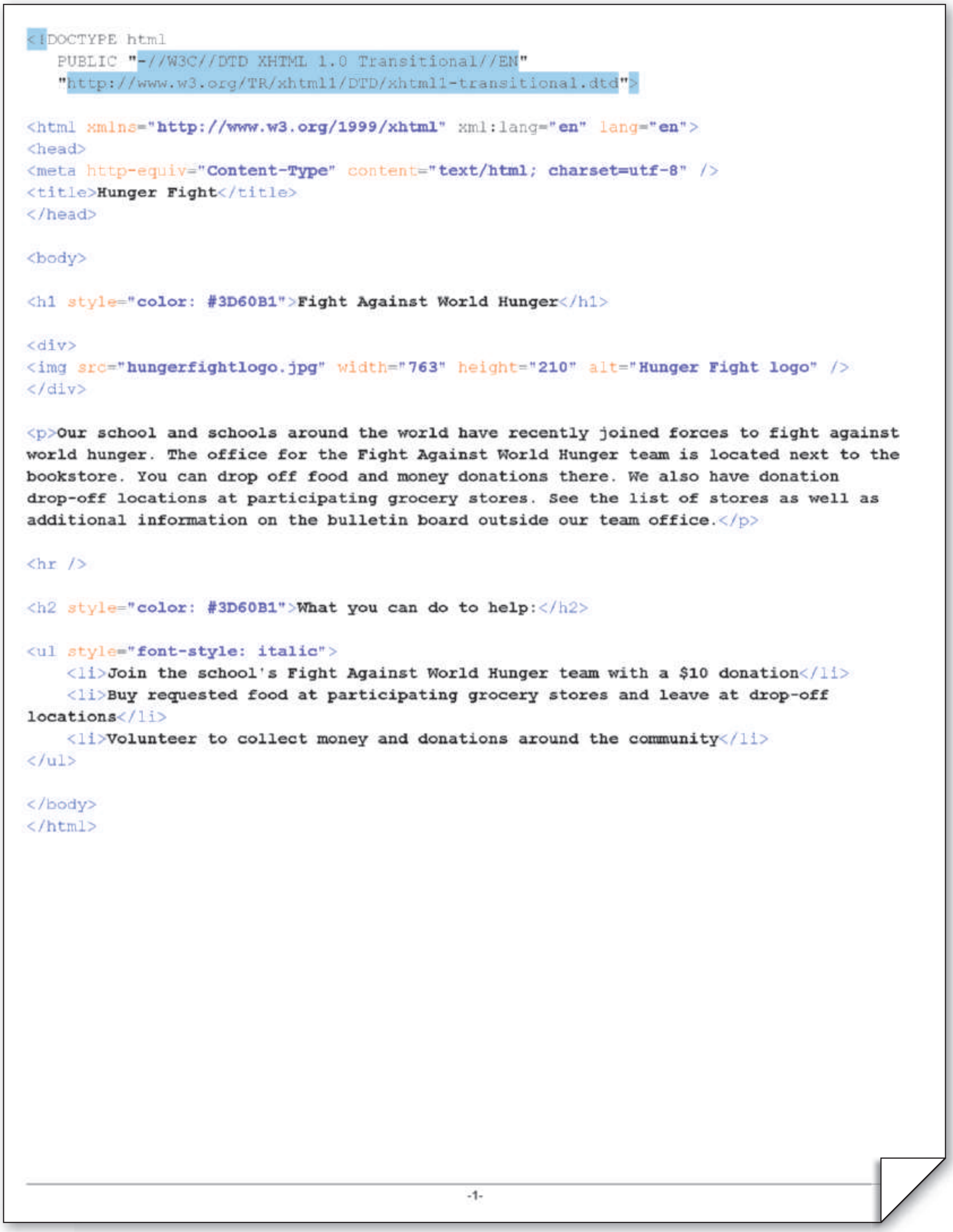
2

- Click the Notepad++ button on the taskbar to activate the Notepad++ window.
- Click File on the menu bar, click the Print command, and then click the Print button to print a hard copy of the HTML code (Figure 2–40).

Q&A

Why do I need a printout of the HTML code?

Having a hard-copy printout is an invaluable tool for beginning developers. A printed copy can help you immediately see the relationship between the HTML tags and the Web page that you view in the browser.



```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Hunger Fight</title>
</head>

<body>

<h1 style="color: #3D60B1">Fight Against World Hunger</h1>

<div>
<img src="hungerfightlogo.jpg" width="763" height="210" alt="Hunger Fight logo" />
</div>

<p>Our school and schools around the world have recently joined forces to fight against
world hunger. The office for the Fight Against World Hunger team is located next to the
bookstore. You can drop off food and money donations there. We also have donation
drop-off locations at participating grocery stores. See the list of stores as well as
additional information on the bulletin board outside our team office.</p>

<hr />

<h2 style="color: #3D60B1">What you can do to help:</h2>

<ul style="font-style: italic">
    <li>Join the school's Fight Against World Hunger team with a $10 donation</li>
    <li>Buy requested food at participating grocery stores and leave at drop-off
locations</li>
    <li>Volunteer to collect money and donations around the community</li>
</ul>

</body>
</html>
```

-1-

Figure 2–40

BTW

Quick Reference
For a list of HTML tags and their associated attributes, see the HTML Quick Reference (Appendix A) at the back of this book, or visit the HTML Quick Reference Web page (scsite.com/HTML6e/qr). For a list of CSS properties and values, see Appendix D.

To Quit Notepad++ and a Browser

The following step shows how to quit Notepad++ and a browser.

1. In Notepad++, click the File menu, then Close All.
2. Click the Close button on the Notepad++ title bar.
3. Click the Close button on the Hunger Fight Internet Explorer title bar.

Chapter Summary

In this chapter, you have learned how to identify the elements of a Web page, define the Web page structure, and enter Web page content using a text editor. You enhanced Web page appearance using inline styles, saved and validated your code, and viewed your Web page and source code in a browser. The items listed below include all the new HTML skills you have learned in this chapter.

1. Start Notepad++ (HTML 40)
2. Enable Word Wrap in Notepad++ (HTML 42)
3. Define the Web Page Structure Using HTML Tags (HTML 42)
4. Enter a Heading (HTML 47)
5. Enter a Paragraph of Text (HTML 47)
6. Create an Unordered List (HTML 50)
7. Save an HTML File (HTML 54)
8. Start a Browser (HTML 57)
9. View a Web Page in a Browser (HTML 59)
10. Activate Notepad++ (HTML 61)
11. Add an Image (HTML 66)
12. Add Color to Web Page Headings (HTML 70)
13. Change the Bulleted List Style (HTML 71)
14. Add a Horizontal Rule (HTML 72)
15. Refresh the View in a Browser (HTML 73)
16. Validate HTML Code (HTML 75)
17. View HTML Source Code for a Web Page (HTML 77)
18. Print a Web Page and an HTML File (HTML 78)
19. Quit Notepad++ and a Browser (HTML 80)

Learn It Online

Test your knowledge of chapter content and key terms.

Instructions: To complete the Learn It Online exercises, start your browser, click the Address bar, and then enter the Web address `scsite.com/html6e/learn`. When the HTML Learn It Online page is displayed, click the link for the exercise you want to complete and read the instructions.

Chapter Reinforcement TF, MC, and SA

A series of true/false, multiple choice, and short answer questions that test your knowledge of the chapter content.

Flash Cards

An interactive learning environment where you identify chapter key terms associated with displayed definitions.

Practice Test

A series of multiple choice questions that test your knowledge of chapter content and key terms.

Who Wants To Be a Computer Genius?

An interactive game that challenges your knowledge of chapter content in the style of a television quiz show.

Wheel of Terms

An interactive game that challenges your knowledge of chapter key terms in the style of the television show, *Wheel of Fortune*.

Crossword Puzzle Challenge

A crossword puzzle that challenges your knowledge of key terms presented in the chapter.

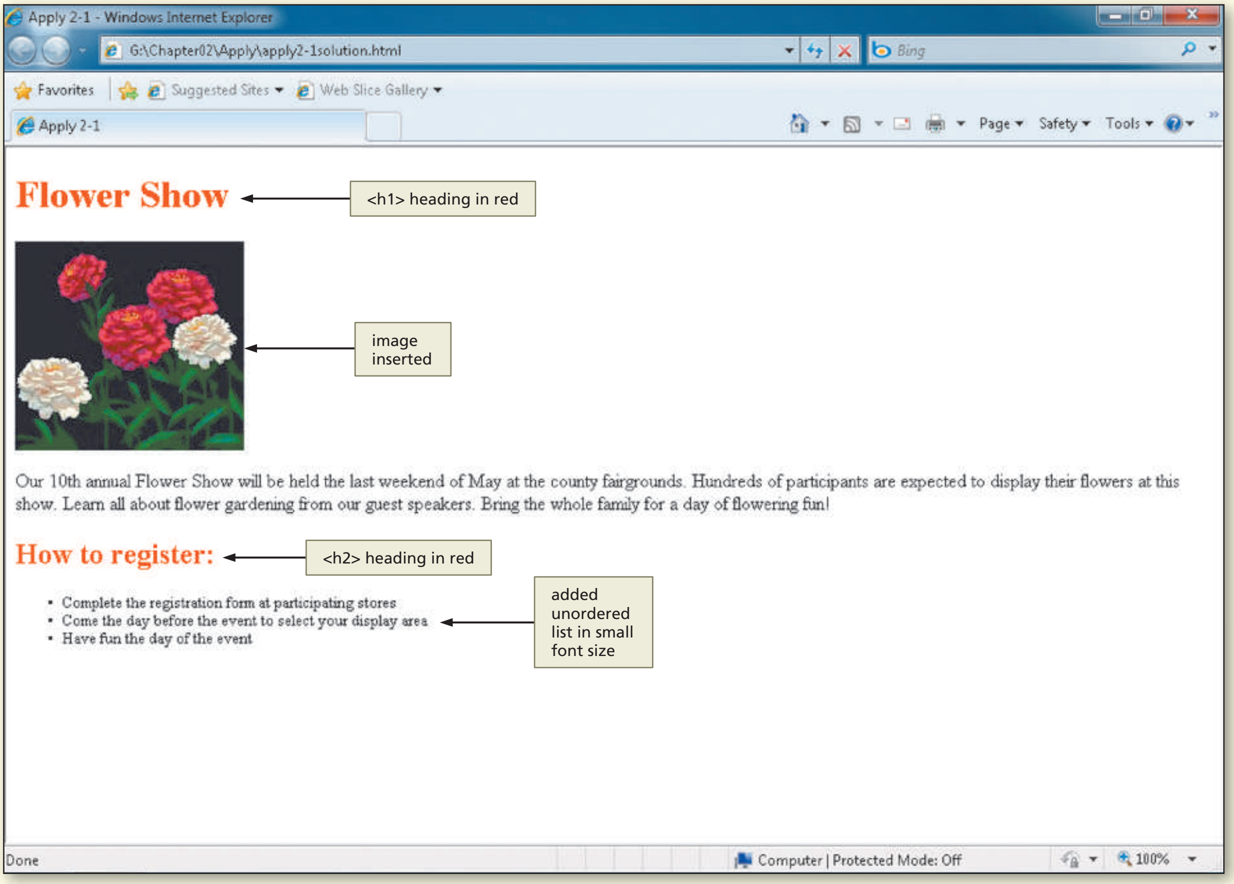
Apply Your Knowledge

Reinforce the skills and apply the concepts you learned in this chapter.

Editing the Apply Your Knowledge Web Page

Instructions: Start Notepad++. Open the file apply2-1.html from the Chapter02\Apply folder of the Data Files for Students. See the inside back cover of this book for instructions for downloading the Data Files for Students, or contact your instructor for information about accessing the required files for this book.

The apply2-1.html file is a partially completed HTML file that you will use for this exercise. Figure 2–41 shows the Apply Your Knowledge Web page as it should be displayed in a browser after the additional HTML tags and attributes are added.


Apply 2-1 - Windows Internet Explorer
G:\Chapter02\Apply\apply2-1solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Apply 2-1
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

Flower Show

<h1> heading in red

image inserted

Our 10th annual Flower Show will be held the last weekend of May at the county fairgrounds. Hundreds of participants are expected to display their flowers at this show. Learn all about flower gardening from our guest speakers. Bring the whole family for a day of flowering fun!

How to register:

<h2> heading in red

- Complete the registration form at participating stores
- Come the day before the event to select your display area
- Have fun the day of the event

added unordered list in small font size

Figure 2–41

Perform the following tasks:

1. Enter g:\Chapter02\Apply\apply2-1.html as the URL to view the Web page in your browser.
2. Examine the HTML file and its appearance in the browser.
3. Using Notepad++, change the HTML code to make the Web page look similar to the one shown in Figure 2–41. Both headings are the color red. (*Hint:* Use the style="color: red" property.)
4. Add the image flowershow.jpg (in the Chapter02\Apply folder) to the Web page. It has a width of 192 pixels and a height of 175 pixels. (*Hint:* Include the image in a <div> </div> container and remember to use the alt attribute.)
5. Make the bulleted list in a small font size. (*Hint:* Use the style="font-size: small" property.)

Continued >

Apply Your Knowledge *continued*

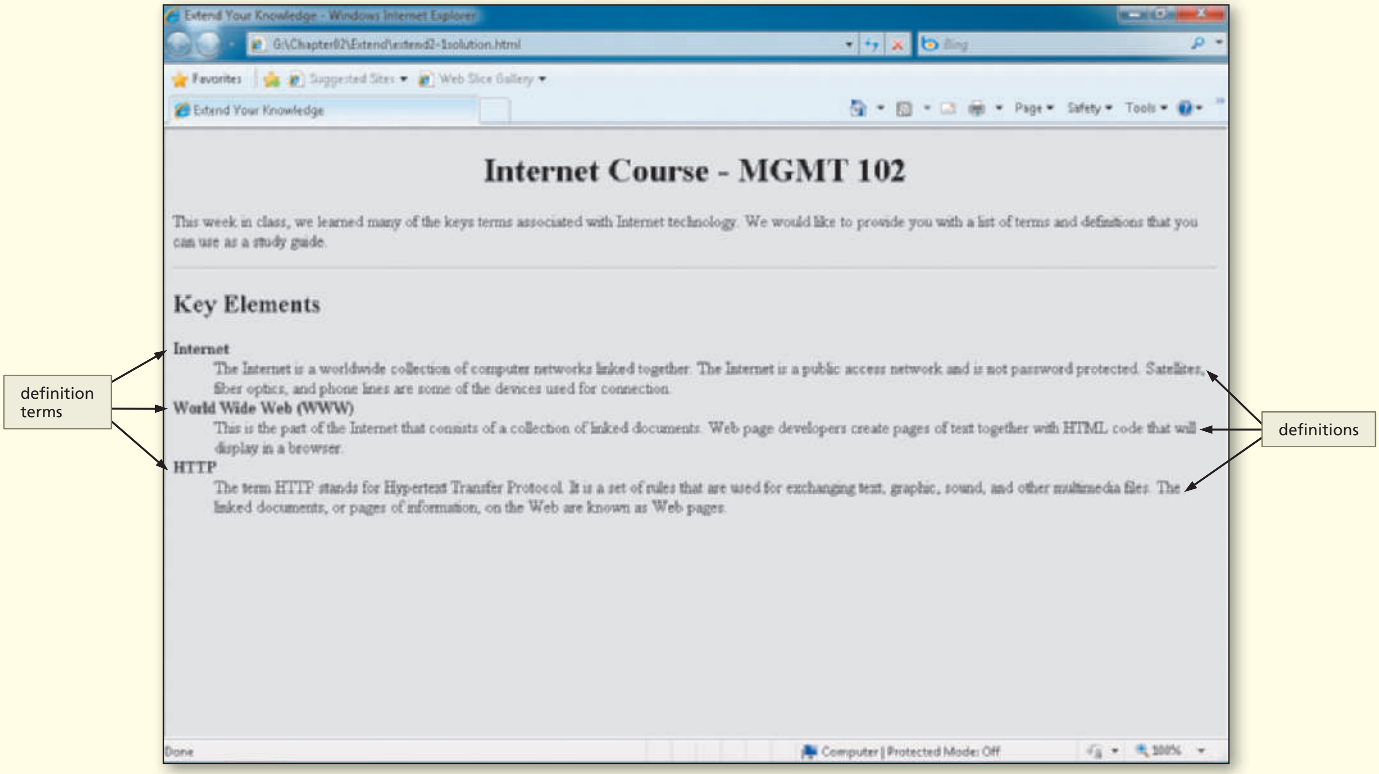
6. Save the revised HTML file in the Chapter02\Apply folder using the file name apply2-1solution.html.
7. Validate your HTML code at http://validator.w3.org/.
8. Enter g:\Chapter02\Apply\apply2-1solution.html as the URL to view the revised Web page in your browser.
9. Print the Web page.
10. Submit the revised HTML file and Web page in the format specified by your instructor.

Extend Your Knowledge

Extend the skills you learned in this chapter and experiment with new skills.

Creating a Definition List

Instructions: Start Notepad++. Open the file, extend2-1.html from the Chapter02\Extend folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files. This sample Web page contains all of the text for the Web page in bulleted list format. You will add the necessary tags to make this a definition list with terms that are bold, as shown in Figure 2–42.


Extend Your Knowledge - Windows Internet Explorer
G:\Chapter02\Extend\extend2-1solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Extend Your Knowledge
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%
definition terms
definitions

Internet Course - MGMT 102

This week in class, we learned many of the keys terms associated with Internet technology. We would like to provide you with a list of terms and definitions that you can use as a study guide.

Key Elements

Internet
The Internet is a worldwide collection of computer networks linked together. The Internet is a public access network and is not password protected. Satellites, fiber optics, and phone lines are some of the devices used for connection.

World Wide Web (WWW)
This is the part of the Internet that consists of a collection of linked documents. Web page developers create pages of text together with HTML code that will display in a browser.

HTTP
The term HTTP stands for Hypertext Transfer Protocol. It is a set of rules that are used for exchanging text, graphic, sound, and other multimedia files. The linked documents, or pages of information, on the Web are known as Web pages.

Figure 2–42

Perform the following tasks:

1. Using the text given in the file extend2-1.html, make changes to the HTML code to change the Web page from a bulleted list to a definition list by following the definition list code shown in Figure 2–14 on page HTML 52.

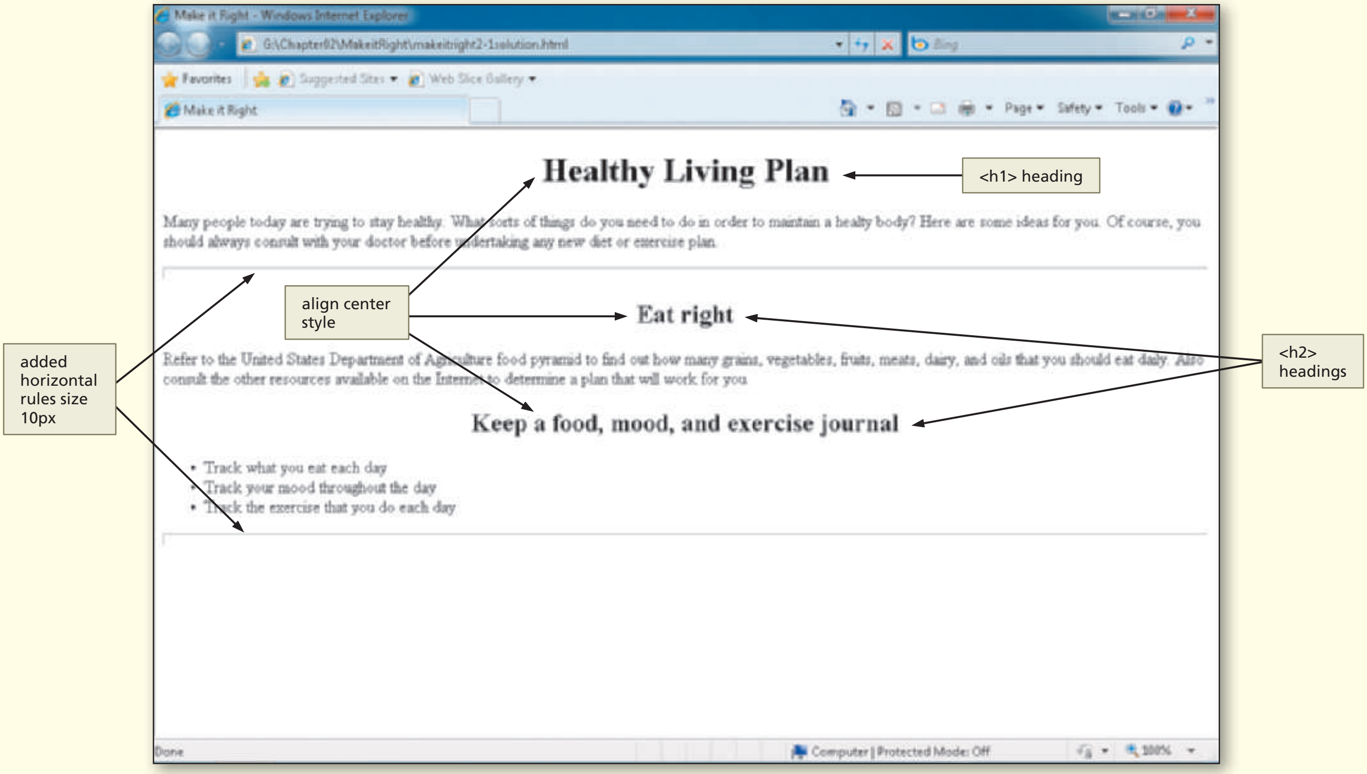
2. Add the additional HTML code necessary to make the terms bold (see font-weight for style in Appendix D) and a background color of #e0e0e0 (see background-color in Appendix D).
3. Save the revised document in the Chapter02\Extend folder with the file name extend2-1solution.html, validate the Web page, and then submit it in the format specified by your instructor.

Make It Right

Analyze a document and correct all errors and/or improve the design.

Correcting the Friendly Reminder Web Page

Instructions: Start Notepad++. Open the file makeitright2-1.html from the Chapter02\MakeItRight folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files. The Web page is a modified version of what you see in Figure 2–43. Make the necessary corrections to the Web page to make it look like Figure 2–43. Format the heading to use the Heading 1 style center-aligned on the Web page (see the text-align property in Appendix D to center a heading). Add two size-10px horizontal rules, as shown in Figure 2–43. Save the file in the Chapter02\MakeItRight folder as makeitright2-1solution.html, validate the Web page, and then submit it in the format specified by your instructor.


Make it Right - Windows Internet Explorer
G:\Chapter02\MakeitRight\makeitright2-1solution.html
Favorites
Suggested Sites
Web Slice Gallery
Make it Right
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%
<h1> heading
align center style
added horizontal rules size 10px
<h2> headings

Healthy Living Plan

Many people today are trying to stay healthy. What sorts of things do you need to do in order to maintain a healty body? Here are some ideas for you. Of course, you should always consult with your doctor before undertaking any new diet or exercise plan.

Eat right

Refer to the United States Department of Agriculture food pyramid to find out how many grains, vegetables, fruits, meats, dairy, and oils that you should eat daily. Also consult the other resources available on the Internet to determine a plan that will work for you.

Keep a food, mood, and exercise journal

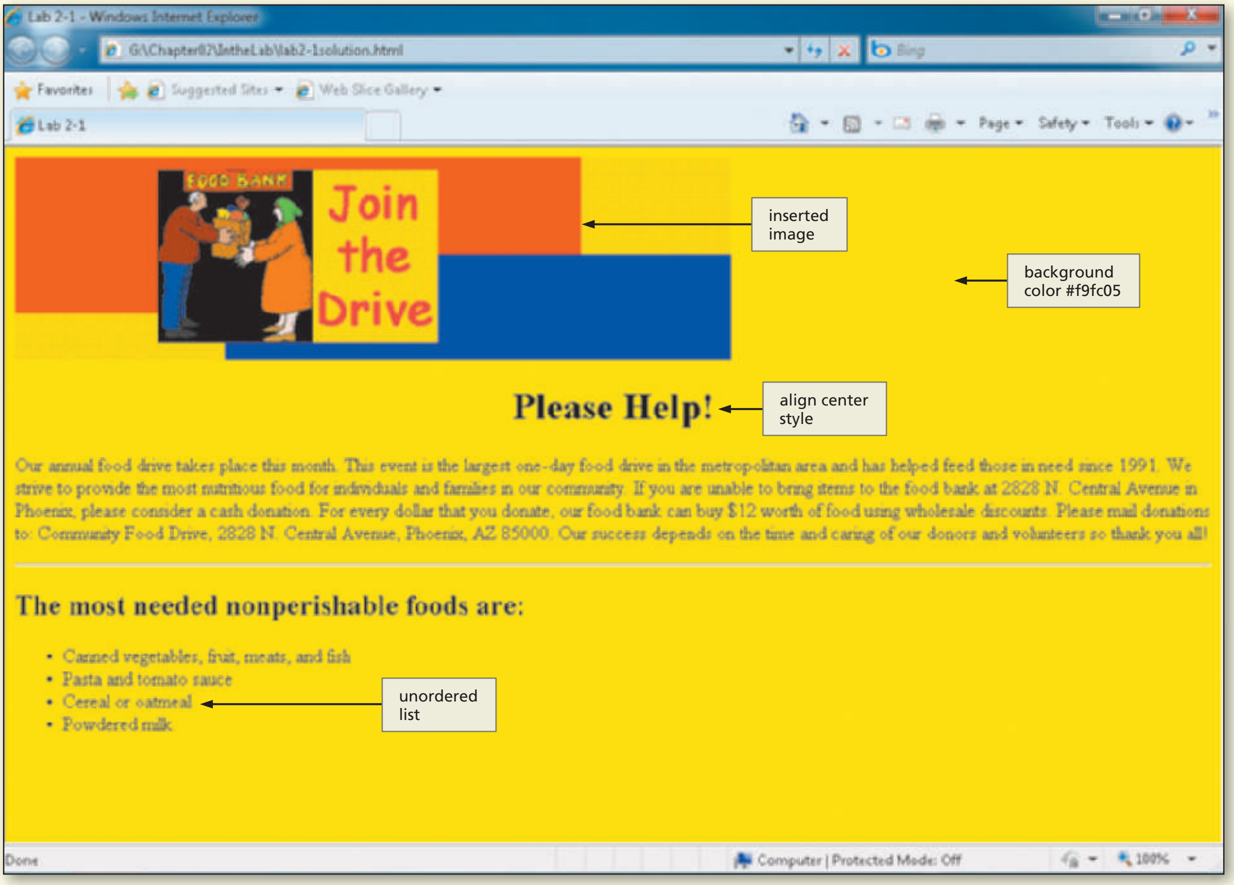
- Track what you eat each day
- Track your mood throughout the day
- Track the exercise that you do each day

Figure 2–43

In the Lab

Lab 1: Creating a Food Drive Web Page

Problem: You did volunteer work for the Community Food Drive in your city. You would like to recruit other friends to volunteer for community service. You have been asked to create a Web page to display information about why you choose to volunteer and let people know how they also can help, as shown in Figure 2–44.



Please Help!

Our annual food drive takes place this month. This event is the largest one-day food drive in the metropolitan area and has helped feed those in need since 1991. We strive to provide the most nutritious food for individuals and families in our community. If you are unable to bring items to the food bank at 2828 N. Central Avenue in Phoenix, please consider a cash donation. For every dollar that you donate, our food bank can buy $12 worth of food using wholesale discounts. Please mail donations to: Community Food Drive, 2828 N. Central Avenue, Phoenix, AZ 85000. Our success depends on the time and caring of our donors and volunteers so thank you all!

The most needed nonperishable foods are:

- Canned vegetables, fruit, meats, and fish
- Pasta and tomato sauce
- Cereal or oatmeal
- Powdered milk

Figure 2–44

Instructions: Perform the following steps:

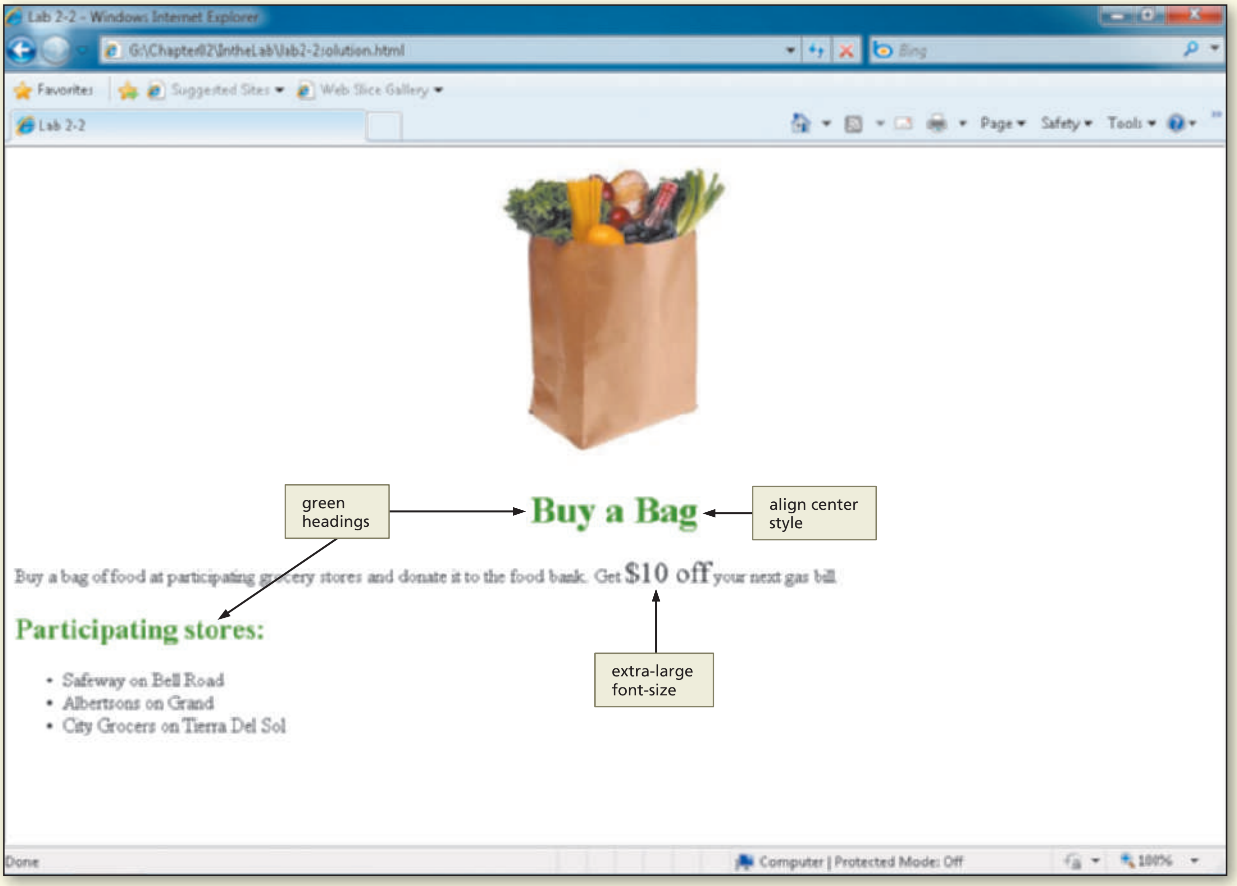
1. Start Notepad++ and create a new HTML file with the title, Lab 2-1, within the <title> </title> tags. For the initial HTML tags, you can use the structure.html file if you created one at the start of this chapter's project, otherwise type the initial tags.
2. Begin the body section by adding the fooddrivelogo.gif image as well as the heading, Please Help! Format the heading to use the Heading 1 style center-aligned on the Web page. (*Hint:* See the text-align property in Appendix D to center the heading.)
3. Add a left-aligned heading, as shown, using the Heading 2 style.
4. Add a background color to the Web page using the #f9fc05 color code. (*Hint:* Use the style="background-color: color number" property.)
5. Add an unordered list of nonperishable foods, as shown in Figure 2–44.
6. Save the file in the Chapter02\IntheLab folder as lab2-1solution.html.

7. Print the lab2-1.html file.
8. Enter g:\Chapter02\IntheLab\lab2-1solution.html as the URL to view the Web page in your browser.
9. Print the Web page.
10. Submit the revised HTML file and Web page in the format specified by your instructor.

In the Lab

Lab 2: Creating an Informational Web Page

Problem: You continue to enjoy volunteering and decide to prepare a Web page announcement, such as the one shown in Figure 2–45, to promote the latest food drive.



Buy a Bag

Buy a bag of food at participating grocery stores and donate it to the food bank. Get $10 off your next gas bill

Participating stores:

- Safeway on Bell Road
- Albertsons on Grand
- City Grocers on Tierra Del Sol

Figure 2–45

Instructions: Perform the following steps:

1. Start Notepad++ and create a new HTML file with the title Lab 2-2 within the <title> </title> tags.
2. The Web page uses the foodbag.jpg image file, which has a width of 207 and a height of 256. Center the image (see the text-align property in Appendix D). Use the color green for both headings.
3. Add the paragraph of text, as shown in Figure 2–45. Make the words “$10 off” x-large style of font (see the <span> HTML tag in Appendix A to help with that).
4. Create one bulleted list with the information shown.

Continued >

STUDENT ASSIGNMENTS

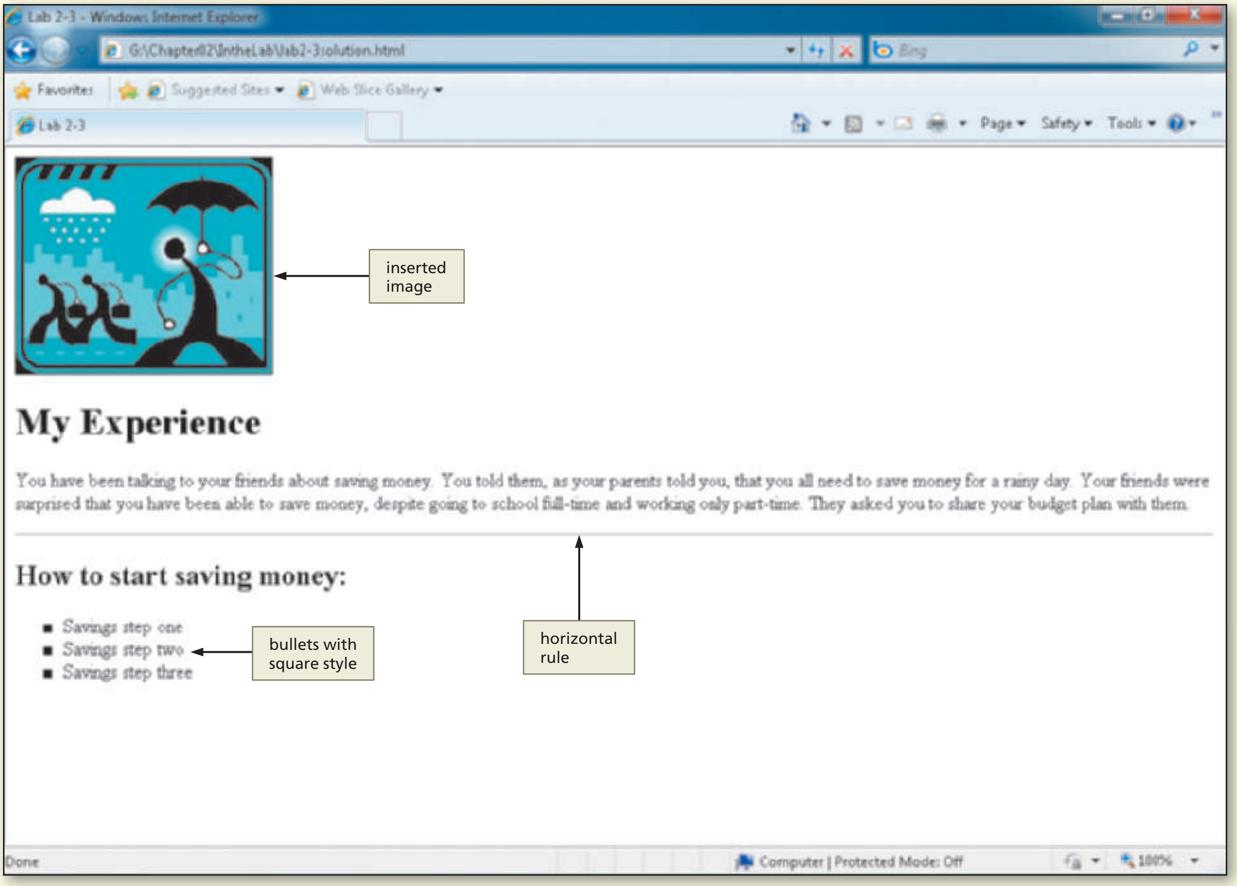
In the Lab *continued*

5. Save the file in the Chapter02\IntheLab folder using the file name lab2-2solution.html.
6. Print the lab2-2solution.html file.
7. Enter g:\Chapter02\IntheLab\lab2-2solution.html as the URL to view the Web page in your browser.
8. Print the Web page.
9. Submit the revised HTML file and Web page in the format specified by your instructor.

In the Lab

Lab 3: Composing a Personal Web Page

Problem: Your friends are concerned that they aren't able to save money. They have asked you for help, since you seem to always have money saved for a rainy day. You decide to compose a Web page with some advice for them. You plan to use a paragraph of text and a bulleted list, as shown in Figure 2–46. The text and bullets in the figure should be replaced with your own money-saving experience and tips.


Lab 2-3 - Windows Internet Explorer
G:\Chapter02\IntheLab\lab2-3solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Lab 2-3
Page
Safety
Tools
inserted image
horizontal rule
bullets with square style
Done
Computer | Protected Mode: Off
100%

My Experience

You have been talking to your friends about saving money. You told them, as your parents told you, that you all need to save money for a rainy day. Your friends were surprised that you have been able to save money, despite going to school full-time and working only part-time. They asked you to share your budget plan with them.

How to start saving money:

- Savings step one
- Savings step two
- Savings step three

Figure 2–46

Instructions: Perform the following steps:

1. Start Notepad++ and create a new HTML file with the title Lab 2-3 within the <title> </title> tags.
2. Include a short paragraph of information and a bulleted list, using a format similar to the one shown in Figure 2–46, to provide information about your money-saving experience.

3. Insert the image file cloudy.jpg, stored in the Chapter02\IntheLab folder. Right-click the image, click Properties, and then click the Details tab to find out the image's dimensions, or open it in a graphics program. Note that the bullets used for the list are square in shape.
4. Save the HTML file in the Chapter02\IntheLab folder using the file name lab2-3solution.html.
5. Enter g:\Chapter02\IntheLab\lab2-3solution.html as the URL to view the Web page in your browser.
6. Print the Web page from your browser.
7. Submit the revised HTML file and Web page in the format specified by your instructor.

Cases and Places

Apply your creative thinking and problem-solving skills to design and implement a solution.

• Easier •• More Difficult

• 1: Add to the Food Drive Web Page

Mr. Wattigney, the director of the Community Food Bank, likes the Web page you created for Lab 2-1. Now that the Food Drive is over, he would like you to update the Web page with new information on upcoming community events. Before updating the page, search the Web to review the Web pages at other food banks or departments of community services for ideas on content to include or formatting to change. What do their Web sites look like? Are there changes you can make to the Lab 2-1 Web page that reflect what other places have done? Using the concepts presented in this chapter, include additional information or change the formatting to make the page more interesting and timely.

• 2: Create an Artist Web Site

You are creating a new Web site for a local photographer. The photographer has asked that you use descriptive alt attributes for images on the Web page, because many of the viewers of his Web page have very slow Internet connections and images often do not load quickly. Search the Web for information on adding useful, descriptive alt attributes for images. Also find information on using thumbnail images. Give suggestions for loading images faster. Create a document with a brief paragraph explaining the information that you found in your research. Make suggestions about how the photographer's Web site can be made more effective.

•• 3: Create a Web Page of CSS Properties

You have learned a lot about using Cascading Style Sheets (CSS) so far in the class. You still have some questions, though, about how to insert certain styles. Research information on the Web (don't forget to look at the W3.org site) to find Web sites that list CSS properties and values that complement Appendix D. In a Word document, add the URLs that you found to be very helpful. Under each URL write a brief paragraph that describes why you thought the site could be useful for new Web developers. Share your list of URLs with fellow students.

•• 4: Create a Personal Web Page

Make It Personal

Your class instructor wants to post all of the students' Web pages on the school server to show what his or her students are interested in. Create a Web page of personal information, listing items such as your school major, jobs that you have had in the past, and your hobbies and interests. To make your personal

Continued >

Cases and Places *continued*

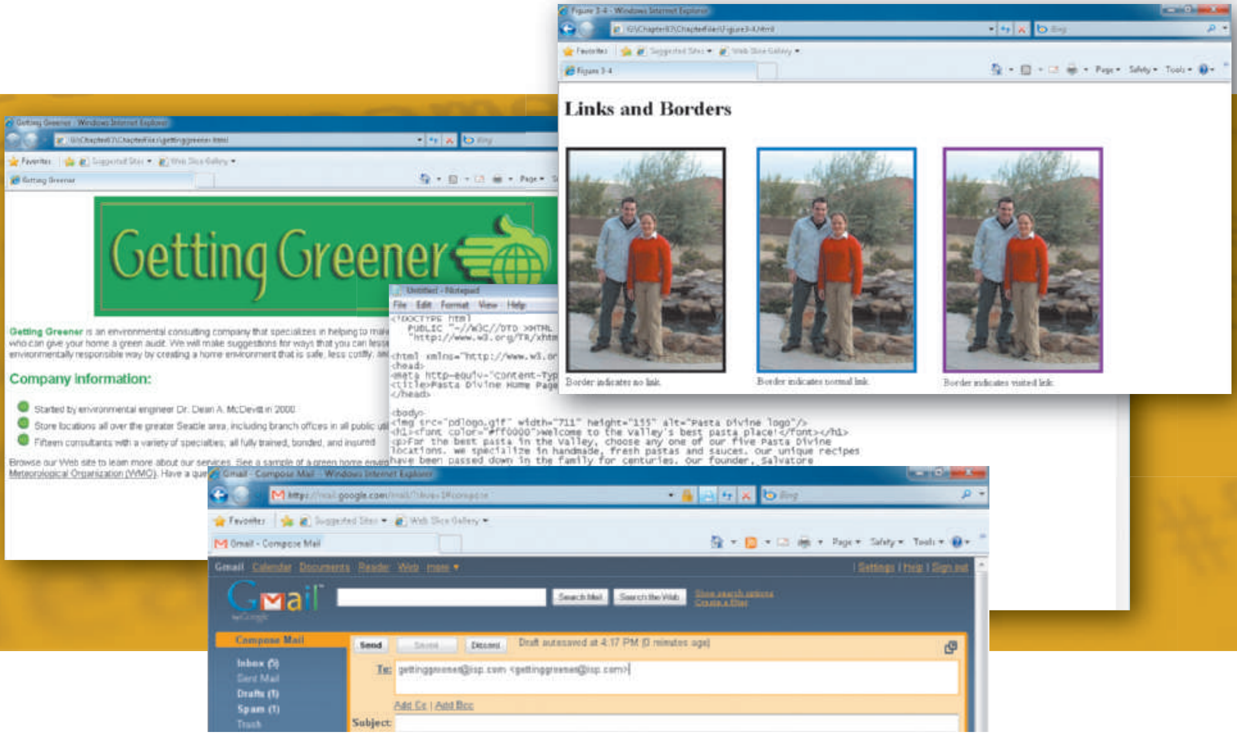
Web page more visually interesting, search the Web for images that reflect your interests. (Remember that if the image is copyrighted, you cannot use it on a personal Web page unless you follow the guidelines provided with the image.) Insert an image or two onto the Web page to help explain who you are.

•• 5: Create Web Pages with Different CSS Properties

Working Together

Work with other students to review the CSS in Appendix D together with the Web sites dedicated to CSS found in Cases and Places 3. Try to find a use for some CSS properties that you have not used so far in this chapter (maybe something with margins). Plan how you can use five CSS properties not used in Chapter 2 to improve one of the Web pages you created in this chapter (either the chapter project or an end-of-chapter project). Utilize the five different CSS properties in the Web page. Explain in a Word document what CSS properties you used, why you used them, and how they improved the Web page.

3 Creating Web Pages with Links, Images, and Embedded Style Sheets


Links and Borders
Border indicates no link.
Border indicates normal link.
Border indicates visited link.
Getting Greener
Company information:
Gmail

Objectives

You will have mastered the material in this chapter when you can:

- Describe linking terms and definitions
- Create a home page and enhance a Web page using images
- Change body and heading format using embedded style sheets
- Align and add color to text using embedded and inline styles
- Use an inline style to insert an image for bullets in an unordered list
- Add a text link to a Web page in the same Web site
- Add an e-mail link
- Add a text link to a Web page on another Web site
- Use absolute and relative paths
- Save, validate, and view an HTML file and test the links
- Use style classes to add an image with wrapped text
- Add links to targets within a Web page
- Copy and paste HTML code
- Add an image link to a Web page in the same Web site

3 Creating Web Pages with Links, Images, and Embedded Style Sheets

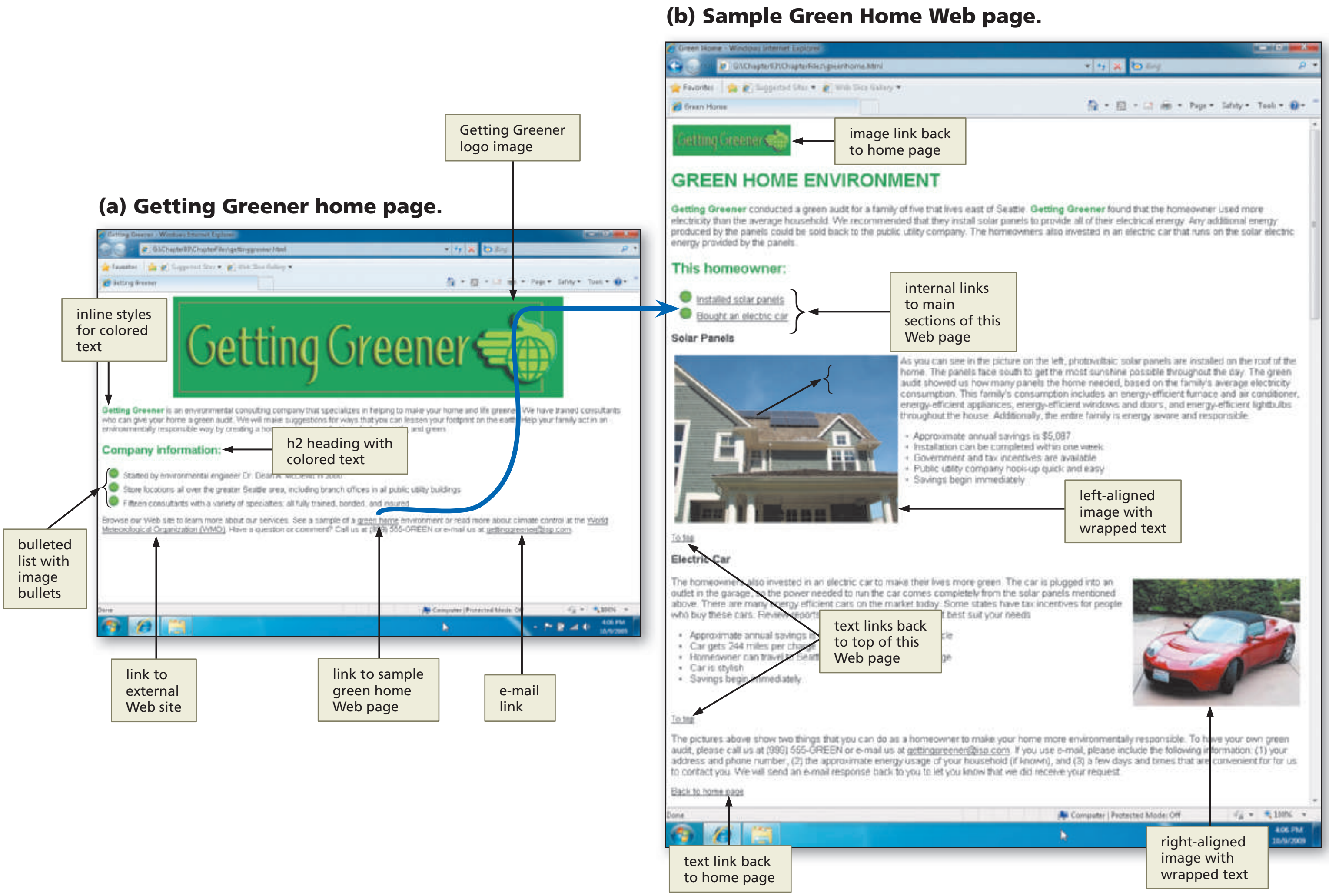
Introduction

One of the most useful and important aspects of the World Wide Web is the ability to connect (link) one Web page to other Web pages — on the same server or on different Web servers — located anywhere in the world. Using hyperlinks, a Web site visitor can move from one page to another, and view information in any order. Many different Web page elements, including text, graphics, and animations, can serve as hyperlinks. In this chapter, you will create Web pages that are linked together using both text links and image links. In the last chapter, you used inline styles to change the appearance of individual elements or HTML tags. In this chapter, you will also use embedded style sheets to set the appearance of elements such as headings and body text for the entire Web page. Before starting on this project, you would have already completed the Web site planning, analysis, and design phases of the Web Development Life Cycle.

Project — Getting Greener Web Site

Chapter 3 illustrates how to use HTML to create a home page for the Getting Greener Web site (Figure 3–1a) and to edit the existing greenhome.html Web page (Figure 3–1b) to improve its appearance and function. Your older brother, Dean, recently opened an environmental consulting company and named it Getting Greener. He would like to advertise his company on the Web and show a sample home on which he has done a green audit. He knows that you have studied Web development in college and asks you to develop two Web pages that are linked together: a home page, and a Web page with the sample home. During your analysis, you determined that there are four basic types of links to use. The first type is a link from one Web page to another in the same Web site. The second type is a link to a Web page on a different Web site. The third type is an e-mail link. The fourth type is a link within one Web page. You plan to utilize all four of these types of links for your brother's Web site.

The Getting Greener home page (Figure 3–1a) includes a logo image banner, headings, an unordered (bulleted) list with a graphic image as the bullet, an e-mail link, and a text link to a Web page on another Web site. This page also includes a link to the greenhome.html Web page. The Green Home Web page (Figure 3–1b) contains two images with text wrapped around them and internal links that allow visitors to move easily from section to section within the Web page. The Web page also has an image link back to Getting Greener's home page.



(b) Sample Green Home Web page.

(a) Getting Greener home page.

Getting Greener logo image
inline styles for colored text
h2 heading with colored text
bulleted list with image bullets
link to external Web site
link to sample green home Web page
e-mail link
image link back to home page
internal links to main sections of this Web page
left-aligned image with wrapped text
text links back to top of this Web page
text link back to home page
right-aligned image with wrapped text
Getting Greener

Getting Greener is an environmental consulting company that specializes in helping to make your home and life greener. We have trained consultants who can give your home a green audit. We will make suggestions for ways that you can lessen your footprint on the earth. Help your family act in an environmentally responsible way by creating a ho[illegible] and green.

Company Information:

- Started by environmental engineer Dr. Dean A. McDevitt in 2000
- Store locations all over the greater Seattle area, including branch offices in all public utility buildings
- Fifteen consultants with a variety of specialties: all fully trained, bonded, and insured

Browse our Web site to learn more about our services. See a sample of a green home environment or read more about climate control at the World Meteorological Organization (WMO). Have a question or comment? Call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com.

GREEN HOME ENVIRONMENT

Getting Greener conducted a green audit for a family of five that lives east of Seattle. Getting Greener found that the homeowner used more electricity than the average household. We recommended that they install solar panels to provide all of their electrical energy. Any additional energy produced by the panels could be sold back to the public utility company. The homeowners also invested in an electric car that runs on the solar electric energy provided by the panels.

This homeowner:

- Installed solar panels
- Bought an electric car

Solar Panels

As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels the home needed, based on the family's average electricity consumption. This family's consumption includes an energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.

- Approximate annual savings is $5,087
- Installation can be completed within one week
- Government and tax incentives are available
- Public utility company hook-up quick and easy
- Savings begin immediately

To top

Electric Car

The homeowners also invested in an electric car to make their lives more green. The car is plugged into an outlet in the garage, so the power needed to run the car comes completely from the solar panels mentioned above. There are many energy efficient cars on the market today. Some states have tax incentives for people who buy these cars. Review reports [illegible] best suit your needs.

- Approximate annual savings is [illegible]cle
- Car gets 244 miles per charge
- Homeowner can travel to Seatt[illegible]ge
- Car is stylish
- Savings begin immediately

To top

The pictures above show two things that you can do as a homeowner to make your home more environmentally responsible. To have your own green audit, please call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com. If you use e-mail, please include the following information: (1) your address and phone number, (2) the approximate energy usage of your household (if known), and (3) a few days and times that are convenient for for us to contact you. We will send an e-mail response back to you to let you know that we did receive your request.

Back to home page

Figure 3–1

Overview

As you read this chapter, you will learn how to create the Web page shown in Figure 3–1 by performing these general tasks:

- Enter HTML code into the Notepad++ window.
- Save the file as an HTML file.
- Enter basic HTML tags and add text to the file.
- Use embedded style sheets, inline styles, and classes to change the format of text and headings.
- Use an inline style to create a bulleted list with a graphic image as the bullets.
- Add a link to another Web page in the same Web site.
- Add a link to an external Web site.
- Add an e-mail link.
- Add targets and links within the same Web page.
- View the Web pages and HTML code in your browser.
- Validate the Web pages.
- Print the Web pages.

Plan Ahead

Project Planning Guidelines

As you create Web pages, such as the project shown in Figure 3–1 on the previous page, you should follow these general guidelines:

1. **Plan the Web site**. Before developing a multiple-page Web site, you must plan the purpose of the site. Refer to Table 1–4 on page HTML 15 for information on the planning phase of the Web Development Life Cycle. In this phase, you determine the purpose of the Web site, identify the users of the site and their computing environments, and decide who owns the information on the Web page.

2. **Analyze the need**. In the analysis phase of the Web Development Life Cycle, you analyze what content to include in the Web page. The Web development project in Chapter 3 is different than the one completed in Chapter 2 because it contains two Web pages that will be linked together. Part of the analysis phase then includes determining how the multiple Web pages work together to form a Web site.

3. **Design the Web site.** Once the analysis is complete, you design the Web site. In this phase, you determine the content of the site, both text and graphics. Design steps specific to this chapter also include determining links within the site and to external Web sites.

   a. **Choose the content for the Web pages**. This part of the life cycle also differs from the previous chapter's project because all of the content does not have to appear on one Web page, as it did in Chapter 2. With a multiple-page Web site, you can distribute the content as needed throughout the Web site. Because of the nature of this Web site, pictures are a large part of the content. The Web site owner wants to show a sample of his company's work. Pictures help show what one family has done to become more environmentally responsible.

   b. **Determine the types of Cascading Style Sheets (CSS) that you will use**. You already learned how to use inline styles to best support the design and purpose of the Web site. In this chapter, you utilize both inline and embedded style sheets to alter the appearance (or style) of various Web page elements. You also incorporate classes with your embedded style sheets to further control the style of elements on the Web page. You need to consider which of these options is best suited for the styles of your Web site.

   c. **Determine how the pages will link to one another**. This Web site consists of a **home page** (the first page in a Web site) and a secondary Web page to which you will link. You need to determine how to link (e.g., with text or a graphic) from the home page to the secondary page and how to link back to the home page.

   d. **Establish what other links are necessary**. In addition to links between the home page and secondary Web page, you need an e-mail link. It is standard for Web developers to provide an e-mail link on the home page of a Web site for visitor comments or questions. Additionally, the secondary Web page (greenhome.html) is a long page that requires visitors to scroll down for navigation. Because of its length, it is important to provide easy and quick ways to navigate the Web page. You do this using links within the Web page.

4. **Develop the Web page(s) and insert all links**. Once the analysis and design is complete, the Web developer creates the Web page(s) using HTML and CSS. Good Web development standard practices should be followed in this step. Examples of good practices include utilizing the proper initial HTML tags, as shown in the previous chapter, and always identifying alt text with images.

5. **Test all Web pages within the Web site**. An important part of Web development is testing to assure that you are following XHTML standards. For the projects in this book, you will use the World Wide Web Consortium (W3C) validator that allows you to test your Web pages and clearly explains any errors it finds. When testing, you should check all content for accuracy. Also, all links (external, internal, and page to page within the same Web site) should be tested.

When necessary, more specific details concerning the above guidelines are presented at appropriate points in the chapter. The chapter also will identify the actions performed and decisions made regarding these guidelines during the creation of the Web page shown in Figure 3–1.

Using Links on a Web Page

As you have learned, many different Web page elements, including text, images, and animations, can serve as links. Text and images are the elements most widely used as links. Figure 3–2 shows examples of text and image links.

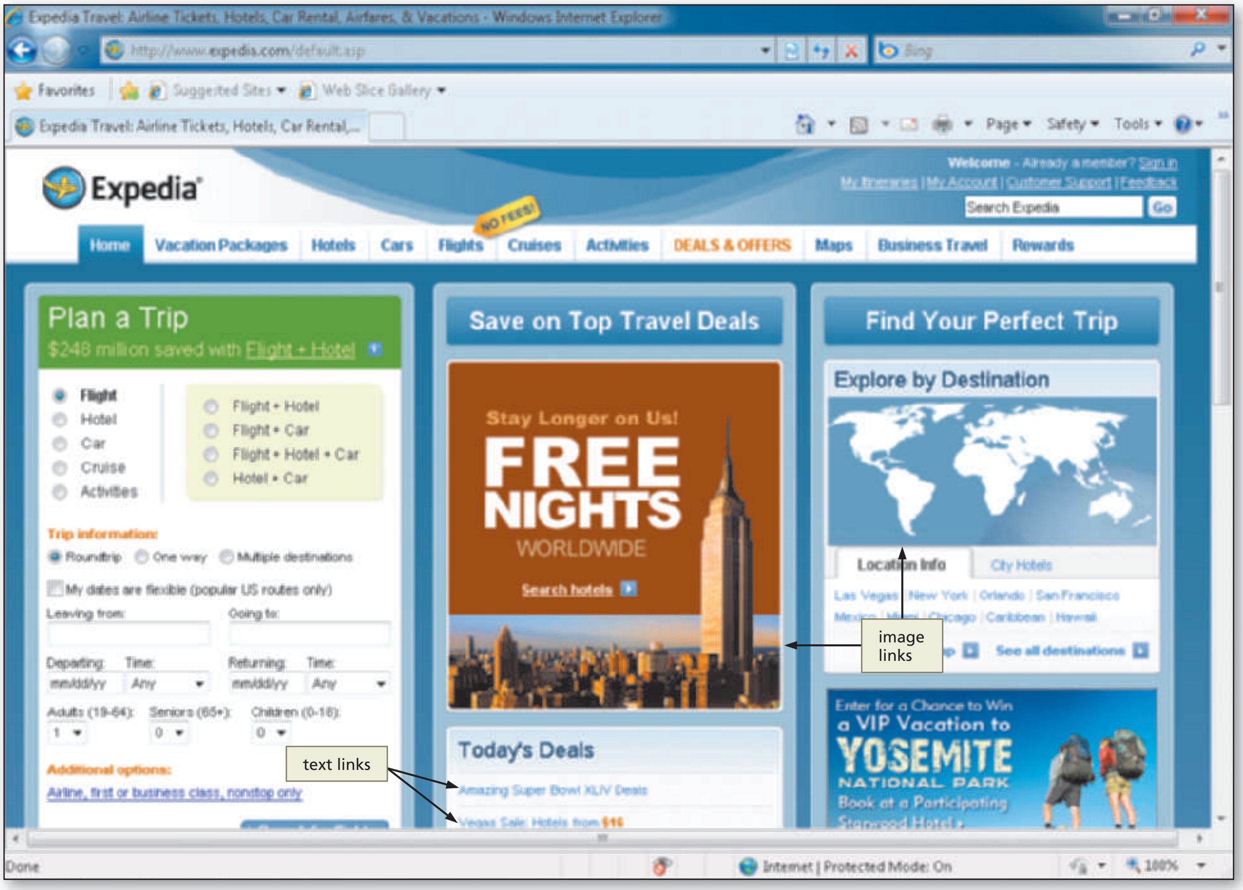


image links

text links

Figure 3–2 Text and image links on a Web page.

When using text links on a Web page, use descriptive text as the clickable word or phrase. For example, the phrase “Click here” does not explain the purpose of the link to the visitor. By contrast, the phrase “Save up to 40% on flights” indicates that the link connects to a Web page with discounted airline tickets.

When text identifies a link, it often appears as underlined text, in a color different from the main Web page text. Unless otherwise changed in the anchor <a> or <body> tags, the browser settings define the colors of text links throughout a Web page. For example, with Internet Explorer, the default color for a normal link that has not been clicked (or visited) is blue, a visited link is purple, and an active link (a link just clicked by a user) varies in color. Figure 3–3 on the next page shows examples of text links in all three states (normal, visited, and active). Generally, as shown in Figure 3–3, moving the mouse pointer over a link causes the mouse pointer to change to a pointing hand. This change notifies the user that a link is available from that text or image.

BTW

Link Help
Many Web sites provide help for new HTML developers. For more information about links, search for key words such as “HTML Tutorials” or “HTML Help” in any good search engine.

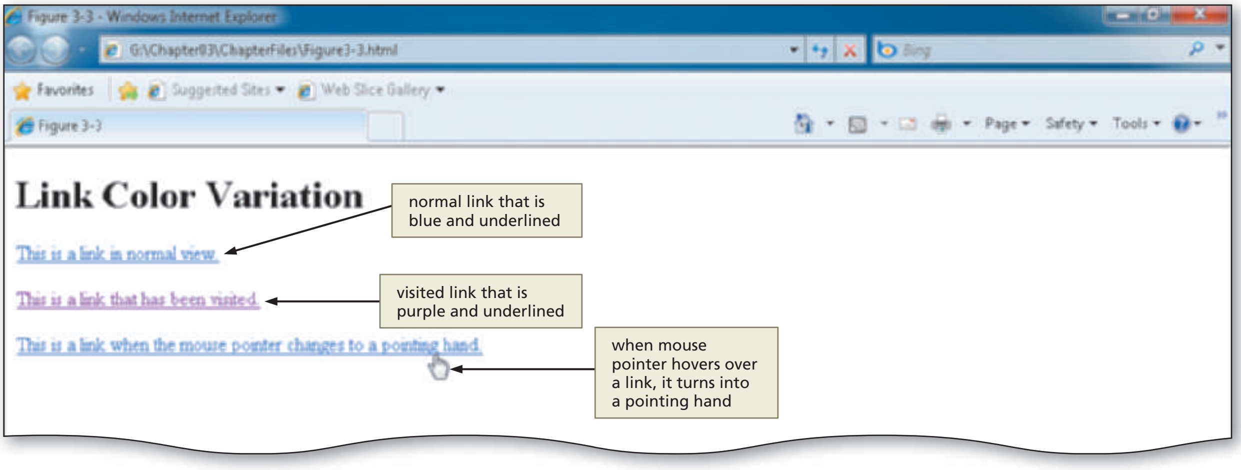


Figure 3-3 - Windows Internet Explorer
G:\Chapter03\ChapterFiles\Figure3-3.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Figure 3-3
Page
Safety
Tools

Link Color Variation

This is a link in normal view.

This is a link that has been visited.

This is a link when the mouse pointer changes to a pointing hand.

normal link that is blue and underlined

visited link that is purple and underlined

when mouse pointer hovers over a link, it turns into a pointing hand

Figure 3–3 Examples of text link color variations.

The same color defaults apply to the border color around an image link. A border makes the image appear as if it has a frame around it. If the image has no border, no frame will appear around the image. The color of the border shows whether the border is a link, and whether the link has been visited (Figure 3–4).

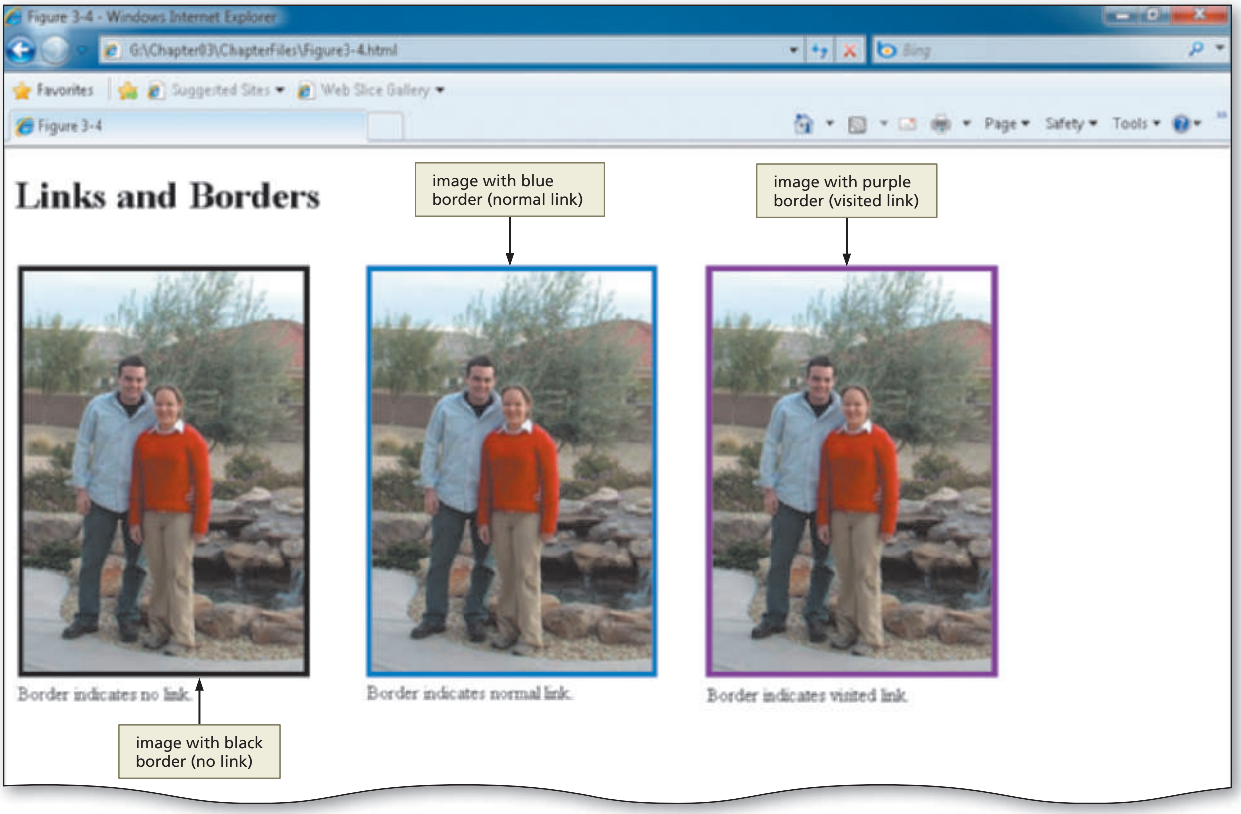


Figure 3-4 - Windows Internet Explorer
G:\Chapter03\ChapterFiles\Figure3-4.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Figure 3-4
Page
Safety
Tools

Links and Borders

image with blue border (normal link)

image with purple border (visited link)

Border indicates no link.

Border indicates normal link.

Border indicates visited link.

image with black border (no link)

Figure 3–4

If you want to change the color of text links or image link borders to override the browser defaults, you can designate those changes in the anchor <a> or <body> elements using an embedded or external style sheet, or by using an inline style. Recall that you use an inline style to change the appearance (or style) of a single element. An embedded style sheet is used to change the styles of similar elements in one Web page. Finally, an external style sheet is contained in a separate .css document and is used to change the style in an entire Web site. (You will use an external style sheet in the next chapter.) To use an embedded or external style sheet in the anchor element to change normal, visited, and active link colors from the default, you would use the following format:

```
a     {color: black}
```

where color is a designated color name, such as black, or a hexadecimal color code. To make the same change with an inline style, the tag format is:

```
<a style="color: black">
```

You can disable the underlining of a link with the text-decoration property within the anchor tag. The **text-decoration property** allows text to be "decorated" with one of five values: underline, overline, line-through, blink, or none. This property can be used in a variety of tags including the anchor tag. Links, by default, are underlined to indicate that they are links.

In the design phase you should consider carefully the benefits and detriments of any style change, especially to a default style. Be sure that users are still able to immediately see that specific text is used as a link before turning off link underlines or changing the default link color. If you determine that you can effectively turn the underline off on a link (as you do for the image link that you create later in this chapter), you can change the text-decoration attribute to none. To do this with an embedded or external style, you would enter the following code:

```
a     {text-decoration: none}
```

To change text-decoration to none with an inline style, enter:

```
<a style="text-decoration: none">
```

BTW

Link Colors
You can change the link colors in popular browsers. In Internet Explorer, you find color selection on the Tools menu, Internet Options. In Mozilla Firefox, click the Tools menu, Options, Content tab. In both browsers, you change colors by clicking a color grid.

Linking to Another Web Page Within the Same Web Site

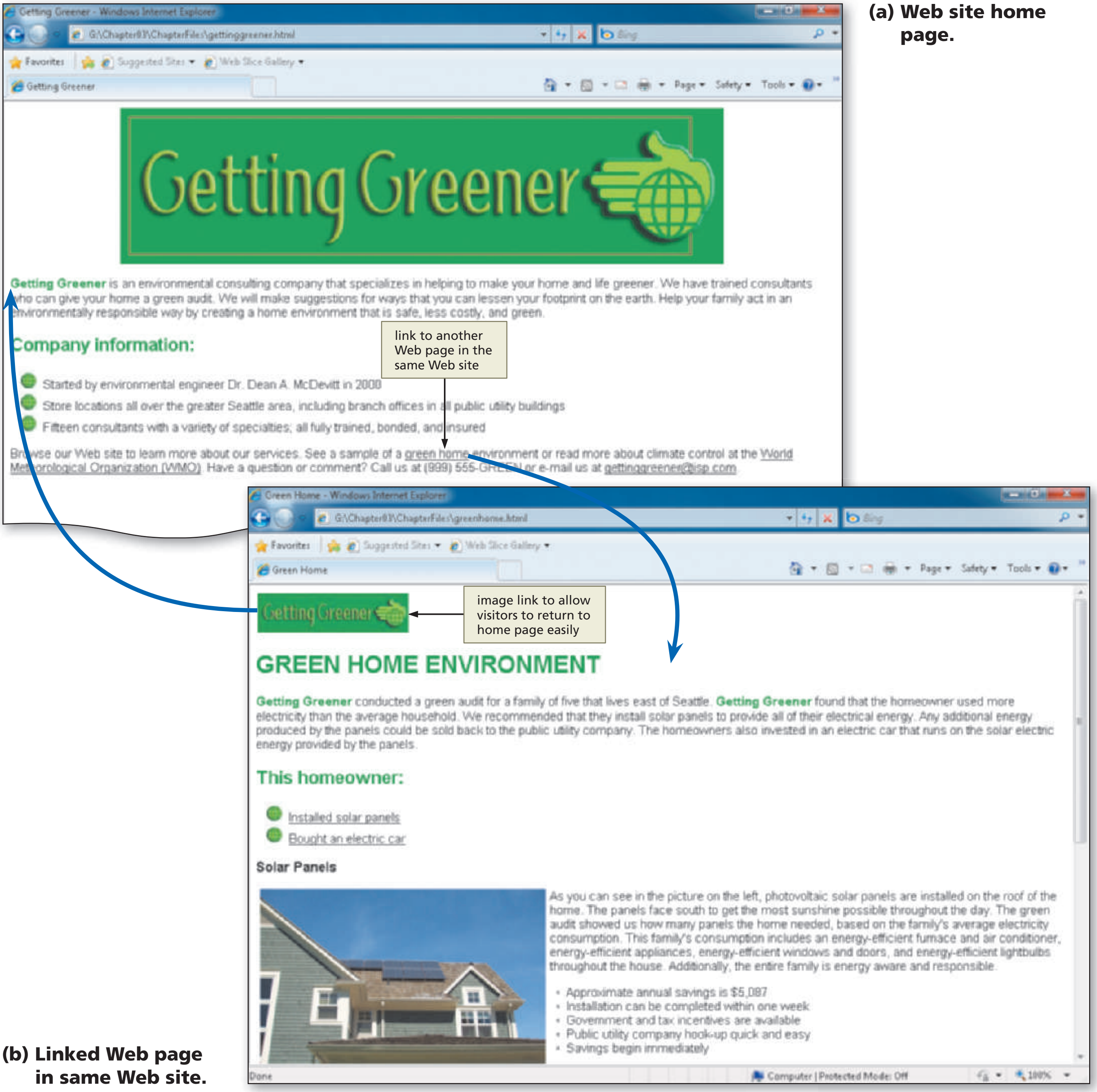
Web pages often include links to connect one Web page to another page within the same Web site. For example, a visitor can click a link on the home page of a Web site (Figure 3–5a on the next page) to connect and view another Web page on the same Web site (Figure 3–5b). The Web pages created in this project include links to other pages in the same Web site: (1) the Getting Greener home page includes a text link to the Green Home Web page; and (2) the Green Home Web page includes an image link back to the Getting Greener home page. To link the words "green home" on the gettinggreener.html home page to the greenhome.html Web page, you need the following HTML code:

```
<a href="greenhome.html">green home</a>
```

BTW

Links on a Web Page
An anchor tag also allows visitors to move within a single Web page. Use the name attribute to allow movement from one area to another on the same page. This linking technique is useful, particularly on long pages. An index of links also can provide easy access to various areas within the Web page.

The href in the anchor <a> tag indicates that when the words “green home” are clicked, the visitor links to the greenhome.html Web page. You end the link with the </a> tag. If you did not add the </a> tag, then all text after the words “green home” would be linked.



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link to another Web page in the same Web site

(a) Web site home page.

Green Home - Windows Internet Explorer
G:\Chapter03\ChapterFiles\greenhome.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Green Home
Page
Safety
Tools
Getting Greener
Done
Computer | Protected Mode: Off
100%

image link to allow visitors to return to home page easily

GREEN HOME ENVIRONMENT

Getting Greener conducted a green audit for a family of five that lives east of Seattle. **Getting Greener** found that the homeowner used more electricity than the average household. We recommended that they install solar panels to provide all of their electrical energy. Any additional energy produced by the panels could be sold back to the public utility company. The homeowners also invested in an electric car that runs on the solar electric energy provided by the panels.

This homeowner:

- Installed solar panels
- Bought an electric car

Solar Panels

As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels the home needed, based on the family's average electricity consumption. This family's consumption includes an energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.

- Approximate annual savings is $5,087
- Installation can be completed within one week
- Government and tax incentives are available
- Public utility company hook-up quick and easy
- Savings begin immediately

(b) Linked Web page in same Web site.

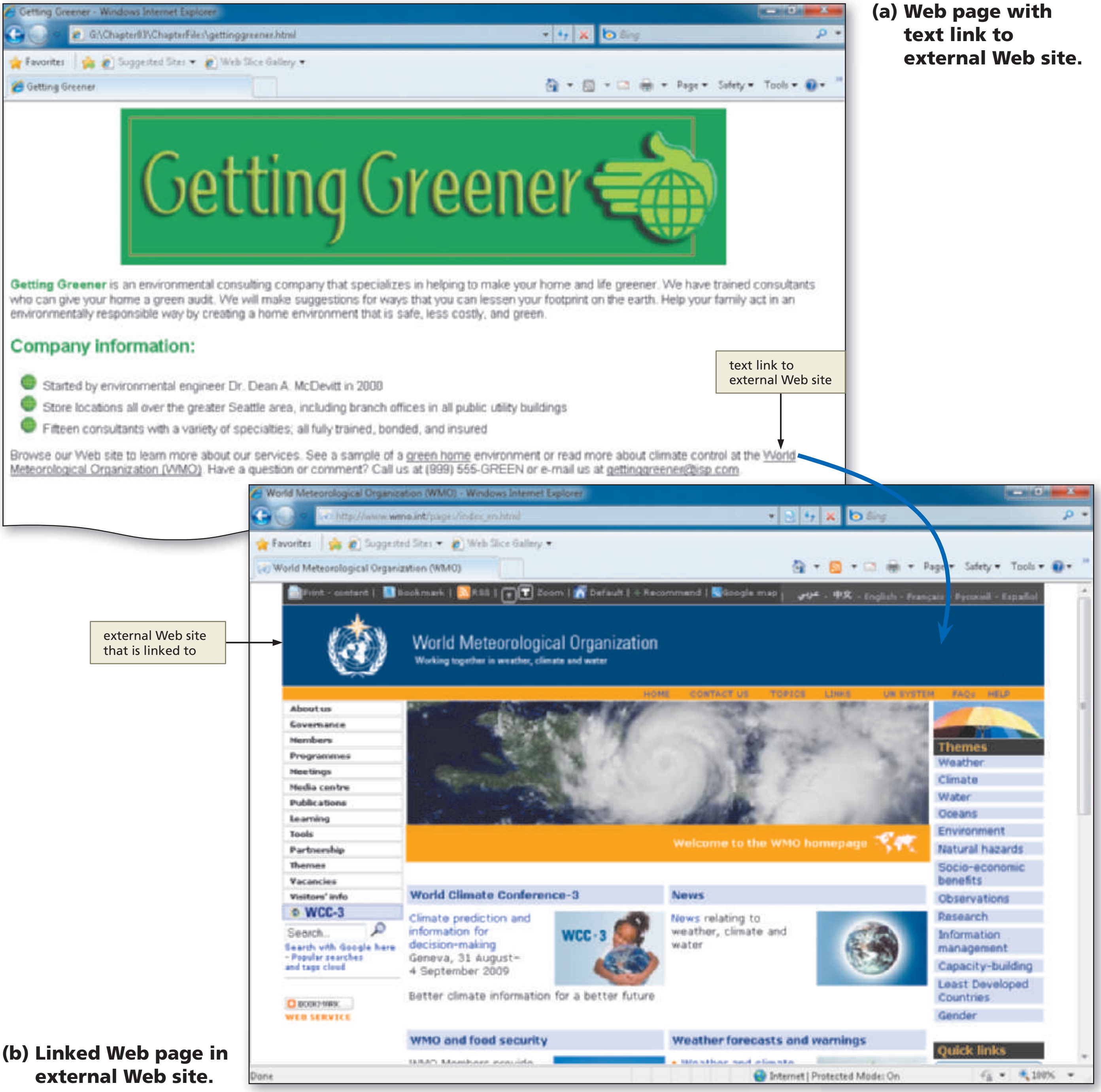
Figure 3–5

Linking to a Web Page in Another Web Site

One of the most powerful features of Web development is the ability to link to Web pages outside of your Web site. Web developers use these links to connect their Web pages to other Web pages with information on the same topic. The links are what give the Web its value as an interconnected resource and provide its “webbiness.” In this project, the home page (Figure 3–6a) includes a link to a page on another Web site where the visitor can find additional information about climate control (Figure 3–6b). To link the words "World Meteorological Organization (WMO)" on the gettinggreener.html home page to an external Web site, you need the following HTML code:

```
<a href="http://www.wmo.int/">World Meteorological Organization
(WMO)</a>
```

Notice that the code is basically the same as that used to link to a Web page within the same Web site. However, you have to add the complete URL (http://www.wmo.int/) when you link to an external Web site.



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text link to external Web site

external Web site that is linked to

World Meteorological Organization (WMO) - Windows Internet Explorer
http://www.wmo.int/pages/index_en.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
World Meteorological Organization (WMO)
Page
Safety
Tools
Print - content | Bookmark | RSS | Zoom | Default | Recommend | Google map
عربي - 中文 - English - Français - Русский - Español
World Meteorological Organization
Working together in weather, climate and water
HOME
CONTACT US
TOPICS
LINKS
UN SYSTEM
FAQs
HELP
About us
Governance
Members
Programmes
Meetings
Media centre
Publications
Learning
Tools
Partnership
Themes
Vacancies
Visitors' info
WCC-3
Search...
Search with Google here
- Popular searches
and tags cloud
BOOKMARK
WEB SERVICE
Welcome to the WMO homepage
World Climate Conference-3
Climate prediction and information for decision-making
Geneva, 31 August–4 September 2009
WCC-3
Better climate information for a better future
News
News relating to weather, climate and water
WMO and food security
Weather forecasts and warnings
Themes
Weather
Climate
Water
Oceans
Environment
Natural hazards
Socio-economic benefits
Observations
Research
Information management
Capacity-building
Least Developed Countries
Gender
Quick links
Done
Internet | Protected Mode: On
100%

(a) Web page with text link to external Web site.

(b) Linked Web page in external Web site.

Figure 3–6

Linking Within a Web Page

Links within a Web page allow visitors to move quickly from one section of the Web page to another. This is especially important in Web pages that are long and require a visitor to scroll down to see all of the content. Many Web pages contain a list of links like a menu or table of contents at the top of the page, with links to sections within the Web page (Figure 3–7). In this project, the Green Home Web page includes links from the top section of the Web page to other sections within the page, as well as links back to the top of the Web page. There are two steps to link within a Web page. First, you have to set a target using a name that makes sense to the purpose of the link. Then, you create a link to that target using the name given. The following HTML code shows an example of a target named solar and then the use of that target as a link. The first statement is inserted at the top of the section of the Web page to which you want to link. The second statement is inserted into the bulleted list at the top of the Web page.

```
<a name="solar"></a>
<a href="#solar">Installed solar panels</a>
```

Again, notice that you also use the anchor <a> tag for this type of link. However, with this inner-page link, you insert the # before the target name to indicate that you want to link to a specific section of the Web page, not necessarily the top of the page. Sometimes when you are browsing the Web, you might see a # used in a link address. That generally links you to a specific section of the Web page.

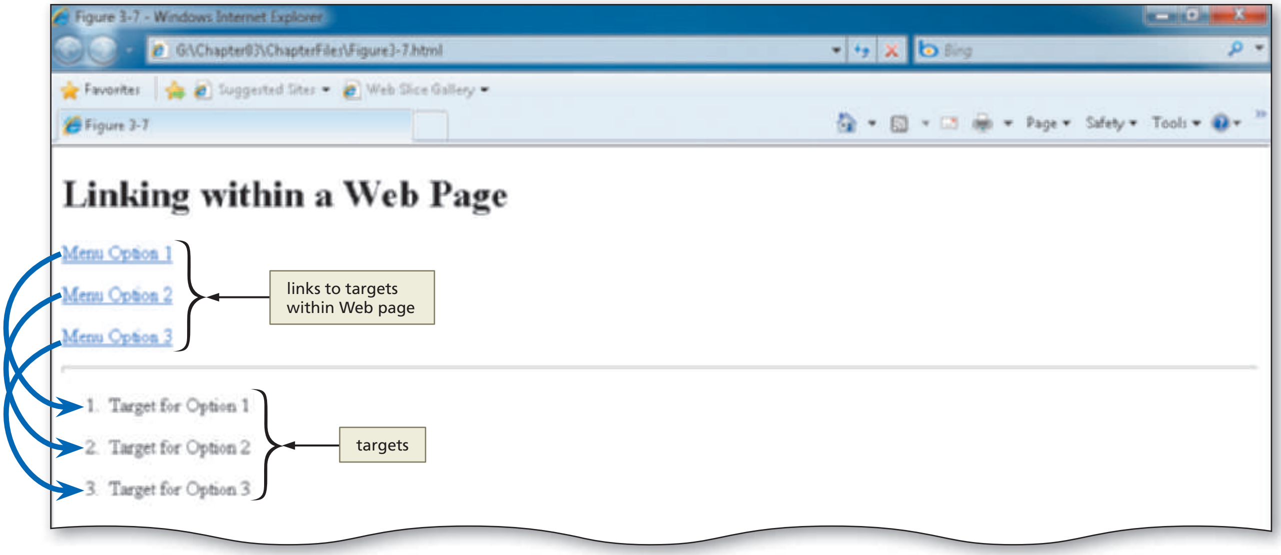


Figure 3-7 - Windows Internet Explorer
G:\Chapter03\ChapterFiles\Figure3-7.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Figure 3-7
Page
Safety
Tools

Linking within a Web Page

Menu Option 1

Menu Option 2

Menu Option 3

1. Target for Option 1
2. Target for Option 2
3. Target for Option 3

links to targets within Web page

targets

Figure 3–7 Web page with internal links.

BTW

E-Mail Links

You can assign more than one e-mail address to a mailto: tag. Use the form "mailto:first@isp.com, second@isp.com" in the <a href=> tag. Some older browsers may not support this tag.

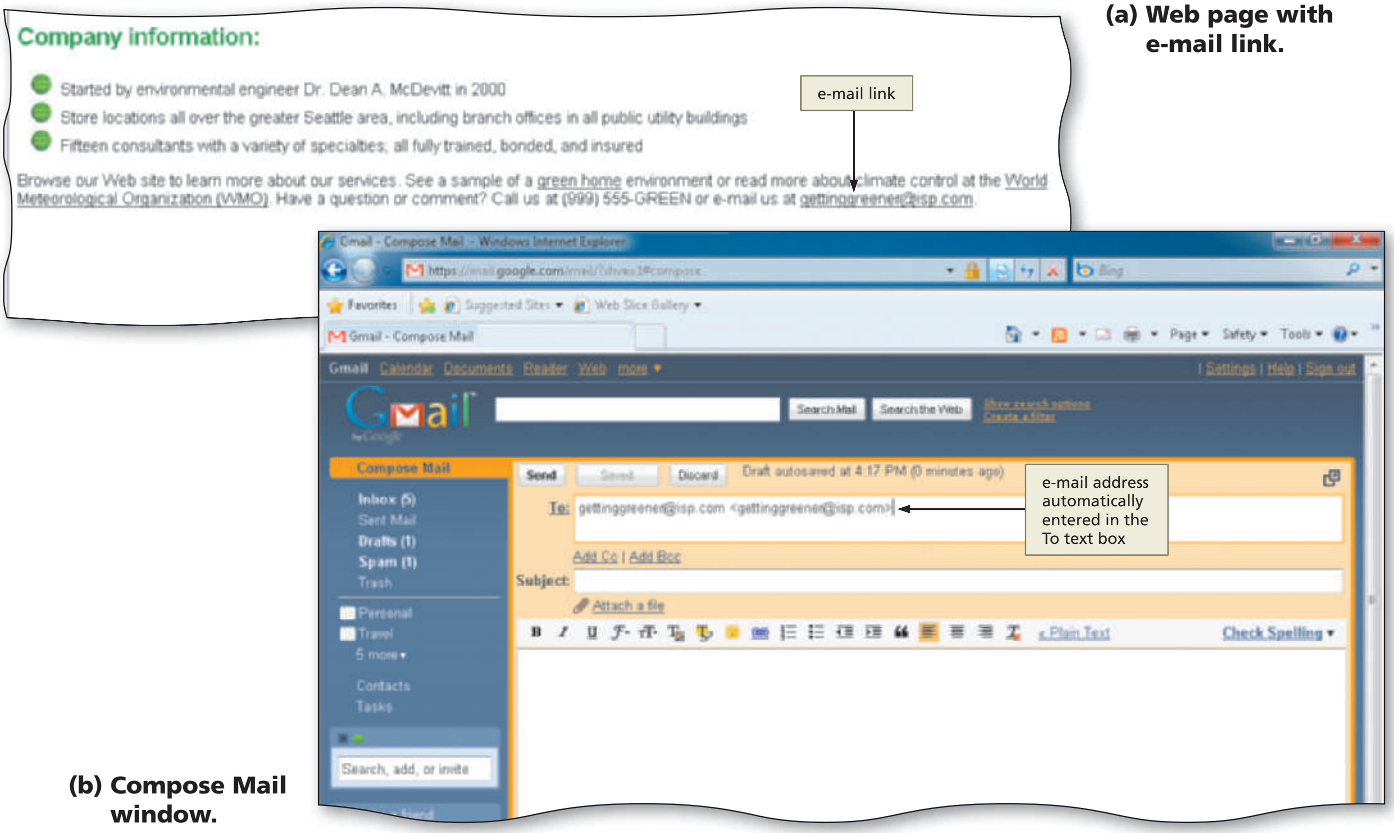
Linking to an E-Mail Address

A well-designed Web page always provides a way for visitors to contact the person at the company responsible for maintaining the Web site or addressing customer questions and comments. An easy way to provide contact information is to include an e-mail link on the Web site's home page, as well as on other pages in the Web site. As shown in Figure 3–8, when a visitor clicks the **e-mail link**, it automatically opens a new message in the default e-mail program and inserts the appropriate contact e-mail address in the To field. Visitors then can type and send an e-mail to request additional information, comment on the

Web site, or notify the company of a problem with its Web site. (*Note*: If your browser is not configured to send e-mail, the e-mail link will not work.) The following HTML code shows an example of how to link the words gettinggreener@isp.com to an e-mail link.

```
<a href="mailto:gettinggreener@isp.com">gettinggreener@isp.com</a>
```

You again use the anchor <a> tag for this type of link. In the href attribute, though, you use the mailto:e-mail address as the value. It may seem strange to have the e-mail address gettinggreener@isp.com twice in this code. The first occurrence of the e-mail address is for the link itself. The second occurrence of gettinggreener@isp.com is used for the words on the Web page that you use as the link.



