Introduction

Welcome to the Instructor Edition of the *HTML for the World Wide Web, Fifth Edition, with XHTML and CSS: Visual QuickStart Guide, Student Edition*. This edition provides tools to help you guide and evaluate your students throughout your course on HTML, XHTML, and CSS.

Each chapter of the *HTML for the World Wide Web, Fifth Edition, with XHTML and CSS: Visual QuickStart Guide* has a corresponding chapter in both the Instructor and Student Editions. (In the Student Edition the study guide section is found at the end of each chapter.) Each chapter is divided into four main sections:

- **Learning Objectives** list the main points students should learn from the chapter.
- **Get Up And Running Exercises** are projects that help students synthesize and practice what they've learned. The exercises are based on techniques introduced in a chapter.
- **Class Discussion Questions** help you review a chapter with your class. You can also use this section to relate a chapter's points to workflow issues specific to the students in your class.
- **Review Questions** help you evaluate how well students have learned key details from a chapter. Each chapter contains a set of multiple choice, fill-in-the-blank, and definition questions. You can incorporate them into your own tests.

The Instructor Edition includes additional material that doesn't appear in the Student Edition. You'll find instructor material in several places:

- Throughout the Instructor Edition, the instructor icon ( ) marks instructor notes and answers to class discussion and definition questions. Paragraphs marked with this icon don't appear in the Student Edition.
- Answers to multiple-choice answers appear in boldface.
- Answers to fill-in-the-blank answers are filled in.

We hope you find the Instructor and Student Editions to be useful tools in your classes. If you have any suggestions that would make the Instructor and Student Editions more effective, please send them to studentedition@peachpit.com.

HTML for the World Wide Web with XHMTL and CSS, Fifth Edition: Visual QuickStart Guide Instructor Edition

Introduction

A suggested schedule for a 16-week semester is to use 10–12 weeks working through the text while developing a first Web site. The remaining weeks of the semester can be used to apply what you've learned in the text to the development of one or more additional sites.

Learning Objectives

- Understand that HTML is text based.
- Explore the factors that may affect (X)HTML display.
- Understand the role of the W3C.
- Review the history of (X)HTML.
- Find the author's companion Web site for the book.

Get Up and Running Exercises

- Visit http://www.w3.org/
  - Explore at least the HTML, XHTML and CSS areas of the World Wide Web Consortium site to see what resources are available.
- Visit http://www.cookwood.com/html/
  - Explore the resources on the author's site, particularly the examples section and the extras section. There is material there that will help you and save you time while learning from this book.

Class Discussion Questions

- What options are available in writing Web pages for the real world, in which all levels of browsers, all versions of HTML, and various degrees of standards-compliance all exist side by side? Examine some pros and cons of each option.
  - Possibilities include writing various versions of HTML, writing XHTML, and whether or not to use CSS. The pros and cons involve browser support for standards and how Web pages look in older browsers.
- What does standards-compliant mean?
  - The World Wide Web Consortium (W3C) is the standards body for (X)HTML. It determines the specifications for the Web-based markup languages. Browsers and sites which meet these specifications are said to be standards compliant.
- What approach to writing Web pages will be taken in this book?
  - The book teaches XHTML and CSS, with a bare minimum of deprecated tags. The author suggests guidelines for choices based on audience, site size, and site purpose.
- Why is it significant that (X)HTML is text based?
  - Any computer can read text documents, thus making it a nearly universal medium.

Review Questions

Multiple choice

1. In this book, (X)HTML means

   A. Transitional XHTML

   B. Both HTML and XHTML

   C. XHTML only

   D. Not applicable to HTML

2. Cascading Style Sheets work in

   A. All browsers

   B. Standards-compliant browsers

   C. XHTML browsers only

   D. No browsers yet

Definitions

1. What is a tag?

   ☞ Keywords enclosed in < and > signs that indicate what kind of content is coming.

2. What is a browser?

   ☞ Software used to display a Web page.

3. What is a deprecated tag?

   ☞ Items marked for removal from the specifications. Their use is discouraged by the W3C.

4. What are standards?

   ☞ Specifications as to how (X)HTML and CSS should work.

Chapter 1: Web Page Building Blocks ◆ Study Guide

Learning Objectives

- Differentiate between elements, attributes, and values.
  - An element contains the opening tag, any attributes or values assigned to that tag, and the closing tag. An attribute contains information about the element. A value further defines the attribute, for example, a color attribute might have a value of "blue." In the tag `<img src="blueflax.jpg" width="300" />` the element is `img`, the attributes of `img` are `src` and `width` and the values are `blueflax.jpg` and `300`.
- Correctly write (X)HTML elements.
  - Use the examples on pages 26 and 27 to learn when to use greater than and less than brackets, quotation marks, equals signs, spaces, and forward slashes.
- Recognize block and inline elements.
  - Block level elements create an automatic line-break. Inline elements are displayed in the current line.
- Understand the Parent-Child Hierarchy.
  - When one element contains another, it is the parent of the contained element. Child elements are considered descendants of parent elements. The parent-child relationship extends only one level. If the element is removed by more than one level the two elements have an ancestor-descendant relationship. For example, in an unordered list, the first list item is a child of the parent `ul`. If that list item contains a second, nested, list then the list items in the second list would be descendants of the original (ancestor) `ul`.
- Write correct file names.
  - File names should be meaningful, all lowercase, contain no spaces, and have the correct extension.
- Define the parts of an absolute URL.
  - An absolute URL contains a scheme, a server name, possibly a path, and possibly a file name.
- Recognize relative URLs.
  - A relative URL describes the location of a file with reference to the location of the file containing the URL. The scheme and server name are omitted. Relative URLs can only be used to link files on the same server as the file containing the URL.

(Continued on the following page)

- Understand XHTML document structure and syntax.
  - XHTML requires `html`, `head`, `body`, `DOCTYPE`, closing tags, quoted values, and lowercase.
- Distinguish various `DOCTYPE`s.
  - XHTML uses strict, transitional, and frameset `DOCTYPE`s. The strict `DOCTYPE` does not allow deprecated tags. The transitional `DOCTYPE` allows deprecated tags. A framed site would use the frameset `DOCTYPE`.
- Understand the cascade.
  - Many styles are inherited from the parent element. The more specific a rule, the more important it is. With two rules of equal importance, the one that appears later wins.
- Understand standards and quirks modes.
  - Standards mode uses the `DOCTYPE` declaration on the page and interprets the page based on the specifications for that `DOCTYPE`. Quirks mode falls back to pre-standards (quirky) interpretation of the page.

Get Up and Running Exercises

- Visit *http://www.cookwood.com/html/*
  - ▲ The author has `DOCTYPE`s there to copy and paste onto your pages. Typing these by hand can be trying, so copying and pasting is a boon.
  - ▲ Locate the color chart on the inside back cover of the book and the Web-safe color chart at *http://www.cookwood.com/html/*. Also, make note of the 16 predefined colors you can refer to by name rather than by hexadecimal value which are listed on the inside back cover.
- Work with another student to use correct XHTML syntax to write a tag for the following image. The file is "alicewrites.jpg." Suitable `alt` text might be "Alice writes at her computer." The image is 300 pixels in width and 300 pixels in height. You want it to be aligned to the left of the text on the page. When you finish, compare your work with another pair of students.
  - One possible solution:
    ```
    <img src="alicewrites.jpg"
    alt="Alice writes at her
    computer" width="300" height="300"
    align="left" />
    ```
    The order of the attributes could be changed with no ill effects, although the convention is that the `src` attribute directly follows `"img"`.

Class Discussion Questions

- If a `body` element were defined to have black text, what color would you expect an `h1` to be?

  ☞ Assuming no other styles were applied to the `h1`, it would inherit the black attribute from the parent element.

- If you wanted to be sure your Web page would work well in the future, would you design for standards mode or quirks mode? Why?

  ☞ Since quirks mode supports deprecated tags, forward compatibility would be easier to achieve using standards mode. Forward compatibility means that code that meets standards now should continue to work properly in the future, thus reducing the problems that might arise going forward over time.

Review Questions

Multiple choice

1. Which of the following would cause the browser to use standards mode?

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

B. `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">`

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

D. `<html>`

2. The browser would not understand one of the following color names. Which is it?

A. Red

B. Turquoise

C. Teal

D. Maroon

3. Which code snippet uses correct XHTML syntax?

A. `<a HREF="aliceAtWork.html">`

B. `<a href="aliceatwork.html">`

C. `<a href=Alice at Work.html>`

D. `<A href="aliceatwork">`

4. Which of the following is considered a helper application?

   A. Multimedia

   B. JavaScript

   C. Image

   D. Plugin

5. What does (X)HTML do with spaces and returns in the text?

   A. Uses them as is

   B. Converts them to a single space

   C. Converts them to special characters

   D. Replaces them with symbols

Fill-in-the-blank

1. *http://www.mydomain.com* is a(n) absolute URL.
2. `<a href="aliceatwork.html">`is a(n) relative URL.
3. A paragraph is an example of a(n) block type element.
4. An italicized word in a paragraph is an example of a(n) inline type element.
5. The hexadecimal color #ffcc66 could be abbreviated to #fc6.
6. In the URL *ftp://www.mydomain.com*, the scheme used is ftp.

Definitions

1. What is an element?

   An element contains the opening tag, any attributes or values assigned to that tag, and the closing tag.

2. What is an attribute?

   An attribute defines information about the element such as size, color, alignment, or alt text.

3. What is a value?

   A value quantifies the attribute, for example, a color attribute might have a value of `"blue."` Values must have quotation marks surrounding them.

Learning Objectives

- Identify the software needed to create Web pages.
  - A word processor or text editor is all that is needed.
- Identify the correct way to save a Web page.
  - Web pages must be saved in text-only format with either the .htm or .html extension. The file name should be in lowercase and have no spaces.
- Understand how to create a default page.
  - Most servers use `index.html` as a default page in each folder. Microsoft servers may use `default.htm` as the default page name.
- Identify the "home" page.
  - The default page at the top level of the Web directory is the site's home page.
- Distinguish between opening a page for viewing and opening a page for editing.
  - Double clicking a page will cause it to open in the browser for viewing. To open the page for editing, open it using the word processor File menu.
- Be familiar with ways to view the source of other designers' pages.
  - Depending on the browser, choose View > Source or View > Page Source.

Get Up and Running Exercises

- On paper, sketch the structure of a site called "mysite." Plan this site so that it is ready for these types of content: images, news, ads, contacts.
  - ▲ Sketches can be rough drawings similar to those on page 48. A home page, subfolders, and arrows indicating navigation should be included.
- On your computer, create the framework for a site called "mysite." Organize this site so that it is ready for these types of content: images, news, ads, contacts. Create a blank text document to be the site home page.
  - A glance at the student's Finder or My Computer view should reveal a main folder called "mysite" containing a default home page and subfolders for images, news, ads, and contacts. There should be a text document saved as `index.html` in the main folder, although the page may be blank at this point.
- Visit *http://www.cookwood.com/*. How does the author organize material on the Web site?
  - There are subfolders for html, html5ed, perl, xml, and personal. Some of those subfolders are even more finely differentiated, such as an "examples" and an "extras" subfolder inside the html5ed folder.

Class Discussion Questions

- What are some suggestions for working with Microsoft Word to create Web pages?

  ☞ Don't use the "Save as Web Page" command found in the File menu. Instead, choose File > Save As and then choose Text Only from the type box. In some versions of Microsoft Word, it is necessary to go to Preferences and choose "Straight Quotes" instead of "Smart Quotes."

- Is it better to use the .htm or the .html file extension?

  ☞ Most computers can understand either extension. It is a matter of personal choice and consistency.

- Are there any advantages to having a default page in every directory on your site?

  ☞ Every directory can have a default page, which will prevent the browser from displaying a list of the directory's contents to visitors. There might be things in a directory that were not for public viewing, or not ready for visitors to see. Not having a default page in the directory opens up the directory for public view. Having a default page also allows a shorter URL because the default page file name does not have to be typed or recalled. In a large site, there could be several files named `index.html`, but each would be in a different directory.

Review Questions

Multiple choice

1. Which would be the best name for a folder in your Web site to hold recipes?

   A. My Recipes

   B. recipes

   C. RECIPES

   D. `recipe section`

2. How can you view your newly created Web page on your own computer while you work on it?

   A. In the browser, choose File > Open > Open File

   B. In the browser, choose File > Open > Open Location

   C. It has to be on a server first

   D. In the word processor, choose Open > As Web Page

3. How can you learn how other designers made their Web page?

   A. **View the source code in the browser**

   B. Contact the designer by email and ask for detailed directions

   C. Use a search engine

   D. Read their "About this Site" information

4. What would be a good way to start a new Web site?

A. Sketch out a site plan.

B. Create a new folder on your computer in which to store all the site files.

C. Decide on a naming system for pages, images, and folders.

D. All the above.

5. What might be an advantage of using an editor such as BBEdit or HomeSite over an editor such as Notepad or SimpleText?

A. You can save as text.

B. There are syntax checkers built in.

C. You can type the tags.

D. The browser will display what you create.

Definitions

1. What is a default page?

☞ A default page is a page that the browser opens automatically. The name of the page does not have to be typed in the Location bar or added to the URL for the browser to display it. The default page is normally named `index.html` and is considered the home page for the site or the main page for a subsection of a site.