(a) Web page with e-mail link.

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- Store locations all over the greater Seattle area, including branch offices in all public utility buildings
- Fifteen consultants with a variety of specialties; all fully trained, bonded, and insured

Browse our Web site to learn more about our services. See a sample of a green home environment or read more about climate control at the World Meteorological Organization (WMO). Have a question or comment? Call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com.

e-mail link

(b) Compose Mail window.

Gmail - Compose Mail - Windows Internet Explorer

Draft autosaved at 4:17 PM (0 minutes ago)

To: gettinggreener@isp.com <gettinggreener@isp.com>

Subject:

e-mail address automatically entered in the To text box

Figure 3–8

Creating a Home Page

The first Web page developed in this chapter is the home page of the Getting Greener Web site. A home page is the main page of a Web site, which visitors to a Web site generally will view first. A Web site home page should identify the purpose of the Web site by briefly stating what content, services, or features it provides. The home page also should indicate clearly what links the visitor should click to move from one page on the site to another. A Web developer should design the Web site in such a way that the links from one Web page to another are apparent and the navigation is clear. The Web site home page also should include an e-mail link, so visitors easily can find contact information for the individual or organization. Many Web sites now include an additional e-mail link to the Web development team. Users can utilize this e-mail link to notify the Web developers of any problems with the Web site or to comment on the site.

You begin creating the home page by starting Notepad++ and entering the initial HTML tags. Then you add an image, heading, text, and an unordered list to your home page. Finally, you add text and e-mail links, and then test the links.

To Start Notepad++

The following steps, which assume Windows 7 is running, start Notepad++ based on a typical installation. You may need to ask your instructor how to start Notepad++ for your computer.

1. Click the Start button on the Windows taskbar to display the Start menu.
2. Click All Programs at the bottom of the left pane on the Start menu to display the All Programs list.
3. Click Notepad++ in the All Programs list.
4. Click Notepad++ in the list to display the Notepad++ window. If there are files already open in Notepad from previous projects, close them all now by clicking the Close button on each open file.
5. If the Notepad++ window is not maximized, click the Maximize button on the Notepad++ title bar to maximize it (Figure 3–9).
6. Click View on the menu bar.
7. If the Word wrap command does not have a check mark next to it, click Word wrap.

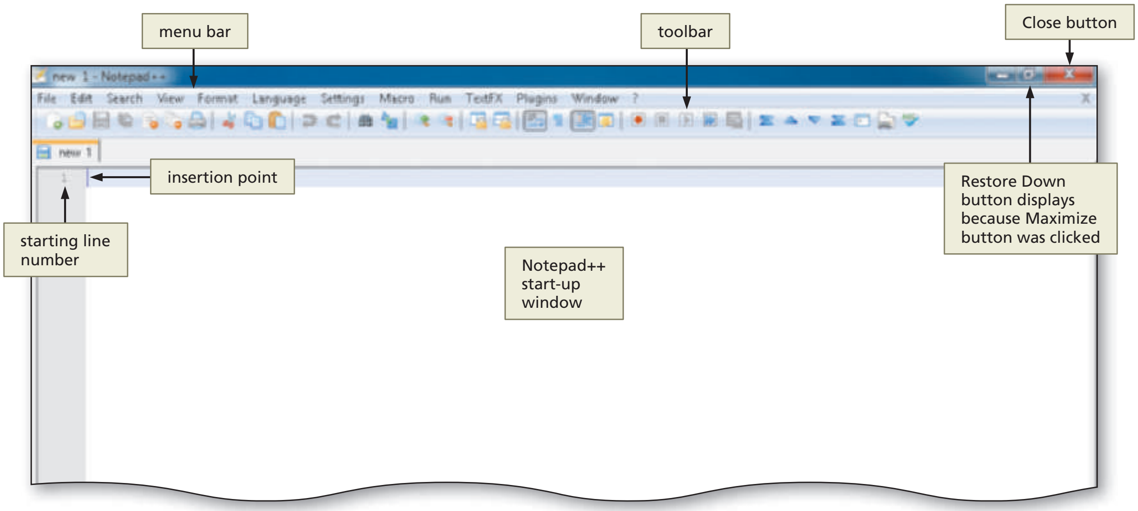

menu bar
toolbar
Close button
new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
insertion point
Restore Down button displays because Maximize button was clicked
starting line number
Notepad++ start-up window

Figure 3–9

To Enter Initial HTML Tags to Define the Web Page Structure

Just as you did in Chapter 2, you start your file with the initial HTML tags that define the structure of the Web page. Table 3–1 contains the tags and text for this task.

Table 3–1 Initial HTML Tags

Line	HTML Tag and Text
1	`<!DOCTYPE html`
2	`   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"`
3	`   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">`
4	
5	`<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">`

BTW

Copy Initial Structure
Remember that you can type in the initial HTML tags and save that code in a file called structure.html, which you can then open and use as the basis for all HTML files. This eliminates the need for you to type this same code at the beginning of every HTML file. Just remember to save structure.html with a new name as soon as you open it.

Table 3–1 Initial HTML Tags (continued)

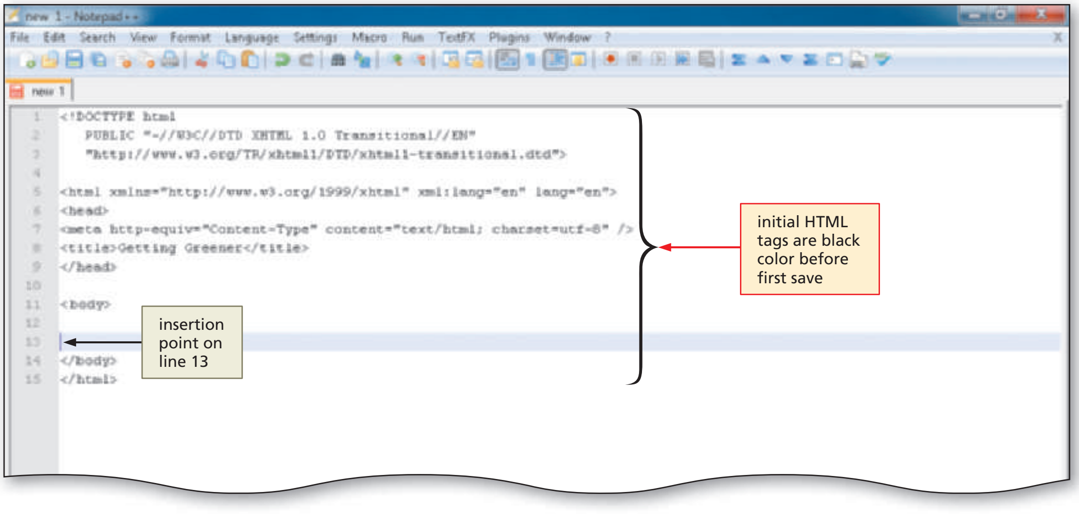
Line	HTML Tag and Text
6	`<head>`
7	`<meta http-equiv="Content-Type" content="text/html;charset=utf-8" />`
8	`<title>Getting Greener</title>`
9	`</head>`
10	
11	`<body>`
12	
13	`</body>`
14	`</html>`

The following steps illustrate how to enter the initial tags that define the structure of the Web page.

1. Enter the HTML code shown in Table 3–1. Press enter at the end of each line. If you make an error as you are typing, use the backspace key to delete all the characters back to and including the incorrect characters, then continue typing.

2. Position the insertion point on the blank line between the <body> and </body> tags (line 12) and press the enter key (Figure 3–10).

3. Compare what you typed to Figure 3–10. If you notice errors, use your mouse pointer or arrow keys to move the insertion point to the right of each error and use the backspace key to correct the error.


new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1

```
1  <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <title>Getting Greener</title>
9  </head>
10
11 <body>
12
13
14 </body>
15 </html>
```

initial HTML tags are black color before first save
insertion point on line 13

Figure 3–10

To Save an HTML File

With the initial HTML code for the Getting Greener home page entered, you should save the file. Saving the file frequently ensures you won't lose your work. Saving a file in Notepad++ also adds color to code that can help you identify different elements more easily. The following step illustrates how to save an HTML file in Notepad++.

1. With a USB flash drive connected to one of the computer's USB ports, click File on the Notepad++ menu bar and then click Save.
2. Type `gettinggreener.html` in the File name text box (do not press enter).
3. Click Computer in the left pane of the Windows Explorer window to display a list of available drives.
4. If necessary, scroll until UDISK 2.0 (G:) or the name of your storage device is displayed in the list of available drives.
5. Open the Chapter03\ChapterFiles folder.
6. Click the Save button in the Save As dialog box to save the file on the USB flash drive in the Chapter03\ChapterFiles folder with the name gettinggreener.html.

Plan Ahead

Identify how to format various elements of the text.
Before inserting the graphical and color elements on a Web page, you should plan how you want to format them. By effectively utilizing graphics and color, you can call attention to important topics on the Web page without overpowering it. Consider the following formatting suggestions.

- **Effectively utilize graphics**. An important part of Web development is the use of graphics to call attention to a Web page. Generally, companies utilize the same logo on their Web site as they use on print material associated with the company, such as business cards and letterheads. Using the same graphical image on all marketing materials, including the Web site, is a good way to provide a consistent visual and brand message to customers.
- **Utilize headings that connect to the graphics**. In many cases, companies use the logo banner as the main heading on their home page, as opposed to using an <h1> heading. It is sometimes good to coordinate the color of the headings and graphics contained on the Web page to the logo banner. This can bring attention to the company logo banner, and it makes the Web page look cohesive with coordinating colors. Heading size standards should generally be followed from h1 (the largest) to h6 (the smallest). In this project, though, you use the company logo banner as your main heading, so you have no h1 heading. You therefore start with the next smaller size heading, h2, as shown in Figure 3–1a on page HTML 91. Figure 3–1b on page HTML 91 shows the use of h1 and h2 headings in appropriate precedence.

To Add a Center-Aligned Banner Image Using an Inline Style

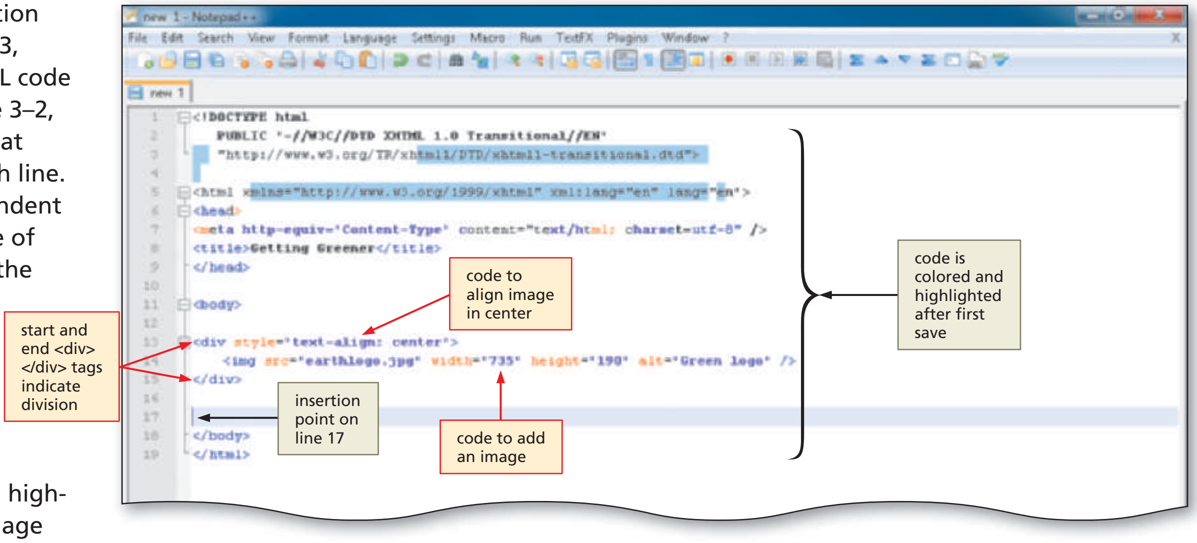
The Getting Greener home page includes an image logo banner to provide visual appeal, catch the visitor's interest, and promote the company's brand. The following steps illustrate how to add an image to a Web page using an inline style to center the image and an <img> tag to insert the image. To use the inline style, you need the <div></div> tags. Remember that the <div></div> tags create a container that defines logical divisions in your Web page. The <div> tag is similar to a paragraph tag, but it allows you to divide the page into larger sections and to define the style of whole sections within your Web page. You could define a section of your page and give that section a different style from the surrounding text. When you use the <div> </div> tags, you are able to design a layout that uses CSS, including inserting images. You use the <div></div> tags in this case to center the image on the Web page. Table 3–2 contains the code for adding the centered logo banner.

Table 3–2 HTML Code for Adding a Center-Aligned Banner Image

Line	HTML Tag and Text
13	`<div style="text-align: center">`
14	`        <img src="earthlogo.jpg" width="735" height="190" alt="Green logo" />`
15	`</div>`

1

- With the insertion point on line 13, enter the HTML code shown in Table 3–2, pressing ENTER at the end of each line. Make sure to indent the second line of code by using the TAB key. This separates the start and end <div> tags from the <img> tag, highlighting the image insertion. Press the ENTER key twice at the end of line 15 to position the insertion point on line 17 (Figure 3–11).


new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
start and end <div> </div> tags indicate division
code to align image in center
insertion point on line 17
code to add an image
code is colored and highlighted after first save

```
1   <!DOCTYPE html
2       PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3       "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5   <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6   <head>
7   <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8   <title>Getting Greener</title>
9   </head>
10
11  <body>
12
13  <div style="text-align: center">
14      <img src="earthlogo.jpg" width="735" height="190" alt="Green logo" />
15  </div>
16
17
18  </body>
19  </html>
```

Figure 3–11

Q&A

Why should I include the width, height, and alt attributes?

Adding width and height attributes can improve page loading time because the browser does not have to figure the width and height before loading the image. Never use the height and width attributes to resize an image, however. Use graphic editing software to resize it and save it with a different file name. The height and width attributes as used in the img tag should reflect the actual image size. The alt attribute provides information about the purpose of the image when the user's mouse hovers over the image and while the image is loading.

Q&A

What is the purpose of the <div> </div> tags?

The <div> tag defines a division or a section in an HTML document. The <div> tag is often used to group elements to format them with styles. In this case, to center the image, you have to use the <div> </div> tags. The statement style="text-align: center" is the inline style that centers this image. An image is left-aligned by default.

Plan Ahead

Identify how to format text elements of the home page.

You should always make a plan before inserting the text elements of a Web page. By formatting the characters and paragraphs on a Web page, you can improve its overall appearance. Effectively formatting the text also makes the message or purpose of the Web page clearer to the users. On a Web page, consider the following formatting suggestions.

- **Use default text size when appropriate**. The body text consists of all text between the heading and the bottom of the Web page. This text is the main content of the Web page and should be used to highlight the key points of your message. You can vary your content by utilizing both paragraphs of text and lists.
- **Determine what text formatting to use**. In a long Web page, it may help to vary your text as a way to break information up between headings. Using bold, color, or italicized text sparingly gives the Web page a more interesting look. Make sure not to overdo the formatting of text because you can make the page look cluttered. It is more difficult to find the content for which you are searching in a cluttered Web page.
- **Determine what style sheets to use**. Consider using style sheets to vary the format of text elements. If the text varies across paragraphs, an inline style is good to use. If you want all of the text in the Web page to be the same, an embedded style sheet is appropriate. If the text is common across more than one Web page, an external style sheet (discussed in the next chapter) should be used.
- **Highlight key text with ordered or unordered lists**. An ordered or unordered list contains specific information that is more clearly identified by a list versus a paragraph of text. In this project, you use a bulleted (unordered) list but vary it by changing the type of bullet used. Using an image as a bullet gives the Web page a nice look and is different than the standard (default) disc bullet for unordered lists.
- **Determine other information suitable for the home page**. Other information that is suitable for a home page includes: the company address (often found in the logo), a phone number, and an e-mail link.

To Add Paragraphs of Text

After the earth logo image for the Getting Greener home page is inserted, you need to add two paragraphs of text introducing Getting Greener. Table 3–3 shows the tags and text to enter.

Table 3–3 HTML Code for Adding Two Paragraphs of Text

Line	HTML Tag and Text
17	`<p>Getting Greener is an environmental consulting company that specializes in helping to make your home and life greener. We have trained consultants who can give your home a green audit. We will make suggestions for ways that you can lessen your footprint on the earth. Help your family act in an environmentally responsible way by creating a home environment that is safe, less costly, and green.</p>`
18	
19	`<p>Browse our Web site to learn more about our services. See a sample of a green home environment or read more about climate control at the World Meteorological Organization (WMO). Have a question or comment? Call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com.</p>`

1. With the insertion point on line 17, enter the HTML code shown in Table 3–3. Press enter twice after the </p> tag on line 17 and once after the </p> tag on line 19. After entering the two paragraphs, the insertion point is on line 20 (Figure 3–12).

Q&A

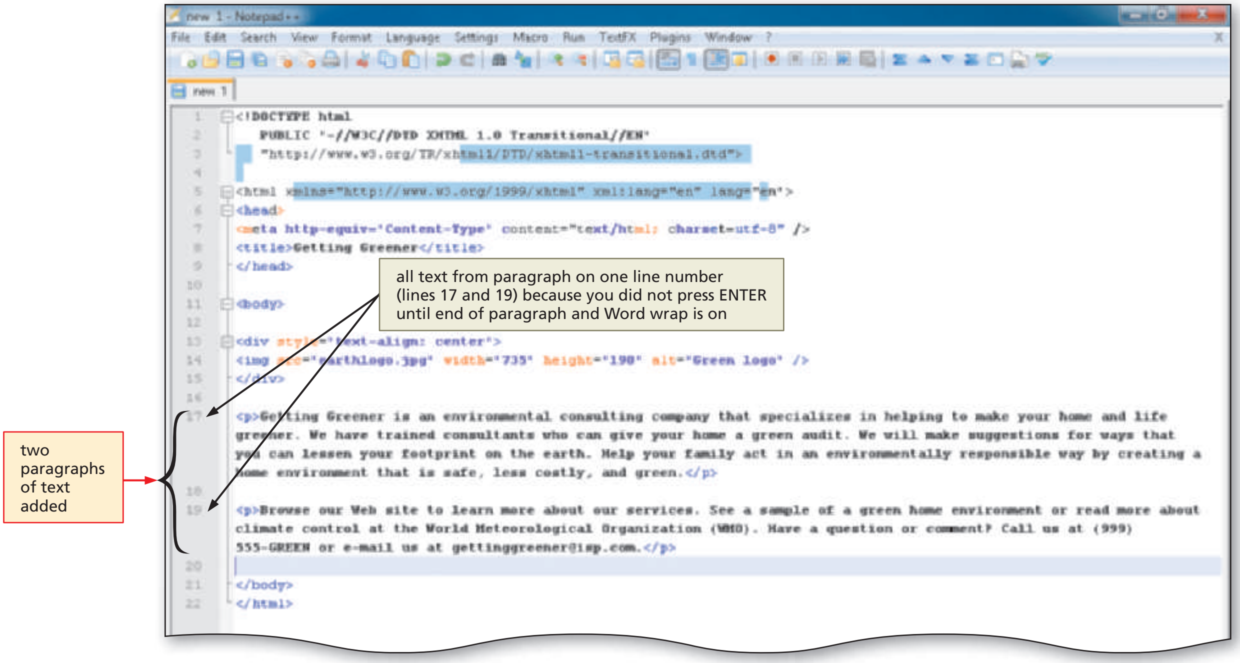
Do I have to end all paragraphs of text with the </p> tag?

A Web page without </p> tags would display in the browser correctly. This Web page would not pass validation using the W3C Markup Validation Service, however. One missed </p> tag will result in many errors during validation.

Q&A

What if I wanted the second paragraph to start without a blank line above it?

If you wanted the second paragraph to move to the next line without a blank line in between, you would use the <br /> tag instead of <p> </p>.


new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
two paragraphs of text added

all text from paragraph on one line number (lines 17 and 19) because you did not press ENTER until end of paragraph and Word wrap is on

```
1  <!DOCTYPE html
2      PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <title>Getting Greener</title>
9  </head>
10
11 <body>
12
13 <div style="text-align: center">
14 <img src="earthlogo.jpg" width="735" height="190" alt="Green logo" />
15 </div>
16
17 <p>Getting Greener is an environmental consulting company that specializes in helping to make your home and life
   greener. We have trained consultants who can give your home a green audit. We will make suggestions for ways that
   you can lessen your footprint on the earth. Help your family act in an environmentally responsible way by creating a
   home environment that is safe, less costly, and green.</p>
18
19 <p>Browse our Web site to learn more about our services. See a sample of a green home environment or read more about
   climate control at the World Meteorological Organization (WMO). Have a question or comment? Call us at (999)
   555-GREEN or e-mail us at gettinggreener@isp.com.</p>
20
21 </body>
22 </html>
```

Figure 3–12

Using an Inline Style to Add Interest to a Bulleted List

You've decided to highlight company information on the home page with an unordered (bulleted) list. To integrate the list with the rest of the page, and to add interest, you want to make the bullets the same as the earth symbol in the company logo. To do this, you'll add an h2 heading above the list and use an inline style to create the bullets.

Inserting an h2 heading above the unordered list visually separates the list from other elements on the Web page and indicates what the items in the list describe. An h1 heading is normally the main heading of the Web page, but in this case, the logo (earthlogo.jpg) is used in lieu of the h1 heading. It serves the same purpose to identify the company and call attention to the top of the Web page. Using an h1 heading under the logo banner would be redundant. So you will start with an h2 heading because it is smaller and an appropriate size to set off the bulleted list.

There are a variety of list-style types (bullets and numbers) that you can use, as described in Chapter 2. You used an inline style with the list-style-type property to make square bullets for the Chapter 2 project. For this Web page, you are going to use the list-style-image property to use a small image (earthbullet.jpg) instead of a disc, circle, or square bullet. You do this by identifying the image earthbullet.jpg as the URL to display in place of a bullet.

To Create an Unordered (Bulleted) List Using Images as Bullets

Table 3–4 shows the HTML code used to add an h2 heading and create a bulleted list with "earth" image bullets for the Getting Greener home page.

Table 3–4 HTML Code for Creating an Unordered (Bulleted) List with Image Bullets

Line	HTML Tag and Text
19	`<h2>Company information:</h2>`
20	
21	`<ul style="list-style-image: url(earthbullet.jpg)">`
22	`<li>Started by environmental engineer Dr. Dean A. McDevitt in 2000</li>`
23	`<li>Store locations all over the greater Seattle area, including branch offices in all public utility buildings</li>`
24	`<li>Fifteen consultants with a variety of specialties; all fully trained, bonded, and insured</li>`
25	`</ul>`

The following step shows how to create the unordered (bulleted) list that appears on the Getting Greener home page.

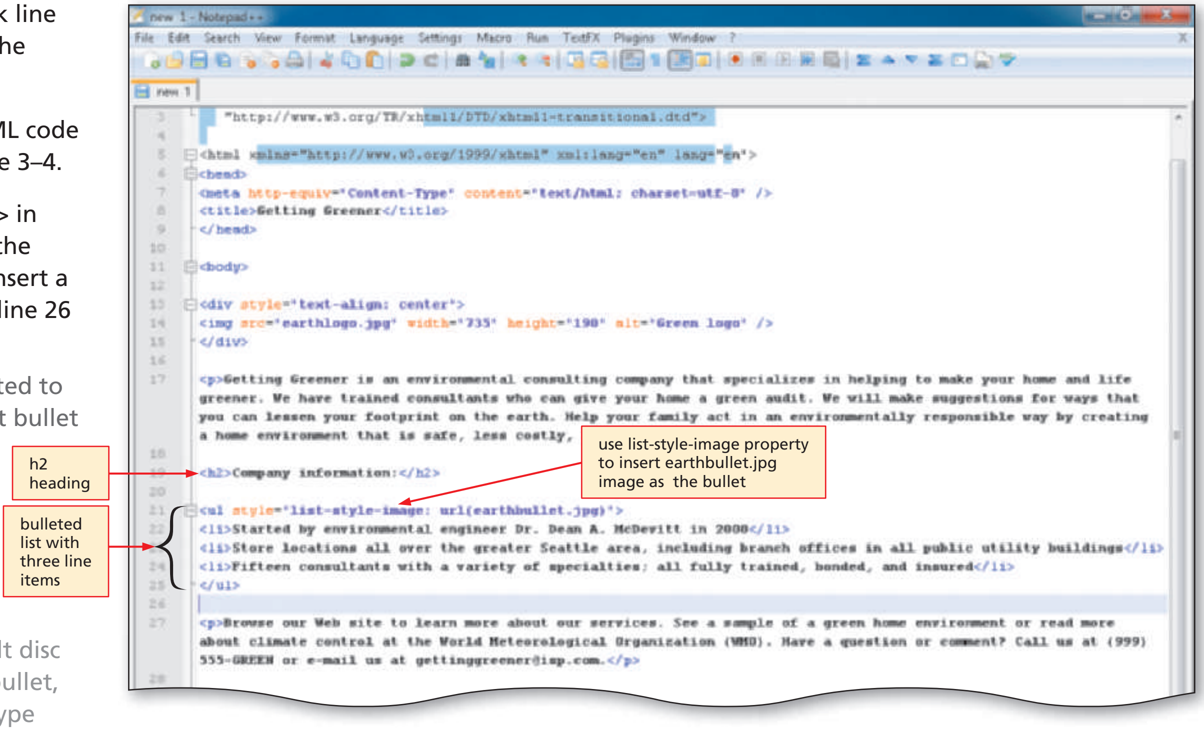
1

- Click the blank line 18 and press the ENTER key.
- Enter the HTML code shown in Table 3–4.
- After the </ul> in line 25, press the ENTER key to insert a blank line on line 26 (Figure 3–13).

Q&A

What if I wanted to use a different bullet type?

For an open circle bullet, use list-style-type: "circle". To use the default disc (filled circle) bullet, the list-style-type does not need to be included.


new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
h2 heading
bulleted list with three line items
use list-style-image property to insert earthbullet.jpg image as the bullet

```
3      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5   <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6   <head>
7   <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8   <title>Getting Greener</title>
9   </head>
10
11  <body>
12
13  <div style="text-align: center">
14  <img src="earthlogo.jpg" width="735" height="190" alt="Green logo" />
15  </div>
16
17  <p>Getting Greener is an environmental consulting company that specializes in helping to make your home and life
    greener. We have trained consultants who can give your home a green audit. We will make suggestions for ways that
    you can lessen your footprint on the earth. Help your family act in an environmentally responsible way by creating
    a home environment that is safe, less costly,
18
19  <h2>Company information:</h2>
20
21  <ul style="list-style-image: url(earthbullet.jpg)">
22  <li>Started by environmental engineer Dr. Dean A. McDevitt in 2000</li>
23  <li>Store locations all over the greater Seattle area, including branch offices in all public utility buildings</li>
24  <li>Fifteen consultants with a variety of specialties; all fully trained, bonded, and insured</li>
25  </ul>
26
27  <p>Browse our Web site to learn more about our services. See a sample of a green home environment or read more
    about climate control at the World Meteorological Organization (WMO). Have a question or comment? Call us at (999)
    555-GREEN or e-mail us at gettinggreener@isp.com.</p>
28
```

Figure 3–13

Plan Ahead

Plan how and where to use the four types of links.

- **Identify how to link from the home page to another page in the same Web site.** Linking to another Web page in the same Web site is often done with text links. When determining what words to use, make sure that the text links are clear and easy to understand. Using a phrase such as "click here" is not one that clearly identifies where the link will go. Choosing words such as "green home" tells the Web site visitor to click that link if they want to see a sample of a green home.
- **Use an e-mail link on the home page**. A good standard practice is to include an e-mail link on the home page. Again, using words such as "click here" are not as effective as using a company's actual e-mail address (gettinggreener@isp.com in this case) as the e-mail link text.
- **Determine external links for the home page**. Visitors to a Web site might want additional information on a topic, so a link also can be included on the home page. Linking to an external Web site (i.e., one that is outside of the boundaries of the current Web site) is appropriate to provide additional information. Again, it is important to select words or phrases that make sense for that link.
- **Use internal links on long Web pages**. Another good standard practice is to include links within a Web page when the page is long (i.e., when you have to press the PAGE DOWN key several times to get to the end of the Web page). Internal links help visitors navigate more easily within long Web pages. Also consider using links to help the visitor easily return back to the top of a long Web page.

Adding a Text Link to Another Web Page Within the Same Web Site

For the purpose of this Web site, the <a> and </a> tags are used to create links on a Web page. The <a> tag also is called the **anchor tag** because it is used to create anchors for links to another page in the same Web site, to a Web page in an external Web site, within the same Web page, and for e-mail links. The anchor tag can also be used to specify the base language of the target URL or to specify the media type of the link. The href attribute stands for a hyperlink reference. This is a reference (an address) to a resource on the Web. Hyperlinks can point to any resource on the Web, including an HTML page, an image, a sound file, or a video. The basic form of the tag used to create a link is:

```
<a href="URL">linktext</a>
```

where linktext is the clickable word or phrase that is displayed on the Web page and the value for href (hypertext reference) is the name or URL of the linked page or file. Table 3–5 shows some of the <a> tag attributes and their functions.

BTW

Other Links

You also can create a link to other Web pages (that is, non-http), an FTP site, and newsgroups. To link to an FTP site, type ftp://URL rather than http://URL as used in this project. For a newsgroup, type news:newsgroup name, and for any particular article within the newsgroup, type news:article name as the entry.

Table 3–5 <a> Tag Attributes and Functions

Attribute	Function
href	Specifies the URL of the linked page or file.
name	Defines a name for the current anchor so it may be the target or destination of another link. Each anchor on a Web page must use a unique name.
rel	Indicates a forward relationship from the current document to the linked document. The value of the rel attribute is a link type, such as prev, next, index, or copyright. For example, the Web page chapter3.html might include the tag <a rel="next" href="chapter4.html"> to indicate a link to the Web page for the next chapter, chapter4.html.

Table 3–5 <a> Tag Attributes and Functions (continued)

Attribute	Function
rev	Indicates a reverse (backward) relationship from the current document to the linked document. The value of the rev attribute is a link type, such as prev, next, index, or copyright. For example, the chapter3.html Web page might include the tag <a rev="prev" href="chapter2.html"> to indicate a link to the Web page for the previous chapter, chapter2.html.
type	Specifies the content type (also known as media types or MIME types) of the linked page or file to help a browser determine if it can handle the resource type. Examples of content types include text/html, image/jpeg, video/quicktime, application/java, text/css, and text/javascript.

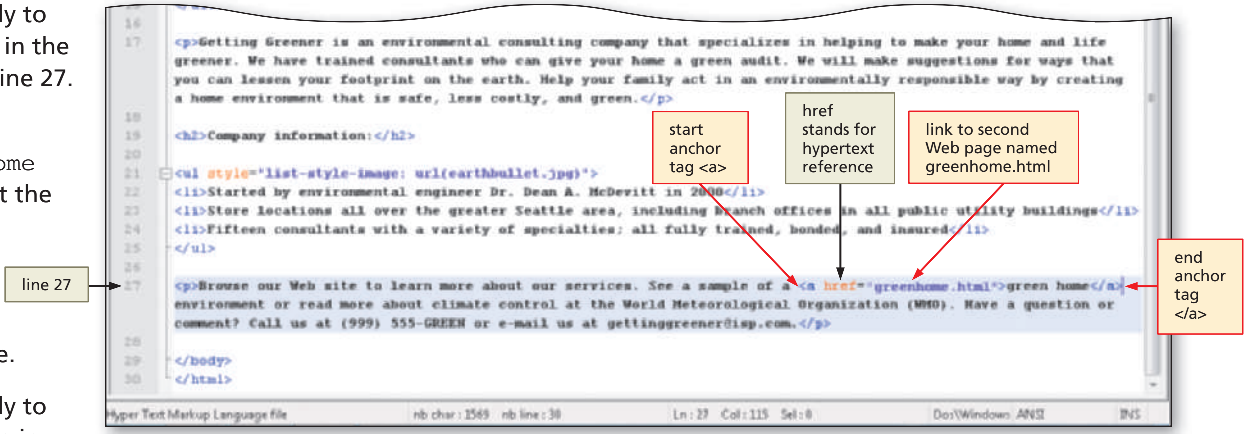
Before creating a link, be sure you know the URL or name of the file to be linked and the text that will serve as the clickable word or phrase. The words should be descriptive and tell the Web page visitor the purpose of the link. For the Getting Greener home page, the text link is a phrase in a paragraph at the bottom of the Web page.

To Add a Text Link to Another Web Page Within the Same Web Site

The Getting Greener home page includes a text link to the Green Home Web page, which is part of the same Web site. The following step illustrates how to add a text link to another Web page within the same Web site.

1

- Click immediately to the left of the g in the word green on line 27.
- Type `<a href="greenhome.html">` to start the link, setting the Web page greenhome.html as the linked Web page.
- Click immediately to the right of the e in home on line 27. Type `</a>` to close the link (Figure 3–14).



```
16
17  <p>Getting Greener is an environmental consulting company that specializes in helping to make your home and life
    greener. We have trained consultants who can give your home a green audit. We will make suggestions for ways that
    you can lessen your footprint on the earth. Help your family act in an environmentally responsible way by creating
    a home environment that is safe, less costly, and green.</p>
18
19  <h2>Company information:</h2>
20
21  <ul style="list-style-image: url(earthbullet.jpg)">
22  <li>Started by environmental engineer Dr. Dean A. McDevitt in 2000</li>
23  <li>Store locations all over the greater Seattle area, including branch offices in all public utility buildings</li>
24  <li>Fifteen consultants with a variety of specialties: all fully trained, bonded, and insured</li>
25  </ul>
26
27  <p>Browse our Web site to learn more about our services. See a sample of a <a href="greenhome.html">green home</a>
    environment or read more about climate control at the World Meteorological Organization (WMO). Have a question or
    comment? Call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com.</p>
28
29  </body>
30  </html>
```

line 27
start anchor tag <a>
href stands for hypertext reference
link to second Web page named greenhome.html
end anchor tag </a>
Hyper Text Markup Language file
nb char : 1569 nb line : 30
Ln : 27 Col : 115 Sel : 0
Dos\Windows ANSI
INS

Figure 3–14

Q&A What is the href attribute for?

The href stands for "hypertext reference" and precedes the URL of the destination Web page.

Q&A How will I know if my text is a link when it is displayed in the browser?

In the browser, the mouse pointer turns into a pointing finger where there is a link. Also, as the default, text used as a link will be blue and underlined. You can change the color and style of a link, and you do that later in the chapter.

Q&A What happens if I forget to insert the </a> tag on a link?

A text link without the </a> tag will not display correctly in the browser. If you forget to use the </a> tag to end this text link, all of the text beyond the <a href=""> tag will serve as that link. In this example, all of the text that follows the g in green will link to the greenhome.html Web page, which is certainly not what you want.

Adding an E-Mail Link

Adding an e-mail link is similar to adding a text link, but instead of using a URL as the href attribute value, the href attribute value for an e-mail link uses the form:

```
<a href="mailto:address@email.com">linktext</a>
```

where the href attribute value uses the word mailto to indicate it is an e-mail link, followed by a colon and the e-mail address to which to send the e-mail message. When the browser recognizes a **mailto** URL in a clicked link, it automatically opens a new message in the default e-mail program and inserts the appropriate contact e-mail address in the To field. The clickable text used for an e-mail link typically is the e-mail address used in the e-mail link. The Web page also should provide some information before the link, so visitors know the purpose of the e-mail link.

BTW

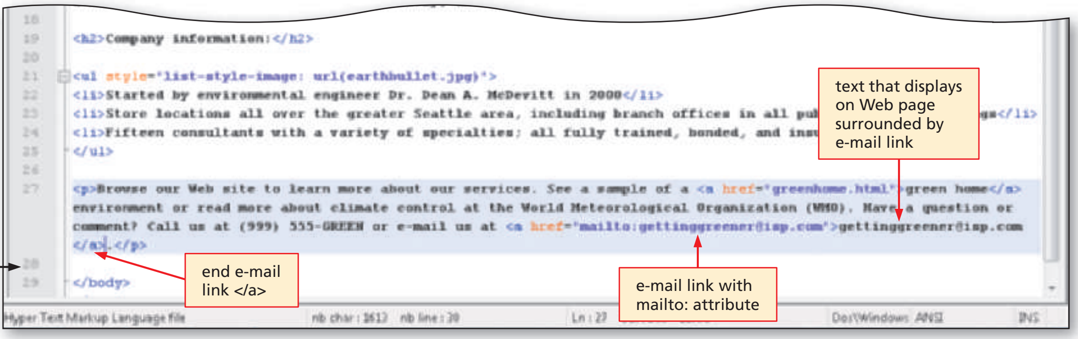
E-Mail Links
E-Mail Links may not work in a school setting because there may not be an e-mail client installed on the school servers. You therefore may not be able to test this link.

To Add an E-Mail Link

The Getting Greener home page includes an e-mail link so customers can contact Getting Greener for additional information or to comment on the Web page. The <a> and </a> tags used to create a text link to a Web page also are used to create an e-mail link. The following step shows how to add an e-mail link to a Web page.

1

- Click immediately to the left of the g in the beginning of gettinggreener@isp .com on line 27. Type `<a href="mailto: gettinggreener@ isp.com">` as the start of the e-mail link. This will link to the e-mail address gettinggreener@isp.com when the link is clicked.



```
18
19  <h2>Company information:</h2>
20
21  <ul style="list-style-image: url(earthbullet.jpg)">
22  <li>Started by environmental engineer Dr. Dean A. McDevitt in 2000</li>
23  <li>Store locations all over the greater Seattle area, including branch offices in all pub                  gs</li>
24  <li>Fifteen consultants with a variety of specialties; all fully trained, bonded, and insu
25  </ul>
26
27  <p>Browse our Web site to learn more about our services. See a sample of a <a href="greenhome.html">green home</a>
    environment or read more about climate control at the World Meteorological Organization (WMO). Have a question or
    comment? Call us at (999) 555-GREEN or e-mail us at <a href="mailto:gettinggreener@isp.com">gettinggreener@isp.com
    </a>.</p>
28
29  </body>
```

line 28
text that displays on Web page surrounded by e-mail link
end e-mail link </a>
e-mail link with mailto: attribute
Hyper Text Markup Language file
nb char : 1612
nb line : 30
Ln : 27
Dos\Windows ANSI
INS

Figure 3–15

- Click immediately after the m in isp.com and before the period in the e-mail address text on line 27.
- Type `</a>` to end the e-mail link, as shown in Figure 3–15.

Q&A

I see two occurrences of gettinggreener@isp.com on line 27. Why do I need two?

The first occurrence of gettinggreener@isp.com (the one within the link <a> tag following the mailto:) is the destination of the link. The second occurrence of gettinggreener@isp.com is the text link itself that will be displayed in the browser.

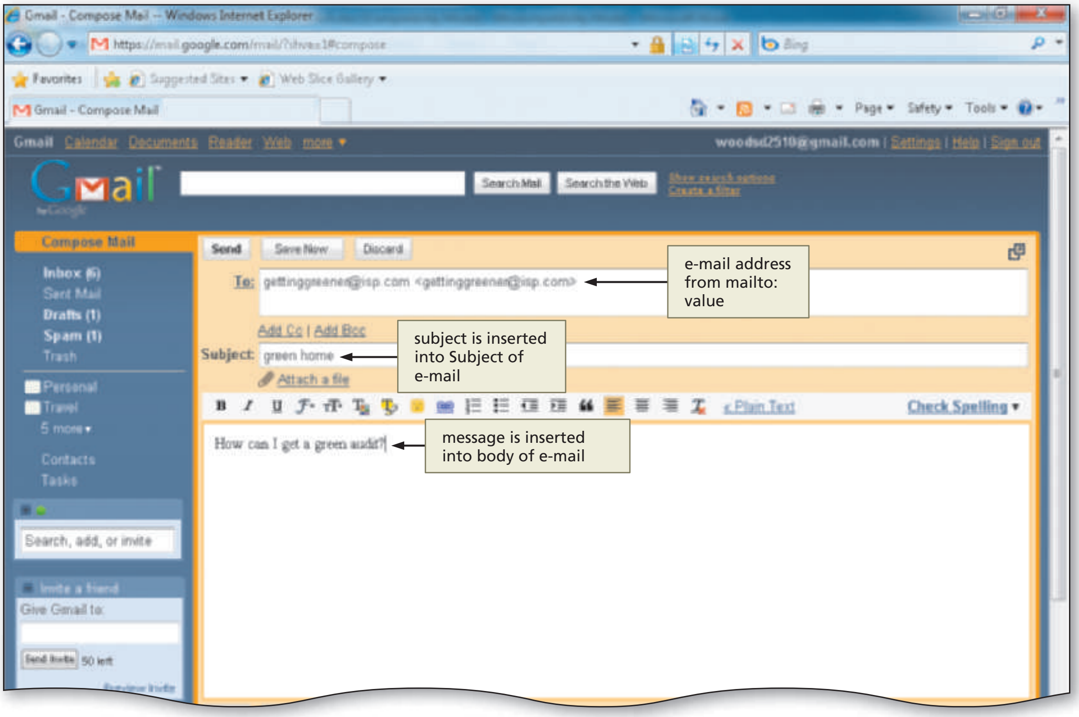
Adding Other Information to an E-Mail Link

Sometimes, you need to add a message in the body of the e-mail in addition to the subject. This technique can be very helpful when more than one e-mail link is positioned on a Web page, and each link has a different purpose. For instance, one e-mail might be used for general questions, whereas another link might be used for specific information. You also can include a carbon-copy (cc) address. For instance, to include just a subject or to include a subject and body message text in the above mailto:, you would complete the following steps.

To Add a Subject to an E-Mail Link

1 Type `<a href="mailto:gettinggreener@isp.com?subject=green home">` as the tag.

Sometimes, you need to add a message in the body of the e-mail in addition to the subject. This technique can be very helpful when more than one e-mail link is positioned on a Web page, and each link has a different purpose. For instance, one e-mail might be used for general questions, whereas another link might be used for specific information. Using the subject and body attributes can be helpful for this scenario. Notice that the two attributes (subject and body) are separated by an ampersand in the following example. The following step shows how to add the subject "green home" to the e-mail together with the message text "How can I get a green audit?" as shown in Figure 3–16.



To: gettinggreener@isp.com <gettinggreener@isp.com>

Subject: green home

How can I get a green audit?

e-mail address from mailto: value

subject is inserted into Subject of e-mail

message is inserted into body of e-mail

Figure 3–16

To Add a Subject Together with Body Message Text

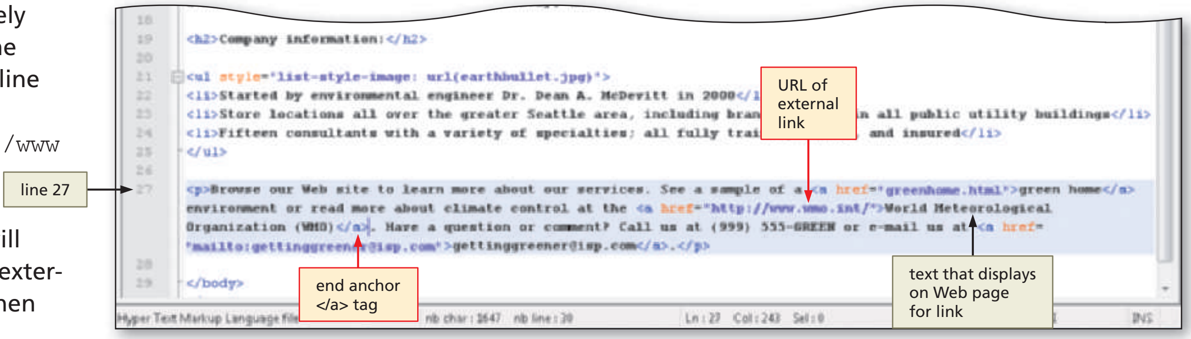
1 Type `<a href="mailto:gettinggreener@isp.com?subject=green home&body=How can I get a green audit?">` as the tag.

To Add a Text Link to a Web Page in Another Web Site

The <a> and </a> tags used to create a text link to a Web page within the same Web site also are used to create a link to a Web page in another Web site. The following step illustrates how to add a text link on the Green Home Web page to an external Web page that describes climate control information.

1

- Click immediately to the left of the W in World on line 27 and type `<a href="http://www.wmo.int/">` to add the text link that will connect to the external Web site when clicked.



```
18
19  <h2>Company information:</h2>
20
21  <ul style="list-style-image: url(earthbullet.jpg)">
22  <li>Started by environmental engineer Dr. Dean A. McDevitt in 2000</l
23  <li>Store locations all over the greater Seattle area, including bran        n all public utility buildings</li>
24  <li>Fifteen consultants with a variety of specialties; all fully trai         and insured</li>
25  </ul>
26
27  <p>Browse our Web site to learn more about our services. See a sample of a <a href="greenhome.html">green home</a>
    environment or read more about climate control at the <a href="http://www.wmo.int/">World Meteorological
    Organization (WMO)</a>. Have a question or comment? Call us at (999) 555-GREEN or e-mail us at <a href=
    "mailto:gettinggreener@isp.com">gettinggreener@isp.com</a>.</p>
28
29  </body>
```

line 27
URL of external link
end anchor </a> tag
text that displays on Web page for link
Hyper Text Markup Language file
nb char : 1647 nb line : 30
Ln : 27 Col : 243 Sel : 0
INS

Figure 3–17

- Click immediately to the right of the) in (WMO) on line 27 and type `</a>` to end the tag, as shown in Figure 3–17.

Q&A How do these links appear when displayed in the browser?

If the default is used, the text link is displayed in a blue, underlined font to indicate it is a link. The mouse pointer also changes to the pointing hand when moved over the link text. You change that color later in the chapter.

Q&A When I type in the URL in the Address box of my browser, I never type in the http:// part of the URL. Why do I have to add the http:// in the link?

Although you do not need to type the http:// into the URL on the browser, you always must include this as part of the href when creating external links. See the discussion on absolute and relative paths below for more information.

Q&A Why did I need the http:// part of the URL for this external link, but I did not need that for the green home link?

The Green Home Web page is stored in the same folder as the home page from which you are linking. You, therefore, do not need to include any information other than the name of the Web page file. Review the following section on absolute and relative paths for more information.

Using Absolute and Relative Paths

At this point, it is appropriate to revisit the overall concept of how the files are organized and saved. As noted in the last chapter, the projects in this book use a very simple folder structure. In this book, the graphical images are stored in the same folder as the HTML files, for example, in the Chapter03\ChapterFiles folder. For most real-world applications, however, it would be more appropriate to separate the HTML code and the graphical images into different folders. Figure 3–18 on the next page shows an example of a more complex file structure that could be used for this book.

To understand how to use this sort of folder structure, you need to identify the folder location, or path, to the files. A **path** describes the location (folder or external Web site) where the files can be found, beginning with the UDISK G:\ drive (or another drive

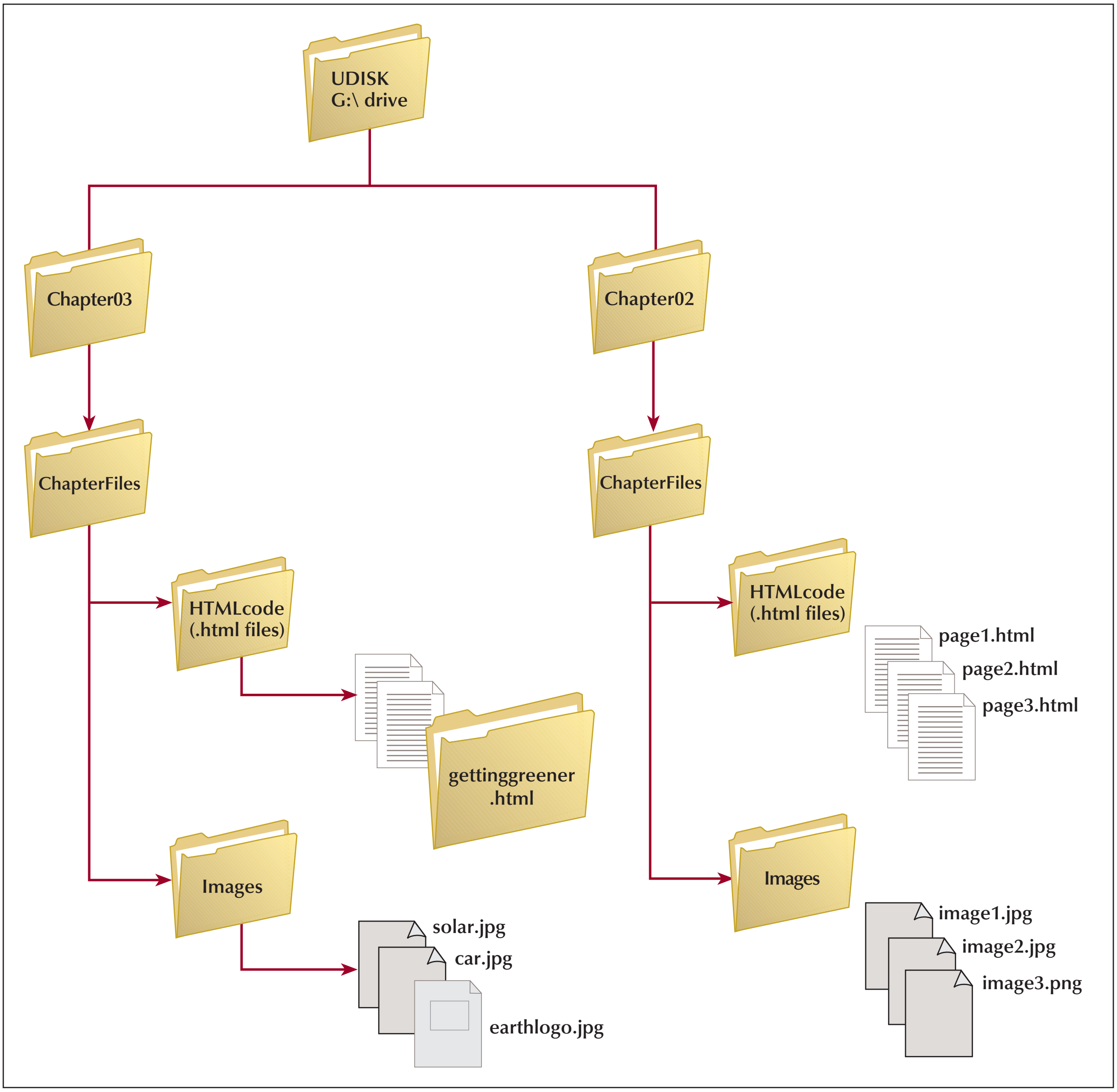


Figure 3–18

on your computer). This beginning location also is known as root. You can use either an absolute or relative path when identifying the location of the files. An **absolute path** specifies the exact address for the file to which you are linking or displaying a graphic. You can think of an absolute path as the complete address of a house, including the house number, street name, city, state, and zip. In order to use that absolute address, you would have to give the entire path (or address) to a person who wants to get to that particular house. When you are referencing a Web page from a server outside of the server on which your Web pages reside, you have to use an absolute path. In this chapter, you use the absolute path to the World Meteorological Organization (WMO). This is because that Web page is located outside of the server (or storage media) on which the Web pages created in the chapter reside. Your link statement for this external Web site is:

```
<a href="http://www.wmo.int/">World Meteorological Organization
(WMO)</a>
```

Although absolute paths indicate the specific addresses of files, they can be cumbersome. If you have to move any of the files to a different folder or a different Web server, then all absolute paths would have to change.

Relative paths specify the location of a file, relative to the location of the file that is currently in use. This is analogous to telling someone your house is located four doors down from the only gas station on that street. Your address in this case is relative to the beginning point, the gas station. Because your user has a beginning point (the gas station), you can describe the ending address (the house) relative to the beginning. A relative path allows you to move up the folder structure. So in the example in which you want to display the image earthlogo.jpg (stored in the Images subfolder) from the Web page gettinggreener.html (stored in the HTMLcode subfolder) within the Chapter03\ChapterFiles folder, you would use the following relative path structure:

```
\Images\earthlogo.jpg
```

Looking at Figure 3–18, you would store the image earthlogo.jpg in the Images folder and store the Web page itself, the gettinggreener.html file, in the HTMLcode subfolder. If you moved to the HTMLcode subfolder and viewed the gettinggreener.html file, the image earthlogo.jpg would not appear because it is not in the same subfolder. To display the gettinggreener.html file with the earthlogo.jpg image, you would use the following relative path structure:

```
<img src="Images/earthlogo.jpg" width="735" height="190"
alt="Green logo" />
```

Another example is the relative addressing that you use in this chapter to link to the second Web page from the home page, and vice versa. The HTML code to link from the home page, gettinggreener.html to the second Web page is:

```
<a href="greenhome.html">green home</a>
```

and to go from the greenhome.html Web page back to the home page, your HTML code is:

```
<a href="gettinggreener.html">home page</a>
```

For another example, let's see what the code would look like if you had two folders for this chapter project. You currently have one folder ChapterFiles in the Chapter03 folder. To have the same basic folder structure as you see in Figure 3–18, you would create a second folder named Images that is on the same folder level as ChapterFiles. So you would then have two folders in the Chapter03 folder. If you moved your images (solar.jpg and car.jpg) to that Images folder, your HTML code to access those images would look like this:

```
<p><img src="Images/solar.jpg" width="348" height="261"
alt="Solar panels" /></p>

<p><img src="Images/car.jpg" width="261" height="202"
alt="Electric car" /></p>
```

It is better to use relative paths for flexibility whenever feasible. If the root folder (i.e., the "highest" folder in the hierarchy) must change for some reason, you do not have to change all addressing if you used relative paths. As an example, if you had to change from g:\Chapter03\ to another folder, all related subfolders would automatically change. With absolute addressing, all paths would have to be individually changed.

Adding Interest and Focus with Styles

In Chapter 2, you learned how to vary the size of headings with the <h1> through <h6> tags. Any text on a Web page, including headings, can be formatted with a different color or style to make it stand out by using style properties. Table 3–6 lists some properties that can be used to enhance standard text on a Web page using styles. Remember that CSS and styles are the preferred technique to satisfy XHTML standards.

BTW

Font Properties
Refer to Appendix D for a more complete list of CSS font properties and values. You can also set font characteristics with the HTML <font> tag (see Appendix A), but this deprecated tag is not used in this project.

Table 3–6 Font Properties and Values

Property	Function
color	• Changes the font color • Can use a six-digit color code or color name
font-family	• Changes the font face or type • Values include fonts, such as Verdana or Arial; text appears using the default font if the font face is not specified
font-size	• Changes the font size. • Value can be an actual numeric size, a percentage, or values such as large, medium, small, etc.
font-style	• Changes the style of a font • Values include normal, italic, and oblique
font-weight	• Changes the weight of a font • Values include normal, bold, bolder, and lighter

Figure 3–19 shows how several of these attributes affect the appearance of text.

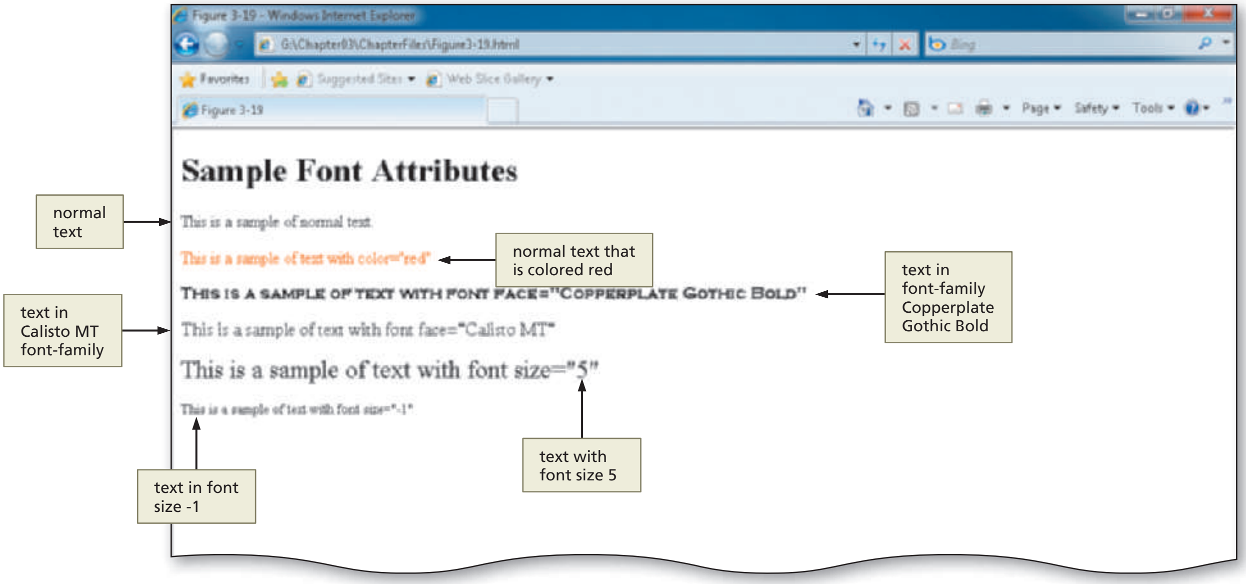


Figure 3-19 - Windows Internet Explorer
G:\Chapter03\ChapterFiles\Figure3-19.html
Favorites
Suggested Sites
Web Slice Gallery
Figure 3-19
Page
Safety
Tools
normal text
normal text that is colored red
text in font-family Copperplate Gothic Bold
text in Calisto MT font-family
text with font size 5
text in font size -1

Sample Font Attributes

This is a sample of normal text.

This is a sample of text with color="red"

THIS IS A SAMPLE OF TEXT WITH FONT FACE="COPPERPLATE GOTHIC BOLD"

This is a sample of text with font face="Calisto MT"

This is a sample of text with font size="5"

This is a sample of text with font size="-1"

Figure 3–19 Examples of various fonts.

Adding Interest and Focus with HTML Tags

There is another way to format text that is compliant with the XHTML 1.0 Transitional standard used in this book. Web pages that use the Transitional DOCTYPE statement allow the use of deprecated tags, as explained in Chapter 2. These Web pages validate the HTML elements and attributes, including deprecated elements, successfully. Text can also be formatted using the formatting tags in HTML. Earlier in the project, you changed the font-weight of some text on the Web page using an inline style. Instead of that style sheet, you could have also used the HTML bold tags (<b> </b>) that make text bold. HTML provides a number of tags that can be used to format text, several of which are listed in Table 3–7. These cannot be used for the XHTML standard above 1.0, but they can be used for the XHTML 1.0 Transitional standard.

Table 3–7 Text Formatting Tags

HTML Tag	Function
<b> </b>	Physical style tag that displays text as bold
<big> </big>	Increases the font size in comparison to the surrounding text
<blockquote> </blockquote>	Designates a long quotation; indents margins on sections of text
<em> </em>	Logical style tag that displays text with emphasis (usually appears as italicized)
<i> </i>	Physical style tag that displays text as italicized
<pre> </pre>	Sets enclosed text as preformatted material, meaning it preserves spaces and line breaks; often used for text in column format in another document pasted into HTML code
<small> </small>	Decreases the font size in comparison to the surrounding text
<strong> </strong>	Logical style tag that displays text with strong emphasis (usually appears as bold)
<sub> </sub>	Displays text as subscript (below normal text)
<sup> </sup>	Displays text as superscript (above normal text)
<tt> </tt>	Displays text as teletype or monospace text

BTW

Deprecated and Obsolete Tags

A deprecated element or attribute is one that has been outdated. Deprecated elements may become obsolete in the future, but most browsers continue to support deprecated elements for backward compatibility. You can still use deprecated tags with a Transitional document type as used in this book. Obsolete elements and attributes have no guarantee of browser support, and they are no longer defined in the W3C specification.

Figure 3–20 shows a sample Web page with some HTML text format tags. These tags fall into two categories: logical style tags and physical style tags. **Logical style tags** allow a browser to interpret the tag based on browser settings, relative to other text on a Web page. The <h2> heading tag, for example, is a logical style that indicates the heading text should be larger than regular text but smaller than text formatted using an <h1> heading tag. The <strong> tag is another logical style, which indicates that text should have a strong emphasis, and which most browsers interpret as displaying the text in bold font. **Physical style tags** specify a particular font change that is interpreted strictly by all browsers. For example, to ensure that text appears as bold font, you would enclose it between a start <b> and end </b> tag. The <strong> tag is a better fit for XHTML standards, and it does not dictate how the browser displays the text. In practice, the <strong> and <b> tags usually have the same result when the Web page is displayed.

BTW

Logical versus Physical Styles

For more information about the differences between logical and physical styles, search the Web for the key words "HTML logical style" or "HTML physical style".

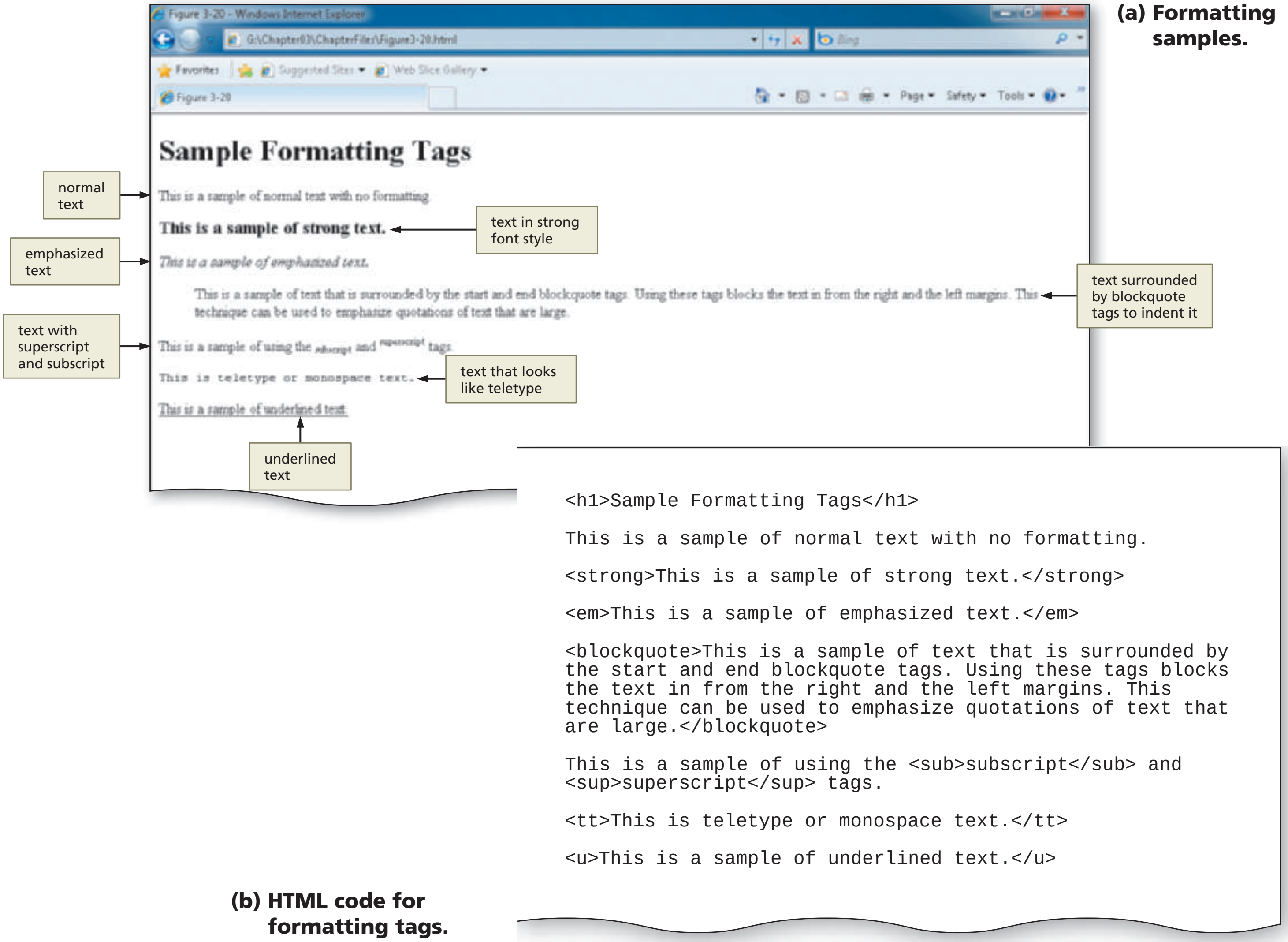


Figure 3-20 - Windows Internet Explorer
G:\Chapter03\ChapterFiles\Figure3-20.html
Favorites
Suggested Sites
Web Slice Gallery
Figure 3-20
Page
Safety
Tools
normal text
text in strong font style
emphasized text
text surrounded by blockquote tags to indent it
text with superscript and subscript
text that looks like teletype
underlined text

Sample Formatting Tags

This is a sample of normal text with no formatting

This is a sample of strong text.

This is a sample of emphasized text.

> This is a sample of text that is surrounded by the start and end blockquote tags. Using these tags blocks the text in from the right and the left margins. This technique can be used to emphasize quotations of text that are large.

This is a sample of using the $_{\text{subscript}}$ and $^{\text{superscript}}$ tags.

`This is teletype or monospace text.`

This is a sample of underlined text.

(a) Formatting samples.

```
<h1>Sample Formatting Tags</h1>

This is a sample of normal text with no formatting.

<strong>This is a sample of strong text.</strong>

<em>This is a sample of emphasized text.</em>

<blockquote>This is a sample of text that is surrounded by
the start and end blockquote tags. Using these tags blocks
the text in from the right and the left margins. This
technique can be used to emphasize quotations of text that
are large.</blockquote>

This is a sample of using the <sub>subscript</sub> and
<sup>superscript</sup> tags.

<tt>This is teletype or monospace text.</tt>

<u>This is a sample of underlined text.</u>
```

(b) HTML code for formatting tags.

Figure 3–20

BTW

CSS Types

Remember that an inline style changes the style of an individual element; an embedded style sheet changes the style of an entire Web page; and an external style sheet changes the style in multiple Web pages in the same Web site. If you want to change the style of a single element, use an inline style.

Style Sheet Precedence Review

In Chapter 2, you learned how to insert an inline style. The project in this chapter also uses an inline style and introduces you to embedded style sheets. You learn about the third and final form of style, external style sheets, in Chapter 4. It will be helpful at this point to review the information from Chapter 2 on the precedence of styles (see Table 2-6 on page HTML 63). An inline style is used to control the style within an individual HTML tag and takes precedence over both embedded and external style sheets. An embedded sheet is used to change the style of an element over one Web page, but overrides or takes precedence over any styles defined in an external style sheet. An external style sheet is a separate document with a .css extension that is used to define styles for multiple pages in a Web site.

Because styles have different levels of precedence, all three types of styles can be used on a single Web page. For example, in this part of the chapter, you define body, anchor, and heading styles with embedded style sheets that are used for both the gettinggreen.html file and the greenhome.html file. You also insert a few inline styles on each Web page. Because of the precedence rules, the inline styles take precedence over the embedded style sheets. For instance, if you use an embedded style sheet to make all paragraphs Garamond font-family in normal text type and size 12, you can override that font-family, style, and size for a specific paragraph with an inline style within that paragraph's

<p> tag. Maybe there is a paragraph that you want to highlight, so you make it bold with an inline style. Or maybe there is a paragraph that you want to downplay, and you make it smaller and italic with an inline style. It is important to determine how and when to use the various styles in the design phase of Web development.

Plan Ahead

Identify which level of style or style sheet to use.
Because of precedence rules, it is generally better to look at the broadest level style first. In this chapter project, you use inline and embedded style sheets, with embedded being the broader level. In other words, an embedded style sheet is used for the entire Web page, and an inline style is used in a particular HTML tag. In Chapter 4, you will add an external style sheet (the broadest level) to your chapter project.

- **Identify what styles need to be different than the standards used across the Web site**. Sometimes you need to vary a style in order to call attention to the content or pull attention away from it. Many Web sites have a legal statement on the bottom of the home page. That is not necessarily something that needs to be the same font-size as the rest of the content on that Web page. So you may choose a smaller font-size and maybe make the text italic for that content. Two types of style sheets are used for styles that are different across a Web site, embedded and inline.
- **Use embedded style sheets to affect a single Web page**. This type of style is good to use if you want the style to affect just one (or a few) Web pages, and not all pages across the Web site.
- **Use inline styles for individual styles**. If you want to change the style of one or a few elements of one Web page, then using inline styles is the most appropriate. If a style is intended for most (or all) of the Web page, consider using an embedded or external style sheet.

Using Embedded Style Sheets

An embedded style sheet is used to control the style of a single Web page. To add an embedded style sheet to a Web page, you insert a start <style> tag at the top of the Web page within the <head> </head> tags that define the header section. After adding the desired style statements, you end the embedded style sheet by adding an end </style> tag.

The following code shows an example of an embedded style sheet to set the h1 heading to the Garamond font family, point size 32. This code would be added between the <head> and </head> tags within <style> </style> tags:

```
<style type="text/css">
h1 {font-family: Garamond;
   font-size: 32pt}
</style>
```

In this embedded style, the h1 (header size 1) element is the **selector**, and the remainder of the code is the **declaration**. The declaration sets the values for two different properties. The first property-value statement sets the h1 font family to Garamond. The second property-value statement sets the font size to 32 point. This means that the browser will display all h1 headers in 32-point Garamond font. You could use this embedded style sheet to easily change all h1 headings, in lieu of making the same change with an inline style in each individual heading tag.

The various types of Cascading Style Sheets allow you to control many different property values for various elements on a Web page. Table 3–8 lists six main properties and related options that are used in CSS. A complete list of properties and property values that can be used in CSS is included in Appendix D.

BTW

HTML/CSS Terminology

In HTML, a *tag* is a special instruction to the browser to specify how the Web page is displayed. Many tags have attributes that help to further modify what is displayed. In CSS, a style *statement* is made up of a selector and a declaration. The part of the style statement that identifies the page element(s) is called the *selector*. The part of the style statement that identifies how the element(s) should appear is called the *declaration*. A declaration includes at least one type of style, or property, to apply to the selected element.

Table 3–8 CSS Properties and Options

Property Name	Options That Can Be Controlled
background	• color • image • position
border	• color • style • width
font	• family • size • style • variant • weight
list	• image • position • type
margin	• length • percentage
text	• alignment • decoration • indentation • spacing • white space

BTW

Specifying Alternative Fonts

If a Web page font is not available on users' computers, you can create a list of fonts and the browser will determine the font to use. For example, if the Web page uses a Geneva font, but Arial or Helvetica would also work well, you create a comma-separated list of acceptable fonts, using <font face="geneva, arial,helvetica"> *your text*</font> as the code. If a Web page uses a font that Web page visitors do not have on their computers, the Web page appears using a default font (usually Times New Roman).

The following code shows an example of an embedded style sheet that you will use in the chapter project:

```
<style type="text/css">
body     {font-family: Arial, Verdana, Garamond;
          font-size: 11pt}
h1, h2   {color: #00934a}
a        {color: black}
a:hover  {background: #00934a;
          color: white}
</style>
```

This embedded style sheet defines four elements on the page: body, headings, links, and the link-hover property. The first style statement uses the **body** selector to specify that all text on the Web page should be one of the font families: Arial, Verdana, or Garamond, in 11 point size. Computers do not always have every font-family installed, so Web developers usually specify multiple font-families. If the first font-family is not available, then the next takes effect. If none of the named font-families are installed, the computer's default font is used. Separate the font-families by commas.

The second style statement defines values for the h1 and h2 properties. The value #00934a will give all h1 and h2 headings on this Web page the color green. On the home page, there is no h1 heading, but there is one on the second Web page, and later in the chapter you will use this same embedded style sheet for that Web page, which has both h1 and h2 headings.

The third style statement defines one property of the link element. The selector **a** is used to indicate the link element. The property-value statement *color: black* changes from the default blue color for links. Because the style statement uses **a** as the selector, it changes all link states (normal, visited, active) to these property values. You also can define a unique style for normal, visited, and active links by creating three separate style statements with **a:link**, **a:visited**, and **a:active** as the selectors.

The last style statement uses the **a:hover** selector to define the style of a link when the mouse pointer points to, or **hovers** over, a link. In this statement, you use a pseudo-class (hover) to have more control over the anchor (link) element. A **pseudo-class** is attached to a selector with a colon to specify a state or relation to the selector to give the Web developer more control over that selector. The format to use with a pseudo-class is entered in the form:

```
selector:pseudo-class { property: value; }
```

with a colon between the selector and the pseudo-class. There are four pseudo-classes that can be used when applied to the anchor or link selector:

- link, for an unvisited link
- visited, for a link to a page that has already been visited
- active, for a link when it gains focus (for example, when it is clicked)
- hover, for a link when the cursor is held over it.

The hover statement tells the browser to display white link text on a green (#00934a) background when the mouse hovers over the link. Adding a link hover style significantly changes the look of the links and adds a dimension of interactivity to the Web page.

The <!-- and --> code used in the embedded style sheet (just after the start style <style> and just before the end style </style> tags) are comment lines. These comment lines tell the browser to ignore whatever is between the comment lines if the browser cannot interpret the code between. So if your Web page user has a browser that is not current, it may not be able to interpret embedded style sheets. An older browser would see the start of the comment <!-- and treat anything between that line and the --> as a comment. This is a good Web development technique.

Recall that embedded style sheets have the second-highest level of precedence of the three types of styles. Although an inline style overrides the properties of an embedded style sheet, the embedded style sheet takes precedence over an external style sheet.

To Add Embedded Style Sheet Statements

Table 3–9 shows the CSS code for an embedded style sheet to specify the font and size for body text on this Web page.

Table 3–9 CSS Code for an Embedded Style Sheet

Line	CSS Selectors and Declarations
9	<style type="text/css">
10	`<!--`
11	
12	`body    {font-family: Arial, Verdana, Garamond;`

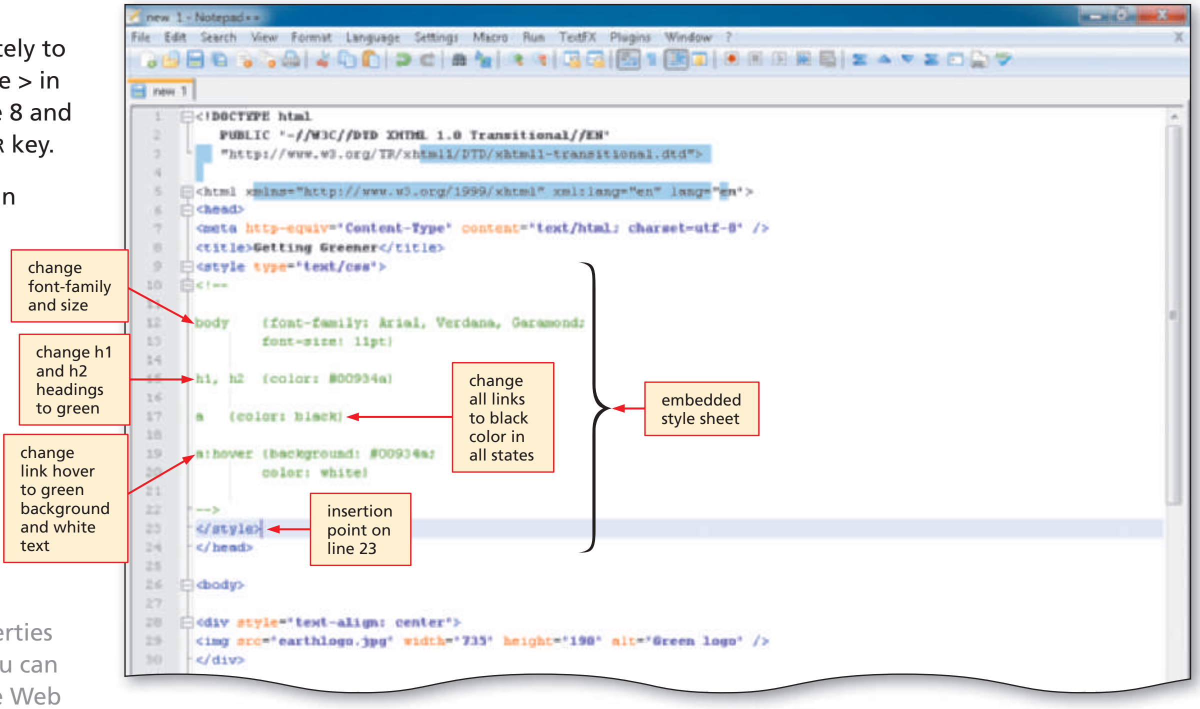
Table 3–9 CSS Code for an Embedded Style Sheet (continued)

Line	CSS Selectors and Declarations
13	`        font-size: 11pt}`
14	
15	`h1, h2  {color: #00934a}`
16	
17	`a       {color: black}`
18	
19	`a:hover {background: #00934a;`
20	`        color: white}`
21	
22	`-->`
23	`</style>`

The following step shows how to enter the embedded style sheet code to change h1 and h2 headings to green, change all links to blank, and change the color of the link hover to green background with white text to provide visual impact.

1

- Click immediately to the right of the > in </title> on line 8 and press the ENTER key.
- Type the code in Table 3–9 but do not press the ENTER key at the end of line 23 (Figure 3–21).



new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
change font-family and size
change h1 and h2 headings to green
change link hover to green background and white text
change all links to black color in all states
embedded style sheet
insertion point on line 23

```
1  <!DOCTYPE html
2      PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <title>Getting Greener</title>
9  <style type="text/css">
10 <!--
11
12 body    {font-family: Arial, Verdana, Garamond;
13          font-size: 11pt}
14
15 h1, h2  {color: #00934a}
16
17 a   {color: black}
18
19 a:hover {background: #00934a;
20          color: white}
21
22 -->
23 </style>
24 </head>
25
26 <body>
27
28 <div style="text-align: center">
29 <img src="earthlogo.jpg" width="735" height="190" alt="Green logo" />
30 </div>
```

Figure 3–21

Q&A

What other styles can I use on my Web pages?

Appendix D lists available CSS properties and values. You can also search the Web for examples of how CSS are used for Web development. Finally, be an active Web page visitor and review the source code on Web pages with styles that you think are particularly effective or ineffective.

Q&A

Is there a way to eliminate the underline on text links altogether?

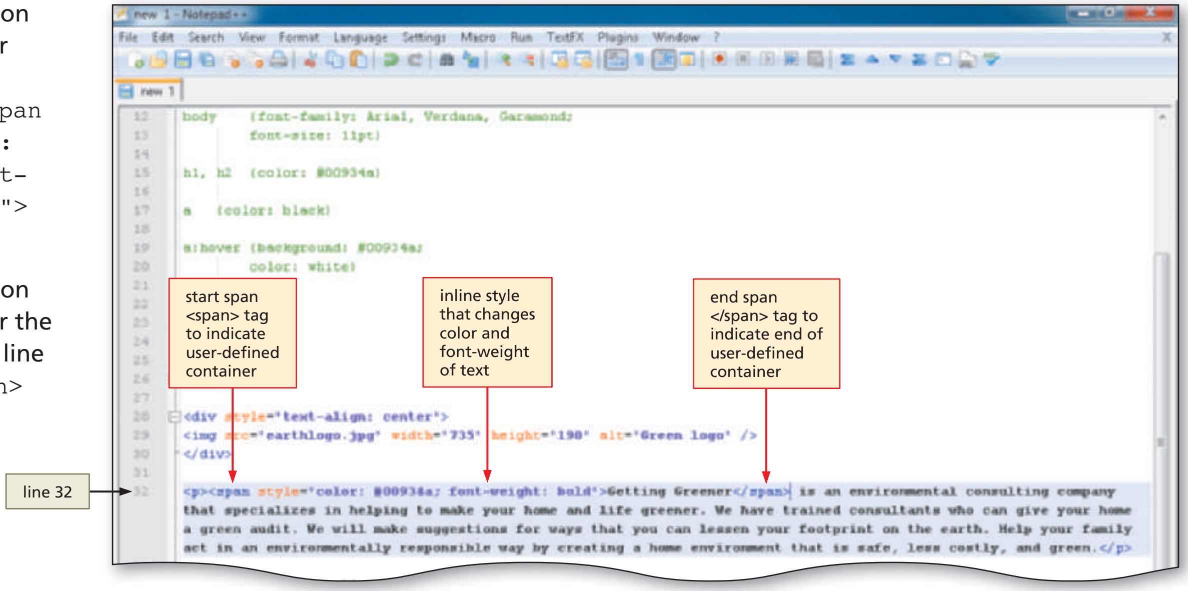
You can use a:hover text-decoration: none to eliminate the underline completely. Understand, however, that users look for underlined text when they try to find the links on a Web page, so use this cautiously.

To Add an Inline Style for Color

The following step shows how to enter an inline style to add a green color (#00934a) in a bold font-weight to provide visual impact and call attention to the company name, Getting Greener. With this inline style, you use the <span> </span> tags. The **<span> </span>** tags create a container into which a user can add an inline style. The <span> provides a finer level of control for styles, as opposed to the <div> </div> tags, which define block-level structure or division in the HTML document. The <span> tag tells the browser to apply the chosen styles to whatever is within the <span></span> container.

1

- With the insertion point right after the > in <p> on line 32, type `<span style="color: #00934a; font-weight: bold">` (Figure 3–22).
- With the insertion point right after the r in Greener on line 32, type `</span>` (Figure 3–22).


new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1

```
12  body    {font-family: Arial, Verdana, Garamond;
13          font-size: 11pt}
14
15  h1, h2  {color: #00934a}
16
17  a   {color: black}
18
19  a:hover {background: #00934a;
20          color: white}
21
22
23
24
25
26
27
28  <div style="text-align: center">
29  <img src="earthlogo.jpg" width="735" height="190" alt="Green logo" />
30  </div>
31
32  <p><span style="color: #00934a; font-weight: bold">Getting Greener</span> is an environmental consulting company
    that specializes in helping to make your home and life greener. We have trained consultants who can give your home
    a green audit. We will make suggestions for ways that you can lessen your footprint on the earth. Help your family
    act in an environmentally responsible way by creating a home environment that is safe, less costly, and green.</p>
```

line 32

start span <span> tag to indicate user-defined container

inline style that changes color and font-weight of text

end span </span> tag to indicate end of user-defined container

Figure 3–22

Q&A What other font-weights could I have used?

The four font-weights are normal, bold, bolder, and lighter. If you don't specify a font-weight, normal is the default.

Q&A What different colors can I use for text?

There are a variety of colors that you can use for headings, text, and backgrounds. You can name the color by color name or hexadecimal code. See Figure 2–27 on page HTML 68 for examples.

To Save an HTML File

With the HTML code for the Getting Greener home page complete, you should re-save the file. The following step shows how to save an HTML file that has been previously saved.

1 Click the Save icon on the Notepad++ toolbar to save the most recent version of gettinggreener.html on the same storage device and in the same folder as the last time you saved it.

Validating the HTML, Viewing the Web Page, and Testing Links

After you save the HTML file for the Getting Greener home page, it should be validated to ensure that it meets current XHTML standards and viewed in a browser to confirm the Web page is displayed as desired. It also is important to test the two links in the Getting Greener home page to verify that they function as expected.

To Validate HTML Code

1. Open Internet Explorer.
2. Navigate to the Web site `validator.w3.org`
3. Click the Validate by File Upload tab.
4. Click the Browse button.
5. Locate the gettinggreener.html file on your storage device and click the file name.
6. Click the Open button.
7. Click the Check button. A successful validation should be displayed, as shown in Figure 3–23a. If you have errors in your code, you may see a screen similar to Figure 3–23b. In this example, the errors relate to a missing </p> tag.

Q&A

What if my HTML code does not validate?

If your code has errors, you should edit your HTML file to correct the errors. The Markup Validation Service report lists clearly what is wrong with your code. Once you make the necessary changes and save the file, you can again use the Browse button to open the corrected HTML file. You then use the Revalidate button to validate the changed code.

Q&A

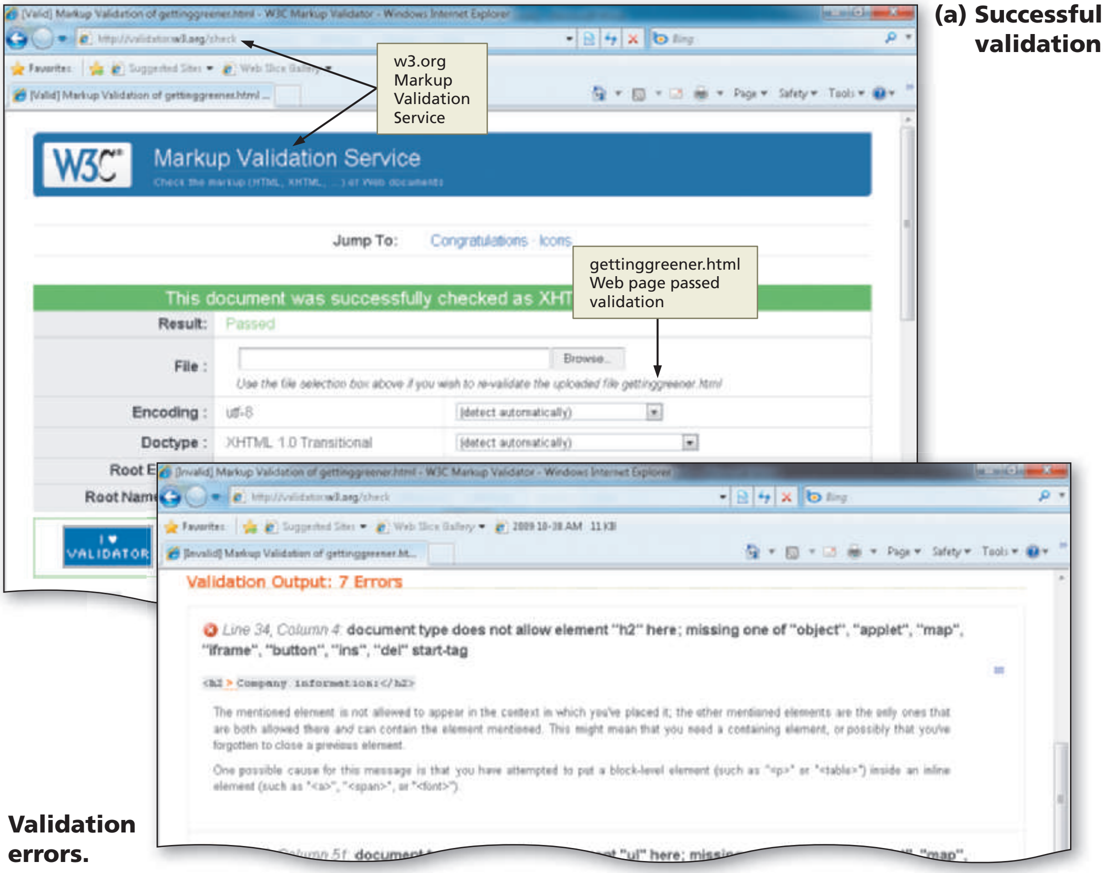
Why is the first error shown in Figure 3–23b on line 34, not line 32, where the </p> is missing?

Usually, the validator shows the exact error and line number on which the error occurs. Sometimes, however, the validator shows subsequent errors that occur as a result of the initial error. You may have to look a line prior to the first error line shown to find the initial error, as in this case.

BTW

Common Validation Errors

Common validation errors include not spelling tags, selectors, or attributes correctly; using uppercase letters (except for DOCTYPE); and not nesting tags correctly. A single coding error can cause many lines of errors during validation. For instance, Figure 3-23b shows a Web page that has seven errors caused by a single missing </p> tag on line 32.


[Valid] Markup Validation of gettinggreener.html - W3C Markup Validator - Windows Internet Explorer
http://validator.w3.org/check
Favorites
Suggested Sites
Web Slice Gallery
[Valid] Markup Validation of gettinggreener.html ...
Page
Safety
Tools
W3C
Markup Validation Service
Check the markup (HTML, XHTML, ...) of Web documents
Jump To:
Congratulations · Icons
Browse...
Root E
Root Nam
I ♥ VALIDATOR
[Invalid] Markup Validation of gettinggreener.html - W3C Markup Validator - Windows Internet Explorer
http://validator.w3.org/check
2009 10-38 AM 11 KB
[Invalid] Markup Validation of gettinggreener.ht...

w3.org Markup Validation Service

gettinggreener.html Web page passed validation

This document was successfully checked as XHT

Result: Passed

File :

Use the file selection box above if you wish to re-validate the uploaded file gettinggreener.html

Encoding : utf-8 (detect automatically)

Doctype : XHTML 1.0 Transitional (detect automatically)

(a) Successful validation.

Validation Output: 7 Errors

Line 34, Column 4: document type does not allow element "h2" here; missing one of "object", "applet", "map", "iframe", "button", "ins", "del" start-tag

```
<h2 > Company information:</h2>
```

The mentioned element is not allowed to appear in the context in which you've placed it; the other mentioned elements are the only ones that are both allowed there and can contain the element mentioned. This might mean that you need a containing element, or possibly that you've forgotten to close a previous element.

One possible cause for this message is that you have attempted to put a block-level element (such as "<p>" or "<table>") inside an inline element (such as "<a>", "<span>", or "<font>").

Column 51: document "ul" here; missi "map",

(b) Validation errors.

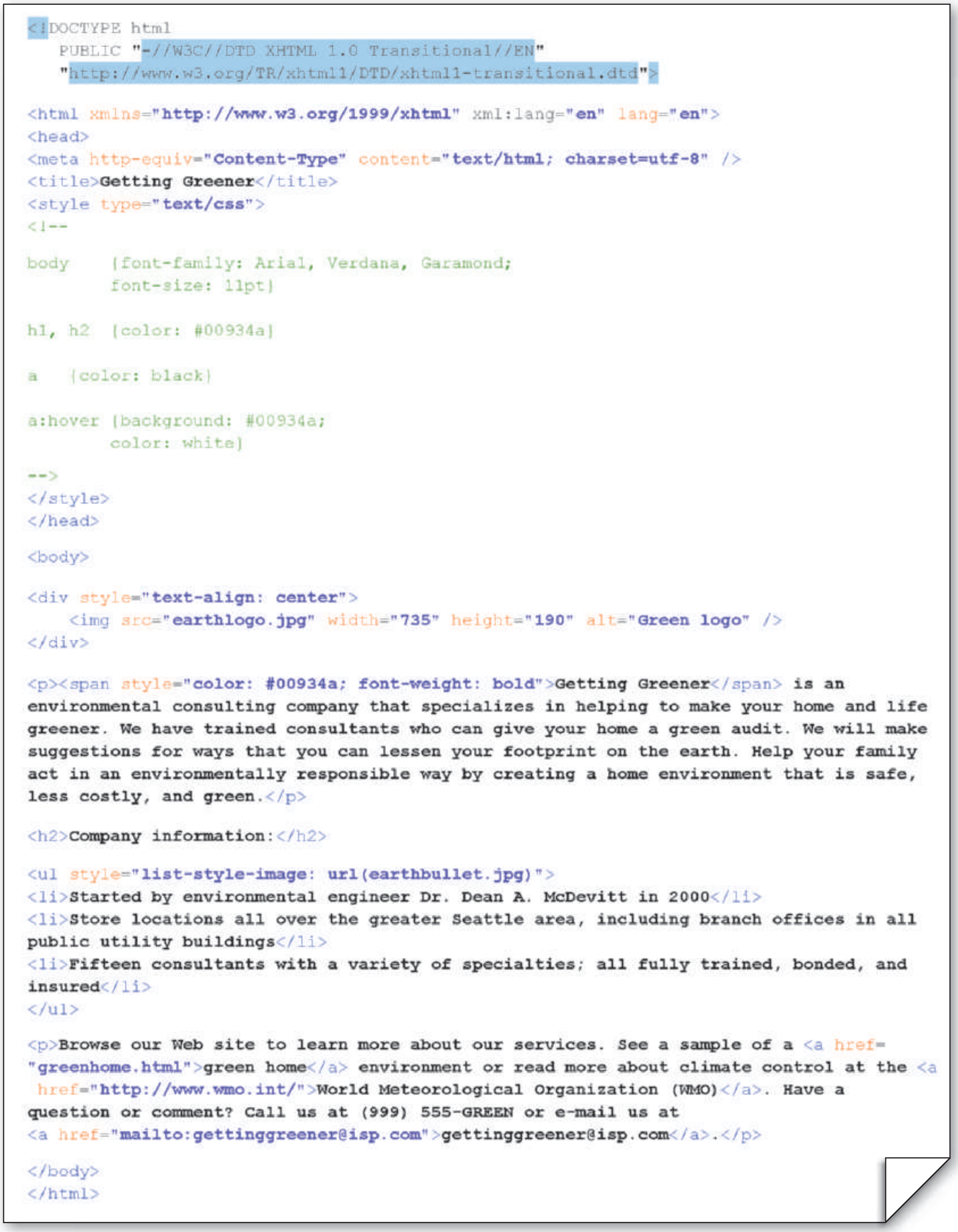
Figure 3–23

To Print an HTML File

After your HTML code has passed validation, it's a good idea to make a hard copy printout of it.

1. Click the Notepad++ button on the taskbar to activate the Notepad++ window.

2. Click File on the menu bar and then click the Print command, and then click the Print button to print a hard copy of the HTML code (Figure 3–24).



```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Getting Greener</title>
<style type="text/css">
<!--

body    {font-family: Arial, Verdana, Garamond;
        font-size: 11pt}

h1, h2  {color: #00934a}

a   {color: black}

a:hover {background: #00934a;
        color: white}

-->
</style>
</head>

<body>

<div style="text-align: center">
    <img src="earthlogo.jpg" width="735" height="190" alt="Green logo" />
</div>

<p><span style="color: #00934a; font-weight: bold">Getting Greener</span> is an
environmental consulting company that specializes in helping to make your home and life
greener. We have trained consultants who can give your home a green audit. We will make
suggestions for ways that you can lessen your footprint on the earth. Help your family
act in an environmentally responsible way by creating a home environment that is safe,
less costly, and green.</p>

<h2>Company information:</h2>

<ul style="list-style-image: url(earthbullet.jpg)">
<li>Started by environmental engineer Dr. Dean A. McDevitt in 2000</li>
<li>Store locations all over the greater Seattle area, including branch offices in all
public utility buildings</li>
<li>Fifteen consultants with a variety of specialties; all fully trained, bonded, and
insured</li>
</ul>

<p>Browse our Web site to learn more about our services. See a sample of a <a href=
"greenhome.html">green home</a> environment or read more about climate control at the <a
 href="http://www.wmo.int/">World Meteorological Organization (WMO)</a>. Have a
question or comment? Call us at (999) 555-GREEN or e-mail us at
<a href="mailto:gettinggreener@isp.com">gettinggreener@isp.com</a>.</p>

</body>
</html>
```

Figure 3–24

To View a Web Page

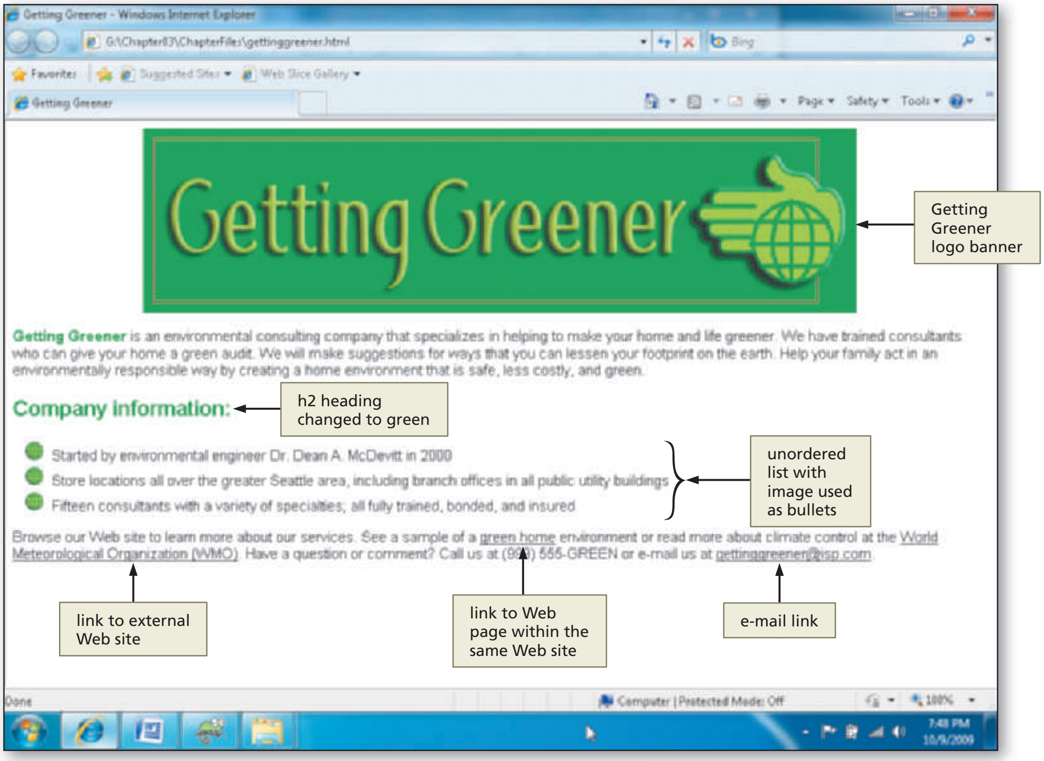
The following steps illustrate how to view the HTML file in a browser.

1. Open Internet Explorer.
2. In Internet Explorer, click the Address bar to select the URL in the Address bar.
3. Type `g:\Chapter03\ChapterFiles\gettinggreener.html` (or the specific path to your file) to display the new URL in the Address bar and then press the ENTER key (Figure 3–25).

Q&A

What if my page does not display correctly?

Check your gettinggreener.html code carefully in Notepad++ to make sure you have not made any typing errors or left anything out. Correct the errors, re-save the file, and try again.


Getting Greener - Windows Internet Explorer
G:\Chapter03\ChapterFiles\gettinggreener.html
Favorites
Suggested Sites
Web Slice Gallery
Getting Greener
Page
Safety
Tools
Getting Greener
Done
Computer | Protected Mode: Off
100%
7:48 PM
10/9/2009

Getting Greener is an environmental consulting company that specializes in helping to make your home and life greener. We have trained consultants who can give your home a green audit. We will make suggestions for ways that you can lessen your footprint on the earth. Help your family act in an environmentally responsible way by creating a home environment that is safe, less costly, and green.

Company information:

- Started by environmental engineer Dr. Dean A. McDevitt in 2000
- Store locations all over the greater Seattle area, including branch offices in all public utility buildings
- Fifteen consultants with a variety of specialties; all fully trained, bonded, and insured

Browse our Web site to learn more about our services. See a sample of a green home environment or read more about climate control at the World Meteorological Organization (WMO). Have a question or comment? Call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com.

Getting Greener logo banner

h2 heading changed to green

unordered list with image used as bullets

link to external Web site

link to Web page within the same Web site

e-mail link

Figure 3–25

Plan Ahead

Test your Web page.

- **Determine what you need to test**. It is important to have a test plan when you test your Web pages. Planning what to test assures that all functionality of the Web page is tested. You should specifically test the display of the Web page itself and test that all of the links on the Web page work correctly.
- **Test the Web page as displayed in the browser**. Certainly the first part of testing is to verify that your Web page is displayed in the browser as intended. Ask yourself the following questions: (1) Are the images all displayed where they should be? (2) Is the text presented as intended? (3) Are the links displayed as intended?
- **Test the links**. In your testing plan, you need to address all of the links that you have inserted into the Web page. It is especially important to test external links, that is, those over which you have no control. If you need to link outside of the Web pages that you developed, then periodically test the links to make sure they are still valid. It helps to create a matrix that includes three columns for information. The first column contains information about all of the links on the Web page. The second column contains information about the intended results of those links. The third column is the one that you complete during testing. If the link tests as it should, you can note that by putting a check mark in the third column. If the link test result is not as it should be, you can note in the third column what the result is. Using a technique such as this makes it easier to do thorough testing. When you know what the results of the test should be, it helps you verify valid links. This is an excellent technique to use when there are different people developing and testing the Web pages. The matrix will notify the developers of the test results clearly.

BTW

Web Page Testing
An important part of Web page development is testing Web page links. For more information about link testing, search the Web for key words such as "HTML testing" or look at the World Wide Web Consortium (w3.org) Web site.

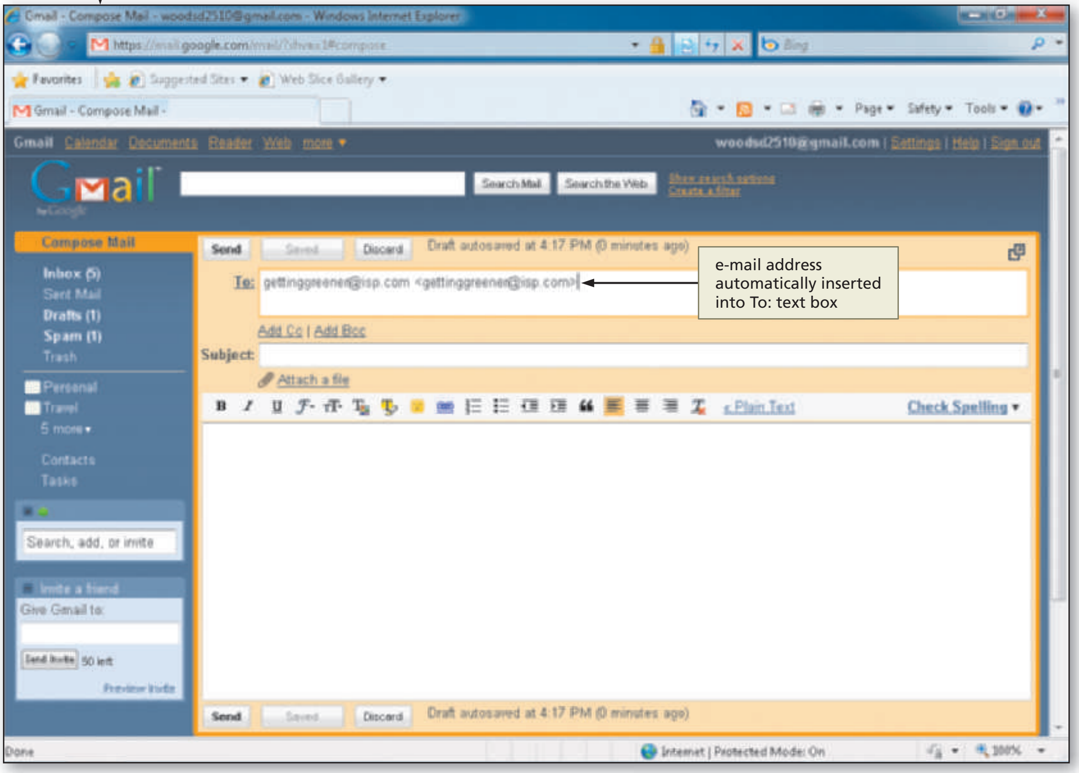
To Test Links on a Web Page

The following steps show how to test the links in the Getting Greener home page to verify that they work correctly.

1

- With the Getting Greener home page displayed in the browser, point to the e-mail link, getting-greener@isp.com and then click the link to open the default e-mail program with the address getting-greener@isp.com in the To: text box, as shown in Figure 3–26.
- Click the Close button in the Compose Mail window. If a dialog box asks if you want to save changes, click No.

Compose Mail window



To: gettinggreener@isp.com <gettinggreener@isp.com>

e-mail address automatically inserted into To: text box

Figure 3–26

2

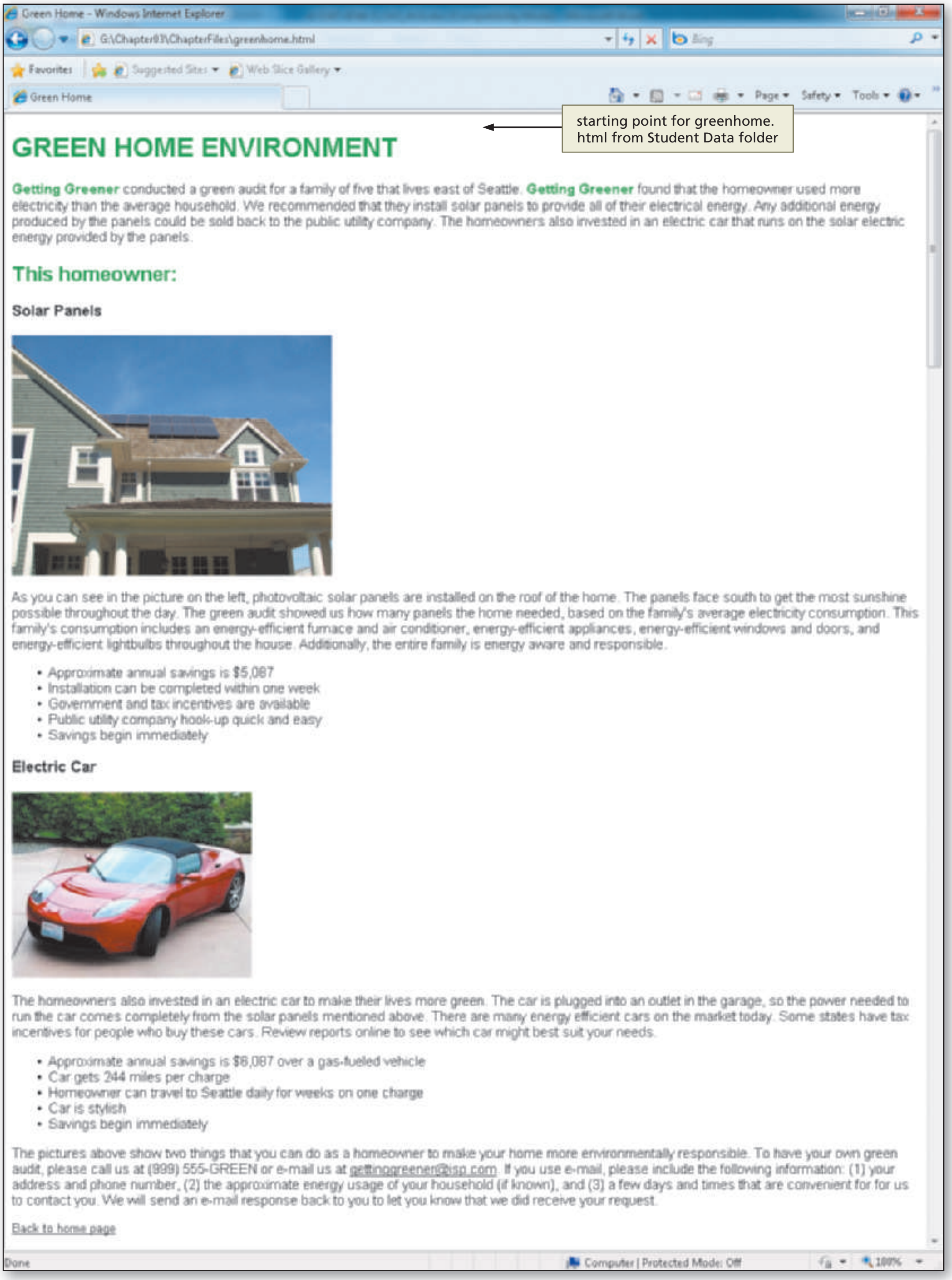
- Click the WMO link to test the external link on the Web page. Close the browser window or use the Back button to return to the Getting Greener home page.

- With the USB flash drive in drive G, point to the green home link and click the link. The secondary Web page, greenhome.html, is displayed (Figure 3–27), although it is not completed.

Q&A

My e-mail does not work when I click the link. Why does that happen?

You may not have an e-mail client installed on your computer or your school's servers. You therefore may not be able to test this e-mail link.


Green Home - Windows Internet Explorer
G:\Chapter03\ChapterFiles\greenhome.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Green Home
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

starting point for greenhome.html from Student Data folder

GREEN HOME ENVIRONMENT

Getting Greener conducted a green audit for a family of five that lives east of Seattle. **Getting Greener** found that the homeowner used more electricity than the average household. We recommended that they install solar panels to provide all of their electrical energy. Any additional energy produced by the panels could be sold back to the public utility company. The homeowners also invested in an electric car that runs on the solar electric energy provided by the panels.

This homeowner:

Solar Panels

As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels the home needed, based on the family's average electricity consumption. This family's consumption includes an energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.

- Approximate annual savings is $5,087
- Installation can be completed within one week
- Government and tax incentives are available
- Public utility company hook-up quick and easy
- Savings begin immediately

Electric Car

The homeowners also invested in an electric car to make their lives more green. The car is plugged into an outlet in the garage, so the power needed to run the car comes completely from the solar panels mentioned above. There are many energy efficient cars on the market today. Some states have tax incentives for people who buy these cars. Review reports online to see which car might best suit your needs.

- Approximate annual savings is $8,087 over a gas-fueled vehicle
- Car gets 244 miles per charge
- Homeowner can travel to Seattle daily for weeks on one charge
- Car is stylish
- Savings begin immediately

The pictures above show two things that you can do as a homeowner to make your home more environmentally responsible. To have your own green audit, please call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com. If you use e-mail, please include the following information: (1) your address and phone number, (2) the approximate energy usage of your household (if known), and (3) a few days and times that are convenient for for us to contact you. We will send an e-mail response back to you to let you know that we did receive your request.

Back to home page

Figure 3–27

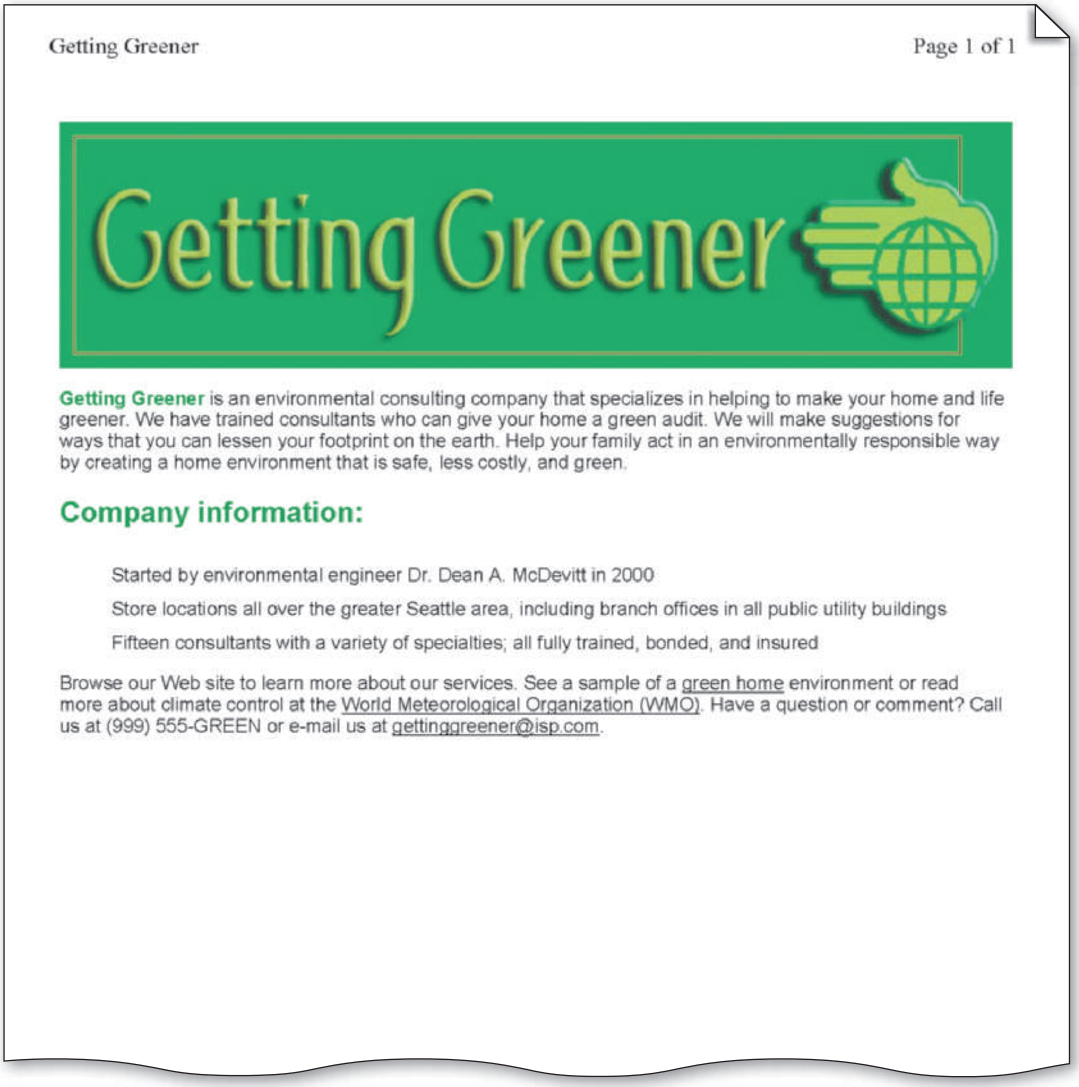
To Print a Web Page

Print the Web page for future reference.

1. Close the browser window or click the Back button on the Standard toolbar to return to the Getting Greener home page.

2. Click the Print icon on the Command bar.

3. Once the Getting Greener home page is printed (Figure 3–28), click the green home link to return to that Web page.



Getting Greener Page 1 of 1

Getting Greener is an environmental consulting company that specializes in helping to make your home and life greener. We have trained consultants who can give your home a green audit. We will make suggestions for ways that you can lessen your footprint on the earth. Help your family act in an environmentally responsible way by creating a home environment that is safe, less costly, and green.

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Store locations all over the greater Seattle area, including branch offices in all public utility buildings

Fifteen consultants with a variety of specialties; all fully trained, bonded, and insured

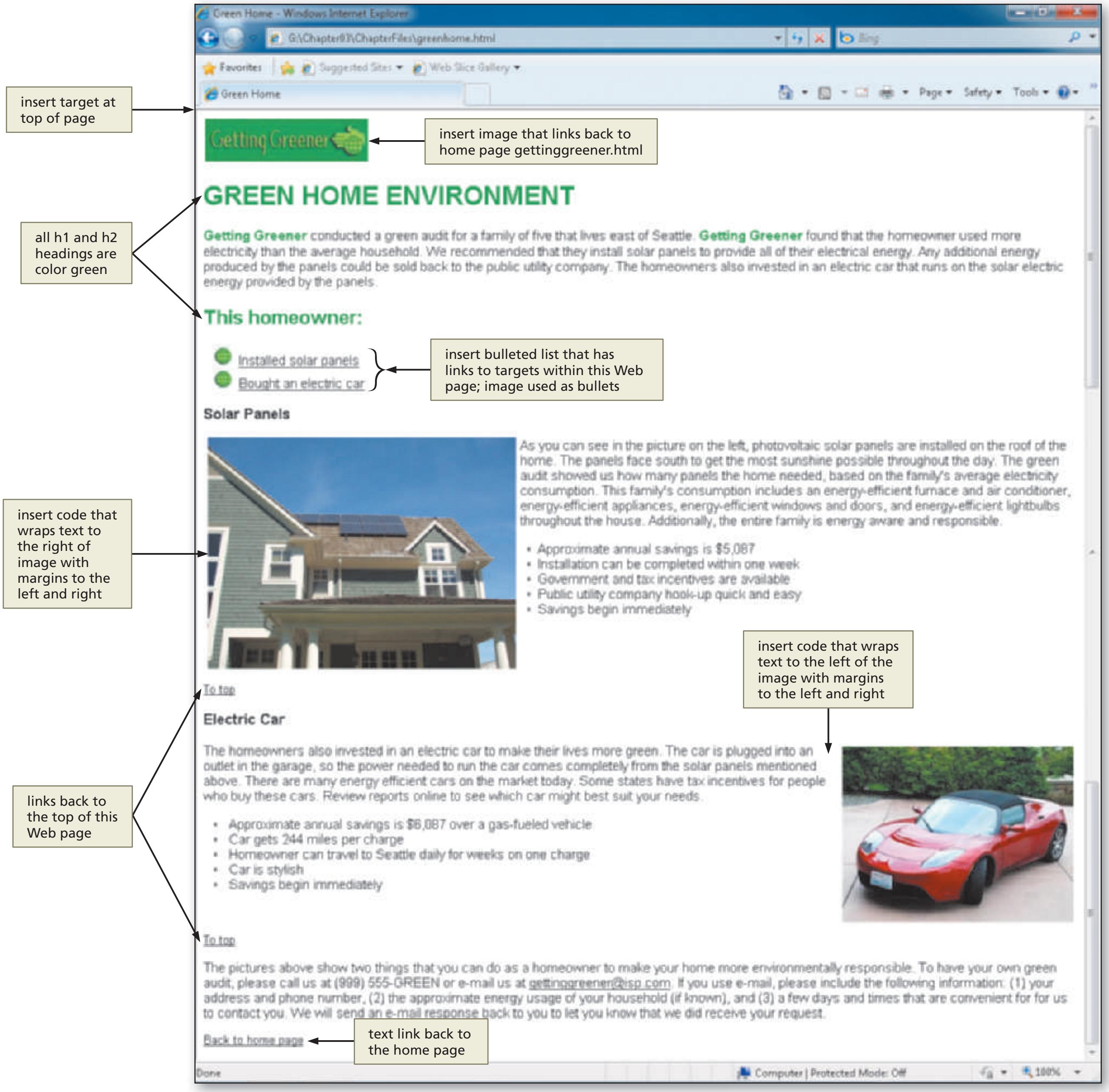
Browse our Web site to learn more about our services. See a sample of a green home environment or read more about climate control at the World Meteorological Organization (WMO). Have a question or comment? Call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com.

Figure 3–28

Editing the Second Web Page

With the home page complete, the next step is to enhance the Green Home Web page. For this part of the project, you will download an existing Web page file and edit the HTML code to create the Web page, as shown in Figure 3–29 on the next page. You will add two images and set text to wrap around the images. You also will add two additional types of links: links within the same Web page and an image link to a Web page in the same Web site.

As you have learned, the <a> tag used to create a link must specify the page, file, or location to which it links. In the case of a link within a Web page, the <a> tag specifies a **target**, or named location, in the same file. Before adding the links and targets in the Green Home Web page, you need to add an unordered (bulleted) list that uses the


Green Home - Windows Internet Explorer
G:\Chapter03\ChapterFiles\greenhome.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Green Home
Page
Safety
Tools
Getting Greener
insert target at top of page
insert image that links back to home page gettinggreener.html
all h1 and h2 headings are color green
insert bulleted list that has links to targets within this Web page; image used as bullets
insert code that wraps text to the right of the image with margins to the left and right
insert code that wraps text to the left of the image with margins to the left and right
links back to the top of this Web page
text link back to the home page
Done
Computer | Protected Mode: Off
100%

GREEN HOME ENVIRONMENT

Getting Greener conducted a green audit for a family of five that lives east of Seattle. Getting Greener found that the homeowner used more electricity than the average household. We recommended that they install solar panels to provide all of their electrical energy. Any additional energy produced by the panels could be sold back to the public utility company. The homeowners also invested in an electric car that runs on the solar electric energy provided by the panels.

This homeowner:

- Installed solar panels
- Bought an electric car

Solar Panels

As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels the home needed, based on the family's average electricity consumption. This family's consumption includes an energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.

- Approximate annual savings is $5,087
- Installation can be completed within one week
- Government and tax incentives are available
- Public utility company hook-up quick and easy
- Savings begin immediately

To top

Electric Car

The homeowners also invested in an electric car to make their lives more green. The car is plugged into an outlet in the garage, so the power needed to run the car comes completely from the solar panels mentioned above. There are many energy efficient cars on the market today. Some states have tax incentives for people who buy these cars. Review reports online to see which car might best suit your needs.

- Approximate annual savings is $6,087 over a gas-fueled vehicle
- Car gets 244 miles per charge
- Homeowner can travel to Seattle daily for weeks on one charge
- Car is stylish
- Savings begin immediately

To top

The pictures above show two things that you can do as a homeowner to make your home more environmentally responsible. To have your own green audit, please call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com. If you use e-mail, please include the following information: (1) your address and phone number, (2) the approximate energy usage of your household (if known), and (3) a few days and times that are convenient for for us to contact you. We will send an e-mail response back to you to let you know that we did receive your request.

Back to home page

Figure 3–29

BTW

Web Page Improvement
Web page development is an ongoing process. In Web page development, you create a Web page, view it in a browser, and then look for ways to improve the appearance of the page.

(earthbullet.jpg) image as the bullets. This list contains two items — Installed solar panels and Bought an electric car — and must be added to the page. The list items will serve as the links that are directed to the heading at the top of each major section of the Green Home Web page. When clicked, these links will move the Web page visitor to the targets, which are named solar and car, respectively.

Because the Web page is so long, it is a good design practice to provide users with a quick way to move back to the top of the Web page without scrolling back. For this purpose, the Web page includes two text links named To top. These links are located just above the Solar Panels and Electric Car headings. When clicked, any To top link takes the Web page visitor back to the top of the page.

To complete the Green Home Web page, you will create an image link, so users can click the back to home page link to return to the Getting Greener home page. There is already a text link inserted at the bottom of the Web page that can be used to return to the home page. It is always important to provide a link back to the home page from subsequent Web pages. Your visitors should not have to use the Back button on the browser to return to the home page.

To Open an HTML File

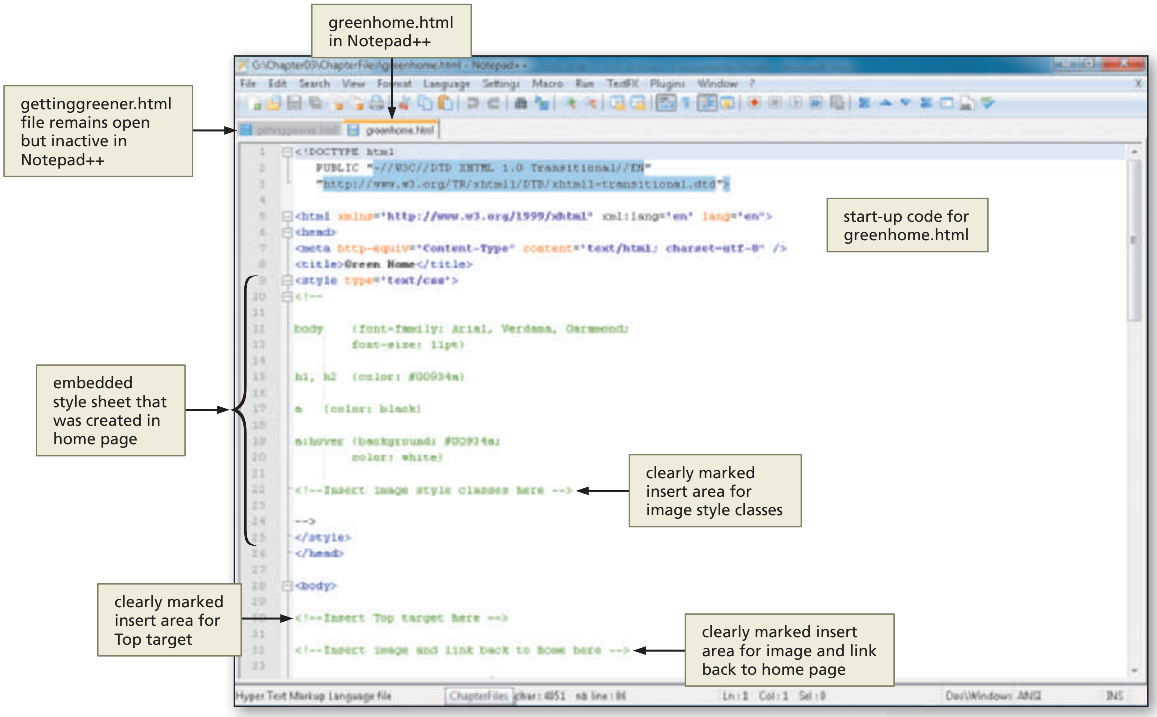
The following steps illustrate how to open the greenhome.html file in Notepad++.

1. Click the Notepad++ button on the taskbar.
2. With a USB flash drive connected to one of the computer's USB ports, click File on the menu bar and then click Open.
3. Click Computer in the navigation pane to display a list of available drives.
4. If necessary, scroll until UDISK 2.0 (G:) is displayed in the list of available drives.
5. If necessary, navigate to the USB drive (G:). Click the Chapter03 folder, and then click the ChapterFiles folder in the list of available folders.
6. Click greenhome.html in the list of files.
7. Click the Open button in the Open dialog box to display the HTML code for the greenhome.html Web page, as shown in Figure 3–30.

Q&A

If I open another file in Notepad++, will I lose the gettinggreener.html file?

The last saved version of gettinggreener.html will still be on the USB drive, even though another HTML file is open in Notepad++. Additionally, even after you open the new file in Notepad++ the other file (gettinggreener.html) remains open in another tab in Notepad++. That is one of the benefits of Notepad++; you can have more than one file open at the same time.



```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Green Home</title>
<style type="text/css">
<!--

body    {font-family: Arial, Verdana, Garamond;
         font-size: 11pt}

h1, h2  {color: #00934a}

a   {color: black}

a:hover {background: #00934a;
         color: white}

<!--Insert image style classes here -->

-->
</style>
</head>

<body>

<!--Insert Top target here -->

<!--Insert image and link back to home here -->
```

greenhome.html in Notepad++
gettinggreener.html file remains open but inactive in Notepad++
start-up code for greenhome.html
embedded style sheet that was created in home page
clearly marked insert area for image style classes
clearly marked insert area for Top target
clearly marked insert area for image and link back to home page
G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
gettinggreener.html
greenhome.html
Hyper Text Markup Language file
ChapterFiles
char : 4051 nb line : 86
Ln : 1 Col : 1 Sel : 0
Dos\Windows ANSI
INS

Figure 3–30

Plan Ahead

- **Determine what graphic images will be used and how to format them**. They say that a picture is worth a thousand words. In Web development, it sometimes makes your message clearer and more attractive if you use pictures. In the planning stage, you have to consider which pictures will help (and not hinder) your content. You also have to decide how to align the text relative to the pictures. Sometimes it makes sense to put the text above or below the picture. It might also be appropriate to wrap the text around the picture. You need to determine all of these specifics before you create the Web page.
- **Identify what links are needed on a long Web page**. When you have an especially long Web page (one in which the visitor has to use the PAGE DOWN key), you should provide links within the Web page for easier navigation. You need to decide where it makes sense to put page breaks. Often it is best to put a link to major topics within the Web page. Make sure that the Web page visitor can easily move to those areas by providing links toward the top of the Web page.
- **Use links back to the top of the page**. Another good technique for long Web pages is to allow visitors to link back to the top of the Web page easily from several places on the page. Providing links back to the top of a long Web page makes browsing more enjoyable.
- **Create a link back to the home page**. If possible, you should always provide a link from secondary Web pages back to the home page. Your visitors should not have to use the Back button on the browser to get back to the home page of the Web site. A common Web development practice is to use a company logo (often a smaller version) to navigate back to the home page. Again, the purpose of this image link as well as other links mentioned here is to make your Web site easy to navigate.

Working with Classes in Style Statements

Notice that the greenhome.html file contains the same embedded style sheet that you created in the gettinggreener.html file earlier in this chapter. For the second Web page, you will add one additional element (img) to the embedded style sheet. In order to utilize the image element as needed on the second Web page (greenhome.html), you need to understand the concept of classes as used with CSS. CSS classes give you more control over the style on a Web page.

Recall that a style statement is made up of a selector and a declaration. The part of the style statement that identifies the page elements is called the selector.

```
a    {color: black}
```

The example above shows a section of the embedded style sheet used in the greenhome.html Web page. The selector in the example is the a (the anchor or link). The part of the style statement that identifies how the element(s) should appear is called the declaration. In this example, the declaration is everything between the curly brackets. This includes the property named color and the value named black.

There is another level of control that you can have over the styles that display on a Web page. For example, rather than having all paragraphs of text appear in the same style, you might want the style of the first paragraph on a page to be different from the other paragraphs of text. To gain more control for these purposes, you can define specific elements of an HTML file as a category, or **class**. You then can create a specific style for each class. Using classes in CSS thus allows you to apply styles to HTML tags selectively.

Using a class, for example, you could apply one style to a beginning paragraph and a different style to a closing paragraph on the same Web page.

Defining and using classes in CSS is a two-step process. First, any elements that belong to the class are marked by adding the tag:

```
class="classname"
```

where classname is the identifier or name of the class.

Any word can be used as a class name, as long as it does not contain spaces. In general, however, you should use descriptive names that illustrate the purpose of a class (for example, beginning, legallanguage, or copyrighttext), rather than names that describe the appearance of the class (for example, bluetext, largeritalic, or boldsmallarial). Using names that describe the purpose makes the code easier to read and more flexible. For this chapter, you will use the class names align-left and align-right in the img element. This immediately tells someone reviewing this code that the styles defined by those classes are used to align images either left or right.

After you have named the classes, you can use the class names in a selector and define a specific style for the class. For example, within the <style> tags in an embedded or external style sheet, you enter a style statement in the format:

```
p.beginning {color: red;
            font: 20pt}
```

where the p indicates that the class applies to a specific category of the paragraph tag and beginning is the class name. The tag and the class name are separated by a period. Together, the tag and the class name make up the selector for the style statement. The declaration then lists the property-value statements that should be applied to elements in the class.

For instance, if you want to display the beginning paragraph text in a 20-point red font, you would add a style statement like the one shown in the sample code in Figure 3–31a on the next page and then use the tag, <p class="beginning">, to apply the style defined by the declaration associated with the p.beginning selector. If the paragraph <p> tag is used without the class name, the paragraph appears in the default format or other format as defined by a style. To use this class name in an HTML tag, you would type:

```
<p class="beginning">
```

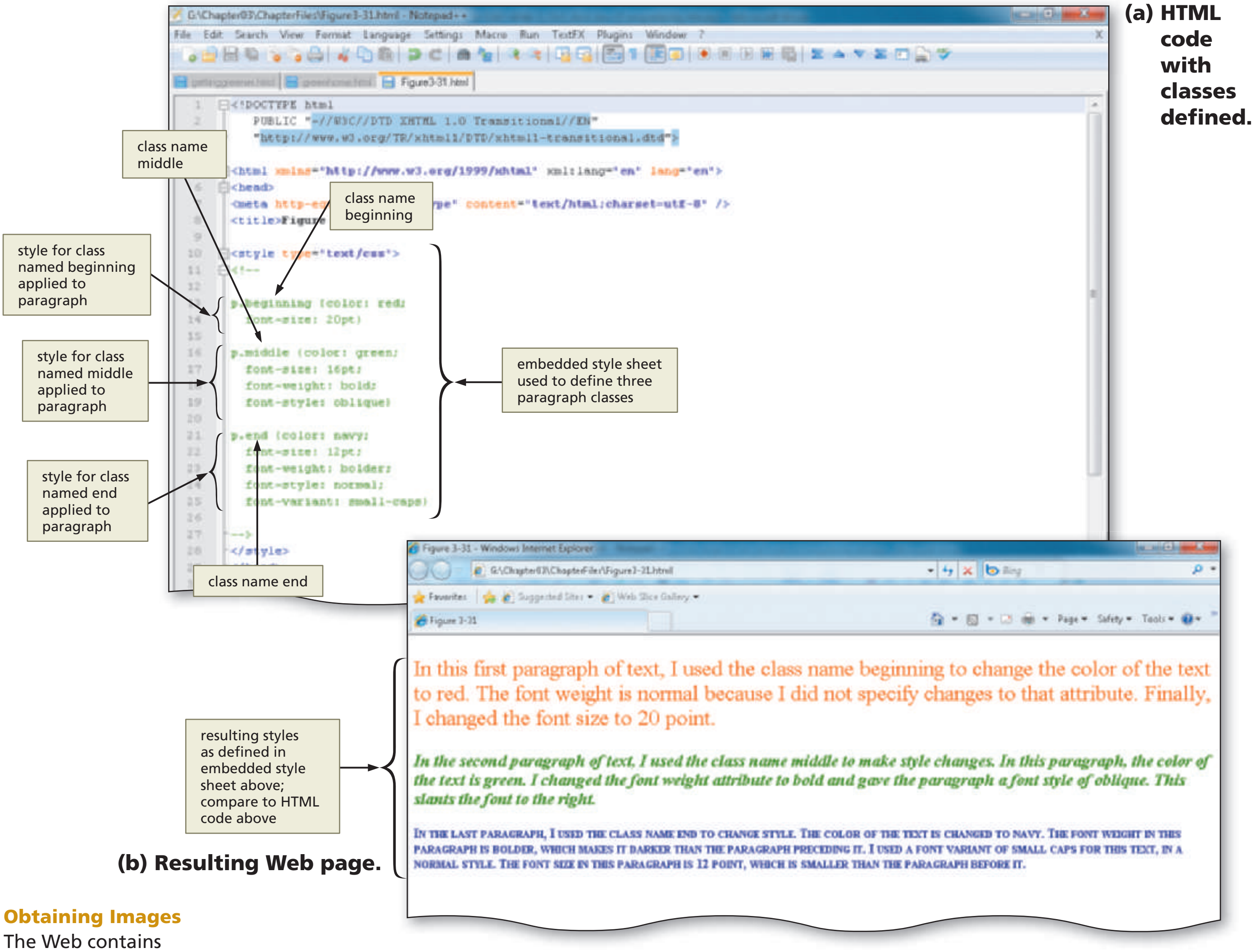
as the code.

In addition to the style for the beginning paragraphs, Figure 3–31a shows an example of HTML code with classes defined for and applied to the middle and end paragraphs. Figure 3–31b shows how the resulting Web page appears in the browser.

You can add as many classes to your Web pages as you need. This is a very useful Web development technique that allows flexibility and variety in a Web page. One drawback is that classes can be defined for use only in embedded or external style sheets. Because the purpose of using classes is to format a group of elements, not individual elements, classes do not work in inline styles.

The example below shows another section of the embedded style sheet in the greenhome.html Web page. In this example, you use a pseudo-class to have more control over the hover state in the anchor element.

```
a:hover     {background: #00934a;
            color: white}
```


G:\Chapter03\ChapterFiles\Figure3-31.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
Figure3-31.html
class name middle
class name beginning
style for class named beginning applied to paragraph
style for class named middle applied to paragraph
style for class named end applied to paragraph
embedded style sheet used to define three paragraph classes
class name end
Figure 3-31 - Windows Internet Explorer
G:\Chapter03\ChapterFiles\Figure3-31.html
Favorites
Suggested Sites
Web Slice Gallery
Figure 3-31
Page
Safety
Tools
resulting styles as defined in embedded style sheet above; compare to HTML code above

```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-eq          pe" content="text/html;charset=utf-8" />
<title>Figure

<style type="text/css">
<!--

p.beginning {color: red;
  font-size: 20pt}

p.middle {color: green;
  font-size: 16pt;
  font-weight: bold;
  font-style: oblique}

p.end {color: navy;
  font-size: 12pt;
  font-weight: bolder;
  font-style: normal;
  font-variant: small-caps}

-->
</style>
```

In this first paragraph of text, I used the class name beginning to change the color of the text to red. The font weight is normal because I did not specify changes to that attribute. Finally, I changed the font size to 20 point.

In the second paragraph of text, I used the class name middle to make style changes. In this paragraph, the color of the text is green. I changed the font weight attribute to bold and gave the paragraph a font style of oblique. This slants the font to the right.

IN THE LAST PARAGRAPH, I USED THE CLASS NAME END TO CHANGE STYLE. THE COLOR OF THE TEXT IS CHANGED TO NAVY. THE FONT WEIGHT IN THIS PARAGRAPH IS BOLDER, WHICH MAKES IT DARKER THAN THE PARAGRAPH PRECEDING IT. I USED A FONT VARIANT OF SMALL CAPS FOR THIS TEXT, IN A NORMAL STYLE. THE FONT SIZE IN THIS PARAGRAPH IS 12 POINT, WHICH IS SMALLER THAN THE PARAGRAPH BEFORE IT.

(a) HTML code with classes defined.

(b) Resulting Web page.

Figure 3–31

BTW

Obtaining Images

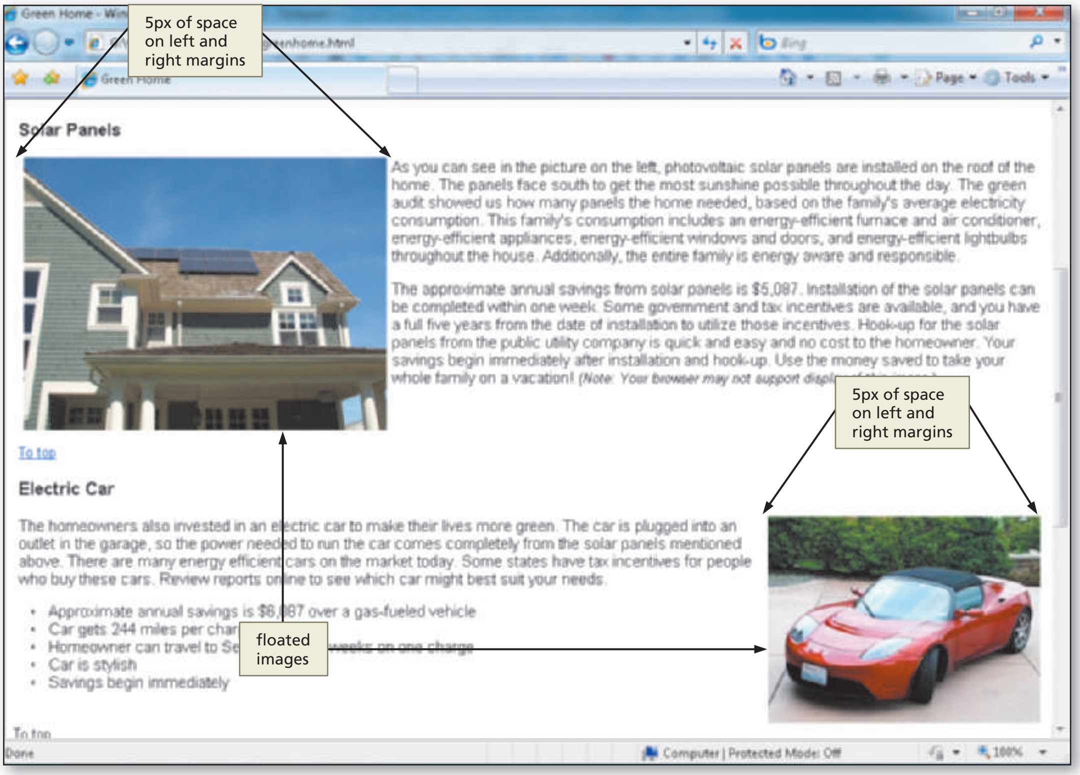
The Web contains thousands of image files that can be downloaded for free and used for noncommercial purposes. Search for “free GIFs” or “free Web images” to find images. If you find a graphic you want to use, right-click the image, click Save Picture As on the shortcut menu, and then save the image to your computer. Many applications come with clip art that can be used on Web pages. Other types of digital images, such as images scanned by a scanner or pictures taken with a digital camera, also can be included on a Web page. You also can create images using a paint or image-editing program. Regardless of where you get the images, always follow copyright rules and regulations.

Adding an Image with Wrapped Text

As shown in Appendix A, the <img> tag has many attributes, including attributes to specify height, width, and alternative text.

Alignment also is a key consideration when inserting an image. Alignment can give an image and the surrounding text completely different looks. Figure 3–32 shows two images, the first of which is left-aligned, which wraps any text to the right of the image. In this chapter, you use an embedded style sheet to align (float) the image to the left or right and wrap the text to the right or left of the positioned image. You also add some space (margins) around the image so that it is separated from the text. To accomplish these tasks, you use the float and margin properties.

The float property indicates in which direction (in this case left and right) to display (or float) an element being inserted on a Web page. **Floating** an element like an image allows the element to move to the side indicated in the float statement. As a result of that repositioning (floating), the other elements, like text, are moved up and allowed to wrap next to the floated element. When you first open the greenhome.html file in Internet Explorer (Figure 3–27 on page HTML 126), both images are left-aligned. Notice that the text is aligned beneath each image, leaving a lot of white space to the right of the images. The text does not surround the images in Figure 3–27, as it does in Figure 3–29 on page HTML 128. You achieve this text wrap by using the float property. In addition to floating the element, you should also provide some space around the image. The margin-left and margin-right properties indicate how many pixels of space to put around each element. In this case, you will have five pixels of space around the right and left of each image. Figure 3–32 shows examples of images with margin spacing.



Green Home - Win

greenhome.html

Solar Panels

As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels the home needed, based on the family's average electricity consumption. This family's consumption includes an energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.

The approximate annual savings from solar panels is $5,087. Installation of the solar panels can be completed within one week. Some government and tax incentives are available, and you have a full five years from the date of installation to utilize those incentives. Hook-up for the solar panels from the public utility company is quick and easy and no cost to the homeowner. Your savings begin immediately after installation and hook-up. Use the money saved to take your whole family on a vacation! *(Note: Your browser may not support displ*

To top

Electric Car

The homeowners also invested in an electric car to make their lives more green. The car is plugged into an outlet in the garage, so the power needed to run the car comes completely from the solar panels mentioned above. There are many energy efficient cars on the market today. Some states have tax incentives for people who buy these cars. Review reports online to see which car might best suit your needs.

- Approximate annual savings is $6,087 over a gas-fueled vehicle
- Car gets 244 miles per char
- Homeowner can travel to Se weeks on one charge
- Car is stylish
- Savings begin immediately

To top

Done

Computer | Protected Mode: Off

5px of space on left and right margins

5px of space on left and right margins

floated images

Figure 3–32 Left- and right-aligned images.

There are several ways to align text around images using styles. You can do this with an inline style (HTML code shown below) or with an embedded style sheet. The format of the HTML code to add the left- and right-aligned images with an inline style is:

```
<img style="float: left; margin-left: 5px; margin-right:
5px" src="solar.jpg" width="349" height="261" alt="Solar
Panels" />
<img style="float: right; margin-left: 5px; margin-right:
5px" src="car.jpg" width="261" height="202" alt="Electric car"
align="right" />
```

where the float property tells the browser on which side to float the image element, and the margin properties tell the browser how much space (5 pixels) to add around the image. Using an inline style is a perfectly acceptable way to float an image element, wrap the text, and add margins of space around the image, but there may be a more efficient way to do it.

If you have numerous images to float on the page, it is better to use classes in an embedded style sheet than to use inline styles.

This project uses an embedded style sheet with a two-step approach. First, you will insert the class names align-left and align-right into the image <img> tags that will use the classes. Then, you add those class names (align-left and align-right) to an image <img> element in the embedded style sheet. To use this two-step approach, first you add the HTML code for the left-align and right-align class names in the <img> tag itself within the Web page content:

```
<img class="align-left" src="solar.jpg" width="348"
 height="261" alt="Solar panels" />
<img class="align-right" src="car.jpg" width="261" height="202"
 alt="Electric car" />
```

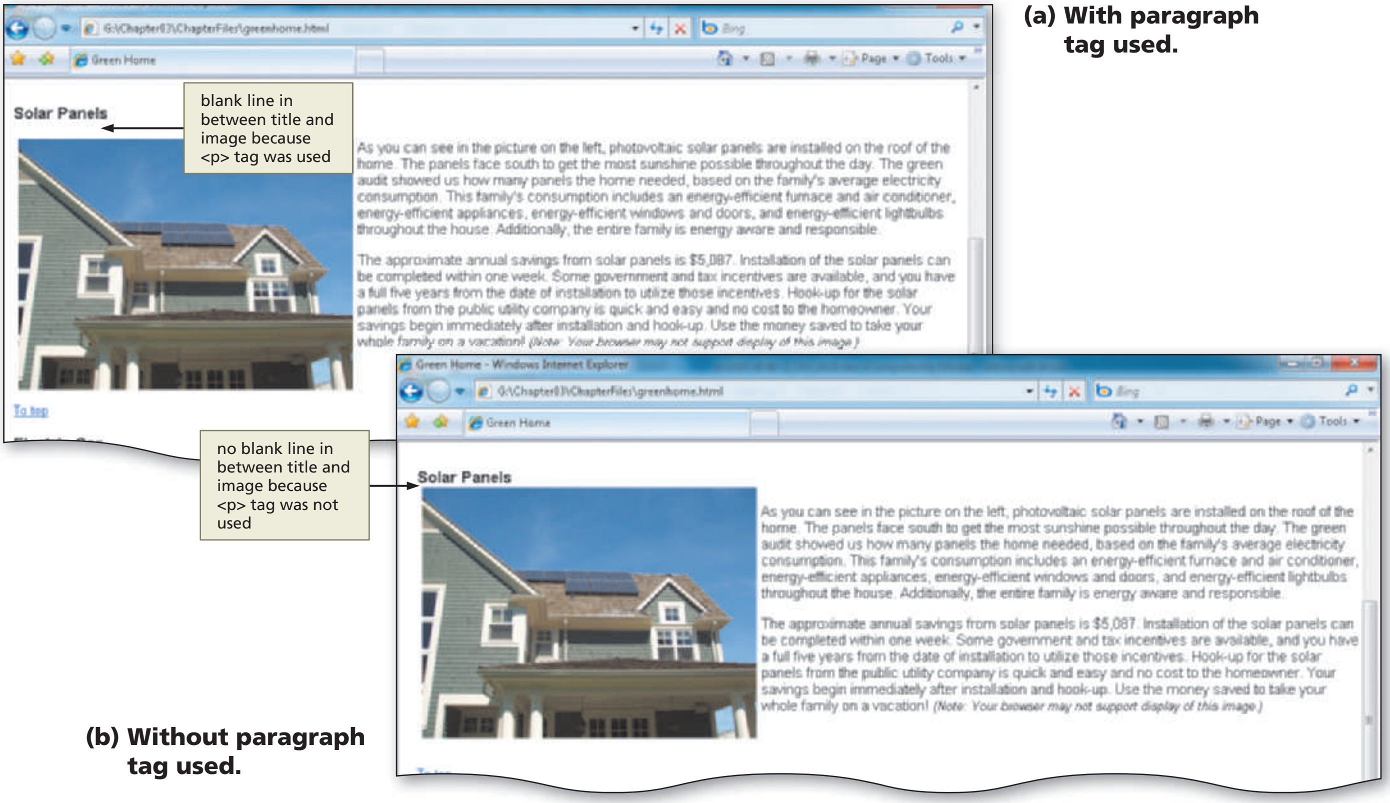
which aligns the first image to the left, and the second image to the right.

Second, you have to insert the img (image) property in the embedded style sheet and add those two class names (align-left and align-right) where you define the style that you will use for images. This involves the following code that is inserted into the embedded style sheet:

```
img.align-left    {float: left;
                   margin-left: 5px;
                   margin-right: 5px}
img.align-right   {float: right;
                   margin-left: 5px;
                   margin-right: 5px}
```

where img is the property element and align-right and align-left are the class names. The class names align-right and align-left are arbitrary; you could name them anything. When naming classes, use names that make sense. Notice that the class names are separated from the element img with a period.

Another way to control space around images is to use the paragraph <p> tag. Remember that a paragraph tag inserts a blank line above the next object (text or image) after the paragraph tag. Figure 3–33a shows an example of using a <p> tag before inserting the Solar image, whereas Figure 3–33b shows an example of not using a <p> tag before the <img> tag. In this project, we will use the paragraph tag before the <img> tag to give more space between the image and the heading.



Solar Panels

As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels the home needed, based on the family's average electricity consumption. This family's consumption includes an energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.

The approximate annual savings from solar panels is $5,087. Installation of the solar panels can be completed within one week. Some government and tax incentives are available, and you have a full five years from the date of installation to utilize those incentives. Hook-up for the solar panels from the public utility company is quick and easy and no cost to the homeowner. Your savings begin immediately after installation and hook-up. Use the money saved to take your whole family on a vacation! *(Note: Your browser may not support display of this image.)*

blank line in between title and image because <p> tag was used

(a) With paragraph tag used.

Green Home - Windows Internet Explorer
G:\Chapter03\ChapterFiles\greenhome.html
Bing
Green Home
Page
Tools

Solar Panels

As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels the home needed, based on the family's average electricity consumption. This family's consumption includes an energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.

The approximate annual savings from solar panels is $5,087. Installation of the solar panels can be completed within one week. Some government and tax incentives are available, and you have a full five years from the date of installation to utilize those incentives. Hook-up for the solar panels from the public utility company is quick and easy and no cost to the homeowner. Your savings begin immediately after installation and hook-up. Use the money saved to take your whole family on a vacation! *(Note: Your browser may not support display of this image.)*

no blank line in between title and image because <p> tag was not used

(b) Without paragraph tag used.

Figure 3–33

Using Thumbnail Images

Many Web developers use thumbnail images to improve page loading time. A **thumbnail image** is a smaller version of the image itself. The thumbnail is used as a link that, when clicked, will load the full-sized image. Figure 3–34a shows an example of a thumbnail image. When the image is clicked, the browser loads the full-sized image (Figure 3–34b). Loading images can take a long time, depending on the size and the complexity of the image. Using a thumbnail image gives a visitor the opportunity to decide whether to view the full-sized image.

To create a thumbnail version of an image, the image can be resized to a smaller size in a paint or image-editing program and then saved with a different file name. The thumbnail image then is added to a Web page as an image link to the larger version of the image. The HTML code to add a thumbnail image that links to a larger image takes the form:

```
<a href="largeimage.gif"><img src="thumbnail.gif" /></a>
```

where largeimage.gif is the name of the full-sized image and thumbnail.gif is the name of the smaller version of the image. In the case of this simple thumbnail example, a visitor clicks the thumbnail image to view the larger image, but there is no "return" button or link on the full-sized image Web page for the user to return to the original Web page. In this case, the visitor would have to use the Back button on the browser's Standard toolbar to return to the original Web page displaying the thumbnail image. For most Web development projects, however, you always want to provide a link for the visitors and not force them to use the Back button.

BTW

Thumbnail Size

The size of a thumbnail varies depending on the clarity of the image and its purpose. Generally a 100–150 pixel height and 100–150 pixel width is an appropriate size. If you need the visitor to see more of the image even in the small size, then a larger thumbnail is fine. If a thumbnail is easily distinguishable at a very small size (100 x 100), then that size is appropriate. Also, you should never resize an image using the height and width attributes in the HTML code. You should resize the image in an editing program and save it with a new file name.

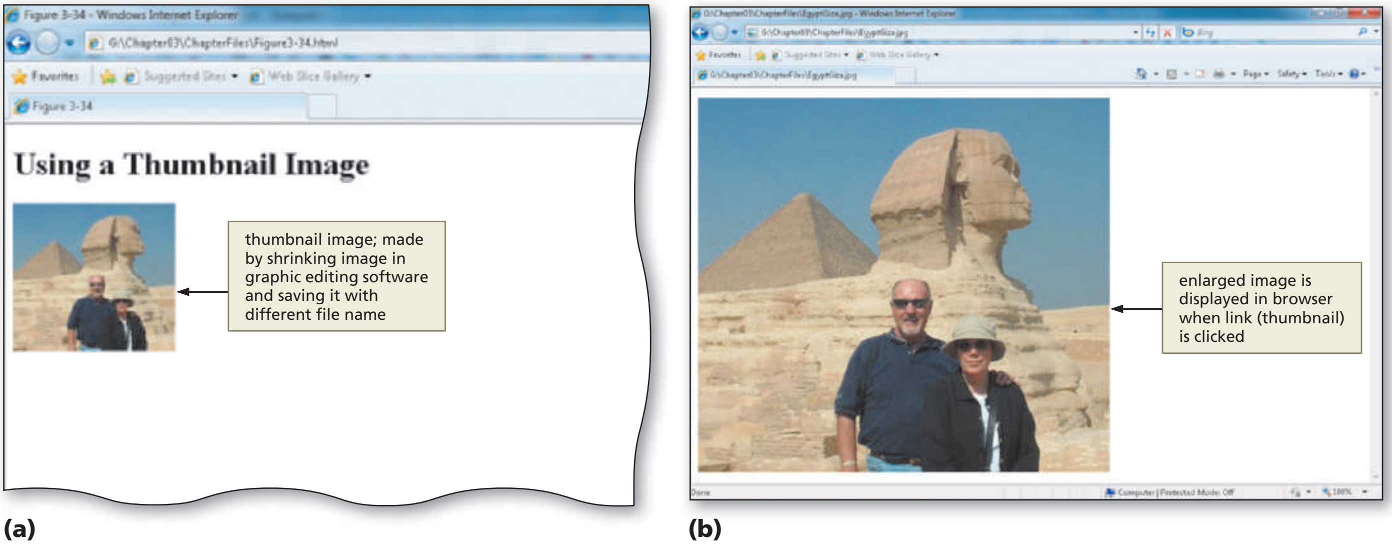


Figure 3-34 - Windows Internet Explorer
G:\Chapter03\ChapterFiles\Figure3-34.html
Favorites
Suggested Sites
Web Slice Gallery
Figure 3-34
Using a Thumbnail Image
G:\Chapter03\ChapterFiles\EgyptSize.jpg - Windows Internet Explorer
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

thumbnail image; made by shrinking image in graphic editing software and saving it with different file name

enlarged image is displayed in browser when link (thumbnail) is clicked

(a)

(b)

Figure 3–34

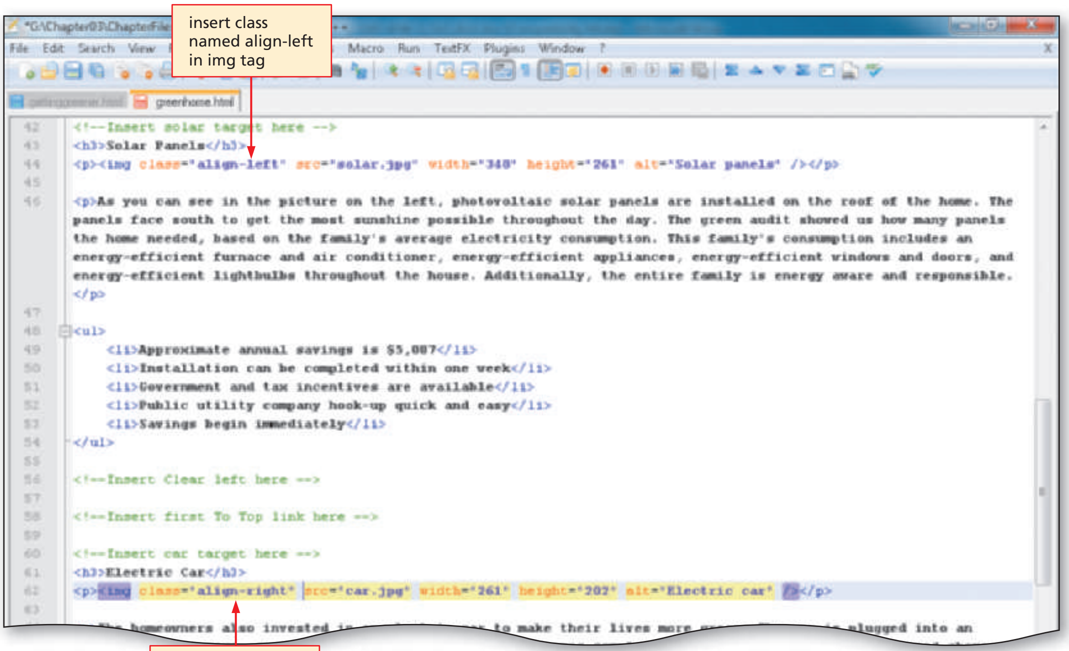
Wrap Text Around Images Using CSS Classes

Now you will use an embedded style sheet to wrap the text around the two images on the greenhome.html Web page. Remember that an embedded style sheet takes effect only for the Web page into which it is embedded. The embedded style sheet is placed within the <head> </head> container at the top of the Web page file.

The following steps show you how to insert left- and right-aligned images with wrapped text by adding class names to the img tags and then defining the classes within the embedded style sheets. Table 3–10 shows the code you'll need to define the classes in Step 3.

1

- With the greenhome.html file displayed in Notepad++, click immediately to the left of the s in src on line 44 to begin adding the class name to the first <img> tag.
- Type `class="align-left"` and press the SPACEBAR so that there is a space between what you just typed and src.
- Click immediately to the left of the s in src on line 62 to begin adding the class name to the second <img> tag.
- Type `class="align-right"` and press the SPACEBAR so that there is a space between what you just typed and src (Figure 3–35).


*G:\Chapter03\ChapterFile
File Edit Search View Macro Run TextFX Plugins Window ?
greenhome.html

```
42  <!--Insert solar target here -->
43  <h3>Solar Panels</h3>
44  <p><img class="align-left" src="solar.jpg" width="348" height="261" alt="Solar panels" /></p>
45
46  <p>As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The
    panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels
    the home needed, based on the family's average electricity consumption. This family's consumption includes an
    energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and
    energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.
    </p>
47
48  <ul>
49      <li>Approximate annual savings is $5,087</li>
50      <li>Installation can be completed within one week</li>
51      <li>Government and tax incentives are available</li>
52      <li>Public utility company hook-up quick and easy</li>
53      <li>Savings begin immediately</li>
54  </ul>
55
56  <!--Insert Clear left here -->
57
58  <!--Insert first To Top link here -->
59
60  <!--Insert car target here -->
61  <h3>Electric Car</h3>
62  <p><img class="align-right" src="car.jpg" width="261" height="202" alt="Electric car" /></p>
63
```

insert class named align-left in img tag

insert class named align-right in img

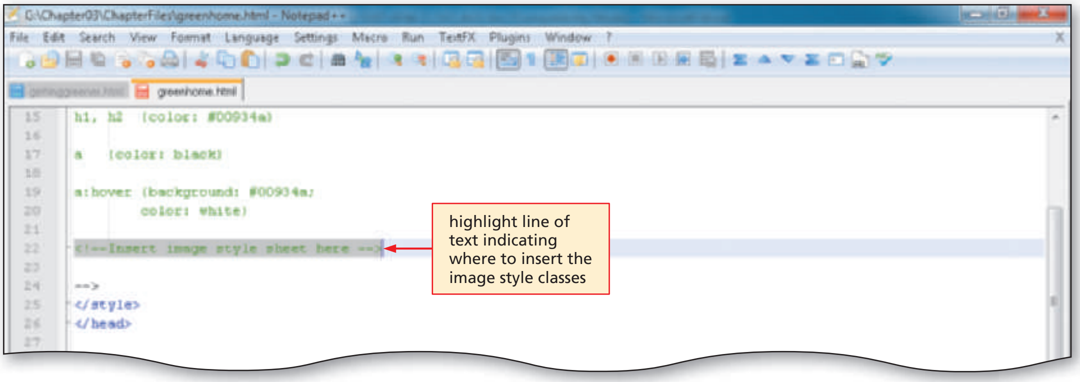
Figure 3–35

2

- Highlight the line <! Insert image style classes here --> on line 22, as shown in Figure 3–36, to begin adding image classes.

Q&A Do I have to press the DELETE key to delete the text that I highlighted in Step 2?

No, you do not have to press the DELETE key to delete the text on line 22. As long as the text is highlighted, the text is automatically deleted as soon as you start typing the HTML code in Step 3.


G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
greenhome.html

```
15  h1, h2  {color: #00934a}
16
17  a   {color: black}
18
19  a:hover {background: #00934a;
20          color: white}
21
22  <!--Insert image style sheet here -->
23
24  -->
25  </style>
26  </head>
27
```

highlight line of text indicating where to insert the image style classes

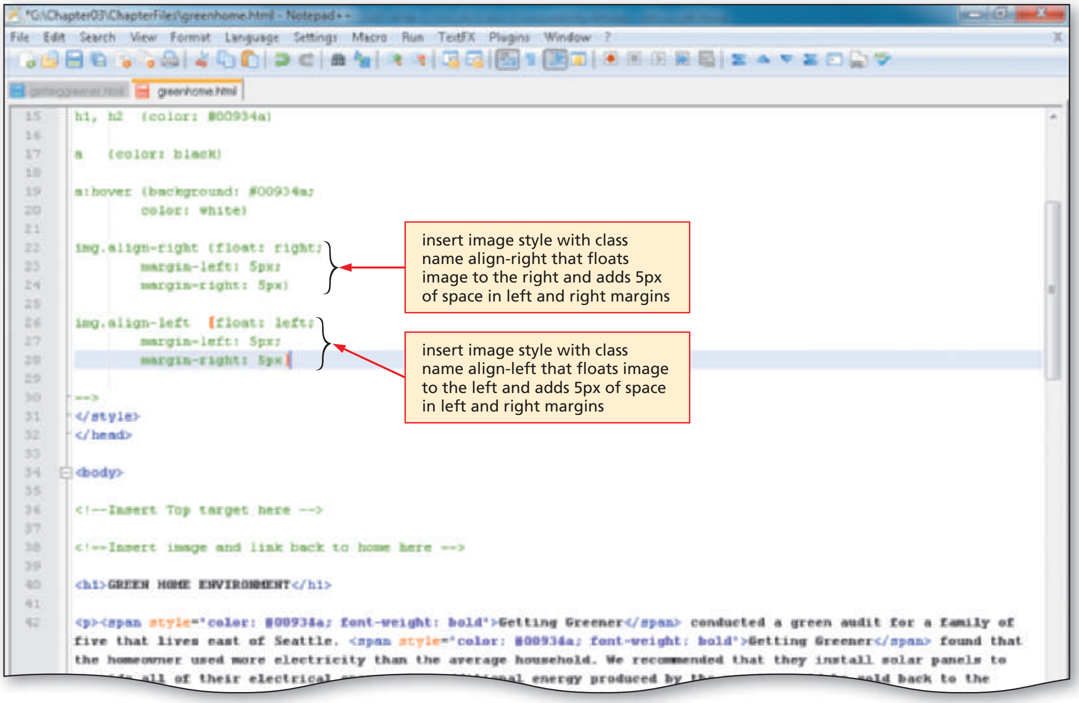
Figure 3–36

Table 3–10 CSS Code to Insert Class Definitions in Embedded Style Sheets

Line	CSS Selectors and Declarations	
22	`img.align-right`	`{float: right;`
23		`margin-left: 5px;`
24		`margin-right: 5px}`
25		
26	`img.align-left`	`{float: left;`
27		`margin-left: 5px;`
28		`margin-right: 5px}`

3

- Type the HTML code in Table 3–10 but do not press the ENTER key at the end of line 28. This HTML code inserts the embedded style sheets that will be used by the align-left and align-right class names inserted in the previous step. This will align the images left or right on the Web page, with text wrapped to the right or left and with five pixels of horizontal space around the image (Figure 3–37).


*G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
greenhome.html

```
h1, h2  {color: #00934a}

a   {color: black}

a:hover {background: #00934a;
         color: white}

img.align-right {float: right;
         margin-left: 5px;
         margin-right: 5px}

img.align-left  {float: left;
         margin-left: 5px;
         margin-right: 5px}

-->
</style>
</head>

<body>

<!--Insert Top target here -->

<!--Insert image and link back to home here -->

<h1>GREEN HOME ENVIRONMENT</h1>

<p><span style="color: #00934a; font-weight: bold">Getting Greener</span> conducted a green audit for a family of
five that lives east of Seattle. <span style="color: #00934a; font-weight: bold">Getting Greener</span> found that
the homeowner used more electricity than the average household. We recommended that they install solar panels to
```

insert image style with class name align-right that floats image to the right and adds 5px of space in left and right margins

insert image style with class name align-left that floats image to the left and adds 5px of space in left and right margins

Figure 3–37

Q&A Why are we using the float property in these style sheets?

The float property allows you to position elements (in this case photographs) on the Web page.

Q&A Why do we need margin-left and margin-right properties?

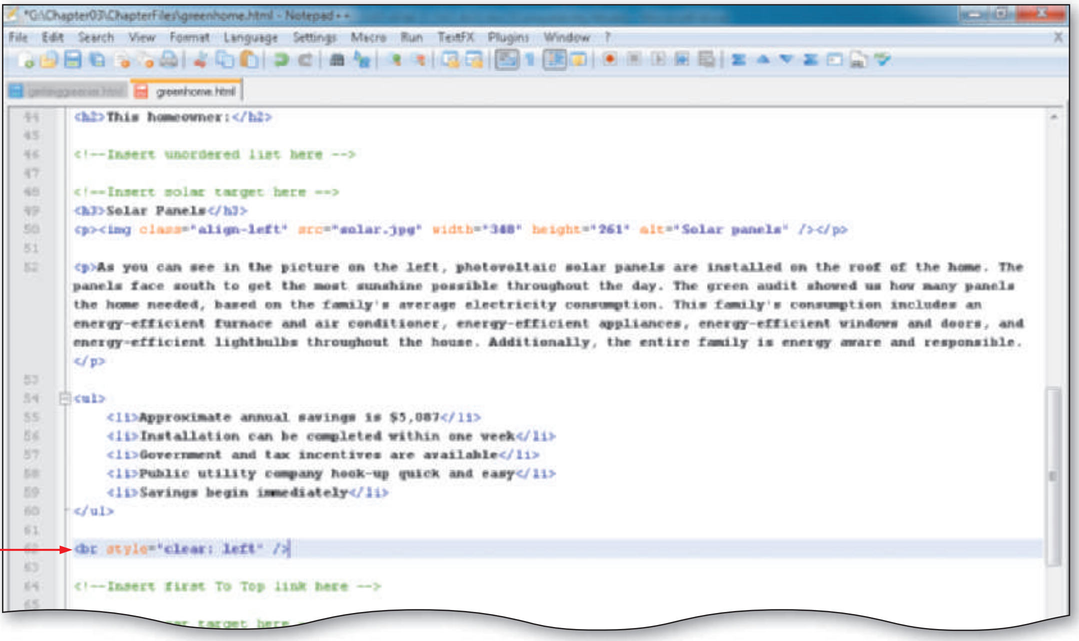
These properties provide five pixels (in this case) of space around the left and right sides of the image that is being inserted. If those are not entered, then the text aligns itself right next to the image. Allowing a bit of space between these two elements makes the image and text neater.

To Clear Text Wrapping

After specifying an image alignment and defining how text wraps, you must enter a break (<br />) tag to stop the text wrapping. You use the <br style="clear: both" />, <br style="clear: left" />", or <br style="clear: right" /> tags to show where the text should stop wrapping. The following steps show how to enter code to clear the text wrapping.

1

- Highlight the line <Insert Clear left here --> on line 62, and then type `<br style="clear: left" />` as the tag (Figure 3–38).


*G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
greenhome.html

```
44  <h2>This homeowner:</h2>
45
46  <!--Insert unordered list here -->
47
48  <!--Insert solar target here -->
49  <h3>Solar Panels</h3>
50  <p><img class="align-left" src="solar.jpg" width="348" height="261" alt="Solar panels" /></p>
51
52  <p>As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The
    panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels
    the home needed, based on the family's average electricity consumption. This family's consumption includes an
    energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and
    energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.
    </p>
53
54  <ul>
55      <li>Approximate annual savings is $5,087</li>
56      <li>Installation can be completed within one week</li>
57      <li>Government and tax incentives are available</li>
58      <li>Public utility company hook-up quick and easy</li>
59      <li>Savings begin immediately</li>
60  </ul>
61
62  <br style="clear: left" />
63
64  <!--Insert first To Top link here -->
```

highlight clear left comment on line 62 and type clear left code

Figure 3–38

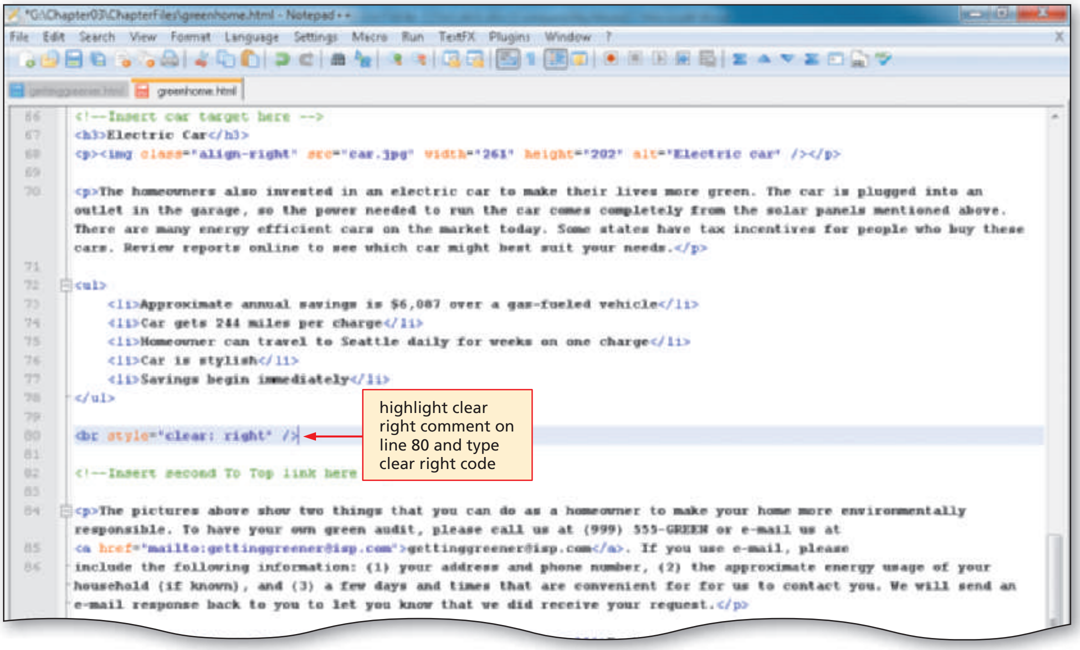
2

- Highlight the line <!--Insert Clear right here --> on line 80, and then type `<br style="clear: right" />` as the tag to clear the text wrapping for both left- and right-aligned images, as displayed in Figure 3–39.

Q&A

What happens if you do not use the <br style="clear: direction" /> tag?

Your text following the wrapped image will not be displayed as you intended. The following text will continue to wrap beyond the end of the text and image combination.


*G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
greenhome.html

```
66  <!--Insert car target here -->
67  <h3>Electric Car</h3>
68  <p><img class="align-right" src="car.jpg" width="261" height="202" alt="Electric car" /></p>
69
70  <p>The homeowners also invested in an electric car to make their lives more green. The car is plugged into an
    outlet in the garage, so the power needed to run the car comes completely from the solar panels mentioned above.
    There are many energy efficient cars on the market today. Some states have tax incentives for people who buy these
    cars. Review reports online to see which car might best suit your needs.</p>
71
72  <ul>
73      <li>Approximate annual savings is $6,087 over a gas-fueled vehicle</li>
74      <li>Car gets 244 miles per charge</li>
75      <li>Homeowner can travel to Seattle daily for weeks on one charge</li>
76      <li>Car is stylish</li>
77      <li>Savings begin immediately</li>
78  </ul>
79
80  <br style="clear: right" />
81
82  <!--Insert second To Top link here
83
84  <p>The pictures above show two things that you can do as a homeowner to make your home more environmentally
    responsible. To have your own green audit, please call us at (999) 555-GREEN or e-mail us at
85  <a href="mailto:gettinggreener@isp.com">gettinggreener@isp.com</a>. If you use e-mail, please
86  include the following information: (1) your address and phone number, (2) the approximate energy usage of your
    household (if known), and (3) a few days and times that are convenient for for us to contact you. We will send an
    e-mail response back to you to let you know that we did receive your request.</p>
```

highlight clear right comment on line 80 and type clear right code

Figure 3–39

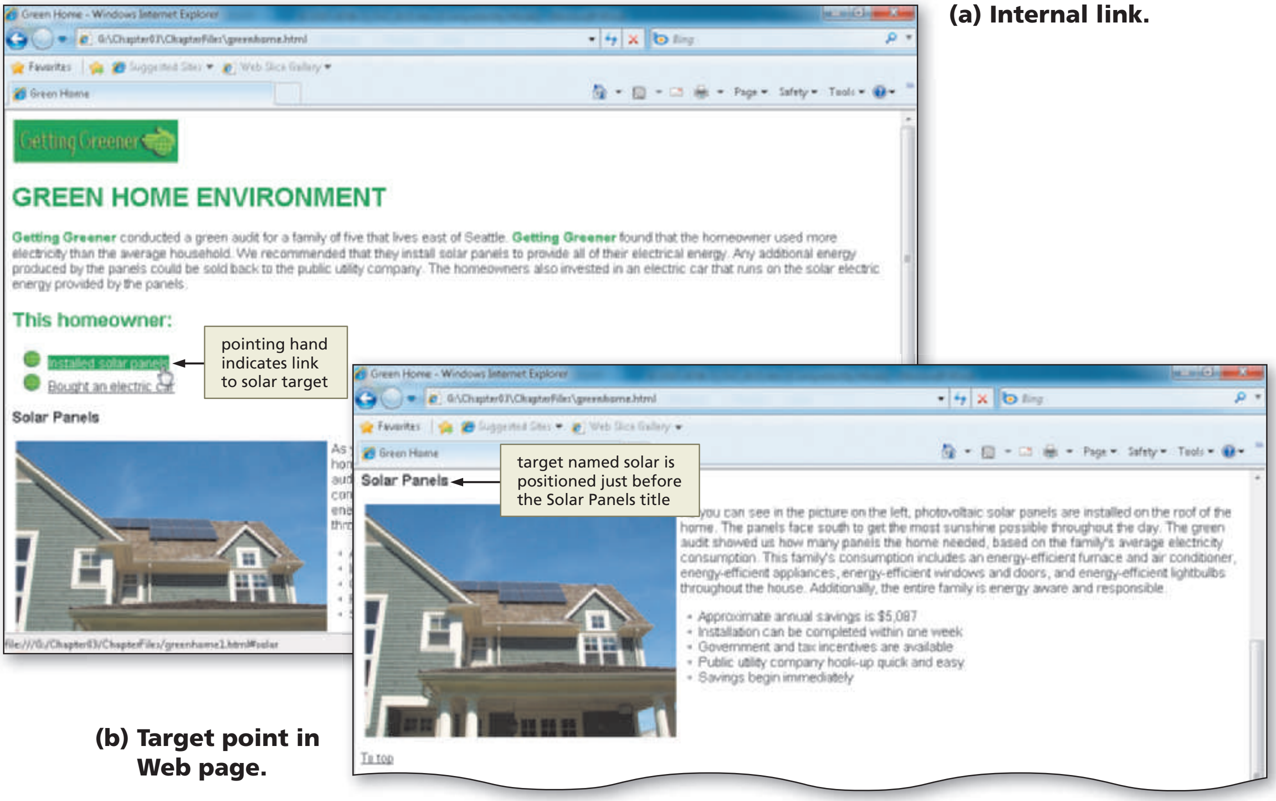
Q&A

Is there one tag to clear all alignments?

Yes. The <br style="clear: both" /> tag clears all text alignments.

Adding Links Within a Web Page

The final links to be added in this project are links within the Green Home Web page. Because the Green Home Web page is quite long, it would be easier for visitors to have a menu or list at the top of the Web page that facilitates immediate movement to another section. Figure 3–40 shows how clicking the text link Installed solar panels in the bulleted list near the top of the page links to the Solar Panels section in another part of the Web page. When the mouse pointer is moved over the words Installed solar panels and is clicked, the browser repositions, or links, the page to the target named solar. Notice when the mouse hovers over the link, the link changes to green background and white text. That is because of the a:hover styles that are embedded on this Web page.



(a) Internal link.

Green Home - Windows Internet Explorer

G:\Chapter03\ChapterFiles\greenhome.html

GREEN HOME ENVIRONMENT

Getting Greener conducted a green audit for a family of five that lives east of Seattle. Getting Greener found that the homeowner used more electricity than the average household. We recommended that they install solar panels to provide all of their electrical energy. Any additional energy produced by the panels could be sold back to the public utility company. The homeowners also invested in an electric car that runs on the solar electric energy provided by the panels.