2. What is the source code?

☞ The source code is the (X)HTML that the browser uses to create the page it displays to the viewer.

Learning Objectives

- Beginning in Chapter 3, students will be given Get Up and Running Exercises activities that require them to make (X)HTML pages. The exercises in Chapters 3–7 can use dummy content and be viewed as practice only. After Chapter 7, students have a grasp of enough basics to use content they intend to develop into one or more viable Web sites over the remainder of the course.

- Select an appropriate `DOCTYPE` to start a page.
  - Use one of the transitional `DOCTYPE`s supplied on page 60 to get started on the first page.
- Identify and create the `head` and `body` section.
  - Web pages have two sections: `head` and `body`. The page can have only one `head` and only one `body`. The browser displays only the information in the `body` section to viewers.
- Use a character encoding declaration that matches the way the file is saved.
  - The default for Windows would be `<meta http-equiv="content-type" content="text/html;charset=windows-1252" />` and for Macintosh it would be `<meta http-equiv="content-type" content="text/html;charset=x-mac-roman" />`
  - Mac users who use Fetch to upload files will find that the file encoding will be changed to ISO-8859-1 by Fetch. In the Chapter 25 tips for uploading files with Fetch, the author explains how to deal with this. Mac/Fetch users should decide now whether to use the default MacRoman or the ISO-8859-1 character encoding in their `meta` tags.

(Continued on the following page)

- Create a document title.
  - The title will appear in the browser's top bar, but not in the document window. Titles, headings, and file names may be a source of confusion for students, so stress where the title actually appears in the browser.
- Create headers.
  - Insert `h1`, `h2`, and `h3` elements in the `body`.
- Create paragraphs.
  - In addition to the opening `<p>` tag, a closing `</p>` tag is required for each paragraph.
- Use `class` and `id` attributes to name elements.
  - Adding `class` and `id` attributes at this point is primarily meant to learn the syntax. The usefulness of `class` and `id` will become apparent later when adding styles and JavaScript.
- Create `divs`.
  - The primary emphasis at this point is to learn what a `div` is and the syntax for using it. The power of `divs` will be explored later when adding styles via the `class` and `id` attributes.
- Create `spans`.
  - Again, the primary emphasis at this point is to learn what a `span` is and the syntax for using it. The power of `spans` will be explored later when adding styles via the `class` attribute.
- Create line breaks.
  - Distinguish between the effect of a `br` and a `p`.
- Create comments.
  - Comment syntax takes this form: `<!–comments go here–>`
- Create element `titles`.
  - The `title` element is considered an important aid to accessibility because it can supply additional information about a page element. The `title` attribute should not be confused with the document title. In a link, a title would look something like this `<a href="page.html" title="additional information about the destination of the link">`. It appears like a tool tip when the mouse is over the link text.

Get Up and Running Exercises

- Visit http://www.w3.org/International/O-charset-lang.html
  - ▲ Examine the common character set codes and make note of any that you might want to use.
- Make a Web page.
  - ▲ Make sure your page contains all of the following: `DOCTYPE`, character encoding, `head` section, `body` section, and `title`. Also, include examples of the following elements: `h1`, `h2`, `h3`, `p`, `div`, `br`, and `comments`.
- Work together.
  - ▲ Work with another student. Divide a paper in two sections. In one section, list every page element from this chapter that is an essential requirement on any (X)HTML page. In the other section, list every page element from this chapter that is optional on an (X)HTML page. Then discuss when and why you would choose to use the optional elements.

Class Discussion Questions

- The browser displays the material in the `body`, but the `title` is placed in the `head`. How does a viewer see the `title`?
  - ☜ In most browsers, the `title` appears in the title bar of the window.
- Why is it important to write an effective page title?
  - ☜ The `title` can influence search engine ranking based on the words it contains. Therefore, important keywords about the page content need to be included in the title. The `title` may be displayed in search engine results. The `title` is also used in History lists, Bookmark lists, and Favorites lists.
- Discuss the essential and optional page elements listed by pairs of students in the Get Up and Running Exercise.
  - ☜ Use this discussion to ensure that students know each element every page must have, and the uses of the other tags and attributes covered so far.

Review Questions

Multiple choice

1. Which is the default character encoding for English Windows?

   A. iso-8859-5

   B. iso-8859-2

   C. x-mac-roman

   D. windows-1252

2. Choose the best title for a page about an album called "Real Life" by an band called "Live Life" on a Web site called "Rockers of the 80s."

   A. Live Life albums

   B. Rockers of the 80s: Live Life: Real Life album

   C. Rockers of the 80s: albums

   D. albums

3. Which is a block element?

   A. `span`

   B. `div`

   C. `class`

   D. `id`

4. Which is an inline element?

   A. `span`

   B. `div`

   C. `p`

   D. `h1`

5. How many `body` elements can a Web page have?

   A. Any amount needed

   B. No more than two

   C. Only one

   D. One or more

Fill-in-the-blank

1. The section of an (X)HTML document that contains document information unseen in the browser window is the `head`.

2. Headers are hierarchical block elements that divide a page into topics and subtopics.

3. A tool tip would appear for an element if it had a title attribute.

Learning Objectives

- Use `b`, `i`, `big`, `small`, `tt`, `code`, `kbd`, `samp`, `pre`, `blockquote`, `q`, `sub`, `sup`, `ins`, `del`, `abbr`, and `acronym` to format text.
- Create a title for an `abbr` or `acronym`.
  - Although the `abbr` and `acronym` tags are only supported by newer browsers, adding the `title` attribute is the key to making the tag work, because it adds explanatory text about the abbreviation or acronym.
- Distinguish between `b`, `i`, `em`, and `strong`
  - The use of `b` and `i` creates visual formatting, while the use of `em` and `strong` creates logical formatting. The difference is significant to users of technology such as aural screen readers.
- Distinguish between various methods of making text appear in italics.
  - The browser displays various tags in italics: `i`, `em`, `cite`, `dfn`, `var`, `address`.
- Apply a `lang` attribute to text in quotation marks.
  - The language code chosen will determine the type of quotation marks used (in standards-supporting browsers).

Get Up and Running Exercises

- Format a Web page.
  - Start by creating a new (X)HTML page. (Or use the one you started in Chapter 3.) Add several new paragraphs of text to the page and use it to experiment with the effects of the tags learned in Chapter 4. Use `b`, `i`, `big`, `small`, `tt`, `code`, `kbd`, `samp`, `pre`, `blockquote`, `q`, `sub`, `sup`, `ins`, `del`, `abbr`, and `acronym`.
- Format some more.
  - Now use the following tags on your page: `em`, `strong`, `cite`, `dfn`, `address`.
- Revisit the W3C.
  - Visit *http://www.w3.org/International/O-charset-lang.html* to study the two-letter language codes. Use at least one language code other than English in a `q` tag to see the effect.

Class Discussion Questions

- What is the difference between the `cite` tag and the `cite` attribute?
  - The `cite` tag is used to mark a citation. It has the effect of creating italics. It might be used, for example, to indicate the title of a book. The `cite` tag brings with it some logic that includes the notion of a citation and gives additional meaning to the marked up title, while at the same time displaying a title in the traditional italic font.
  - The `cite` attribute is used to provide a hypertext reference to the source of a `blockquote`.
- There are several ways to make text appear in italics in the browser. When is it appropriate to use each one?
  - Discuss the appropriate uses of `i`, `em`, `cite`, `dfn`, `var`, `address`
- Compare logical formatting with visual formatting using `b` and `strong`.
  - Visual formatting (`b`) creates a bold effect that can be seen visually. Logical formatting (`strong`) also conveys visual information (usually bold text). In addition, logical formatting provides logic about the text that is conveyed if the text is not viewed visually. For example, an aural screen reader would voice `strong` text in a strong way, perhaps louder, but `b` text would receive no special emphasis.

Review Questions

Multiple choice

1. If you wanted to explain the meaning of W3C the first time you used it on a Web page, what tag would you use?

A. `cite`

B. `abbr`

C. `dfn`

D. `acronym`

2. If you wanted to include several paragraphs from *War and Peace* on a Web page, what tag would you use?

A. `acronym`

B. `q`

C. `blockquote`

D. `em`

3. If you wanted to display a poem typed in the shape of a diamond on a Web page, what tag would you use?

A. `pre`

B. `sub`

C. `small`

D. `cite`

4. Which tags would you most likely use to edit a Web page written by a co-worker?

A. `em` and `strong`

B. `sub` and `sup`

C. `big` and `small`

D. `ins` and `del`

5. When would a monospaced font be a good choice for a Web page?

   A. When writing computer code

   B. When quoting a book title

   C. When writing a street address

   D. When indicating a language code

Fill-in-the-blank

1. The characters to type to make a less-than bracket appear on a Web page are <

2. The characters to type to make a greater-than bracket appear on a Web page are >

Chapter 5: Creating Web Images ◆ Study Guide

Learning Objectives

- Identify the image formats that are recognized by browsers.
  - These include GIF, JPEG, and PNG.
- Recognize the Web-safe colors.
  - A chart of Web-safe colors is available at *www.cookwood.com/html/colors* The chart at *www.cookwood.com/html/colors* could be bookmarked as a reference students could use when working with software such as Photoshop or Fireworks. Here's an easy trick for determining whether a color is Web-safe. All Web-safe colors are a combination of 00, 33, 66,99, FF, or CC. So, for example, #CC0033 is a Web-safe color, but #C400FE is not.
- Explain how to decide if Web-safe colors are necessary.
  - Use the server Web logs to gauge the audience for the Web pages to see if visitors' monitors are capable of displaying more than 216 colors.
- Understand the relationship between size and resolution.
  - Monitor size and resolution as well as image size and resolution need to be understood. In terms of monitors, Windows measure 96 pixels per inch while Macs use 72 pixels per inch. This may create what appears to be a difference in image size. And an image may look much larger or smaller than the student intended on a monitor with 800 x 600 resolution vs. one with 1024 x 768 resolution. When scanning images, the original scan may be done at 150 or 300 dpi, while the image optimized for the Web should have only the necessary 72 pixels per inch in resolution.
- Understand how to make images that download quickly.
  - Image size is a factor, as well as image compression. Other factors include reducing the number of colors, interlacing in GIF or PNG format, and blurring in JPEG format.
- Make an image with transparency.
  - Only GIF and PNG allow transparency.
- Make an animated GIF.
  - This process will depend on the available software. Some software that allows you to do this includes Adobe ImageReady, Macromedia Fireworks, and Paint Shop Pro.

Get Up and Running Exercises

- Gather a few images to use for practice. Possible sources are mentioned on page 89.
  - This might be a good time to start encouraging students to develop organizational habits that will help in future Web site projects. Have students save source images in one folder and optimized images for use on Web pages in another. Both folders should be inside the folder holding their practice (X)HTML documents.
- Create your own images.
  - If you have imaging software available such as Photoshop or Paint Shop Pro, work with students on basic image production. Small images suitable for buttons, some text in a banner graphic, an image scanned from a photo, or a set of images for an animated GIF would all be appropriate exercises.

Class Discussion Questions

- What factors should be considered when deciding on an image format?
  - The number of colors needed, the size and resolution of the image, transparency requirements, and animation are some factors that should be mentioned. For solid colors, GIFs are considered the best choice because the number of colors can be reduced to only those needed, making the file size smaller. For thousands of colors, as in photographs, the JPEG format usually works better. Only GIF and PNG can have a transparent background.
- What are some of the restrictions in using free images?
  - They may be for personal use only and not for modification. They may have copyright restrictions. A license may be required. Most Web sites that offer free images clearly state the conditions under which they can be used. The license agreements of CDs with clip art state how the images may be used.

Review Questions

Multiple choice

1. What mode should images for the Web use?

   A. CMYK

   B. Grayscale

   C. RGB

   D. PNG

2. How can you achieve a smooth border on text using a transparent background?

   A. Dither the image

   B. Convert individual colors to transparency

   C. Invert the colors

   D. Set the matte to match the page's background color

3. What format makes the most sense for an image with thousands of colors?

   A. PNG

   B. JPEG

   C. GIF

   D. BMP

4. What effect does interlacing an image have?

   A. The image appears at gradually increasing resolution

   B. The image appears line by line

   C. The image appears dithered

   D. The image appears in only Web-safe colors

5. Which is an option that may be used to help compress JPEG images?

   A. Reduce the number of colors to 8

   B. Apply a slight Gaussian Blur

   C. Convert individual colors to transparency

   D. Interlace the image

6. How do you create an animated GIF?

   A. Create a movie

   B. Create scripts to show layers

   C. Create with transparency

   D. Create a series of images that play one after another in the same graphic element.

Fill-in-the-blank

1. There are 216 colors that are considered to be Web safe.
2. Mixing two colors to produce a missing color is called dithering.
3. The fastest way to select an entire layer is to choose the Select All command.
4. Most monitors display images at about 72 pixels per inch.

   (Accept 72, 96, or numbers up to 100.)

Chapter 6: Using Images ◆ Study Guide

Learning Objectives

- Understand how to insert an image on a page.
  - Use the `img` tag.
- Understand the `img` tag attributes.
  - Attributes that should be added include `alt`, `width`, and `height`. The `title` tag may be used to add additional information. Although deprecated, the `align` attribute is still useful as well. In a later chapter, styles will be used to align images using `float`.
- Link a thumbnail image to a full-sized version.
  - Explain that they will need to nest the image in an `a` tag.
- Understand how to stop text from flowing around floated images.
  - Although deprecated, the `clear` attribute of the `br` tag is still useful in this context. In Chapter 11, styles will be used to achieve this.
- Select a way to add white space around an image.
  - Although deprecated, the `hspace` and `vspace` tags are still useful to create white space. Alternatively, the image can be created with white space as part of the image. In Chapter 10, styles will be used to create white space around an image.
- Identify ways to align images with lines of text.
  - Although deprecated, the various line alignment options are still useful. In Chapter 10, styles will be used to create alignment.
- Use a horizontal rule and its attributes.
  - All the attributes of `hr` have been deprecated. In Chapter 11, styles will be applied to horizontal rules. The `hr` tag itself is not deprecated.

Get Up and Running Exercises

- Create a new blank (X)HTML document or use one of the practice pages you started in an earlier chapter. Add some text to the page before you begin adding images. For every image you add in this exercise, be sure to include `alt`, `title`, `width`, and `height` attributes. First add two thumbnail images and link them to full-sized versions of the images. Next, add an image that can have no text flowing around it. Then add an image which has text flowing around to the right of the image. Finally, add an image which has text flowing around to the left of the image.

  ☞ If students have a limited number of images available at this point, the same image can be used over and over to test different techniques.

- Try using `vspace` and `hspace` with the images you added to the page. Also, use the small images (the thumbnails) to test the effects of the line alignment choices: `texttop`, `top`, `middle`, `absmiddle`, `bottom`, and `absbottom`.

- Add a horizontal rule to your page that is centered and is 50% of the page width.

  ☞ The students should do something like this: `<hr align="center" width="50%" />`. The order of the `align` and `center` attributes can be changed with no harmful result.

Class Discussion Questions

- Why is adding a width and height to an `img` tag so important?

  ☞ The browser will render the text around the image even before the image is finished downloading, therefore, visitors have something to read while they wait.

- Why is it normally better to use graphics software to size images rather than using the `width` and `height` attributes in the (X)HTML?

  ☞ Using the (X)HTML to make an image appear smaller than actual size does not reduce the image's file size or the time required to download it. Using this method to make an image appear larger than actual size may result in a grainy appearance. An image might become distorted by appearing too wide or too tall if the width and height were not proportionate to the actual size of the image.

- What are some reasons to use thumbnails?

  ☞ If there are a number of images on a page, such as a gallery of photos, creating thumbnails provides a quick download of images that can be linked to larger versions for optional viewing. It allows the visitor to pick and choose which images to download at full size. Thumbnails pack a lot of graphic information on a page and make it easier for a visitor to navigate to the information they want quickly.

Review Questions

Multiple choice

1. If an image were used for formatting only, how would you handle the requirement for `alt` text?

   A. `alt=""`

   B. leave it out completely

   C. `alt="formatting image"`

   D. `alt="_"`

2. If you want to be sure tooltips appear in every browser, what attribute would you add to an `img` tag?

   A. `alt`

   B. `tip`

   C. `title`

   D. `src`

3. When does `alt` text appear in every browser (assuming there is no `title` attribute for the element)?

   A. When the mouse is over the image

   B. When the image does not appear

   C. When the image is clicked

   D. When the `title` attribute is left empty

4. What happens when you use the attribute `align="left"` with an image?

   A. The image will be at the top of the line.

   B. The image will be on the next clear line on the left margin.

   C. The image will be on the right with text flowing around to the left.

   D. The image will be on the left with text flowing around to the right.

Fill-in-the-blank

1. A `clear` attribute can be added to a `br` tag.
2. To add white space to both the left and right side of an image, use the `hspace` attribute.
3. To add white space to both the top and bottom of an image, use the `vspace` attribute.
4. To create a solid appearance in a horizontal rule, use the `noshade` attribute.
5. For a horizontal rule, the `width` attribute can be expressed in either pixels or percentage.

Chapter 7: Links ◆ Study Guide

Learning Objectives

- Write the destination, the label, and the target in Web links.
  - Destinations are defined by URL. The label is the clickable text or image. The target specifies a particular window or frame in which the link will open.
- Write links to other Web pages and to particular sections of documents.
  - The anchor `name` attribute creates a link to a document section.
- Create a default link target.
  - The `base` tag placed in the document `head` is used to set a default target.
- Create links for FTP, NEWS, TELNET, and EMAIL.
  - In links to FTP, NEWS, and TELNET servers, or in links to EMAIL addresses, the `href` attribute of the `a` tag refers to the specified destination.
- Understand how to use `accesskey` and `tabindex` to create navigation shortcuts.
  - Care is required for `accesskey` so that standard keyboard shortcuts are not overridden. Setting tab order with `tabindex` is often an accessibility aid.
- Create a client-side image map.
  - An image map is an image with one or more clickable links, sometimes called hot spots, defined on it. These areas are defined using x and y coordinates in just the same way that you find a street on a road map by using coordinates to hone in on the spot you are seeking. Double-check the imaging software used for finding the x and y coordinates to be sure pixels are the measurement unit.
- Understand the steps in creating a server-side image map.
  - Server-side image maps are less commonly used and depend on obtaining information from the particular Internet service provider involved. Server-side image maps are so rarely used, it is probably enough that the students know that they would have to work with the server administrator should they ever want to implement one.

Get Up and Running Exercises

- Create a new (X)HTML document. Follow these steps to complete a linking exercise.
  1. Use an `h1` tag to create the page heading *Linking Exercises*.
  2. Use `h2` tags to create headings down the page called *Links to Another Web Page, Links to Sections of This Page, Links that Open in New Windows, Other Types of Links,* and *Image Map Links*.
  3. Add some dummy paragraphs under each of the `h2` subheadings to give the page some scrollable length.
  4. Under the subhead *Links to Another Web Page,* write links to the following search engines: Google, Yahoo, Alta Vista, Excite.
  5. Add an anchor name directly in front of each of your `h2` subheads. Then, under the subsection called *Links to Sections of this Page,* write links that lead directly to each section of your current document.
  6. Under the subhead *Links that Open in New Windows,* write a link to Google that opens the Google page in a new window.
  7. Under the subhead *Other Types of Links,* create the following links:
     - A link labeled "Download Now" that links to ftp://ftp.site.com
     - A link labeled "Read the Article" that links to news:somearticle
     - A link labeled "Email me" that links to your email address
     - A link labeled "Log in" that links to telnet://someschool.edu

  ☞ Note that testing these links in the browser, except for the email link, will produce error messages. Real ftp, news, and telnet addresses can be used if preferred.
  8. Add an image suitable for a client-side image map under the subhead *Image Map Links*. Use imaging software to map the coordinates, and then write the (X)HTML map to create the clickable regions of the image. Add the area tags to create the links.

     ☞ Provide an image for the image map exercise so that students can all work on the same image when learning to chart the x and y coordinates. Make sure `alt` text is included. Including `target` and `accesskey` attributes is optional.
  9. Your page has quite a few links now. Tab through them to see what the default Tab order is. Then change that order by adding a `tabindex` value of `"1"` to the email link.
  10. Use the `accesskey` attribute to create a shortcut to the link you wrote to Yahoo.

Class Discussion Questions

- What are some guidelines for writing the labels for links?
  - Some suggestions include the following: write meaningful text that tells what will be found by clicking the link, avoid Click Here links, use brief labels rather than lengthy labels. Many visitors scan a page looking for the blue underlined text, which is the default link appearance. Therefore, labels that clearly spell out where they lead are simply good navigation clues. Underlined text is difficult to read, so lengthy clickable text in a link is a problem for visitors.
- Why is it a good idea to have a link to your site's home page on each page of your site?
  - In terms of linking, other sites may sometimes link to specific pages within your site, a practice known as deep linking. A home link can help these visitors find your main page. Also, visitors may want to return to the home page in search of something.
- Can you think of a way to use tab order to promote accessibility?
  - Tab order can be set to allow visitors to skip directly to the most important menu options. For visitors who can only navigate by tabbing (for example, the visually impaired), this can save time.
- Can you think of a way to use anchors to promote accessibility?
  - Links that allow visitors to move directly to the desired section of the page aid accessibility. A frequently used accessibility link is to use a tiny transparent graphic linked to an anchor placed next to the menu choices or the main page content. The `alt` text for the transparent link would say something like "skip to menu" or "skip to main content" and would be read aloud by screen readers.

Review Questions

Multiple choice

1. Which tag sets a default frame as a target?

   A. `base`

   B. `blank`

   C. `window`

   D. `href`

2. Which attributes of an element create an anchor?

   A. `id` and `name`

   B. `target` and `name`

   C. `id` and `href`

   D. `id` and #

3. What are the possible values for the `shape` attribute of an `area` tag?

   A. square, circle, rect

   B. rect, circle, poly

   C. coords, href, alt

   D. rect, circle, square

4. What coordinates are needed to represent a circle in an image map?

   A. The center of the circle and the perimeter

   B. The top left and the center

   C. The center of the circle and the radius

   D. Each point on the circle

5. Where should a `usemap` attribute be placed?

   A. In the map label

   B. In the coordinates

   C. In the cgi-bin directory

   D. In the `img` element that corresponds to the image map

Fill-in-the-blank

1. The type of image map that is interpreted by the user's browser is a client-side image map.
2. To link to a particular place on a page use a(n) anchor.
3. To make a link appear in a given window or frame, use a(n) target.
4. The `href` attribute stands for hypertext reference.

Definitions

1. What is the distinction between an image map and a graphic link?

   ☞ An image map is a graphic with several clickable regions defined in it. A graphic link is an entire image used as a link, frequently a button-type link.

2. What are the essential parts of a link?

   ☞ A link has a destination, a label, and possibly a target.

Chapter 8: Creating Styles ◆ Study Guide

Learning Objectives

- Understand the syntax of a CSS rule.
  - Styles consist of selectors and declarations. The declaration is in curly brackets and consists of a property and value. For example: `h1 {color: red;}`.
- Write CSS rules.
  - Understand the appropriate application of each type of style rule.
- Assign the same style rule to more than one element.
  - Remember to use commas between the names of the selectors.
- Create style rules for link states.
  - The order of `a` rules should be `link`, `visited`, `focus`, `hover`, `active`. Otherwise they may fail to behave as expected in certain states.

Get Up and Running Exercises

- Write a style rule for an `h2` that would produce an `h2` with a blue background and white text.
  - `h2 { background: blue; color: white;}`
- Write a style rule that would make only paragraphs identified as belonging to the `class` note appear with fuchsia text.
  - `p.note {color: fuchsia;}`
- Write a style rule that would allow you to make words in paragraphs tagged with `strong` appear red.
  - `p strong {color: red;}`
- Write a style rule that creates a class called legal that would make any text it was applied to green.
  - `.legal {color: green;}`
    - Note that the period must precede the class name.
- Write a style rule that creates an `id` called legal that would make text appear green.
  - `#legal {color: green;}`
    - While `class` can be used many times on a page, `id` can only be used one time per page and usually identifies a block level element such as `div`.
- Write a style rule that makes the first line of a `p` appear red.
  - `p: first-line {color: red;}`

(Continued on the following page)

- Write a single style rule that makes `p`, `td`, `div`, and `li` elements appear red.
  - `p, td, div, li {color: red;}`
- Write style rules for all the pseudo states of the `a` tag. Change the color of the text in every state.
  - Every rule would follow this format with differing colors. The rules should be in LVFHA order.
    - `a:link {color: red;}`
    - `a:visited{color:gray;}`
    - `a:focus{color:blue;}`
    - `a:hover{color:red;}`
    - `a:active{color:olive;}`

Class Discussion Questions

- What are the key parts of style rule syntax?
  - The selector name is followed by a declaration in curly brackets. Inside the curly brackets are various properties and values. The property and value are separated by a : (colon). After each property-value pair there is a ; (semi-colon).
- What is the difference between these two style rules?
  - ▲ `p em {color: red;}`
  - ▲ `p, em {color: red;}`
  - In the first rule, only the `em` text in a `p` would be red. In the second rule, all `p` text and all `em` text would be red.

Review Questions

Multiple choice

1. Which is a style rule for a class?

   A. `.bills {color: blue; background: red;}`

   B. `#bills {color: blue; background: red:}`

   C. `div#bills {color: blue; background: red:}`

   D. `p bills {color: blue; background: red:}`

2. Which would style the `first-child` `p` of the `div` with an id of bills?

   A. `#bills p: first-child {color: blue;}`

   B. `p div: first-child {color: blue;}`

   C. `div#bills {color:blue;}`

   D. `p #bills: first-child {color: blue;}`

Fill-in-the-blank

1. The selector defines which elements are affected by a style rule.
2. The property-value pairs that specify a style rule are the declaration.
3. In a property-value pair, the property is separated from the value with a colon. Multiple property-value pairs in a single declaration are separated by semicolons.
4. In the relationship hierarchy, an ancestor (or parent) is the name of the element that contains the element you wish to format.
5. The correct order for rules for the link states is: LVFHA or `link, visited, focus, hover, active`.

Definitions

1. What is a descendant selector?

☞ A selector based on an element's ancestor.

2. What is a child selector?

☞ A selector based on an element's parent.

3. What are pseudo-elements?

☞ Intangible elements that don't exist in the document itself, such as `hover` or `first-line`. Pseudo-elements are not built into the structure of the document.