This homeowner:

- Installed solar panels
- Bought an electric car

Solar Panels

file:///G:/Chapter03/ChapterFiles/greenhome1.html#solar

pointing hand indicates link to solar target

(b) Target point in Web page.

Green Home - Windows Internet Explorer

G:\Chapter03\ChapterFiles\greenhome.html

Solar Panels

As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels the home needed, based on the family's average electricity consumption. This family's consumption includes an energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.

- Approximate annual savings is $5,087
- Installation can be completed within one week
- Government and tax incentives are available
- Public utility company hook-up quick and easy
- Savings begin immediately

To top

target named solar is positioned just before the Solar Panels title

Figure 3–40

To create links within the same Web page, the targets for the links first must be created. Link targets are created using the <a> tag with the name attribute, using the form:

```
<a name="targetname"></a>
```

where targetname is a unique name for a link target within that Web page. Notice that the tag uses the name attribute, rather than the href attribute, and that no text is included between the start <a> and end </a> tag, because the target is not intended to appear on the Web page as a clickable link. Instead, the link target is intended to mark a specific area of the Web page, to which a link can be directed.

Links to link targets are created using the <a> tag with the href attribute, using the form:

```
<a href="#targetname">
```

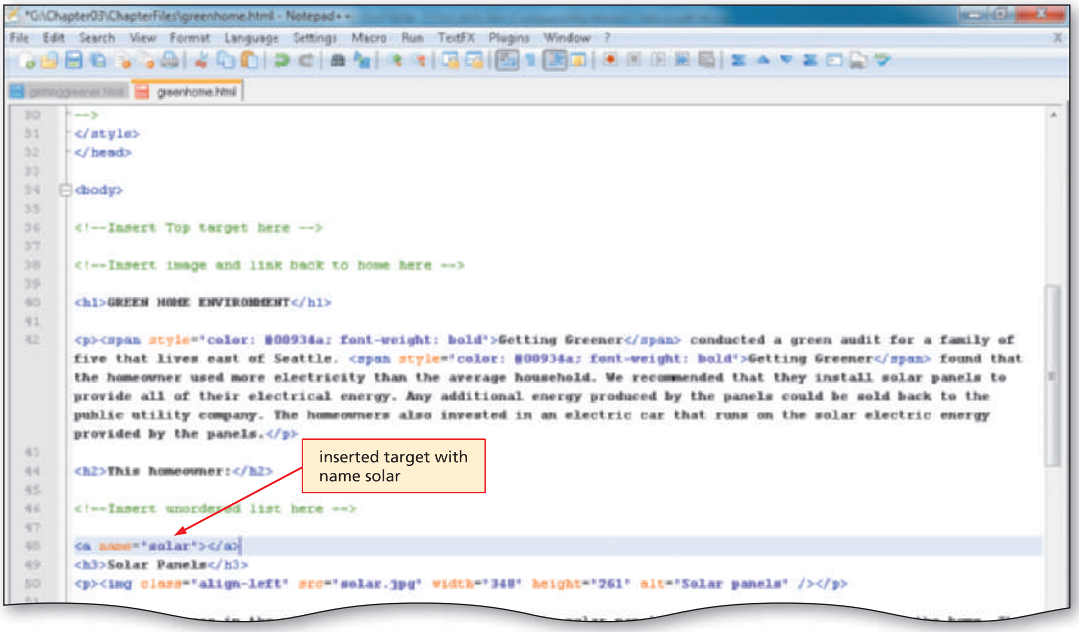
where targetname is the name of a link target in that Web page. Notice that the tag uses the href attribute, followed by the pound sign (#) and the target name enclosed in quotation marks.

To Set Link Targets

The next step is to set link targets to the Solar Panels and Electric Car sections of the Web page. The following steps show how to set the two link targets in the Green Home Web page.

1

- Highlight the line <!-- Insert solar target here --> on line 48.
- Type `<a name="solar"></a>` to create a link target named solar (Figure 3–41).


*G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
gettinggreener.html
greenhome.html
inserted target with name solar

```
30  -->
31  </style>
32  </head>
33
34  <body>
35
36  <!--Insert Top target here -->
37
38  <!--Insert image and link back to home here -->
39
40  <h1>GREEN HOME ENVIRONMENT</h1>
41
42  <p><span style="color: #00934a; font-weight: bold">Getting Greener</span> conducted a green audit for a family of
    five that lives east of Seattle. <span style="color: #00934a; font-weight: bold">Getting Greener</span> found that
    the homeowner used more electricity than the average household. We recommended that they install solar panels to
    provide all of their electrical energy. Any additional energy produced by the panels could be sold back to the
    public utility company. The homeowners also invested in an electric car that runs on the solar electric energy
    provided by the panels.</p>
43
44  <h2>This homeowner:</h2>
45
46  <!--Insert unordered list here -->
47
48  <a name="solar"></a>
49  <h3>Solar Panels</h3>
50  <p><img class="align-left" src="solar.jpg" width="348" height="261" alt="Solar panels" /></p>
```

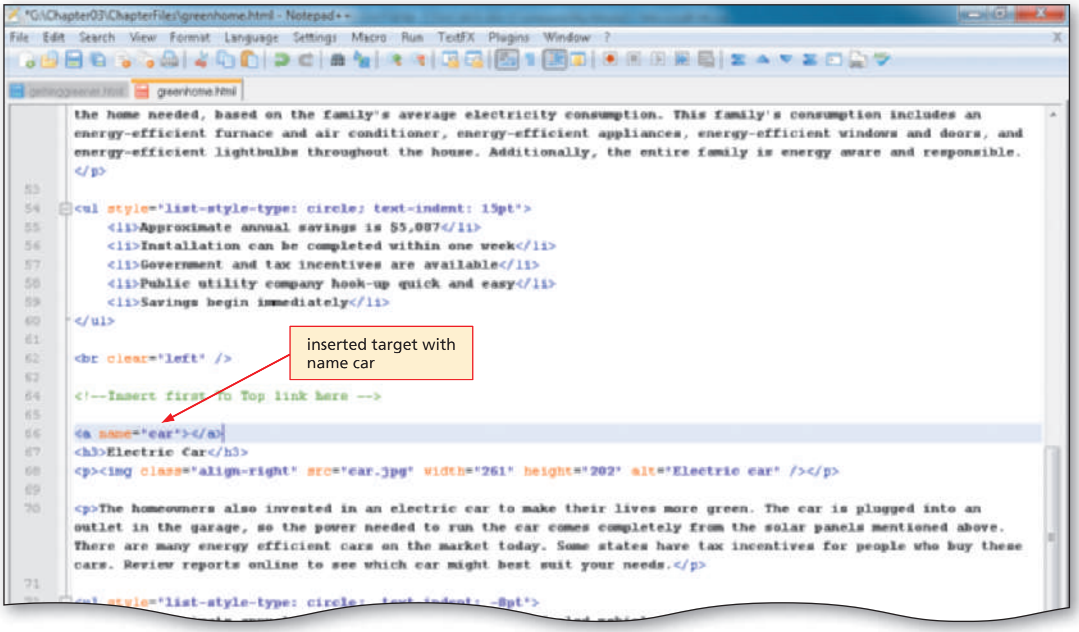
Figure 3–41

2

- Highlight the line <!--Insert car target here --> on line 66.
- Type `<a name="car"></a>` to create a link target named car (Figure 3–42).

Q&A There is nothing between the start anchor and end anchor tags for these targets. Will they work?

These targets are just placeholders, so they do not need any words or phrases; they only need a target name, as shown in the anchor tag.


*G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
gettinggreener.html
greenhome.html
inserted target with name car

```
    the home needed, based on the family's average electricity consumption. This family's consumption includes an
    energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and
    energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.
    </p>
53
54  <ul style="list-style-type: circle; text-indent: 15pt">
55      <li>Approximate annual savings is $5,087</li>
56      <li>Installation can be completed within one week</li>
57      <li>Government and tax incentives are available</li>
58      <li>Public utility company hook-up quick and easy</li>
59      <li>Savings begin immediately</li>
60  </ul>
61
62  <br clear="left" />
63
64  <!--Insert first To Top link here -->
65
66  <a name="car"></a>
67  <h3>Electric Car</h3>
68  <p><img class="align-right" src="car.jpg" width="261" height="202" alt="Electric car" /></p>
69
70  <p>The homeowners also invested in an electric car to make their lives more green. The car is plugged into an
    outlet in the garage, so the power needed to run the car comes completely from the solar panels mentioned above.
    There are many energy efficient cars on the market today. Some states have tax incentives for people who buy these
    cars. Review reports online to see which car might best suit your needs.</p>
71
72  <ul style="list-style-type: circle; text-indent: -8pt">
```

Figure 3–42

To Add Links to Link Targets Within a Web Page

The next step is to add link targets using the code shown in Table 3–11.

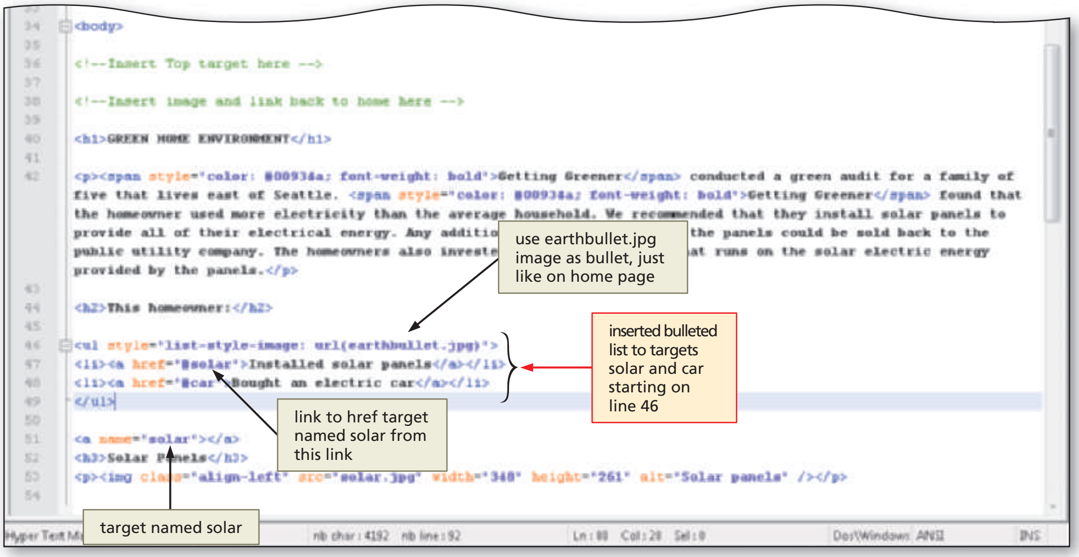
Table 3–11 HTML Code to Insert Bulleted List with Links to Link Targets

Line	HTML Tag and Text
46	`<ul style="list-style-image: url(earthbullet.jpg)">`
47	`<li><a href="#solar">Installed solar panels</a></li>`
48	`<li><a href="#car">Bought an electric car</a></li>`
49	`</ul>`

The following step shows how to add the code to create an unordered (bulleted) list and then to use the list items as links to link targets within the Web page.

1

- Highlight the line <!--Insert unordered list here --> on line 46.
- Type the HTML code in Table 3–11 but do not press the ENTER key at the end of line 49. This HTML code inserts the bulleted list that provides links to the two targets (solar and car) inserted above. Notice that you use the same earthbullet.jpg image that you used on the home page as the bullet (Figure 3–43). This helps with consistency across the Web site.



```
34 <body>
35
36 <!--Insert Top target here -->
37
38 <!--Insert image and link back to home here -->
39
40 <h1>GREEN HOME ENVIRONMENT</h1>
41
42 <p><span style="color: #00934a; font-weight: bold">Getting Greener</span> conducted a green audit for a family of
   five that lives east of Seattle. <span style="color: #00934a; font-weight: bold">Getting Greener</span> found that
   the homeowner used more electricity than the average household. We recommended that they install solar panels to
   provide all of their electrical energy. Any additio                      the panels could be sold back to the
   public utility company. The homeowners also investe                       at runs on the solar electric energy
   provided by the panels.</p>
43
44 <h2>This homeowner:</h2>
45
46 <ul style="list-style-image: url(earthbullet.jpg)">
47 <li><a href="#solar">Installed solar panels</a></li>
48 <li><a href="#car">Bought an electric car</a></li>
49 </ul>
50
51 <a name="solar"></a>
52 <h3>Solar Panels</h3>
53 <p><img class="align-left" src="solar.jpg" width="348" height="261" alt="Solar panels" /></p>
54
```

use earthbullet.jpg image as bullet, just like on home page

inserted bulleted list to targets solar and car starting on line 46

link to href target named solar from this link

target named solar

Figure 3–43

Q&A

Do I have to use a bulleted list for the links?

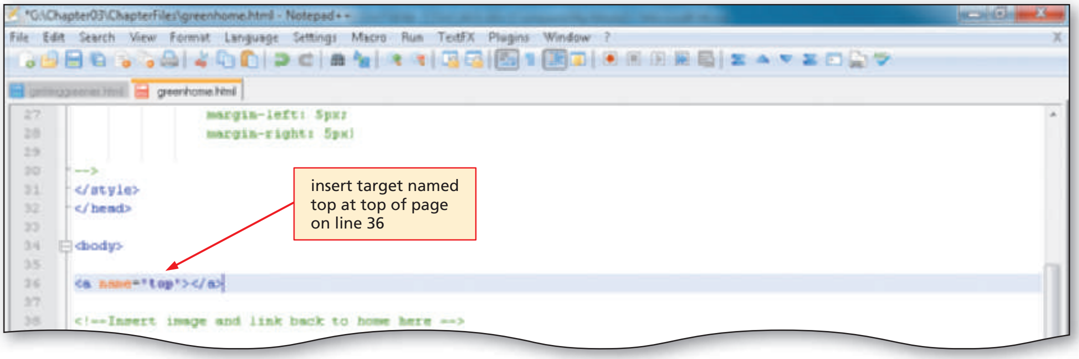
No, you can use any text for the links to the targets created in the step above. The bulleted list makes the links easy to use and keeps the links in one area of the Web page.

To Add Links to a Target at the Top of the Page

In this step, you add two To top links to provide a quick way to move back to the top of the Web page. To make these links, you first set the target at the top of the page, and then create the links to that target. You will also use an inline style to make the link text smaller than the regular font size. The following steps illustrate how to add links to a target at the top of the page.

1

- Highlight the line <!--Insert Top target here --> on line 36.
- Type `<a name="top"></a>` as the tag that will create a target at the top of the Web page named top (Figure 3–44).


*G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
greenhome.html

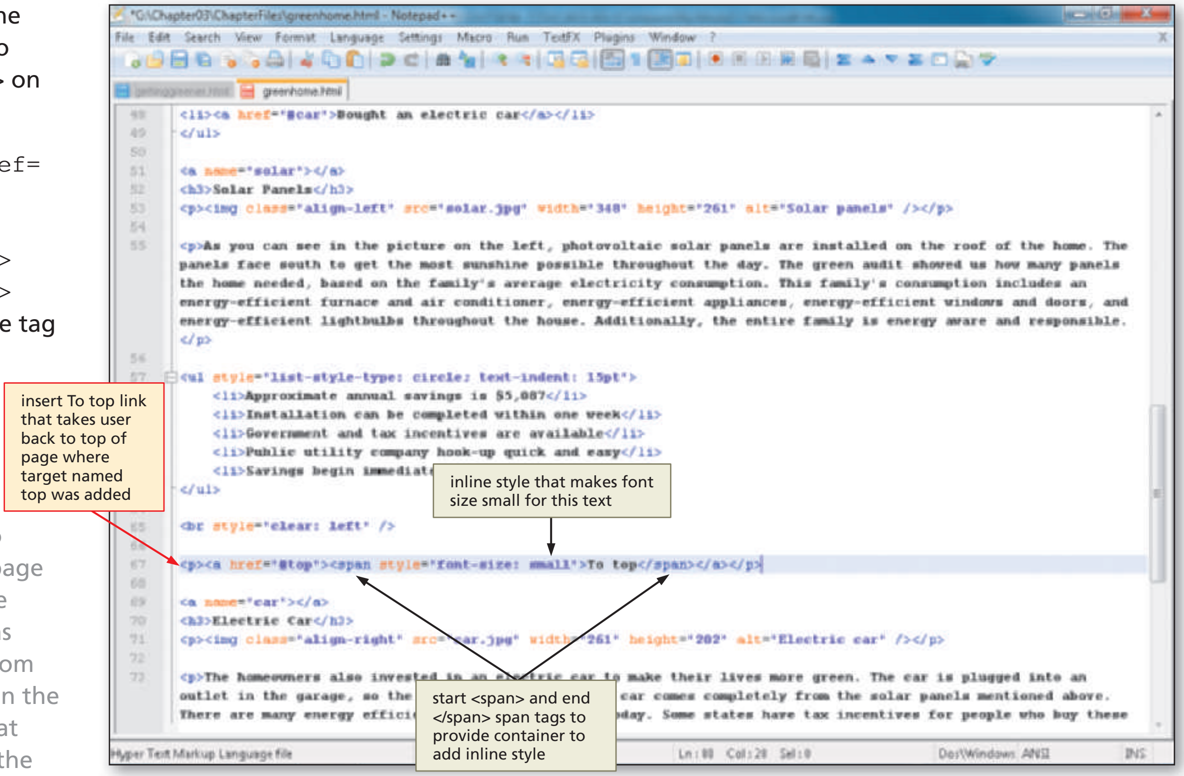
```
27                  margin-left: 5px;
28                  margin-right: 5px}
29
30  -->
31  </style>
32  </head>
33
34  <body>
35
36  <a name="top"></a>
37
38  <!--Insert image and link back to home here -->
```

insert target named top at top of page on line 36

Figure 3–44

2

- Highlight the line <!--Insert first To top link here --> on line 67.
- Type `<p><a href="#top"><span style="font-size: small">To top</span></a></p>` as the tag (Figure 3–45).


*G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
greenhome.html
Hyper Text Markup Language file
Ln : 88 Col : 28 Sel : 0
Dos\Windows ANSI
INS

```
48  <li><a href="#car">Bought an electric car</a></li>
49  </ul>
50
51  <a name="solar"></a>
52  <h3>Solar Panels</h3>
53  <p><img class="align-left" src="solar.jpg" width="348" height="261" alt="Solar panels" /></p>
54
55  <p>As you can see in the picture on the left, photovoltaic solar panels are installed on the roof of the home. The
    panels face south to get the most sunshine possible throughout the day. The green audit showed us how many panels
    the home needed, based on the family's average electricity consumption. This family's consumption includes an
    energy-efficient furnace and air conditioner, energy-efficient appliances, energy-efficient windows and doors, and
    energy-efficient lightbulbs throughout the house. Additionally, the entire family is energy aware and responsible.
    </p>
56
57  <ul style="list-style-type: circle; text-indent: 15pt">
        <li>Approximate annual savings is $5,087</li>
        <li>Installation can be completed within one week</li>
        <li>Government and tax incentives are available</li>
        <li>Public utility company hook-up quick and easy</li>
        <li>Savings begin immediat
    </ul>

65  <br style="clear: left" />
66
67  <p><a href="#top"><span style="font-size: small">To top</span></a></p>
68
69  <a name="car"></a>
70  <h3>Electric Car</h3>
71  <p><img class="align-right" src="car.jpg" width="261" height="202" alt="Electric car" /></p>
72
73  <p>The homeowners also invested in an electric car to make their lives more green. The car is plugged into an
    outlet in the garage, so the                    car comes completely from the solar panels mentioned above.
    There are many energy effici                    day. Some states have tax incentives for people who buy these
```

insert To top link that takes user back to top of page where target named top was added

inline style that makes font size small for this text

start <span> and end </span> span tags to provide container to add inline style

Figure 3–45

Q&A

Why do you use a small size font for this link?

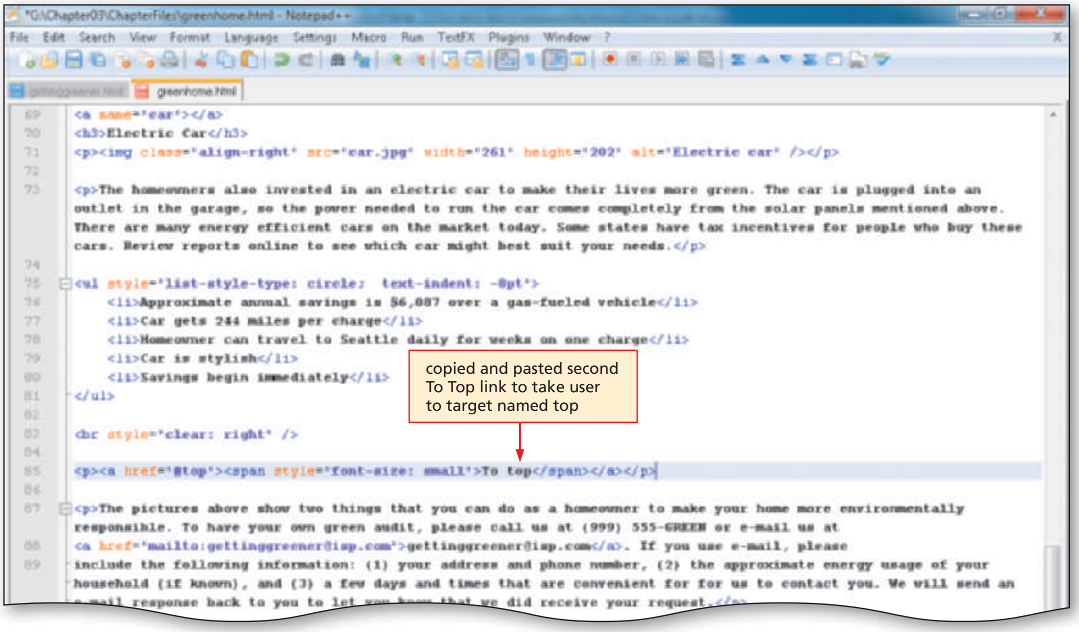
The link back to the top of the page should be subtle yet noticeable as distinguished from the other text on the page. Notice that the text link at the very bottom of the Web page to return to the home page is the same small size.

To Copy and Paste HTML Code

The copy and paste feature can be very useful for entering the same code in different places. The following step shows how to copy and paste the link code to three other lines in the HTML code.

1

- Highlight the HTML code `<p><a href="#top"><span style="font-size: small">To top</span></a></p>` on line 67.
- Click Edit on the menu bar and then click Copy.
- Highlight the line <!--Insert second To top link here --> on line 85 to position the pointer.
- Click Edit on the menu bar and then click Paste to paste the HTML code that you copied into line 85 (Figure 3–46).



*G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
gettinggreener.html
greenhome.html

```
69   <a name="car"></a>
70   <h3>Electric Car</h3>
71   <p><img class="align-right" src="car.jpg" width="261" height="202" alt="Electric car" /></p>
72
73   <p>The homeowners also invested in an electric car to make their lives more green. The car is plugged into an
     outlet in the garage, so the power needed to run the car comes completely from the solar panels mentioned above.
     There are many energy efficient cars on the market today. Some states have tax incentives for people who buy these
     cars. Review reports online to see which car might best suit your needs.</p>
74
75   <ul style="list-style-type: circle;  text-indent: -8pt">
76       <li>Approximate annual savings is $6,087 over a gas-fueled vehicle</li>
77       <li>Car gets 244 miles per charge</li>
78       <li>Homeowner can travel to Seattle daily for weeks on one charge</li>
79       <li>Car is stylish</li>
80       <li>Savings begin immediately</li>
81   </ul>
82
83   <br style="clear: right" />
84
85   <p><a href="#top"><span style="font-size: small">To top</span></a></p>
86
87   <p>The pictures above show two things that you can do as a homeowner to make your home more environmentally
     responsible. To have your own green audit, please call us at (999) 555-GREEN or e-mail us at
88   <a href="mailto:gettinggreener@isp.com">gettinggreener@isp.com</a>. If you use e-mail, please
89   include the following information: (1) your address and phone number, (2) the approximate energy usage of your
     household (if known), and (3) a few days and times that are convenient for for us to contact you. We will send an
     e-mail response back to you to let you know that we did receive your request.</p>
```

copied and pasted second To Top link to take user to target named top

Figure 3–46

To Add an Image Link to a Web Page

The last step is to add an image link from the Green Home Web page back to the Getting Greener home page. The style for links that you set with an embedded style sheet earlier says that link background color is green and text is white. For an image link, however, this would not be appropriate. To override the embedded style sheet for just this one instance, you will use an inline style to set a background-color that is transparent with text-decoration of none (no underline). Remember that according to the style precedence rules, an inline style takes precedence over an embedded style sheet. These two styles (background-color: transparent; text-decoration: none) ensure that no border appears around the image and there is no line under the link image. Table 3–12 shows the code used to insert the image link.

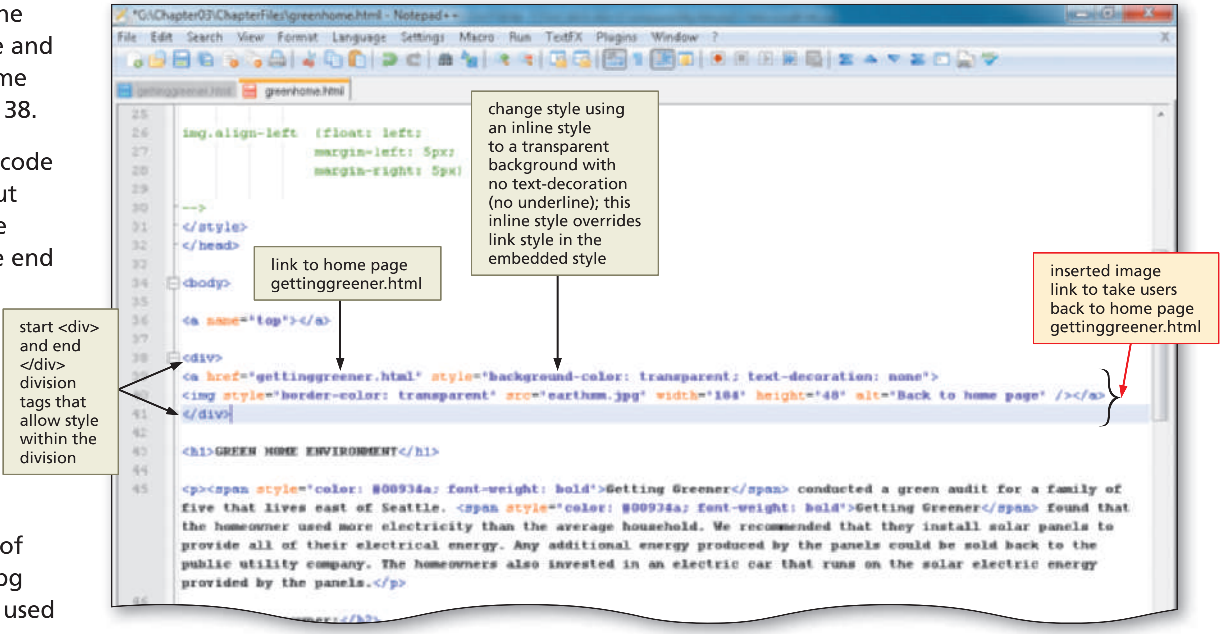
Table 3–12 HTML Code to Insert Image Link to Home

Line	HTML Tag and Text
38	`<div>`
39	`<a href="gettinggreener.html" style="background-color: transparent; text-decoration: none">`
40	`<img style="border-color: transparent" src="earthsm.jpg" width="184" height="48" alt="Back to home page" /></a>`
41	`</div>`

The following step shows how to create an image link at the top of the Green Home Web page.

1

- Highlight the line <!--Insert image and link back to home here --> on line 38.
- Type the HTML code in Table 3–12 but do not press the ENTER key at the end of line 41. This HTML code inserts a link back to home from the image earthsm.jpg. This image is a smaller version of the earthlogo.jpg image that you used on the home page (Figure 3–47).



*G:\Chapter03\ChapterFiles\greenhome.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
gettinggreener.html
greenhome.html

```
25
26  img.align-left  {float: left;
27                   margin-left: 5px;
28                   margin-right: 5px}
29
30  -->
31  </style>
32  </head>
33
34  <body>
35
36  <a name="top"></a>
37
38  <div>
39  <a href="gettinggreener.html" style="background-color: transparent; text-decoration: none">
40  <img style="border-color: transparent" src="earthsm.jpg" width="104" height="48" alt="Back to home page" /></a>
41  </div>
42
43  <h1>GREEN HOME ENVIRONMENT</h1>
44
45  <p><span style="color: #00934a; font-weight: bold">Getting Greener</span> conducted a green audit for a family of
    five that lives east of Seattle. <span style="color: #00934a; font-weight: bold">Getting Greener</span> found that
    the homeowner used more electricity than the average household. We recommended that they install solar panels to
    provide all of their electrical energy. Any additional energy produced by the panels could be sold back to the
    public utility company. The homeowners also invested in an electric car that runs on the solar electric energy
    provided by the panels.</p>
```

start <div> and end </div> division tags that allow style within the division

link to home page gettinggreener.html

change style using an inline style to a transparent background with no text-decoration (no underline); this inline style overrides link style in the embedded style

inserted image link to take users back to home page gettinggreener.html

Figure 3–47

To Save, Validate, and Print the HTML File

With the HTML code for the Green Home Web page complete, the HTML file should be saved, the Web page should be validated at w3.org, and a copy of the file should be printed as a reference.

1 If necessary, activate the Notepad++ window.

2 Click File on the menu bar, and then Save on the File menu to save the HTML file as greenhome.html.

3 Open a new browser window and go to validator.w3.org.

4 Click the Validate by File Upload tab, browse to the greenhome.html Web page, and then click Open.

5 Click the Check button to determine if the Web page is valid. If the file is not valid, make corrections,
re-save, and revalidate.

6 Click the Notepad++ button on the taskbar to display the greenhome.html code. Click File on the menu bar, click Print on the File menu, and then click the Print button in the Print dialog box to print the HTML code.

To View and Test a Web Page

With the HTML code validated and saved, you should view the Web page and test the links.

1 Click the Internet Explorer button on the taskbar to view the page in your browser.

2 Click the Refresh button on the Standard toolbar to display the changes made to the Web page, which should now look like Figure 3–1b on page HTML 91.

3 Verify that all internal links work correctly by clicking the two links in the bulleted list at the top of the Web page. Also make sure to check the two To top links. Finally, verify that the image link to the home page works.

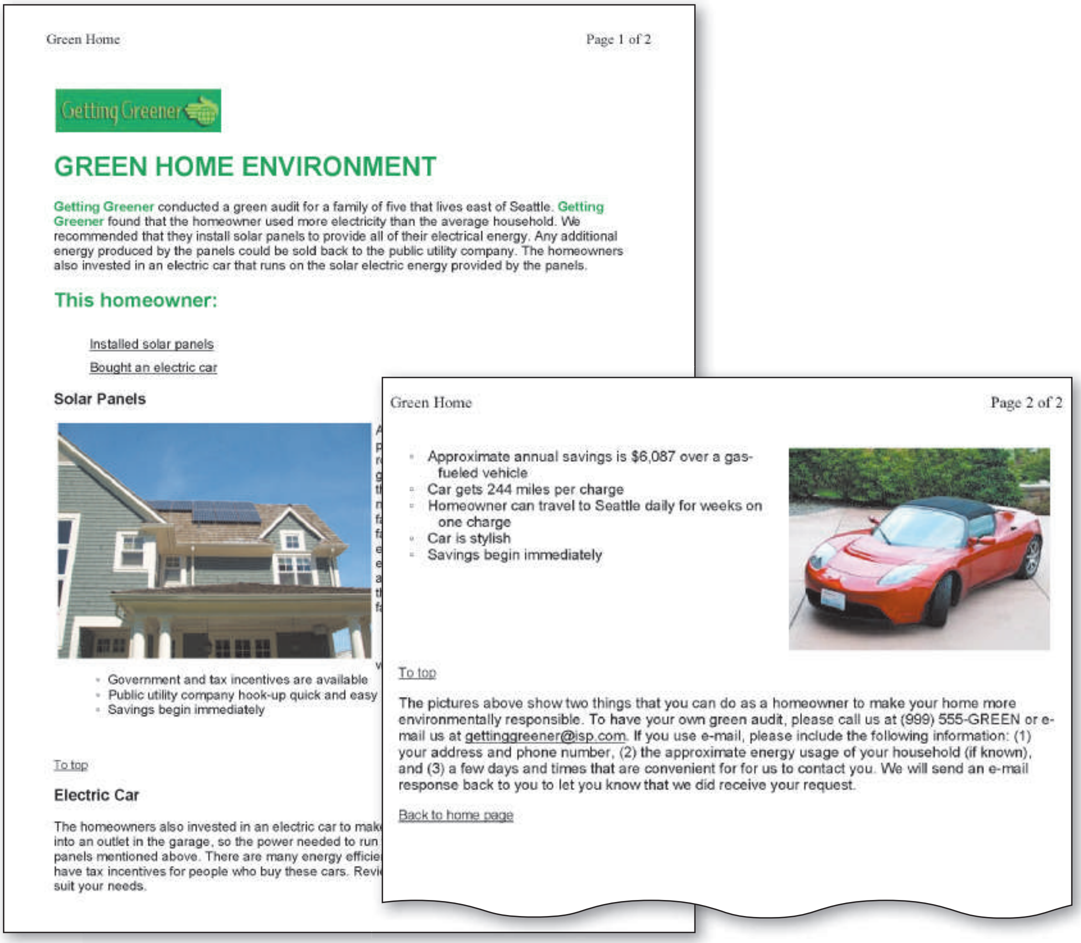
Q&A

How can I tell if internal links are working when the link and target are displayed in the same browser window?

To see movement to a link, you might need to restore down and resize the browser window so that the target is not visible, then click the link.

To Print a Web Page

1 Click the Print icon on the Command bar to print the Web page (Figure 3–48).



Green Home Page 1 of 2

Getting Greener

GREEN HOME ENVIRONMENT

Getting Greener conducted a green audit for a family of five that lives east of Seattle. Getting Greener found that the homeowner used more electricity than the average household. We recommended that they install solar panels to provide all of their electrical energy. Any additional energy produced by the panels could be sold back to the public utility company. The homeowners also invested in an electric car that runs on the solar electric energy provided by the panels.

This homeowner:

Installed solar panels

Bought an electric car

Solar Panels

- Government and tax incentives are available
- Public utility company hook-up quick and easy
- Savings begin immediately

To top

Electric Car

The homeowners also invested in an electric car to mak
into an outlet in the garage, so the power needed to run
panels mentioned above. There are many energy efficie
have tax incentives for people who buy these cars. Revi
suit your needs.

Green Home Page 2 of 2

- Approximate annual savings is $6,087 over a gas-fueled vehicle
- Car gets 244 miles per charge
- Homeowner can travel to Seattle daily for weeks on one charge
- Car is stylish
- Savings begin immediately

To top

The pictures above show two things that you can do as a homeowner to make your home more environmentally responsible. To have your own green audit, please call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com. If you use e-mail, please include the following information: (1) your address and phone number, (2) the approximate energy usage of your household (if known), and (3) a few days and times that are convenient for for us to contact you. We will send an e-mail response back to you to let you know that we did receive your request.

Back to home page

Figure 3–48

BTW

Quick Reference
For a list of HTML tags and their associated attributes, see the HTML Quick Reference (Appendix A) at the back of this book, or visit the Quick Reference Web page for this book (scsite.com/HTML6e/qr). For a list of CSS properties and values, see Appendix D, or visit scsite.com/HTML6e/qr.

To Quit Notepad++ and a Browser

1. In Notepad++, click the File menu, then Close All.
2. Click the Close button on the Notepad++ title bar.
3. Click the Close button on all open browser windows.

Chapter Summary

In this chapter, you have learned how to develop a two-page Web site with links, images, and formatted text. You learned how to use inline and embedded style sheets and style classes to format elements in each Web page. The items listed below include all the new HTML and CSS skills you have learned in this chapter.

1. Add a Center-Aligned Banner Image Using an Inline Style (HTML 102)
2. Create an Unordered (Bulleted) List Using Images as Bullets (HTML 106)
3. Add a Text Link to Another Web Page Within the Same Web Site (HTML 108)
4. Add an E-Mail Link (HTML 109)
5. Add a Text Link to a Web Page in Another Web Site (HTML 111)
6. Add Embedded Style Statements (HTML 119)
7. Add an Inline Style for Color (HTML 121)
8. Test Links on a Web Page (HTML 125)
9. Wrap Text Around Images Using CSS Classes (HTML 136)
10. Clear Text Wrapping (HTML 138)
11. Set Link Targets (HTML 140)
12. Add Links to Link Targets Within a Web Page (HTML 141)
13. Add Links to a Target at the Top of the Page (HTML 142)
14. Copy and Paste HTML Code (HTML 143)
15. Add an Image Link to a Web Page (HTML 143)

Learn It Online

Test your knowledge of chapter content and key terms.

Instructions: To complete the Learn It Online exercises, start your browser, click the Address bar, and then enter the Web address `scsite.com/html6e/learn`. When the HTML Learn It Online page is displayed, click the link for the exercise you want to complete and read the instructions.

Chapter Reinforcement TF, MC, and SA

A series of true/false, multiple choice, and short answer questions that test your knowledge of the chapter content.

Flash Cards

An interactive learning environment where you identify chapter key terms associated with displayed definitions.

Practice Test

A series of multiple choice questions that test your knowledge of chapter content and key terms.

Who Wants To Be a Computer Genius?

An interactive game that challenges your knowledge of chapter content in the style of a television quiz show.

Wheel of Terms

An interactive game that challenges your knowledge of chapter key terms in the style of the television show, *Wheel of Fortune*.

Crossword Puzzle Challenge

A crossword puzzle that challenges your knowledge of key terms presented in the chapter.

Apply Your Knowledge

Reinforce the skills and apply the concepts you learned in this chapter.

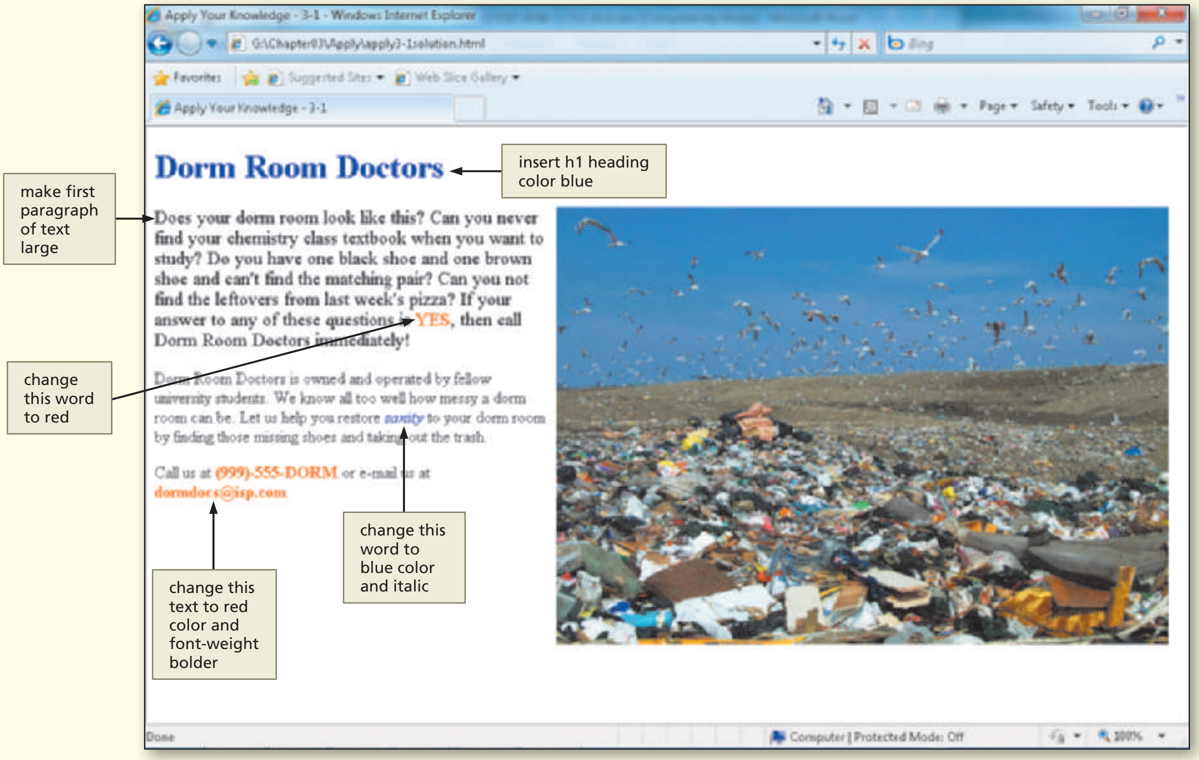
Adding Text Formatting to a Web Page Using Inline Styles

Instructions: Start Notepad++. Open the file apply3-1.html from the Chapter03\Apply folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files.

The apply3-1.html file is a partially completed HTML file that you will use for this exercise. Figure 3–49 shows the Apply Your Knowledge Web page as it should be displayed in a browser after the additional HTML tags and attributes are added.

Perform the following tasks:

1. Enter g:\Chapter03\Apply\apply3-1.html as the URL to view the Web page in your browser.
2. Examine the HTML file in Notepad++ and its appearance in the browser.
3. In Notepad++, change the HTML code to make the Web page look similar to the one shown in Figure 3–49.
4. Use an inline style to create a left-aligned h1 heading, Dorm Room Doctors, and make it blue.
5. Using the <div></div> container, right-align the image garbage.jpg (width=600, height=428). Give the image a right-and left-margins of 10 pixels. (Make sure to use the alt attribute.)
6. Make the first paragraph a large font. Color the words YES red in that paragraph. (*Hint:* Use the <span> tag.)
7. The second paragraph should be normal font, but make the word sanity blue and italic.
8. In the third paragraph, make the phone number and e-mail address red and in a bolder font-weight.
9. Save the revised HTML file in the Chapter03\Apply folder using the file name apply3-1solution.html.


Apply Your Knowledge - 3-1 - Windows Internet Explorer
G:\Chapter03\Apply\apply3-1solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Apply Your Knowledge - 3-1
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

Dorm Room Doctors

Does your dorm room look like this? Can you never find your chemistry class textbook when you want to study? Do you have one black shoe and one brown shoe and can't find the matching pair? Can you not find the leftovers from last week's pizza? If your answer to any of these questions is YES, then call Dorm Room Doctors immediately!

Dorm Room Doctors is owned and operated by fellow university students. We know all too well how messy a dorm room can be. Let us help you restore *sanity* to your dorm room by finding those missing shoes and taking out the trash.

Call us at **(999)-555-DORM** or e-mail us at **dormdocs@isp.com**

insert h1 heading color blue

make first paragraph of text large

change this word to red

change this word to blue color and italic

change this text to red color and font-weight bolder

Figure 3–49

Continued >

Apply Your Knowledge *continued*

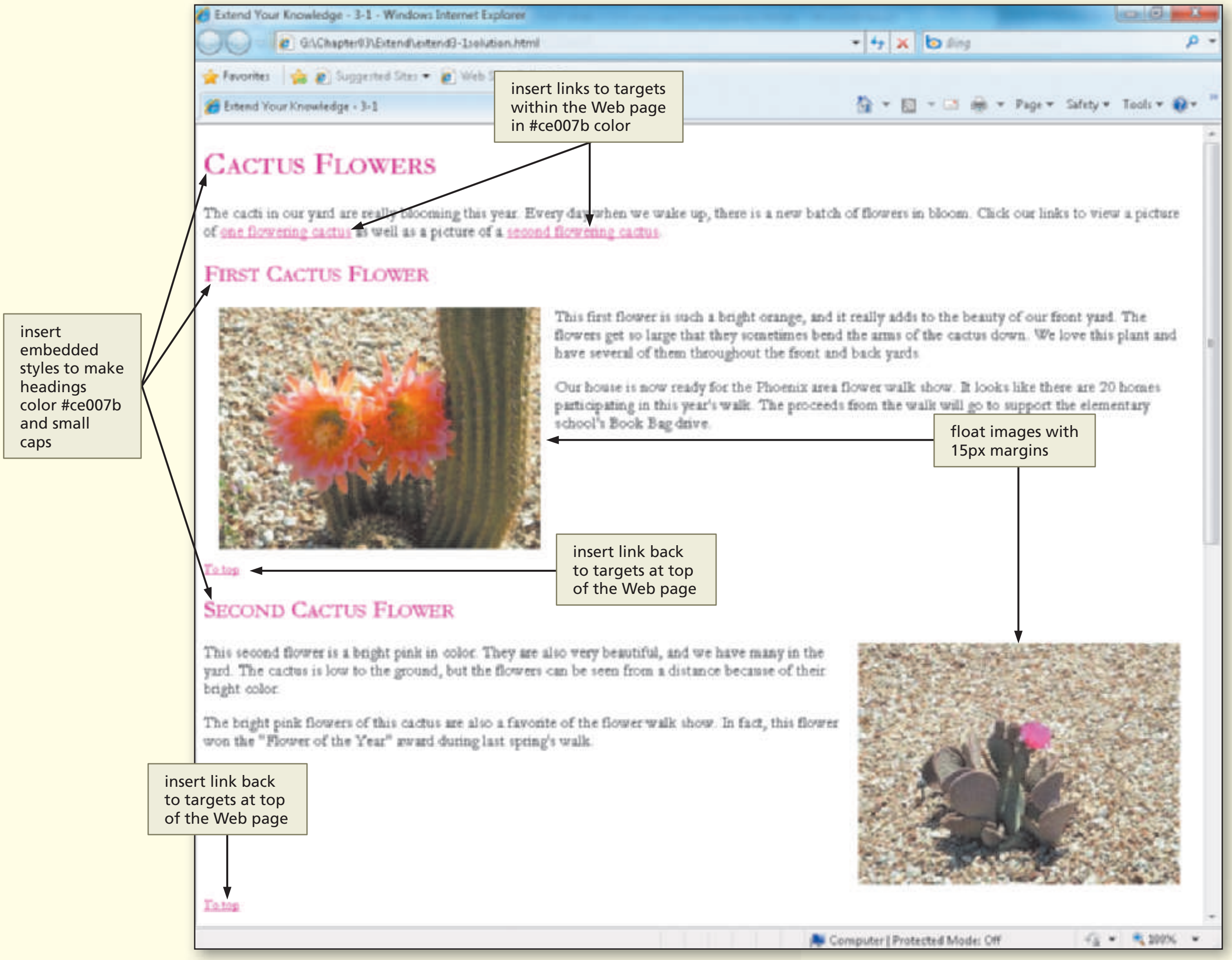
10. Validate your code.
11. Print the revised HTML file.
12. Enter g:\Chapter03\Apply\apply3-1solution.html as the URL to view the revised Web page in your browser.
13. Print the Web page.
14. Submit the revised HTML file and Web page in the format specified by your instructor.

Extend Your Knowledge

Extend the skills you learned in this chapter and experiment with new skills.

Creating Targets and Links

Instructions: Start Notepad++. Open the file extend3-1.html from the Chapter03\Extend folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files. This sample HTML file contains all of the text for the Web page shown in Figure 3–50. You will add the necessary tags to make this Web page appear with left- and right-aligned images, text formatting, and links, as shown in Figure 3–50.


Extend Your Knowledge - 3-1 - Windows Internet Explorer
G:\Chapter03\Extend\extend3-1solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Extend Your Knowledge - 3-1
Page
Safety
Tools
Computer | Protected Mode: Off
100%

CACTUS FLOWERS

The cacti in our yard are really blooming this year. Every day when we wake up, there is a new batch of flowers in bloom. Click our links to view a picture of one flowering cactus as well as a picture of a second flowering cactus.

FIRST CACTUS FLOWER

This first flower is such a bright orange, and it really adds to the beauty of our front yard. The flowers get so large that they sometimes bend the arms of the cactus down. We love this plant and have several of them throughout the front and back yards.

Our house is now ready for the Phoenix area flower walk show. It looks like there are 20 homes participating in this year's walk. The proceeds from the walk will go to support the elementary school's Book Bag drive.

To top

SECOND CACTUS FLOWER

This second flower is a bright pink in color. They are also very beautiful, and we have many in the yard. The cactus is low to the ground, but the flowers can be seen from a distance because of their bright color.

The bright pink flowers of this cactus are also a favorite of the flower walk show. In fact, this flower won the "Flower of the Year" award during last spring's walk.

To top

insert links to targets within the Web page in #ce007b color

insert embedded styles to make headings color #ce007b and small caps

float images with 15px margins

insert link back to targets at top of the Web page

insert link back to targets at top of the Web page

Figure 3–50

Perform the following tasks:

1. Insert the following embedded style sheets:

```
body          {font-family: Garamond, Arial, Verdana;
              font-size: 12pt}
h1, h2        {color: #ce007b;
              font-variant: small-caps}
img           {hspace: 20}
.align-right  {float: right;
              margin-left: 15px;
              margin-right: 15px}
.align-left   {float: left;
              margin-left: 15px;
              margin-right: 15px}
a             {text-decoration: underline;
              color: #ce007b}
a:hover       {background: #ce007b;
              color: white}
```

2. Make sure to use inline styles for all other styles. Add code to align the second picture on the right, also with margins of 15px. (*Hint:* Remember to clear alignment for both images.)
3. Add the HTML code to create three targets (one at the top of the Web page, one near the first h2 heading, and the last near the second h2 heading). Also create two link(s) back to the top with font size small, as shown in Figure 3–50.
4. Validate your HTML code and test all links.
5. Save the revised document as extend3-1solution.html and submit it in the format specified by your instructor.

Make It Right

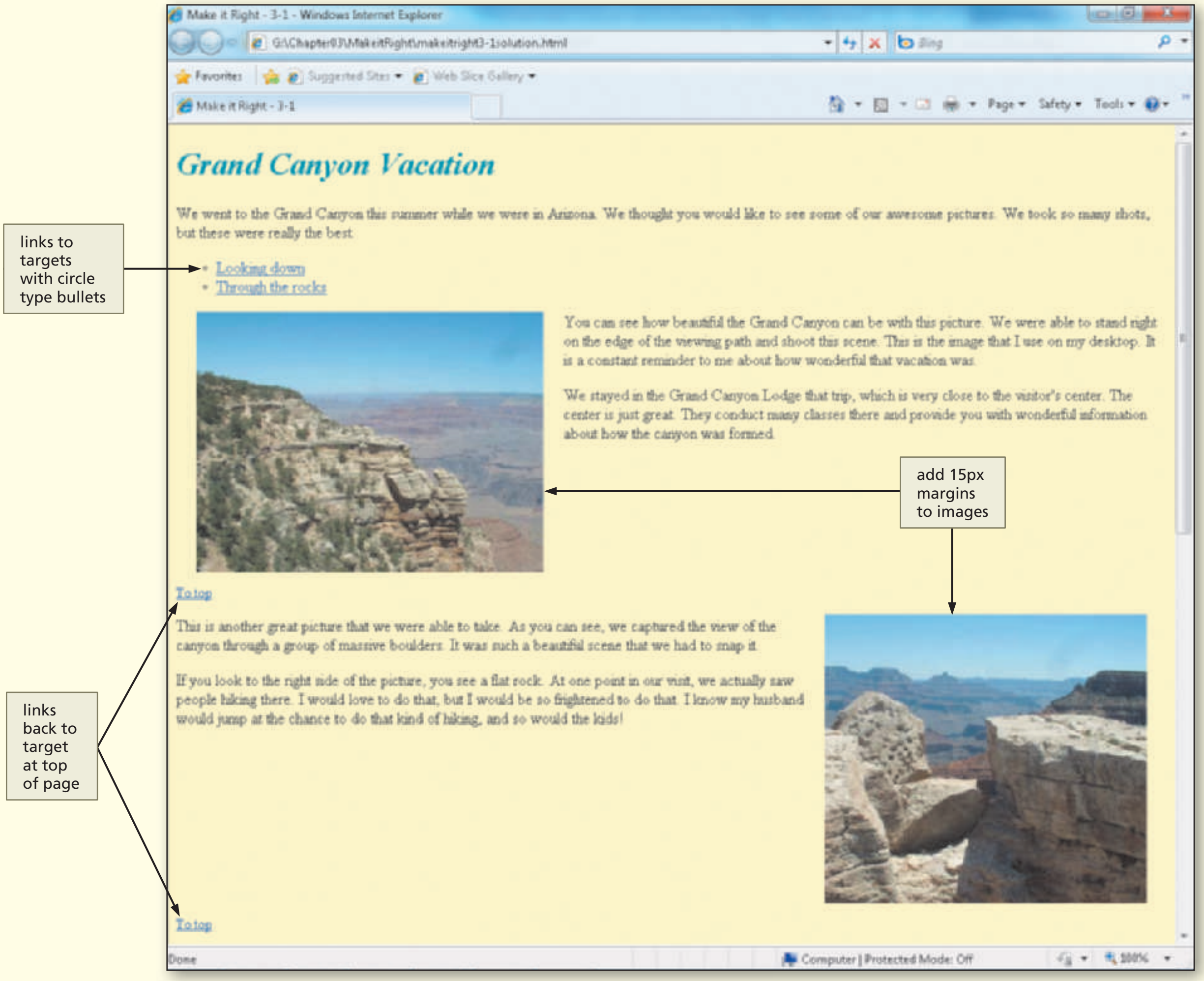
Analyze a document; correct all errors and improve the design.

Correcting the Grand Canyon Web Page

Instructions: Start Notepad++. Open the file makeitright3-1.html from the Chapter03\MakeItRight folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files. The Web page is a modified version of what you see in Figure 3–51 on the next page. Make the necessary corrections to the Web page to make it look like the figure. The background color is #ffffc5 for this Web page. Use an inline style to float the images and provide margins. The Web page uses the images grandcanyon1.jpg and grandcanyon2.jpg, which have widths and heights of 346, 259, and 321, 288, respectively.

Continued >

Make It Right *continued*


Make it Right - 3-1 - Windows Internet Explorer
G:\Chapter03\MakeitRight\makeitright3-1solution.html
Favorites
Suggested Sites
Web Slice Gallery
Make it Right - 3-1
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%
links to targets with circle type bullets
add 15px margins to images
links back to target at top of page

Grand Canyon Vacation

We went to the Grand Canyon this summer while we were in Arizona. We thought you would like to see some of our awesome pictures. We took so many shots, but these were really the best.

- Looking down
- Through the rocks

You can see how beautiful the Grand Canyon can be with this picture. We were able to stand right on the edge of the viewing path and shoot this scene. This is the image that I use on my desktop. It is a constant reminder to me about how wonderful that vacation was.

We stayed in the Grand Canyon Lodge that trip, which is very close to the visitor's center. The center is just great. They conduct many classes there and provide you with wonderful information about how the canyon was formed.

To top

This is another great picture that we were able to take. As you can see, we captured the view of the canyon through a group of massive boulders. It was such a beautiful scene that we had to snap it.

If you look to the right side of the picture, you see a flat rock. At one point in our visit, we actually saw people hiking there. I would love to do that, but I would be so frightened to do that. I know my husband would jump at the chance to do that kind of hiking, and so would the kids!

To top

Figure 3–51

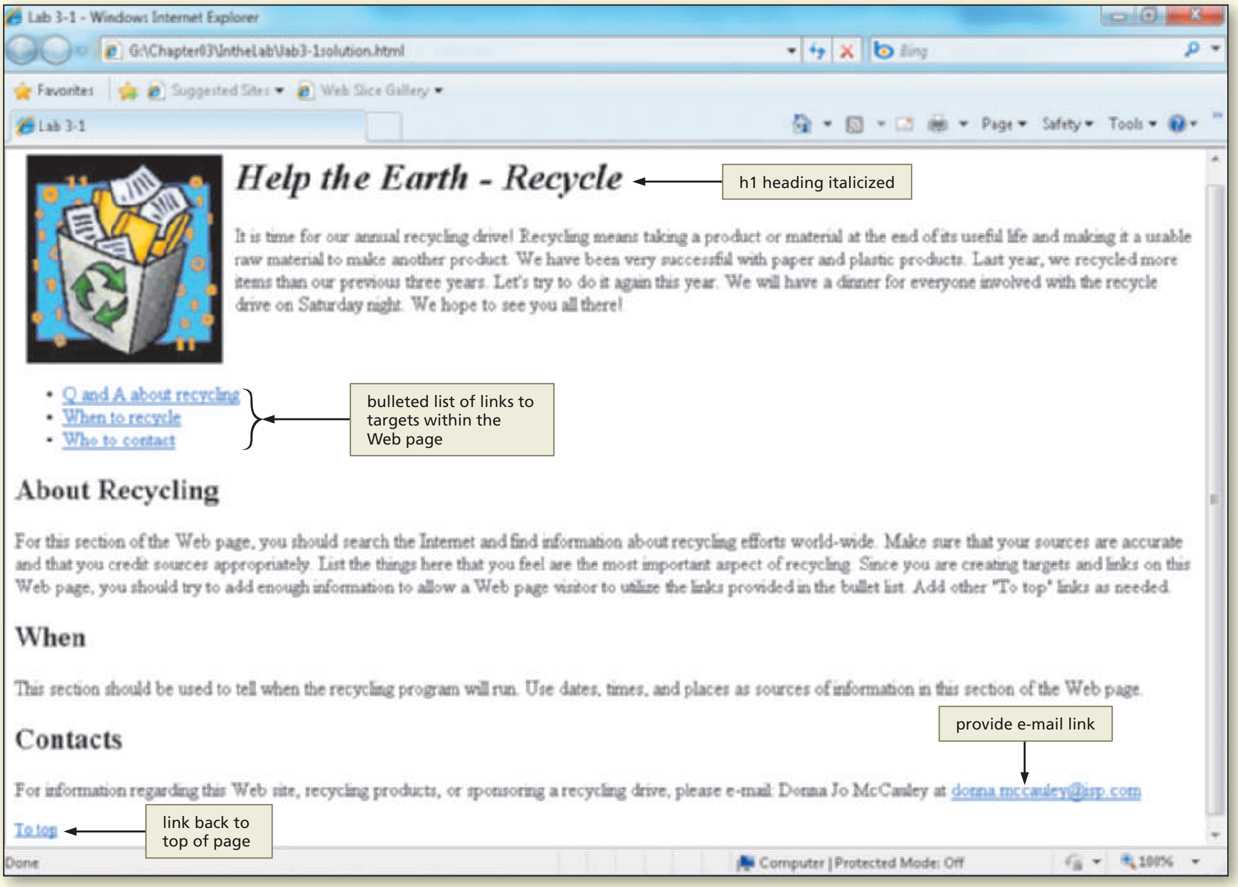
In the Lab

Lab 1: Creating a Web Page with Links

Problem: Your instructor wants you to create a Web page demonstrating your knowledge of link targets. You have been asked to create a Web page to demonstrate this technique, similar to the one shown in Figure 3–52. Use inline styles for all styles in the Web page.

Instructions: Perform the following steps:

1. Start Notepad++ and create a new HTML file with the title, Lab 3-1, in the main heading section.
2. Begin the body section by adding the image recycle.gif and aligning it to the left. Use the margin-left-and-right with values of 10 pixels.
3. Add the heading Help the Earth - Recycle. Format the heading to use the Heading 1 style, left-aligned, italic, with the font color black.
4. Add an unordered list with the three list items, as shown in Figure 3–52. These three items will be used to link to the three sections of text below them.


Lab 3-1 - Windows Internet Explorer
G:\Chapter03\IntheLab\lab3-1solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Lab 3-1
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

Help the Earth - Recycle

It is time for our annual recycling drive! Recycling means taking a product or material at the end of its useful life and making it a usable raw material to make another product. We have been very successful with paper and plastic products. Last year, we recycled more items than our previous three years. Let's try to do it again this year. We will have a dinner for everyone involved with the recycle drive on Saturday night. We hope to see you all there!

- Q and A about recycling
- When to recycle
- Who to contact

About Recycling

For this section of the Web page, you should search the Internet and find information about recycling efforts world-wide. Make sure that your sources are accurate and that you credit sources appropriately. List the things here that you feel are the most important aspect of recycling. Since you are creating targets and links on this Web page, you should try to add enough information to allow a Web page visitor to utilize the links provided in the bullet list. Add other "To top" links as needed.

When

This section should be used to tell when the recycling program will run. Use dates, times, and places as sources of information in this section of the Web page.

Contacts

For information regarding this Web site, recycling products, or sponsoring a recycling drive, please e-mail: Donna Jo McCauley at donna.mccauley@isp.com

To top

h1 heading italicized

bulleted list of links to targets within the Web page

provide e-mail link

link back to top of page

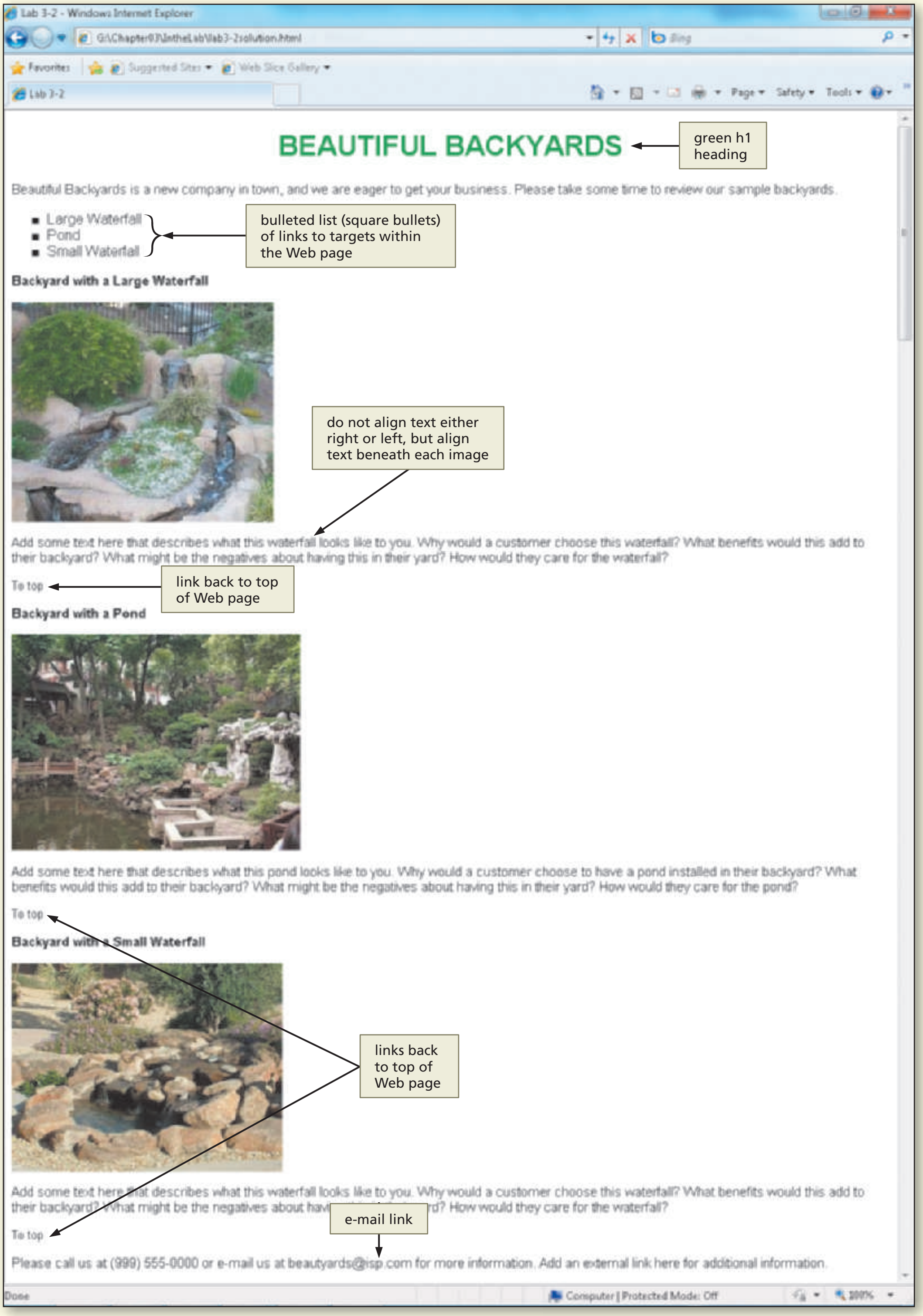
Figure 3–52

5. Add a Heading 2 style heading, About Recycling, and set a link target named about. Type a paragraph of text based on your research of the topic, as shown in Figure 3–52.
6. Add a Heading 2 style heading, When, and set a link target named when. Type a paragraph based on your research of the topic, as shown in Figure 3–52.
7. Add a Heading 2 style heading, Contacts, and set a link target named contacts. Type the paragraph, as shown in Figure 3–52.
8. Create a link target at the top of the page named top.
9. Create a top link at the bottom of the page, as shown in Figure 3–52. Set the link to direct to the top target at the top of the page.
10. Create links from the bulleted list to the three targets.
11. Create an e-mail link, as shown in Figure 3–52.
12. Save the HTML file in the Chapter03\IntheLab folder using the file name lab3-1solution.html.
13. Validate the lab-3-1solution.html file.
14. Print the lab3-1solution.html file.
15. Enter the URL `g:\Chapter03\IntheLab\lab3-1solution.html` to view the Web page in your browser.
16. Print the Web page.
17. Submit the HTML file and Web page in the format specified by your instructor.

In the Lab

2: Creating a Web Page with Links

Problem: Your instructor wants you to create a Web page demonstrating your knowledge of link targets. You have been asked to create a Web page to demonstrate this technique, similar to the one shown in Figure 3–53.


Lab 3-2 - Windows Internet Explorer
G:\Chapter03\IntheLab\lab3-2solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Lab 3-2
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

BEAUTIFUL BACKYARDS

green h1 heading

Beautiful Backyards is a new company in town, and we are eager to get your business. Please take some time to review our sample backyards.

- Large Waterfall
- Pond
- Small Waterfall

bulleted list (square bullets) of links to targets within the Web page

Backyard with a Large Waterfall

do not align text either right or left, but align text beneath each image

Add some text here that describes what this waterfall looks like to you. Why would a customer choose this waterfall? What benefits would this add to their backyard? What might be the negatives about having this in their yard? How would they care for the waterfall?

To top

link back to top of Web page

Backyard with a Pond

Add some text here that describes what this pond looks like to you. Why would a customer choose to have a pond installed in their backyard? What benefits would this add to their backyard? What might be the negatives about having this in their yard? How would they care for the pond?

To top

Backyard with a Small Waterfall

links back to top of Web page

Add some text here that describes what this waterfall looks like to you. Why would a customer choose this waterfall? What benefits would this add to their backyard? What might be the negatives about havi rd? How would they care for the waterfall?

e-mail link

To top

Please call us at (999) 555-0000 or e-mail us at beautyards@isp.com for more information. Add an external link here for additional information.

Figure 3–53

Instructions: Perform the following steps:

1. Start Notepad++ and create a new HTML file with the title, Lab 3-2, in the main heading section.
2. Begin the body section by adding an h1 heading that is centered.
3. Add the following code into an embedded style. Notice that all text links have the same background color as the h1 heading at the top of the Web page. This is because of the code that you put in the embedded style, as follows:

```
h1          {color: #00934a;
            font-family: Arial, Verdana, Garamond}
h2          {color: #00934a;
            font-family: Arial, Verdana, Garamond}
p           {font-family: Arial, Verdana, Garamond;
            font-size: 11pt}
a           {text-decoration: none;
            color: black;
            font-family: Arial, Verdana, Garamond}
a:hover     {background: #00934a;
            color: white}
ul          {font-family: Arial, Verdana, Garamond;
            list-style-type: square}
```

4. Add an unordered list with the three list items, as shown in Figure 3–53. These three items will be used to link to the three sections of text below them.
5. Add a title (not a heading) Backyard with a Large Waterfall and use a font-weight of bolder. Add the image largewaterfall.jpg that has a width of 294 and a height of 247.
6. Add a second title, Backyard with a Pond, and image pond.jpg (width=324; height=243). Set a link target named pond. Type a paragraph based on your research of the topic, as shown in Figure 3–53.
7. Add a third title, Backyard with a Small Waterfall, and image smallwaterfall.jpg (width=304; height=234).
8. Create a link target at the top of the page named top.
9. Add three To top links, one after each section, as shown in Figure 3–53. Set the link to direct to the top target at the top of the page.
10. Create links from the bulleted list to the three targets.
11. Create an e-mail link, as shown in Figure 3–53.
12. Save the HTML file in the Chapter03\IntheLab folder using the file name lab3-2solution.html.
13. Validate the lab3-2solution.html file.
14. Print the lab3-2solution.html file.
15. Enter the URL `g:\Chapter03\IntheLab\lab3-2solution.html` to view the Web page in your browser.
16. Print the Web page.
17. Submit the HTML file and Web page in the format specified by your instructor.

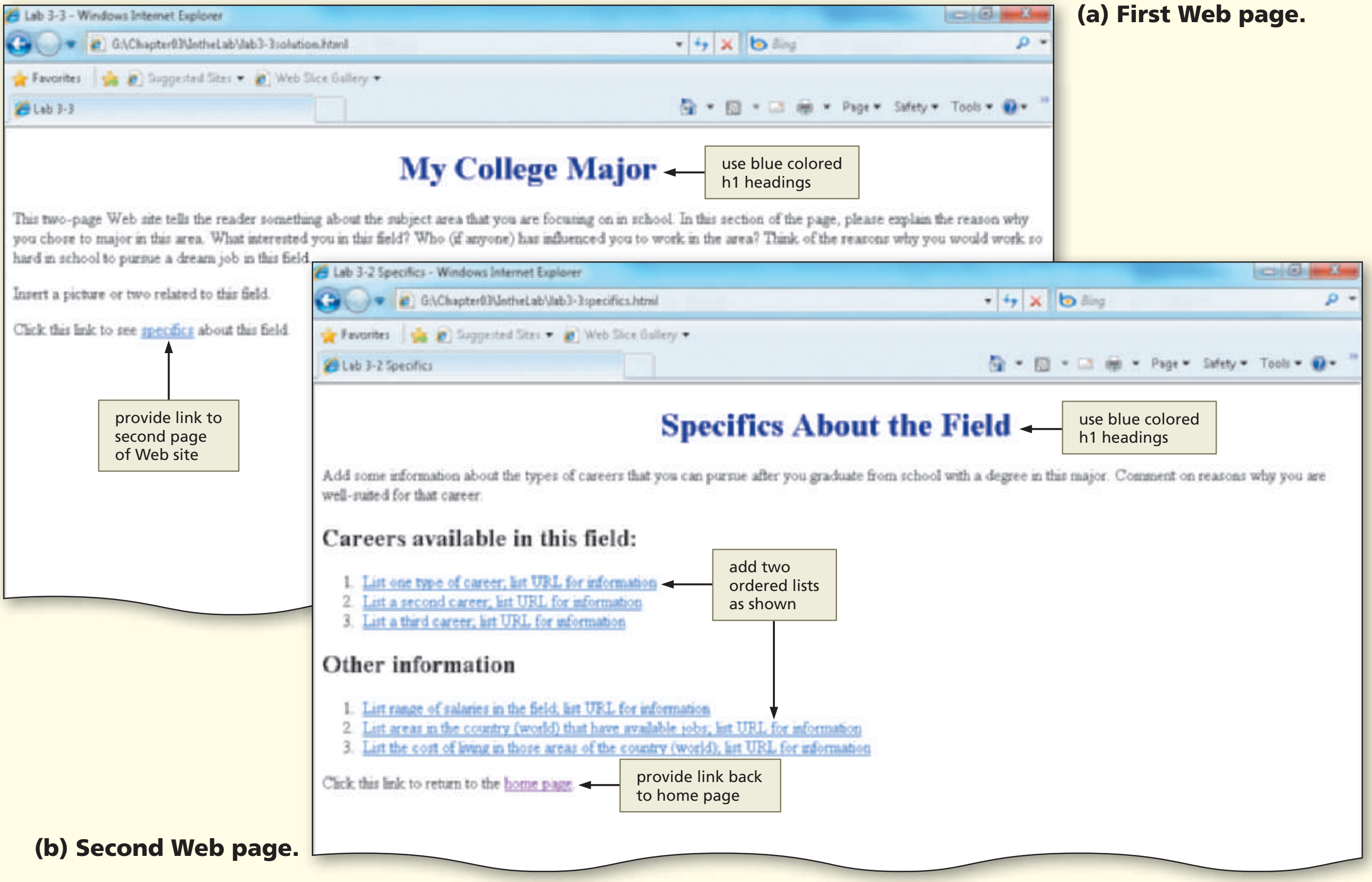
In the Lab

3: Creating Two Linked Web Pages

Problem: Your Communications instructor has asked each student in the class to create a two-page Web site to help students in the class get to know more about the area in which you are majoring in school. She suggested using the basic template shown in Figures 3–54a and 3–54b as a starting point. The first Web page (Figure 3–54a) is a home page that includes basic information about your major. Really try to answer the questions listed (for example, why you chose this major), as shown on the Web page. If you can, add an image related to your chosen field somewhere on the Web page. Add a link to the second Web page. The second Web page (Figure 3–54b) includes a paragraph of text and numbered lists with links.

Instructions: Perform the following steps:

1. Start Notepad++ and create a new HTML file with the title Lab 3-3 in the main heading section.
2. In the first Web page, include a Heading style 1 heading, similar to the one shown in Figure 3–54a, and a short paragraph of text. Experiment and use any color for the heading (navy is shown).
3. Create a text link to the second Web page, lab3-3specifics.html.
4. Save the HTML file in the Chapter03\IntheLab folder using the file name lab3-3solution.html. Validate the lab3-3solution.html file. Print the lab3-3solution.html file.
5. Start a new HTML file with the title Lab 3-3 Specifics in the main heading section.
6. In the second Web page, include a Heading style 1 heading, similar to the one shown in Figure 3–54b, a short paragraph of text, and two Heading style 2 headings. Use any color for the headings; navy is


Lab 3-3 - Windows Internet Explorer
G:\Chapter03\IntheLab\lab3-3solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Lab 3-3
Page
Safety
Tools

(a) First Web page.

My College Major

use blue colored h1 headings

This two-page Web site tells the reader something about the subject area that you are focusing on in school. In this section of the page, please explain the reason why you chose to major in this area. What interested you in this field? Who (if anyone) has influenced you to work in the area? Think of the reasons why you would work so hard in school to pursue a dream job in this field.

Insert a picture or two related to this field.

Click this link to see specifics about this field.

provide link to second page of Web site

Lab 3-2 Specifics - Windows Internet Explorer
G:\Chapter03\IntheLab\lab3-3specifics.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Lab 3-2 Specifics
Page
Safety
Tools

Specifics About the Field

use blue colored h1 headings

Add some information about the types of careers that you can pursue after you graduate from school with a degree in this major. Comment on reasons why you are well-suited for that career.

Careers available in this field:

1. List one type of career; list URL for information
2. List a second career; list URL for information
3. List a third career; list URL for information

add two ordered lists as shown

Other information

1. List range of salaries in the field; list URL for information
2. List areas in the country (world) that have available jobs; list URL for information
3. List the cost of living in those areas of the country (world); list URL for information

Click this link to return to the home page.

provide link back to home page

(b) Second Web page.

Figure 3–54

shown in the h1 and black is used in the h2 headings. From the standpoint of consistency, you may want to make those headings all the same color. (*Hint:* Use an embedded style for this.)

7. Create two ordered (numbered) lists with at least two items that serve as links to Web pages on another Web site. Add a link back to the first Web page, as shown in Figure 3–54b.
8. Save the HTML file in the Chapter03\IntheLab folder using the file name lab3-3specifics.html. Validate the lab3-3specifics.html file. Print the lab3-3specifics.html file.
9. Enter the URL `g:\Chapter03\IntheLab\lab3-3solution.html` to view the Web page in your browser. Click the text link to the second Web page. Click the links in the lists to test them.
10. Print the Web pages.
11. Submit the HTML file and Web page in the format specified by your instructor.

Cases and Places

Apply your creative thinking and problem-solving skills to design and implement a solution.

• Easier ••More Difficult

• 1: Add a Web Page to the Getting Greener Site

Laquisha Carter is very impressed with the Getting Greener Web pages and now would like to add a Web page listing other "green" things that you can do to help the environment. Search the Web to find at least four Web sites that contain information about other environmentally responsible things that you can do. Create a Web page that includes a Heading 1 style heading, a brief paragraph of descriptive text, and list links to those Web sites. Modify the Getting Greener home page to include a link to the new Web page.

• 2: Create a Web Page with Text Formatting

You recently got an internship developing Web pages for Jose Sanchez Painters. Mr. Sanchez has asked you to update the home page for his Web site to make it more visually appealing. As a first step, you plan to create a Web page with sample text formats, such as the ones shown in Figure 3–20 on page HTML 116, to share with Mr. Sanchez and get his input on which types of formatting he prefers. Create such a Web page and include text formatted as bold, italic, underlined, superscript, and subscript; use different colors and sizes for each type of text. Use CSS styles for most of your styles, but also use some of the text formatting tags shown in the chapter. Determine why you would choose to use one over the other (i.e., styles versus formatting tags). Be sure to include one sample using the font-weights of bold tag and one using bolder to see how they compare when displayed together. Compare those to using <bold> or <strong> as formatting tags. Be creative and make sure that the Web page looks good but that the new styles do not distract from the content. Be prepared to explain to your client, Mr. Sanchez, why some font-families (e.g., something very cursive style) might not be appropriate.

•• 3: Add Image Links to External Sites

To update the Getting Greener Web site further, you want to add image links so the pictures on the Green Home Web page also are links to Web pages in an external Web site. Search the Web for information specific to each of the two Green Home images used in the project. Modify the Green Home Web page so each "green" image is used as a link to a Web page in an external Web site. After adding the links, you decide the text paragraphs on the page are too close to the pictures. Modify the Green Home Web page to use the properties of float together with margins in the <img> element to add space around each image. Also try two variations of other properties you can use with the <img> element in addition to float and margin. (*Hint:* See Appendix D for ideas.)

Continued >

Cases and Places *continued*

•• 4: Create a Web Page with Text Links and Define Link Colors

Make It Personal

Your sister owns a clothing store and recently had a Web site developed for her company. She is unhappy that the links on the company Web pages appear in blue when unvisited and purple when visited, because those colors do not match the company logo. She has asked you to update the Web pages. Create a Web page similar to Figure 3–4 on page HTML 94, with three text links to a Web page in an external Web site. Add the appropriate link styles to define the link colors requested by your sister. Also, explain why you might not want to change the colors of the links from the standard blue and violet but show ways that you can accommodate different colors and not confuse users.

•• 5: Create a Prototype Web Site with Five Pages

Working Together

Your manager at Uptown Enterprises has asked your team to create a simple five-page prototype of the Web pages in the new Entertainment section for the online magazine CityStuff. The home page should include headings and brief paragraphs of text for Arts, Music, Movies, and Dining. Within each paragraph of text is a link to one of the four detailed Web pages for each section (for example, the Arts link should connect to the Arts Web page). The home page also includes an e-mail link at the bottom of the page. Add a To top link that connects to a target at the top of the page. The four detailed Web pages should include links to external Web sites of interest and a link back to the home page. If possible, also find appropriate images to use as a background or in the Web page, and set text to wrap around the images. Remember to use CSS. Determine during the design phase whether it would be better to use inline or embedded style sheets or both for this Web site.

4 Creating Tables in a Web Site Using an External Style Sheet

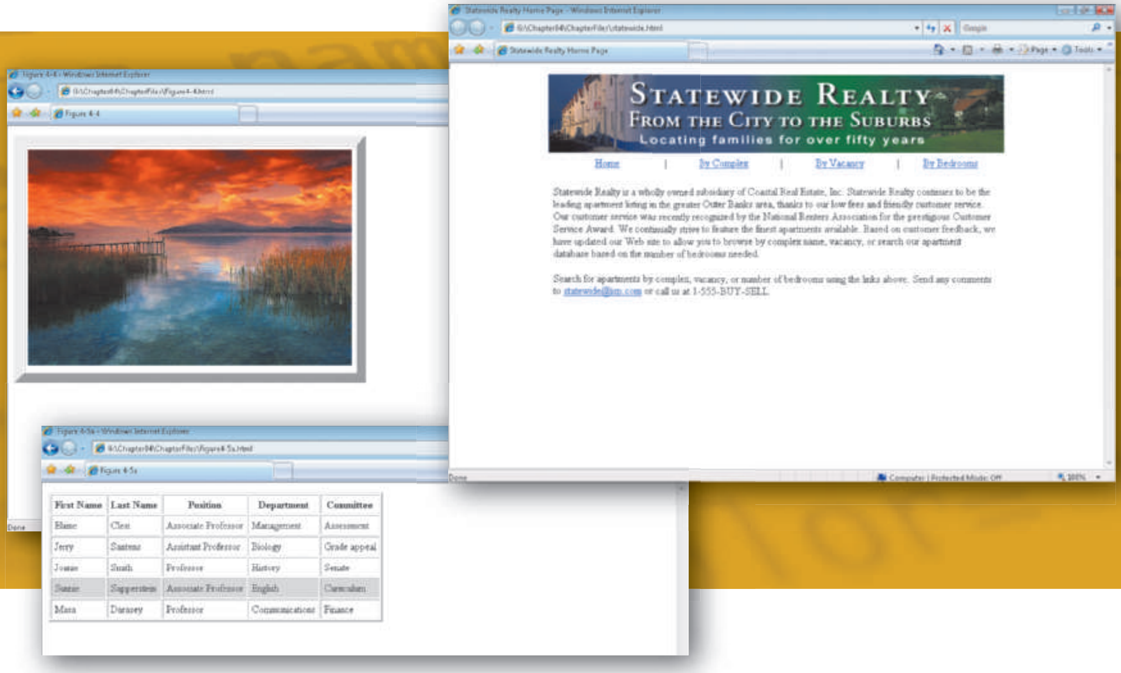


Figure 4-4 - Windows Internet Explorer
G:\Chapter04\ChapterFiles\Figure4-4.html
Figure 4-4
Statewide Realty Home Page - Windows Internet Explorer
G:\Chapter04\ChapterFiles\statewide.html
Statewide Realty Home Page
Figure 4-5a - Windows Internet Explorer
G:\Chapter04\ChapterFiles\Figure4-5a.html
Figure 4-5a
Done

STATEWIDE REALTY
FROM THE CITY TO THE SUBURBS
Locating families for over fifty years

Home | By Complex | By Vacancy | By Bedrooms

Statewide Realty is a wholly owned subsidiary of Coastal Real Estate, Inc. Statewide Realty continues to be the leading apartment listing in the greater Outer Banks area, thanks to our low fees and friendly customer service. Our customer service was recently recognized by the National Renters Association for the prestigious Customer Service Award. We continually strive to feature the finest apartments available. Based on customer feedback, we have updated our Web site to allow you to browse by complex name, vacancy, or search our apartment database based on the number of bedrooms needed.

Search for apartments by complex, vacancy, or number of bedrooms using the links above. Send any comments to statewide@isp.com or call us at 1-555-BUY-SELL.

First Name	Last Name	Position	Department	Committee
Blaine	Clem	Associate Professor	Management	Assessment
Jerry	Santana	Assistant Professor	Biology	Grade appeal
Joanne	Smith	Professor	History	Senate
Susie	Sapperstein	Associate Professor	English	Curriculum
Mara	Dunsey	Professor	Communications	Finance

Objectives

You will have mastered the material in this chapter when you can:

- Define table elements
- Describe the steps used to plan, design, and code a table
- Create a borderless table for a horizontal menu bar with text links
- Create an external style sheet to define styles across a Web site
- Utilize classes to give you more control over styles
- Link an external style sheet to Web pages where you want its styles applied
- Copy and paste HTML code to a new file
- Create a table with borders and insert text
- Alter the spacing between and within cells using the cellspacing and cellpadding attributes
- Utilize inline styles to alter the style of individual elements on a Web page
- Add background color to rows and cells
- Insert a caption below a table
- Create headings that span rows using the rowspan attribute

4 Creating Tables in a Web Site Using an External Style Sheet

Introduction

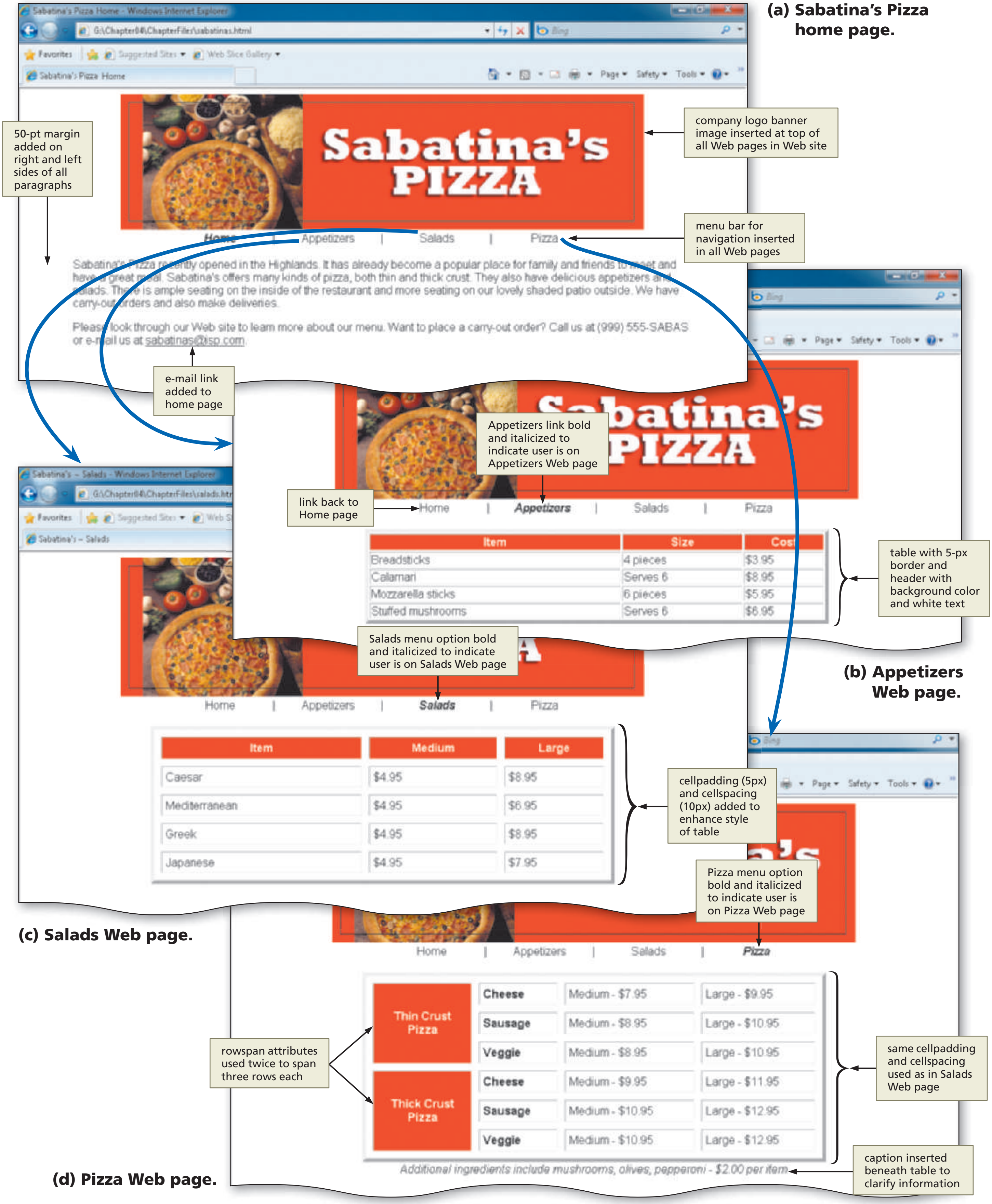
So far, you have learned how to make a basic Web page and how to link one Web page to another, both within the same Web site and external to the Web site. You also learned how to create inline styles and embedded style sheets to alter the appearance of Web page elements. In this chapter's project, you create an external (linked) style sheet to set the style for elements across multiple Web pages. The project also adds to your HTML knowledge by teaching you how to organize and present information on a Web page using tables with rows and columns. In this chapter, you learn about the elements used in a table and how to plan, design, and code a table. You learn how to use a table to create a horizontal menu bar with text links, and to create tables to organize text and images. You will enhance the Web site by manipulating the properties and attributes of tables and paragraphs, altering borders, colors, and spacing, and adding a table caption.