4. What does a format based on an adjacent sibling do?

☞ It styles the sibling directly following the selected sibling. The two must be within the same parent element.

Chapter 9: Applying Styles ◆ Study Guide

Learning Objectives

- Understand how to create an external style sheet.
  - Save the style sheet as text and give it the .css extension
- Understand how to link to an external style sheet.
  - Use the `link` tag to link to an external style sheet.
- Understand how to link to an alternate style sheet.
  - More than one style sheet can be linked to a page, giving visitors alternatives. A common use of alternative style sheets gives the visitor the option to select a larger (or smaller) font size.
- Understand how to use internal style sheets.
  - Style rules would be in the document `head` and affect only the page they were on.
- Understand how to import an external style sheet.
  - The `@import` rule is used for this. It is useful in hiding certain styles from Netscape 4.x, which does not support the `@import` rule.
- Understand how to apply styles locally.
  - Local styles, or inline styles, are added within the tag to be styled in the flow of the (X)HTML.
- Explore how to use comments in style rules.
  - CSS comments use the `/*some comment*/` syntax.

Get Up and Running Exercises

- Open a blank text document. Save it in the same folder where you will save your (X)HTML pages for this chapter. Save it with the file name *mystyles.css*.
  - ▲ Define style rules for `h1`, `h2`, and `p`. Make each element display in a different color to make the effect of your styles very obvious.
    - ☞ Students can go back to the style rules written in the last chapter and can use the examples provided in this chapter to write styles for color, border style, and background color.
- Link your new style sheet to one of your existing (X)HTML pages, or create a new (X)HTML page for this exercise.
  - ▲ Use the `link` tag in the `head` of the (X)HTML document.
- Write an internal style for `h1` in the `head` of the (X)HTML document you have linked to *mystyles.css*. In the internal style, change the color of the `h1` to a different color from the color you used in Make sure that you put the internal style rule after the link to the external style sheet.
  - ☞ Students should observe that the rule in the internal style sheet, being closer to the `h1` in the cascade, is the rule that determines the color of the `h1`.
- Open another blank text document. Save it in the same folder where you saved your (X)HTML pages for this chapter. Save it with the file name *not_nn.css*.
  - ▲ Define a style that adds a border to an `img` in *not_nn.css*. Now import *not_nn.css* to the same (X)HTML page where you linked to *mystyles.css*.
    - ☞ Students should put the `@import` rule in the `head` of the document before the `link` element. After they observe the results in both Netscape and IE, have them change that order and put the `link` element first and the `@import` element second and check the results again.
- Finish the exercise by finding an `h2` element on your (X)HTML page. Add an inline style rule to the `h2` that will change the color.
  - ☞ Students should observe that the inline style rule, being closer to the `h2` in the cascade, is the rule that determines the color of the `h2` element.

Class Discussion Questions

- If more than one style rule applies to a particular element, what happens?

  ☜ According to the location rules of the cascade, the latest style rule wins.

- What are different uses for comments in style rules?

  ☜ They can be used to leave notes and reminders. They can be used to hide styles by commenting them out while testing various effects.

- Many style rules can be listed in a single style sheet. What is the value of having more than one style sheet linked to a page?

  ☜ Alternative style sheets can be used to give viewers options regarding colors and sizes. Different style sheets can be tailored for different browsers and linked or imported accordingly. Style sheets for print and other variations in display are possible (discussed in Chapter 12).

- Many style rules can be listed in a single style sheet. What is the value of having all the style rules in one place?

  ☜ Site wide changes are possible using a single set of style rules.

Review Questions

Multiple choice

1. Which links to the style sheet *main.css*?

A. `<link rel="stylesheet" type="text/css" href="main.css" />`

B. `<link rel="stylesheet" type="text/html" title="main" href="main.css" />`

C. `<style type="text/css" >main.css</style>`

D. `@import "main.css"`

2. Which would make an `h1` red?

A `<h1 color:red>`

B. `<h1 style="color:red;">`

C. `<h1> {color:red}`

D. `<h1 style="red">`

3. An external style sheet contains a rule making all `p` elements red. An internal style later on the page contains a rule making all `p` elements blue. What color would the `p` elements on the page be?

A. Red

B. Purple

C. It depends on which `p` it is

D. Blue

4. How would you change the color of a single subhead on one page of your site?

A. Use the `@import` rule

B. Write a local style

C. Put it in the head

D. Use mystyles.css

(Continued on the following page)

5. What is one way to improve the viewing experience of visitors who might be using version 4 Netscape Navigator browsers?

   A. Post a "best when viewed in Internet Explorer" notice on your page.

   B. Post a notice on your page encouraging viewers to upgrade their browsers.

   C. Don't use any styles.

   D. Put the style rules Netscape 4.x doesn't support in an imported style sheet.

Fill-in-the-blank

1. A style sheet is saved with the .css extension.

2. An external style sheet is a separate text document that is linked or imported to an (X)HTML page.

3. An internal style sheet is written in the `head` of a particular (X)HTML page.

4. A local style is written directly in the affected tag.

5. The location rules that determine the importance of various styles that might apply to a particular page element are part of the cascade.

   For more details about how the cascade works and how items are "weighted" by inheritance, specificity, and location, refer to pages 42-43 and *http://www.w3.org/TR/REC-CSS2/cascade.html*.

Chapter 10: Formatting with Styles ◆ Study Guide

Learning Objectives

- Understand how to set a style for a font family.
  - Specify more than one font (usually three) and a default font such as serif or sans-serif with `font-family`.
- Describe how to embed fonts on a page.
  - This only works in limited situations.
- Understand how to write style rules to make text in italics, in bold, in varying sizes, and with varying line height.
  - Style declarations for these text styles are `font-style`, `font-weight`, `font-size`, and `line-height`.
- Understand how to write font styles in shorthand.
  - Set `font-family`, `font-style`, `font-weight`, `font-size`, and `line-height` all at once. The shorthand that does this would look something like `p {font: normal bold 12px/17px Verdana, Helvetica, sans-serif;}`
- Review how to set text color and text background.
  - Students have used `color` and `background` style rules in previous chapters. This chapter also shows how to use an image as a background.
- Understand how to control tracking and kerning, white space, and text alignment.
  - Style declarations for tracking and kerning are `word-spacing` and `letter-spacing`. The `white-space` declaration can be used to retain a document's original spaces and returns. Text alignment (`text-align`) options are left, right, center, and justify.
- Understand how to use both positive and negative indents.
  - Indenting declarations use `text-indent` with a length expressed as a positive or negative number of ems or pixels. A negative number would create a hanging indent.
- Learn to change text case, create small caps, and use text decorations.
  - Case can be set to all uppercase or all lowercase with the `text-transform` declaration. Small caps are set with `font-variant` (and can also be set as part of the shorthand `font` property). The possibilities for `text-decoration` include `underline`, `overline`, `line-through`, `blink`, and `none`.

Get Up and Running Exercises

1. Create a new (X)HTML document with text in various headings (like `h1` and `h2`), divs, and paragraphs. Make links to three of your favorite Web sites. Give one of the divs the id "hanging."
2. Then create a new style sheet. Save both the style sheet and the (X)HTML file in the same folder and link the style sheet to the (X)HTML page with a `link` tag. Use some of your own ideas to format the text, but be sure to use each of the following at least once in your new style sheet.
3. Set all the paragraphs to display at 12px in Arial, Helvetica, or Geneva sans-serif fonts. Make the paragraphs have a line-height of 18px. Make the paragraph text the color #999999. Write this style rule in the shorthand form described on page 165.
4. Make a different set of font declarations for the `h` tags (like `h1` and `h2`), and give them a background. The background for the headings could be either a solid color or a small image. If you use an image, decide whether to have it repeat or not. Write these style rules out in full detail.
5. Create a style for the #hanging div that displays the text as a hanging indent, all in bold small caps. You can set the font size or color, the background, the border, or any other element you would like to examine.

   ☞ Since large blocks of all caps are difficult to read, make sure students regard this simply as a learning exercise.
6. Write style declarations in the style sheet for the `a` tag (in all its many states) that uses the `text-decoration: none` rule. With the `text-decoration` turned off, the links won't be underlined, so devise a way to make your links look very obviously like links and not like normal text.

Class Discussion Questions

- What were some of the solutions devised by class members to make links with no underline look very obviously like links?

  ☞ Students may have tried ideas such as using background colors, making the links bold, making the links a different color from the surrounding text, making the links differing colors in the various states such as hover and visited, using a border to make the link look like a button.
- What is the difference between `line-height`, `word-spacing` and `letter-spacing`?

  ☞ Line height is the amount of space between each line in a paragraph. Word spacing is the horizontal space between words. Letter spacing is the horizontal space between individual letters in words.

Review Questions

Multiple choice

1. To embed a font on a page, what do you have to do in addition to writing the `@font-face` rule?

   A. Use .eot to create the fonts.

   B. Be sure it is a TrueType font.

   C. Provide the font plugin.

   D. Make the font available on the server in the correct format.

2. Which font property creates italic text?

   A. `font-weight`

   B. `font-style`

   C. `font-family`

   D. `font-face`

3. Examine the (X)HTML on page 157. What technique is used to create different backgrounds for the links area and the content area?

   A. The example uses `span` tags to create the different section appearance.

   B. The `<a name="mila">` creates a different style formatting for the section.

   C. The sections are wrapped in `div` tags with different ids. Each id relates to a style in the external style sheet.

   D. The (X)HTML formatting tags such as `b`, `i`, `big` and `small` were kept to a minimum.

4. Why is it a good practice to specify more than one font choice in a `font-family` declaration?

   A. Different systems have different standard serif and sans-serif fonts installed.

   B. The common fonts are not available on certain systems.

   C. The `font-family` properties are inherited for all the fonts specified.

   D. Some computer displays do not do a good job with Arial.

5. How can you reduce the heavy boldness of the default heading (like `h1` and `h2`) styles?

   A. `Font-weight: bold`

   B. `Font-weight: normal`

   C. `Font-weight: 800`

   D. `Font-weight: bolder`

Fill-in-the-blank

1. To get a browser to display all of the spaces and returns, use the `white-space` property.
2. To align text to the left, right, center, or justified, use the `text-align` property.
3. To display an initial capital letter, use the `text-transform` property.
4. To create a strike-through effect in text, use the `text-decoration` property.
5. To repeat a background image only horizontally, use `repeat-x` in the background property.

Definitions

1. What are the font size keywords?

   The keywords that determine size are `xx-small`, `x-small`, `small`, `medium`, `large`, `x-large`, and `xx-large`.

2. Which font size units are appropriate for screen styles?

   Good choices for screen display include pixels, ems and the keywords.

3. Which font size units are appropriate for print styles?

   Points, cm, mm, or picas can be used to format printed output.

4. What is a relative font size?

   A relative font size depends on the size of the parent element. Relative font sizes can be set with ems or percent values (like `1.2em` or `120%`). The units `1em` and `100%` would match the parent element's font size.

Chapter 11: Layout with Styles ◆ Study Guide

Learning Objectives

- Layout a Web page using CSS.
- Understand the box model.
  - The box includes content surrounded by `padding`, `border`, and `margin`. The top, right, bottom and left `padding`, `border`, and `margin` of any element (from the entire `body` down to the individual character) can be individually styled with CSS. Understanding and using the box model can make the difference between ho-hum CSS and CSS that really sings.
- Understand absolute, relative, and fixed positioning in CSS.
  - Absolute positioning places elements in an exact position with respect to the parent element. Relative positioning places elements relative to the element's original position in the page's flow. With fixed positioning, elements do not move when the user scrolls.
- Understand the `display` property.
  - It is especially useful to know when to transform elements from `inline` to `block` elements using the `display` property, and when to use `display: none`.
- Change `background` colors, images, and attachments.
  - The `background` property has been touched on briefly in previous chapters. This chapter explores its full power.
- Understand foreground color.
  - Foreground color has been used in previous chapters, although it was not identified by the term foreground.
- Use `width` and `height` properties.
  - Because the implementation of the box model in the very popular Internet Explorer browser does not fully use the standards, getting pixel perfect width and height layouts cross-browser can be tricky.

Get Up and Running Exercises

- Visit *http://www.glish.com* to see other CSS layouts in addition to the one used in this chapter.
  - A similar repository of already debugged CSS layouts is available on Owen Briggs' site, The Noodle incident in a section titled Box Lessons (*http://www.thenoodleincident.com/tutorials/box_lesson/boxes.html*).
- Start a new (X)HTML page. Plan a page layout with at least three divisions: site name, navigation and content. Link the page to a CSS page that specifies rules for `position`, `background`, `foreground color`, `border`, `padding`, `margins`, `width`, `height`, and `overflow` of each of the three divisions of the page. Use `float` to place an image on the right of your content area, or to place a bordered sidebar-like paragraph on the right side of the content.
  - Students may want to reuse the formatting techniques they applied in the last chapter, and add the positioning rules to an existing (or revised) style sheet.
- An optional exercise. Take the (X)HTML page you just laid out above and remove the style sheet link in the head. Save your style sheet by a different name and create a link on the page to the second style sheet. Now edit the second style sheet to change all the positioning rules to create a totally different layout! One (X)HTML page—two different layouts based on the styles applied.

Class Discussion Questions

- Discuss the advantages and disadvantages of layout with styles.
  - The advantages are numerous. CSS is good for creating liquid layouts that expand or contract depending on the visitor's monitor. Using CSS for layout keeps layout instructions separate from content and thereby speeds up download time and makes updates to an entire site much easier. CSS and (X)HTML are supported standards and will maintain their usefulness in future versions of browsers.
  - The significant disadvantage is the lingering presence of Netscape Navigator version 4 among Internet users. Netscape 4.x understands only parts of the CSS specifications (notably font specifications) and does not render CSS layouts well. A lesser disadvantage is the sometimes differing implementation of standard specifications in current browsers.
- What is the distinction between `display:none` and `visibility: hidden`?
  - With `display:none` the element disappears from the document flow leaving no empty space behind. A good example of its use would be to style a document for print so that elements displayed on a screen, perhaps a list of links, could be omitted from the print version. With `visibility: hidden` the element is hidden but the space it would occupy on the screen is still available. A good example of its use would be to alternately show and hide `div`s containing text or graphics related to buttons or links on a page.

- What are the border properties? Where can they be used?

  ☞ A border can be used on any element on the page. Border properties are `border-style`, `border-width`, `border-color`.

Review Questions

Multiple choice

1. Since the default border style is `none`, which of the following rules will result in a visible border?

A. `{border-width: 2px}`

B. `{border-color: red}`

C. `{border-style: solid}`

D. `{border-style: solid; border: 2px red}`

2. If you specify all four side in a `padding` rule, what order is correct?

A. top, bottom, left, right

B. right, left, top, bottom

C. top, right, bottom, left

D. right, bottom, left, top

3. Where is padding in the box model?

A. Inside the border

B. Outside the margin

C. Inside the content

D. In the margin

4. For most block-level elements, what is the `auto` value for the `width`?

A. The width of the content area

B. The width of the browser window

C. The width of the containing block

D. The width of the containing block minus padding, borders, and margin

(Continued on the following page)

5. If more than one element is placed in the same position, how do you specify which element will be on top?

   A. `float`

   B. `overflow: hidden`

   C. `z-index`

   D. `vertical-align: top`

6. Which of the following is not a `border-style`?

   A. dotted

   B. inset

   C. groove

   D. emboss

Fill-in-the-blank

1. To position elements with respect to their parent elements, use `position: absolute`.
2. To position an element to stay affixed to a particular position in the browser window, use `position: fixed`.
3. To position elements with respect to their original locations, use `position: relative`.
4. To make a background image appear only one time, use `background-repeat: no-repeat`.
5. The text on the page is an example of foreground color.
6. To change the `cursor` to an arrow, use `cursor: default`.
7. If you specify two values when writing a `border` rule, the first value is for top and bottom borders.
8. Three units of value that might be used in setting padding values are pixels, percents, and ems.
9. The color of the `margin` is always transparent.
10. To make a set of images align neatly with an element's `baseline`, use `vertical-align: baseline`.

Definitions

1. Describe overflow.

☞ Overflow is content that is too large to fit into the containing box. It can be set to appear no matter how much bigger it is than the containing box. It can be set to clip, which means only the amount of material that can display in the containing box will appear and the rest will be hidden. Or a scroll bar can be used to allow scrolling to view the overflow.

2. Define `z-index`.

☞ Sometimes referred to as stacking order, `z-index` is the number indicating an element's level in a set of overlapping elements. The higher the value assigned to the `z-index`, the higher the element is in the stack. Values can be both positive and negative.

3. Explain the `clear` property.

☞ The `clear` property is used to control which element an element can float next to. Values for `clear` are `left`, `right`, `both`, and `none`. The `clear` property is added to the element whose sides you want to be clear of the floated object, and not to the floated object itself.

Chapter 12: Style Sheets for Printing ◆ Study Guide

Learning Objectives

- Use media-specific style sheets.
  - Since CSS 2, it has been possible to link to style sheets for screen, print, Braille, and various other media types.
- Understand the difference between screen and print styles.
  - Two chief differences are the use of print-based units of measure such as points instead of pixels, and the use of fonts more suitable for print.
- Specify when pages will break in a style sheet for printing.
  - Choices include `page-break-before`, `page-break-after`, and `page-break-inside`.
- Identify print-specific properties using the `@page` rule.
  - Browser support for these properties is not complete, but students should be aware of them for future use.

Get Up and Running Exercises

- Start a new style sheet that will specify print rules for the (X)HTML page you used for the layout exercises in Chapter 11. Save it with a name like *print.css*. Link it to your Web page with a `media` choice specified in the link. There should now be two `link` tags in the `head` of your Web page, one to the style sheet used for positioning the layout in Chapter 11, and one for print rules.
- In your print style sheet, change rules that need to be optimized for print. This might include fonts, font sizes, background colors and images, margins, and page breaks.
  - If the browsers available for testing include browsers that support the `@page` rules, students should use them as well.
  - Put the print style sheet `link` in the `head` after the screen style sheet `link`. This takes advantage of the cascade, so only the rules that are different need to be specified in the print style sheet.

Class Discussion Questions

- You have probably seen Web pages that offer a link to a "printer-friendly version" of the page. Is this the same thing as using a linked media-specific style sheet for print?

  ☞ A printer-friendly version is usually a completely revamped (X)HTML page, which means the designer had to create (and maintain) two separate versions of the same page. With a print-specific style sheet, all the designer has to do is create the print rules and link to them on any page that might be printed.

- If you were the Webmaster for a public school, what sort of pages on the school Web site would include a `link` to a print style sheet?

  ☞ Students will probably suggest various types of schedules and calendars as well as things like school supply lists, syllabi, assignments, and contact information.

Review Questions

Multiple choice

1. Which of the following is not a possible media for a style sheet?

A. tty

B. aural

C. projection

D. vend

2. Which font would be a good choice for a print style sheet?

A. Times

B. Helvetica

C. Verdana

D. Tahoma

3. What is an easy way to check your print style sheet without actually printing the page?

A. Use View Source

B. Use Save As print

C. Use Print Preview

D. Use Output

4. Which `@page` rule would provide alignment marks for color plates?

A. `@page: glossary {marks: crop}`

B. `@page: glossary {marks: first}`

C. `@page: glossary {marks: cross}`

D. `@page: glossary {marks: margin}`

Fill-in-the-blank

1. Stranded lines at the end of a page are called orphans.
2. Stranded lines at the beginning of a page are called widows.

Definitions

1. What are the page break options?

   ☞ The `property page-break: before` would cause a page break before content began. `page-break: after` would force a page break after the specified content. The `property page-break: avoid` would force a page to break either before or after the specified content, but not within it.

2. What does the `@page:right {style-rule}` rule do?

   ☞ It sets rules for all the pages that would be printed on the right. Such rules might increase the left margin to account for binding, for example.

Chapter 13: Lists ◆ Study Guide

Learning Objectives

- Use ordered, unordered, and definition lists.
- Understand how to create nested lists.
  - Nested lists, which are lists inside of lists, are used for creating outline structures or to insert bullet points as subtopics in a numbered list.
- Use CSS to style nested lists.
  - Context-specific selectors are used. For example, to style an ordered list nested in an unordered list, the style selector would be `ul ol {style-rule}`
- Specify the style of bullet or number used as a marker in a list.
  - The selector used in the style sheet is `list-style-type`.
- Set the initial value for the first item in an ordered list.
  - Use the attribute `start="n"` in the opening list tag, where *n* represents the initial value.
- Understand how to change the numbering in an ordered list.
  - Use the attribute `value="n"` in the `li` tag, where *n* represents the value for the list item.
- Understand how to use an image as a list marker.
  - Use the `list-style-image: url(image.gif)` property.
- Understand how to control where list markers hang.
  - The selector used is `list-style-position`.

Get Up and Running Exercises

- Add two ordered lists, three unordered lists, and a definition list to an (X)HTML page. In either the ordered or unordered list, nest two additional lists down to the third level. In one of the ordered lists, change the starting value. In one of the unordered lists, change the default bullet style. Make the third unordered list use images in place of the default bullet.
- Attach a style sheet to the page to style the lists using at least `font-family`, `font-size`, `font-weight`, and `list-style-position` rules down to the third level.

Class Discussion Questions

- Why are lists considered so important on the Web?

  Most viewers are scanning quickly in search of something in particular. Only when viewers find what they want do they stop to read Web pages in depth. Lists help present the essentials quickly in a format that is easy to read and uses white space to make the page more "inviting" to the viewer. Lists are the perfect format for presenting options, sets of instructions, and definitions.

Review Questions

Multiple choice

1. What is the proper sequence of tags to nest an unordered list inside a particular list item in a numbered list?

   A. Open and close the `li`, then add the unordered list tags.

   B. Open the `li`, add the unordered list tags, then close the `li`.

   C. Close the `ol`, then add the unordered list tags.

   D. Use `toplevel li {style_rules}`

2. Imagine an outline where the level one items use Roman Numerals, the level two items use capital letters and the level three items use Arabic numerals. How would you style the list items that use Arabic numerals??

   A. `ul ul ol li {style_rules}`

   B. `ol ol li {style_rules}`

   C. `ol li ol li {style_rules}`

   D. `ol ol ol li {style_rules}`

3. If your style is `li {font-size: 75%}`, what would happen to nested list items?

   A. Inheritance rules would make each `li` relatively smaller and smaller.

   B. The font-size will always be the same.

   C. In most cases the `li` will default to 100%.

   D. Nested lists would use classes or ids.

4. Why include both a `list-style-image` and a `list-style-type` specification in a list style rule?

   A. Both are always required.

   B. To give the image a background color.

   C. In case the image doesn't load.

   D. To force the alignment to the right.

Fill-in-the-blank

1. The value of the `list-style-position` property that makes markers flush with the list item text is `inside`.
2. The value of the `list-style-position` property that makes markers extend to the left of the list item text is `outside`.
3. In a definition list, the tag for the defined word is `dt`, and the tag for the definition itself is `dd`.
4. The `list-style-type` that would create uppercase letters as item markers is `upper-alpha`.

Definitions

1. What are the default bullet styles?

   The first level is a solid round bullet. The second level is an empty round bullet. The third level is a square bullet. All subsequent levels will have square bullets by default.

2. What is the default ordered list style?

   Arabic numerals are the default.

3. What order must be used when specifying `list-style` properties?

   Properties may be specified in any order.

Chapter 14: Tables ◆ Study Guide

Learning Objectives

- Understand how to create a table.
  - ☞ Tables are used for page layout and for tabular data in this chapter.
- Apply `border`, `width`, `background`, `cellpadding`, `cellspacing`, `rowspan`, and `colspan` effects to a table.
- Create vertical and horizontal sections within a table.
  - ☞ Use the `colgroup`, `col span`, `thead`, `tbody`, and `tfoot`.
- Understand how to write tables that display quickly in the browser.
  - ☞ When tables are used for layout, the entire contents of a page may be contained in a table, making download speed especially important.

Get Up and Running Exercises

- Plan a new (X)HTML page by drawing it out on paper. Plan a table layout to hold (at least) a site name, a navigation area, and a content area. Decide on the minimum number of columns and rows you need to achieve your layout.
- At the computer, start a new (X)HTML page. Before you insert any content, type out the "skeleton" of the table by creating the `table`, `tr`, and `td` tags to hold your columns and rows. If you plan to combine any cells, add the `colspan` or `rowspan` attributes. Add the `width` and `alignment` attributes to the `table` tag. Even if you don't want a border showing when you are finished, you may find it helpful to make the borders viewable while you work using the `border` attribute. Add content to each of your table cells.
- With those basics completed, you can now refine the table by adding `thead`, `tbody`, and `tfoot` tags. Finally link the page to a CSS style sheet that will style `border`, `margin`, `text-align`, `vertical-align`, `background`, `padding`, `border-spacing`, and `rules` as needed in your table.
- Finally, somewhere in your content area of the page, create a small table to display some tabular information, perhaps the number of each color of M&M in a small bag of M&Ms.

Class Discussion Questions

- Browsers may not display any part of a table until it can all be rendered. How can you increase the download speed of for your tables?
  - ☞ Students should suggest such concepts as keeping table size small, using pixels to specify a table width, providing values for cell width, using column groups, and using the style rule `table-layout: fixed`.
- If you create a table with three equal columns in the first row, what are the implications of that decision on the remaining rows in the table?
  - ☞ Each additional row of the table will either have three columns, or must account for three columns using `colspan`. The columns will maintain the equal-size relationship in every row. While many new rows could be added to the table, each would reflect the column number and column size layout of the first row.
- The (X)HTML table attribute for `cellpadding` has not been deprecated. Is there any reason to use the CSS `padding` property instead?
  - ☞ With CSS, you can control the space on every side of the cell individually. For example, you could set different amounts of padding for the top, right, bottom, and left of the table cells. That is not possible with (X)HTML alone. The (X)HTML `cellpadding` attribute operates on the table as a whole and cannot be applied to individual table cells.
- Since `tbody` is implicit in (X)HTML, why bother adding it?
  - ☞ CSS or formatting attributes can be added to horizontal sections of cells in a table.