Project — Sabatina's Pizza Web Site

Having a reliable Web site makes it easier for a company's customers to find the establishment, provides a way to communicate the company's brand, and allows the company to provide additional services. As advertising director for Sabatina's Pizza, you want to enhance Sabatina's Web site to increase the company's exposure to current and new customers, and to incorporate ideas gathered from customer feedback surveys. The new site will allow customers to browse through tables of information that outline the appetizers, salads, and pizzas offered by the restaurant.

As shown in Figure 4–1a, the Sabatina's Pizza home page includes a company logo banner and a borderless table that contains a menu bar under the logo. The borderless table gives users easy access to all pages in the Web site. This table is available on every Web page in the Web site. The Appetizers, Salads, and Pizza Web pages (Figures 4–1b, 4–1c, and 4–1d) each include the company logo banner and the same borderless table at the top, as well as one table with borders that displays the contents of that particular Web page. In this project, you will create the sabatinas.html and appetizers.html Web pages. You will edit the salads.html Web page (Figure 4–1c) to add cellspacing and cellpadding attributes, thereby adjusting the spacing between cells. The pizza.html Web page file (Figure 4–1d) is also edited to add a caption with information about the table and to use the rowspan attribute to create headings that span several rows.

As you read through this chapter and work on the project, you will learn how to plan, design, and code tables to create a user-friendly Web site. You also will learn to format tables and to combine table features to make the pages more readable. In addition, you will learn to create a menu bar with text links.


Sabatina's Pizza Home - Windows Internet Explorer
G:\Chapter04\ChapterFiles\sabatinas.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Sabatina's Pizza Home
Page
Safety
Tools
Sabatina's PIZZA
Sabatina's ~ Salads - Windows Internet Explorer
G:\Chapter04\ChapterFiles\salads.htm
Sabatina's ~ Salads

(a) Sabatina's Pizza home page.

Home | Appetizers | Salads | Pizza

Sabatina's Pizza recently opened in the Highlands. It has already become a popular place for family and friends to meet and have a great meal. Sabatina's offers many kinds of pizza, both thin and thick crust. They also have delicious appetizers and salads. There is ample seating on the inside of the restaurant and more seating on our lovely shaded patio outside. We have carry-out orders and also make deliveries.

Please look through our Web site to learn more about our menu. Want to place a carry-out order? Call us at (999) 555-SABAS or e-mail us at sabatinas@isp.com.

50-pt margin added on right and left sides of all paragraphs

company logo banner image inserted at top of all Web pages in Web site

menu bar for navigation inserted in all Web pages

e-mail link added to home page

(b) Appetizers Web page.

Home | ***Appetizers*** | Salads | Pizza

Item	Size	Cost
Breadsticks	4 pieces	$3.95
Calamari	Serves 6	$8.95
Mozzarella sticks	6 pieces	$5.95
Stuffed mushrooms	Serves 6	$6.95

Appetizers link bold and italicized to indicate user is on Appetizers Web page

link back to Home page

table with 5-px border and header with background color and white text

(c) Salads Web page.

Home | Appetizers | ***Salads*** | Pizza

Item	Medium	Large
Caesar	$4.95	$8.95
Mediterranean	$4.95	$6.95
Greek	$4.95	$8.95
Japanese	$4.95	$7.95

Salads menu option bold and italicized to indicate user is on Salads Web page

cellpadding (5px) and cellspacing (10px) added to enhance style of table

(d) Pizza Web page.

Home | Appetizers | Salads | ***Pizza***

Thin Crust Pizza	Cheese	Medium - $7.95	Large - $9.95
	Sausage	Medium - $8.95	Large - $10.95
	Veggie	Medium - $8.95	Large - $10.95
Thick Crust Pizza	Cheese	Medium - $9.95	Large - $11.95
	Sausage	Medium - $10.95	Large - $12.95
	Veggie	Medium - $10.95	Large - $12.95

Additional ingredients include mushrooms, olives, pepperoni - $2.00 per item

Pizza menu option bold and italicized to indicate user is on Pizza Web page

rowspan attributes used twice to span three rows each

same cellpadding and cellspacing used as in Salads Web page

caption inserted beneath table to clarify information

Figure 4–1

Overview

As you read this chapter, you will learn how to create the Web pages shown in Figures 4–1a through 4–1d on the previous page by performing these general tasks:

- Enter HTML code into the Notepad++ window.
- Save the file as an HTML file.
- Enter basic HTML tags and add text to the file.
- Add a horizontal menu bar with text links.
- Create a table with borders to display information in an organized manner.
- Create an external style sheet to set the style for all Web pages in the Web site.
- Use classes to give more control over the styles used.
- Link an external style sheet to Web pages.
- Utilize inline styles to alter the style of individual elements on the Web page.
- Add HTML tags that enhance a table with cellpadding and cellspacing.
- Enhance a Web table with rowspanning.
- Add a caption to a table.
- Print the HTML code and Web pages

Plan Ahead

General Project Guidelines

When creating a Web page, the actions you perform and decisions you make will affect the appearance and characteristics (the styles) of the finished page. As you create Web pages, such as those shown in Figures 4–1a through 4–1d, you should follow these general guidelines:

1. **Complete Web page planning.** Before developing a Web page, you must know the purpose of the Web site, identify the users of the site and their computing environments, and decide who owns the information on the Web page.

2. **Analyze the content and organization of the Web page**. In the analysis phase of the Web development life cycle, you should analyze what content to include on the Web page and how to organize that information. In this phase, you need to determine what information you want to convey so that you can highlight that information on the Web page using different techniques. Refer to Table 1–4 on page HTML 15 for information on the phases of the Web development life cycle.

3. **Choose the content and organization for the Web page**. Once you have completed the analysis, you need to determine specifically what content to include on the Web page. With tables, you are able to display the Web page content in a very organized manner. Tables can be used to display text only, as well as graphical images or combinations of text and images. Some text is better highlighted by using different colors for column or row headings. Other information is displayed more effectively with row- and column-spanning techniques. This should all be determined before coding the Web pages.

4. **Identify how to format various elements of the Web page**. The overall appearance or style of a Web page significantly affects its ability to communicate clearly. Additionally, you want to provide easy navigation for your Web site visitors. Adding images and color helps to communicate your message and adding a menu bar with links to the other Web pages within the Web site makes it easy to navigate the Web site. Determine what style sheets to use for the overall appearance or style, including external, embedded, and inline style sheets. Also determine what formatting tag attributes need to be implemented.

Plan Ahead

(continued)

5. **Determine where to save the Web page**. You can store a Web page permanently, or save it on a variety of storage media, including a hard disk, USB flash drive, CD, or DVD. You also can indicate a specific location on the storage media for saving the Web page. Recognize the appropriate absolute and relative addressing that you will need as determined by your analysis.
6. **Create the Web page and links**. After analyzing and designing the Web site, you need to develop the individual Web pages. It is important to maintain a consistent look throughout the Web site. Use graphics and links consistently so that your Web site visitor does not become confused.
7. **Test all Web pages within the Web site**. An important part of Web development is testing to assure that you are following XHTML standards. This book uses the World Wide Web Consortium (W3C) validator that allows you to test your Web page and clearly explains any errors you have. Additionally, you should check all content for accuracy and test all links.

When necessary, more specific details concerning the above guidelines are presented at appropriate points in the chapter. The chapter also will identify the actions performed and decisions made regarding these guidelines during the creation of the Web pages shown in Figures 4–1a through 4–1d on page HTML 159.

Planning and Designing a Multipage Web Site

The Web site that you create in this chapter consists of four Web pages: sabatinas.html, appetizers.html, salads.html, and pizza.html. With a multipage Web site, you need to design the overall look of the Web site itself, as well as the individual Web pages. You will use both formatting tag attributes and style sheets to create the overall appearance (or style) of the Web site. An **external style sheet** is used to define styles for multiple pages in a Web site. With external (linked) style sheets, you create the style sheet first in a separate file saved with a .css extension. You then link this style sheet into any Web page in which you want to use it.

In Chapters 2 and 3, you learned how to insert inline and embedded style sheets into your Web pages. Recall that inline style sheets are used to change the style of an individual HTML tag. An embedded style sheet is inserted between the <head> and </head> tags of a single Web page within the style container (<style> and </style). Embedded style sheets are used to change the style for elements on an entire Web page. For the project in this chapter, where you have a multipage Web site, you will learn how to create an external, or linked, style sheet.

Creating Web Pages with Tables

Tables allow you to organize information on a Web page using HTML tags. Tables are useful when you want to arrange text and images into rows and columns in order to make the information straightforward and clear to the Web page visitor. You can use tables to create Web pages with newspaper-type columns of text or structured lists of information. Tables can be complex, using the rowspan and colspan attributes to span rows and columns, background colors in cells, and borders to provide formatting (Figure 4–2a on the next page). Tables also can be simple, with a basic grid format and no color (Figure 4–2b). The purpose of the table helps to define what formatting is appropriate.

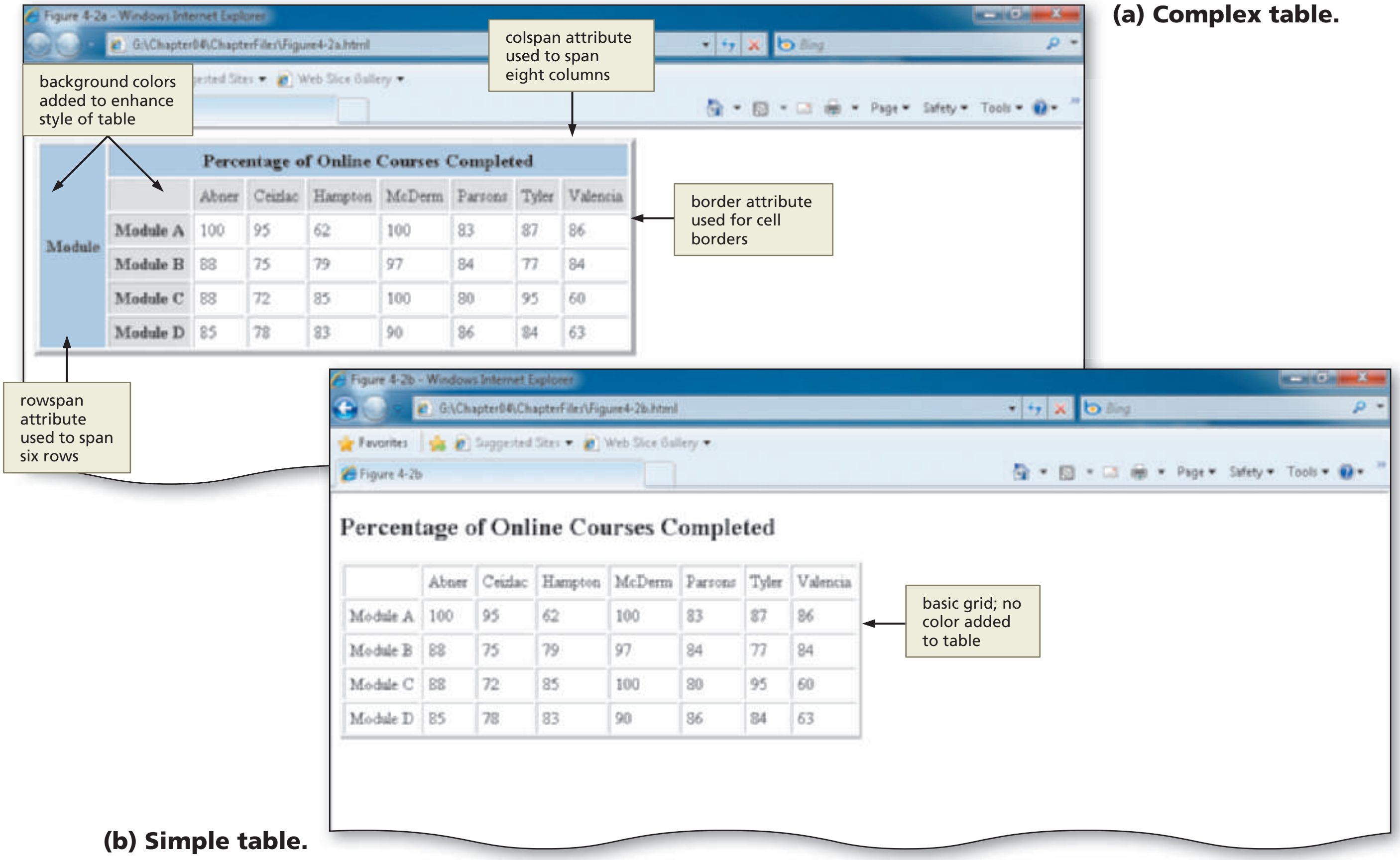


Figure 4-2a - Windows Internet Explorer
G:\Chapter04\ChapterFiles\Figure4-2a.html
Suggested Sites
Web Slice Gallery
Page
Safety
Tools
Figure 4-2b - Windows Internet Explorer
G:\Chapter04\ChapterFiles\Figure4-2b.html
Favorites
Figure 4-2b
Bing

(a) Complex table.

Module	Percentage of Online Courses Completed							
		Abner	Ceizlac	Hampton	McDerm	Parsons	Tyler	Valencia
	Module A	100	95	62	100	83	87	86
	Module B	88	75	79	97	84	77	84
	Module C	88	72	85	100	80	95	60
	Module D	85	78	83	90	86	84	63

background colors added to enhance style of table

colspan attribute used to span eight columns

border attribute used for cell borders

rowspan attribute used to span six rows

Percentage of Online Courses Completed

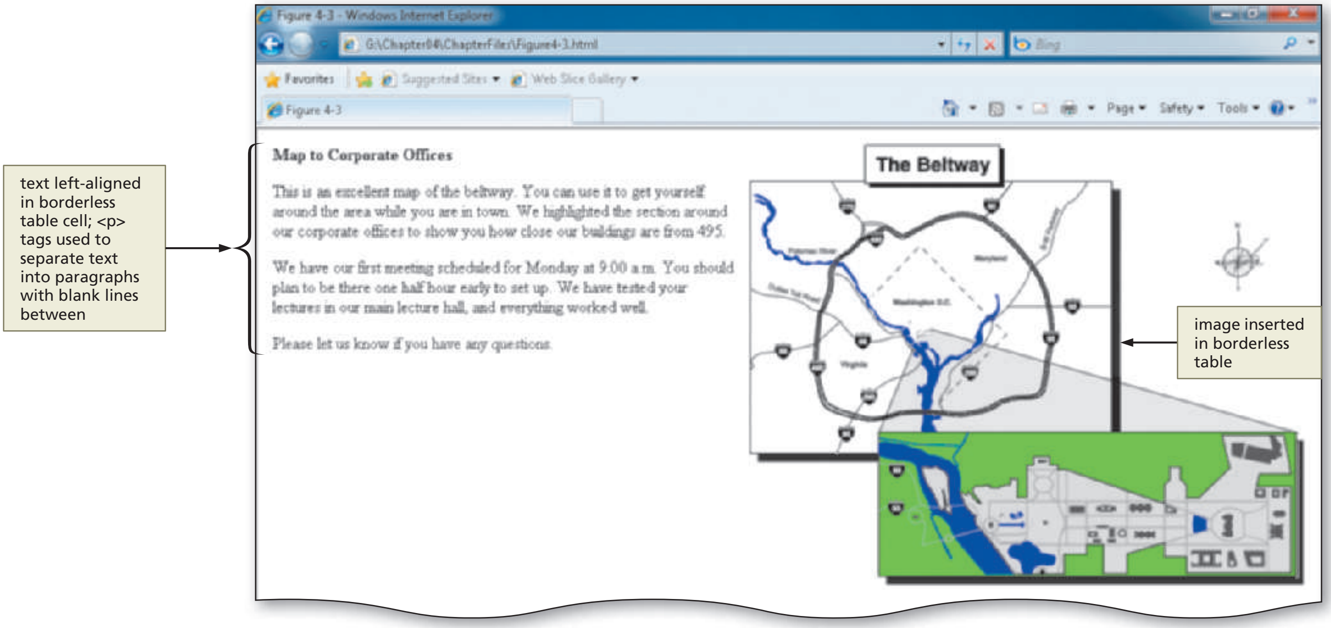
	Abner	Ceizlac	Hampton	McDerm	Parsons	Tyler	Valencia
Module A	100	95	62	100	83	87	86
Module B	88	75	79	97	84	77	84
Module C	88	72	85	100	80	95	60
Module D	85	78	83	90	86	84	63

basic grid; no color added to table

(b) Simple table.

Figure 4–2

In Chapter 3, you learned how to wrap text around an image. You also can use tables to position text and images, such as the one shown in Figure 4–3; this is a borderless table used to position text to the left of the map images. An advantage of using a table to position text and images instead of just wrapping the text around the image is that you have greater control over the placement of the text and image.



Map to Corporate Offices

This is an excellent map of the beltway. You can use it to get yourself around the area while you are in town. We highlighted the section around our corporate offices to show you how close our buildings are from 495.

We have our first meeting scheduled for Monday at 9:00 a.m. You should plan to be there one half hour early to set up. We have tested your lectures in our main lecture hall, and everything worked well.

Please let us know if you have any questions.

text left-aligned in borderless table cell; <p> tags used to separate text into paragraphs with blank lines between

image inserted in borderless table

Figure 4–3 Image and text positioned in table.

Tables also can be used to create a border or frame around an image. Figure 4–4 shows a Web page with an image inserted into a table with one row and one cell. The border is set to a pixel width of 15 to create the appearance of a frame. Using a table to create a frame is a simple technique that gives an image a polished look and highlights the image.

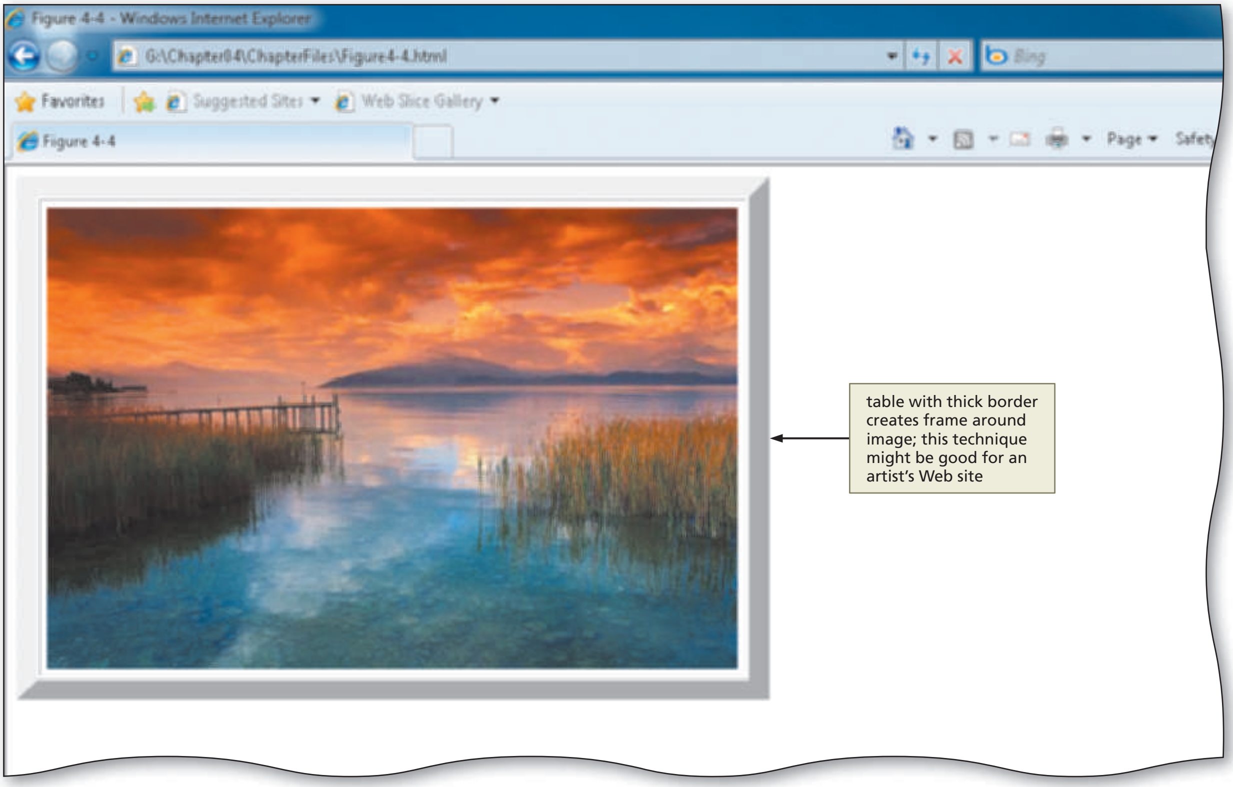


Figure 4-4 - Windows Internet Explorer
G:\Chapter04\ChapterFiles\Figure4-4.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Figure 4-4
Page
Safety

table with thick border creates frame around image; this technique might be good for an artist's Web site

Figure 4–4 Table used as image frame.

Table Elements

Tables consist of rows, columns, and cells, much like spreadsheets. A **row** is a horizontal line of information. A **column** is a vertical line of information. A **cell** is the intersection of a row and a column. Figure 4–5 on the next page shows examples of these three elements. In Figure 4–5a, the fifth row in the table has a gray background. In Figure 4–5b, the fourth column has a peach background. In Figure 4–5c, the cell at the intersection of column 2 and row 6 has a gold background.

As shown in Figure 4–5c, a cell can be one of two types: a heading cell or a data cell. A **heading cell** displays text as bold and center-aligned. A **data cell** displays normal text that is left-aligned.

Understanding the row, column, and cell elements is important as you create a table using HTML. Properties and attributes are set relative to these table elements. For example, you can set attributes for an entire row of information, for a single cell, or for one or more cells within a row.

BTW

Tables

Tables are useful for a variety of purposes. They can store information in tabular form or create a layout on a Web page. Layouts created with tables give more flexibility to the Web developer. You have more control over the placement of information or images. Many popular Web sites use tables.

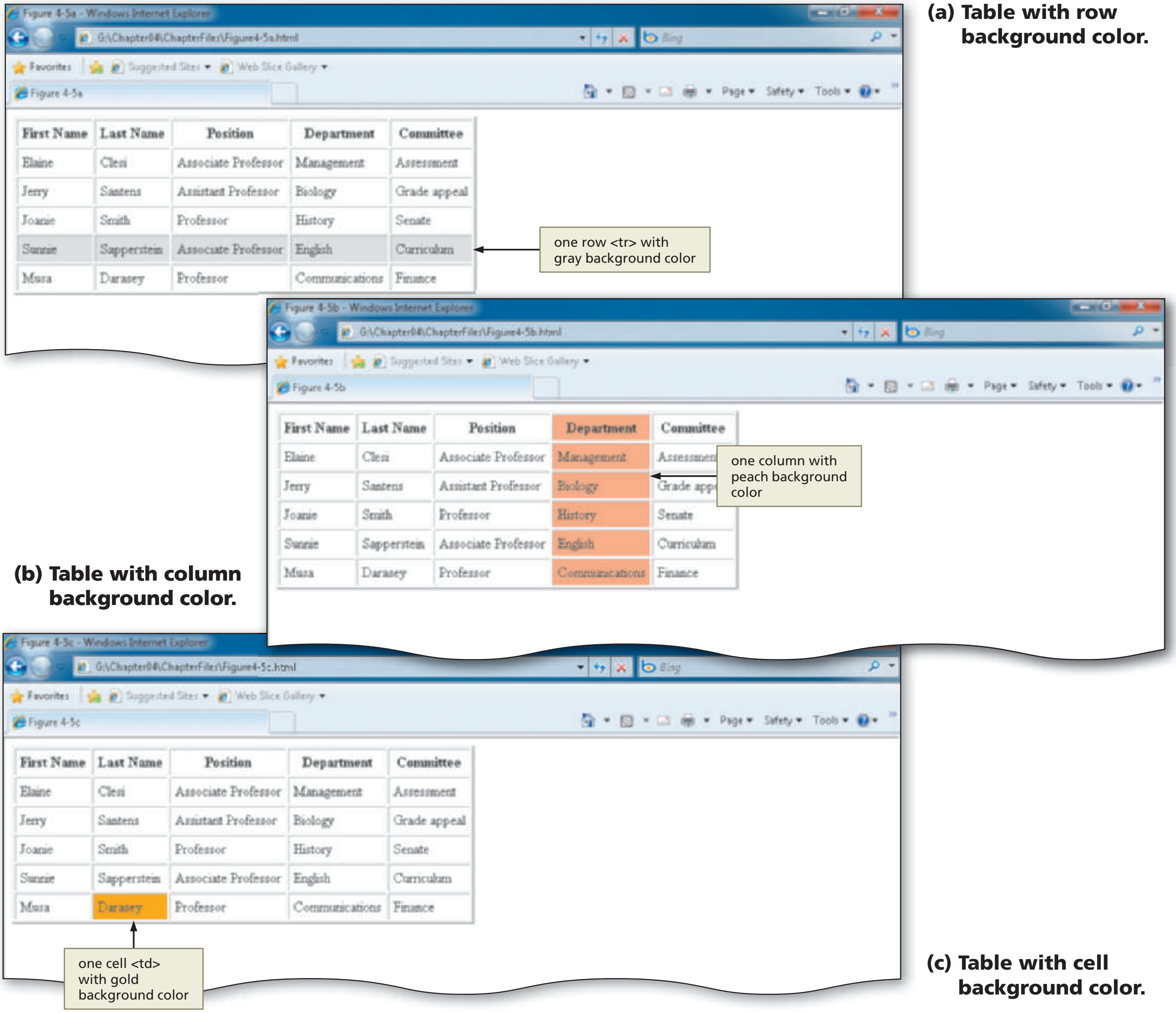


Figure 4-5a - Windows Internet Explorer

G:\Chapter04\ChapterFiles\Figure4-5a.html

First Name	Last Name	Position	Department	Committee
Elaine	Clesi	Associate Professor	Management	Assessment
Jerry	Santens	Assistant Professor	Biology	Grade appeal
Joanie	Smith	Professor	History	Senate
Sunnie	Sapperstein	Associate Professor	English	Curriculum
Musa	Darasey	Professor	Communications	Finance

one row <tr> with gray background color

(a) Table with row background color.

Figure 4-5b - Windows Internet Explorer

G:\Chapter04\ChapterFiles\Figure4-5b.html

First Name	Last Name	Position	Department	Committee
Elaine	Clesi	Associate Professor	Management	Assessmen
Jerry	Santens	Assistant Professor	Biology	Grade app
Joanie	Smith	Professor	History	Senate
Sunnie	Sapperstein	Associate Professor	English	Curriculum
Musa	Darasey	Professor	Communications	Finance

one column with peach background color

(b) Table with column background color.

Figure 4-5c - Windows Internet Explorer

G:\Chapter04\ChapterFiles\Figure4-5c.html

First Name	Last Name	Position	Department	Committee
Elaine	Clesi	Associate Professor	Management	Assessment
Jerry	Santens	Assistant Professor	Biology	Grade appeal
Joanie	Smith	Professor	History	Senate
Sunnie	Sapperstein	Associate Professor	English	Curriculum
Musa	Darasey	Professor	Communications	Finance

one cell <td> with gold background color

(c) Table with cell background color.

Figure 4–5

BTW

Table Elements

Many Web sources discuss table parts, giving numerous examples and tips. For more information about HTML table parts, search the Web for key terms such as HTML Table Elements or Table Properties.

Adding Style to Table Elements

As discussed earlier, there are many ways to set the style (or appearance) of a Web page element. You can use formatting tag attributes (e.g., setting cellpadding and cellspacing on a table) to set the appearance or style. You also can use inline, embedded, or external (linked) style sheets to set the style. During the design phase of the Web development life cycle, you determine how to set the styles for the elements on your Web pages. In this chapter, you use an external (linked) style sheet to set styles for the tables across the entire Web site.

Table Borders, Headers, Captions, and Rules

Tables include features such as table borders, table headers, table captions, and rules attributes (Figure 4–6). A **table border** is the line that encloses the perimeter of the table. A **table header** is the same as a heading cell — it is any cell with bold text that indicates the purpose of the row or column. A header row is used to identify the meaning of the numbers in each column, and headings that span columns and rows are used to provide additional information. Headers also are used by non-visual browsers to identify table content. See the guidelines in Appendix C for specific information about making your Web pages available to the nearly 20% of the world population who have some sort of disability. A **table caption** is descriptive text located above or below the table that further describes the purpose of the table.

Tables can use these features individually or in combination. The purpose for the table dictates which of these features are used. For example, the table shown in Figure 4–6 lists columns of numbers. A header row is used to identify the meaning of the numbers in each column, and headings that span columns and rows are used to provide additional information. Finally, the table caption explains that each number is based on thousands (that is, the 10 listed in the table represents 10,000).

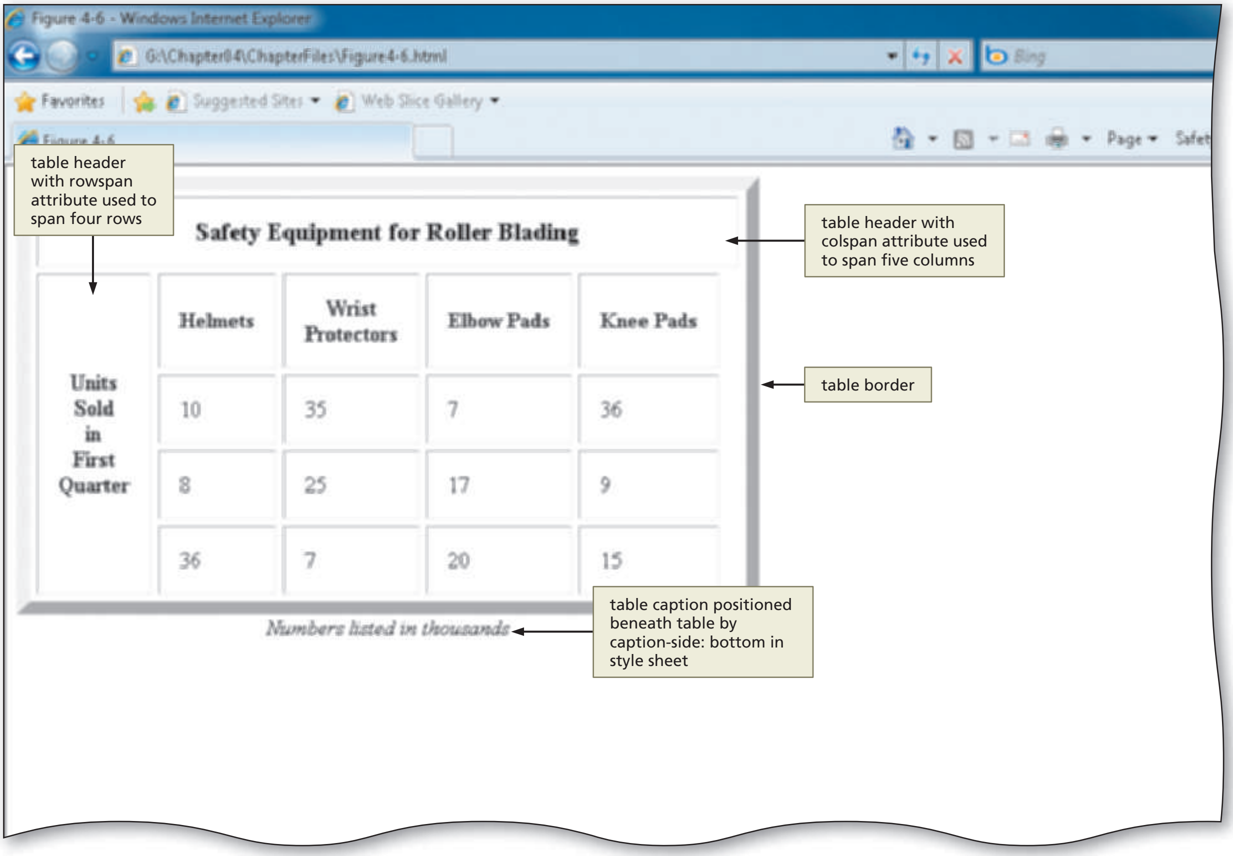


Figure 4-6 - Windows Internet Explorer
G:\Chapter04\ChapterFiles\Figure4-6.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Figure 4-6
Page
Safet

Safety Equipment for Roller Blading				
Units Sold in First Quarter	Helmets	Wrist Protectors	Elbow Pads	Knee Pads
	10	35	7	36
	8	25	17	9
	36	7	20	15

Numbers listed in thousands

table header with rowspan attribute used to span four rows

table header with colspan attribute used to span five columns

table border

table caption positioned beneath table by caption-side: bottom in style sheet

Figure 4–6 Table headers, border, and caption.

Another useful table feature is the rules attribute, which creates horizontal or vertical lines in a table. The **rules attribute** allows a Web developer to select which internal borders to show in a table. It supports several values to provide different formatting options. For example, using rules="none" creates a table with no internal rules. Using rules="cols" creates a table with vertical rules between each column in the table (Figure 4–7a), while rules="rows" creates a table with horizontal rules between each row in the table (Figure 4–7b). Appendix A provides additional information on values supported by the rules attribute.

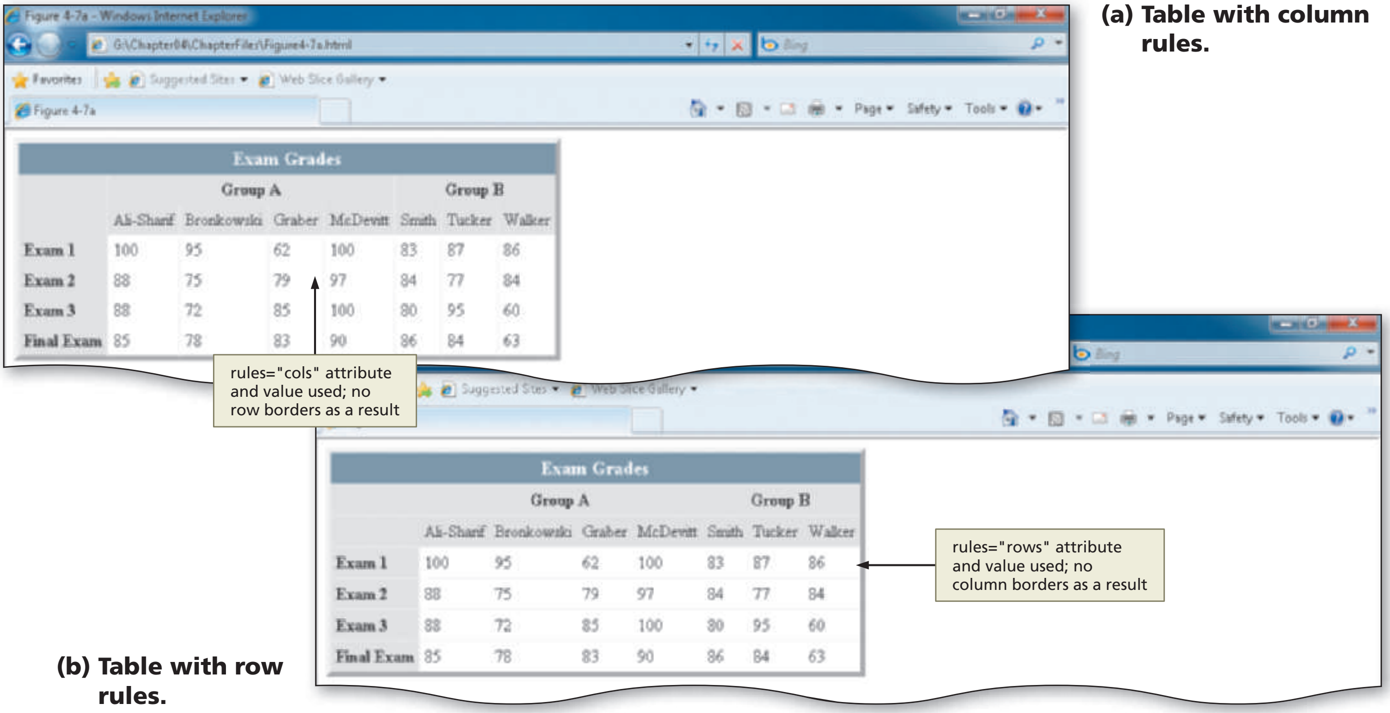


Figure 4-7a - Windows Internet Explorer
G:\Chapter04\ChapterFiles\Figure4-7a.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Figure 4-7a
Page
Safety
Tools

Exam Grades							
	Group A				Group B		
	Ali-Sharif	Bronkowski	Graber	McDevitt	Smith	Tucker	Walker
Exam 1	100	95	62	100	83	87	86
Exam 2	88	75	79	97	84	77	84
Exam 3	88	72	85	100	80	95	60
Final Exam	85	78	83	90	86	84	63

(a) Table with column rules.

rules="cols" attribute and value used; no row borders as a result

Exam Grades							
	Group A				Group B		
	Ali-Sharif	Bronkowski	Graber	McDevitt	Smith	Tucker	Walker
Exam 1	100	95	62	100	83	87	86
Exam 2	88	75	79	97	84	77	84
Exam 3	88	72	85	100	80	95	60
Final Exam	85	78	83	90	86	84	63

rules="rows" attribute and value used; no column borders as a result

(b) Table with row rules.

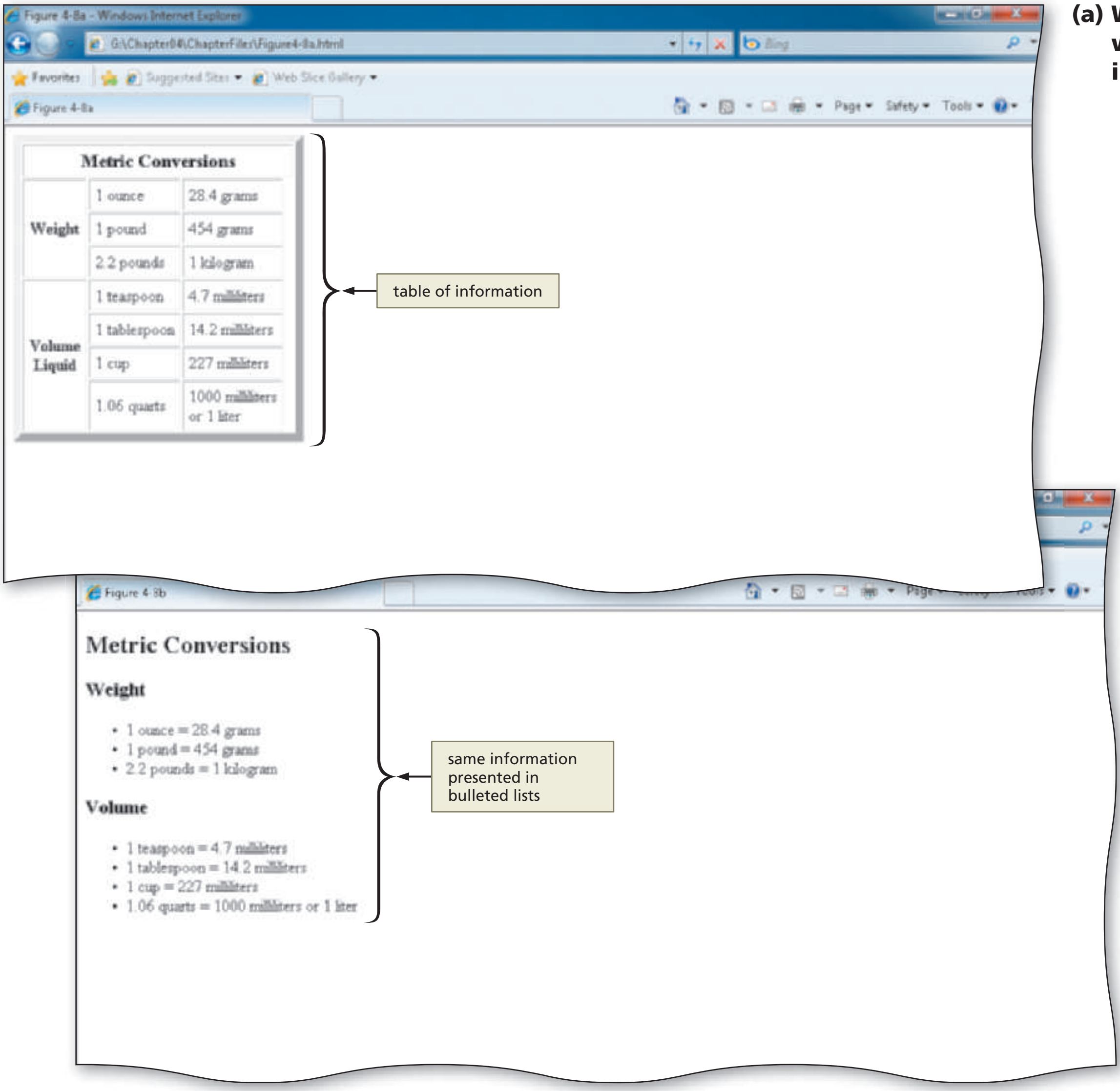
Figure 4–7

Determining the Need for, Planning, and Coding a Table

Creating tables for a Web page is a three-step process: (1) determining if a table is needed, (2) planning the table, and (3) coding the table. Each of these steps is discussed in detail in the following sections.

Determining If a Table Is Needed

First, you must determine whether a table is necessary. Not all Web pages require the use of tables. A general rule is that a table should be used when it will help organize information or Web page elements in such a way that it is easier for the Web page visitor to read. Tables generally are useful on a Web page if the Web page needs to display a structured, organized list of information or includes text and images that must be positioned in a very specific manner. Figures 4–8a and 4–8b show examples of information displayed as text in both a table and a bulleted list. To present this information, a table (Figure 4–8a) would be the better choice. The bulleted list (Figure 4–8b) might give the Web page an acceptable look, but the table presents the information more clearly.



Metric Conversions		
Weight	1 ounce	28.4 grams
	1 pound	454 grams
	2.2 pounds	1 kilogram
Volume Liquid	1 teaspoon	4.7 milliliters
	1 tablespoon	14.2 milliliters
	1 cup	227 milliliters
	1.06 quarts	1000 milliliters or 1 liter

table of information

(a) Web page with table of information.

Metric Conversions

Weight

- 1 ounce = 28.4 grams
- 1 pound = 454 grams
- 2.2 pounds = 1 kilogram

Volume

- 1 teaspoon = 4.7 milliliters
- 1 tablespoon = 14.2 milliliters
- 1 cup = 227 milliliters
- 1.06 quarts = 1000 milliliters or 1 liter

same information presented in bulleted lists

(b) Web page with bulleted lists of information.

Figure 4–8

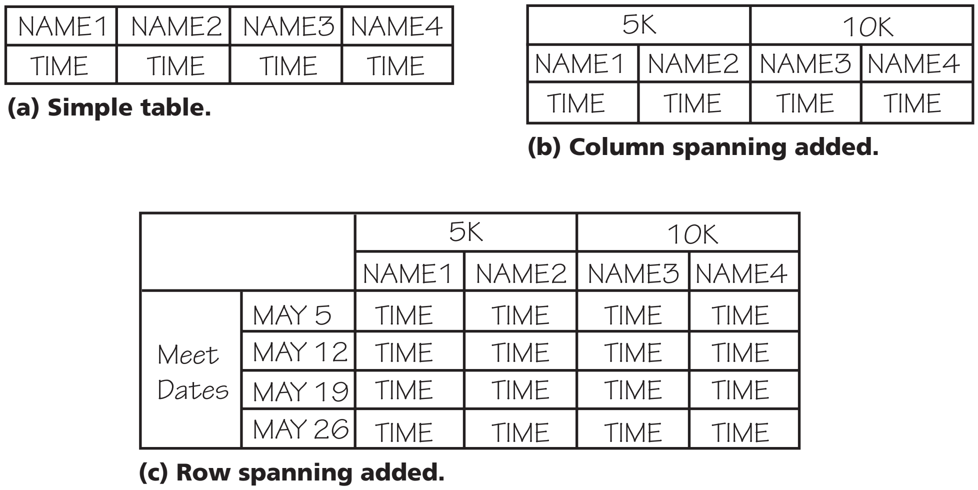
Planning the Table

To create effective tables, you must plan how the information will appear in the table and then create a good design. Before writing any HTML code, sketch the table on paper. After the table is sketched on paper, it is easier to see how many rows and columns to create, if the table will include headings, and if any of the headings span rows or columns. Conceptualizing the table on paper first saves time when you try to determine which HTML table tags to use to create the table.

For example, to create a simple table that lists the times run by various cross-country team members, you might sketch the table shown in Figure 4–9a on the next page. If runners participate in two different race lengths, such as 5K and 10K, that information can be included in a table designed as shown in Figure 4–9b. If the table needs to include different race dates for each race length, that information can be included in a table such as the one shown in Figure 4–9c. Finally, to make the table easier for the Web page visitor to understand, the table should include headings that span rows and columns and a caption. For instance, in Figure 4–9b, the headings 5K and 10K each span two columns of data. Because column spanning is used, you can easily see which runners ran in the 5K or 10K races. In Figure 4–9c, because of row spanning, you can easily tell what date each race was run. Design issues such as these should be considered in the planning stage before any HTML code is entered. Figure 4–10 shows how the table might look after it is coded. You will use a variety of style sheets together with formatting tag attributes to create the tables for the project in this chapter.

BTW

Table Tutorial
Table tutorials are available through online sources. Tutorials take you step-by-step through the table creation process. Search the Web for the phrase HTML Table Tutorial to find excellent sources of information.



NAME1	NAME2	NAME3	NAME4
TIME	TIME	TIME	TIME

(a) Simple table.

5K		10K	
NAME1	NAME2	NAME3	NAME4
TIME	TIME	TIME	TIME

(b) Column spanning added.

		5K		10K	
		NAME1	NAME2	NAME3	NAME4
Meet Dates	MAY 5	TIME	TIME	TIME	TIME
	MAY 12	TIME	TIME	TIME	TIME
	MAY 19	TIME	TIME	TIME	TIME
	MAY 26	TIME	TIME	TIME	TIME

(c) Row spanning added.

Figure 4–9

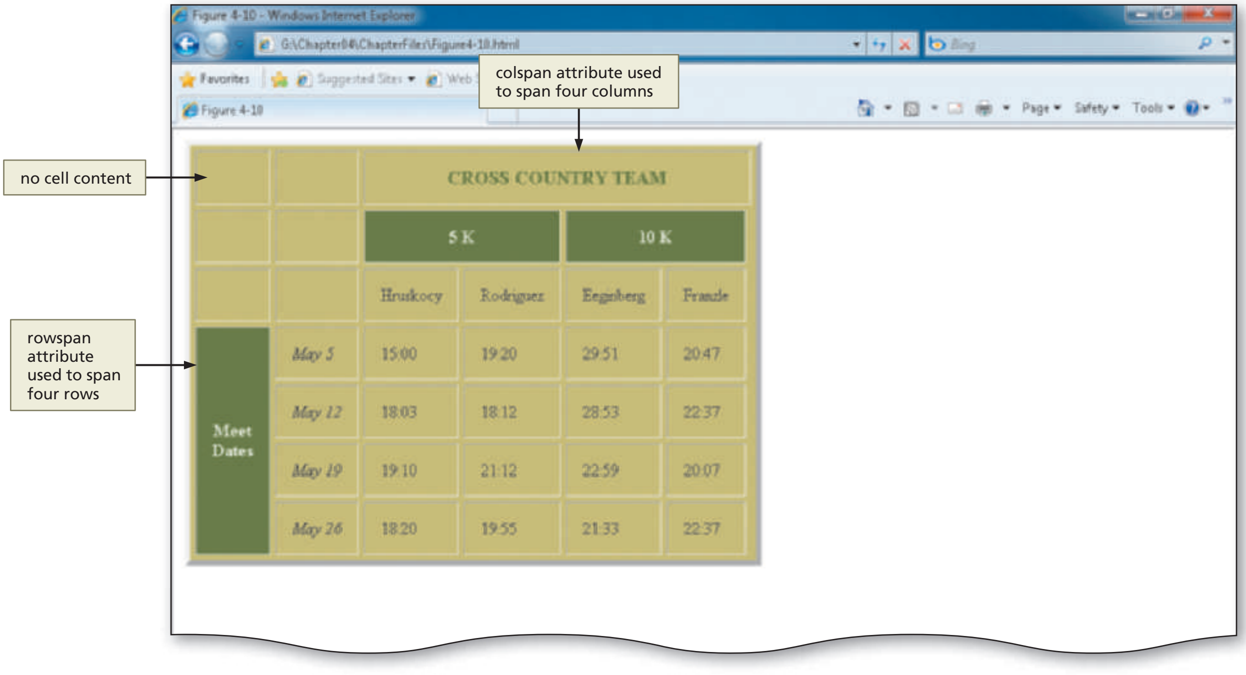


Figure 4-10 - Windows Internet Explorer
G:\Chapter04\ChapterFiles\Figure4-10.html
Bing
Favorites
Suggested Sites
Web
Figure 4-10
Page
Safety
Tools

colspan attribute used to span four columns

no cell content

rowspan attribute used to span four rows

		CROSS COUNTRY TEAM			
		5 K		10 K	
		Hruskocy	Rodriguez	Eeginberg	Franzle
Meet Dates	*May 5*	15:00	19:20	29:51	20:47
	May 12	18:03	18:12	28:53	22:37
	May 19	19:10	21:12	22:59	20:07
	May 26	18:20	19:55	21:33	22:37

Figure 4–10 Table with row and column spanning.

Coding the Table

After you have completed the table design, you can begin coding the table using HTML tags. Table 4–1 shows the four main HTML tags used to create a table. Each of these tags has a number of attributes, which are discussed later in this chapter.

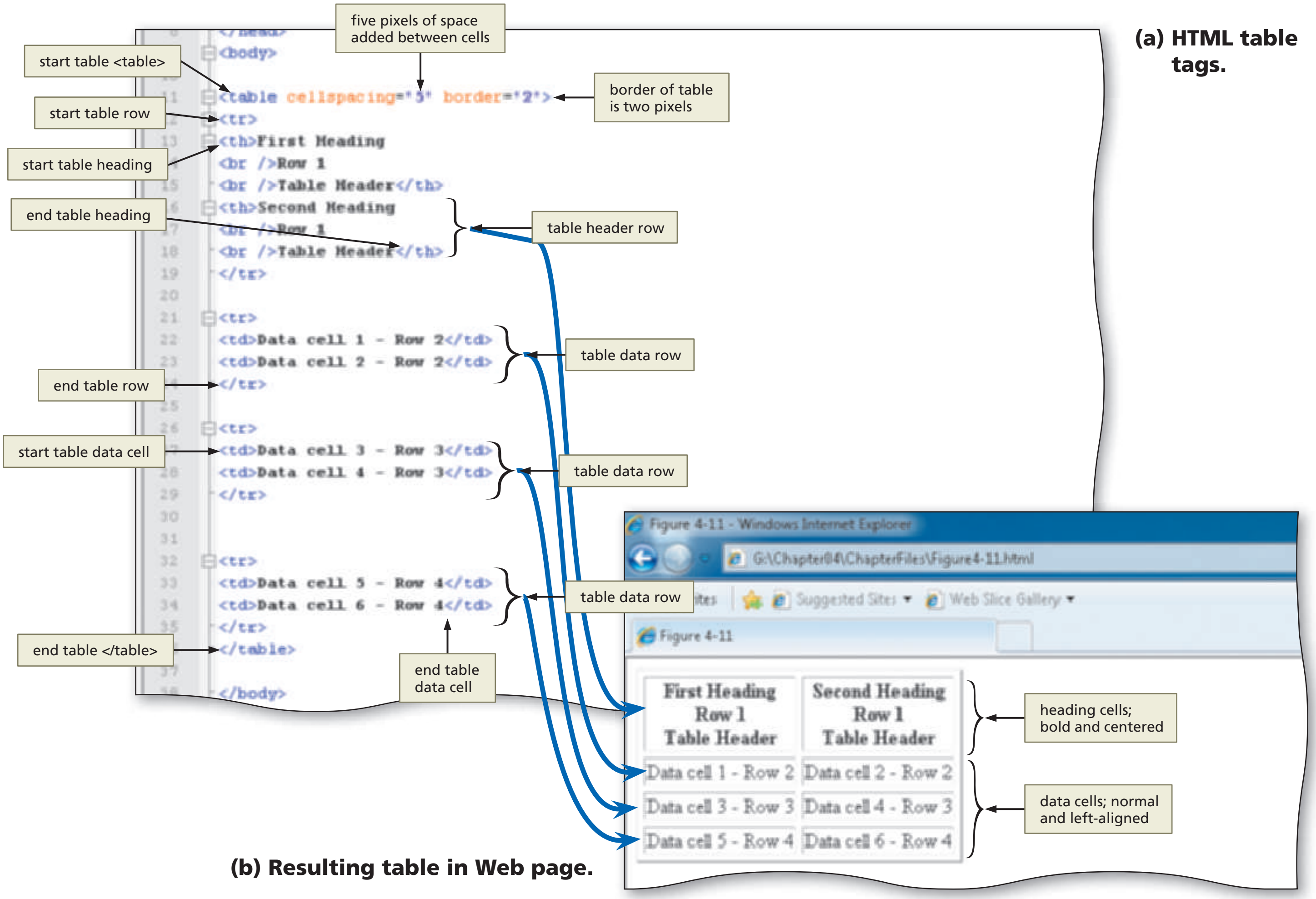
Figure 4–11a shows an example of these tags used in an HTML file, and Figure 4–11b shows the resulting Web page. As shown in Figure 4–11b, the table has four rows (a table header and three rows of data cells) and two columns. The rows are indicated in the HTML file

Table 4–1 HTML Table Tags

Tag	Function
<table></table>	• Indicates the start and end of a table • All other table tags are inserted within these tags
<tr> </tr>	• Indicates the start and end of a table row • Rows consist of heading or data cells
<th> </th>	• Indicates the start and end of a table heading (also called a heading cell) • Table headings default to bold text and center-alignment
<td> </td>	• Indicates the start and end of a data cell in a table • Data cells default to normal text and left-alignment

in Figure 4–11a by the start **<tr>** tags and the end **</tr>** tags. For this simple table, the number of columns in the table is determined based on the number of cells within each row. As shown in Figure 4–11b, each row has two cells, which results in a table with two columns. (Later in this chapter, you will learn how to indicate the number of columns within the <table> tag.)

As shown in the HTML in Figure 4–11a, the first row includes table heading cells, as indicated by the start **<th>** tag and end **</th>** tag. In the second, third, and fourth rows, the cells contain data, indicated by the start **<td>** tag and end **</td>** tag. In the resulting table, as shown in Figure 4–11b, the table header in row 1 appears as bold and centered text. The text in the data cells in rows 2 through 4 is left-aligned and normal text. The table in Figure 4–11b has a border, and cellspacing of 5 pixels was added to highlight further differences between the cells. You learn about cellspacing later in the chapter.



```
</head>
<body>

<table cellspacing="5" border="2">
<tr>
<th>First Heading
<br />Row 1
<br />Table Header</th>
<th>Second Heading
<br />Row 1
<br />Table Header</th>
</tr>

<tr>
<td>Data cell 1 - Row 2</td>
<td>Data cell 2 - Row 2</td>
</tr>

<tr>
<td>Data cell 3 - Row 3</td>
<td>Data cell 4 - Row 3</td>
</tr>


<tr>
<td>Data cell 5 - Row 4</td>
<td>Data cell 6 - Row 4</td>
</tr>
</table>

</body>
```

First Heading Row 1 Table Header	Second Heading Row 1 Table Header
Data cell 1 - Row 2	Data cell 2 - Row 2
Data cell 3 - Row 3	Data cell 4 - Row 3
Data cell 5 - Row 4	Data cell 6 - Row 4

(a) HTML table tags.

(b) Resulting table in Web page.

Figure 4–11

BTW

Table Borders
Table borders frame an image. You can insert a single image into a one-row, one-column table. Using a border gives the image a 3-D appearance, making the image appear to have a frame around it. A border of 1 pixel (border="1") is too small to use as a frame, but border="25" is too large.

Table Tag Attributes

Each of the four main table tags listed in Table 4–1 on page HTML 169 has different attributes. Table 4–2 lists the table tags and the main attributes associated with each. The <th> and <td> tags, which are both used to specify the contents of a cell, have the same attributes. Many of the table tags' attributes listed in Table 4–2 are used in creating the Sabatina's Pizza Web site.

Table 4–2 Table Tag Attributes and Functions

Tag	Attribute	Function
<table> </table>	border cellspacing cellpadding cols width	• Defines width of table border in pixels • Defines space between cells in pixels • Defines space between a cell's contents and its border in pixels • Defines number of columns • Sets table width relative to window width
<tr> </tr>	valign	• Vertically aligns row (top, middle, bottom)
<th> </th> and <td> </td>	colspan rowspan valign	• Sets number of columns spanned by a cell • Sets number of rows spanned by a cell • Vertically aligns cell (top, middle, bottom)

Plan Ahead

Identify the format of various Web page elements.
Before inserting tables or graphical elements in a Web page, you should plan how you want to format them. By effectively utilizing tables and graphics, you can better organize the most important topics on the Web page. Consider the following formatting suggestions.

- **Effectively utilize graphics.** An important part of Web development is the use of graphics to call attention to a Web page. Generally, companies utilize the same logo on their Web site as they use on print material associated with the company, such as business cards and letterheads. Using the same graphical image on all marketing materials, including the Web site, is a good way to provide a consistent visual image and brand message to customers. Colorful company logos can also add an attention-grabbing element to a Web page.

- **Format tables to organize Web page content.** Sometimes it is better to have no border around the table, while other times borders enhance the look of the table, depending on the content and purpose of the table. In this chapter, you will use both bordered and borderless tables. Another consideration is where to place the table (left-, right-, or center-aligned).

- **Determine what table formatting to use**. When using a table to organize text links, it is important to first decide how to format the table. Although you may not want to distract from the text links by creating a table with a heavy border, you need to separate the text links in such a way that they are easy to find. Creating a borderless table with separators (e.g., pipe symbols) between the text links helps organize but not distract from the links.

- **Identify what links are needed**. Each Web page in a multipage Web site should have a link back to the home page of the Web site. Web developers often use the company logo to link back to the home page. In this project, the logo is also the central image of the Web pages. Because of that, a better option might be to provide a text link called Home that visitors can use to return to the home page. Each Web page should include links to the other pages on the Web site. Putting these links in a table at the top of each Web page helps visitors navigate easily, and providing the navigation menu bar across all Web pages in the Web site is also important for consistency. If a Web page is very long, it also might be a good idea to put the same text link table at the bottom of the Web page. Again, the purpose of providing links is to make it easy to navigate the Web site.

Creating a Home Page with Banner Logo and Borderless Table

The first Web page developed in this chapter’s project is the home page of the Sabatina’s Pizza Web site. As you have learned, the home page is the main page of a Web site and is what Web site visitors generally view first. Visitors then click links to move from the home page to the other Web pages in the site. The Sabatina’s Pizza home page includes the company logo as a banner image and a borderless table that contains three links to other pages: the Appetizers Web page, the Salads Web page, and the Pizza Web page. The home page also provides an e-mail link, so visitors can contact Sabatina’s Pizza easily.

To Start Notepad++

The first step in creating the Sabatina’s Pizza Web site is to start Notepad++ and ensure that word wrap is enabled. The following steps, which assume Windows 7 is running, start Notepad++ based on a typical installation. You may need to ask your instructor how to start Notepad++ for your computer.

1. Click the Start button on the Windows taskbar to display the Start menu.
2. Click All Programs at the bottom of the left pane on the Start menu to display the All Programs list.
3. Click Notepad++ in the All Programs list.
4. Click Notepad++ in the list to display the Notepad++ window.
5. If the Notepad++ window is not maximized, click the Maximize button on the Notepad++ title bar to maximize it.
6. Click View on the menu bar.
7. If the Word wrap command does not have a check mark next to it, click Word wrap.

To Enter Initial HTML Tags to Define the Web Page Structure

Just as you did in Chapters 2 and 3, you start your file with the initial HTML tags that define the structure of the Web page. Table 4–3 contains the tags and text for this task.

Table 4–3 Initial HTML Tags

Line	HTML Tag and Text
1	<!DOCTYPE html
2	PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3	"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4	
5	<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6	<head>
7	<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8	<title>Sabatina’s Pizza Home</title>
9	</head>
10	

Table 4–3 Initial HTML Tags (continued)

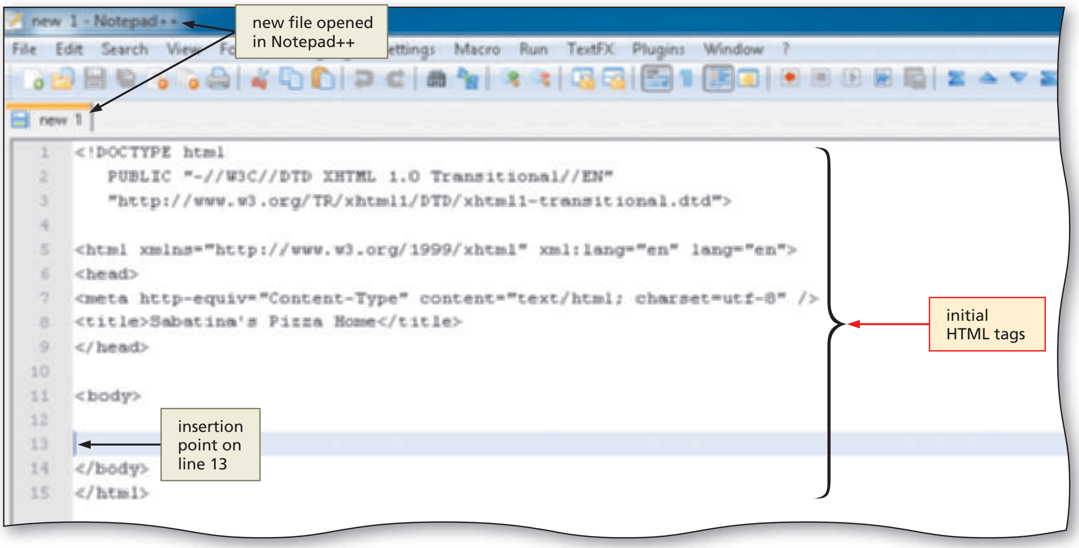
Line	HTML Tag and Text
11	`<body>`
12	
13	`</body>`
14	`</html>`

The following steps illustrate how to enter the initial tags that define the structure of the Web page.

1. Enter the HTML code shown in Table 4-3. Press ENTER at the end of each line. If you make an error as you are typing, use the BACKSPACE key to delete all the characters back to and including the incorrect characters, then continue typing.

2. Position the insertion point on the blank line between the <body> and </body> tags (line 12) and press the ENTER key to position the insertion point on line 13 (Figure 4–12).

3. Compare what you typed to Figure 4–12. If you notice errors, use your mouse pointer or ARROW keys to move the insertion point to the right of each error and use the BACKSPACE key to correct the error.


new 1 - Notepad++
File Edit Search View Fo... ettings Macro Run TextFX Plugins Window ?
new 1
new file opened in Notepad++
initial HTML tags
insertion point on line 13

```
1   <!DOCTYPE html
2      PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5   <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6   <head>
7   <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8   <title>Sabatina's Pizza Home</title>
9   </head>
10
11  <body>
12
13
14  </body>
15  </html>
```

Figure 4–12

To Save an HTML File

With the initial HTML code for the Sabatina's Pizza home page entered, you should save the file. Saving the file frequently ensures you won't lose your work. Saving a file in Notepad++ also adds color to code that can help you identify different elements more easily. The following steps illustrate how to save an HTML file in Notepad++.

1. With a USB flash drive connected to one of the computer's USB ports, click File on the Notepad++ menu bar and then click Save.

2. Type `sabatinas.html` in the File name text box (do not press ENTER).

3. Click Computer in the left pane of the Save As dialog box to display a list of available drives.

4. If necessary, scroll until UDISK 2.0 (G:) or the name of your storage device is displayed in the list of available drives.

5 Open the Chapter04\ChapterFiles folder.

6 Click the Save button in the Save As dialog box to save the file on the USB flash drive in the Chapter04\ChapterFiles folder with the name sabatinas.html.

To Insert and Center an Image

The first task for the Sabatina's Pizza home page is to insert the company logo banner, sabatinaslogo.jpg. As stated earlier in the book, the company logo is generally used in all communication that represents the company, including on the Web site, on business cards, and on company letterheads. Table 4–4 contains the HTML code to add the centered logo banner image.

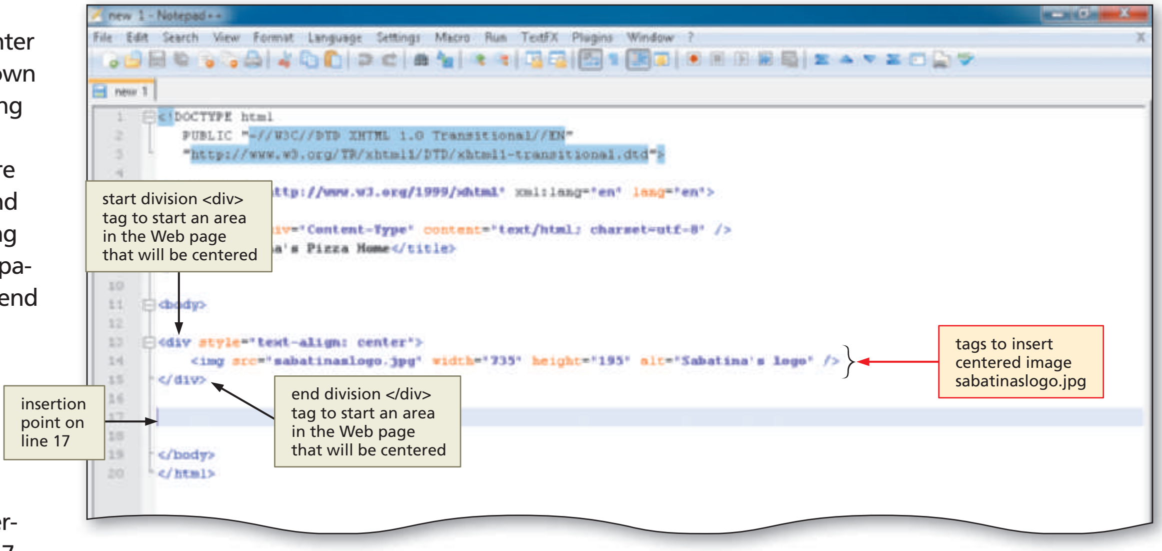
Table 4–4 HTML Code for Adding and Centering an Image

Line	HTML Tag and Text
13	`<div style="text-align: center">`
14	`  <img src="sabatinaslogo.jpg" width="735" height="190" alt="Sabatina's logo" />`
15	`</div>`

The following step shows how to add a centered banner image.

1

- With the insertion point on line 13, enter the HTML code shown in Table 4–4, pressing ENTER at the end of each line. Make sure to indent the second line of code by using the TAB key. This separates the start and end <div> tag from the <img> tag, highlighting the image insertion. Press the ENTER key twice at the end of line 15 to position the insertion point on line 17 (Figure 4–13).



new 1 - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
new 1
start division <div> tag to start an area in the Web page that will be centered
insertion point on line 17
end division </div> tag to start an area in the Web page that will be centered
tags to insert centered image sabatinaslogo.jpg

```
1  <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
   ttp://www.w3.org/1999/xhtml" xml:lang="en" lang="en">

   iv="Content-Type" content="text/html; charset=utf-8" />
   a's Pizza Home</title>

10
11 <body>
12
13 <div style="text-align: center">
14    <img src="sabatinaslogo.jpg" width="735" height="195" alt="Sabatina's logo" />
15 </div>
16
17
18
19 </body>
20 </html>
```

Figure 4–13

Q&A When I pressed ENTER at the end of line 14, Notepad++ indented line 15 also. How do I remove the indent?

You have to press the left arrow key or Backspace to get back to the left margin before you insert the </div> tag.

Q&A How can I determine the height and width of an image?

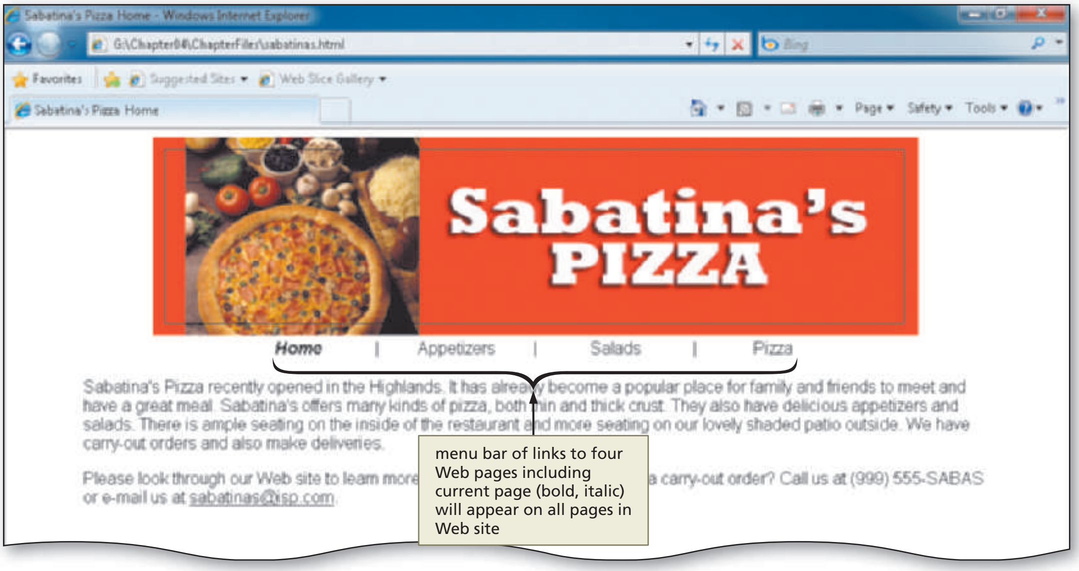
You can determine the height and width of an image by opening the image in a paint or image-editing program. Once you know the height and width, you also can adjust the width and height by using the width and height attributes in the <img> tag. Be aware that, in doing so, you might cause the image to look distorted on the Web page.

Q&A Why can't I just put the <img> tag within the <center></center> container to center this image?

If you look up the <center> tag in Appendix A, you see that it is deprecated. This book uses Cascading Style Sheets and the <div> </div> container rather than deprecated tags.

Using a Table to Create a Horizontal Menu Bar

The Web site created in this project consists of four Web pages. Visitors should be able to move easily from one Web page to any of the other three Web pages. Providing a menu bar prominently across the top of the Web page (Figure 4–14) gives the visitor ready access to navigation links. You will create a table to hold the menu bar links.



Home | Appetizers | Salads | Pizza

Sabatina's Pizza recently opened in the Highlands. It has already become a popular place for family and friends to meet and have a great meal. Sabatina's offers many kinds of pizza, both thin and thick crust. They also have delicious appetizers and salads. There is ample seating on the inside of the restaurant and more seating on our lovely shaded patio outside. We have carry-out orders and also make deliveries.

Please look through our Web site to learn more a carry-out order? Call us at (999) 555-SABAS or e-mail us at sabatinas@isp.com.

menu bar of links to four Web pages including current page (bold, italic) will appear on all pages in Web site

Figure 4–14

BTW

Navigation
Studies have been conducted to assess the best location on a Web page to place navigation bars and lists. The research results are varied, with indications that navigation options on the top, side, and bottom of a Web page show slight differences in visitor usability. The most important aspect of Web page navigation is to make the options easy enough to locate so visitors do not have to search for them.

All of the styles for this and other tables are set in the external style sheet that you will create in the next section of this chapter. The horizontal menu bar table is borderless (no border property is used), and has one row and seven columns (each divider is a column, as well as the text links). To better align the menu bar with the Sabatina's Pizza logo, the table is set to 60% of the window's width, so that it is not as wide as the logo. The menu bar has four links — Home, Appetizers, Salads, and Pizza — that link to the Web pages sabatinas.html, appetizers.html, salads.html, and pizza.html, respectively. Each link is inserted in a single column (cell). The | (pipe) symbol is included in a column between each of the four links to separate them visually.

The width of each column (cell) in the table is specified in the external style sheet, which will be linked to the home page and all other Web pages in this Web site later in the chapter. (If you do not define the width for these cells, the width defaults to the size of the word or symbol in the cell.) Classes that are used in the home page and in the other three Web pages are also defined in the external style sheet. The menuword and menupipe classes need to be inserted in the menu bar in order to adopt the styles as defined in the external style sheet. The class menuword will be used to set each of the cells in which there are words (i.e., Home, Appetizers, Salads, and Pizza) to 23% of the width of the table. The menupipe class will be used to set each of the cells in which there are pipe symbols to 1% of the size of the table. When you specify sizes in percentages, it is generally best not to set the entire 100% width. The menuwordselect class is used to highlight the link to the page being viewed in the browser. For example, when you click the link to the Appetizers Web page, the word Appetizers in the menu bar is bold and italicized. Each Web page uses the menuwordselect class for one link word.

Just as you did in Chapter 3, you add the class names to your Web pages before you create the classes, in this case, in the external style sheet. All menu bar styles are controlled with the external style sheet. If you didn't use an external style sheet, you would have to type each style into each menu bar on each Web page in the Web site. The advantage of using external (linked) style sheets is that if you need to make a change across the entire Web site, you make that change only once — in the external style sheet. The change then takes effect in every Web page into which the external (linked) style sheet has been linked. Using an external style sheet, you create the .css file once and link it with one line of code into each Web page.

To Create a Horizontal Menu Bar with Text Links

Table 4–5 shows the HTML code for the horizontal menu bar table.

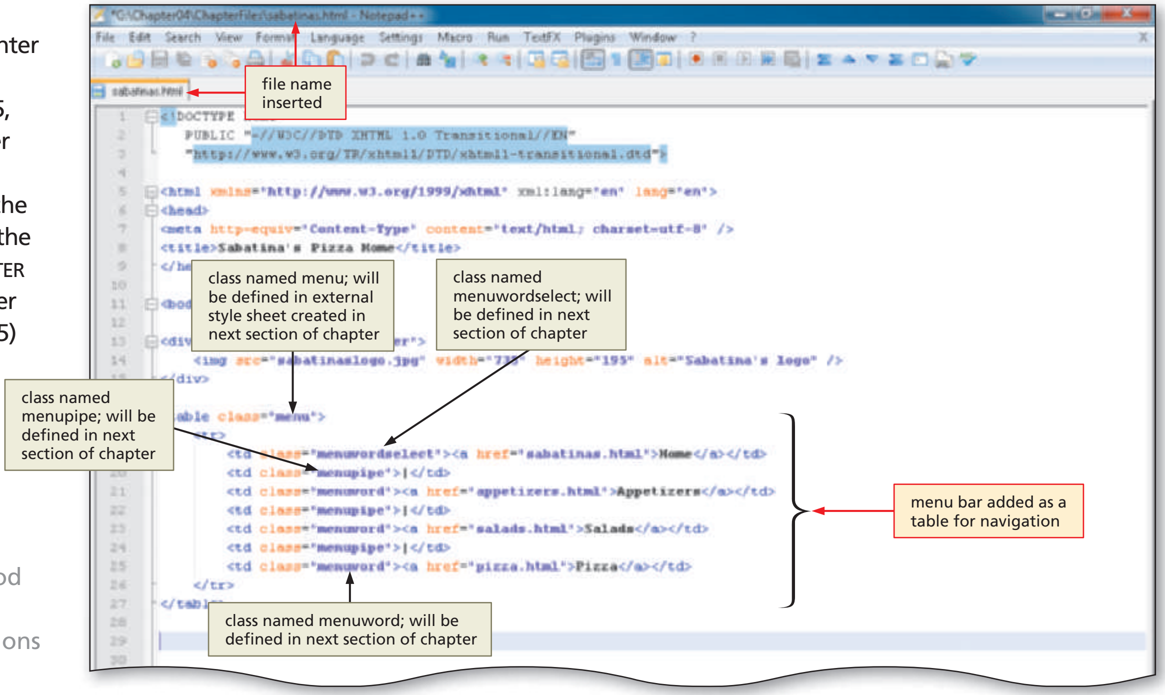
Table 4–5 HTML Code to Insert a Menu Bar

Line	HTML Tag and Text
17	`<table class="menu">`
18	`  <tr>`
19	`    <td class="menuwordselect"><a href="sabatinas.html">Home</a></td>`
20	`    <td class="menupipe">|</td>`
21	`    <td class="menuword"><a href="appetizers.html">Appetizers</a></td>`
22	`    <td class="menupipe">|</td>`
23	`    <td class="menuword"><a href="salads.html">Salads</a></td>`
24	`    <td class="menupipe">|</td>`
25	`    <td class="menuword"><a href="pizza.html">Pizza</a></td>`
26	`    </tr>`
27	`</table>`

The following step shows how to create a table that contains text links to four pages on the Web site, separated by pipe symbols. The pipe symbol is usually found above the ENTER key; it is inserted when you press Shift and the \ (backslash) key.

1

- With the insertion point on line 17, enter the HTML code, as shown in Table 4–5, pressing ENTER after each line. Use the TAB key to indent the code, as shown in the table. Press the ENTER key once more after line 28 (Figure 4–15) to position the insertion point on line 29.



*G:\Chapter04\ChapterFiles\sabatinas.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
sabatinas.html

```
1   <!DOCTYPE
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5   <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6   <head>
7   <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8   <title>Sabatina's Pizza Home</title>
9   </he
10
11  <bod
12
13  <div                     er">
14    <img src="sabatinaslogo.jpg" width="735" height="195" alt="Sabatina's logo" />
15  </div>
16
17   able class="menu">
18    <tr>
19      <td class="menuwordselect"><a href="sabatinas.html">Home</a></td>
20      <td class="menupipe">|</td>
21      <td class="menuword"><a href="appetizers.html">Appetizers</a></td>
22      <td class="menupipe">|</td>
23      <td class="menuword"><a href="salads.html">Salads</a></td>
24      <td class="menupipe">|</td>
25      <td class="menuword"><a href="pizza.html">Pizza</a></td>
26    </tr>
27  </tabl
28
29
30
```

file name inserted

class named menu; will be defined in external style sheet created in next section of chapter

class named menuwordselect; will be defined in next section of chapter

class named menupipe; will be defined in next section of chapter

menu bar added as a table for navigation

class named menuword; will be defined in next section of chapter

Figure 4–15

Q&A

Why indent my code with the TAB key?

Indenting is a good way to organize your code so sections are recognizable. You can immediately see what lines of code are related to a single row in the table, as contained within the indented <tr> </tr> tags. This is helpful when you have many rows in the table, as in the pizza.html file.

To Add Paragraphs of Text

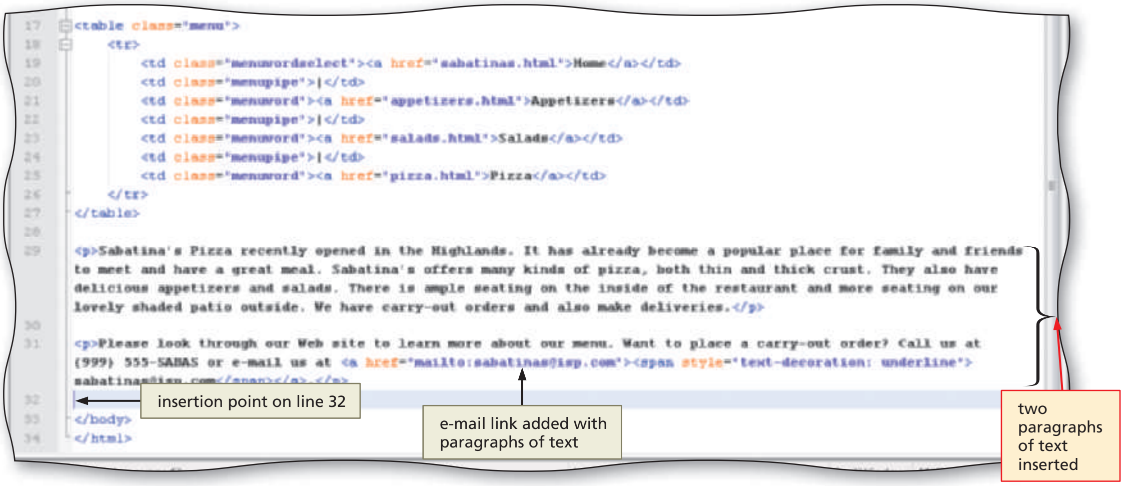
Next, two paragraphs of text must be added to the Web page. The text is displayed beneath the menu bar of links you just inserted. You use a paragraph <p> tag to insert a blank line between the menu bar and the text. Table 4–6 contains the code to add the paragraphs of text.

Table 4–6 HTML Code to Add Paragraphs of Text

Line	HTML Tag and Text
29	`<p>Sabatina’s Pizza recently opened in the Highlands. It has already become a popular place for family and friends to meet and have a great meal. Sabatina’s offers many kinds of pizza, both thin and thick crust. They also have delicious appetizers and salads. There is ample seating on the inside of the restaurant and more seating on our lovely shaded patio outside. We have carry-out orders and also make deliveries.</p>`
30	
31	`<p>Please look through our Web site to learn more about our menu. Want to place a carry-out order? Call us at (999) 555-SABAS or e-mail us at <a href="mailto:sabatinas@isp.com"><span style="text-decoration: underline">sabatinas@isp.com</span></a>.</p>`

The following step illustrates how to add paragraphs of text.

1. With the insertion point on line 29, enter the HTML code, as shown in Table 4–6, to insert the paragraphs of text, pressing the ENTER key after each line, including line 31 (Figure 4–16).



```
17  <table class="menu">
18      <tr>
19          <td class="menuwordselect"><a href="sabatinas.html">Home</a></td>
20          <td class="menupipe">|</td>
21          <td class="menuword"><a href="appetizers.html">Appetizers</a></td>
22          <td class="menupipe">|</td>
23          <td class="menuword"><a href="salads.html">Salads</a></td>
24          <td class="menupipe">|</td>
25          <td class="menuword"><a href="pizza.html">Pizza</a></td>
26      </tr>
27  </table>
28
29  <p>Sabatina's Pizza recently opened in the Highlands. It has already become a popular place for family and friends
    to meet and have a great meal. Sabatina's offers many kinds of pizza, both thin and thick crust. They also have
    delicious appetizers and salads. There is ample seating on the inside of the restaurant and more seating on our
    lovely shaded patio outside. We have carry-out orders and also make deliveries.</p>
30
31  <p>Please look through our Web site to learn more about our menu. Want to place a carry-out order? Call us at
    (999) 555-SABAS or e-mail us at <a href="mailto:sabatinas@isp.com"><span style="text-decoration: underline">
    sabatinas@isp.com</span></a>.</p>
32
33  </body>
34  </html>
```

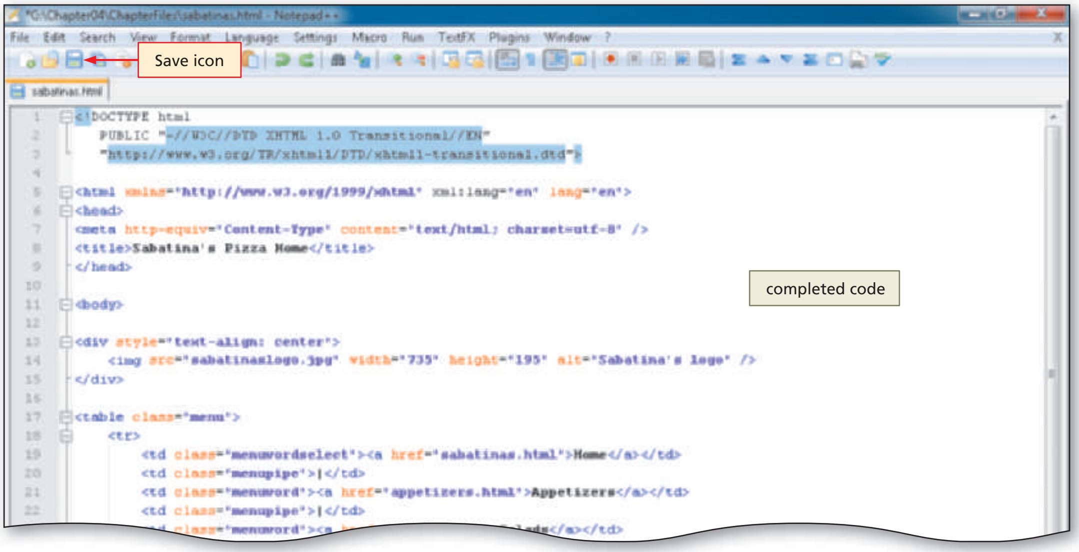
insertion point on line 32
e-mail link added with paragraphs of text
two paragraphs of text inserted

Figure 4–16

To Save the HTML File

With the HTML code for the Sabatina’s Pizza home page complete, you should re-save the file. The following step shows how to save an HTML file that has been previously saved.

1. Click the Save icon on the Notepad++ toolbar to save the most recent version of sabatinas.html on the same storage device and in the same folder as the last time you saved it (Figure 4–17).


*G:\Chapter04\ChapterFiles\sabatinas.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
Save icon
sabatinas.html
completed code

```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Sabatina's Pizza Home</title>
</head>

<body>

<div style="text-align: center">
    <img src="sabatinaslogo.jpg" width="735" height="195" alt="Sabatina's logo" />
</div>

<table class="menu">
    <tr>
        <td class="menuwordselect"><a href="sabatinas.html">Home</a></td>
        <td class="menupipe">|</td>
        <td class="menuword"><a href="appetizers.html">Appetizers</a></td>
        <td class="menupipe">|</td>
        <td class="menuword"><a                         alads</a></td>
```

Figure 4–17

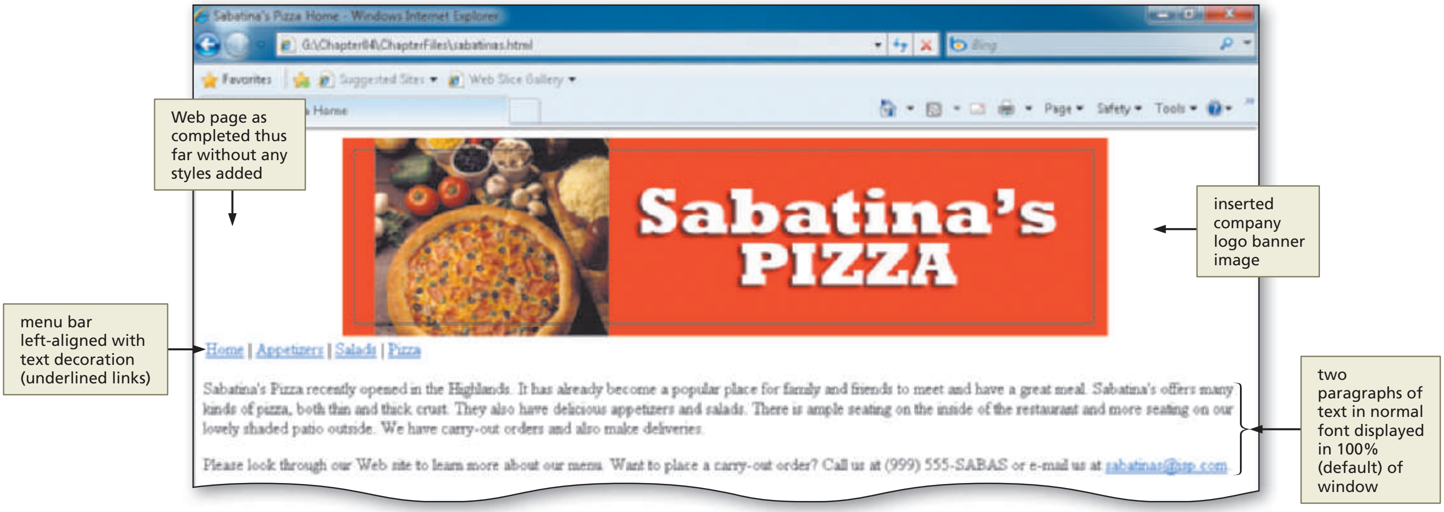
Viewing the Web Page and Testing Links

After you save the HTML file for the Sabatina's Pizza home page, it should be viewed in a browser to confirm the Web page appears as desired. You do not validate or print the Web page yet because you still have one statement (the link) to add to the file. It also is important to test the four links on the Sabatina's Pizza home page to verify they function as expected.

To View a Web Page

The following steps illustrate how to view the HTML file in a browser.