Review Questions

Multiple choice

1. Which tag creates a row in a table?

   A. `tr`

   B. `td`

   C. `thead`

   D. `table`

2. Which tag creates a cell in a table?

   A. `tr`

   B. `td`

   C. `thead`

   D. `table`

3. What is the chief difference between using an (X)HTML `border` attribute and a CSS `border` property in a table?

   A. The (X)HTML `border` property can be used to determine width, while the CSS `border` property cannot.

   B. The CSS `border` property is overridden by the (X)HTML `border` attribute.

   C. The (X)HTML `border` attribute cannot be used to render cell walls.

   D. The (X)HTML `border` attribute is inherited by all the table cells, while the CSS `border` property is not.

4. If you plan to create a non-flexible table layout, what is the recommended maximum width?

   A. 150px

   B. 768px

   C. 300px

   D. 600px

5. How would you wrap text around a table using (X)HTML?

   A. `float`

   B. `valign`

   C. `align`

   D. `margin`

6. What is a good tip to help you keep your table code usable?

   A. Capitalize all the tags

   B. Use comments to guide you

   C. Use spacer images in the code

   D. Use combinations of tables and text

7. Why is it a good idea start out a new table with all the opening and closing `table`, `tr`, and `td` tags typed before you begin adding content and testing in the browser?

   A. So you can add the CSS

   B. The table may not render in the browser if a complete table is not there

   C. To help determine the width for each row

   D. To speed up download time

8. What can you do to control where text appears in a long or tall table cell?

   A. Use either `valign` or `vertical-align`

   B. Use `align`

   C. Use `td`

   D. Use either `cellpadding` or `cellspacing`

Fill-in-the-blank

1. To achieve a fluid or flexible table layout, set the width using percent.
2. To achieve a fixed or non-flexible table layout, set the width using pixels.
3. To control the space between table cell borders with CSS use `border-spacing`.
4. To span a row across several table cells, use `colspan`.
5. To span a cell across several rows, use `rowspan`.

Definitions

1. Explain the difference between `colspan= "n"` and `col span= "n"`.

   The `colspan` attribute is used to combine table cells. On the other hand, the `col` property is used to designate a non-structural column group in a table (where the `span` attribute denotes the number of columns), which can then be assigned attributes that will apply to all the columns in the group.

2. Describe what the table `rules` attribute does.

   It determines which cells of a table have visible horizontal or vertical rules between them.

3. What is `nowrap`?

   A tag that will prevent text from wrapping in a table cell, no matter what the width of the cell.

4. Describe how Internet Explorer 5 for Windows calculates the size of a table's width.

   IE 5 for Windows totals the content, cellspacing, cellpadding and border to determine width. In other browsers, the width does not include cellpadding or border.

Chapter 15: Frames ◆ Study Guide

Learning Objectives

- Understand the advantages and disadvantages of using frames.
  - The advantages include being able to have stationary material stay on the page while other sections of the page display changing data. The disadvantages include navigation and search engine indexing problems as well as the fact that the W3C discourages the use of frames because of accessibility issues.
- Create a frameset with both columns and rows.
  - Framesets can lay out pages with only rows, only columns, or some combination of both.
- Create an inline frame.
  - Certain older browsers do not support inline frames.
- Understand how to control frame margins, scroll bars, borders, and resizability.
- Understand how to target links to particular frames or windows.
- Understand how to use a `noframes` section.
  - This section is used to supply alternate content for users whose browsers do not display frames.
- Understand alternate ways to achieve an effect similar to frames.
  - Fixed positioning and embedded objects are used for alternates to frames.
- Understand how to make frames more accessible.
  - Create a title for each framed page. Include a `noframes` section in each framed page. Provide a `longdesc` attribute for each frame that leads visitors to a Web page explaining the frame. In some cases, a complete non-frame version of the site can be offered, with visitors being given a choice as to which version they wish to enter.

Get Up and Running Exercises

- Make a new (X)HTML page. This page will be a frameset, so use the correct `DOCTYPE` for a frameset. The frameset should set up a page with two rows. In the second row of the frameset, create a two-column frameset. The first row will hold a banner or site name, the first column in the second row will hold a navigation menu, and the second column in the second row will be the main content area. Make sure you include a `noframes` section.

  - The frameset portion of the page would look something like this before adding any other attributes about scroll bars, borders, etc.

```
<frameset rows="a, b">
   <frame name="banner"
   →src="banner.html" />
   <frameset cols="a, b">
   <frame name="nav"
   →src="menu.html" />
   <frame name="content"
   →src="mainpage.html" />
   </frameset>
   </frameset>
```

- Adjust the frame's margins, scroll bars, border colors, and borders as desired. Make sure you have three other (X)HTML pages ready that will serve as the source pages for the three windows of your `frameset`. You will also need a few additional pages that you can have open up in the contents frame as the different menu choices are clicked. Target the links in the navigation window so that they will open in the contents window. (Decide whether using a `base target` would be a good idea for this.)

Class Discussion Questions

- What are the disadvantages of frames? Why might a designer decide to use them in spite of the disadvantages.

  - The disadvantages include navigation and search engine indexing problems as well as the fact that the W3C discourages the use of frames because of accessibility issues. Furthermore, some browsers do not render frames.

  - In spite of that, frames are sometimes the best navigation solution for a situation. If certain windows will always be static and only small amounts of new content need to be downloaded for each menu option, frames can speed the user through that download.

- What are ways of making frames more accessible?

  - Possibilities include giving every frame a `title`, every page a `title`, every frame a `longdesc`, adding navigation links or a site map in a `noframes` area, and creating a non-frame version of the same information.

Review Questions

Multiple choice

1. How many separate (X)HTML files need to be prepared to open the initial view of a frame site with three frames?

   A. 3

   B. 1

   C. 4

   D. 2

2. How do you create a flexible frame window that uses whatever space is available?

   A. Use rows

   B. Use pixels

   C. Use percents

   D. Use an asterisk (*)

3. When is a frame's `name` put to use?

   A. As the `title`

   B. As a link target

   C. As an accessibility aid

   D. As the `longdesc`

4. How would you create a frame set with two columns above a bottom row?

   A. Put the bottom row in the `noframe` `body`

   B. Nest a two column `frameset` in the top row of the first `frameset`

   C. Use the `target` in the bottom row

   D. Embed a `frameset`

5. How can you add a frame to an (X)HTML page that is not a `frameset`?

   A. Use a `frameset` in the `body`

   B. Specify the width and height

   C. Use an `iframe`

   D. Use fixed positioning

6. An alternative to frames is to

   A. Save as a `frameset`

   B. Create a mix of frames and `noframes` content

   C. Include a `base` element for the default `target`

   D. Embed text or (X)HTML content in a page using the `object` element

Fill-in-the-blank

1. A frame's margin is transparent in color.
2. If you write a text explanation of your frame site, you use a `longdesc` attribute to link to the explanation.
3. To make sure links open in the desired frame of a frameset, use the `target` attribute in the link.
4. To break out of a frameset and make a link open in the browser completely free of your frameset, use the `target= " top"` attribute.
5. To prevent visitors from being able to resize individual frames, use the `noresize` attribute.
6. To make frame borders disappear completely, use a combination of `border= "0"` and `frameborder= "0"` attributes in the `frameset` tag.

Definitions

1. What is the purpose of a `frameset` document?

   The `frameset` document is a brief (X)HTML document that sets up the columns and rows in a `frameset`. It does not contain any actual content (except for content inserted in a `noframes` section).

2. Distinguish between a `frameset` and an `iframe`.

   The `frameset` lays out a plan for rows and columns that would persist through every page of a site using it. An `iframe` can be used to insert a frame containing an (X)HTML page in an independent (X)HTML page that is not part of any `frameset`.

3. Describe a situation in which it would make sense to use a `scrolling="yes"` attribute in a `frame` tag.

   Use this in cases where you want the scroll bar to always appear, whether or not the information fits in the available space.

Chapter 16: Forms ◆ Study Guide

Learning Objectives

- Understand how to create an (X)HTML form.
  - Form elements include text boxes, password boxes, radio buttons, checkboxes, drop-down menu lists, upload boxes, hidden fields, and buttons.
- Understand that most forms require a CGI script.
  - The author has provided basic CGI scripts on her Web site. Some ISPs will not allow CGI scripts. In an academic environment, the college or university may have policies that will affect classroom server configuration regarding the execution of scripts.
- Understand how to submit a form by email without a CGI script.
  - This technique does not work in older browsers or with Microsoft Outlook.
- Be aware of form hosting services as an alternative to using way to process forms.
  - These are commercial services that may insert advertising in exchange for their service.
- Use form `fieldset` elements.
- Use form `label` elements.
- Use `tabindex` and `accesskey` attributes to improve a form's accessibility.
- Understand how to disable form elements.
- Understand how to display form contents in a way that cannot be changed.

Get Up and Running Exercises

- Investigate some of the sources of free scripts. Check *www.cookwood.com/perl*, *wwwcpan.org*, *www.cgi-resources.com*, *www.extropia.com*, and *www.awsd.com/scripts*. Be sure to look at the basic scripts the author has to help you understand how forms and scripts work together at *www.cookwood.com/html/cgiscripts/*
- Create a new (X)HTML page for a form. The form will gather names, addresses, email addresses, favorite music genre, favorite instrument, favorite musician, favorite source for music, and visitor comments. Write the form to submit by email without a CGI script. Include the following:

  First name `text` field

  Last name `text` field

  Address fields for street, city and state

  Email address field

  Favorite genre radio buttons offering at least five genre options

  Favorite instrument checkboxes offering at least five instrument names

  Favorite musician `text` field

  Favorite source for music drop-down menu offering at least five music sources as options

  Field for comments

  Submit button

(Continued on the following page)

- Organize your form using `fieldsets`. Use a `label` on several of the fields. If your form would benefit from a change in the default tab order, use `tabindex` to change it. Add a couple of `accesskey` shortcuts. Experiment with other ideas from the chapter such as `readonly` text boxes.
- Finally, use CSS to format your form's appearance.

Class Discussion Questions

- Discuss the advantages and disadvantages of form hosting services.
  - They save the designer from having to master the CGI script before beginning to use forms in a Web page. However, they may restrict the appearance or options available in the form and they may insert advertising on the pages.
- What is the purpose of a hidden form field?
  - Hidden fields can be used to store information gathered on previous pages of the form. One page of a form might request name and address and the next page might request order confirmation. The name and address can be stored in hidden fields for submission when the visitor completes the order. Hidden fields can also be used to configure things like the subject line that will appear in the email sent to the form's recipient, or the email address of the form recipient.
- Suppose you allow visitors to select more than one menu option from a menu using the `multiple="multiple"` attribute. What would you do to let users know about this ability?
  - Write instructions near the menu explaining that users can select more than one option using the Ctrl or Command key.

Review Questions

Multiple choice

1. Which programming language is not used to create CGI scripts?

   A. PHP

   B. Perl

   C. Visual Basic

   D. Cobol

2. When a script is uploaded to the server, where is it generally stored?

   A. In the public_html directory

   B. In the cgi-bin directory

   C. In chmod

   D. In the binary mode

3. Why do you have to set permissions on a CGI script?

   A. So it will execute

   B. So it has the correct extension

   C. So it will have variables

   D. So it is in ASCII mode

4. Which `form` tag below would submit a form without a CGI script?

   A.
   ```
   <form method="post"
   enctype="text/plain"
   action="mailto:you@site.com">
   ```

   B.
   ```
   <form method="post"
   enctype="text/plain">
   ```

   C.
   ```
   <form method="get"
   action="script.url">
   ```

   D.
   ```
   <form method="post"
   action="script.url"
   mailto:you@site.com>
   ```

5. How do you create a drop-down menu list?

   A. `<input type= "radio">`

   B. `<textarea name="name">`

   C. `<input type="text">`

   D. `<select name="name">`

6. Which tag will divide a menu into categories?

   A. `option`

   B. `optgroup`

   C. `select`

   D. `label`

Fill-in-the-blank

1. The most common language used for CGI scripts is perl.
2. When you FTP a CGI script to the server, make sure to upload in ASCII (or text) mode.
3. If you want to allow visitors to upload documents using your form, the `form` tag must contain the following attribute: `enctype="multipart/form-data"`.
4. The attribute in the `form` tag that connects the `form` to the CGI script that will process it is the `action` attribute.
5. The two available options for a `form method` attribute are `get` and `post`.
6. If a checkbox set has five checkboxes, every checkbox in the set needs the same name but every checkbox in the set must have a different value.

Definitions

1. What is a name-value pair?

   Every form element has a name associated with it. The value comes from the visitor's input (or from input preset by the page designer). When the form is submitted, the name-value pairs are formatted and sent to the form's recipient.

2. What are the three important parts of a form?

   The `form` tag with a reference to the CGI script, the form elements and fields, and the submit button.

3. What is the purpose of a Browse button in a form?

   It allows visitors to select a file to be uploaded from their local hard drive.

4. What is the difference between a password box and a text box?

   Bullets or asterisks replace any letters entered in a password box so casual observers cannot read them. Note, however, that the information in a password box is not encrypted when submitted.

Chapter 17: Multimedia ◆ Study Guide

Learning Objectives

- Many types of multimedia can be used in Web pages. Often special software, or a plugin, is required to play it. Although the `embed` tag has been deprecated in favor of the `object` tag, we still speak of "embedding" multimedia in the Web page. QuickTime, Windows Media, Java applets, and other types of multimedia can be embedded in a page.
- Understand the role of the plugin in multimedia use. Know where to direct visitors to find an appropriate plugin.
- Understand how to use the `object` element with the `embed` element to work around browser support problems.
- Understand how to add QuickTime, Windows Media, and Java applets to a Web page. Also identify how to link to external multimedia files.
- Understand how to create a slide show with a `meta` tag.