1. In Internet Explorer, click the Address bar to select the URL on the Address bar.
2. Type `g:\Chapter04\ChapterFiles\sabatinas.html` or the location of your file on the Address bar of your browser and press ENTER to display the Web page (Figure 4–18).


Sabatina's Pizza Home - Windows Internet Explorer
G:\Chapter04\ChapterFiles\sabatinas.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Home
Page
Safety
Tools
Sabatina's PIZZA
Web page as completed thus far without any styles added
inserted company logo banner image
menu bar left-aligned with text decoration (underlined links)
two paragraphs of text in normal font displayed in 100% (default) of window

Home | Appetizers | Salads | Pizza

Sabatina's Pizza recently opened in the Highlands. It has already become a popular place for family and friends to meet and have a great meal. Sabatina's offers many kinds of pizza, both thin and thick crust. They also have delicious appetizers and salads. There is ample seating on the inside of the restaurant and more seating on our lovely shaded patio outside. We have carry-out orders and also make deliveries.

Please look through our Web site to learn more about our menu. Want to place a carry-out order? Call us at (999) 555-SABAS or e-mail us at sabatinas@isp.com

Figure 4–18

To Test Links on a Web Page

The following steps show how to test the links on Sabatina's Pizza home page to verify that they work correctly.

1. With Sabatina's home page displayed in the browser, point to the e-mail link, sabatinas@isp.com and click the link to open the default e-mail program with the address sabatinas@isp.com in the To: text box.

2. Click the Close button in the New Message window. If a dialog box asks if you want to save changes, click No.

3. With the USB flash drive in drive G, click the Salads link from the home page just created. Click back to the Home page from the Salads page. Next, click the Pizza link from the Home page. Click back to the Home page from the Pizza page. The link for the Appetizers page will not work because that Web page is not yet created; you will create it later in this chapter.

External Style Sheets

External style sheets are the most comprehensive type of style sheet and can be used to control the consistency and look of many Web pages within a Web site. Adding an external style sheet to a Web page involves a two-step process of creating an external style sheet and then linking this style sheet to the desired Web pages. The most beneficial feature of the external style sheet is that you can easily change the style (appearance) of all Web pages into which the style sheet is linked just by changing the external style sheet. For instance, the font-family and font-size for all four Web pages in this chapter's project are set in the external style sheet. If the owners of the Web site decide that they do not like the look (or style) of that font-family or font-size, you only have to make the change in one file — the external style sheet. Compare that process to having the font-family and font-size inserted into every single Web page in a Web site either with embedded style sheets or (worst case) inline styles. To make a change to all font-family and font-size styles, you would have to change those in every single place that those styles reside. External (linked) style sheets are the most efficient and powerful way to change styles for an entire Web site.

An external style sheet is a text file that contains the selectors and declarations for the styles you want to apply across the Web site. The sample code that follows shows an example of an external style sheet used to set table, paragraph, and link formatting. Note the use of classes (e.g., menu, menuword, menupipe) in this external style sheet that provides a finer level of control within a table used for navigation.

BTW

Classes

Note that the classes are named with a period (.) after the element is defined. Thus, the table .menu statement identifies a class named menu that will be used with the table elements.

```
table    {width: 65%;
                 margin-left:auto;
                 margin-right:auto;
                 font-family: Arial, Verdana, Garamond;
                 font-size: 12 pt}
       .menu     {text-align: center;
                 width: 60%}
       .menuword {width: 23%}
       .menupipe {width: 1%}
```

```
th       {color: white;
         background-color: #ff1828}
caption  {caption-side: bottom;
         font-style: italic}
p        {margin-left: 50pt;
         margin-right: 50pt;
         font-family: Arial, Verdana, Garamond;
         font-size: 12pt}
a        {text-decoration: none;
         font-family: Arial, Verdana, Garamond;
         font-size: 12pt;
         color: black}
```

The format of the external style sheet is very similar to the format of the embedded style sheet. An external style sheet, however, does not need <style> </style> tags to start and end the style sheet; it only needs the style statements.

To create an external style sheet, enter all of the style statements in a text file using Notepad++ or another text editor, and then save the text file with a .css (for Cascading Style Sheet) extension. The code shown above, for example, can be saved with the file name styles1.css and then linked onto multiple Web pages.

Remember that the <head> tag is used for a variety of purposes. The information contained within the <head></head> container of your HTML document provides information to browsers and search engines but is not displayed on the Web page itself. The following tags can be used within the <head></head> container: <base>, <link>, <meta>, <script>, <style>, and <title>. For each Web page to which you want to apply the styles in an external style sheet, a <link /> tag similar to the sample code below must be inserted within the <head></head> tags of the Web page:

```
<link rel="stylesheet" type="text/css" href="styles1.css" />
```

The <link /> tag indicates that the style sheet styles1.css should be applied to this Web page. The property-value statement rel="stylesheet" defines the relationship of the linked document (that is, it defines it as a style sheet). The property-value statement type="text/css" indicates the content and language used in the linked document. The property-value statement href="styles1.css" indicates the name and location of the linked style sheet, styles1.css. To apply this style sheet to other pages in the Web site, you would insert the same <link /> tag between the <head></head> tags of each Web page.

Plan Ahead

Determine what type of style sheets or other formatting to use in your Web pages.

- **Determine which styles will be common across the Web pages in the Web site.** Some things should be constant across Web pages in a Web site. For instance, if tables are used, their style is generally common or consistent throughout the Web site. A font-family style is also something that is generally common across all Web pages in a Web site. Consider using external (or linked) style sheets for styles that will encompass all Web pages in a multipage Web site. Because it is a four-page Web site, the project in this chapter is a perfect application for external (or linked) style sheets. You use an external style sheet in this project to set styles for the body, paragraphs, links, and some table styles.
- **Identify elements that need to differ from the style used across the Web site**.
  - Consider using embedded style sheets for Web pages in which the styles apply only to one particular Web page. You can use embedded style sheets when you want elements within one Web page to look similar to one another. In the project in Chapter 4, however, you do not use embedded style sheets.
  - Consider using inline styles for any style that is unique for a single element, such as when you want one word or paragraph on one Web page to look different than all others. In this project, you use inline styles to align images and vary some text.
  - Consider using formatting tag attributes to give style to a single element. In this project, you use the cellpadding and cellspacing attributes, and others.

Adding an External Style Sheet

The next step is to create an external style sheet (.css file) and link it to the Web pages where it will be used. The external (linked) style sheet will set the style for body text, paragraphs, links, and table format.

Because the font-family and font-size style is used for all text on all Web pages, you can put that style in the body element, identified on the external style sheet as body. All links (identified as *a* in the external style sheet) will be black through all states (normal, visited, and active) and use no text decoration (that is, the text links will not be underlined). Most of the tables will have a 65% width relative to the window. The exception is the menu bar table that you created earlier, which will be slightly smaller (60% width). Finally, you will use classes, as discussed in Chapter 3, to have more control over particular elements of the tables in the Web site. You use a class named menu for the menu bar links. You also want to separate the menu bar table cells with pipe symbols. To do that, you use classes named menuword and menupipe to specify the width of each of those cells. You also insert a class named menuwordselect, which is used later for the menu tables in the Web site. Note that the classes are named with a period (.) after the element is defined. Thus, the table.menu statement identifies a class named menu that will be used with the table elements.

Plan Ahead

Create and link an external style sheet.

The external style sheet is the most powerful and lowest precedence style sheet. With this style sheet, you can easily create a common look across a Web site by creating the external (.css) style sheet and linking it onto all Web pages.

- **Create the .css file**. The first step is to create the external style sheet itself. This file, which contains all of the style statements that you want, has to be saved with a file name extension of .css. Make sure to store this file in the same folder as the other Web pages.
- **Link the external style sheet onto the Web pages**. The second step is to link the external style sheet (.css file) onto the Web pages where you want the styles to be applied. The link statement is placed between the <head> and </head> tags.

To Create an External Style Sheet

Table 4–7 shows the style statements for an external style sheet for the Sabatina's Pizza Web site. To create an external style sheet, you open a new text file and enter CSS code for the style statements that define the Web page style. After coding the style statements, you save the file with the file extension .css to identify it as a CSS file.

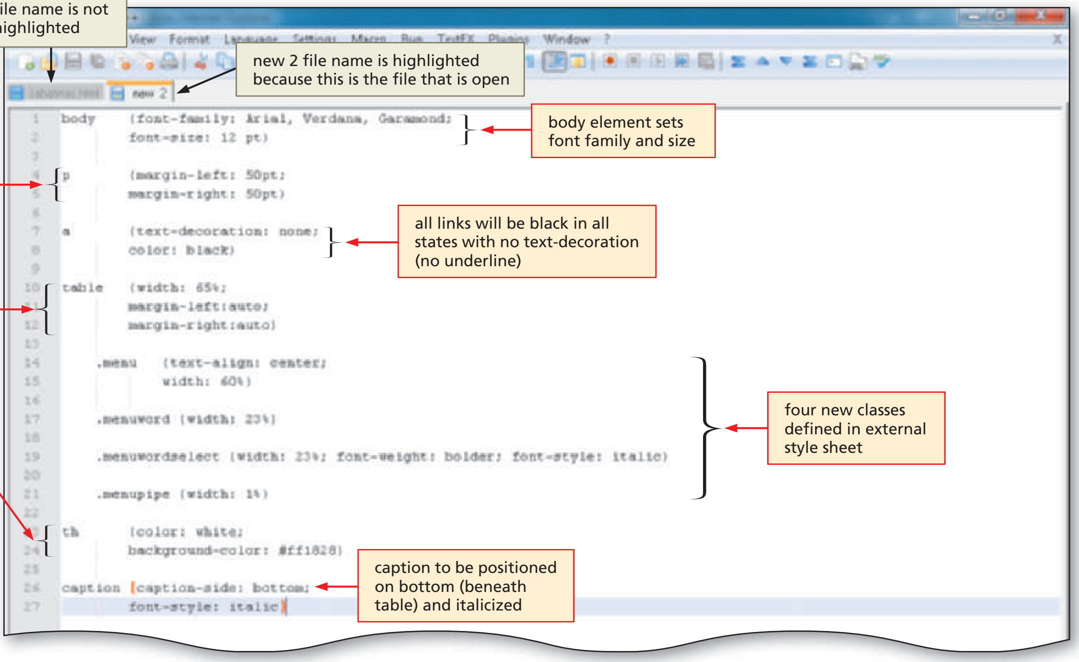
Table 4–7 Code for an External Style Sheet

Line	CSS Properties and Values
1	`body {font-family: Arial, Verdana, Garamond;`
2	`font-size: 12 pt}`
3	
4	`p {margin-left: 50pt;`
5	`margin-right: 50pt}`
6	
7	`a {text-decoration: none;`
8	`color: black}`
9	
10	`table {width: 65%;`
11	`margin-left:auto;`
12	`margin-right:auto}`
13	
14	`.menu {text-align: center;`
15	`width: 60%}`
16	
17	`.menuword {width: 23%}`
18	
19	`.menuwordselect {width: 23%; font-weight: bolder; font-style: italic}`
20	
21	`.menupipe {width: 1%}`
22	
23	`th {color: white;`
24	`background-color: #ff1828}`
25	
26	`caption {caption-side: bottom;`
27	`font-style: italic}`

The following steps illustrate how to create and save an external style sheet.

1

- If necessary, click the Notepad++ button on the taskbar to display sabatinas.html. Click File on the menu bar and then click New.
- Enter the CSS code, as shown in Table 4–7, using the TAB key to align text, as shown (Figure 4–19).



```
body    {font-family: Arial, Verdana, Garamond;
        font-size: 12 pt}

p       {margin-left: 50pt;
        margin-right: 50pt}

a       {text-decoration: none;
        color: black}

table   {width: 65%;
        margin-left:auto;
        margin-right:auto}

    .menu   {text-align: center;
            width: 60%}

    .menuword {width: 23%}

    .menuwordselect {width: 23%; font-weight: bolder; font-style: italic}

    .menupipe {width: 1%}

th      {color: white;
        background-color: #ff1828}

caption {caption-side: bottom;
        font-style: italic}
```

sabatinas.html file name is not highlighted

new 2 file name is highlighted because this is the file that is open

body element sets font family and size

paragraph element has 50 points on each side

all links will be black in all states with no text-decoration (no underline)

table style is 65% of browser window with equal left and right margins

four new classes defined in external style sheet

the element (table heading) will have #ff1828 background color with white text

caption to be positioned on bottom (beneath table) and italicized

Figure 4–19

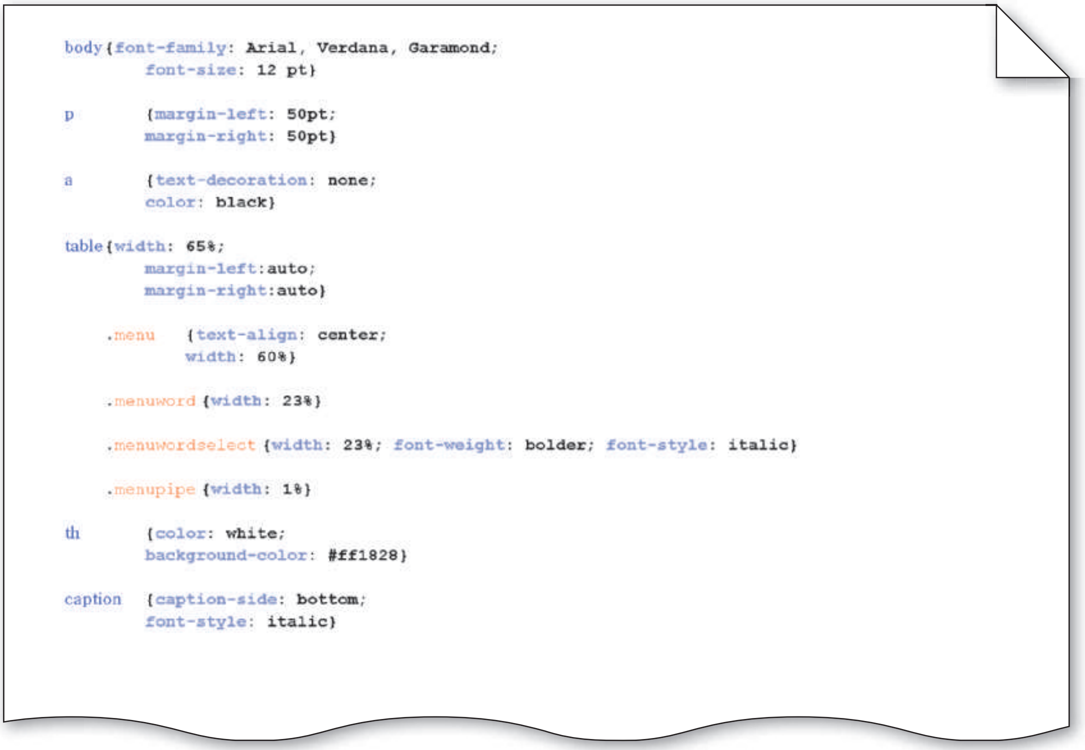
Q&A

Why did this step open a new file but not close the old file that I had in Notepad++?

In addition to having line numbers, one of the nicest features of Notepad++ (as opposed to Notepad) is that you can have multiple files open at the same time. This helps in situations like you have here, where you are creating one file that affects another. You can click the tabs in Notepad++ to move from one file to another.

2

- With the USB drive plugged into your computer, click File on the menu bar and then click Save As. Type `styles1.css` in the File name text box. If necessary, navigate to the G:\Chapter04\ChapterFiles folder. Click the Save button in the Save As dialog box to save the file as styles1.css.
- Click the File menu, click Print on the File menu, and then click the Print button in the Print dialog box to print a hard copy of the style sheet (Figure 4–20).



```
body{font-family: Arial, Verdana, Garamond;
        font-size: 12 pt}

p       {margin-left: 50pt;
        margin-right: 50pt}

a       {text-decoration: none;
        color: black}

table{width: 65%;
        margin-left:auto;
        margin-right:auto}

    .menu   {text-align: center;
            width: 60%}

    .menuword {width: 23%}

    .menuwordselect {width: 23%; font-weight: bolder; font-style: italic}

    .menupipe {width: 1%}

th      {color: white;
        background-color: #ff1828}

caption {caption-side: bottom;
        font-style: italic}
```

Figure 4–20

Examining the External Style Sheet

Because the CSS code for the external style sheet is complex, a review is necessary to learn what it does. The CSS code that you entered and is shown in Table 4-7 on page HTML 181 defines a new style for four main elements on a Web page: body, paragraphs, links, and tables. It is a good idea (but not a requirement) to insert your styles in order in the external style sheet.

The first style statement on lines 1 and 2 is entered as:

```
body    {font-family: Arial, Verdana, Garamond;

        font-size: 12 pt}
```

to change the font-family and font-size for the text throughout the Web site. You use the body element because you want these styles to apply to text across the Web site (Figure 4-19). If you wanted to apply one font-family or font-size to paragraphs of text and another font-family and font-size to the text in links, you would use the elements *p* and *a* rather than body to create those styles. This project uses three different font-family styles (Arial, Verdana, and Garamond) just in case the computer on which the Web page is viewed does not have the first (Arial) or second (Verdana) font-family. If the computer does not have any of the three font-families, then the normal (default browser) font-family is used.

The next styles are applied to the paragraph (p) element on lines 4 and 5:

```
p     {margin-left: 50pt;

      margin-right: 50pt}
```

With this style, you are adding right and left margins that are 50 points wide. This pulls the paragraph text in 50 points both from the left and right. To see what that style statement does to the look of the home page for this Web site, look at Figure 4–18 on page HTML 177 compared to Figure 4–1a on page HTML 159.

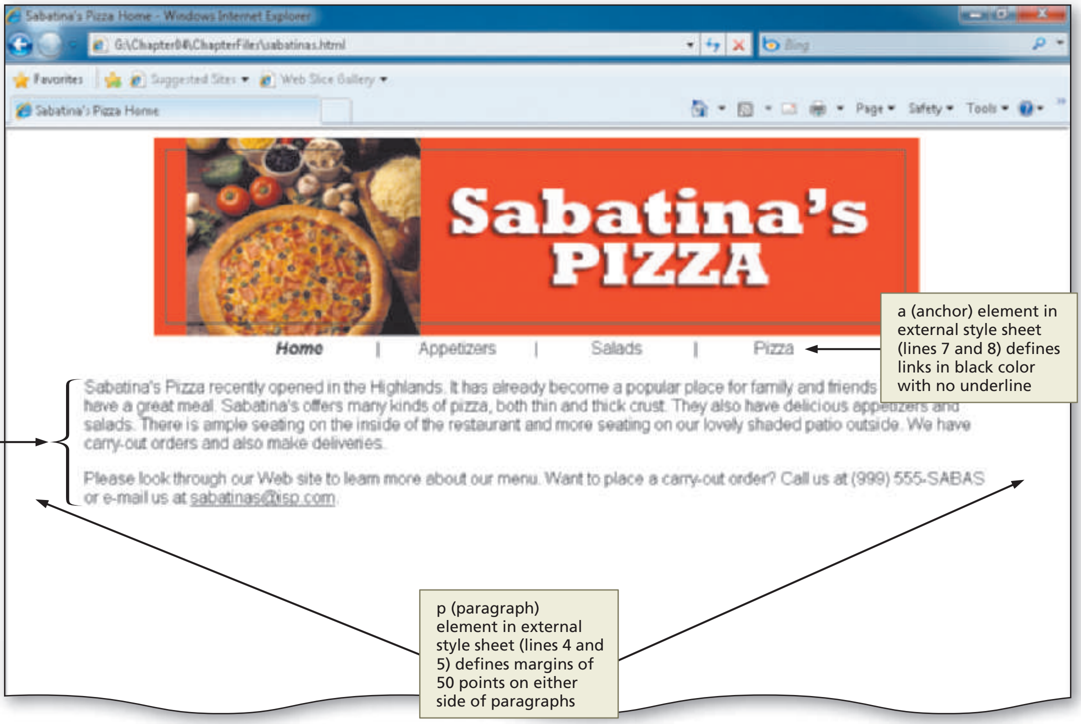
Lines 7 and 8 define the styles for all links by using the link (a) element:

```
a     {text-decoration: none;

      color: black}
```

This statement sets links to have no text-decoration (underlines) and makes all link states (normal, visited, and active) black in color. With a text-decoration setting of none, the browser will not display lines under any links. Setting the link color to black throughout eliminates the blue and purple (normal and visited) link colors that you would normally have. You can see in Figure 4–1a through 4-1d that users can tell what page they are on by the style of the link text in the menu bar; the name of the page they are visiting appears bold and italic in the menu bar. This is accomplished with the menuwordselect class that was defined in the styles1.css file that you just created. For instance, you can see that the style of the Home link (Figure 4–21 on the next page) when you are on the Home Web page is darker (bolder) and italicized. As you move from page to page, that bolder and italicized style moves to the respective page text link. For this feature, the menuwordselect class is inserted into the appropriate text link. The menuwordselect class is used once on each Web page.

BTW

Colors
To find the exact color, you can open the logo in a graphic image editing program and use one of the tools (such as the eye dropper tool) to click on the logo itself. If you then look at the color box, you should see the six-digit hexadecimal code for that color.


Sabatina's Pizza Home - Windows Internet Explorer
G:\Chapter04\ChapterFiles\sabatinas.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Sabatina's Pizza Home
Page
Safety
Tools
Sabatina's
PIZZA
Home | Appetizers | Salads | Pizza

Sabatina's Pizza recently opened in the Highlands. It has already become a popular place for family and friends have a great meal. Sabatina's offers many kinds of pizza, both thin and thick crust. They also have delicious appetizers and salads. There is ample seating on the inside of the restaurant and more seating on our lovely shaded patio outside. We have carry-out orders and also make deliveries.

Please look through our Web site to learn more about our menu. Want to place a carry-out order? Call us at (999) 555-SABAS or e-mail us at sabatinas@isp.com.

a (anchor) element in external style sheet (lines 7 and 8) defines links in black color with no underline

body element in external style sheet (lines 1 and 2) defines font-family of Arial, Verdana, Garamond in font-size 12

p (paragraph) element in external style sheet (lines 4 and 5) defines margins of 50 points on either side of paragraphs

Figure 4–21

In this external style sheet, all table-related styles are inserted together from lines 10 through 27:

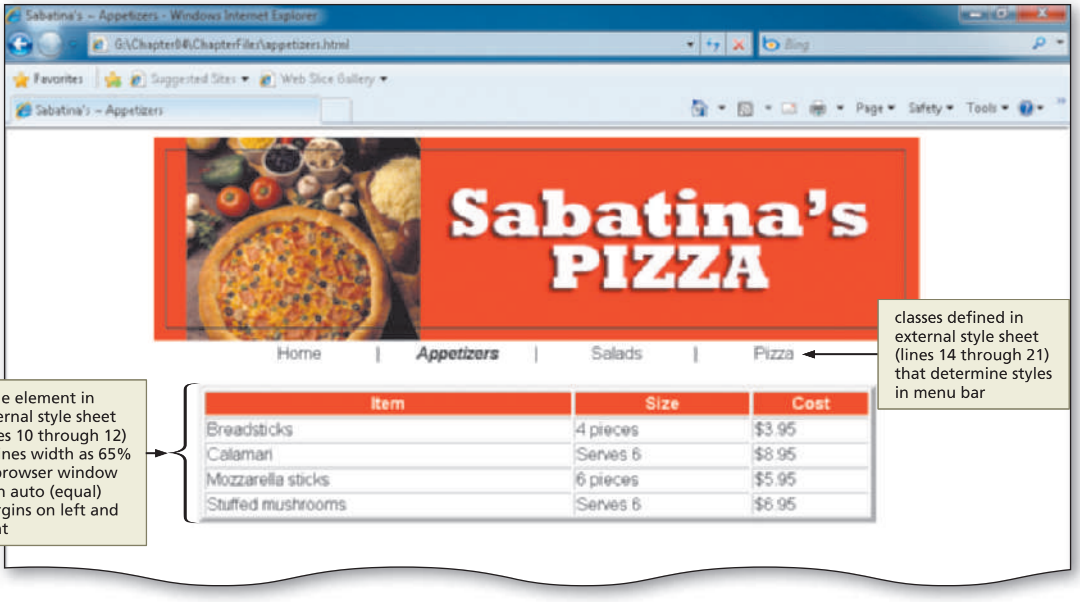
```
table                     {width: 65%;
                          margin-left:auto;
                          margin-right:auto}
    .menu                 {text-align: center;
                          width: 60%}
    .menuword             {width: 23%}
    .menuwordselect       {width: 23%;  font-weight: bolder;
                          font-style: italic}
    .menupipe             {width: 1%}
th                        {color: white;
                          background-color: #ff1828}
caption                   {caption-side: bottom;
                          font-style: italic}
```

Lines 10 through 12 identify the general style for all tables on the Web pages. The width of all tables (with the exception of the menu bar) will be 65% of the browser window. You control the width of the menu bar table by naming a class called menu (remember this can be any arbitrary name), as shown in the code in the styles1.css Web page file. The margin:auto statements horizontally center the element table with respect to the edges of the window. The values used for each side are equal because of the auto designator.

On lines 14 through 21, beneath the table element, are four named classes: menu, menuword, menuwordselect, and menupipe. Those lines are indented so that you can immediately see that they are related to the table element. On line 15, the style of the menu class is designated to be 60% rather than the 65% of all other tables. Line 14 tells the browser to display the text within the cells of the table in the center. See the differences created by these styles in Figure 4–22.

The menuword class sets the width of that column to 23%. The menupipe class sets the column with the pipe symbol to 1%. The menuwordselect class specifies a word to highlight by making it bolder and italicized. In Figure 4–22, the selected word is Appetizers. See how that word in the menu bar is bolder and italicized. You can utilize these classes (menu, menuword, menuwordselect, and menupipe) with the HTML code that you just typed in the sabatinas.html file. For the Sabatina's Pizza Home page, the menuwordselect class is used for the Home link (Figure 4–19, page HTML 182). When you click the Appetizers link though, the word Appetizers will be in bold and italics because you will use the menuwordselect class for that link. See the effect of that code in Figure 4–22.

In lines 23 and 24, you identify styles for all table headers (<th>). You designate a background color of #ff1828 (which is a red) with text color that is white (Figure 4–22). The red that is used is the same red that is in the Sabatina's Pizza logo banner.


Sabatina's – Appetizers - Windows Internet Explorer
G:\Chapter04\ChapterFiles\appetizers.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Sabatina's – Appetizers
Page
Safety
Tools
Sabatina's
PIZZA
Home | ***Appetizers*** | Salads | Pizza

Item	Size	Cost
Breadsticks	4 pieces	$3.95
Calamari	Serves 6	$8.95
Mozzarella sticks	6 pieces	$5.95
Stuffed mushrooms	Serves 6	$6.95

classes defined in external style sheet (lines 14 through 21) that determine styles in menu bar

table element in external style sheet (lines 10 through 12) defines width as 65% of browser window with auto (equal) margins on left and right

Figure 4–22

The final section of CSS code, lines 26 and 27, defines the styles to be applied to table captions. You want all captions to be aligned beneath the table and italicized.

Linking to the External Style Sheet

Four Web pages in the Sabatina's Pizza Web site require the same style: sabatinas .html, appetizers.html, salads.html, and pizza.html. Linking the external style sheet to each of these Web pages gives them the same styles for margins, paragraph text, links, and tables.

To link to the external style sheet, a <link /> tag must be inserted onto each of these four Web pages. The <link /> tag used to link an external style sheet is added within the <head></head> tag of the Web page HTML code. The general format of the <link /> tag is:

```
<link rel="stylesheet" type="text/css" href="styles1.css" />
```

where rel="stylesheet" establishes that the linked document is a style sheet, type="text/css" indicates that the CSS language is used in the text file containing the style sheet, and href="styles1.css" provides the name and location (URL) of the linked style sheet. To link a style sheet to a Web page, the <link /> tag must use "stylesheet" as the value for the rel property and text/css as the value for the type property. The URL used as the value for the href property varies, based on the name and location of the file used as the external style sheet. The URL used here indicates that the external style sheet, styles1.css, is located in the main or root directory of the Web site.

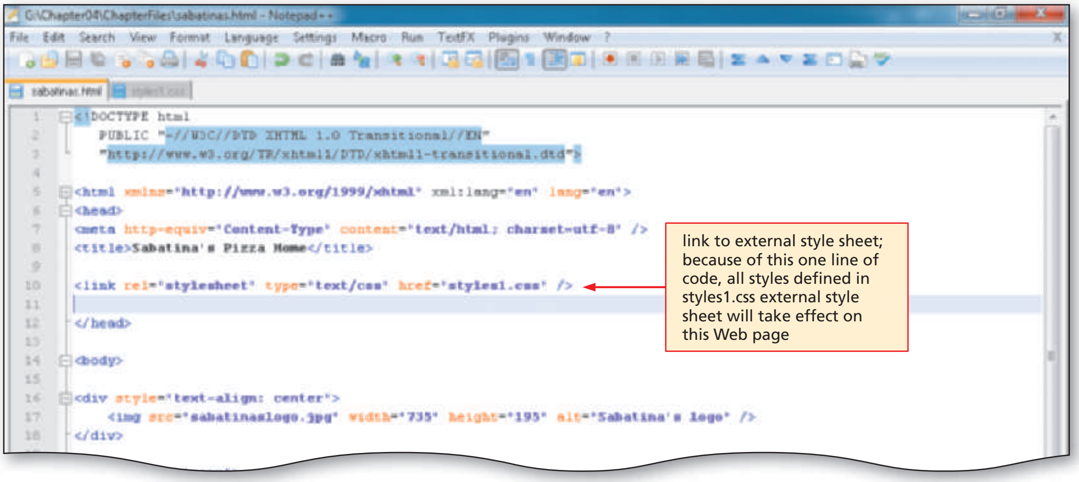
To Link to an External Style Sheet

After creating and saving the external style sheet, .css file, you use a <link /> tag to link the external style sheet to any Web pages to which you want to apply the style. Notice that the link tag is one of those (like the <img /> tag) that does not have a separate end tag (e.g., <body> and </body>). You therefore should use the / after a space and before the > in the tag to indicate the end of the tag.

The following step illustrates how to add a link to an external style sheet using a <link /> tag and then save the HTML file.

1

- Click the sabatinas .html tab in Notepad++ to make it the active window.
- With the sabatinas .html file open, click the end of line 8 after the > and press the ENTER key twice. Your insertion point should be positioned on line 10.
- Type `<link rel="stylesheet" type="text/css" href="styles1 .css" />` as the HTML code and then press the ENTER key, as shown in Figure 4–23.
- Click the Save button on the Notepad++ toolbar.


G:\Chapter04\ChapterFiles\sabatinas.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
sabatinas.html
styles1.css

```
1   <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5   <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6   <head>
7   <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8   <title>Sabatina's Pizza Home</title>
9
10  <link rel="stylesheet" type="text/css" href="styles1.css" />
11
12  </head>
13
14  <body>
15
16  <div style="text-align: center">
17      <img src="sabatinaslogo.jpg" width="735" height="195" alt="Sabatina's logo" />
18  </div>
```

link to external style sheet; because of this one line of code, all styles defined in styles1.css external style sheet will take effect on this Web page

Figure 4–23

Q&A

Is that all it takes to use an external style sheet — to insert that link statement?

Yes, that is all you need to do to use the styles identified in the external style sheet. The styles specified in the external style sheet will apply to that page, unless an embedded or inline style sheet takes precedence. Remember too that if you want to change a style, you just change it in the external (linked) style sheet itself. It automatically takes effect in any Web page that is linked to the external style sheet. (Remember to click the Refresh button if that Web page is already open in the browser.)

Q&A

Will the table styles from the styles1.css file take effect for all tables within the Web site?

As long as you insert the style sheet link statement onto the Web page, then the table styles will take effect. Remember that you can override those styles with either an embedded or an inline style sheet. You would do this if there is a table that you want to vary from all other tables in the Web site.

Q&A

Why is an external style sheet sometimes called a linked style sheet?

The style sheet that you created above is external to (as opposed to inline or embedded in) the Web page in which it is used. That's why it is called an external style sheet. The external style sheet is used by linking it into a Web page. It is called linked because you use a <link /> tag to insert it.

Validating and Printing the HTML, Viewing the Web Page, and Testing Links

After you save the HTML file for the Sabatina's Pizza home page, it should be validated to ensure that it meets current XHTML standards and viewed in a browser to confirm the Web page displays as desired. It also is important to test the links in the Sabatina's Pizza home page to verify that they function as expected.

To Validate a Web Page

The following steps illustrate how to validate an HTML file.

1. Open Internet Explorer and navigate to the Web site validator.w3.org.
2. Click the Validate by File Upload tab.
3. Click the Browse button.
4. Locate the sabatinas.html file on your storage device and click the file name.
5. Click the Open button in the Choose File to Upload dialog box and the file name will be inserted into the File box.
6. Click the Check button.

Q&A

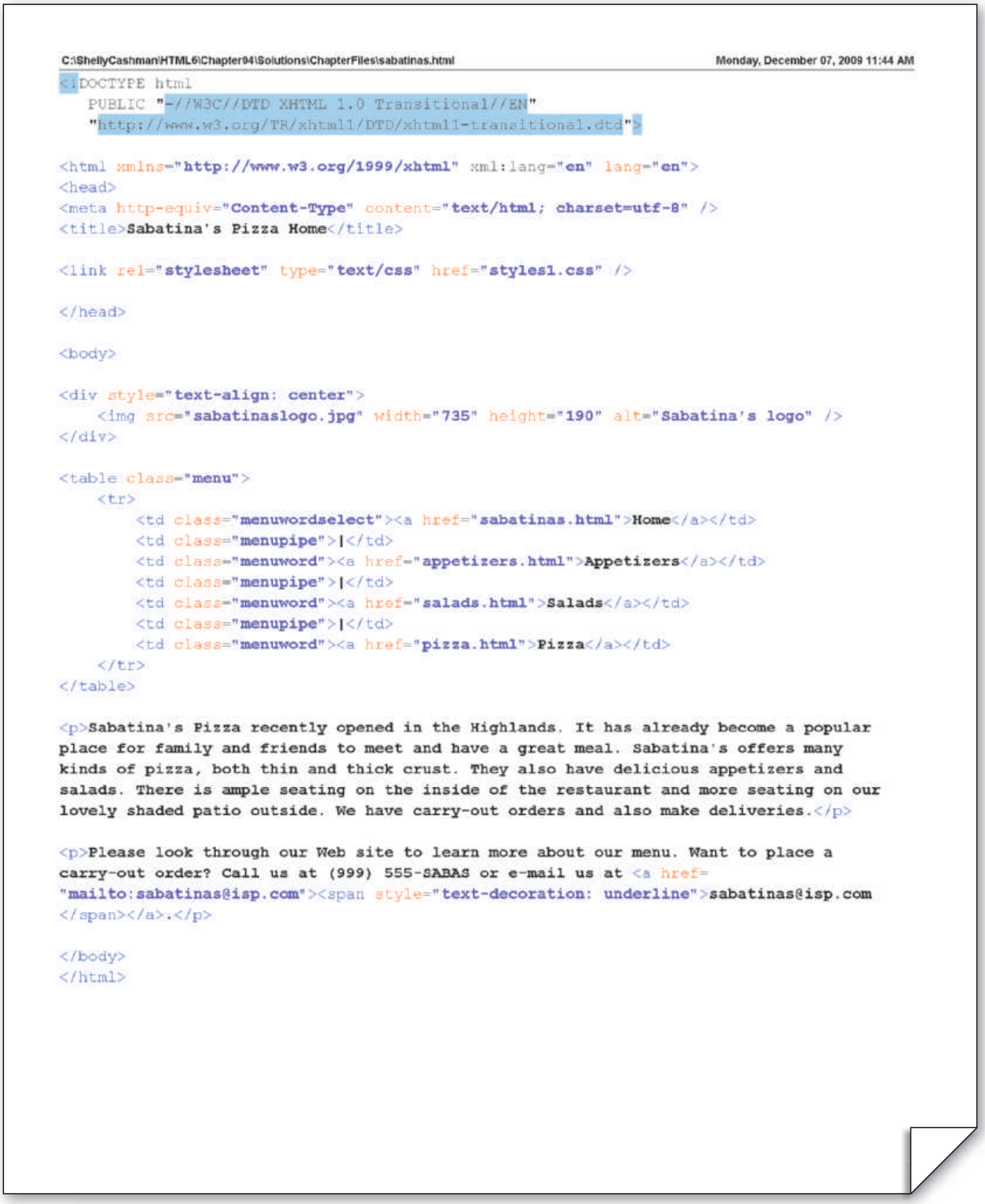
What if my HTML code does not pass the validation process?

If your file does not pass validation, make changes to the file to correct your errors. You should then revalidate the file.

To Print an HTML File

After your HTML code has passed validation, it is a good idea to make a hard copy printout of it.

1. Click the Notepad++ button on the taskbar to activate the Notepad++ window.
2. Click File on the menu bar, click the Print command, and then click the Print button to print a hard copy of the HTML code (Figure 4–24).



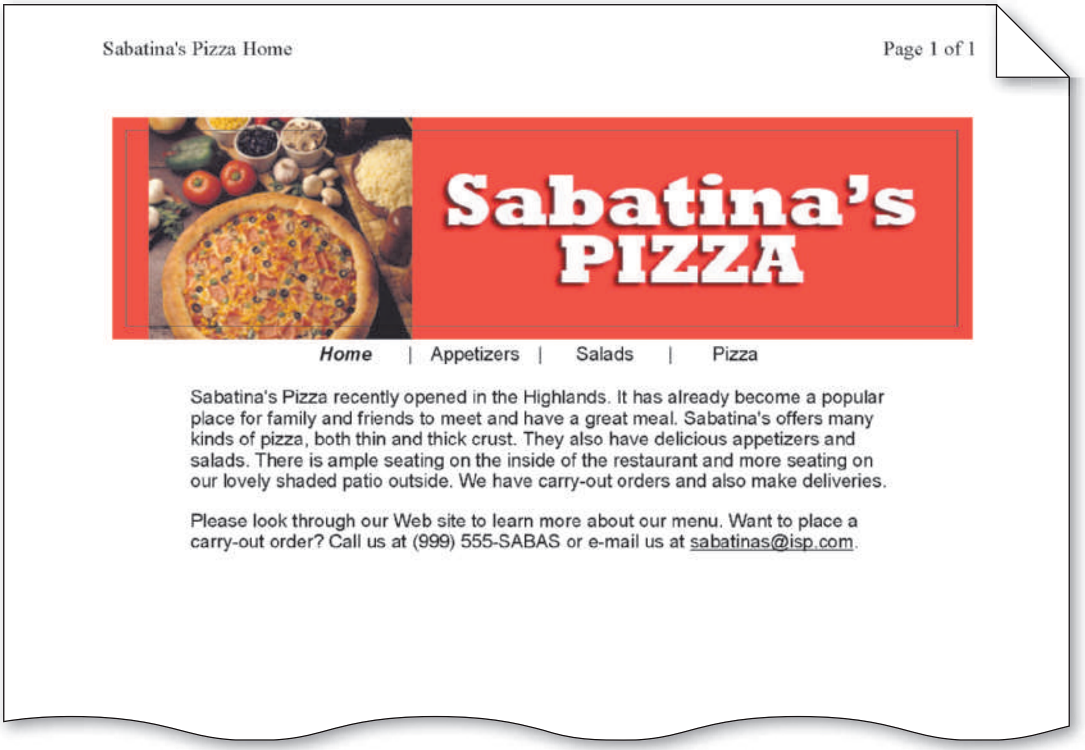
C:\ShellyCashman\HTML6\Chapter04\Solutions\ChapterFiles\sabatinas.html Monday, December 07, 2009 11:44 AM

```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Sabatina's Pizza Home</title>

<link rel="stylesheet" type="text/css" href="styles1.css" />

</head>

<body>

<div style="text-align: center">
    <img src="sabatinaslogo.jpg" width="735" height="190" alt="Sabatina's logo" />
</div>

<table class="menu">
    <tr>
        <td class="menuwordselect"><a href="sabatinas.html">Home</a></td>
        <td class="menupipe">|</td>
        <td class="menuword"><a href="appetizers.html">Appetizers</a></td>
        <td class="menupipe">|</td>
        <td class="menuword"><a href="salads.html">Salads</a></td>
        <td class="menupipe">|</td>
        <td class="menuword"><a href="pizza.html">Pizza</a></td>
    </tr>
</table>

<p>Sabatina's Pizza recently opened in the Highlands. It has already become a popular
place for family and friends to meet and have a great meal. Sabatina's offers many
kinds of pizza, both thin and thick crust. They also have delicious appetizers and
salads. There is ample seating on the inside of the restaurant and more seating on our
lovely shaded patio outside. We have carry-out orders and also make deliveries.</p>

<p>Please look through our Web site to learn more about our menu. Want to place a
carry-out order? Call us at (999) 555-SABAS or e-mail us at <a href=
"mailto:sabatinas@isp.com"><span style="text-decoration: underline">sabatinas@isp.com
</span></a>.</p>

</body>
</html>
```

Figure 4–24

To View, Test, and Print a Web Page

1. Click the Internet Explorer button on the Windows taskbar to activate Internet Explorer.
2. In Internet Explorer, click the Address bar to select the URL in the Address bar.
3. Type `g:\Chapter04\ChapterFiles\sabatinas.html` (or the specific path to your file) to display the new URL in the Address bar and then press the ENTER key.
4. Click the Salads and Pizza links to test that they work correctly.
5. Click the Print button on the Internet Explorer Command bar to print the Web page (Figure 4–25).



Sabatina's Pizza Home

Page 1 of 1

Home | Appetizers | Salads | Pizza

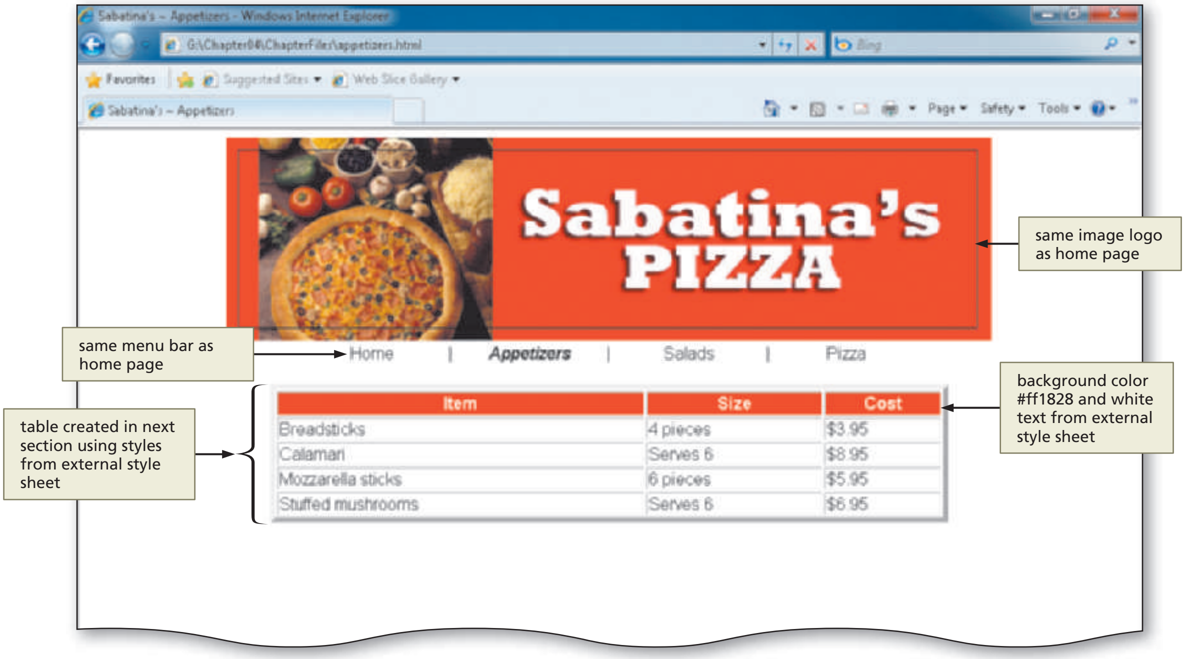
Sabatina's Pizza recently opened in the Highlands. It has already become a popular place for family and friends to meet and have a great meal. Sabatina's offers many kinds of pizza, both thin and thick crust. They also have delicious appetizers and salads. There is ample seating on the inside of the restaurant and more seating on our lovely shaded patio outside. We have carry-out orders and also make deliveries.

Please look through our Web site to learn more about our menu. Want to place a carry-out order? Call us at (999) 555-SABAS or e-mail us at sabatinas@isp.com.

Figure 4–25

Creating a Second Web Page

You have created the Sabatina's Pizza home page with a horizontal menu bar of text links for easy navigation to other pages in the site and an external style sheet. Now it is time to create one of those linked pages — the Appetizers page (Figure 4–26 on the next page). Like the home page, the Appetizers page includes the logo image and a horizontal menu bar of text links. Having the Sabatina's Pizza logo and the horizontal menu bar at the top of each page provides consistency throughout the Web site. The menu bar lists the four Web pages — Home, Appetizers, Salads, and Pizza — with a | (pipe) symbol between links. Beneath the menu bar is a table listing the appetizers that are available at Sabatina's Pizza.



Home | Appetizers | Salads | Pizza

Item	Size	Cost
Breadsticks	4 pieces	$3.95
Calamari	Serves 6	$8.95
Mozzarella sticks	6 pieces	$5.95
Stuffed mushrooms	Serves 6	$6.95

same image logo as home page

same menu bar as home page

table created in next section using styles from external style sheet

background color #ff1828 and white text from external style sheet

Figure 4–26

The first step in creating the Appetizers Web page is to add the HTML tags to define the Web page structure, the Sabatina's Pizza logo banner image, and the horizontal menu bar. Because the logo banner image and menu bar are the same as on the home page, you can copy and paste HTML code from the Home page and then edit it for the Appetizers page. You would copy/paste this code because you have already tested it by opening the sabatinas.html file in the browser, and you know the code works. Rather than retyping the code, and possibly getting errors, a copy/paste will assure that it is correct.

To Copy and Paste HTML Code to a New File

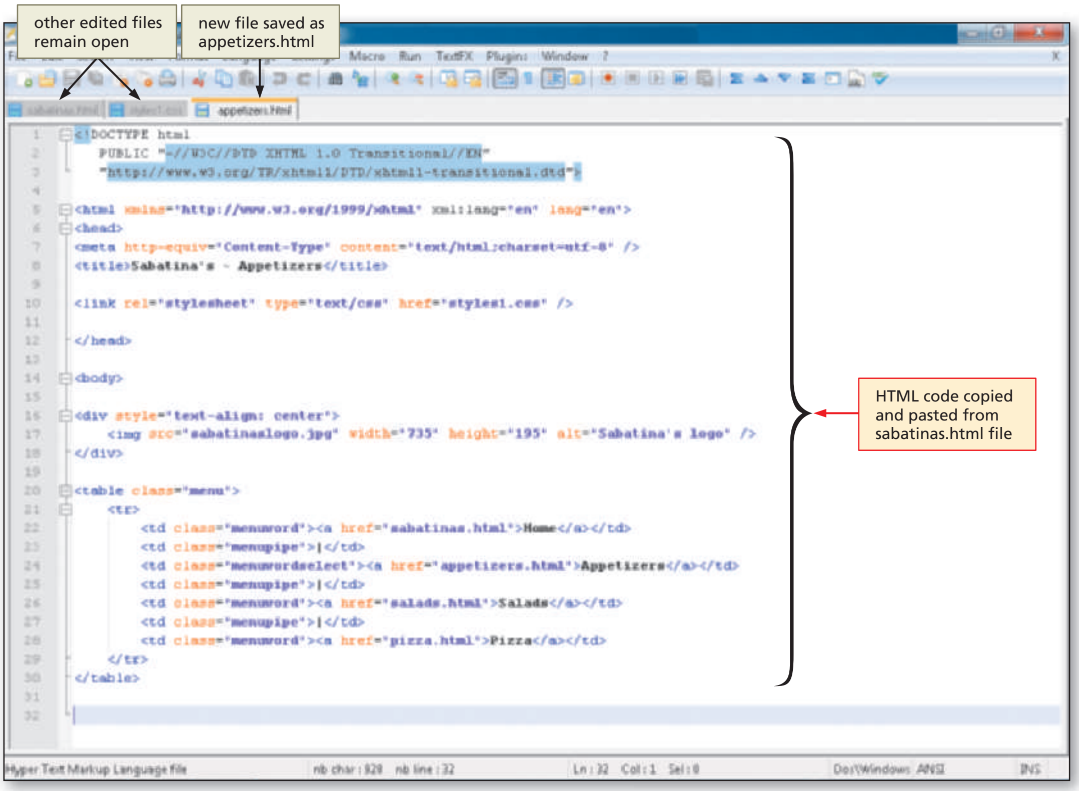
The following step shows how to copy the HTML tags to define the Web page structure and the horizontal menu table from the HTML file, sabatinas.html, to a new HTML file.

1. If necessary, click the Notepad++ button on the taskbar and click the sabatinas.html tab to make it the active window.
2. Click immediately to the left of the < in the <!DOCTYPE html tag on line 1.
3. Drag through the </table> tag on line 30 to highlight lines 1 through 30.
4. Press CTRL+C to copy the selected lines to the Clipboard.
5. Click File on the Notepad++ menu bar and then click New.
6. Press CTRL+V to paste the contents from the Clipboard into a new file. Press the ENTER key twice to position the insertion point on line 32.
7. Change the words Pizza Home in the <title> on line 8 to ~ Appetizers (using the tilde ~ character).
8. Change the word menuwordselect on line 22 to menuword.
9. Change the word menuword on line 24 to menuwordselect.

To Save an HTML File

With the HTML code for the structure code and menu table added, the appetizers .html file should be saved.

1. With a USB drive plugged into the computer, click File on the menu bar and then click Save As. Type `appetizers.html` in the File name text box.
2. If necessary, click USB (G:) in the Save in list. Double-click the Chapter04 folder and then double-click the ChapterFiles folder in the list of available folders. Click the Save button in the Save As dialog box (Figure 4–27).


other edited files remain open
new file saved as appetizers.html
HTML code copied and pasted from sabatinas.html file
Macro Run TextFX Plugins Window ?
sabatinas.html
styles1.css
appetizers.html

```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html;charset=utf-8" />
<title>Sabatina's - Appetizers</title>

<link rel="stylesheet" type="text/css" href="styles1.css" />

</head>

<body>

<div style="text-align: center">
    <img src="sabatinaslogo.jpg" width="735" height="195" alt="Sabatina's logo" />
</div>

<table class="menu">
    <tr>
        <td class="menuword"><a href="sabatinas.html">Home</a></td>
        <td class="menupipe">|</td>
        <td class="menuwordselect"><a href="appetizers.html">Appetizers</a></td>
        <td class="menupipe">|</td>
        <td class="menuword"><a href="salads.html">Salads</a></td>
        <td class="menupipe">|</td>
        <td class="menuword"><a href="pizza.html">Pizza</a></td>
    </tr>
</table>
```

Hyper Text Markup Language file
nb char : 828 nb line : 32
Ln : 32 Col : 1 Sel : 0
Dos\Windows ANSI
INS

Figure 4–27

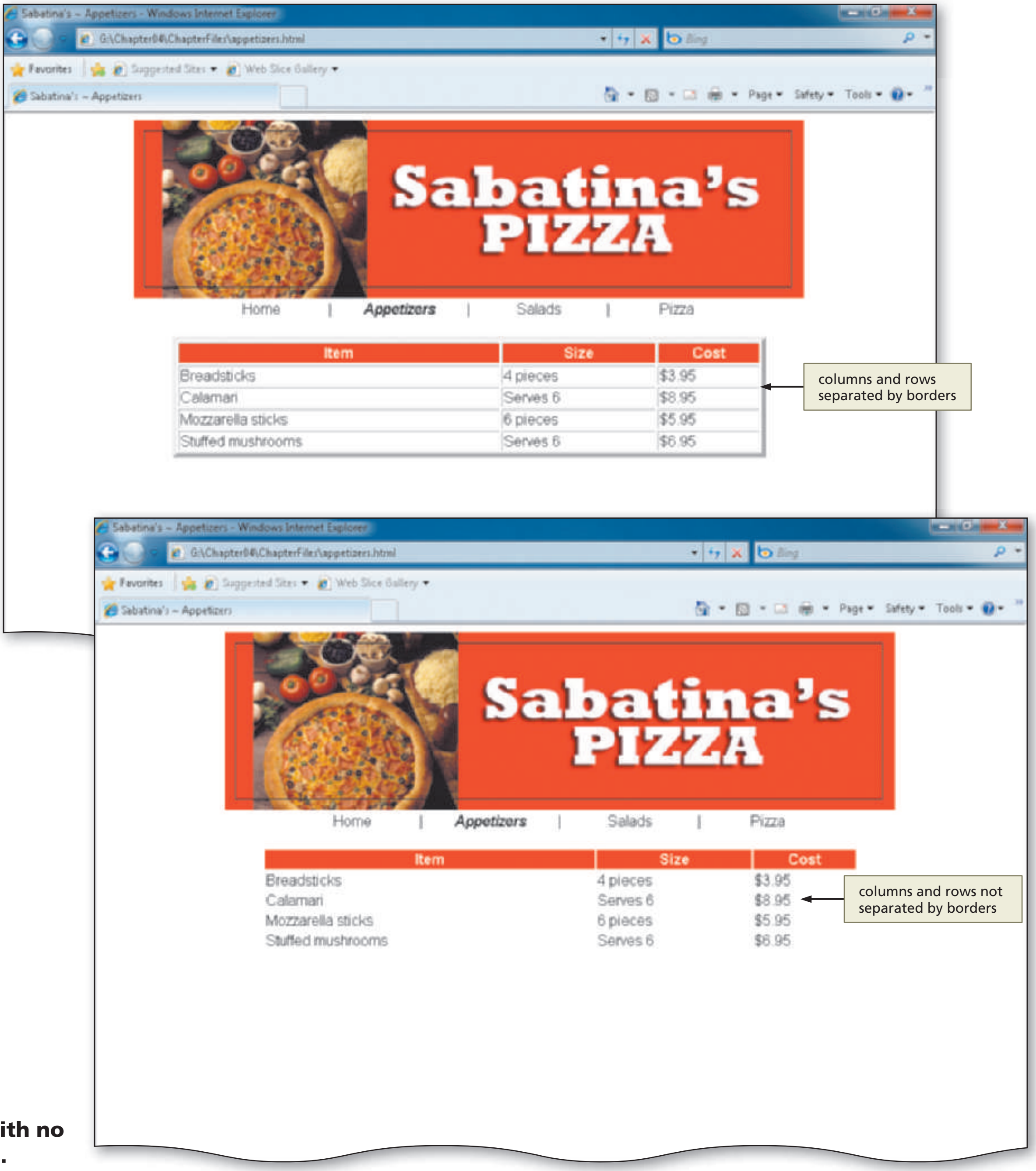
Plan Ahead

Determine what styles are needed for the second Web page.
Prior to adding more code to the Appetizers Web page, think through what styles you have defined and determine if there is anything in this Web page that needs to differ from the external style sheet. Any differences can be inserted as a formatting attribute, an inline style, or as an embedded style sheet that will override the styles defined in the external style sheet.

- **Review the table formatting in the external style sheet to see if it is appropriate for this page.** Borderless tables often are appropriate when the tables are used to position text and image elements. In other instances, such as when a table is used to structure columns and rows of information, borders are appropriate.
- **Identify any other styles that may need to be applied to tables on this page**. It is important to make your tables clear enough that users can easily identify the information that they need. You may want to start with the basic table format and add options as necessary.

Adding a Table with Borders

The borderless table style defined in the styles1.css external style sheet works well for the horizontal menu that appears on every page. However, the borderless format would be less effective in presenting the three columns and five rows of information about available appetizers at Sabatina's Pizza. Figure 4–28a shows this information in a table with borders. Figure 4–28b shows the same information in a table without borders. As shown in this figure, using a table with borders makes the information on the Appetizers Web page easier to read and provides a frame that gives the table a three-dimensional appearance.



(a) Table with borders.

Sabatina's – Appetizers - Windows Internet Explorer

G:\Chapter04\ChapterFiles\appetizers.html

Home | *Appetizers* | Salads | Pizza

Item	Size	Cost
Breadsticks	4 pieces	$3.95
Calamari	Serves 6	$8.95
Mozzarella sticks	6 pieces	$5.95
Stuffed mushrooms	Serves 6	$6.95

columns and rows separated by borders

(b) Table with no borders.

Sabatina's – Appetizers - Windows Internet Explorer

G:\Chapter04\ChapterFiles\appetizers.html

Home | *Appetizers* | Salads | Pizza

Item	Size	Cost
Breadsticks	4 pieces	$3.95
Calamari	Serves 6	$8.95
Mozzarella sticks	6 pieces	$5.95
Stuffed mushrooms	Serves 6	$6.95

columns and rows not separated by borders

Figure 4–28

To Create a Table with Borders and Insert Text

Creating the table shown in Figure 4–28a involves first creating a table with three columns and five rows. The first row of the table is for column headings; the other rows are for data. As you have learned, table heading cells <th> differ from data cells <td> in their appearance. Text in a heading cell appears as bold and centered, while text in a data cell appears as normal and left-aligned. In the external style sheet styles1.css that you created in an earlier section of the project, you gave table header cells a background color of #ff1828 and white text. Table 4–8 contains the HTML tags and text used to create the table of appetizers on the Appetizers Web page.

Table 4–8 HTML Code to Create a Table

Line	HTML Tag and Text
32	`<br />`
33	`<table border="5">`
34	`   <tr>`
35	`       <th>Item</th>`
36	`       <th>Size</th>`
37	`       <th>Cost</th>`
38	`   </tr>`
39	
40	`   <tr>`
41	`       <td>Breadsticks</td>`
42	`       <td>4 pieces</td>`
43	`       <td>$3.95</td>`
44	`   </tr>`
45	
46	`   <tr>`
47	`       <td>Calamari</td>`
48	`       <td>Serves 6</td>`
49	`       <td>$8.95</td>`
50	`   </tr>`
51	
52	`   <tr>`
53	`       <td>Mozzarella sticks</td>`
54	`       <td>6 pieces</td>`
55	`       <td>$5.95</td>`
56	`   </tr>`
57	
58	`   <tr>`
59	`       <td>Stuffed mushrooms</td>`
60	`       <td>Serves 6</td>`
61	`       <td>$6.95</td>`
62	`   </tr>`
63	`</table>`
64	
65	`</body>`
66	`</html>`

The following step illustrates how to create a table with borders and insert text into heading and data cells.

1

- With the insertion point on line 32, enter the HTML code for the Appetizers table, as shown in Table 4–8, using TAB to create indents, and pressing ENTER after each line except the last line (Figure 4–29).

Q&A

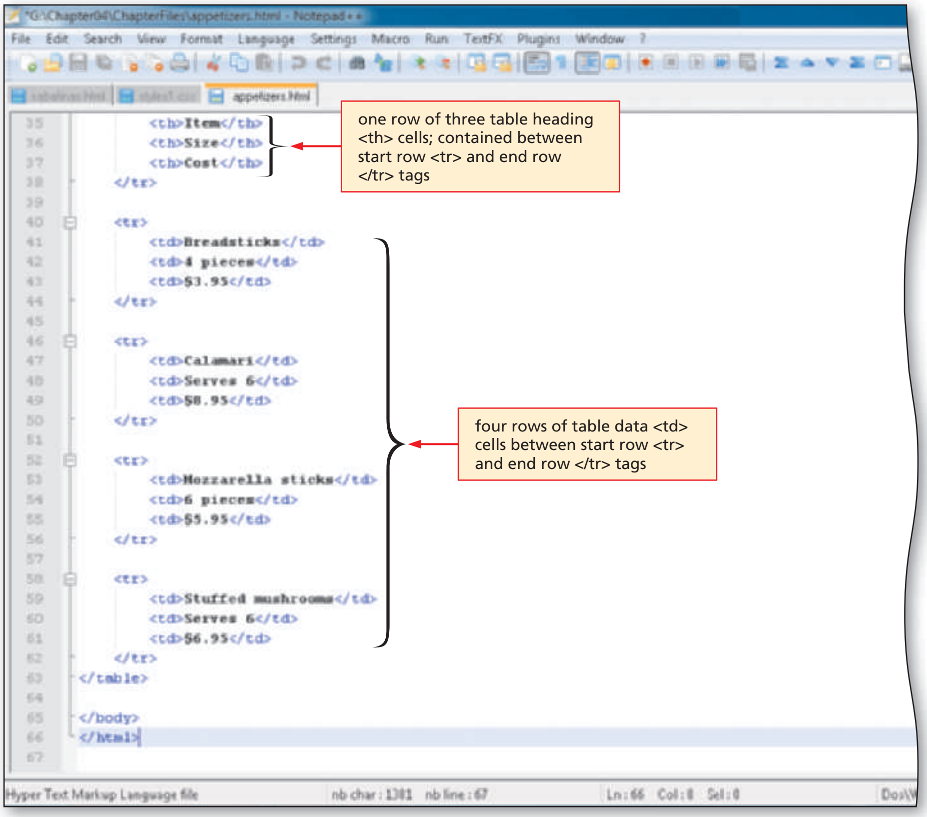
What does the number in the table border line (line 33) represent?

It represents the number of pixels that you want the border to be. The higher the number, the wider the border.

Q&A

Are there other attributes that can be used in the <table>, <tr>, <th>, and <td> tags?

Many other attributes can be used in the <table> related tags (see Appendix A). The best way to review these attributes is to try them in simple tables to see the effect. Viewing tables with various attributes designated side by side on a Web page helps you to determine which attributes to use.


*G:\Chapter04\ChapterFiles\appetizers.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
appetizers.html

```
35          <th>Item</th>
36          <th>Size</th>
37          <th>Cost</th>
38      </tr>
39
40      <tr>
41          <td>Breadsticks</td>
42          <td>4 pieces</td>
43          <td>$3.95</td>
44      </tr>
45
46      <tr>
47          <td>Calamari</td>
48          <td>Serves 6</td>
49          <td>$8.95</td>
50      </tr>
51
52      <tr>
53          <td>Mozzarella sticks</td>
54          <td>6 pieces</td>
55          <td>$5.95</td>
56      </tr>
57
58      <tr>
59          <td>Stuffed mushrooms</td>
60          <td>Serves 6</td>
61          <td>$6.95</td>
62      </tr>
63  </table>
64
65  </body>
66  </html>
67
```

Hyper Text Markup Language file
nb char : 1381 nb line : 67
Ln : 66 Col : 8 Sel : 0
Dos\W

one row of three table heading <th> cells; contained between start row <tr> and end row </tr> tags

four rows of table data <td> cells between start row <tr> and end row </tr> tags

Figure 4–29

Q&A

Why are we using a white font color for the headings?

Because the background color is so dark (#ff1828), you could not easily read the heading if it was the default color of black. Changing the font color to white on a dark background color makes it easier to read.

To Save, Validate, View, and Print the Web Page

After adding the remaining HTML code, perform the following steps to save, validate, view, and print the Appetizers Web page.

1 In Notepad++, click the Save icon on the toolbar to save appetizers.html.

2 Click the Internet Explorer button on the taskbar.

3 Use the W3C validator service to validate the appetizers.html Web page.

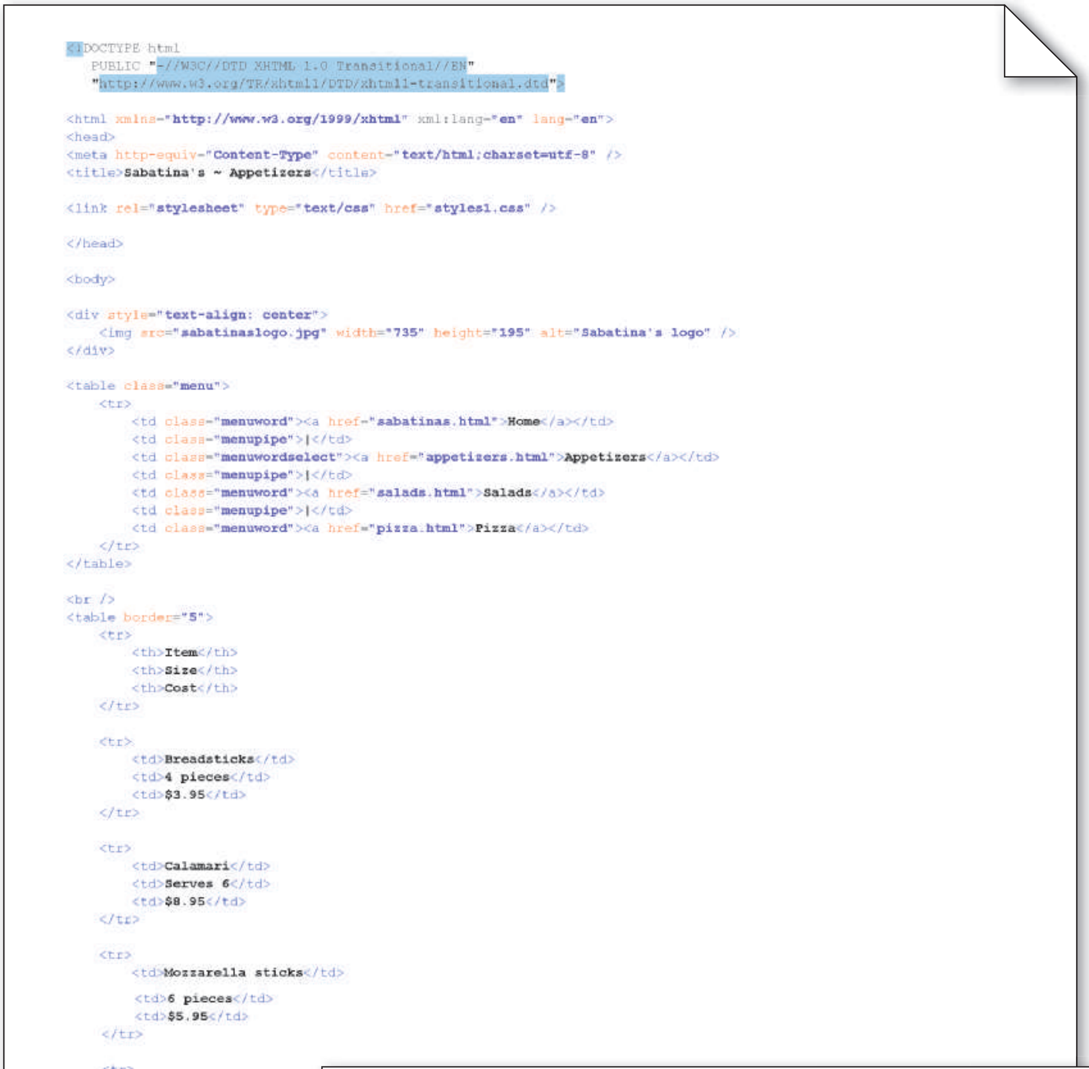
4 Click the Notepad++ button to return to Notepad++.

5 Print the appetizers.html Notepad++ file (Figure 4–30).

6 Use the Back button or Internet Explorer tabs to return to the Sabatina's home page.

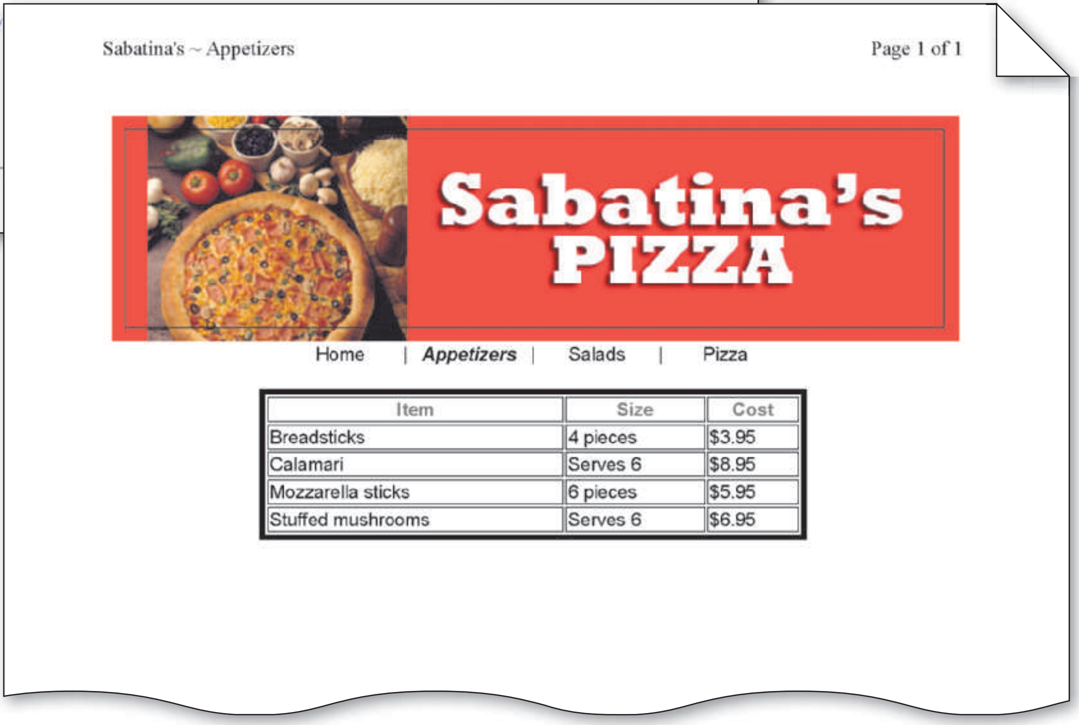
7 Click the Appetizers link on the home page to show the most recent file.

8 Click the Print button on the Command bar to print the Web page, as shown in Figure 4–31.



```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html;charset=utf-8" />
<title>Sabatina's ~ Appetizers</title>

<link rel="stylesheet" type="text/css" href="styles1.css" />

</head>

<body>

<div style="text-align: center">
    <img src="sabatinaslogo.jpg" width="735" height="195" alt="Sabatina's logo" />
</div>

<table class="menu">
    <tr>
        <td class="menuword"><a href="sabatinas.html">Home</a></td>
        <td class="menupipe">|</td>
        <td class="menuwordselect"><a href="appetizers.html">Appetizers</a></td>
        <td class="menupipe">|</td>
        <td class="menuword"><a href="salads.html">Salads</a></td>
        <td class="menupipe">|</td>
        <td class="menuword"><a href="pizza.html">Pizza</a></td>
    </tr>
</table>

<br />
<table border="5">
    <tr>
        <th>Item</th>
        <th>Size</th>
        <th>Cost</th>
    </tr>

    <tr>
        <td>Breadsticks</td>
        <td>4 pieces</td>
        <td>$3.95</td>
    </tr>

    <tr>
        <td>Calamari</td>
        <td>Serves 6</td>
        <td>$8.95</td>
    </tr>

    <tr>
        <td>Mozzarella sticks</td>

        <td>6 pieces</td>
        <td>$5.95</td>
    </tr>

    <tr>
        <td>Stuffed mushrooms</
        <td>Serves 6</td>
        <td>$6.95</td>
    </tr>
</table>

</body>
</html>
```

Figure 4–30



Sabatina's ~ Appetizers   Page 1 of 1

Home | *Appetizers* | Salads | Pizza

Item	Size	Cost
Breadsticks	4 pieces	$3.95
Calamari	Serves 6	$8.95
Mozzarella sticks	6 pieces	$5.95
Stuffed mushrooms	Serves 6	$6.95

Figure 4–31

To Test Links on a Web Page

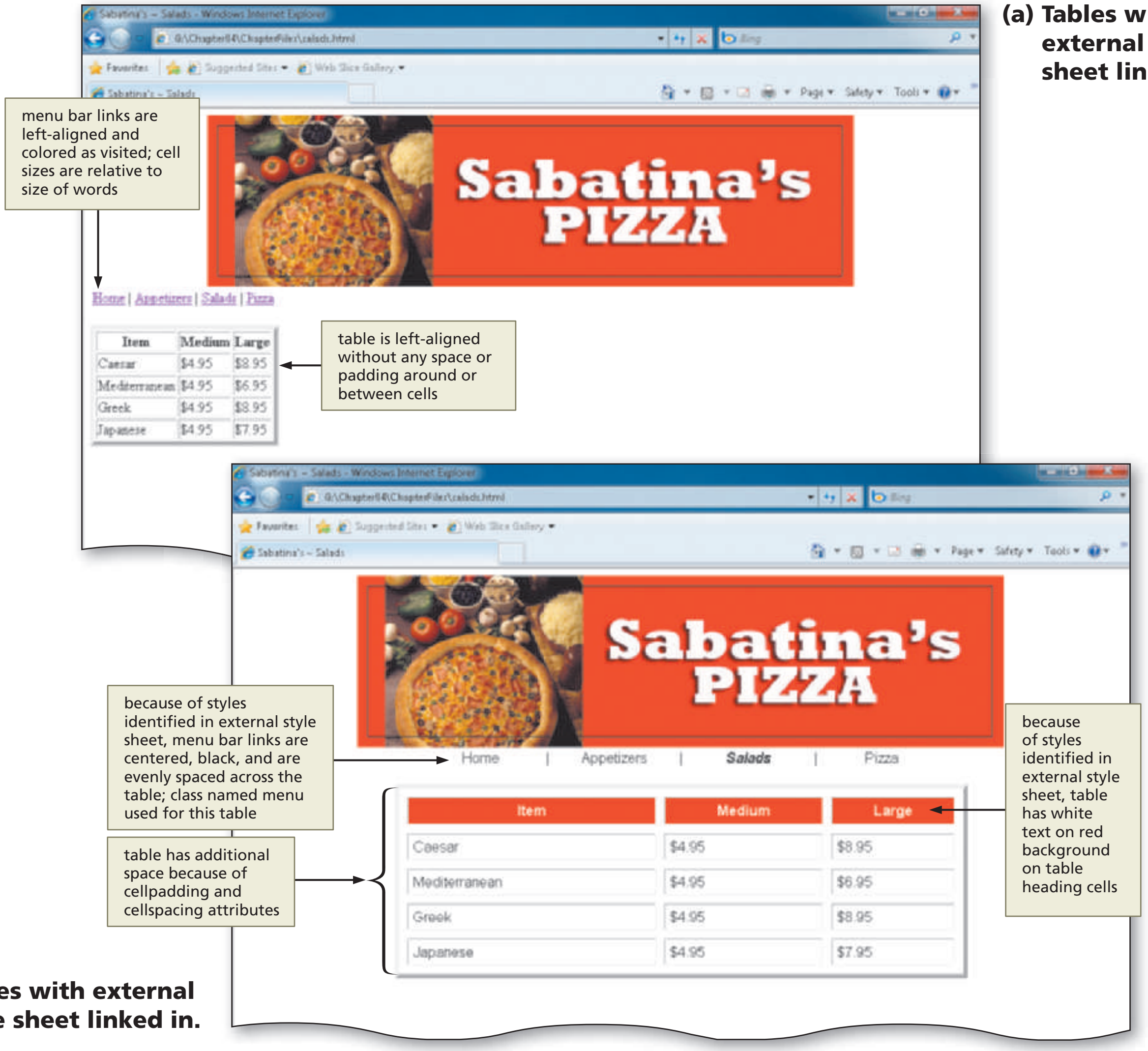
After confirming that the Web page appears as desired, the four links on the horizontal menu bar should be tested to verify that they function as expected. The following steps show how to test the links on the appetizers.html Web page. Compare Figure 4–32a (the starting Web page) to Figure 4–32b (the ending Web page after the HTML code is entered in the next section).

1. Click the Home link to change to the Sabatina's Pizza home page.
2. Click the Appetizers link to return to the appetizers.html Web page.
3. Click the Pizza link. (You will add a heading to the Pizza page later in the project.)
4. Click the Salads link (Figure 4–32a).

Q&A

Why isn't the Salads Web page formatted with the styles in the external style sheet?

In order for the external style sheet to take effect, you have to insert the <link> statement into the HTML code in the Salads file.


Sabatina's – Salads - Windows Internet Explorer
G:\Chapter04\ChapterFiles\salads.html
Favorites
Suggested Sites
Web Slice Gallery
Sabatina's – Salads
Page
Safety
Tools
Sabatina's PIZZA
Home | Appetizers | Salads | Pizza

Item	Medium	Large
Caesar	$4.95	$8.95
Mediterranean	$4.95	$6.95
Greek	$4.95	$8.95
Japanese	$4.95	$7.95

menu bar links are left-aligned and colored as visited; cell sizes are relative to size of words

table is left-aligned without any space or padding around or between cells

(a) Tables with no external style sheet linked in.

Sabatina's – Salads - Windows Internet Explorer
G:\Chapter04\ChapterFiles\salads.html
Sabatina's PIZZA
Home | Appetizers | Salads | Pizza

Item	Medium	Large
Caesar	$4.95	$8.95
Mediterranean	$4.95	$6.95
Greek	$4.95	$8.95
Japanese	$4.95	$7.95

because of styles identified in external style sheet, menu bar links are centered, black, and are evenly spaced across the table; class named menu used for this table

table has additional space because of cellpadding and cellspacing attributes

because of styles identified in external style sheet, table has white text on red background on table heading cells

(b) Tables with external style sheet linked in.

Figure 4–32

Adding a Link, Cellspacing, and Cellpadding

The table of information on the Appetizers Web page did not use the cellspacing or cellpadding attributes. The size of each data cell, therefore, automatically was set to the minimum size needed for the text inserted in the data cell. The salads.html Web page, however, should be modified to use cellspacing and cellpadding by adding the cellspacing and cellpadding attributes to the <table> tag. **Cellspacing** defines the number of pixels of space between cells in a table. Additional cellspacing makes the borders around each cell look thicker (see the thickness of the borders in Figure 4–33b versus Figure 4–33a). Although there is no official default, browsers usually use a default of 2 for cellspacing. **Cellpadding** defines the number of pixels of space between a cell's contents and the cell wall. In other words, if you add cellpadding, you give more space around the content within that cell. The default for cellpadding is 1. Figures 4–33a and 4–33b illustrate how using the cellspacing and cellpadding <table> tag attributes can affect a table's appearance.

BTW

Cellspacing

The cellspacing attribute adds pixels between cells. The purpose of cellspacing is to add additional space in the separation between the cells, whether or not a border exists. With a border, cellspacing increases the size of the border between the cells. Without a border, cellspacing increases the amount of white space between the cells.

BTW

Cellpadding

The cellpadding attribute adds pixels within a cell border. The purpose of cellpadding is to keep the content within each cell from looking like it is too close to the content of another cell. Cellpadding will set a margin for the right, left, top, and bottom of the cell all at once with the specification of one tag.

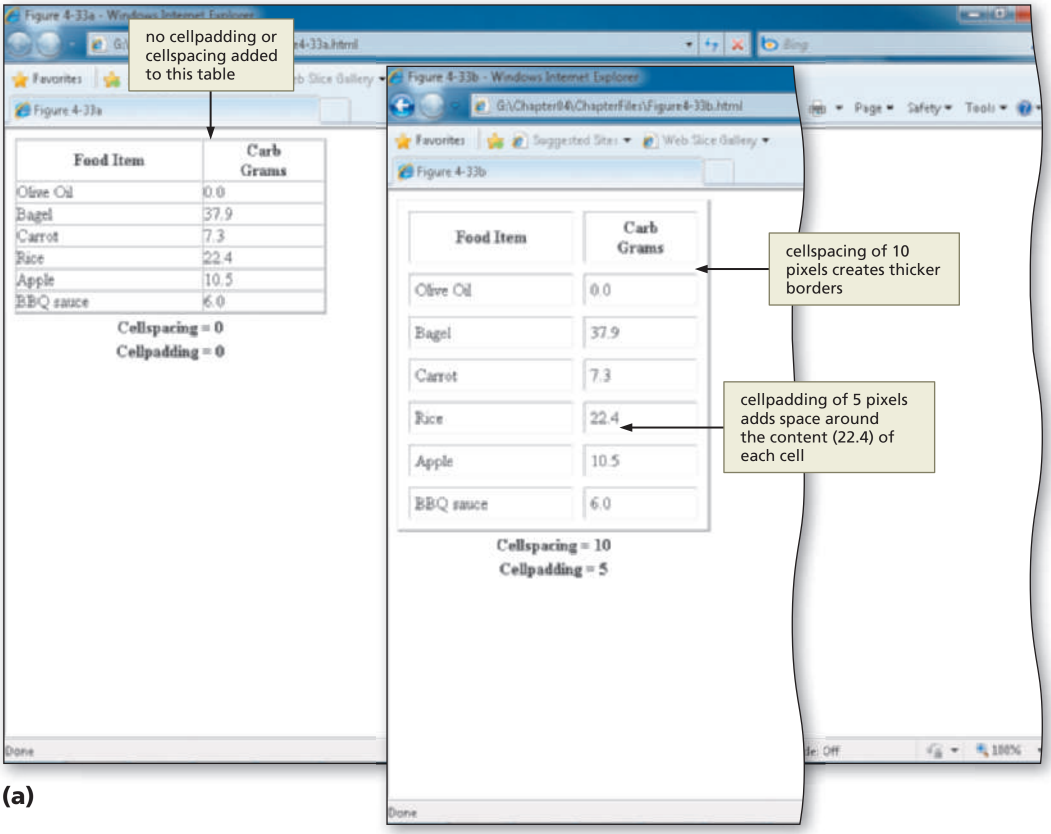


Figure 4-33a - Windows Internet Explorer
Favorites
Figure 4-33a
Done
Figure 4-33b - Windows Internet Explorer
G:\Chapter04\ChapterFiles\Figure4-33b.html
Favorites
Suggested Sites
Web Slice Gallery
Figure 4-33b
Page
Safety
Tools
Done
100%

no cellpadding or cellspacing added to this table

Food Item	Carb Grams
Olive Oil	0.0
Bagel	37.9
Carrot	7.3
Rice	22.4
Apple	10.5
BBQ sauce	6.0

Cellspacing = 0
Cellpadding = 0

cellspacing of 10 pixels creates thicker borders

cellpadding of 5 pixels adds space around the content (22.4) of each cell

Food Item	Carb Grams
Olive Oil	0.0
Bagel	37.9
Carrot	7.3
Rice	22.4
Apple	10.5
BBQ sauce	6.0

Cellspacing = 10
Cellpadding = 5

(a)

(b)

Figure 4–33 Tables with and without cellspacing and cellpadding.

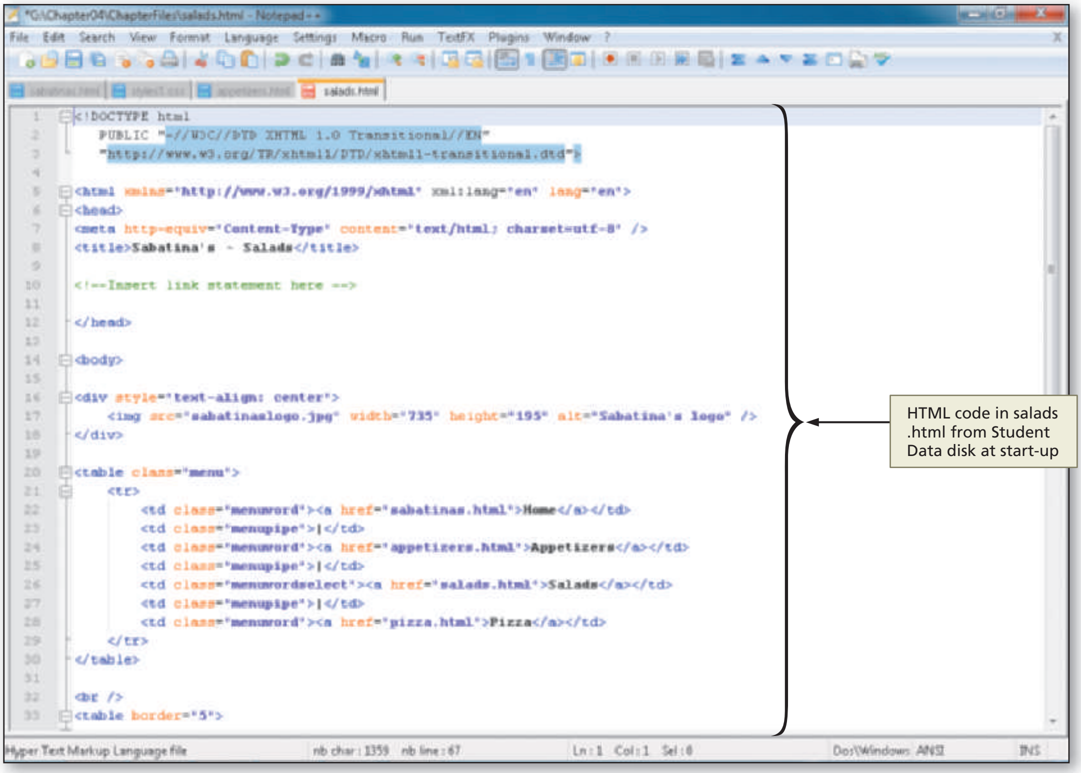
Plan Ahead

- **Determine if you need to use cellpadding, cellspacing, or both.** The first thing you should consider is if you need these spacing attributes at all. If your content is getting across to the users without any modification to the spacing, then maybe you do not need to do this. Look again at the appetizers.html Web page. The information there is completely readable, and there is no cellpadding or cellspacing.
- **Determine what table spacing to use.** If you decide that you do need to insert space within or around the cells of data, then you should next consider how much space to provide within the table. Cellspacing is the space between the borders of each cell. Cellpadding is the space between a cell's content and its border. Both attributes serve the purpose of making the table of information easier to read. No rule of thumb says how much cellpadding or cellspacing should be used. Try various values to see the effect on the table.

To Open an HTML File

In the following steps, you activate Notepad++ and open the salads.html Web page file.

1. Click the - Notepad++ button on the taskbar.
2. With a USB drive plugged into your computer, click File on the menu bar and then click Open on the File menu.
3. If necessary, navigate to the Chapter04\ChapterFiles folder on the USB drive.
4. Double-click salads.html in the list of files to open the file in Notepad++ (Figure 4–34).


*G:\Chapter04\ChapterFiles\salads.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
sabatinas.html
styles1.css
appetizers.html
salads.html
Hyper Text Markup Language file
nb char : 1359 nb line : 67
Ln : 1 Col : 1 Sel : 0
Dos\Windows ANSI
INS

```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Sabatina's - Salads</title>

<!--Insert link statement here -->

</head>

<body>

<div style="text-align: center">
   <img src="sabatinaslogo.jpg" width="735" height="195" alt="Sabatina's logo" />
</div>

<table class="menu">
   <tr>
      <td class="menuword"><a href="sabatinas.html">Home</a></td>
      <td class="menupipe">|</td>
      <td class="menuword"><a href="appetizers.html">Appetizers</a></td>
      <td class="menupipe">|</td>
      <td class="menuwordselect"><a href="salads.html">Salads</a></td>
      <td class="menupipe">|</td>
      <td class="menuword"><a href="pizza.html">Pizza</a></td>
   </tr>
</table>

<br />
<table border="5">
```

HTML code in salads .html from Student Data disk at start-up

Figure 4–34

To Link to an External Style Sheet

The first thing you need to do in this Web page is link to the external style sheet that contains the overall styles you want this Web page to have.

1. Highlight the phrase <!--Insert link statement here --> on line 10.

2. Type `<link rel="stylesheet" type="text/css" href="styles1.css" />` to enter the link to the external style sheet. Do not press the ENTER key.

Q&A Remind me, what does this link statement do?

This statement links this Web page to the external style sheet that you created earlier. You need this link to the external (or linked) style sheet in order to apply those styles to the Web page.

To Add Cellspacing and Cellpadding to a Table

With the salads.html file open, the HTML code to add cellspacing and cellpadding can be added. The following step shows how to add cellspacing and cellpadding to a table.

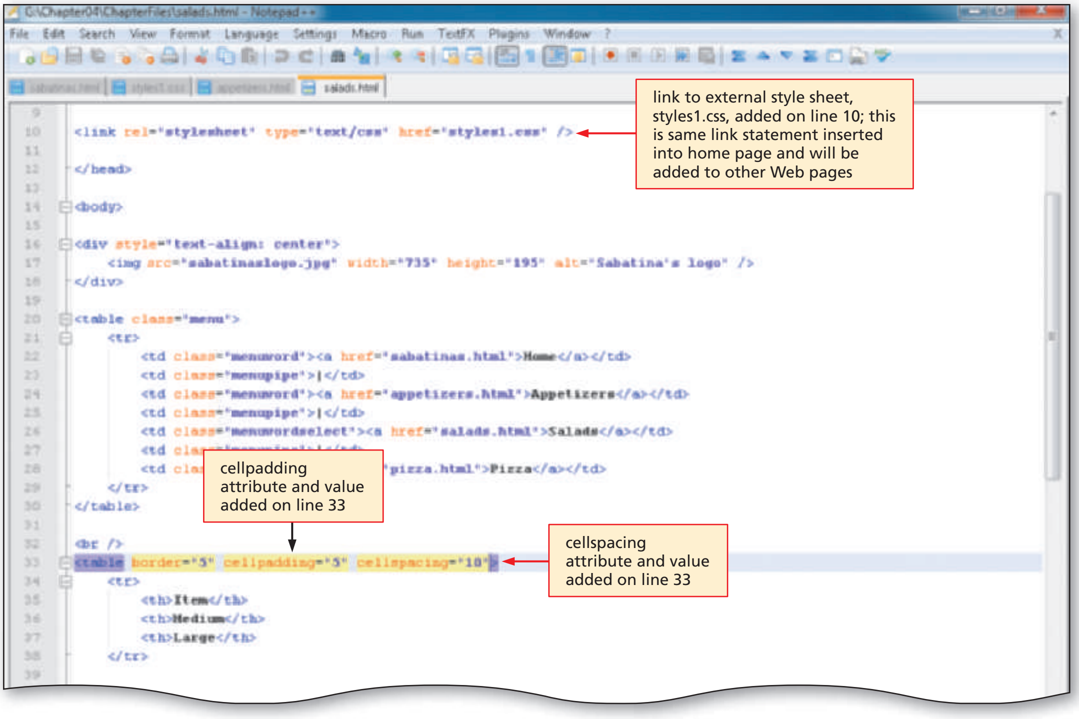
1

- Click immediately to the right of the second " (quotation mark) in the border="5" statement on line 33 and then press the SPACEBAR.

- Type `cellpadding="5" cellspacing="10"` as the attributes and values but do not press the ENTER key (Figure 4–35).

Experiment

- Change the values in the cellpadding and cellspacing attributes to see what that does to the table. Try values that are smaller or much larger to see the effect.


G:\Chapter04\ChapterFiles\salads.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
sabatinas.html
styles1.css
appetizers.html
salads.html

```
 9
10  <link rel="stylesheet" type="text/css" href="styles1.css" />
11
12  </head>
13
14  <body>
15
16  <div style="text-align: center">
17      <img src="sabatinaslogo.jpg" width="735" height="195" alt="Sabatina's logo" />
18  </div>
19
20  <table class="menu">
21      <tr>
22          <td class="menuword"><a href="sabatinas.html">Home</a></td>
23          <td class="menupipe">|</td>
24          <td class="menuword"><a href="appetizers.html">Appetizers</a></td>
25          <td class="menupipe">|</td>
26          <td class="menuwordselect"><a href="salads.html">Salads</a></td>
27          <td cla
28          <td cla                  "pizza.html">Pizza</a></td>
29      </tr>
30  </table>
31
32  <br />
33  <table border="5" cellpadding="5" cellspacing="10">
34      <tr>
35          <th>Item</th>
36          <th>Medium</th>
37          <th>Large</th>
38      </tr>
39
```

link to external style sheet, styles1.css, added on line 10; this is same link statement inserted into home page and will be added to other Web pages

cellpadding attribute and value added on line 33

cellspacing attribute and value added on line 33

Figure 4–35

Q&A What is the amount of cellpadding and cellspacing if I do not specify this in the table tag?

The default value for cellpadding is 1, while the default value for cellspacing is 2.

Q&A Can I set the cellpadding and cellspacing differently for different cells?

No, you cannot set cellpadding and cellspacing differently for various cells. This attribute is only available for the <table> (whole table) tag.

To Save, Validate, Print, and View the HTML File and Print the Web Page

1. With the USB drive plugged into your computer, click File on the menu bar and then click Save to save the salads.html file.
2. Click the Internet Explorer button on the taskbar to display the Sabatina's ~ Salads page.
3. Validate the Web page using the W3C validator service.
4. Use the Back button or Internet Explorer tabs to return to the Sabatina's ~ Salads page.
5. Click the Refresh icon on the Address bar to show the most recent file.
6. Click the Print button on the Command bar to print the Web page.
7. Click the Notepad++ button to return to Notepad++. Print the file.

Adding a Caption and Spanning Rows

If you need to add information to a table that does not fit into the table data cells, a caption can be a good option. For example, look at the pizza.html Web page in Figure 4–1d on page HTML 159. The caption indicates additional ingredients that are available for the pizzas listed in the table. That "additional ingredients" information does not fit into either the heading or data cells for the table. It is also not appropriate to have that information as an h1 or h2 heading. Putting that information in a caption is a perfect solution.

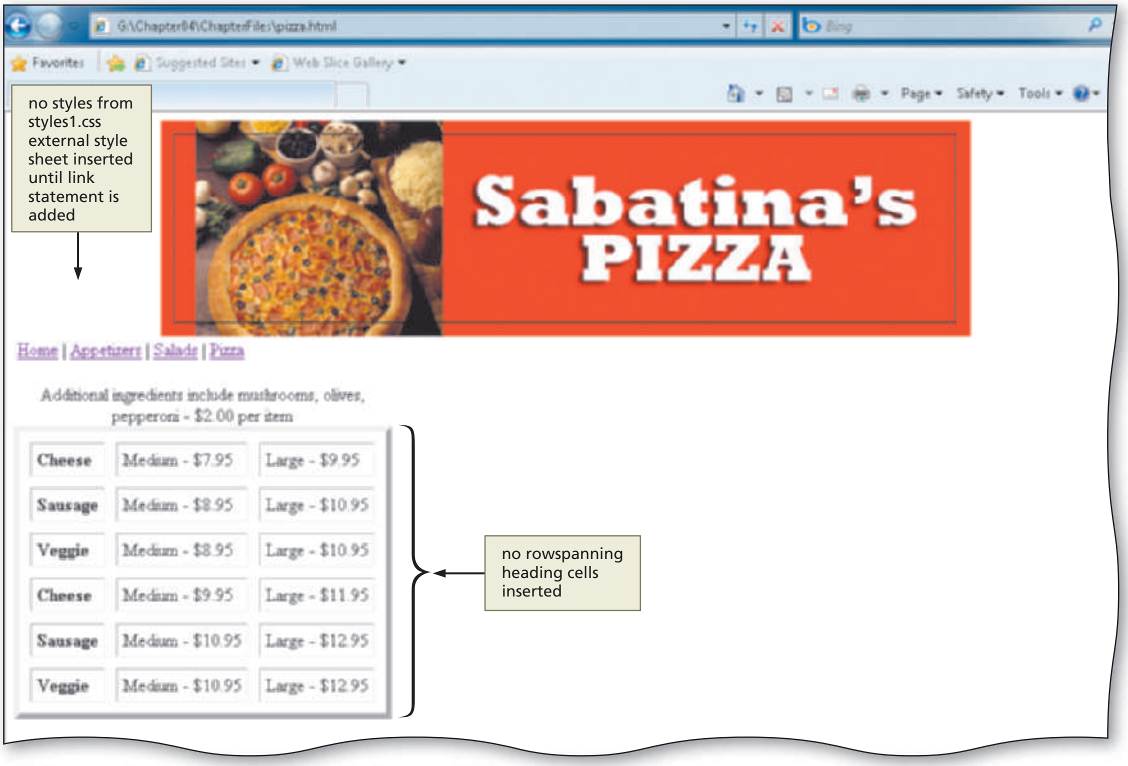
When you want to merge several cells into one, you can use row or column spanning. You can span rows or columns anywhere in a table. Generally, row and column spanning is used to create headings in tables. The **rowspan attribute** of the <th> or <td> tag sets a number of rows spanned by a cell. Although the chapter project uses only row spanning, you can also span columns. The **colspan attribute** of the <th> or <td> tag sets a number of columns spanned by a cell. Figure 4–10 on page HTML 168 shows examples of both column and row spanning. Notice that both the 5K and 10K headings span (or go across) two columns each. The heading Meet Dates spans (or goes across) four rows of information.

Figure 4–36 shows what the pizza.html Web page looks like at the start of the process. All of the table content is present, but there is no row or column spanning. You decide during the design phase that this table would benefit from row spanning, but that column spanning is unnecessary. You will enter the HTML code to complete the row spanning (Figure 4–37). In Figure 4–37, the heading Thin Crust Pizza is an example of row spanning. In this case, this heading spans three rows. In the same figure, the words Thick Crust Pizza also span three rows of information.

BTW

Row and Column Spanning

Creating headings that span rows and columns defines tables more clearly. Many Web sites contain information about row and column spanning. For more information about row and column spanning, search the Web. Many tutorials have good suggestions for the use of column and row spanning.



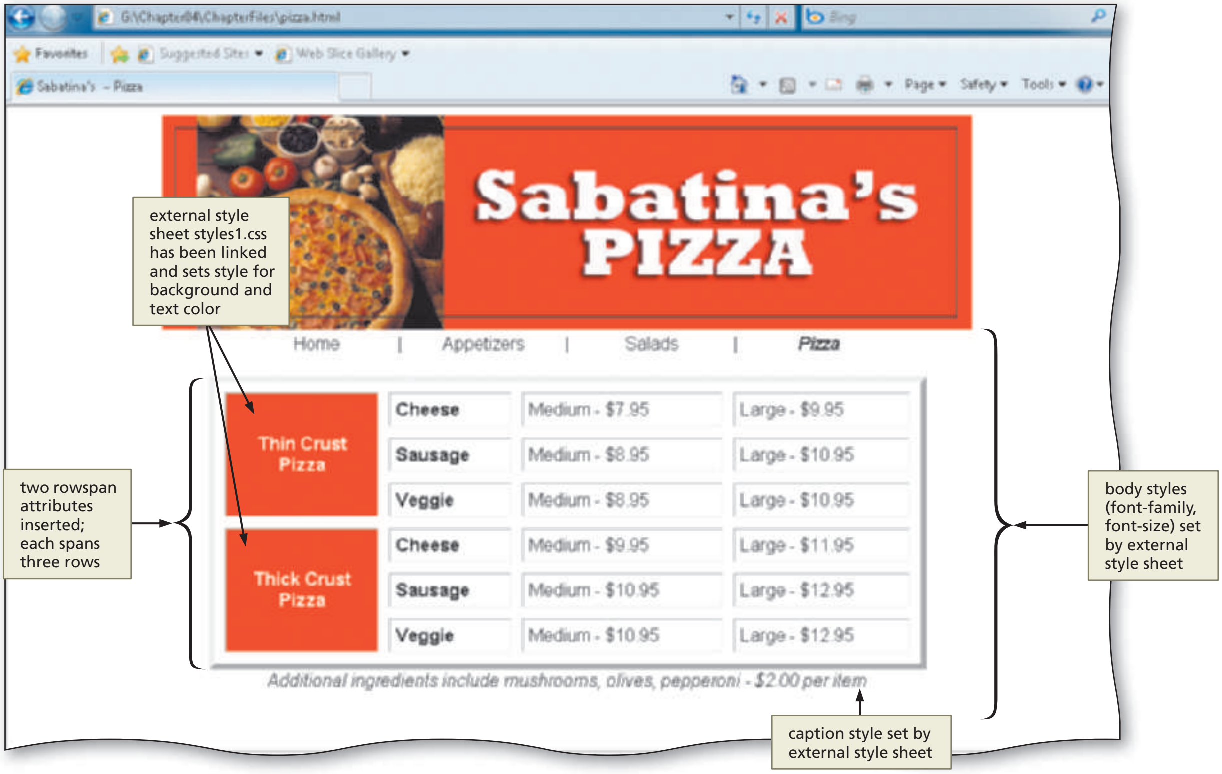
Additional ingredients include mushrooms, olives, pepperoni - $2.00 per item

Cheese	Medium - $7.95	Large - $9.95
Sausage	Medium - $8.95	Large - $10.95
Veggie	Medium - $8.95	Large - $10.95
Cheese	Medium - $9.95	Large - $11.95
Sausage	Medium - $10.95	Large - $12.95
Veggie	Medium - $10.95	Large - $12.95

no styles from styles1.css external style sheet inserted until link statement is added

no rowspanning heading cells inserted

Figure 4–36 Pizza Web page before enhancements.



Thin Crust Pizza	Cheese	Medium - $7.95	Large - $9.95
	Sausage	Medium - $8.95	Large - $10.95
	Veggie	Medium - $8.95	Large - $10.95
Thick Crust Pizza	Cheese	Medium - $9.95	Large - $11.95
	Sausage	Medium - $10.95	Large - $12.95
	Veggie	Medium - $10.95	Large - $12.95

Additional ingredients include mushrooms, olives, pepperoni - $2.00 per item

external style sheet styles1.css has been linked and sets style for background and text color

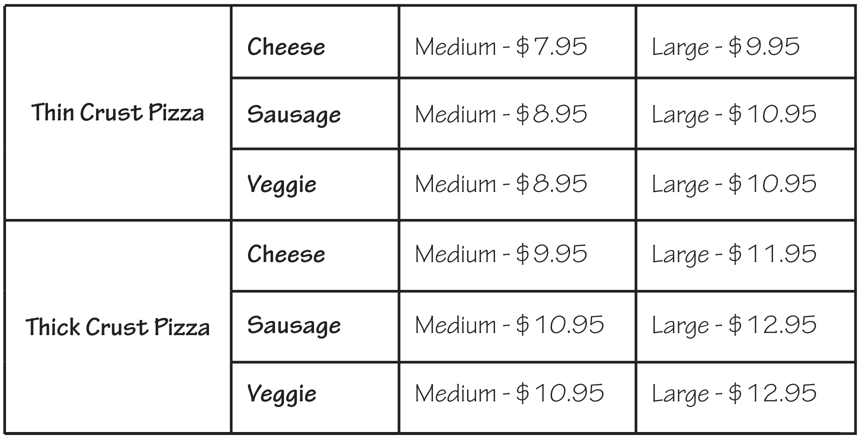
two rowspan attributes inserted; each spans three rows

body styles (font-family, font-size) set by external style sheet

caption style set by external style sheet

Figure 4–37 Pizza Web page after enhancements.

The first step when deciding to span rows or columns is to sketch the table design on a piece of paper, as shown in Figure 4–38. Again, for this Web page, it was determined that column spanning was unnecessary. The table organizes pizza type by thin and thick crust and thus should have row spanning for those two main headings.



Thin Crust Pizza	Cheese	Medium - $7.95	Large - $9.95
	Sausage	Medium - $8.95	Large - $10.95
	Veggie	Medium - $8.95	Large - $10.95
Thick Crust Pizza	Cheese	Medium - $9.95	Large - $11.95
	Sausage	Medium - $10.95	Large - $12.95
	Veggie	Medium - $10.95	Large - $12.95

Figure 4–38

After defining the main sections of the table, you must determine how many rows each heading should span. For example, the first heading, Thin Crust Pizza, should span three rows. The second heading for Thick Crust Pizza should span three rows as well. In the following steps, you open the file pizza.html, link the external style sheet styles1.css, and add rowspan attributes to create table headings that span rows.

Plan Ahead

- **Determine if a caption is needed**. A caption can help clarify the table's purpose. For some tables, such as the table used to position images and the tables used to create menu bars, captions are not appropriate. Tables used to structure columns and rows of information, such as the pizza table, can benefit from having a caption to clarify or add information about the contents of the table. The caption tag must be inserted directly after the <table> tag.
- **Determine whether to use row and column spanning**. The purpose of the table determines whether you need to add row or column spanning. If the content is broken into logical segments of information, you may need to include row or column spanning in order to make the content clear. If you decide to add row or column spanning, it is best to sketch your ideas on paper first. This could help you understand more clearly what tags you need to use where.
- **Determine if different colors are needed for backgrounds**. You can help visitors more easily read a table full of information by varying the background colors effectively. If you use the same color background for the same level (or type) of information, it can help visually organize the information. Again, you may have to use a light font color if the background color is very dark.

To Open an HTML File

1. Click the Notepad++ button on the taskbar.
2. With the USB drive plugged into your computer, click File on the menu bar and then click Open on the File menu.
3. If necessary, navigate to the Chapter04\ChapterFiles folder on the USB drive.
4. Double-click pizza.html in the list of files to open the file in Notepad++.

To Link the External Style Sheet

The first thing you need to do in this Web page is link to the external style sheet that contains the styles that you want for this Web page.

1 Highlight the text <!--Insert link statement here --> on line 10.

2 Type `<link rel="stylesheet" type="text/css" href="styles1.css" />` to enter the link to the external style sheet. Do not press the ENTER key.

To Add a Table Caption

Captions are added to tables using the <caption> </caption> tags to enclose the caption text. The formatting to make the caption italic and align it at the bottom of the table is included in the external style sheet (styles1.css) that is now linked to this page.

The following step shows how to add a caption below the pizza table.

1

- Highlight the text <!--Insert caption statement here --> on line 35.
- Type `<caption>Additional ingredients include mushrooms, olives, pepperoni – $2.00 per item</caption>` as the tag to add the italic caption below the table (Figure 4–39).

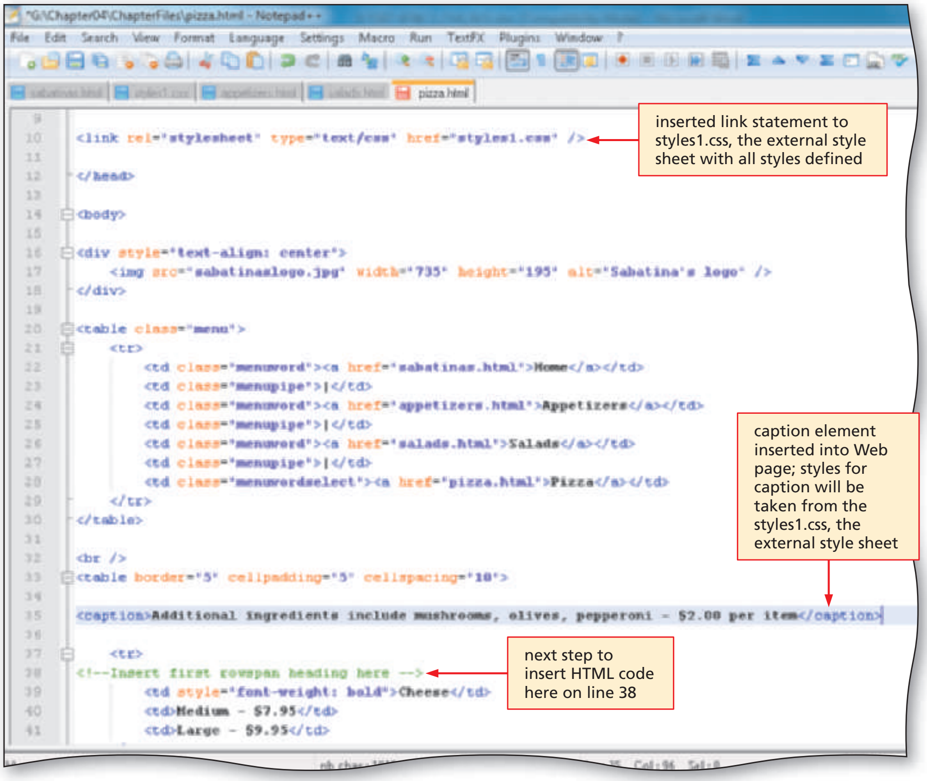
Experiment

- Add an inline style to the caption statement that aligns the caption-side to the top (top alignment for captions is the default). The inline style will override the external style sheet. Remember to take the inline style out once you are finished with the caption so that the bottom alignment default in the external style sheet takes effect again.

Q&A

Why would I use the caption tag?

The caption further explains the main purpose of the table, or adds information that doesn't fit elsewhere in the table. Other uses are to identify units of measure or to give a number or title to the table.


*G:\Chapter04\ChapterFiles\pizza.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
sabatinas.html
styles1.css
appetizers.html
salads.html
pizza.html

```
 9
10  <link rel="stylesheet" type="text/css" href="styles1.css" />
11
12  </head>
13
14  <body>
15
16  <div style="text-align: center">
17      <img src="sabatinaslogo.jpg" width="735" height="195" alt="Sabatina's logo" />
18  </div>
19
20  <table class="menu">
21      <tr>
22          <td class="menuword"><a href="sabatinas.html">Home</a></td>
23          <td class="menupipe">|</td>
24          <td class="menuword"><a href="appetizers.html">Appetizers</a></td>
25          <td class="menupipe">|</td>
26          <td class="menuword"><a href="salads.html">Salads</a></td>
27          <td class="menupipe">|</td>
28          <td class="menuwordselect"><a href="pizza.html">Pizza</a></td>
29      </tr>
30  </table>
31
32  <br />
33  <table border="5" cellpadding="5" cellspacing="10">
34
35  <caption>Additional ingredients include mushrooms, olives, pepperoni - $2.00 per item</caption>
36
37      <tr>
38  <!--Insert first rowspan heading here -->
39          <td style="font-weight: bold">Cheese</td>
40          <td>Medium - $7.95</td>
41          <td>Large - $9.95</td>
```

inserted link statement to styles1.css, the external style sheet with all styles defined

caption element inserted into Web page; styles for caption will be taken from the styles1.css, the external style sheet

next step to insert HTML code here on line 38

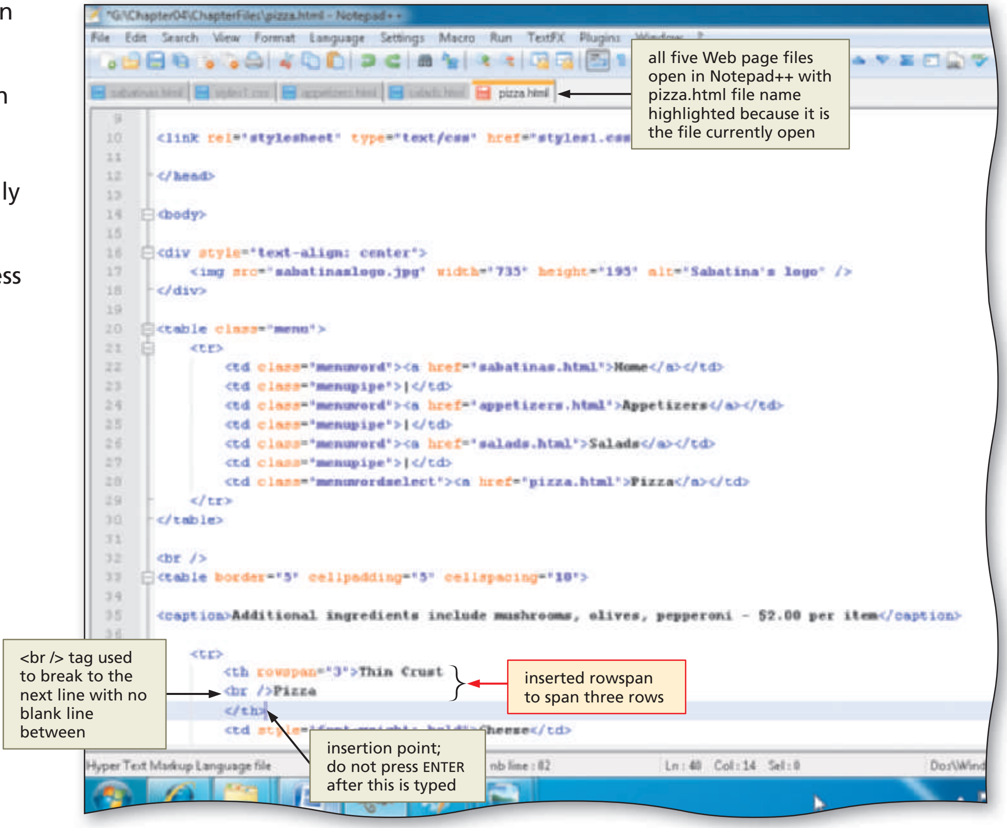
Figure 4–39

To Create the Headings That Span Rows

The following steps illustrate how to enter HTML code to create two headings that each span three rows.

1

- Highlight <!--Insert first rowspan heading here --> on line 38.
- Press the TAB key twice and then type `<th rowspan="3">Thin Crust` and then press the ENTER key; the next line is automatically indented to the same level.
- Type `<br />Pizza` and then press the ENTER key.
- Type `</th>` as the HTML code but do not press the ENTER key (Figure 4–40).


*G:\Chapter04\ChapterFiles\pizza.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
pizza.html
Hyper Text Markup Language file
nb line : 82
Ln : 40 Col : 14 Sel : 0
Dos\Wind

```
 9
10  <link rel="stylesheet" type="text/css" href="styles1.css
11
12  </head>
13
14  <body>
15
16  <div style="text-align: center">
17      <img src="sabatinaslogo.jpg" width="735" height="195" alt="Sabatina's logo" />
18  </div>
19
20  <table class="menu">
21      <tr>
22          <td class="menuword"><a href="sabatinas.html">Home</a></td>
23          <td class="menupipe">|</td>
24          <td class="menuword"><a href="appetizers.html">Appetizers</a></td>
25          <td class="menupipe">|</td>
26          <td class="menuword"><a href="salads.html">Salads</a></td>
27          <td class="menupipe">|</td>
28          <td class="menuwordselect"><a href="pizza.html">Pizza</a></td>
29      </tr>
30  </table>
31
32  <br />
33  <table border="5" cellpadding="5" cellspacing="10">
34
35  <caption>Additional ingredients include mushrooms, olives, pepperoni - $2.00 per item</caption>
36
        <tr>
            <th rowspan="3">Thin Crust
            <br />Pizza
            </th>
            <td style="font-weight: bold">Cheese</td>
```

all five Web page files open in Notepad++ with pizza.html file name highlighted because it is the file currently open

<br /> tag used to break to the next line with no blank line between

inserted rowspan to span three rows

insertion point; do not press ENTER after this is typed

Figure 4–40

Q&A What is the purpose of the <br /> tag in the steps above?

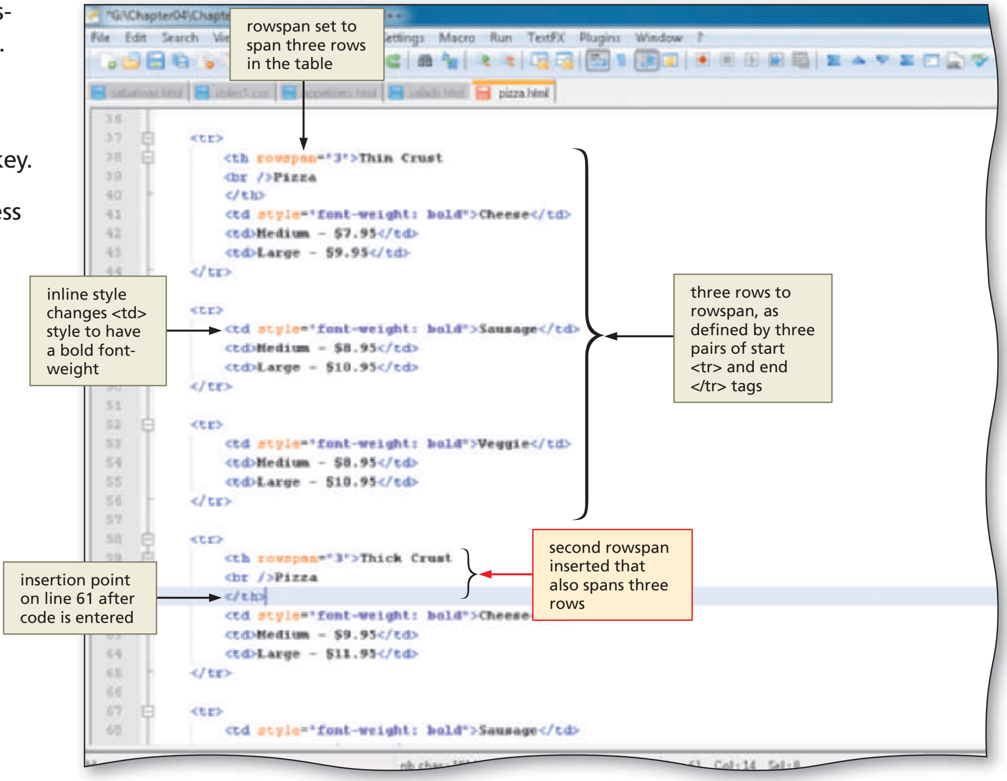
The <br /> tag moves the word Pizza to a second line so that the first column is not too much wider than the other columns in the table.

Q&A Why are we not using the colspan attribute in this table?

The colspan attribute is used to add headings that span columns in a table. In this pizza table, column spanning is not necessary or appropriate. One column of information concerns the ingredients on the pizza, and the other two columns contain the pricing for medium and large pizzas. There is no column heading that would be appropriate to span those three columns.

2

- Highlight <!--Insert second rowspan heading here --> on line 59.
- Press the TAB key twice and then type `<th rowspan="3">Thick Crust` and then press the ENTER key.
- Type `<br />Pizza` and then press the ENTER key.
- Type `</th>` as the HTML code but do not press the ENTER key (Figure 4–41).



```
36
37  <tr>
38      <th rowspan="3">Thin Crust
39      <br />Pizza
40      </th>
41      <td style="font-weight: bold">Cheese</td>
42      <td>Medium - $7.95</td>
43      <td>Large - $9.95</td>
44  </tr>

    <tr>
        <td style="font-weight: bold">Sausage</td>
        <td>Medium - $8.95</td>
        <td>Large - $10.95</td>
    </tr>
51
52  <tr>
53      <td style="font-weight: bold">Veggie</td>
54      <td>Medium - $8.95</td>
55      <td>Large - $10.95</td>
56  </tr>
57
58  <tr>
59      <th rowspan="3">Thick Crust
        <br />Pizza
        </th>
        <td style="font-weight: bold">Cheese
64      <td>Medium - $9.95</td>
        <td>Large - $11.95</td>
65  </tr>
66
67  <tr>
68      <td style="font-weight: bold">Sausage</td>
```

rowspan set to span three rows in the table

inline style changes <td> style to have a bold font-weight

three rows to rowspan, as defined by three pairs of start <tr> and end </tr> tags

second rowspan inserted that also spans three rows

insertion point on line 61 after code is entered

Figure 4–41

Q&A

Why isn't there an extra pair of <tr> </tr> tags between the rowspan title (Thin Crust Pizza) and the line of HTML code for data (Cheese)?

Thin Crust Pizza and Cheese are on the same row (row 1) that is being spanned. Row 2 contains the line with Sausage; row 3 is the line with Veggie. Therefore, the rowspan value is set to 3. The text that spans the rows (Thin Crust Pizza and Thick Crust Pizza) is always aligned with the first row of text.

Experiment

- Remove the <br /> tag from the HTML code that you entered on lines 39 and 60. See how this changes the look of the table.
- Change the <br /> tag on lines 39 and 60 to a <p> tag (don't forget the </p>). See what that does to the look of the table.

To Save, Validate, and Print the HTML File

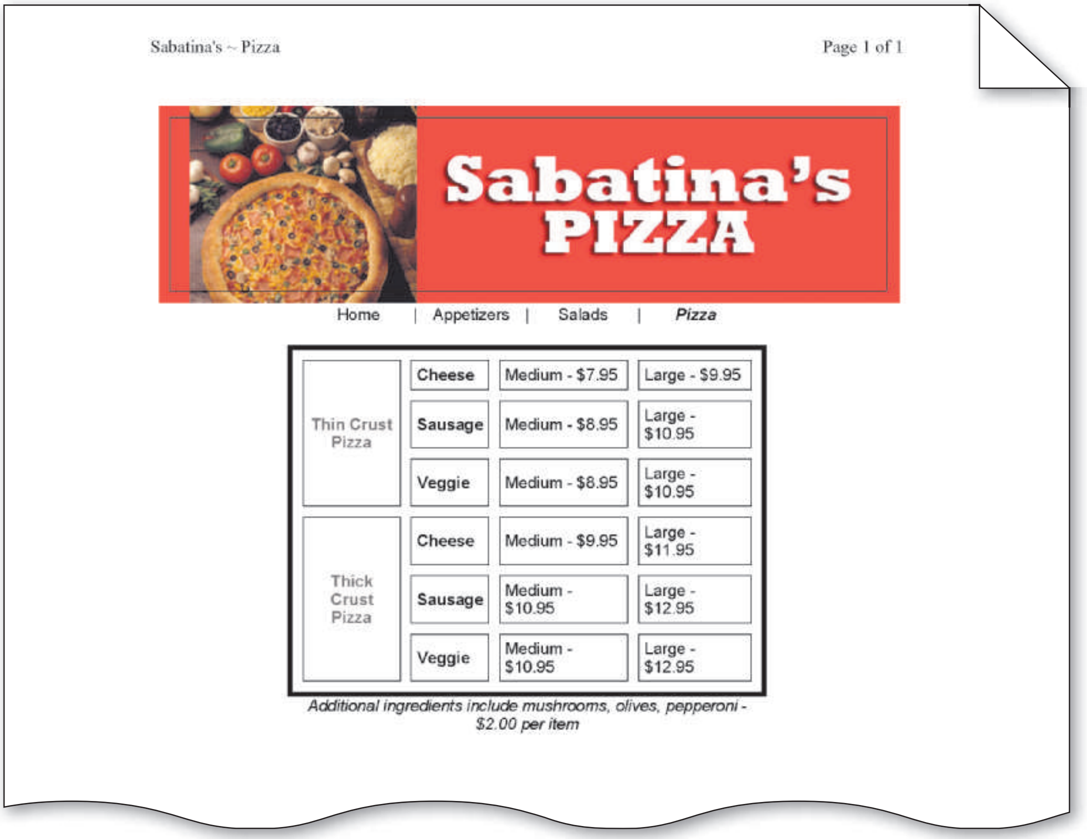
1 With the USB drive plugged into your computer, click the Save icon on the Notepad++ toolbar to save the pizza.html file.

2 Validate the HTML file using the validator.w3.org Web page.

3 Print the Notepad++ file.

To View and Print the Web Page

1. Click the Internet Explorer button on the taskbar.
2. Click the Pizza link on the menu table to display the Pizza Web page.
3. Print the Web page with rowspan attributes entered (Figure 4–42).



Sabatina's ~ Pizza

Page 1 of 1

Home | Appetizers | Salads | *Pizza*

Thin Crust Pizza	**Cheese**	Medium - $7.95	Large - $9.95
	Sausage	Medium - $8.95	Large - $10.95
	Veggie	Medium - $8.95	Large - $10.95
Thick Crust Pizza	**Cheese**	Medium - $9.95	Large - $11.95
	Sausage	Medium - $10.95	Large - $12.95
	Veggie	Medium - $10.95	Large - $12.95

Additional ingredients include mushrooms, olives, pepperoni - $2.00 per item

Figure 4–42

To Quit Notepad++ and a Browser

1. In Notepad++, click the File menu, then Close All.
2. Click the Close button on the Notepad++ title bar.
3. Click the Close button on the browser title bar. If necessary, click the Close all tabs button.

Chapter Summary

In this chapter, you learned how to create and link an external style sheet, about table elements, and the steps to plan, design, and code a table in HTML. You also learned to enhance a table with background color, cellspacing, cellpadding, a caption, and headers that span rows. The items listed below include all the new HTML skills you learned in this chapter.

1. Insert and Center an Image (HTML 173)
2. Create a Horizontal Menu Bar with Text Links (HTML 175)
3. Create an External Style Sheet (HTML 181)
4. Link to an External Style Sheet (HTML 186)
5. Copy and Paste HTML Code to a New File (HTML 190)
6. Create a Table with Borders and Insert Text (HTML 193)
7. Add Cellspacing and Cellpadding to a Table (HTML 199)
8. Add a Table Caption (HTML 203)
9. Create Headings that Span Rows (HTML 204)

Learn It Online

Test your knowledge of chapter content and key terms.

Instructions: To complete the Learn It Online exercises, start your browser, click the Address bar, and then enter the Web address `scsite.com/html6e/learn`. When the HTML Learn It Online page is displayed, click the link for the exercise you want to complete and read the instructions.

Chapter Reinforcement TF, MC, and SA

A series of true/false, multiple choice, and short answer questions that test your knowledge of the chapter content.

Flash Cards

An interactive learning environment where you identify chapter key terms associated with displayed definitions.

Practice Test

A series of multiple choice questions that test your knowledge of chapter content and key terms.

Who Wants To Be a Computer Genius?

An interactive game that challenges your knowledge of chapter content in the style of a television quiz show.

Wheel of Terms

An interactive game that challenges your knowledge of chapter key terms in the style of the television show, *Wheel of Fortune*.

Crossword Puzzle Challenge

A crossword puzzle that challenges your knowledge of key terms presented in the chapter.

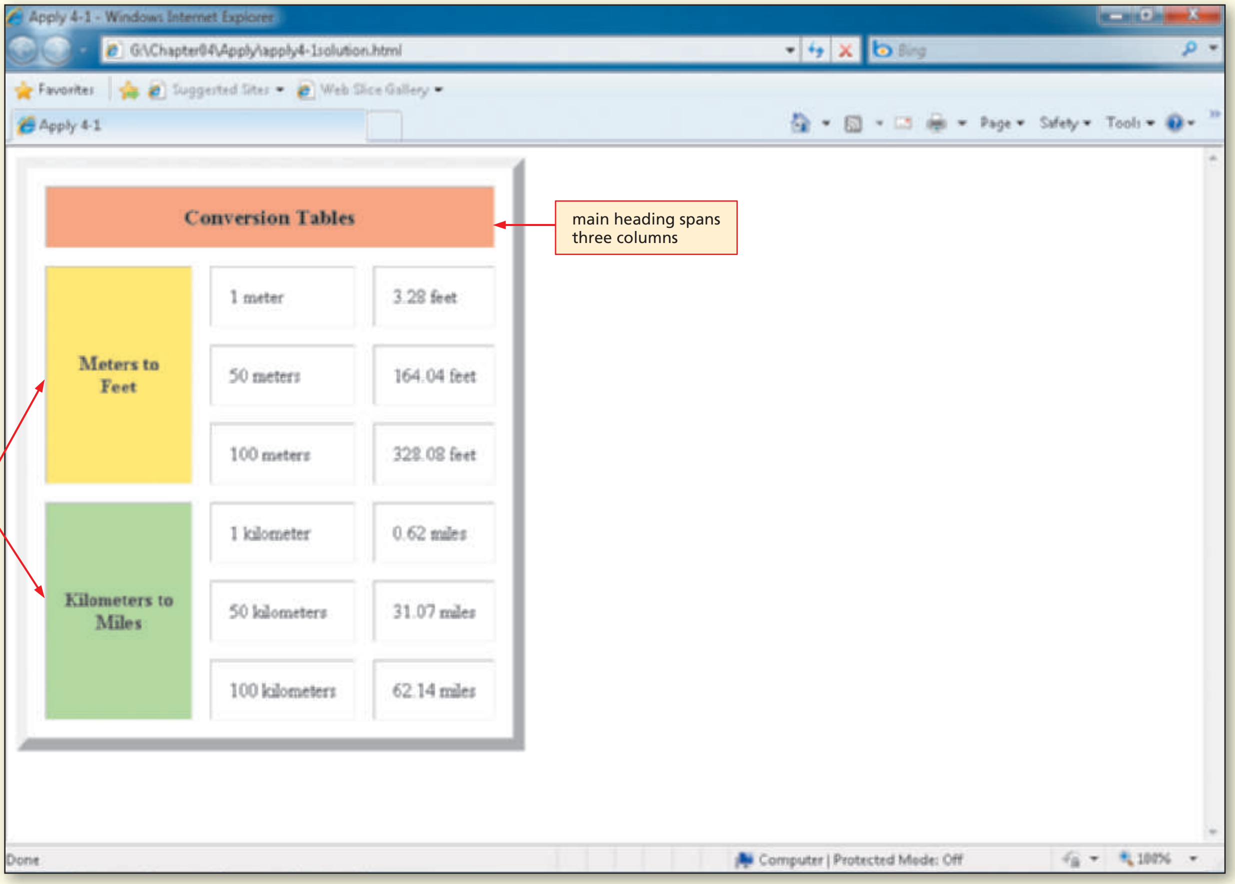
Apply Your Knowledge

Reinforce the skills and apply the concepts you learned in this chapter.

Editing a Table on a Web Page

Instructions: Start Notepad++. Open the file apply4-1.html from the Chapter04\Apply folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files.

The apply4-1.html file is a partially completed HTML file that you will use for this exercise. Figure 4–43 shows the Apply Your Knowledge Web page as it should display in a browser after the additional HTML tags and attributes are added.


Apply 4-1 - Windows Internet Explorer
G:\Chapter04\Apply\apply4-1solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Apply 4-1
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

Conversion Tables		
Meters to Feet	1 meter	3.28 feet
	50 meters	164.04 feet
	100 meters	328.08 feet
Kilometers to Miles	1 kilometer	0.62 miles
	50 kilometers	31.07 miles
	100 kilometers	62.14 miles

main heading spans three columns

two rowspan headings span three rows each

Figure 4–43

Perform the following tasks:

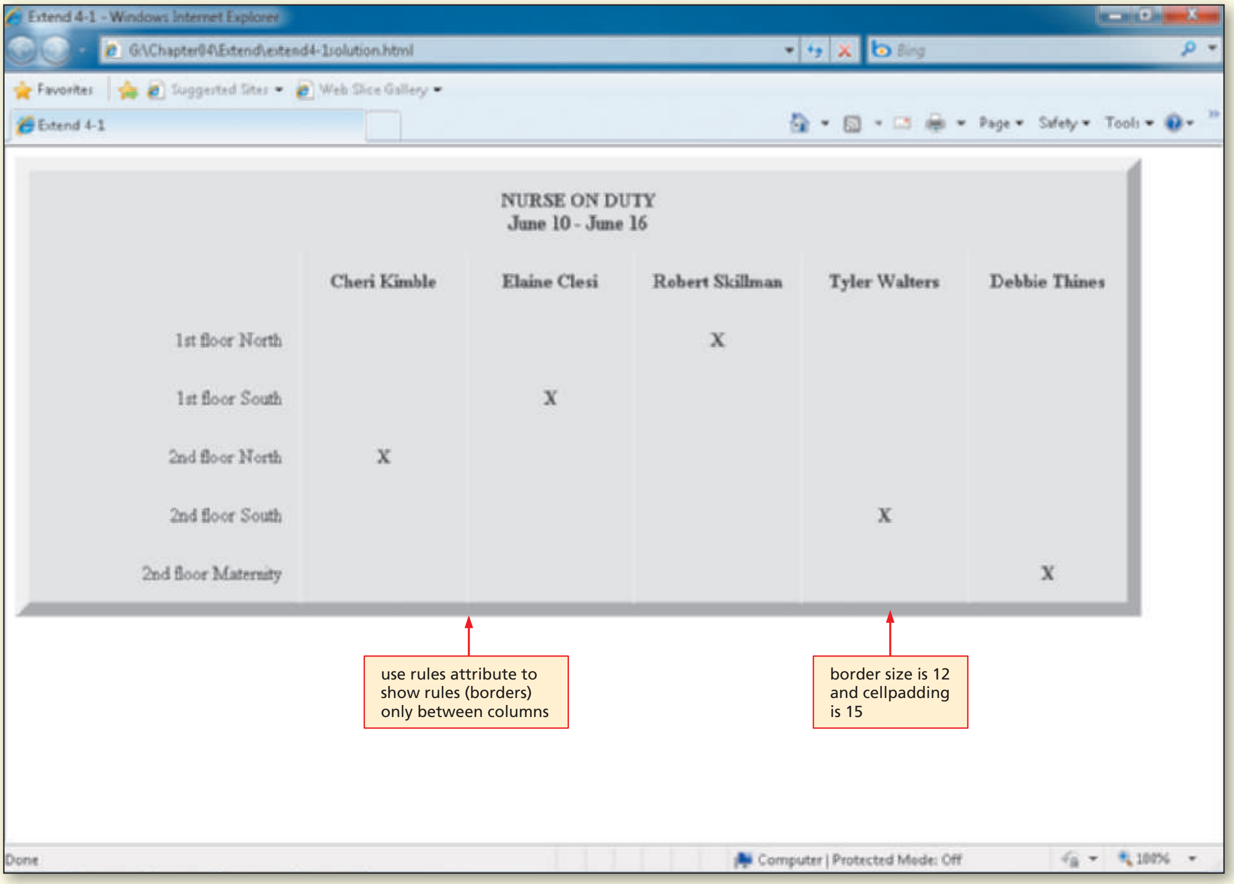
1. Enter the URL g:\Chapter04\Apply\apply4-1.html to view the Web page in your browser.
2. Examine the HTML file and its appearance as a Web page in the browser.
3. Add a border of 10, cellspacing of 15, and cellpadding of 15 to the table.
4. Add any HTML code necessary for additional features shown on the Web page in Figure 4–43. Your changes should include a colspan heading that spans three columns of information and two rowspan headings that span three rows each. The main heading is font-size large.
5. Colors used for the headings are colspan - #ff9473; first rowspan - #ffff6b; second rowspan - #a5de94 (experiment with the colors if you wish).
6. Save the revised file in the Chapter04\Apply folder using the file name apply4-1solution.html.
7. Validate the code using the W3C validator service.
8. Print the revised HTML file.
9. Enter the URL g:\Chapter04\Apply\apply4-1solution.html to view the Web page in your browser.
10. Print the Web page.
11. Submit the revised HTML file and Web page in the format specified by your instructor.

Extend Your Knowledge

Extend the skills you learned in this chapter and experiment with new skills.

Creating a Table with Rules

Instructions: Start Notepad++. Open the file extend4-1.html from the Chapter04\Extend folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files. This sample HTML file contains all of the text for the Web page shown in Figure 4–44. You add the necessary tags to make this Web page display the table, as shown in Figure 4–44.


Extend 4-1 - Windows Internet Explorer
G:\Chapter04\Extend\extend4-1solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Extend 4-1
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

NURSE ON DUTY
June 10 - June 16

	Cheri Kimble	Elaine Clesi	Robert Skillman	Tyler Walters	Debbie Thines
1st floor North			X		
1st floor South		X			
2nd floor North	X				
2nd floor South				X	
2nd floor Maternity					X

use rules attribute to show rules (borders) only between columns

border size is 12 and cellpadding is 15

Figure 4–44

Perform the following tasks:

1. Add HTML code to align the table on the left of the Web page. Align the text in the first column to the right of the data cell. (*Hint:* Review the text-align property.) Also give it a border of 12 with cellpadding of 15.
2. Insert the additional HTML code necessary to change the rules (see Appendix A) to only display columns.
3. Color the background #e0e0e0.
4. Add other table attributes not used in this chapter to further enhance the table. (*Hint:* See Appendix A.)
5. Save the revised document as extend4-1solution.html and validate the code using the W3C validator service.
6. Create an external style sheet that contains the following styles and save it as stylesextend4-1.css.
7. Link stylesextend4-1.css into the Web page extend4-1solution.html.

```
table           {text-align: center}
.twentyfive     {width: 25%}
.fifteen        {width: 15%}
```

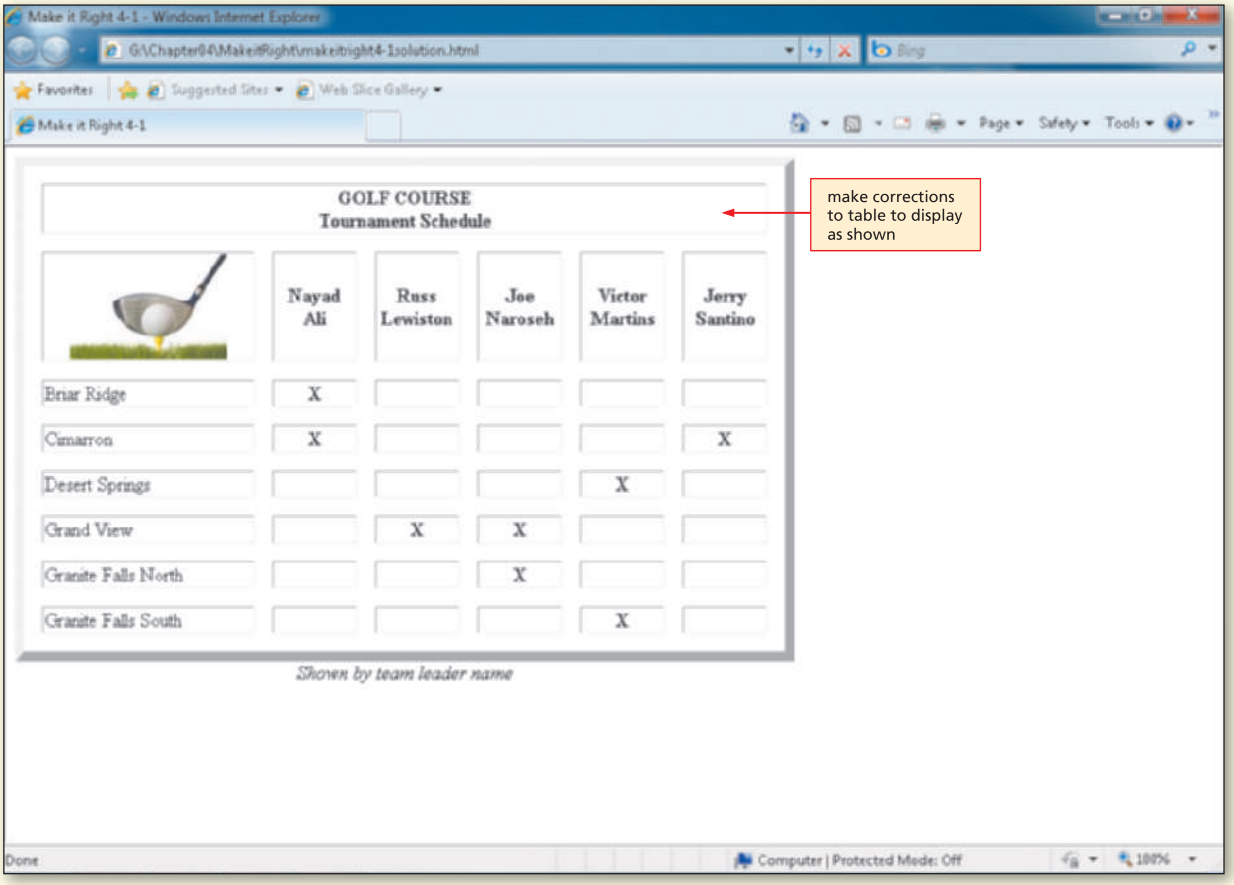
8. Re-save extend4-1solution.html. Print the revised HTML file and Web page and submit them in the format specified by your instructor.

Make It Right

Analyze a document and correct all errors and/or improve the design.

Correcting the Golf Course Tournament Schedule

Instructions: Start your browser. Open the file makeitright4-1.html from the Chapter04\MakeItRight folder of the Data Files for Students. See the inside back cover of this book for instructions on downloading the Data Files for Students, or contact your instructor for information about accessing the required files. The Web page is a modified version of what you see in Figure 4–45. Make the necessary corrections to the Web page to make it look like Figure 4–45, using inline styles for all styles. The Web page should include the six columns of information with a main heading that spans all six columns. The second row contains the image golf.jpg in the first cell. The second row also has a line break between the person's first and last name. (*Hint:* Use the <br /> tag.) Save the file as makeitright4-1solution.html and validate the code.


Make it Right 4-1 - Windows Internet Explorer
G:\Chapter04\MakeitRight\makeitright4-1solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Make it Right 4-1
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

GOLF COURSE Tournament Schedule					
	Nayad Ali	Russ Lewiston	Joe Naroseh	Victor Martins	Jerry Santino
Briar Ridge	X				
Cimarron	X				X
Desert Springs				X	
Grand View		X	X		
Granite Falls North			X		
Granite Falls South				X	

Shown by team leader name

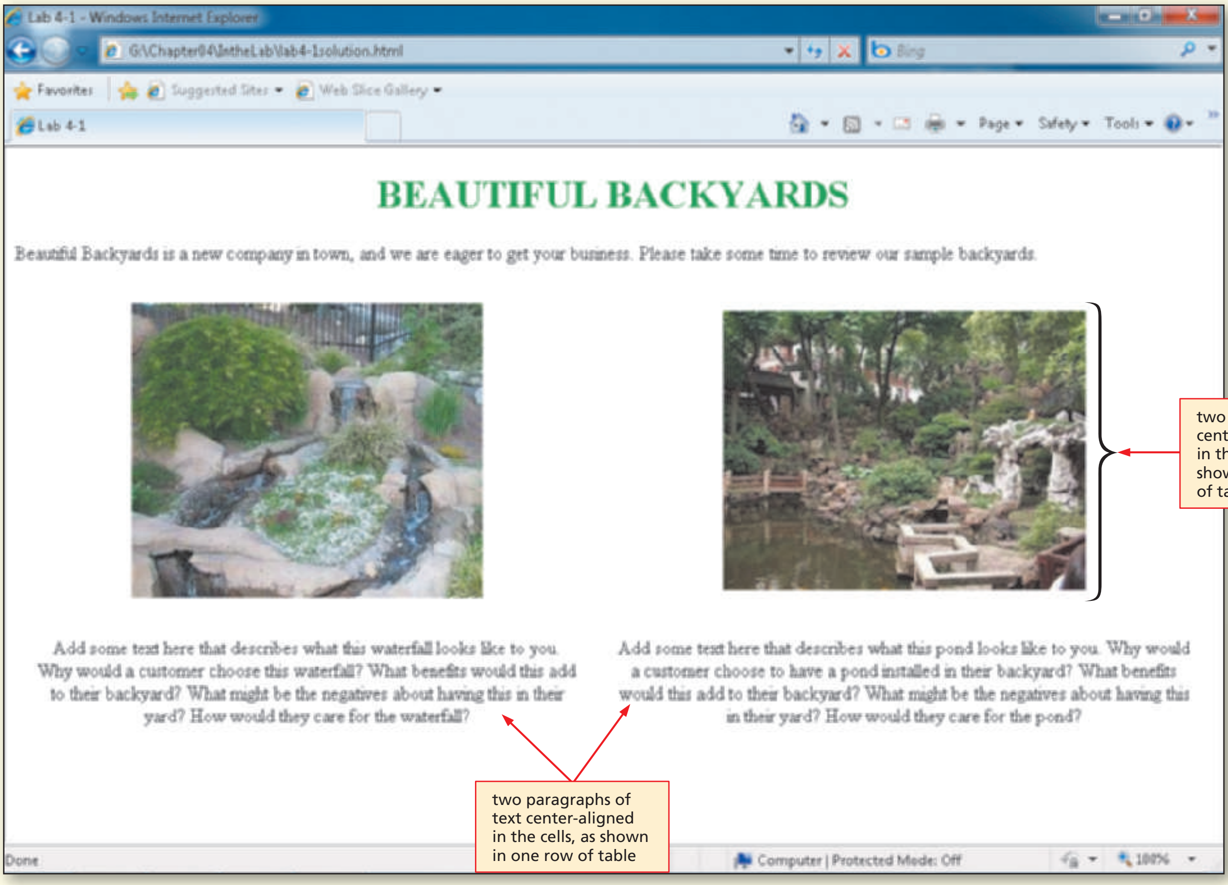
make corrections to table to display as shown

Figure 4–45

In the Lab

Lab 1: Creating a Table with Multiple Images

Problem: The owners of Beautiful Backyards (see Lab 3-2 at the end of Chapter 3) want to review the potential for the use of tables on their company home page and compare that with the Web page created in Lab 3-2. You have been asked to create a Web page that shows the two images and how tables can be used to display them and the associated text, as shown in Figure 4–46.


Lab 4-1 - Windows Internet Explorer
G:\Chapter04\IntheLab\lab4-1solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Lab 4-1
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

BEAUTIFUL BACKYARDS

Beautiful Backyards is a new company in town, and we are eager to get your business. Please take some time to review our sample backyards.

Add some text here that describes what this waterfall looks like to you. Why would a customer choose this waterfall? What benefits would this add to their backyard? What might be the negatives about having this in their yard? How would they care for the waterfall?

Add some text here that describes what this pond looks like to you. Why would a customer choose to have a pond installed in their backyard? What benefits would this add to their backyard? What might be the negatives about having this in their yard? How would they care for the pond?

two images center-aligned in the cells, as shown in one row of table

two paragraphs of text center-aligned in the cells, as shown in one row of table

Figure 4–46

Instructions: Perform the following steps:

1. Start a new HTML file with the title Lab 4-1 in the main heading section.
2. Just as in Lab 3-2, the heading <h1> should be color #00934a.
3. Insert the text shown in the top lines of the Web page using a font size of large. (*Hint:* You can copy/paste the text from Lab 3-2.)
4. Add a centered borderless table with two columns and two rows and cellpadding of 15.
5. Insert the image largewaterfall.jpg in the first column of the first row. (*Hint:* You can use Microsoft Paint to determine the width and height of each image or right-click the image and select Properties.)
6. Add the second image pond.jpg to that same row in a second column.
7. Start a new row and add the text for each of the images.
8. Save the HTML file in the Chapter04\IntheLab folder using the file name lab4-1solution.html.
9. Validate the Web page using the W3C validator service.
10. Print the lab4-1solution.html file.
11. Open the lab4-1solution.html file in your browser to view it as a Web page.

Continued >

In the Lab *continued*

12. Print the Web page.
13. Submit the revised HTML file and Web page in the format specified by your instructor.

In the Lab

Lab 2: Creating Two Linked Pages

Problem: Your manager at Voytkovich Antiquities has asked you to create two Web pages, similar to the ones shown in Figures 4–47a and 4–47b. The first Web page is a home page that presents information about Voytkovich Antiquities, together with two links. The Prices link on the first page will be linked to a price list of items found at the antiquities store. The second link, called Links, should direct the Web page visitor to another Web page of your choosing that has to do with antiquities. You may select a museum or another similar site of your choosing. For this project, use a combination of inline style sheets, external (linked) style sheets, and formatting tag attributes in order to accomplish the tasks.

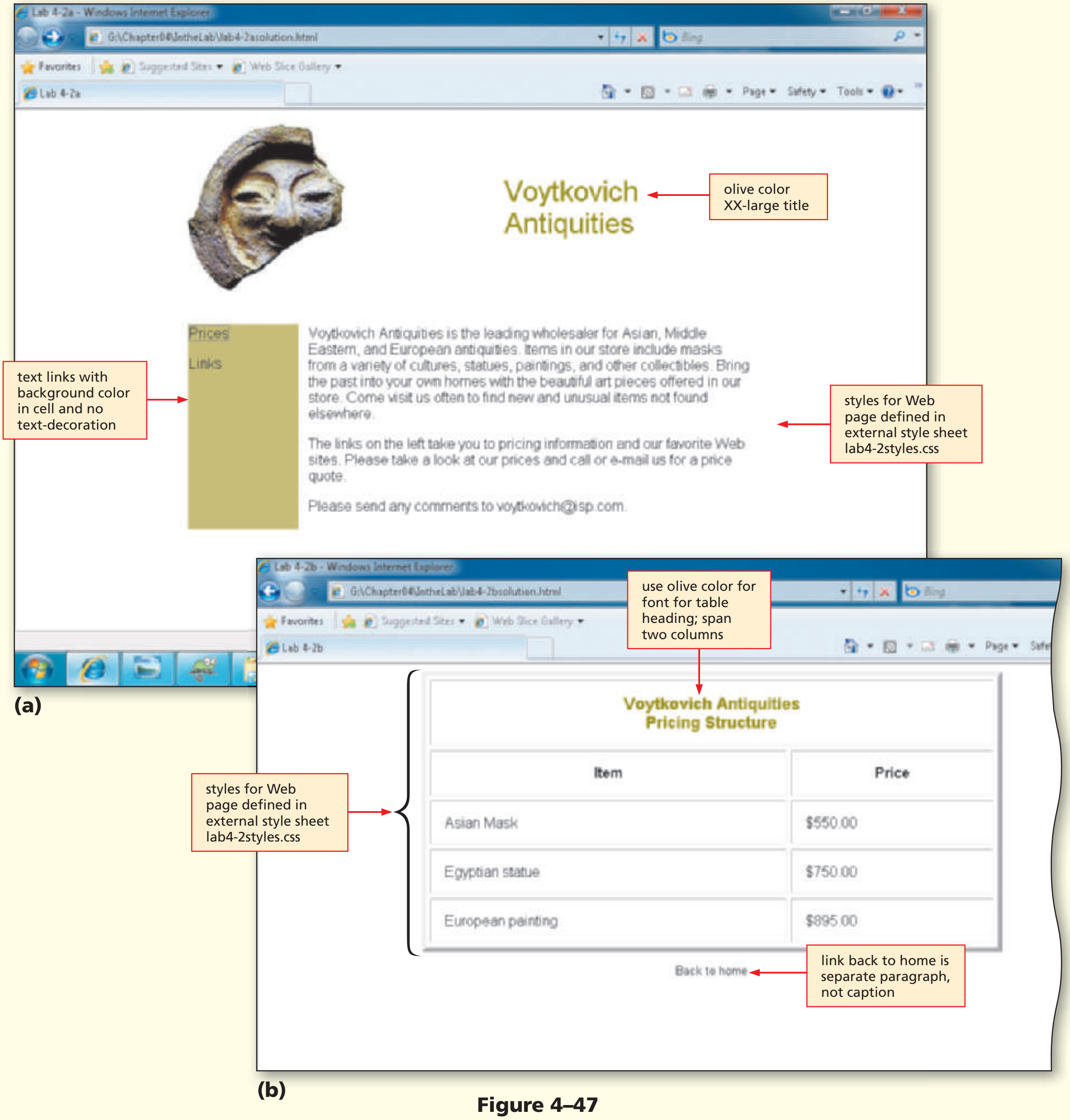
Instructions: Perform the following steps:

1. Start a new HTML file with the title Lab 4-2a in the main heading section.
2. Create a one-row, two-column borderless table with the image mask.jpg in the left-hand data cell and the words Voytkovich Antiquities (use the <br /> tag between those words) in an olive color and size xx-large in the right-hand data cell.
3. Create a second one-row, two-column borderless table. In the first column, include two text links named Prices (which links to lab4-2bsolution.html) and Links (which links to an antiquity Web site of your choosing). Include the text and an e-mail link, as shown in Figure 4–47a.
4. Create an external style sheet with the following styles. Save it as lab4-2styles.css. Link this external style sheet into the Web page.

```
body        {font-family: Arial, Verdana, Garamond;
            font-size: 11 pt}
a           {text-decoration: none;
            color: black}
table       {width: 65%;
            margin-left:auto;
            margin-right:auto}
.menu       {text-align: left;
            width: 20%}
.content    {width: 80%}
```

5. Save the HTML file using the file name lab4-2asolution.html in the Chapter04\IntheLab folder. Validate the file using the W3C validator service. Print the HTML file.
6. Start a new HTML file with the title Lab 4-2b in the main heading section. Link the external style sheet lab4-2styles.css into the file.
7. Create a five-row, two-column table with a five-pixel border, cellpadding of 15, and cellspacing of 5.
8. Span the first heading across both columns, as shown in Figure 4–47b, with olive text in size large.
9. Enter the headings, Item and Price, and additional information in the appropriate table cells, as shown in Figure 4–47b. Make sure to include a link (font size of small) back to the home page.
10. Save the HTML file in the Chapter04\IntheLab folder using the file name lab4-2bsolution.html. Validate the file using the W3C validator service. Print the HTML file.

11. Open the file lab4-2asolution.html in your browser and test the Prices link to verify it links to the lab4-2bsolution.html Web page.
12. Print both Web pages.
13. Submit the revised HTML file, .css file, and Web pages in the format specified by your instructor.


Lab 4-2a - Windows Internet Explorer
G:\Chapter04\IntheLab\lab4-2asolution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Lab 4-2a
Page
Safety
Tools
Lab 4-2b - Windows Internet Explorer
G:\Chapter04\IntheLab\lab4-2bsolution.html
Lab 4-2b

Voytkovich Antiquities

Prices

Links

Voytkovich Antiquities is the leading wholesaler for Asian, Middle Eastern, and European antiquities. Items in our store include masks from a variety of cultures, statues, paintings, and other collectibles. Bring the past into your own homes with the beautiful art pieces offered in our store. Come visit us often to find new and unusual items not found elsewhere.

The links on the left take you to pricing information and our favorite Web sites. Please take a look at our prices and call or e-mail us for a price quote.

Please send any comments to voytkovich@isp.com.

olive color XX-large title

text links with background color in cell and no text-decoration

styles for Web page defined in external style sheet lab4-2styles.css

(a)

Voytkovich Antiquities Pricing Structure	
Item	Price
Asian Mask	$550.00
Egyptian statue	$750.00
European painting	$895.00

Back to home

use olive color for font for table heading; span two columns

styles for Web page defined in external style sheet lab4-2styles.css

link back to home is separate paragraph, not caption

(b)

Figure 4–47

In the Lab

Lab 3: Creating Schedules

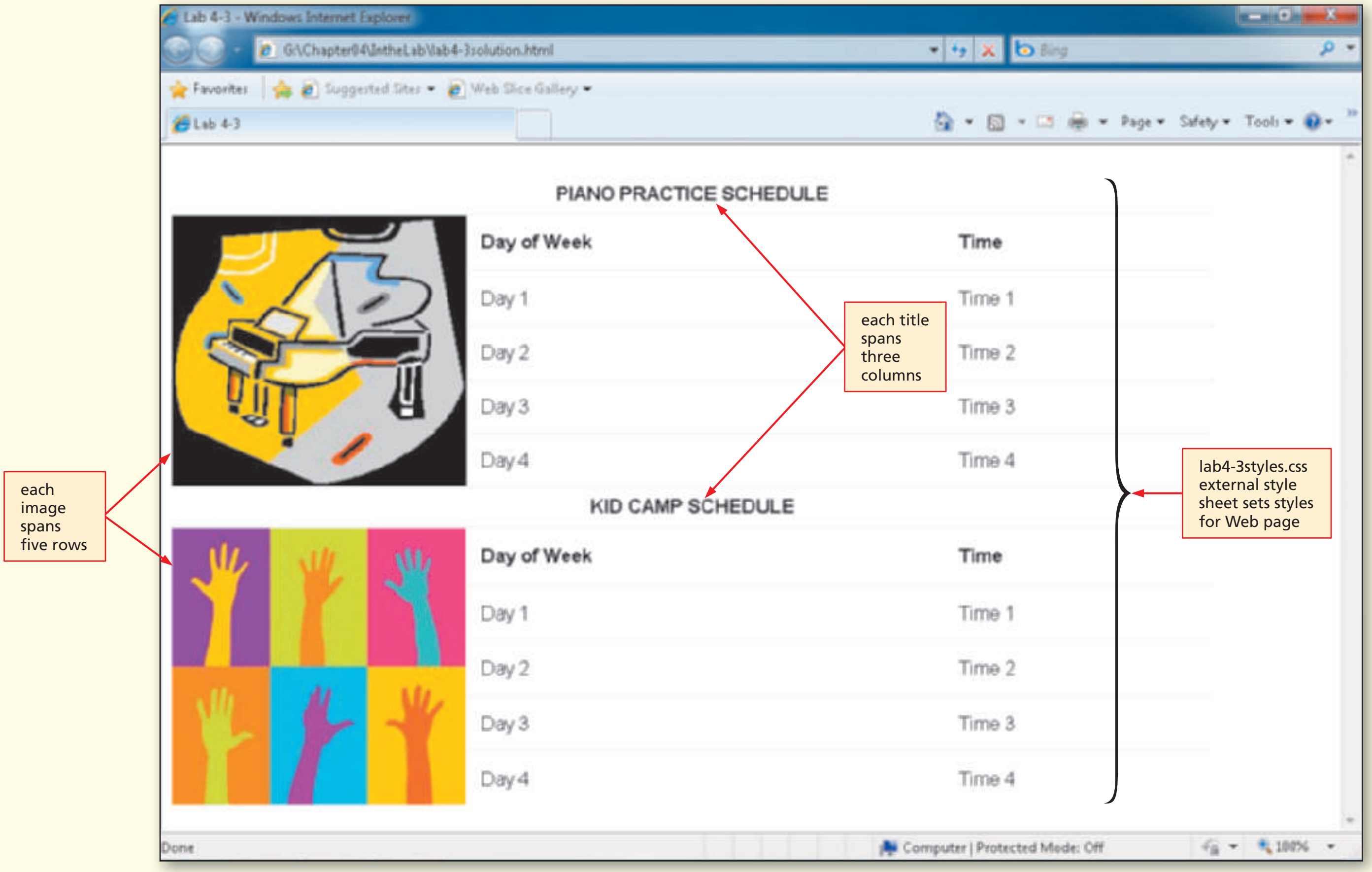
Problem: You want to create a Web page and an external style sheet that lists your piano practice and volunteer schedule, similar to the one shown in Figure 4–48. The Web page will use a table with images that span several rows and columns to organize the information.

Instructions: Perform the following steps:

1. Start a new HTML file with the title Lab 4-3 in the main heading section.
2. In the Web page, create a bordered table that displays in 90% of the browser in which only rows display, as shown in Figure 4–48. (*Hint:* See the rules attribute.)
3. Include the headings and data cells as shown, with valid information (i.e., real days and times as per a normal schedule of activities) in the data cells. The main headings should be center-aligned across three columns. The data other than the main headings should have an indent of 10 pixels.
4. Add two images, piano.jpg and volunteer.jpg, with all appropriate image attributes, each spanning five rows.
5. The external style sheet should contain the following styles and be saved as lab4-3styles.css:

   ```
   body          {font-family: Arial, Verdana, Garamond;
                 font-size: 11 pt}
   th.subtitle   {text-align: left; text-indent: 10px}
   td            {text-indent: 10px}
   ```

   (*Note:* The <th> element aligns text left. Where would you use that class named subtitle?)
6. Link lab4-3styles.css to the HTML file, and save the HTML file as lab4-3solution.html.
7. Validate the HTML file using the W3C validator service.
8. Print the HTML and CSS files.
9. Print the Web page from your browser.
10. Submit the HTML file, .css file, and Web page in the format specified by your instructor.


Lab 4-3 - Windows Internet Explorer
G:\Chapter04\IntheLab\lab4-3solution.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
Lab 4-3
Page
Safety
Tools
Done
Computer | Protected Mode: Off
100%

PIANO PRACTICE SCHEDULE

	Day of Week	Time
	Day 1	Time 1
	Day 2	Time 2
	Day 3	Time 3
	Day 4	Time 4

KID CAMP SCHEDULE

	Day of Week	Time
	Day 1	Time 1
	Day 2	Time 2
	Day 3	Time 3
	Day 4	Time 4

each image spans five rows

each title spans three columns

lab4-3styles.css external style sheet sets styles for Web page

Figure 4–48

Cases and Places

Apply your creative thinking and problem-solving skills to design and implement a solution.

● Easier ●● More Difficult

• 1: Adding to the Sabatina's Pizza Web Site

In the Sabatina's Pizza project, you created an external style sheet that contained many styles for different Web page elements. Analyze what styles might be good to change or add, and determine a design plan for the changes. Make changes to the style sheet and save the changes with another file name (remember to give the file name a .css extension). Revise the link statement in one of the Sabatina's Pizza Web pages to use the new external style sheet name. Have other students evaluate the page that uses the new external style sheet, comparing it with the same page using the original external style sheet. If you like your changes and decide you want to make these changes throughout all pages, modify the other Sabatina's Web pages to include the link to the new .css file.

• 2: Finding Tables on the Web

The Dean of your school wants to update the Web pages for the school's Web site. She has asked your help in doing this and wants to see a proposal. You think that tables would provide the perfect format for displaying the various academic programs available in your school, potential class schedules, and a calendar of events. Browse the Web to find examples of tables used for information such as what is needed on your school's Web site. Print those pages so that you have concrete examples to show the Dean. Prepare a document that explains to the Dean how you would use such tables for your school's particular needs. Try using a storyboard (a graphical organizer that contains a series of illustrations or images displayed in sequence and that visually depicts your ideas). Sketch a Web page design (see Figure 4–9 on page HTML nn and Figure 4–40 on page HTML nn) that incorporates tables for your purpose.

•• 3: Researching Style Sheet Classes

Your manager at WebSource wants you to prepare a brief presentation on the use of classes in style sheets, as described in this chapter. He asks you to find at least two Web sites that describe the use of classes in style sheets and then review how the techniques discussed in the Web sites compare to the style sheet methods described and used in this chapter. The presentation also should discuss how the use of classes can help make Web development more effective — both in developing a single Web page and in developing an entire Web site.

•• 4 Creating a Time Schedule

Make It Personal

Your computer club wants you to create a table that lists meeting, open lab, and lab class times for the computer labs. Sketch a basic table format to use for this purpose and ask a few friends (or classmates) what they think. Once you have determined a good design for the Web page, begin to code the table needed. As you begin to build the Web page, you start thinking about other table attributes that could make the Web pages look even better. Create a Web page with a basic five-row, two-column table with a one-pixel border. Review the additional table attributes listed in Appendix A, including the rules attribute. Find information on those attributes on other Web sites, including the W3C Web site (*www.w3.org*). Modify the basic table on your Web page to incorporate at least four of these attributes.

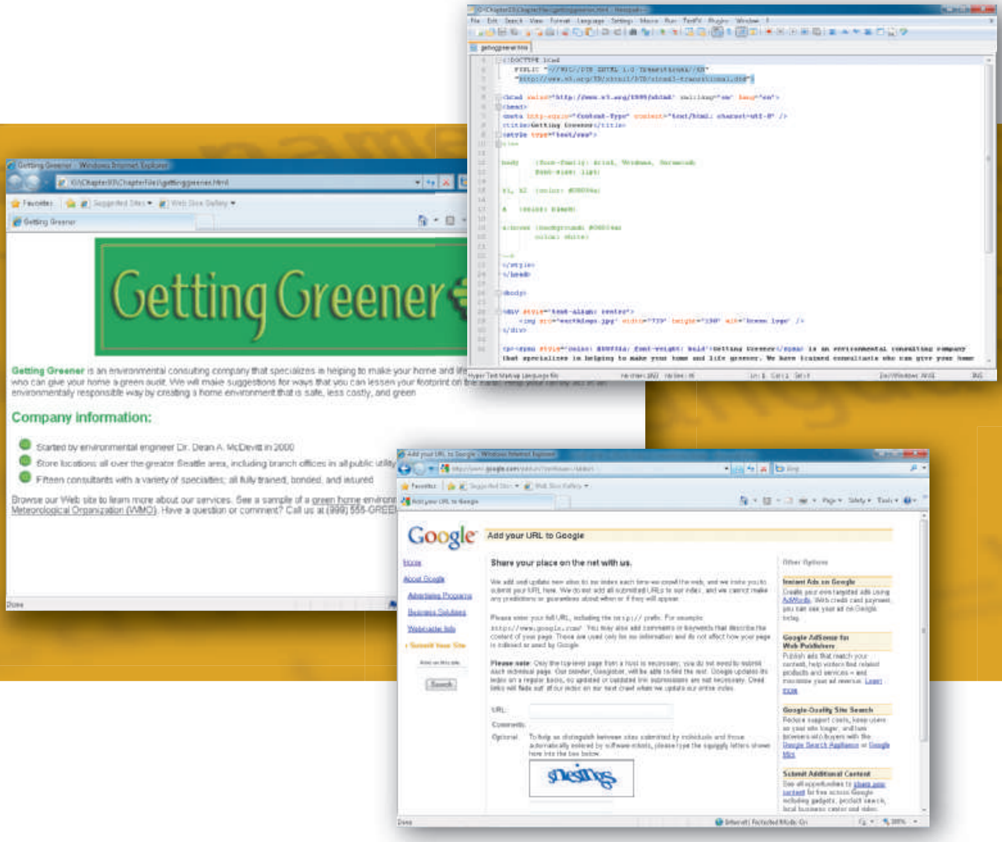
•• 5 Creating a Gift Shop Web Site

Working Together

Your design team at Triple-D Design has been asked to create a proposal for an existing customer to explain the value of using Cascading Style Sheets. Select a Web site with which you are familiar. Verify that the Web site does not utilize any of the three types of style sheets. Develop a graphic of the Web site hierarchy. Determine how the three types of style sheets could be used in this Web site and develop an outline explaining how they could enhance pages or sections of the site, add style consistency, or make the site easier to maintain. Write a proposal to the owners of the Web site that describes the features you could add with style sheets and the benefits of doing so, relative to the formatting techniques currently used in the Web site. As an example, you might want to address the number of times that a particular <font> tag is used in the site and contrast that with the ease of using one external style sheet and a link statement per page. Use other ideas as discussed in the chapter project to emphasize the other benefits of style sheets. Write the proposal in the form of a bid, giving time estimates and costs associated with the development effort. Include your hierarchy chart and style sheet outline as appendices to the proposal.

Special Feature 1

Attracting Visitors to Your Web Site



Objectives

You will have mastered the material in this special feature when you can:

- Add keywords and descriptions to your Web pages
- Find appropriate Web site servers
- Determine the availability of a domain name
- Discuss Web page publishing options
- Develop an advertising plan to get the word out about your Web site

Introduction

In Chapter 3, you developed the Getting Greener Web site, which consisted of two Web pages. In this special feature, you learn how to fine-tune that Web site to make sure that it will attract visitors. A Web site is a passive marketing tool; it serves no purpose if no one knows that it is there. It is not enough to just develop a Web site. You also have to make modifications to the Web pages to ensure that they will attract visitors.

Project — Attracting Visitors

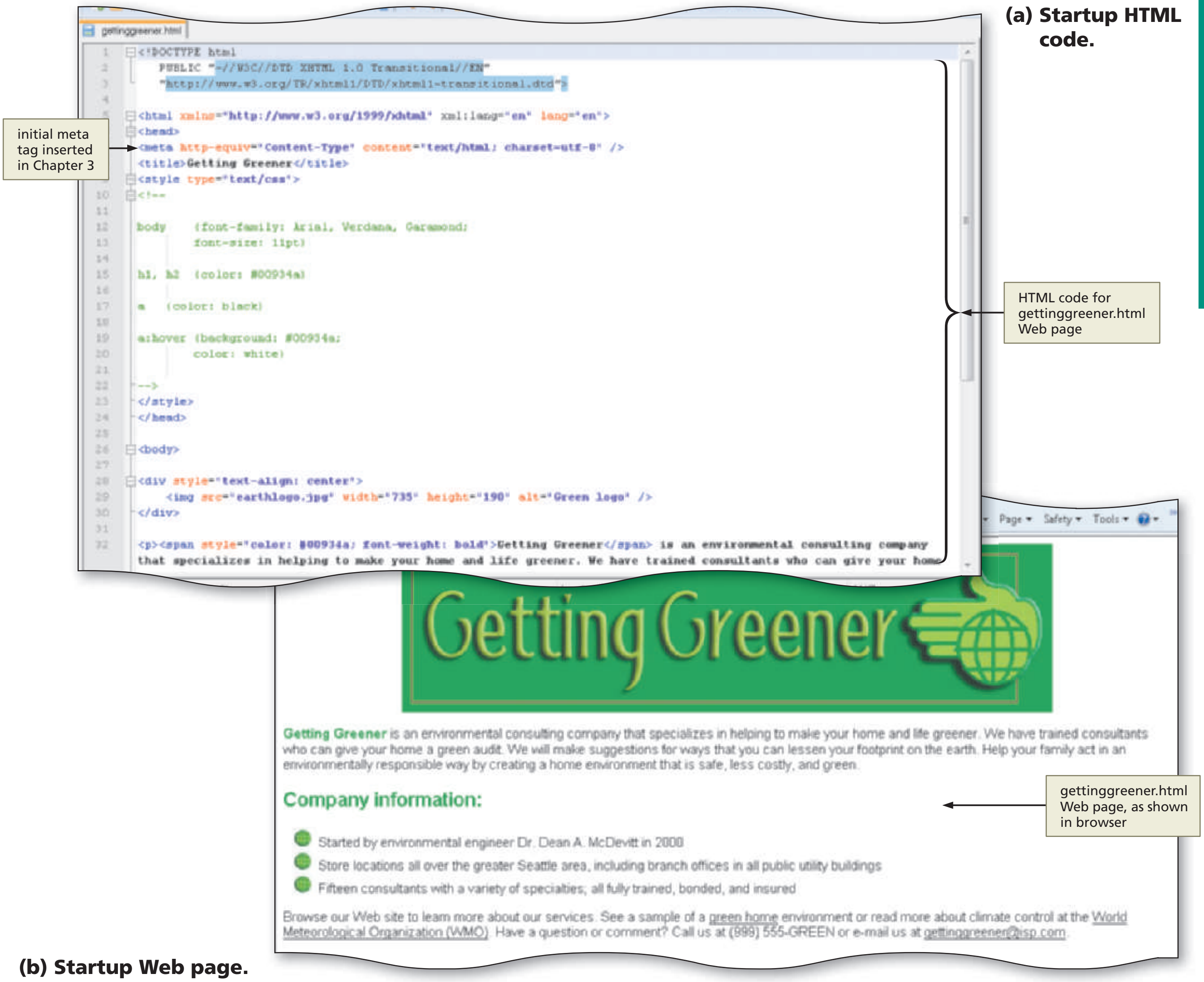
Web sites have become an important means of worldwide communication. Businesses utilize Web sites to communicate with their customers and vendors. Teachers create Web sites to communicate with other teachers and their students, and private users create Web sites to share aspects of their personal life with family, friends, and others.

In Chapter 3, you created the Getting Greener home page, gettinggreener.html, as shown in Figure 1. The project in this feature shows you how to utilize <meta /> tags to add keywords and descriptions to this page to help Web site visitors looking for such topics find your Web page.

Overview

As you read through this feature, you will learn how to add keywords and descriptions to the meta tags that you previously developed (Figure 1a) to the Web page, as shown in Figure 1b. You also learn how to find a hosting site, determine a domain name, publish the Web pages, and determine an advertising plan by performing these general tasks:

- Decide what meta names (keywords and descriptions) you should use.
- Insert the keywords and descriptions into the meta tags.
- Identify available domain names.
- Determine an appropriate hosting situation for your Web site.
- Establish an advertising plan.



(a) Startup HTML code.

gettinggreener.html
initial meta tag inserted in Chapter 3
HTML code for gettinggreener.html Web page
Page ▾ Safety ▾ Tools ▾
gettinggreener.html Web page, as shown in browser

```
<!DOCTYPE html
    PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Getting Greener</title>
<style type="text/css">
<!--

body    {font-family: Arial, Verdana, Garamond;
        font-size: 11pt}

h1, h2  {color: #00934a}

a   {color: black}

a:hover {background: #00934a;
        color: white}

-->
</style>
</head>

<body>

<div style="text-align: center">
    <img src="earthlogo.jpg" width="735" height="190" alt="Green logo" />
</div>

<p><span style="color: #00934a; font-weight: bold">Getting Greener</span> is an environmental consulting company
that specializes in helping to make your home and life greener. We have trained consultants who can give your home
```

Getting Greener is an environmental consulting company that specializes in helping to make your home and life greener. We have trained consultants who can give your home a green audit. We will make suggestions for ways that you can lessen your footprint on the earth. Help your family act in an environmentally responsible way by creating a home environment that is safe, less costly, and green.

Company information:

- Started by environmental engineer Dr. Dean A. McDevitt in 2000
- Store locations all over the greater Seattle area, including branch offices in all public utility buildings
- Fifteen consultants with a variety of specialties; all fully trained, bonded, and insured

Browse our Web site to learn more about our services. See a sample of a green home environment or read more about climate control at the World Meteorological Organization (WMO). Have a question or comment? Call us at (999) 555-GREEN or e-mail us at gettinggreener@isp.com.

(b) Startup Web page.

Figure 1

Plan Ahead

General Project Guidelines

In the Getting Greener home page in Chapter 3, you added a title, Getting Greener, that included the keyword "greener" in it. That word "greener" identifies the main subject matter for the Web site, but while your topic is clear, more must be done to your Web site. Once your Web page is complete, you need to publish it and attract visitors. There are several ways to attract visitors, which you will accomplish in the following project. In preparation for this project, you should follow these general guidelines:

1. **Identify the meta names you should use.** There are different meta names that you can use within the <meta /> tag, including keywords and description. In this step, you determine whether to use keywords or description or to use both keywords and description in different meta tags.

2. **Determine the keywords and descriptions that reflect the purpose of the Web site.** Before you add keywords and description to your meta tags, you need to determine the words and description that apply to the Web site. When Web users are searching for informative sites, they type those keywords or description into the search engine. You should put yourself in the role of a user looking for information relative to the theme of your Web site. This helps you come up with great ideas for the keywords that will work. These keywords/description are in addition to the relevant phrases already included in the Web page title or body content.

(continued)

Plan Ahead

(continued)

3. **Decide the available domain names.** A Web page address or URL is an important part of advertising your Web page. You can register your domain name, which will make it easier for Web users to find your site. You need to decide on a few possibilities and then determine if those domain names are already registered. If the name you choose is not registered, you can purchase and register it.
4. **Assess your Web hosting alternatives.** Many Web developers have access to their own corporate Web servers. If you do, then you do not have to consider other Web hosting options. If this is not an option, then you need to find a Web server on which to host your Web pages.
5. **Establish an advertising plan.** You have many choices for publicizing your Web pages. Most companies include the URL in all corporate correspondence, including letterheads, advertisements, and products. Sharing links with a related Web site also helps get visitors. You need to determine a plan that will incorporate the best techniques to effectively publicize your Web pages.

Adding Keywords

You have already created the HTML file that is used in this special feature. You use the file gettinggreener.html that you created in Chapter 3. The page includes a number of keywords: You added the word “greener” to the title on the Web page; you also used the phrases “environmental consulting company”, “green audit”, and “green home” in the Web page content. Any of these phrases might be used by visitors searching for companies that deal with environmental or “green” issues. You can explicitly identify the keywords that you want the search engine to find by adding additional keywords and phrases to your <meta /> tag.

As with other projects, you use Notepad++ to enhance this file by adding keywords and descriptions. To include additional information in your Web page, you will follow these general steps:

1. Open the gettinggreener.html file in Notepad++.
2. Add the keywords and description to new <meta /> tags.
3. Save and validate the file.

To Open the File

For this project, you will add keywords and a description to the gettinggreener.html Web page already created. The following steps show you how to add keywords.

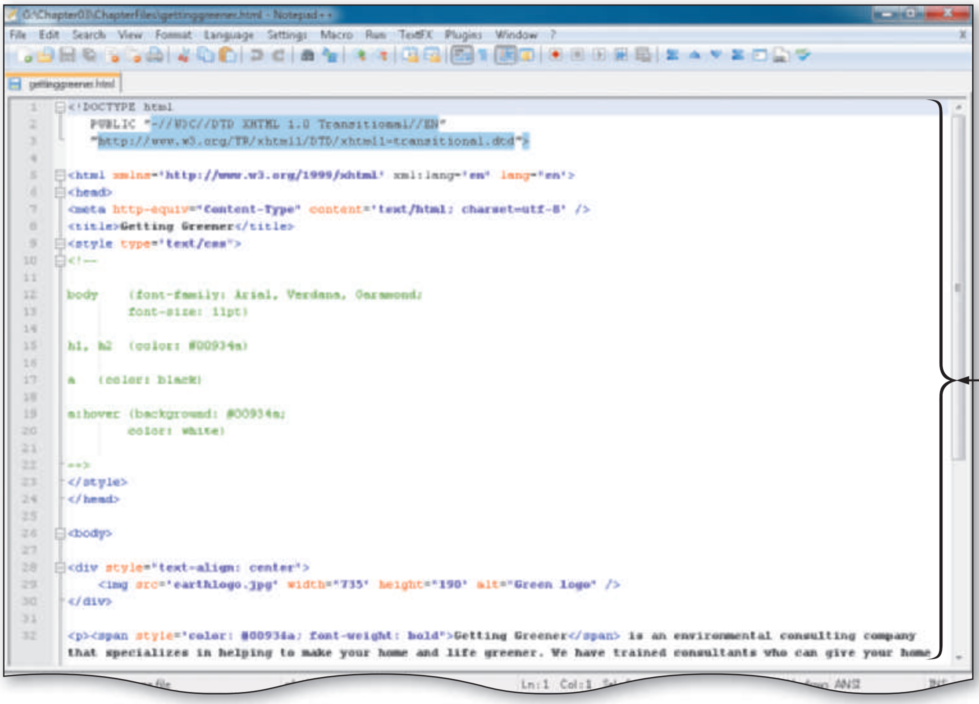
1. Start Notepad++.
2. Open the gettinggreener.html file in the Chapter03\ChapterFiles folder that you stored on the G:\ drive (Figure 2).
3. If necessary, enable Word wrap in Notepad++.