Get Up and Running Exercises

- If you have QuickTime files, Windows Media files, or Java applets available, add them to an (X)HTML page. Then create links to make the same multimedia files open in standalone players.
  - It is not a good idea to encourage students to search for free multimedia movie samples to use in practice exercises on their Web pages, because such a search will deliver porn sites in the results. If students want to learn how to make their own multimedia files, Windows Media information is available at *http://www.microsoft.com/windows/windowsmedia/technologies.asp*. QuickTime information is available at *http://www.apple.com/quicktime/*. Sun Microsystems offers free sample applets and resources at *http://java.sun.com/openstudio/index.html*. The applets from Sun could be used by students.
- Create a slide show out of five different (X)HTML pages using the `meta` tag.

Class Discussion Questions

- The saga of embedded multimedia is a mini version of the browser wars. Discuss whether the current trend toward standards compliance in all browsers is an improvement over the old competitive struggles.

  ☞ You may get responses from all over the spectrum on this discussion. Competition does encourage innovation. From the point of view of design-to-production work time, accessibility, and future compatibility, however, standards are a great time saving relief to the Web designer. Tags and tools that only work in one particular browser or on one particular platform may soon be relegated to the scrap heap of the Internet, thereby saving Web designers from hacks, workarounds, and multiple versions for multiple browsers.

Review Questions

Multiple choice

1. What is required to view multimedia embedded in a Web page?

A. A browser

B. A MIME

C. A plugin

D. An MP3 player

2. Which one of these attributes can you control for a QuickTime movie?

A. The extension

B. The height and width

C. The plugin type

D. The `classid` abbreviation

3. The term *applet* reflects which of the following?

A. Apple developed the applet

B. The codetype is JavaScript

C. The object is a tiny Java application

D. An applet plugin should be installed

4. Which is not a type of multimedia to embed on a page?

A. Real Audio

B. MP3

C. Flash

D. JavaScript

5. Why might linking to a multimedia file be preferred to embedding it?

   A. It only downloads and plays if the user clicks the link.

   B. It plays in the background as soon as it downloads.

   C. It can be set to start downloading before the page loads.

   D. It is easier to make it loop endlessly.

Fill-in-the-blank

1. When we finally have a standards-compliant way to add embedded multimedia in a browser page, it will use only the `object` tag.

2. The values `true`, `false` and `palindrome` control an object's loop (or looping).

3. To make a page's background sound in QuickTime format, use the attribute `hidden`.

4. In `<meta http-equiv="refresh" content="7;url=next.html" />`, the *7* represents seconds.

5. Text that scrolls across the screen is called a marquee.

   ☞ One reason why the marquee was never adapted for use outside of Internet Explorer is that it is not accessible to non-visual browsers. Therefore the W3C has never considered making it a standard markup element.

Definitions

1. What is multimedia?

☞ Sound, animations and movies that are not created by (X)HTML. (X)HTML can be used to embed effects in a page, however. Because multimedia is not actually (X)HTML, it requires a helper application or a plugin to play. A helper application uses the extension and MIME type of the multimedia file to launch an appropriate piece of software that will play the file outside the browser. A plugin, on the other hand, enables the browser to display the multimedia file embedded right in the Web page.

Chapter 18: Scripts ◆ Study Guide

Learning Objectives

- Understand how to add simple scripts written in JavaScript to a page.
  - The author provides some basic scripts. The book *JavaScript for the World Wide Web: Visual QuickStart Guide* by Tom Negrino and Dori Smith is an excellent source of scripts.
- Understand how to call an external script.
  - External scripts work the same way as local scripts, but are saved in a separate text file (with the .js extension) and thus, can be referenced from any number of Web pages on a site. An external JavaScript is a separate file, saved with the .js file extension, that can be linked to a Web page (or many Web pages) to perform functions in exactly the same way that JavaScript written right on the Web page does.
- Distinguish between automatic and triggered scripts.
  - An automatic script runs as soon as the browser encounters it when rendering the page. A triggered script requires some action from the user.
- Use a button to trigger a script.
  - There is a `button` element that can be created right in the script. A graphic image can also be used as the trigger for a scripted event.
- Understand intrinsic events.
  - There are numerous intrinsic events, but all involve some action by the user involving mouse movement, clicking, or tabbing.

Get Up and Running Exercises

- Add an automatic script to an (X)HTML page that writes something really clever on the page like "Hello, world."
  - Use the `document.write("Hello, world!")` syntax described on page 314.
- Add a script to an (X)HTML page that uses a mouse click as a trigger. Make the script give you the correct time.

Class Discussion Questions

- When would you need to use a backslash before a character in a script?

  ☞ Using the backslash, commonly called "escaping a character," is a way to tell the browser that the escaped character should be interpreted as is and not as part of the script code.

- Is there any advantage to using an external script over inserting the JavaScript right on the Web page?

  ☞ Like external style sheets, external scripts can be written once and linked to multiple pages. Therefore, external scripts can save time and work for the Web designer, and reduce page download size.

- Give an example of a time when you would need a `CDATA` section in your (X)HTML document.

  ☞ JavaScript has traditionally been "commented" out of Web pages with a combination of the (X)HTML comment tags `<!-- ->` and the JavaScript comments //. This is described on page 320. Current technology requires hiding JavaScript from XML parsers as well. CDATA is used for this.

Review Questions

Multiple choice

1. Which event could not be used to trigger a script?

A. `onload`

B. `onclick`

C. `onalert`

D. `onsubmit`

2. How do you hide scripts from XML parsers?

A. Use comments

B. Use `CDATA`

C. Use a `noscript` tag

D. Use CSS

3. How do you set JavaScript as the default scripting language for a page?

A. Use `language="Javascript"`

B. Use `type="text" language="Javascript"`

C. Use `<meta http-equiv= "Content-Script-Type" content="text/javascript" />`

D. Use `<!--javascript-->`

4. What attribute do you use to specify the location of an external script?

A. **`src`**

B. `language`

C. `type`

D. `charset`

Fill-in-the-blank

1. When you use a script, you must state the language it is written in.
2. The name of the event that occurs when a visitor moves the mouse away from an element is `onmouseout`.
3. The name of the event that occurs when a visitor selects or tabs to an element is `onfocus`.
4. A triggered type of script won't run unless the visitor does something to cause it to run.
5. Two intrinsic events that are used in the `body` tag are `onload` and `onunload`.

Definitions

1. How does the `noscript` tag work?

   The contents of the `noscript` tag get displayed as text by browsers that don't understand the `script` tag. This can be used to give the visitor information about the part of the page they are missing.

2. What is an intrinsic event?

   An intrinsic event is something that the visitor does, such as mouse over an image or click a link.

3. Describe two ways to add scripts to a page.

   The script can be written directly in the (X)HTML or put in an external file which is "called" from within the (X)HTML.

   In sites where the same script will be needed over and over again, it makes good sense to save the script once to a file that can be called from any page.

Chapter 19: JavaScript Essentials ◆ Study Guide

Learning Objectives

- Apply prewritten JavaScript to (X)HTML pages.

  ☞ The author provides pre-tested scripts at *www.cookwood.com* that students can paste into their (X)HTML pages to learn to work with JavaScript. These include scripts that will add date and time, change the text in the status bar, change multiple frames with one link, keep frames in their framesets, create image rollovers, preload images, and set the size of a new window.

Get Up and Running Exercises

- Visit *www.cookwood.com/html5ed/examples/#c19* and find the scripts that accompany Chapter 19.
- First try all of them that can be used on a single page, such as the date and time script or the link status script. Now is your chance to make those rollover buttons you have been itching to try, so prepare some buttons in advance and use the script that changes an image `onmouseover` to make a set of navigation buttons. Along with the JavaScript rollover on the page, use the example script on page 330 to preload the images needed for the rollovers by calling an external script.
- Then use your frameset pages from Chapter 15 and try the scripts that work on frames, such as the script that will change multiple frames with one link.

  ☞ A popular source of prewritten scripts is JavaScript Source at *http://javascript.internet.com/*. These scripts are a bit more complex than those supplied with Chapter 19, in that they often require pasting JavaScript in two places (the `head` and the `body`).

Class Discussion Questions

- What does JavaScript add to a Web page?
  - Effects on the page that are often labeled dynamic or interactive are normally achieved with JavaScript. These effects, or events, may change images or open new windows based on visitor actions, thereby giving the visitor a sense of interaction with the browser display. You might mention that there are many more uses for JavaScript. For example, JavaScript can verify forms, do computations, set cookies, detect plugins, and write text "on the fly." Refer your students to some of the online repositories of scripts for more examples.
- What is the value of preloading images for button rollovers?
  - If images are preloaded, they display instantly when rollover effects are used. If the images were not preloaded prior to the visitor mousing over an original rollover image, there would be a noticeable delay while the new image downloaded. This might make the visitor think the link wasn't working.
- Discuss why most of the JavaScript examples in this chapter are used in links.
  - The most common visitor action that triggers a script involves links. An action can be associated with a clickable area on the screen, whereas no action can be associated with plain text. The automatically executing scripts don't require user actions and therefore are not associated with links.

Review Questions

Multiple choice

1. Study this code, which creates a link using a rollover effect with an image.

```
<a href="page.html"
onmouseover="document.pic.src=
'image.jpg'"
onmouseout="document.pic.src=
'graphic.jpg'"><img src="graphic.jpg"
name="pic" width="143" height="83"
alt="Image Information" /></a>
```

Which snippet of the (X)HTML gives the name of the image that will display when the visitor moves the mouse away from the image?

A. `a href="page.html"`

B. `onmouseover="document.pic.src= 'image.jpg'"`

C. `onmouseout="document.pic.src= 'graphic.jpg'"`

D. `img src="graphic.jpg"`

2. What is this tag meant to do?

```
<script type="text/javascript"
language="javascript"
src="time.js"></script>
```

A. Write something on the page

B. Call an external script named `time.js`

C. Change the status label

D. Create a slide show timer

3. What steps could you take to make sure your pages from a framed site are always displayed in the surrounding frames?

A. Use a `base` target in the `head` section

B. Write a `keepinframes.js` file and put the script to call it in the `head` of every document in the framed site

C. Make sure each of the frames has a name in every document in the framed site

D. Insert `onmouseover="window.status='frameset';return true"` in the links

4. What is one thing to keep in mind when using rollover images?

A. The images should be the same size

B. There should always be text in the status label

C. The height and width of the new window should be set

D. The external script should be saved as text

5. In this link, what browser chrome will the new window have?

```
<ahref="javascript:location=
'hawthorne.html';window.open
('hester.html', 'characters',
'height=250, width=250,scrollbars=
yes')">Hester Prynne</a>
```

A. Scrollbars

B. Tool bars

C. Resize handles

D. Location bar

6. Which of the following *cannot* be accomplished with an `onload` script?

A. Images are preloaded

B. A new window opens automatically

C. The date and time are written to the page

D. More than one frame at a time is changed *with* one link

Fill-in-the-blank

1. A link containing the words "`window.status`" would write a phrase in the browser status bar.
2. When images are preloaded, they are stored in the browser's cache.
3. When an image changes, or when something appears on the page because the visitor has the mouse in a particular location, that is known as a rollover effect.
4. Images need a `name` attribute in order to be properly referenced and then used by a script.

Definitions

1. Define intrinsic event.

   An intrinsic event triggers a script. Intrinsic events include actions such as loading a page or moving or clicking a mouse. Appendix C lists 18 predefined intrinsic events and the elements with which they work.

2. Define JavaScript.

   JavaScript is a programming language. It can be used to add interactivity to a Web page. JavaScript is included on an (X)HTML page with the `<script>` tag. Most browsers understand JavaScript and know how to run such scripts.

Chapter 20: Symbols and Non-English Characters ◆ Study Guide

Learning Objectives

- Understand character encoding and Unicode UTF-8.
  - Character encoding is what a computer does to translate characters into recognizable letters and symbols on the screen. In English, there are 128 characters, called ASCII. Unicode is a universal system for encoding all the characters in all the world's languages. The character encoding declared in the document head determines which language characters are used on the page.
- Understand how to save and edit a page using the proper encoding.
- Understand how to declare a page's character encoding.
  - A `meta` tag in the `head` is used to set the character encoding, which must match the encoding with which the page was saved.
- Understand how to specify the language used in a Web page.
  - A language can be declared in the opening `html` tag using the syntax `<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="xx" lang="xx">` where `"xx"` is the two-letter abbreviation for the page's main language.

Get Up and Running Exercises

- Study the resources at *www.alanwood.net/unicode* and in Appendix D in the text. Be sure to find the information on *www.alanwood.net/unicode* that explains how to install language kits.
  - Language kits for Mac information is found at *http://www.alanwood.net/unicode/utilities_fonts_mac.html#apple*. Information about adding Unicode characters with Windows can be found at *http://www.alanwood.net/unicode/htmlunicode.html*.
- Check your software to see what the default character encoding is when you save an (X)HTML page. Figure out how to save with your software with a different character encoding.
  - Review page 51 and Figure 2.9, which shows the Save As options in the BBEdit editor that allow users to select an encoding option. Remind students that the default encoding for Windows is windows-1252 and for Mac, it is x-mac-roman.
  - For those using Mac and Fetch, be mindful that Fetch, by default, converts characters to ISO-8859-1 when uploading. See pages 63 and 411 in the text for suggestions for Mac and Fetch users.