Q&A What if I did not create the gettinggreener.html file from Chapter 3?

Your instructor should have a copy of the gettinggreener.html file.

Other Ways

1. Right-click the file name gettinggreener.html in Windows Explorer, select Edit with Notepad++


G:\Chapter03\ChapterFiles\gettinggreener.html - Notepad++
File Edit Search View Format Language Settings Macro Run TextFX Plugins Window ?
gettinggreener.html
Ln:1 Col:1

```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Getting Greener</title>
<style type="text/css">
<!--

body    {font-family: Arial, Verdana, Garamond;
         font-size: 11pt}

h1, h2  {color: #00934a}

a   {color: black}

a:hover {background: #00934a;
         color: white}

-->
</style>
</head>

<body>

<div style="text-align: center">
    <img src="earthlogo.jpg" width="735" height="190" alt="Green logo" />
</div>

<p><span style="color: #00934a; font-weight: bold">Getting Greener</span> is an environmental consulting company
that specializes in helping to make your home and life greener. We have trained consultants who can give your home
```

HTML code for gettinggreener.html Web page

Figure 2

Meta Names

There are several meta names that you can use in the <meta /> tag, as shown in Table 1. You already included one meta tag in the initial HTML code that you inserted into every Web page created thus far. The

```
<meta http-equiv="Content-Type" content="text/html;
charset=utf-8" />
```

line has been included in all Web pages throughout the book. As mentioned earlier, this statement declares the character-encoding as UTF-8. The Unicode Transformation Format (UTF) is a compressed format that allows computers to display and manipulate text. When the browser encounters this meta tag, it will display the Web page properly, based on the particular UTF-8 encoding embedded in the tag. UTF-8 is the preferred encoding standard for Web pages, e-mail, and other applications.

Some of the more frequently used meta names are listed in Table 1. In this project, you use two of those meta names: description and keywords. The keywords are used by some search engines to find your Web pages. Other search engines use the keywords included in the content of your Web pages. The best plan includes putting keywords in both places. The description, on the other hand, is what some search engines add next to your Web page URL to describe the content of the Web page. Visitors often look at that description to determine whether they want to click that particular link (or URL) from the list of URLs that the search engine displays. The format that is used for each type of meta name is:

BTW

SEO

SEO is an acronym for Search Engine Optimization or Search Engine Optimizer. SEO is the process of improving the amount of traffic that you get on your Web site. Optimizing a Web site involves editing the content and HTML in the Web page to increase its relevance to specific keywords and to remove barriers to the page indexing functions of search engines. To find more information, search for SEO on the Internet.

```
<meta name="keywords" content="green ideas, eco friendly" />
<meta name="description" content="Seattle area home or business
environmental consulting."
```

where name identifies the type of meta element that you use, and content identifies the specific phrases or words that are used.

Table 1 Meta Names and Their Functions

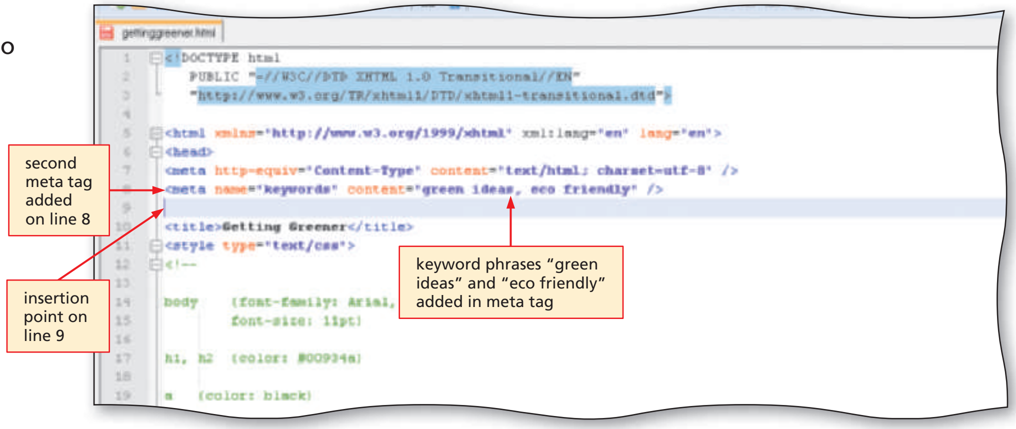
Meta Name	Function
author	Supplies the name of the document author
description	Provides a description of the document
keywords	Provides a list of keywords that describe the document

To Add Keywords

The following step illustrates how to add keywords to the gettinggreener.html Web page.

1

- Click after the > at the end of line 7 and press the ENTER key to position the insertion point on line 8.
- Type `<meta name="keywords" content="green ideas, eco friendly"/>` and then press the ENTER key (Figure 3).



```
1  <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <meta name="keywords" content="green ideas, eco friendly" />
9
10 <title>Getting Greener</title>
11 <style type="text/css">
12 <!--
13
14 body    {font-family: Arial,
15         font-size: 11pt}
16
17 h1, h2  {color: #00934a}
18
19 a   {color: black}
```

second meta tag added on line 8

insertion point on line 9

keyword phrases “green ideas” and “eco friendly” added in meta tag

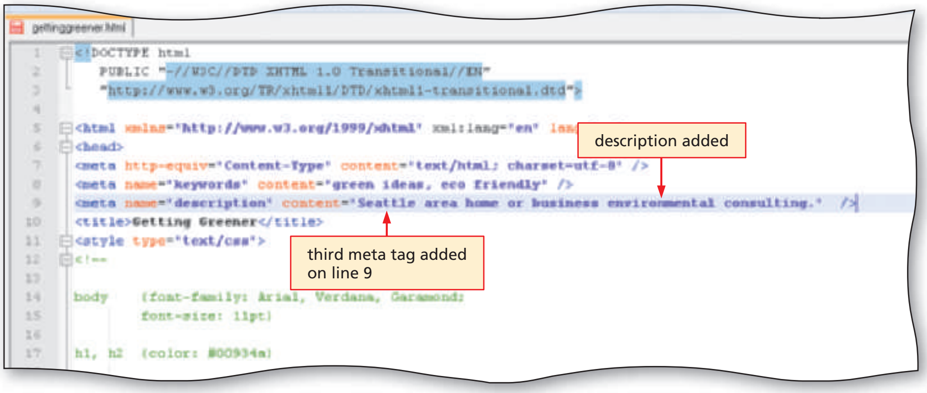
Figure 3

To Add a Description

The following step illustrates how to add a meta tag description to your Web page.

1

- If necessary, position the insertion point on line 9.
- Type `<meta name="description" content="Seattle area home or business environmental consulting."/>` but do not press the ENTER key (Figure 4).



```
1  <!DOCTYPE html
2     PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
4
5  <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lan
6  <head>
7  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
8  <meta name="keywords" content="green ideas, eco friendly" />
9  <meta name="description" content="Seattle area home or business environmental consulting."  />
10 <title>Getting Greener</title>
11 <style type="text/css">
12 <!--
13
14 body    {font-family: Arial, Verdana, Garamond;
15         font-size: 11pt}
16
17 h1, h2  {color: #00934a}
```

description added

third meta tag added on line 9

Figure 4

Q&A

Is there a difference between keywords and description?

Yes. Search engines use keywords to find your Web pages, while they display descriptions next to the respective Web page URLs.

Q&A

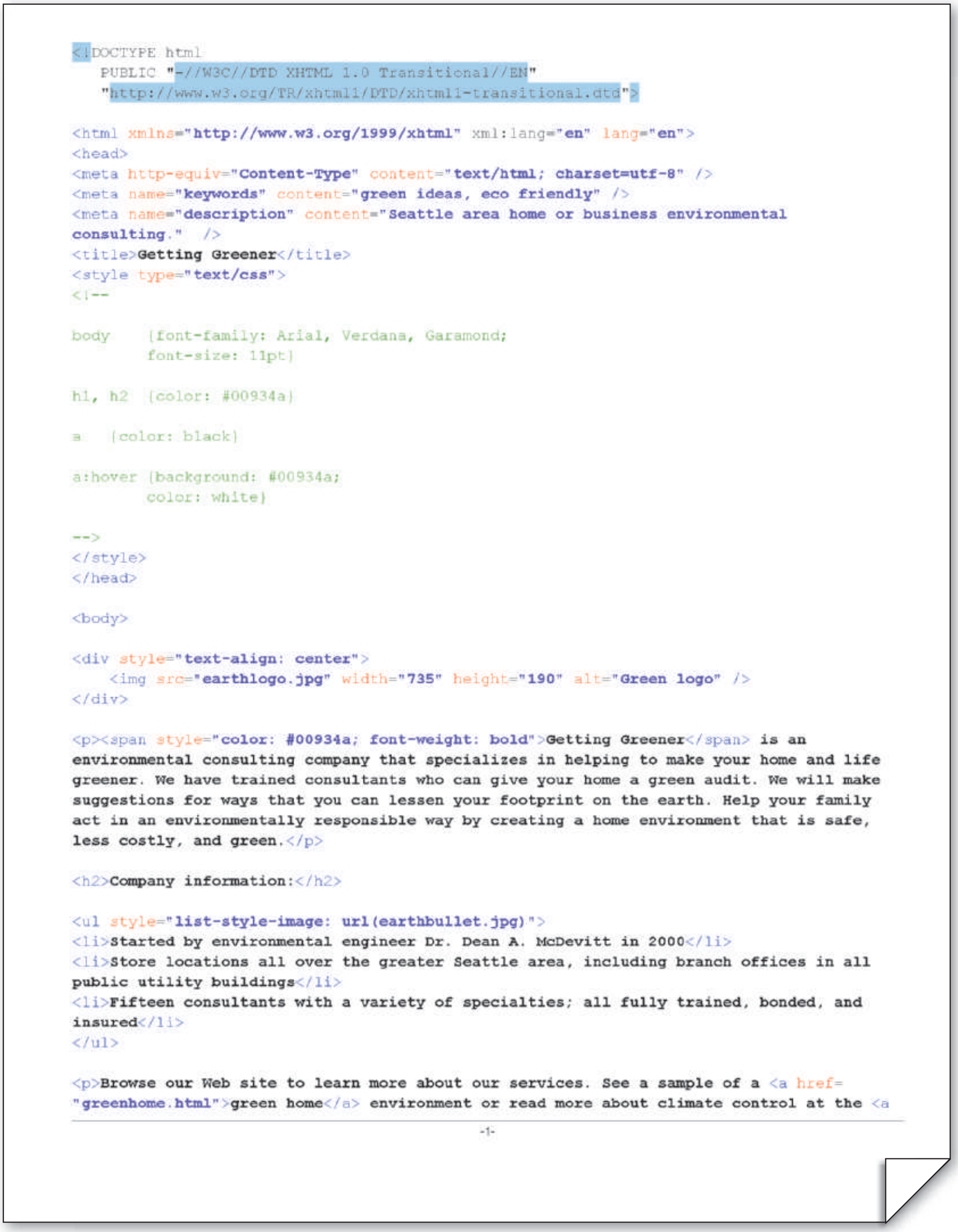
If I have relevant keywords in the content of my Web page, why should I add other words to the <meta /> tags?

It always helps to have keywords identified in both places for those search engines that choose one method over the other.

To Save, Validate, and Print a Document

You are finished entering the meta tags. As with all Web development projects, you now need to save, validate, and print the file.

1. In Notepad++, click the Save icon on the toolbar to save the file with the new meta tags.
2. Validate the file using the w3.org validation service.
3. Once the file is successfully validated, print the file (Figure 5).



```
<!DOCTYPE html
   PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<meta name="keywords" content="green ideas, eco friendly" />
<meta name="description" content="Seattle area home or business environmental
consulting."  />
<title>Getting Greener</title>
<style type="text/css">
<!--

body    {font-family: Arial, Verdana, Garamond;
        font-size: 11pt}

h1, h2  {color: #00934a}

a   {color: black}

a:hover {background: #00934a;
        color: white}

-->
</style>
</head>

<body>

<div style="text-align: center">
    <img src="earthlogo.jpg" width="735" height="190" alt="Green logo" />
</div>

<p><span style="color: #00934a; font-weight: bold">Getting Greener</span> is an
environmental consulting company that specializes in helping to make your home and life
greener. We have trained consultants who can give your home a green audit. We will make
suggestions for ways that you can lessen your footprint on the earth. Help your family
act in an environmentally responsible way by creating a home environment that is safe,
less costly, and green.</p>

<h2>Company information:</h2>

<ul style="list-style-image: url(earthbullet.jpg)">
<li>Started by environmental engineer Dr. Dean A. McDevitt in 2000</li>
<li>Store locations all over the greater Seattle area, including branch offices in all
public utility buildings</li>
<li>Fifteen consultants with a variety of specialties; all fully trained, bonded, and
insured</li>
</ul>

<p>Browse our Web site to learn more about our services. See a sample of a <a href=
"greenhome.html">green home</a> environment or read more about climate control at the <a
```

-1-

Figure 5

Determining a Domain Name

You may use the domain name of the server on which you publish your Web pages together with a path to your specific pages as an option for your Web page address or URL. A **domain name** is the server name portion of the URL. You are also able to register your own domain name on the Internet for about $10 per year. That sometimes makes it easier for visitors to find your Web pages. In the case of the gettinggreener.html file, you could register a domain name that is available for your Getting Greener Web site.

To determine if the domain name you are considering is available, you can start your search at InterNIC. InterNIC is a registered service mark of the U.S. Department of Commerce. The InterNIC Web site (*www.internic.net/alpha.html*) is operated by the Internet Corporation for Assigned Names and Numbers (ICANN) to provide information to the public regarding Internet domain name registration services. ICANN is responsible for managing and coordinating the Domain Name System (DNS) to ensure that every Internet address is unique, and that all users of the Internet can find all valid addresses.

BTW

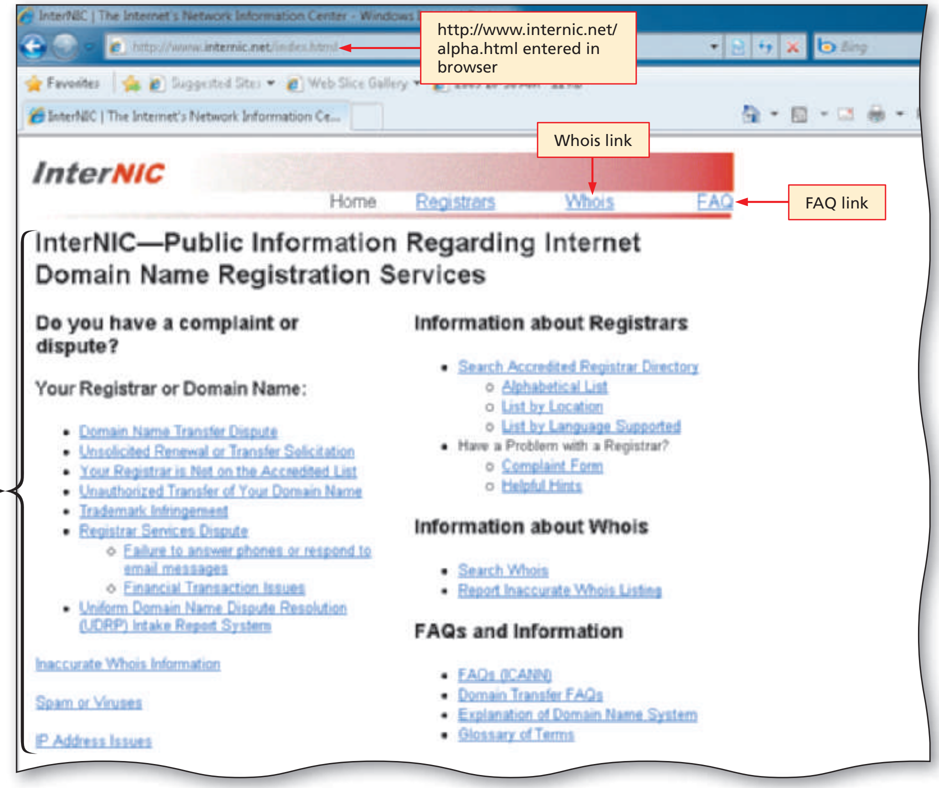
InterNIC
InterNIC contains trusted public information regarding Internet domain name registration services. The InterNIC Web site has a FAQs section, information about domain name registrars, as well as links for domain name disputes.

Check Domain Name Availability

In order to check to see if a domain name is available, complete the following steps:

1

- Open Internet Explorer.
- Type `http://www.internic.net/alpha.html` into the address bar, as shown in Figure 6.
- Review the FAQ section of the Web site to better understand the domain naming process.
- Click the Whois link to see what domain names have previously been registered for gettinggreener. You can try .com, .net, or .org to see the results.


InterNIC | The Internet's Network Information Center - Windows
http://www.internic.net/index.html
Bing
Favorites
Suggested Sites
Web Slice Gallery
InterNIC | The Internet's Network Information Ce...
InterNIC
Home
Registrars
Whois
FAQ

InterNIC—Public Information Regarding Internet Domain Name Registration Services

Do you have a complaint or dispute?

Your Registrar or Domain Name:

- Domain Name Transfer Dispute
- Unsolicited Renewal or Transfer Solicitation
- Your Registrar is Not on the Accredited List
- Unauthorized Transfer of Your Domain Name
- Trademark Infringement
- Registrar Services Dispute
  - Failure to answer phones or respond to email messages
  - Financial Transaction Issues
- Uniform Domain Name Dispute Resolution (UDRP) Intake Report System

Inaccurate Whois Information

Spam or Viruses

IP Address Issues

Information about Registrars

- Search Accredited Registrar Directory
  - Alphabetical List
  - List by Location
  - List by Language Supported
- Have a Problem with a Registrar?
  - Complaint Form
  - Helpful Hints

Information about Whois

- Search Whois
- Report Inaccurate Whois Listing

FAQs and Information

- FAQs (ICANN)
- Domain Transfer FAQs
- Explanation of Domain Name System
- Glossary of Terms

http://www.internic.net/alpha.html entered in browser

Whois link

FAQ link

links to variety of functions within InterNIC Web site

Figure 6

Finding a Web Hosting Site

The next step in the Web development process is to publish your Web pages so that visitors can see them. In order to publish your Web site, you need hosting services. There are many options available for Web hosting. You need access to a Web server onto which you can upload all of the Web pages in your Web site.

One option is to use the ISP that you use to connect to the Internet. ISPs sometimes provide space for their clients to host a Web site. If you registered your own domain name, you can even have your ISP set up a virtual domain, or shared Web hosting, on their server with your new domain name. Your ISP's server may be set up to allocate hosting services and bandwidth to more than one Web site by using a virtual domain. In other words, although you register the domain name gettinggreener.com, your ISP would host it on its own Web server. Virtual Web hosting is a much cheaper option because you do not have to pay for a dedicated server to host just your Web site. You can check with your ISP for details. A second option is to use a company that charges for Web site hosting. There are thousands of companies that provide Web hosting services. Most charge a monthly fee, but some offer free Web hosting in exchange for advertising on your Web site. A final option is for you to set up your own Web server. You would have to know enough about the technology to set it up and keep it running.

If you choose to utilize your own ISP or a Web hosting service, you need to consider a few things. These include:

- What is the total cost? Compare monthly or annual costs; the highest cost may not always provide the best service.
- How much space is available to you? You need to assess your current needs (i.e., file sizes, sizes of graphics) and also your future needs (i.e., how much more information you will create).
- How fast is the connection speed? The speed of the connection to the Internet is important to efficiently serve your visitors.
- How much total bandwidth transfer is available? The number and size of Web pages in your Web site together with the number and size of graphical images is important to consider.
- Do they provide technical support? You may occasionally need help, especially in the beginning.
- Do they offer tracking services? Many hosting companies allow you to see how visitors utilize your Web site by viewing a tracking log.

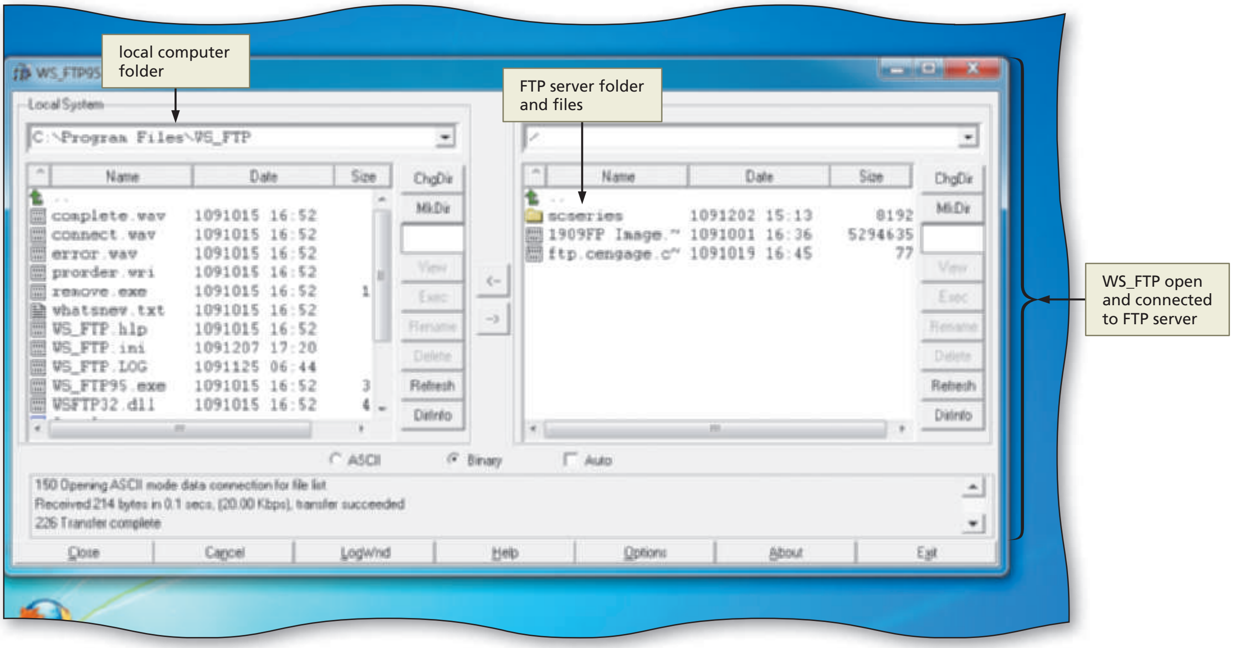
After you have selected a Web hosting service, you need to transfer your files to that server.

BTW

Web Site Hosting
There are a variety of Web site hosting options available today. To search for Web hosting services, use different search engines to find different alternatives. Make sure to use the checklist shown on this page to assess the hosting services and fees.

Publishing Your Web Site

Once you have determined a Web hosting strategy, the next step is to publish your Web pages so that visitors can see them. **Publishing** your Web site means transferring your files to the Web server. There are many options available for file transfers. You could use a File Transfer Protocol (FTP) program such as WS-FTP for Windows (Figure 7) or Fetch for Mac (for more information about FTP programs, see Appendix E). In addition, many Web page editors also provide publishing functionality. Once your Web pages are published, the last step is to advertise their location to attract visitors.



local computer folder

FTP server folder and files

WS_FTP open and connected to FTP server

```
C:\Program Files\WS_FTP

Name            Date            Size
..
complete.wav    1091015 16:52
connect.wav     1091015 16:52
error.wav       1091015 16:52
prorder.wri     1091015 16:52
remove.exe      1091015 16:52   1
whatsnew.txt    1091015 16:52
WS_FTP.hlp      1091015 16:52
WS_FTP.ini      1091207 17:20
WS_FTP.LOG      1091125 06:44
WS_FTP95.exe    1091015 16:52   3
WSFTP32.dll     1091015 16:52   4
```

```
/

Name            Date              Size
..
scseries        1091202 15:13     8192
1909FP Image.~  1091001 16:36  5294635
ftp.cengage.c~  1091019 16:45       77
```

```
150 Opening ASCII mode data connection for file list
Received 214 bytes in 0.1 secs, (20.00 Kbps), transfer succeeded
226 Transfer complete
```

Figure 7

Advertising Your Web Site

Now that your Web pages are published, you need to get the word out to potential Web site visitors. You need to determine a comprehensive advertising plan. It serves no purpose for you to publish a Web site if no one visits it. There are several ways to start an advertising campaign:

- Put your URL on your business cards, company brochures, stationery, and e-mail signature.
- Advertise your URL in newsletters and print articles.
- Tell people verbally about your Web site.
- Find and get listed on targeted directories and search engines specific to your industry.
- Buy banner ads.
- Negotiate reciprocal links in which you agree to link to a Web site if they agree to link to your Web site.
- Utilize newsgroups specific to your industry.

BTW

Search Engines
Both Google and Yahoo! contain information about optimizing your Web sites. Review their Webmaster guidelines for great ideas on registering with their search engines. Google even provides a Google 101 section that explains how Google indexes and serves the Web.

Registering with Search Engines

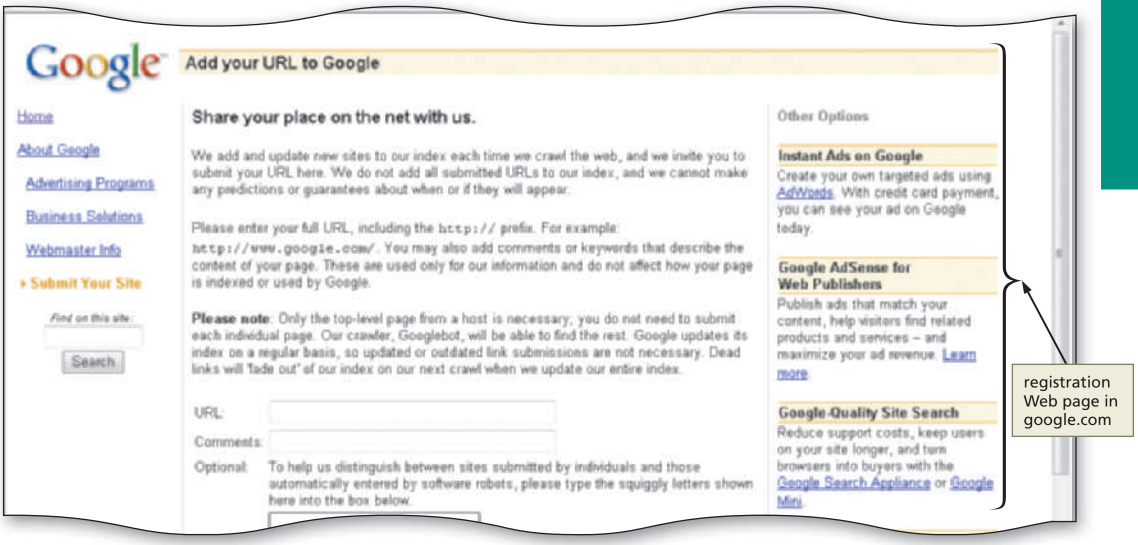
You are finished entering the meta tags, publishing, and advertising your Web site. The next step is to register your Web site with the two most popular search engines, Google and Yahoo! It is also a good idea to register your site with search engines that specialize in subject matter related to your Web site.

To Register Your Web Site with Search Engines

The next step shows you how to register your Web pages with the Google and Yahoo! search engines.

1

- In Internet Explorer, type `http://www.google.com/addurl.html` in the address bar and press the ENTER key (Figure 8).
- Follow the directions to add your URL.



Add your URL to Google

Home

About Google

Advertising Programs

Business Solutions

Webmaster Info

Submit Your Site

Find on this site:

Search

Share your place on the net with us.

We add and update new sites to our index each time we crawl the web, and we invite you to submit your URL here. We do not add all submitted URLs to our index, and we cannot make any predictions or guarantees about when or if they will appear.

Please enter your full URL, including the `http://` prefix. For example: `http://www.google.com/`. You may also add comments or keywords that describe the content of your page. These are used only for our information and do not affect how your page is indexed or used by Google.

Please note: Only the top-level page from a host is necessary; you do not need to submit each individual page. Our crawler, Googlebot, will be able to find the rest. Google updates its index on a regular basis, so updated or outdated link submissions are not necessary. Dead links will 'fade out' of our index on our next crawl when we update our entire index.

URL:

Comments:

Optional: To help us distinguish between sites submitted by individuals and those automatically entered by software robots, please type the squiggly letters shown here into the box below.

Other Options

Instant Ads on Google

Create your own targeted ads using AdWords. With credit card payment, you can see your ad on Google today.

Google AdSense for Web Publishers

Publish ads that match your content, help visitors find related products and services – and maximize your ad revenue. Learn more.

Google Quality Site Search

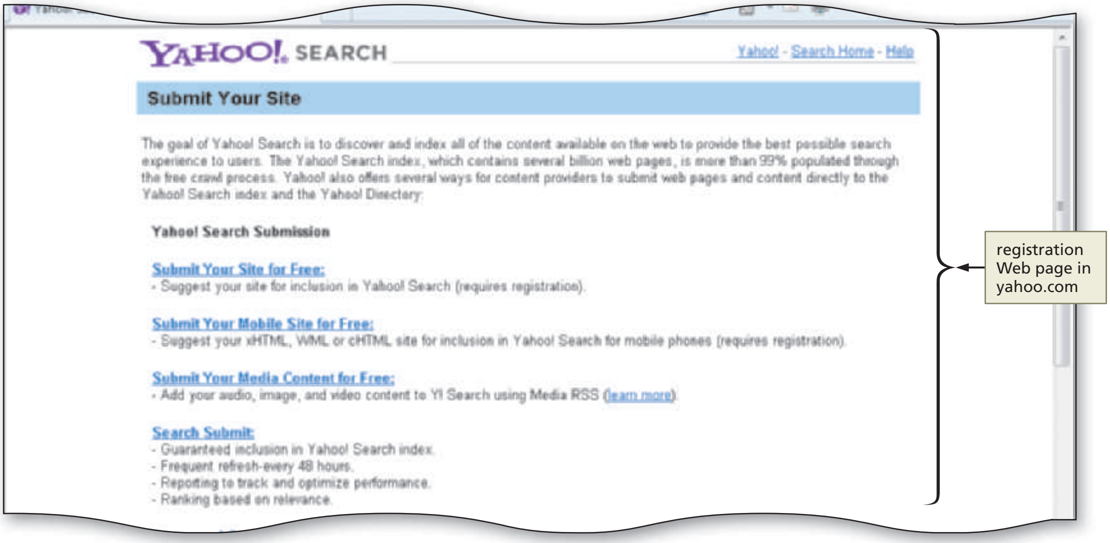
Reduce support costs, keep users on your site longer, and turn browsers into buyers with the Google Search Appliance or Google Mini.

registration Web page in google.com

Figure 8

2

- For the Yahoo! registration, type `http://search.yahoo.com/info/submit.html` in the Internet Explorer address bar and press the ENTER key (Figure 9).
- Follow the directions to add your URL.



YAHOO! SEARCH

Yahoo! - Search Home - Help

Submit Your Site

The goal of Yahoo! Search is to discover and index all of the content available on the web to provide the best possible search experience to users. The Yahoo! Search index, which contains several billion web pages, is more than 99% populated through the free crawl process. Yahoo! also offers several ways for content providers to submit web pages and content directly to the Yahoo! Search index and the Yahoo! Directory:

Yahoo! Search Submission

Submit Your Site for Free:
- Suggest your site for inclusion in Yahoo! Search (requires registration).

Submit Your Mobile Site for Free:
- Suggest your xHTML, WML or cHTML site for inclusion in Yahoo! Search for mobile phones (requires registration).

Submit Your Media Content for Free:
- Add your audio, image, and video content to Y! Search using Media RSS (learn more).

Search Submit:
- Guaranteed inclusion in Yahoo! Search index.
- Frequent refresh-every 48 hours.
- Reporting to track and optimize performance.
- Ranking based on relevance.

registration Web page in yahoo.com

Figure 9

Feature Summary

In this feature, you have learned how to insert keywords and description meta tags into your Web page. You also learned about domain names, how to search for a Web host, publish your Web page, advertise your Web site, and register your site with search engines. The items listed below include all the new skills you have learned in this feature.

1. Add Keywords (HTML 226)
2. Add a Description (HTML 226)
3. Check Domain Name Availability (HTML 228)
4. Register Your Web Site with Search Engines (HTML 230)

In the Lab

Design and/or create a document using the guidelines, concepts, and skills presented in this chapter. Labs are listed in order of increasing difficulty.

Lab 1: Creating a Publishing and Advertising Plan

Problem: Your assignment is to apply the ideas and suggestions listed in this special feature to write a comprehensive publishing and advertising plan. This plan should all be noted in a Word file that can be submitted to your instructor.

Instructions:

1. Determine a domain name that is available to use for your Getting Greener Web site.
2. Research and identify several possible Web hosting options. Answer all six questions covered in this special feature section for each of your hosting options.
3. Research and identify the specifics about registering your Web site with both Google and Yahoo!.
4. Write an advertising plan that addresses specific ways that you can get the word out about your Web site. Specific plans should include:
   a. Locating targeted directories and search engines specific to the industry reflected in the Web site
   b. Investigating the pros and cons of buying banner ads
   c. Determining Web sites to which you could have possible reciprocal links
   d. Finding newsgroups specific to the industry reflected in the Web site
5. Save the file with the name Lab SF1-1 Advertising. Submit the file in the format specified by your instructor.

In the Lab

Lab 2: Attracting Visitors to Another Web Site

Problem: In this assignment, you are to assess another Web site to complete the same basic steps as taken in this feature to improve the site's visibility on the Internet.

Instructions:

1. Select a Web site that is of interest to you and open the site's home page.
2. Review the meta tags (if any) that are used on the home page. (*Hint:* View the page source to review those tags.) Determine how you can utilize additional meta tags for this Web page. What keywords and descriptions would be good to use? What keywords and descriptions do other related Web sites use?
3. Write an advertising plan that addresses specific ways that you can get the word out about this Web site. Specific plans should include:
   a. Locating targeted directories and search engines specific to the industry reflected in the Web site
   b. Determining Web sites to which you could have possible reciprocal links
   c. Finding newsgroups specific to the industry reflected in the Web site
4. Save the file with the name Lab SF1-2 Advertising. Submit the file in the format specified by your instructor.

Appendix A
HTML Quick Reference

HTML and XHTML Coding Standards

HTML is the original language used for publishing hypertext on the World Wide Web. It is a nonproprietary format based on Standard Generalized Markup Language (SGML). HTML documents can be created with a wide variety of tools, from simple text editors such as Notepad and Notepad++, to sophisticated WYSIWYG authoring tools such as Adobe Dreamweaver. Extensible Markup Language (XML) is a markup language that uses tags to describe the structure and content of a document, not just the format.

Extensible Hypertext Markup Language (XHTML) is a reformulation of HTML so it conforms to XML structure and content rules. By combining HTML and XML, XHTML provides the display features of HTML and the stricter coding standards required by XML.

Table A–1 lists some important XHTML coding practices that Web developers should follow to ensure that their HTML code conforms to XHTML standards as defined by the World Wide Web Consortium (W3). The projects in this book follow XHTML standards and adhere to the rules outlined in Table A–1. This information is also shown in Table 1–3 in Chapter 1.

Table A–1 XHTML Coding Practices

Practice	Invalid Example	Valid Example
HTML file must include a DOCTYPE statement	<html> <head><title>sample Web page</title>	<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"> <html> <head><title>sample Web page</title></head>
All tags and attributes must be written in lowercase	<TABLE WIDTH="100%">	<table width="100%">
All attribute values must be enclosed by single or double quotation marks	<table width=100%>	<table width="100%">
All tags must be closed, including tags such as img, hr, and br, which do not have end tags, but which must be closed as a matter of practice	 <hr> <p>This is another paragraph	<br /> <hr /> <p>This is another paragraph</p>
All elements must be nested properly	<p><strong>This is a bold paragraph</p></strong>	<p><strong>This is a bold paragraph</strong></p>

HTML Tags and Attributes

HTML uses tags such as <h1> and <p> to structure text into headings, paragraphs, lists, hypertext links, and so on. Many HTML tags have attributes that can be defined in different ways to further modify the look of the Web page. Table A–2 lists HTML tags and their associated attributes. The list provides a brief description of each tag and its attributes. The default value for each attribute is indicated by bold text in the Description column. For a comprehensive list, more thorough descriptions, examples of all HTML tags, and XHTML coding standards, visit the World Wide Web Consortium Web site at *www.w3.org*.

As the World Wide Web Consortium continually updates the HTML specifications, HTML tags are added to, deleted, and replaced by newer tags. In the list in Table A–2, deprecated elements—tags that can be replaced with newer elements—are indicated with an asterisk. Deprecated elements still are available for use, and most browsers still support them. Browsers will probably continue to support deprecated tags and attributes in the near future, but eventually these tags may become obsolete, so future support cannot be guaranteed. It is therefore a best practice to not use deprecated tags. Obsolete elements are no longer in use and are not supported by common browsers. This appendix does not list obsolete elements.

Table A–2 HTML Tags and Attributes

HTML Tag and Attributes	Description
<!DOCTYPE>	Indicates the version of XHTML used
<!--Text here-->	Inserts invisible comments
<a>….</a>	Anchor; creates a hyperlink or fragment identifier
charset=*character set*	Specifies the character encoding of the linked resource
href=*url*	Hyperlink reference that specifies the target URL
name=*text*	Specifies a name for enclosed text, allowing it to be the target of a hyperlink
rel=*relationship*	Indicates the relationship going from the current page to the target
rev=*relationship*	Indicates the relationship going from the target to the current page
target=*name* *****	Defines the name of the window or frame in which the linked resource will appear
<address>….</address>	Used for information such as authorship, e-mail addresses, or addresses; enclosed text appears italicized and indented in some browsers
No attributes	
<area>….</area>	Creates a clickable area, or hotspot, on a client-side image map
coords=*value1, value2*	Specifies the coordinates that define the edges of the hotspot; a comma-delimited list of values
href=*url*	Hyperlink reference that specifies the target URL
Nohref	Indicates that no link is associated with the area
shape=*shape*	Identifies the shape of the area (poly, rect, circle)
target=*name* *****	Defines the name of the window or frame in which the linked resource will appear
<b>….</b>	Specifies text to appear in bold
No attributes	
<base />	Identifies the base in all relative URLs in the document
href=*url*	Specifies the absolute URL used to resolve all relative URLs in the document
target=*name* *****	Defines the name for the default window or frame in which the hyperlinked pages are displayed

Table A–2 HTML Tags and Attributes *(continued)*

HTML Tag and Attributes	Description
<big>….</big>	Increases the size of the enclosed text to a type size bigger than the surrounding text; exact display size depends on the browser and default font
No attributes	
<blockquote>….</blockquote>	Sets enclosed text to appear as a quotation, indented on the right and left
No attributes	
<body>….</body>	Defines the start and end of a Web page's content
alink=*color* *****	Defines the color of an active link
background=*url* *****	Identifies the image to be used as a background
bgcolor=*color* *****	Sets the document's background color
link=*color* *****	Defines the color of links not yet visited
vlink=*color* *****	Defines the color of visited links
<b>….</b>	Sets enclosed text to appear in bold
No attributes	
<br />	Inserts a line break
clear=*margin* *****	Sets the next line to start in a spot where the requested margin is clear (left, right, all, none); used to stop text wrap
<caption>….</caption>	Creates a caption for a table
align=*position* *****	Sets caption position (top, bottom, left, right)
<center>….</center> *	Centers the enclosed text horizontally on the page
No attributes	
<cite>….</cite>	Indicates that the enclosed text is a citation; text usually is displayed in italics
No attributes	
<code>….</code>	Indicates that the enclosed text is a code sample from a program; text usually is displayed in fixed width font such as Courier
No attributes	
<col>….</col>	Organizes columns in a table into column groups to share attribute values
align=*position*	Sets horizontal alignment of text within the column (char, center, top, bottom, left, right)
span=*value*	Sets the number of columns that span the <col> element
valign=*position*	Specifies vertical alignment of text within the column (top, middle, bottom)
width=*value*	Sets the width of each column in the column group
<colgroup>….</colgroup>	Encloses a group of <col> tags and groups the columns to set properties
align=*position*	Specifies horizontal alignment of text within the column (char, center, top, bottom, left, right)
char=*character*	Specifies a character on which to align column values (for example, a period is used to align monetary values)
charoff=*value*	Specifies a number of characters to offset data aligned with the character specified in the char property
span=*number*	Sets the number of columns the <col> element spans
valign=*position*	Specifies vertical alignment of text within the column (top, middle, bottom)
width=*value*	Sets the width of each column spanned by the colgroup statement

Table A–2 HTML Tags and Attributes *(continued)*

HTML Tag and Attributes	Description
<dd>….</dd>	Indicates that the enclosed text is a definition in the definition list
No attributes	
<div>….</div>	Defines block-level structure or division in the HTML document
align=*position* *****	Specifies alignment of the content block (center, left, right)
class=*name*	Assigns the class name to each class of divisions
id=*name*	Assigns a unique name to a specific content block
<dl>….</dl>	Creates a definition list
No attributes	
<dt>….</dt>	Indicates that the enclosed text is a term in the definition list
No attributes	
<em>….</em>	Indicates that the enclosed text should be emphasized; usually appears in italics
No attributes	
<fieldset>….</fieldset>	Groups related form controls and labels
align=*position*	Specifies alignment of a legend as related to the fieldset (top, bottom, middle, left, right)
<font>….</font> *	Defines the appearance of enclosed text
size=*value* *****	Sets the font size in absolute terms (1 through 7) or as a relative value (for example, +2)
color=*color* *****	Sets the font color; can be a hexadecimal value (#rrggbb) or a word for a predefined color value (for example, navy)
face=*list* *****	Identifies the font face; multiple entries should be separated by commas
point-size=*value* *****	Sets the point size of text for downloaded fonts
weight=*value* *****	Sets the weight of the font, ranging from 100 (lightest) to 900 (heaviest)
<form>….</form>	Marks the start and end of a Web page form
action=*url*	Specifies the URL of the application that will process the form; required attribute
enctype=*encoding*	Specifies how the form element values will be encoded
method=*method*	Specifies the method used to pass form parameters (data) to the server
target=*text*	Specifies the frame or window that displays the form's results
<frame>….</frame>	Delimits a frame within a frameset
frameborder=*option*	Specifies whether the frame border is displayed (yes, no)
marginheight=*value*	Adds *n* pixels of space above and below the frame contents
marginwidth=*value*	Adds *n* pixels of space to the left and the right of the frame contents
name=*text*	Specifies the name of the frame
noresize	Prevents the user from resizing the frame
scrolling=*option*	Adds scroll bars or not—always (yes), never (no), or add when needed (**auto**)
src=*url*	Defines the URL of the source document that is displayed in the frame
<frameset>….</frameset>	Defines a collection of frames in a frameset
cols=*value1*, *value2*,…	Defines the number and width of frames within a frameset
rows= *value1*, *value2*,…	Defines the number and height of frames within a frameset
frameborder=*option*	Specifies whether the frame border is displayed (yes, no)

Table A–2 HTML Tags and Attributes *(continued)*

HTML Tag and Attributes	Description
<hn>….</hn>	Defines a header level *n*, ranging from the largest (h1) to the smallest (h6)
align=*position* *****	Specifies the header alignment (**left**, center, right)
<head>….</head>	Delimits the start and end of the HTML document's head
No attributes	
<hr />	Inserts a horizontal rule
align=*type* *****	Specifies the alignment of the horizontal rule (left, **center**, right)
noshade *****	Specifies to not use 3D shading and to round the ends of the rule
size=*value* *****	Sets the thickness of the rule to a value in pixels
width=*value or %* *****	Sets the width of the rule to a value in pixels or a percentage of the page width; percentage is preferred
<html>….</html>	Indicates the start and the end of the HTML document
version=*data*	Indicates the HTML version used; not usually used
<i>….</i>	Sets enclosed text to appear in italics
No attributes	
<iframe>….</iframe> *****	Creates an inline frame, also called a floating frame or subwindow, within an HTML document
align=*position* *****	Aligns the frame with respect to context (top, middle, **bottom**, left, right)
frameborder=*option* *****	Specifies whether a frame border is displayed (1=yes; 0=no)
height=*value* *****	Sets the frame height to a value in pixels
marginheight=*value* *****	Sets the margin between the contents of the frame and its top and bottom borders to a value in pixels
marginwidth=*value* *****	Sets the margin between the contents of the frame and its left and right borders to a value in pixels
name=*text* *****	Assigns a name to the current frame
noresize *****	Prevents the user from resizing the frame
src=*url* *****	Defines the URL of the source document that is displayed in the frame
width=*value* *****	Sets the frame width to a value in pixels
scrolling=*option* *****	Adds scroll bars or not—always (yes), never (no), or add when needed (**auto**)
<img>….</img>	Inserts an image into the current Web page
align=*type* *****	Defines image alignment in relation to the text or the page margin (top, middle, bottom, right, left)
alt=*text*	Provides a text description of an image if the browser cannot display the image; always should be used
border=*value* *****	Sets the thickness of the border around the image to a value in pixels; default size is 3
height=*value*	Sets the height of the image to a value in pixels; always should be used
src=*url*	Specifies the URL of the image to be displayed; required
usemap=*url*	Specifies the map of coordinates and links that defines the href within this image
width=*value*	Sets the width of the image to a value in pixels; always should be used
<input>….</input>	Defines controls used in forms
alt=*text*	Provides a short description of the control or image button; for browsers that do not support inline images

Table A–2 HTML Tags and Attributes *(continued)*

HTML Tag and Attributes	Description
<input>….</input> *(continued)*	
checked	Sets radio buttons and check boxes to the checked state
disabled	Disables the control
maxlength=*value*	Sets a value for the maximum number of characters allowed as input for a text or password control
name=*text*	Assigns a name to the control
readonly	Prevents changes to the control
size=*value*	Sets the initial size of the control to a value in characters
src=*url*	Identifies the location of the image if the control is set to an image
tabindex=*value*	Specifies the tab order between elements in the form, with 1 as the first element
type=*type*	Defines the type of control (**text**, password, check box, radio, submit, reset, file, hidden, image, button)
usemap=*url*	Associates an image map as defined by the <map> element
value=*data*	Sets the initial value of the control
<ins>….</ins>	Identifies and displays text as having been inserted in the document in relation to a previous version
cite=*url*	Specifies the URL of a document that has more information on the inserted text
datetime=*datetime*	Date and time of a change
<kbd>….</kbd>	Sets enclosed text to display as keyboard-like input
No attributes	
<label>….</label>	Creates a label for a form control
for=*data*	Indicates the name or ID of the element to which the label is applied
<legend>….</legend>	Assigns a caption to a fieldset element, as defined by the <fieldset> tags
No attributes	
<li>….</li>	Defines the enclosed text as a list item in a list
value=*value1* *****	Inserts or restarts counting with value1
<link />	Establishes a link between the HTML document and another document, such as an external style sheet
charset=*character set*	Specifies the character encoding of the linked resource
href=*url*	Defines the URL of the linked document
name=*text*	Names the current anchor so that it can be the destination for other links
rel=*relationship*	Indicates the relationship going from the current page to the target
rev=*relationship*	Indicates the relationship going from the target to the current page
target=*name*	Defines the name of the frame into which the linked resource will appear
type=*mime-type*	Indicates the data or media type of the linked document (for example, text/css for linked style sheets)
<map>….</map>	Specifies a client-side image map; must enclose <area> tags
name=*text*	Assigns a name to the image map
<meta />	Provides additional data (metadata) about an HTML document
content=*text*	Specifies the value for the <meta> information; required
http-equiv=*text*	Specifies the HTTP-equivalent name for metadata; tells the server to include that name and content in the HTTP header when the HTML document is sent to the client

Table A–2 HTML Tags and Attributes *(continued)*

HTML Tag and Attributes	Description
<meta /> *(continued)*	
name=*text*	Assigns a name to metadata
scheme=*text*	Provides additional context for interpreting the information in the content attribute
<noframes>….</noframes>	Defines content to be displayed in browsers that do not support frames; very important to include
No attributes	
<object>….</object>	Includes an external object in the HTML document such as an image, a Java applet, or other external object, not well-supported by most browsers
archive=*url*	Specifies the URL of the archive containing classes and other resources that will be preloaded for use by the object
classid=*url*	Specifies the URL of the embedded object
codebase=*url*	Sets the base URL for the object; helps resolve relative references
codetype=*type*	Identifies the content type of the data in the object
data=*url*	Identifies the location of the object's data
Declare	Indicates the object will be declared only, not installed in the page
height=*value*	Sets the height of the object to a value in pixels
name=*text*	Assigns a control name to the object for use in forms
standby=*text*	Defines the message to display while the object loads
tabindex=*value*	Specifies the tab order between elements, with 1 as the first element
type=*type*	Specifies the content or media type of the object
usemap=*url*	Associates an image map as defined by the <map> element
width=*value*	Sets the width of the object to a value in pixels
<ol>….</ol>	Defines an ordered list that contains numbered list item elements (<li>)
type=*option* *****	Sets or resets the numbering format for the list; options include: A=capital letters, a=lowercase letters, I=capital Roman numerals, i=lowercase Roman numerals, or **1**=Arabic numerals
<option>….</option>	Defines individual options in a selection list, as defined by the <select> element
label=*text*	Provides a shorter label for the option than that specified in its content
Selected	Sets the option to be the default or the selected option in a list
value=*value*	Sets a value returned to the server when the user selects the option
Disabled	Disables the option items
<p>….</p>	Delimits a paragraph; automatically inserts a blank line between text
align=*position* *****	Aligns text within the paragraph (left, center, right)
<param>….</param>	Passes a parameter to an object or applet, as defined by the <object> or <applet> element
id=*text*	Assigns an identifier to the element
name=*text*	Defines the name of the parameter required by an object
type=*type*	Specifies the content or media type of the object
value=*data*	Sets the value of the parameter
valuetype=*data*	Identifies the type of parameter used in the value attribute (data, ref, object)

Table A–2 HTML Tags and Attributes *(continued)*

HTML Tag and Attributes	Description
<pre>….</pre>	Preserves the original format of the enclosed text; keeps line breaks and spacing the same as the original
No attributes	
<q>….</q>	Sets enclosed text as a short quotation
lang=*option*	Defines the language in which the quotation will appear
<samp>….</samp>	Sets enclosed text to appear as sample output from a computer program or script; usually appears in a monospace font
No attributes	
<script>….</script>	Inserts a client-side script into an HTML document
defer	Indicates that the browser should defer executing the script
src=*url*	Identifies the location of an external script
type=*mime-type*	Indicates the data or media type of the script language (for example, text/javascript for JavaScript commands)
<select>….</select>	Defines a form control to create a multiple-choice menu or scrolling list; encloses a set of <option> tags to define one or more options
name=*text*	Assigns a name to the selection list
multiple	Sets the list to allow multiple selections
size=*value*	Sets the number of visible options in the list
disabled	Disables the selection list
tabindex=*value*	Specifies the tab order between list items, with 1 as the first element
<small>….</small>	Sets enclosed text to appear in a smaller typeface
No attributes	
<span>….</span>	Creates a user-defined container to add inline structure to the HTML document
No attributes	
<strike>….</strike> *	Sets enclosed text to appear with strong emphasis; usually displayed as bold text
No attributes	
<strong>….</strong>	Sets enclosed text to appear with strong emphasis; usually displayed as bold text
No attributes	
<style>….</style>	Encloses embedded style sheet rules for use in the HTML document
media=*data*	Identifies the intended medium of the style (**screen**, tty, tv, projection, handheld, print, braille, aural, all)
title=*data*	Indicates the title of the style sheet
type=*data*	Specifies the content or media type of the style language (for example, text/css for linked style sheets)
<sub>….</sub>	Sets enclosed text to appear in subscript
No attributes	
<sup>….</sup>	Sets enclosed text to appear in superscript
No attributes	
<table>….</table>	Marks the start and end of a table
align=*position* *	Aligns the table text (left, right, center, justify, char)
border=*value*	Sets the border around a table to a value in pixels
cellpadding=*value*	Sets padding around each cell's contents to a value in pixels

Table A–2 HTML Tags and Attributes *(continued)*

HTML Tag and Attributes	Description
<table>….</table> *(continued)*	
cellspacing=*value*	Sets spacing between cells to a value in pixels
summary=*text*	Provides a summary of the table's purpose and structure
width=*value or %*	Sets table width in pixels or a percentage of the window
frame=*option*	Defines which parts of the outer border (frame) to display (void, above, below, hsides, lhs, rhs, vsides, box, border)
rules=*option*	Specifies which inner borders are to appear between the table cells (none, groups, rows, cols, all)
<tbody>….</tbody>	Defines a groups of rows in a table body
align=*option*	Aligns text (left, center, right, justify, char)
char=*character*	Specifies a character on which to align column values (for example, a period is used to align monetary values)
charoff=*value*	Specifies a number of characters to offset data aligned with the character specified in the char property
valign=*position*	Sets vertical alignment of cells in a group (top, middle, bottom, baseline)
<td>….</td>	Defines a data cell in a table; contents are left-aligned and normal text by default
bgcolor=*color* *****	Defines the background color for the cell
colspan=*value*	Defines the number of adjacent columns spanned by the cell
rowspan=*value*	Defines the number of adjacent rows spanned by the cell
width=*n* or % *****	Sets the width of the table in either pixels or a percentage of the whole table width
headers=*idrefs*	Defines the list of header cells for the current cell
abbr=*text*	Provides an abbreviated version of the cell's contents that browsers can use if space is limited
scope=*option*	Specifies cells for which the element defines header cells (row, col, rowgroup, colgroup)
align=*position*	Specifies horizontal alignment (left, center, right, justify, char)
char=*character*	Specifies a character on which to align column values (for example, a period is used to align monetary values)
charoff=*value*	Specifies a number of characters to offset data aligned with the character specified in the char property
valign=*position*	Sets vertical alignment of cells in the group (top, middle, bottom, baseline)
<textarea>….</textarea>	Creates a multiline text input area within a form
cols=*value*	Defines the number of columns in the text input area
name=*data*	Assigns a name to the text area
rows=*value*	Defines the number of rows in the text input area
disabled	Disables the element
readonly	Prevents the user from editing content in the text area
tabindex=*value*	Specifies the tab order between elements, with 1 as the first element
<tfoot>….</tfoot>	Identifies and groups rows into a table footer
align=*position*	Specifies horizontal alignment (left, center, right, justify, char)
char=*character*	Specifies a character on which to align column values (for example, a period is used to align monetary values)
charoff=*value*	Specifies a number of characters to offset data aligned with the character specified in the char property

Table A–2 HTML Tags and Attributes *(continued)*

HTML Tag and Attributes	Description
<tfoot>....</tfoot> *(continued)*	
valign=*position*	Sets vertical alignment of cells in a group (top, middle, bottom, baseline)
<th>....</th>	Defines a table header cell; contents are bold and center-aligned by default
bgcolor=*color* *****	Defines the background color for the cell
colspan=*value*	Defines the number of adjacent columns spanned by the cell
rowspan=*value*	Defines the number of adjacent rows spanned by the cell
width=*n* or % *****	Sets the width of the table in either pixels or a percentage of the whole table width
<thead>....</thead>	Identifies and groups rows into a table header
align=*position* *****	Specifies horizontal alignment (left, center, right, justify, char)
char=*character*	Specifies a character on which to align column values (for example, a period is used to align monetary values)
charoff=*value*	Specifies a number of characters to offset data aligned with the character specified in the char property
valign=*position*	Sets vertical alignment of cells in a group (top, middle, bottom, baseline)
<title>....</title>	Defines the title for the HTML document; always should be used
No attributes	
<tr>....</tr>	Defines a row of cells within a table
bgcolor=*color* *****	Defines the background color for the cell
align=*position* *****	Specifies horizontal alignment (left, center, right, justify, char)
char=*character*	Specifies a character on which to align column values (for example, a period is used to align monetary values)
charoff=*value*	Specifies a number of characters to offset data aligned with the character specified in the char property
valign=*position*	Sets vertical alignment of cells in a group (top, middle, bottom, baseline)
<tt>....</tt>	Formats the enclosed text in teletype- or computer-style monospace font
No attributes	
<u>....</u> *	Sets enclosed text to appear with an underline
No attributes	
<ul>....</ul>	Defines an unordered list that contains bulleted list item elements (<li>)
type=*option* *****	Sets or resets the bullet format for the list; options include: circle, **disc**, square
<var>....</var>	Indicates the enclosed text is a variable's name; used to mark up variables or program arguments
No attributes	

Appendix B
Browser-Safe Color Palette

Browser-Safe Colors

Three hardware components help deliver color to a computer user: the processor, the video card, and the monitor. Because of the wide variety of components that exist, the color quality that users see varies greatly. The software on a user's computer, specifically the Web browser, also affects the way that color is displayed on a monitor. For Web developers, it is the browser that limits color significantly. It is very difficult, if not impossible, to plan for all possible color variations created by a Web browser. Using browser-safe colors allows for the browser variations, but it also limits the number of colors used on the Web page.

A total of 216 browser-safe colors appear well on different monitors, operating systems, and browsers—including both Windows and Macintosh operating systems and Internet Explorer and Mozilla Firefox browsers. When using color on your Web site, keep in mind that using only the 216 browser-safe colors can be very restrictive, especially for the approximately 10% of Web visitors who have 256-color monitors. On those monitors, only the browser-safe colors will be displayed. If you decide to use a non-browser-safe color, the visitor's browser will try to create the color by combining (a process called dithering) any number of the 216 acceptable colors. The resulting color could be slightly different from the color you had intended.

For a complete list of the 216 browser-safe colors, see Table B–1 on the next page or visit the Shelly-Cashman Series HTML Web page (*scsite.com/html6e*) and click Color Chart. Links to other Web sites with information about browser-safe colors also are available.

Note that you can use the color name as well as the color number when identifying a particular color to use. For instance, you can use the number #000099 (see color sample on the following page) or the word "navy" to specify the same color. Also note that to comply with XHTML standards, color names such as "navy" or "silver" must be all lowercase letters.

Table B–1 Browser-Safe Colors

#ffffff	#ffffcc	#ffff99	#ffff66	#ffff33	#ffff00
#ffccff	#ffcccc	#ffcc99	#ffcc66	#ffcc33	#ffcc00
#ff99ff	#ff99cc	#ff9999	#ff9966	#ff9933	#ff9900
#ff66ff	#ff66cc	#ff6699	#ff6666	#ff6633	#ff6600
#ff33ff	#ff33cc	#ff3399	#ff3366	#ff3333	#ff3300
#ff00ff	#ff00cc	#ff0099	#ff0066	#ff0033	#ff0000
#ccffff	#ccffcc	#ccff99	#ccff66	#ccff33	#ccff00
#ccccff	#cccccc	#cccc99	#cccc66	#cccc33	#cccc00
#cc99ff	#cc99cc	#cc9999	#cc9966	#cc9933	#cc9900
#cc66ff	#cc66cc	#cc6699	#cc6666	#cc6633	#cc6600
#cc33ff	#cc33cc	#cc3399	#cc3366	#cc3333	#cc3300
#cc00ff	#cc00cc	#cc0099	#cc0066	#cc0033	#cc0000
#99ffff	#99ffcc	#99ff99	#99ff66	#99ff33	#99ff00
#99ccff	#99cccc	#99cc99	#99cc66	#99cc33	#99cc00
#9999ff	#9999cc	#999999	#999966	#999933	#999900
#9966ff	#9966cc	#996699	#996666	#996633	#996600
#9933ff	#9933cc	#993399	#993366	#993333	#993300
#9900ff	#9900cc	#990099	#990066	#990033	#990000
#66ffff	#66ffcc	#66ff99	#66ff66	#66ff33	#66ff00
#66ccff	#66cccc	#66cc99	#66cc66	#66cc33	#66cc00
#6699ff	#6699cc	#669999	#669966	#669933	#669900
#6666ff	#6666cc	#666699	#666666	#666633	#666600
#6633ff	#6633cc	#663399	#663366	#663333	#663300
#6600ff	#6600cc	#660099	#660066	#660033	#660000
#33ffff	#33ffcc	#33ff99	#33ff66	#33ff33	#33ff00
#33ccff	#33cccc	#33cc99	#33cc66	#33cc33	#33cc00
#3399ff	#3399cc	#339999	#339966	#339933	#339900
#3366ff	#3366cc	#336699	#336666	#336633	#336600
#3333ff	#3333cc	#333399	#333366	#333333	#333300
#3300ff	#3300cc	#330099	#330066	#330033	#330000
#00ffff	#00ffcc	#00ff99	#00ff66	#00ff33	#00ff00
#00ccff	#00cccc	#00cc99	#00cc66	#00cc33	#00cc00
#0099ff	#0099cc	#009999	#009966	#009933	#009900
#0066ff	#0066cc	#006699	#006666	#006633	#006600
#0033ff	#0033cc	#003399	#003366	#003333	#003300
#0000ff	#0000cc	#000099	#000066	#000033	#000000

Appendix C

Accessibility Standards and the Web

Making the Web Accessible

Nearly 20% of the world population has some sort of disability, a physical condition that limits the individual's ability to perform certain tasks. The U.S. Congress passed the Rehabilitation Act in 1973, which promotes economic independence for those with disabilities. In 1998, Congress amended this act to reflect the latest changes in information technology. Section 508 requires that any electronic information developed, procured, maintained, or used by the federal government be accessible to people with disabilities. Disabilities that inhibit a person's ability to use the Web fall into four main categories: visual, hearing, motor, and cognitive. This amendment has had a profound effect on how Web pages are designed and developed.

Although Section 508 is specific to Web sites created and maintained by the federal government, all competent Web developers adhere to the Section 508 guidelines. It is important to include everyone as a potential user of your Web site, including those with disabilities. To ignore the needs of nearly 20% of our population is just poor practice.

The World Wide Web Consortium (W3C) developed its own set of guidelines, called the Web Accessibility Initiative (WAI), for accessibility standards. These guidelines cover many of the same issues defined in the Section 508 rules and expand on them relative to superior Web site design.

Section 508 Guidelines Examples

The 13 parts of the Section 508 guidelines are as follows:

- Subpart A—General
  - 1194.1 Purpose.
  - 1194.2 Application.
  - 1194.3 General exceptions.
  - 1194.4 Definitions.
  - 1194.5 Equivalent facilitation.

- Subpart B—Technical Standards
  - 1194.21 Software applications and operating systems.
  - 1194.22 Web-based intranet and Internet information and applications. 16 rules.
  - 1194.23 Telecommunications products.
  - 1194.24 Video and multimedia products.
  - 1194.25 Self contained, closed products.
  - 1194.26 Desktop and portable computers.
- Subpart C—Functional Performance Criteria
  - 1194.31 Functional performance criteria.
- Subpart D—Information, Documentation, and Support
  - 1194.41 Information, documentation, and support.

Web developers should review these guidelines thoroughly. We focus on the specific guidelines for intranet and Internet development in the following sections.

Sub-section **§ 1194.22** of Section 508, **Web-based intranet and Internet information and applications**, is the segment of the amendment that impacts Web design. There are 16 paragraphs within § 1194.22, which are lettered (a) through (p). These 16 paragraphs describe how each component of a Web site should be designed to ensure accessibility. The following is a list of the 16 paragraphs:

§ 1194.22 (a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).

Graphical images that contain Web page content should include a text alternative (for example, using the alt or longdesc attributes). For good Web development practice, all images should include the alt attribute to describe that image, as shown in Project 2.

§ 1194.22 (b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

Audio clips should contain a transcript of the content; video clips need closed captioning.

§ 1194.22 (c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.

Although color is an important component of most Web pages, you need to consider those site visitors with forms of color blindness if the color contributes significantly to the Web site content.

§ 1194.22 (d) Documents shall be organized so they are readable without requiring an associated style sheet.

Style sheets have an important role in Web development. Some browsers, however, allow users to create their own customized style sheets, which could alter the style sheets that you have designated. When developing a Web site using style sheets, ensure that the site maintains its functionality, even if your specified style sheets have been turned off.

§ 1194.22 (e) Redundant text links shall be provided for each active region of a server-side image map.

and

§ 1194.22 (f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.

This means that it is preferable for the Web developer to use client-side image maps unless the map uses a shape that the client-side will not allow. If the Web developer chooses to use server-side image maps, the developer should provide text alternatives for each link on the image map.

§ 1194.22 (g) Row and column headers shall be identified for data tables.
and

§ 1194.22 (h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.

You should structure your tables so that they appear in a linear fashion. In other words, the table content should be displayed one cell at a time, working from left to right across each row before moving to the next row.

§ 1194.22 (i) Frames shall be titled with text that facilitates frame identification and navigation.

Nonvisual browsers open frame sites one frame at a time. It is therefore important that the Web developer gives a name to each frame, and that the name reflects the contents of that frame. You can use either the title or the name attribute, but because nonvisual browsers differ in which attribute they use, the Web developer should use both attributes.

§ 1194.22 (j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

Animations on a Web page can be irritating to many people. However, they also can be quite harmful to people who have certain cognitive or visual disabilities or seizure disorders. You should therefore ensure that animations fall within the ranges stated, and you should limit the use of animations when possible. You also should make certain that necessary page content is available without the animations.

§ 1194.22 (k) A text-only page, with equivalent information or functionality, shall be provided to make a Web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only pages shall be updated whenever the primary page changes.

If you cannot comply with the other 15 guidelines, you should provide a text-only page to display the content of the page. You should also provide an easily accessible link to that text-only Web page.

§ 1194.22 (l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by adaptive technology.

Scripts are often used to create a more interesting and dynamic Web page. You should ensure that the functionality of the script is still available for any person using nonvisual browsers.

§ 1194.22 (m) When a Web page requires that an applet, plug-in, or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with 1994.21 (a) through (i).

Any applet or plug-in that is used on your Web pages should also comply with Section 508. The Web developer should provide a link to the applet or plug-in that is compliant with Section 508.

§ 1194.22 (n) When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

Forms need to be accessible to anyone, including those using nonvisual browsers. You should therefore include value attributes or alternative text for buttons, input boxes, and text area boxes on any form included on your Web page.

§ 1194.22 (o) A method shall be provided that permits users to skip repetitive navigation links.

It can be helpful to provide text links at the very top of a Web page so that users of nonvisual browsers can quickly link to the content of the Web site. Some Web developers use a link that allows users to skip to the main content of the Web page immediately by using a transparent image.

§ 1194.22 (p) When a timed response is required, the user shall be alerted and given sufficient time to indicate that more time is required.

Users need to be given sufficient time to react to a time-out from inactivity by notifying users that the process will soon time out. The user should then be given a way to easily request additional time.

WAI Guidelines

The WAI identifies 14 guidelines for Web developers. Within each guideline is a collection of checkpoints that identifies how to apply the guideline to specific Web site features. Each checkpoint is given a priority score that shows how much importance the WAI places on that guideline. All Web developers should review the information at the official Web site at *www.w3c.org/WAI* for complete information on these guidelines, and should apply the guidelines, together with the following suggestions on the application of the guidelines, to their Web page development.

The three WAI priorities are:

Priority 1: A Web content developer **must** satisfy this checkpoint. Otherwise, one or more groups will find it impossible to access information in the document. Satisfying this checkpoint is a basic requirement for some groups to be able to use Web documents.

Priority 2: A Web content developer **should** satisfy this checkpoint. Otherwise, one or more groups will find it difficult to access information in the document. Satisfying this checkpoint will remove significant barriers to accessing Web documents.

Priority 3: A Web content developer **may** address this checkpoint. Otherwise, one or more groups will find it somewhat difficult to access information in the document. Satisfying this checkpoint will improve access to Web documents.

Table C–1 contains the WAI guidelines together with the checkpoints and corresponding priority value.

Table C–1

WAI Guidelines and Checkpoints	Priority
1. Provide equivalent alternatives to auditory and visual content.	
1.1 Provide a text equivalent for every non-text element (e.g., via "alt", "longdesc", or in element content). *This includes*: images, graphical representations of text (including symbols), image map regions, animations (e.g., animated GIFs), applets and programmatic objects, ASCII art, frames, scripts, images used as list bullets, spacers, graphical buttons, sounds (played with or without user interaction), standalone audio files, audio tracks of video, and video.	1
1.2 Provide redundant text links for each active region of a server-side image map.	1
1.3 Until user agents can automatically read aloud the text equivalent of a visual track, provide an auditory description of the important information of the visual track of a multimedia presentation.	1
1.4 For any time-based multimedia presentation (e.g., a movie or animation), synchronize equivalent alternatives (e.g., captions or auditory descriptions of the visual track) with the presentation.	1
1.5 Until user agents render text equivalents for client-side image map links, provide redundant text links for each active region of a client-side image map.	3
2. Don't rely on color alone.	
2.1 Ensure that all information conveyed with color is also available without color; for example, from context or markup.	1
2.2 Ensure that foreground and background color combinations provide sufficient contrast when viewed by someone having color deficits or when viewed on a black and white screen.	2
3. Use markup and style sheets and do so properly.	
3.1 When an appropriate markup language exists, use markup rather than images to convey information.	2
3.2 Create documents that validate to published formal grammars.	2
3.3 Use style sheets to control layout and presentation.	2
3.4 Use relative rather than absolute units in markup language attribute values and style sheet property values.	2
3.5 Use header elements to convey document structure and use them according to specification.	2
3.6 Mark up lists and list items properly.	2
3.7 Mark up quotations. Do not use quotation markup for formatting effects such as indentation.	2
4. Clarify natural language usage.	
4.1 Clearly identify changes in the natural language of a document's text and any text equivalents (e.g., captions).	1
4.2 Specify the expansion of each abbreviation or acronym in a document where it first occurs.	3
4.3 Identify the primary natural language of a document.	3

Table C–1 *(continued)*

WAI Guidelines and Checkpoints	Priority
5. Create tables that transform gracefully.	
5.1 For data tables, identify row and column headers.	1
5.2 For data tables that have two or more logical levels of row or column headers, use markup to associate data cells and header cells.	1
5.3 Do not use tables for layout unless the table makes sense when linearized. Otherwise, if the table does not make sense, provide an alternative equivalent (which may be a linearized version).	2
5.4 If a table is used for layout, do not use any structural markup for the purpose of visual formatting.	2
5.5 Provide summaries for tables.	3
5.6 Provide abbreviations for header labels.	3
6. Ensure that pages featuring new technologies transform gracefully.	
6.1 Organize documents so they may be read without style sheets. For example, when an HTML document is rendered without associated style sheets, it must still be possible to read the document.	1
6.2 Ensure that equivalents for dynamic content are updated when the dynamic content changes.	1
6.3 Ensure that pages are usable when scripts, applets, or other programmatic objects are turned off or not supported. If this is not possible, provide equivalent information on an alternative accessible page.	1
6.4 For scripts and applets, ensure that event handlers are input-device-independent.	2
6.5 Ensure that dynamic content is accessible or provide an alternative presentation or page.	2
7. Ensure user control of time-sensitive content changes.	
7.1 Until user agents allow users to control flickering, avoid causing the screen to flicker.	1
7.2 Until user agents allow users to control blinking, avoid causing content to blink (i.e., change presentation at a regular rate, such as turning on and off).	2
7.3 Until user agents allow users to freeze moving content, avoid movement in pages.	2
7.4 Until user agents provide the ability to stop the refresh, do not create periodically auto-refreshing pages.	2
7.5 Until user agents provide the ability to stop auto-redirect, do not use markup to redirect pages automatically. Instead, configure the server to perform redirects.	2
8. Ensure direct accessibility of embedded user interfaces.	
8.1 Make programmatic elements such as scripts and applets directly accessible or compatible with assistive technologies (Priority 1 if functionality is important and not presented elsewhere, otherwise Priority 2).	2
9. Design for device-independence.	
9.1 Provide client-side image maps instead of server-side image maps except where the regions cannot be defined with an available geometric shape.	1
9.2 Ensure that any element that has its own interface can be operated in a device-independent manner.	2
9.3 For scripts, specify logical event handlers rather than device-dependent event handlers.	2
9.4 Create a logical tab order through links, form controls, and objects.	3
9.5 Provide keyboard shortcuts to important links (including those in client-side image maps), form controls, and groups of form controls.	3

Table C–1 *(continued)*

WAI Guidelines and Checkpoints	Priority
10. Use interim solutions.	
10.1 Until user agents allow users to turn off spawned windows, do not cause pop-ups or other windows to appear and do not change the current window without informing the user.	2
10.2 Until user agents support explicit associations between labels and form controls, for all form controls with implicitly associated labels, ensure that the label is properly positioned.	2
10.3 Until user agents (including assistive technologies) render side-by-side text correctly, provide a linear text alternative (on the current page or some other) for *all* tables that lay out text in parallel, word-wrapped columns.	3
10.4 Until user agents handle empty controls correctly, include default, place-holding characters in edit boxes and text areas.	3
10.5 Until user agents (including assistive technologies) render adjacent links distinctly, include non-link, printable characters (surrounded by spaces) between adjacent links.	3
11. Use W3C technologies and guidelines.	
11.1 Use W3C technologies when they are available and appropriate for a task and use the latest versions when supported.	2
11.2 Avoid deprecated features of W3C technologies.	2
11.3 Provide information so that users may receive documents according to their preferences (e.g., language, content type, etc.).	3
11.4 If, after best efforts, you cannot create an accessible page, provide a link to an alternative page that uses W3C technologies, is accessible, has equivalent information (or functionality), and is updated as often as the inaccessible (original) page.	1
12. Provide context and orientation information.	
12.1 Title each frame to facilitate frame identification and navigation.	1
12.2 Describe the purpose of frames and how frames relate to each other if it is not obvious by frame titles alone.	2
12.3 Divide large blocks of information into more manageable groups where natural and appropriate.	2
12.4 Associate labels explicitly with their controls.	2
13. Provide clear navigation mechanisms.	
13.1 Clearly identify the target of each link.	2
13.2 Provide metadata to add semantic information to pages and sites.	2
13.3 Provide information about the general layout of a site (e.g., a site map or table of contents).	2
13.4 Use navigation mechanisms in a consistent manner.	2
13.5 Provide navigation bars to highlight and give access to the navigation mechanism.	3
13.6 Group related links, identify the group (for user agents), and, until user agents do so, provide a way to bypass the group.	3
13.7 If search functions are provided, enable different types of searches for different skill levels and preferences.	3
13.8 Place distinguishing information at the beginning of headings, paragraphs, lists, etc.	3
13.9 Provide information about document collections (i.e., documents comprising multiple pages).	3
13.10 Provide a means to skip over multi-line ASCII art.	3

Table C–1 *(continued)*

WAI Guidelines and Checkpoints	Priority
14. Ensure that documents are clear and simple.	
14.1 Use the clearest and simplest language appropriate for a site's content.	1
14.2 Supplement text with graphic or auditory presentations where they will facilitate comprehension of the page.	3
14.3 Create a style of presentation that is consistent across pages.	3

Appendix D

CSS Properties and Values

This appendix provides a brief review of Cascading Style Sheets (CSS) concepts and terminology, and lists CSS level 1 and 2 properties and values supported by most browsers.

CSS Concepts and Terminology

CSS supports three types of style sheets: inline, embedded, and external (or linked). A **style** is a rule that defines the appearance of an element on a Web page. Inline styles are used to change the appearance (or style) for individual elements, such as a heading or a paragraph. A **style sheet** is a series of rules that defines the style for a Web page or an entire Web site. The **style statement** changes that specific element, but does not affect other elements in the document. With an embedded style sheet, you add the style sheet within the <style></style> container between the <head></head> tags of the HTML document. An embedded style sheet allows you to define the style for an entire Web page. With a linked, or external, style sheet, you create a text file that contains all of the styles that you want to apply, and save the text file with the file extension .css. You then add a link to this external style sheet on any Web page in the Web site in which you want to use those styles. External style sheets give you the most flexibility and are ideal to apply the same formats to all of the Web pages in a Web site. External style sheets also make it easy to change formats quickly across Web pages.

The part of the style statement that identifies the page element that you want to change is called the selector. In the example below, the selector is the h1 (heading size 1) element. The part of the style statement that identifies how the element(s) should appear is called the declaration. In this example, the declaration is everything between the curly brackets {color: red}. This includes the property named color and the value named red. You could use the statement below in both an embedded and an external style sheet. With an external (linked) style sheet, you save the file with the selectors and declarations as a .css file. You then link that file into any Web page into which you want those styles to apply.

```
h1    {color: red}
```

To add the same style statement into an embedded style sheet, you have to put the selector and declaration within the <style></style> container as shown below. This code would be inserted within the <head></head> container.

```
<style type="text/css">
h1    {color: red}
</style>
```

These two style sheets (embedded and external) give you the most flexibility. For instance, if you want all h1 and h2 headings to be the color red, you would simply add the code below:

```
h1, h2      {color: red}
```

You also could make the style change to the h1 heading as an inline style. You insert that code within the body of the Web page in the following format:

```
<h1 style="color: red">
```

Although this can be very useful, understand that you would have to insert the same declaration for every h1 (or h2 or h3) heading within the Web page. That makes the inline style less flexible than the other style sheets.

As shown in Table D–1, the three style sheets supported by CSS control the appearance of a Web page at different levels. Each style sheet type also has a different level of precedence or priority in relationship to the others. An external style sheet, for example, is used to define styles for multiple pages in a Web site. An embedded style sheet is used to change the style of one Web page, but overrides or takes precedence over any styles defined in an external style sheet. An inline style sheet is used to control the style within an individual HTML tag and takes precedence over the styles defined in both embedded and external style sheets.

Table D–1 CSS Precedence

Type	Level and Precedence
Inline	• To change the style within an individual HTML tag • Overrides embedded and external style sheets
Embedded	• To change the style of one Web page • Overrides external style sheets
External	• To change the style of multiple pages in a Web site

Because style sheets have different levels of precedence, all three types of style sheets can be used on a single Web page. For example, you may want some elements of a Web page to match the other Web pages in the Web site, but you also may want to vary the look of certain sections of that Web page. You can do this by using the three types of style sheets.

A newer version of Cascading Style Sheets, CSS3, is currently being defined, but is not covered in this appendix. CSS3 utilizes a modularized approach to style sheets, which allows CSS to be updated in a more timely and flexible manner.

For a more comprehensive list of CSS properties and values, see the *www.w3.org* Web site. In addition to an abundance of information about CSS levels 1 and 2, the w3 site also has extensive information about CSS3, from its history to its use with browsers today. The Web site also includes many online tutorials for learning CSS levels 1 and 2 as well as CSS3.

CSS Properties

Tables D–2 through D–10 show the property names, descriptions, and valid values for various categories of CSS properties. Values listed in bold are the default.

Acceptable Units of Measure

Many of the properties below use units of measure for their attribute values. Table D–2 lists the acceptable units of measure that can be used.

Table D–2 Units of Measure

Property Name	Description	Values
color	A color is either a keyword or a numerical RGB specification	[keyword – aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, white, and yellow] [#rrggbb]
length	Indicates both relative (em, ex, px) and absolute (in, cm, mm, pt, pc) lengths	em – relative to size of capital M of browser default font ex – relative to small x of browser default font px – represents one pixel, smallest unit of measure in – one inch cm – one centimeter mm – one millimeter pt – 1/72 of an inch pc – 1/12 of an inch
percentage	Values are always relative to another value; default if not defined	percentage of width or height of parent element

Background and Color Styles

Colors and subtle backgrounds can enhance the style of a Web page significantly. You can set the background or color of an element using these style sheet properties. Not all browser versions support these style attributes, however, so be aware that not all users will be able to see the background and color styles set by these properties. Table D–3 provides a list of background and color properties.

Table D–3 Background and Color Properties

Property Name	Description	Values
background	The background property is a shorthand property for setting the individual background properties (i.e., background-color, background-image, 'background-repeat, 'background-attachment, and background-position) at the same place in the style sheet.	
background-attachment	Sets the background image to fixed, or scrolls with the page	scroll fixed
background-color	Sets the background color of an element	**transparent** [color]
background-image	Sets an image as the background	**none** [url]
background-position	Sets the starting position of a background image	[length] [percentage] bottom center left right top

background-repeat	Sets if/how a background image will be repeated	**repeat**
		repeat-x
		repeat-y
		no-repeat

color	Sets the foreground color of an element	[color] transparent

Border Styles

Many changes can be made to the style, color, and width of any or all sides of a border using the border properties listed in Table D–4. Using the border-color, border-width, or border-style border properties allows you to set the style for all sides of a border. Using style properties such as border-top-width, border-right-color, or border-bottom-style gives you the option to set the width, color, or style for only the top, right, bottom, or left border of a table cell. If you do not make changes to the border style using style sheet properties, the default border will be displayed.

Table D–4 Border Properties

Property Name	Description	Values
border-color	Sets the color of the four borders; can have from one to four colors	[color] transparent
border-top-color border-right-color border-bottom-color border-left-color	Sets the respective color of the top, right, bottom, and left borders individually	[color]
border-style	Sets the style of the four borders; can have from one to four styles	**none** dashed dotted double groove inset outset ridge solid
border-top-style border-right-style border-bottom-style border-left-style	Sets the respective style of the top, right, bottom, and left borders individually	**none** dashed dotted double groove inset outset ridge solid
border-width	Shorthand property for setting the width of the four borders in one declaration; can have from one to four values	**medium** [length] thick thin
border-top-width border-right-width border-bottom-width border-left-width	Sets the respective width of the top, right, bottom, and left borders individually	**medium** [length] thick thin

Classification Styles

These properties classify elements into categories more than they set specific visual parameters. Table D–5 lists common classification properties that can be used.

Table D–5 Classification Properties

Property Name	Description	Values
display	Describes how/if an element is displayed on the canvas, which may be on a printed page, a computer monitor, etc.	**block** inline list-item none
white-space	Declares how whitespace inside the element is handled: the 'normal' way (where whitespace is collapsed), as *pre* (which behaves like the <pre> element in HTML) or as *nowrap* (where wrapping is done only through <br /> elements)	**normal** pre nowrap

Font Styles

An element's font can be changed using the font attribute and various font properties. When you set the font family for an element, you can set one or more fonts or font families by using a comma-delimited list. Each font family generally includes several font definitions. For example, the Arial font family includes Arial Black and Arial Narrow. If you specify more than one font, the browser assesses the user's system and uses the first font family installed on the system. If the system has none of the font families specified in the style sheet, the browser uses the default system font. Table D–6 lists common font properties.

Table D–6 Font Properties

Property Name	Description	Values
font	Shorthand property for setting font-style, font-variant, font-weight, font-size, line-height, and font-family at the same place in the style sheet	
font-family	A prioritized list of font-family names and/or generic family names for an element	[family-name] cursive fantasy monospace sans-serif serif
font-size	Sets the size of a font	[length] [percentage] large medium small x-large x-small xx-large xx-small
font-style	Sets the style of a font	**normal** italic oblique
font-variant	Displays text in a small-caps font or a normal font	**normal** small-caps
font-weight	Sets the weight of a font	**normal** bold bolder lighter

List Styles

Using the properties associated with list styles allows you to set the kind of marker that identifies a list item. An unnumbered list marker, for example, can be a filled disc, an empty circle, or a square. A numbered list marker can be a decimal, lower-alpha, lower-Roman numeral, upper-alpha, or upper-Roman numeral. Table D–7 provides compatible browser list properties.

Table D–7 List Properties

Property Name	Description	Values
list-style-image	Sets an image as the list-item marker	**none** url
list-style-position	Indents or extends a list-item marker with respect to the item's content	**outside** inside
list-style-type	Sets the type of list-item marker	**disc** circle square decimal lower-alpha lower-Roman upper-alpha upper-Roman

Margin and Padding Styles

Many changes can be made to the width and spacing around an element using the margin and padding properties listed in Table D–8. Padding is the space that occurs between the edge of an element and the beginning of its border. If you increase padding around an element, you add space inside its border. The border, therefore, has a larger area to cover.

You can use the margin or padding property to set the widths of margins and padding amounts along all four sides of an element. Using margin and padding properties such as margin-top, margin-right, padding-left, or padding-bottom gives you the option to set the margin or padding for only the top, right, bottom, or left side of an element.

Table D–8 Margin and Padding Properties

Property Name	Description	Values
margin	Shorthand property for setting margin-top, margin-right, margin-bottom, and margin-left at the same place in the style sheet.	
margin-top margin-right margin-bottom margin-left	Sets the top, right, bottom, and left margin of an element individually	[length] [percentage] auto
padding	Shorthand property for setting padding properties in one declaration	
padding-top padding-right padding-bottom padding-left	Sets the top, right, bottom, and left padding of an element individually	[length] [percentage]

Miscellaneous Formatting Styles

Other changes can be made to the width and spacing around elements using the properties listed in Table D–9. These properties can be applied to text elements. They are most useful, however, with elements such as images.

You can use the width or height property to set the widths or heights of images or text, or the size of the box. The float and clear properties alter the position of the element on a Web page. You can float images on a Web page and clear the sides where floating elements are not accepted.

Table D–9 Miscellaneous Formatting Properties

Property Name	Description	Values
width	Can be applied to text elements, but it is most useful with elements such as images	[length] [percentage] **auto**
height	Can be applied to text elements, but it is most useful with elements such as images	[length] **auto**
float	With the value none, the element will be displayed where it appears in the text; with a value of left (right) the element will be moved to the left (right) and the text will wrap on the right (left) side of the element	left right **none**
clear	Specifies if an element allows floating elements on its sides	**none** left right both

Text Styles

Text styles can be used to change the letter-spacing, alignment, line-height (not recommended), and text decoration, along with other text properties. The text-transform property can change text into all uppercase, all lowercase, or be used to change the first letter of each word to uppercase. With text-align, you can align text left, right, center, or justify the text. The text style properties are listed in Table D–10.

Table D–10 Text Properties

Property Name	Description	Values
letter-spacing	Increases or decreases the space between characters	**normal** [length]
line-height	Sets the spacing between text baselines	**normal** [length] [number] [percentage]
text-align	Aligns the text in an element	left right center justify
text-decoration	Adds decoration to text	**none** blink line-through overline underline

Table D–10 Text Properties (*Continued*)

Property Name	Description	Values
text-indent	Indents the first line of text in an element	[length] [percentage]
text-transform	Controls text capitalization	**none** capitalize lowercase uppercase
vertical-align	Sets the vertical positioning of text	**baseline** [length] [percentage] bottom middle sub super text-bottom text-top top
word-spacing	Increases or decreases the space between words	**normal** [length]

Appendix E

Publishing Web Pages to a Web Server

Publishing your Web site means transferring your files to a Web server (Web host) that will make your pages available 24/7 on the Web. Publishing involves two basic steps: choosing a Web host and uploading your Web site files (usually via FTP) to that host.

Choosing a Web Host

There are many options available for Web hosting, as detailed in the "Finding a Web Hosting Site" section of the Special Feature on "Attracting Visitors to Your Web Site." Common options are to use the ISP that you use to connect to the Internet or to use a Web hosting service.

Your Internet service provider (ISP) may provide space for its clients to host a Web site. If it does, you should contact your network system administrator or technical support staff at your ISP to determine if their Web server supports FTP, and to obtain necessary permissions to access the Web server. There are other options for hosting Web sites as well. You can search for free Web hosts using any browser. Whatever Web host you choose, you must secure a username and password in order to gain access to the host.

Uploading Files to the Host

Once you have chosen a Web host, you'll need a program to transfer your files to the Web server. The most common file transfer program is called FTP. **File Transfer Protocol (FTP)** is an Internet standard that allows computers to exchange files with other computers on the Internet. FTP was developed to promote sharing files across a variety of computers reliably and efficiently. FTP programs that run on PCs are sometimes called FTP clients.

There are many FTP programs available for free on the Internet. Search for FTP in any browser and you will find a variety of programs. Read the documentation to assure that the program works with your computer and operating system. Then download and install the FTP program of your choice.

Now you can use your FTP program to upload your Web pages to the server. Be sure to include all HTML files, CSS files, and any graphic files that make up your Web site. Table E–1 shows the steps to use FTP to upload your files. All of the necessary information (e.g., username) should be provided to you by the network administrator for the Web host. Specific keystrokes or mouse clicks to accomplish each step may vary among FTP clients.

Table E–1 Using FTP to Upload Your Web Files	
1.	Start your FTP program.
2.	Type in the host name/address as provided by the network administrator.
3.	Select the host type.
4.	Enter the user ID and password that you were given and then click the OK button.
5.	You should see both a local system (your computer) as well as the remote system (the Web host) in the FTP dialog box.
6.	Use the up arrow to find the folders in which you stored your files; use the up arrow to locate the folders on the remote system also.
7.	Highlight the files that you want to upload and click the right arrow to move the files to the remote system.

Index

Note: Page numbers in boldface indicate key terms.