(Continued on the following page)

- Add a character encoding declaration to the head of your (X)HTML documents. Use `xml:lang="xx" lang="xx"` to add some characters in a language other than the one declared in the page's encoding to a Web page.

Class Discussion Questions

- What is Unicode?
  - Unicode is a system of encoding language characters into computer bits. Unicode has a unique code for each character in all the world's languages. Any character from any language can be used on a Web page with the proper Unicode encoding. (X)HTML uses UTF-8.
- Why should you specify the language in which your page is written?
  - The browser will display the characters properly if it does not have to guess at the language used in the document, assuming that the visitor has the necessary fonts installed on their system. IE 6 gives users the option of downloading resources to properly encode a page if the encoding is specified on the page. Clearly identifying the language and the character encoding used on the page makes the page more accessible to users from around the world.

Review Questions

Multiple choice

1. Approximately what percent of Web users speak English?

   A. 70

   B. 60

   C. 50

   D. 40

2. How many characters are in the basic ASCII encoding system?

   A. 128

   B. 256

   C. 1252

   D. 252

3. In addition to declaring a character encoding in the document `head`, what else must a Web designer do?

   A. Give the three-letter language code

   B. Put the encoding language in the `body` tag.

   C. Use the correct characters

   D. Save the document with the correct encoding

Fill-in-the-blank

1. In the character reference `&#x201C;`, the *x* indicates a hexadecimal reference.

2. Visitors can only view characters for which they have fonts installed.

Definitions

1. What is a language kit?

☞ It's a kit that can be installed on a computer that allows you to view and edit in several languages.

2. What is the difference between ASCII and UTF-8?

☞ ASCII is used for the 128 characters needed to encode English. UTF-8 is the Unicode used in (X)HTML and can be used for characters in any language, including double-byte languages such as Chinese. UTF-8 includes the ASCII characters, and many others as well.

Chapter 21: Formatting: The Old Way ◆ Study Guide

Learning Objectives

- Understand deprecated tags.
  - Use of deprecated tags is discouraged by the W3C. The tags still work and browsers understand them. Many factors go into deciding which tags get deprecated, but accessibility issues are among the most important. Pages that use CSS for formatting are considered more accessible than pages formatted using (X)HTML. Pages that use CSS positioning for layout are more accessible than table-based layouts. Another factor figuring in the push away from deprecated tags is the growth in the number of devices that use the Internet. Phones, handheld devices, even automobiles download information from the Internet. Removing the formatting from the (X)HTML makes it much easier to "restyle" content for a number of devices.
  - Throughout this chapter, the author includes page numbers for reference in the Tips section of the page. These pages reference standards-supported techniques for achieving effects formerly achieved using "The Old Way."
- Understand the `font` elements of `basefont`, `font face`, `font size`, and `font color`.
- Understand how to set link colors with `link`, `vlink`, and `alink`.
  - Setting link colors with these tags is done as an attribute of the `body` tag and they apply to every link on the page with no exceptions or variations.

Get Up and Running Exercises

- Take a page you previously formatted with CSS. Insert some `font` tags on the page to format `font face`, `font size`, and `font color`. What effect do the `font` tags have on how the page displays?
  - Students should note that the inline style, whether it's a font tag or an inline style, will override CSS rules (in most browsers). See the class discussion question below.
- Create a new (X)HTML page and use `basefont` in the `body` tag to set a `font size`, `color` and `face`. Use an `h1`, `h2`, `h3`, and several `p` elements on the page to see the effect of `basefont`. Use the `link`, `vlink`, and `alink` attributes in the `body` tag to set link colors.
  - After students have experimented with this for a while, have them attach one of their existing CSS style sheets to the page and see what happens.
- Make something `blink`.
  - Blinking text is a hallmark of "newbieness" on the Web, so when students have succeeded in this exercise you should encourage them to remove the blinking text. Blinking text (and flashing animated GIFs) can be a problem for visitors with certain seizure disorders, and should be discouraged if for that reason alone.

Class Discussion Questions

- Explain how `font` tags fit into the cascade when using CSS.
  - Using the simplification that the last style (or the closest style) is the one that is used to determine formatting, then an inline `font` tag will overrule an internal or external CSS style rule. Styles will override `basefont` tags, but not `font` tags.
- `Font` tags are easier to learn to use than CSS. Can you think of any reasons why CSS is worth the effort?
  - There are many that students may mention. Here are a few possibilities. CSS creates pages that are more accessible and device independent. CSS offers the designer much more flexibility in styling various parts of the page. CSS does things that (X)HTML styles cannot, such as put backgrounds and borders on any element on the page. CSS saves time for the designer. Once a style sheet is written it can be used on thousands of pages, while `font` tags have to be typed in one by one on every page.
  - Of course, some students may decide `font` tags are easy and they still work, so why not use them.

Review Questions

Multiple choice

1. What does deprecated mean?

A. It infers that the tag is bad

B. It is a tag marked for eventual removal from the standard

C. It means a tag is transitional

D. It means something is no longer useful

2. Which is required in a `basefont` attribute?

A. `color`

B. `face`

C. `size`

D. `link`

3. How many times do you have to type `basefont` if you use it?

A. When the browser default changes

B. Every time you change the color

C. Around every bit of text you style

D. Once per document

4. Which is the correct way to use `font face`?

A. `<fontface=Trebuchet MS, Arial, Helvetica>text</font>`

B. `<fontface="Trebuchet MS", Arial, Helvetica>text</font>`

C. `<font face="Trebuchet MS, Arial, Helvetica">text</font>`

D. `<basefont face="Trebuchet MS, Arial, Helvetica">text</font>`

5. Which font size represents the browser default?

A. 2

B. +1

C. 16

D. 3

6. What does `vlink` represent?

A. A virtual link

B. An unchanged link

C. A visited link

D. A colored link

Fill-in-the-blank

1. To strike out text, use the `strike` tag.

2. To underline text, use the `u` tag.

3. You may not use blinking text in a `title`.

4. You can set the color of all the text on the page with a `text` attribute in the `body` tag.

Chapter 22: Layout: The Old Way ◆ Study Guide

Learning Objectives

- Recognize which page layout tags are deprecated.
  - ☞ All the tags mentioned in this chapter are deprecated. Tips in each section refer students to the appropriate page in the book where they can learn to achieve the effects discussed using styles.
- Understand how to set background color using `bgcolor`.
  - ☞ The `bgcolor` tag may be used for page backgrounds, table backgrounds, and table cells.
- Understand how to use background images with the `background` tag.
  - ☞ Most browsers will only tile a background image using this tag. IE has an attribute that will fix the background on the page.
- Review use of the `center` tag.
- Understand both Internet Explorer and Netscape's method of setting page margins.
  - ☞ IE used the `leftmargin="x" topmargin="x"` attributes in the `body` tag to set margins. Netscape, however, `used marginwidth="x" marginheight="x"` to do the same thing. Therefore it was necessary to include both sets of settings in the `body` tag.
- Recognize the following tags and understand what they do in terms of page layout: `nobr`, `wbr`, `spacer`, `multicol`, and `layer`.
- Discuss pixel shims.
  - ☞ A pixel shim is a transparent GIF that can be used to push text and table cells into the desired positions or sizes.

Get Up and Running Exercises

- Use the (X)HTML page you created in the last chapter to try out formatting the old way to test some of the page layout tags in Chapter 22. Add the following to the page and study the various effects you can achieve: `bgcolor`, `background`, `center`, `leftmargin`, `topmargin`, `marginwidth`, `marginheight`, `spacer`, and `multicol`. Try indenting a few paragraphs using a `ul` and push some text around with pixel shims.

Class Discussion Questions

- Although `ul` and `blockquote` are not among the deprecated tags, using them to indent text is formatting the old way. Why would the W3C discourage indenting with `ul` or `blockquote`?

  - Formatting indents just for the sake of indents this way is an illogical use of the tag. When the tags are not used logically, then accessibility issues arise. In addition, it becomes difficult to restyle content for different types of devices when the logic inherent in the tags can't be depended on to lay out the structure of the document sensibly. CSS uses `padding`, `margin`, and `indent` to achieve indented text.

- After you complete the *Get Up and Running* exercise above, work with one or two other students. Discuss the effects you created using the deprecated tags, and discuss how you would achieve these same effects with styles and standard codes. Share your ideas on what you would do if you were hired to bring a site full of such deprecated (X)HTML tags up to valid markup standards.

Review Questions

Multiple choice

1. What is a pixel shim?

   A. A deprecated tag

   B. A 72 dpi spacer tag

   C. A wedge of color that can be used in a table

   D. An image inserted in a page to alter alignment or spacing

2. Which is not a limitation of the `multicol` tag?

   A. Columns must be the same width

   B. It only works in Netscape 4

   C. It creates columns

   D. The columns might overlap

3. What is the `layer` tag used for?

   A. Graphic elements

   B. Backgrounds

   C. Offsets

   D. Positioning

Fill-in-the-blank

1. Use the `nobr` tag to keep elements on one line.
2. To specify a spot where a line break is acceptable, use a `wbr` tag.
3. The `center` tag will center any element on the page.
4. To eliminate the space between the contents of the page and the edge of the browser window in IE, use both `leftmargin="0" and topmargin="0"`.
5. To eliminate the space between the contents of the page and the edge of the browser window in Netscape, use both `marginwidth="0" and marginheight="0"`.
6. The browser will automatically tile a background image.

Chapter 23: WML: Web Pages for Mobile Devices ◆ Study Guide

Learning Objectives

- Identify the meaning and use of WML.
  - WML, or Wireless Markup Language, is used to write Web pages for mobile devices like cell phones. It uses the same XML syntax as XHTML and shares many of the same tags.
- Create an .htaccess file for the server.
  - Apache servers use .htaccess files to establish rules for access into directories on the server. The .htaccess file is a simple text file that can add MIME types, set up passwords, deny users by IP address and many other directory-level configurations.
  - Have students create a new directory on the server for the WML files. Be sure the .htaccess file is uploaded to the directory on the server where the WML files will be stored. There may be existing .htaccess files on the server which should not be overwritten.
  - Apache servers use .htaccess files at the directory level to set various rules and directives regarding access. Directives may set password access, directory file formats and dozens of other rules. An .htaccess file in a subdirectory overrules any directives set in an .htaccess file higher in the directory structure on the server.
- Understand the WML concepts of `deck` and `card`.
  - The WML page is called a `deck`. Each screen display is called a `card`. A `deck` may contain one or more `cards`.
- Understand how to include images in WML files.
- Create content in WML.
  - The exercise below has students create content giving movie show times.
- Test WML content in a simulator.
  - The author gives sources for simulators on page 392.

Get Up and Running Exercises

- Download an appropriate simulator from Openwave or a particular manufacturer's site using the instructions on page 392. If you own a phone that you can use for testing, you can skip this step.
- Create an .htaccess file or copy the one at *www.cookwood.com*. Upload it to the server. Be sure you put it in the directory on the server where you will store the WML files.
- Build a WML deck. Write content giving show times for at least two movies at a theater. Build an opening screen with an image, theater name, and a link to show times. On the show times card, name two or more movies with links from each one to a card with a table of two daily show times per movie. Use a template to put a Back button on the cards. Add any other WML elements you want to investigate. Use your simulator to test your results.

Class Discussion Questions

- How are graphics for mobile devices different from graphics for desktop computers?

  ☞ Graphics must be saved as WBMP format. They must be very small, no larger than 100 pixels in width and height. While color is free on the Web, mobile devices use a minimum of color. Although seemingly obvious, it doesn't hurt to mention that black and white mobile displays only use two colors, so graphics must be reduced to two colors when saving. Designers can make use of basic icons and simple logo-like images at best under these strict limitations.

- What does it mean to a designer that WML is an application of XML?

  ☞ Put simply, it means that syntax rules for XML are used to write WML. That includes quoting values, closing tags, using lowercase for tags and attributes, and writing valid code. Since XHTML also uses XML syntax rules and many of the same tags, students already have a strong preparation for learning WML.

Review Questions

Multiple choice

1. What is a WML page called?

   A. card

   B. deck

   C. wml

   D. xml

2. How many cards can be in a deck?

   A. 52

   B. zero or one

   C. as many as you like

   D. 1

3. What is the purpose of a card id?

   A. It tells the browser what to download

   B. It puts the cards in order

   C. It is a link target

   D. It creates a label for a table

4. Which familiar element would not work on a WML page?

   A. `p`

   B. `span`

   C. `em`

   D. `br`

5. What does `<table columns="2" align="LL">` do?

   A. Creates a table column

   B. Creates a table with two columns and two rows

   C. Creates an aligned row as a table header

   D. Creates a table with two left-aligned columns

6. What are the navigation choices in mobile devices?

   A. Links on the card or buttons on the device itself

   B. Links on the card only

   C. Refresh actions

   D. The number keys on the mobile device itself

7. The `refresh` tag is usually used to do what?

   A. Refresh the previous card

   B. Refresh the link

   C. Refresh a card to display a value entered in a variable

   D. Refresh the window if the card does not download fully

8. What action is created by `<onevent type="onenterforward"><go href="#help"/></onevent>`?

   A. The user is immediately taken to a help screen

   B. The user sees a help button

   C. The user presses Forward to get help

   D. An action will occur after a set time elapses

9. Which of the following is not an `onevent` type?

   A. `onenterforward`

   B. `ontimer`

   C. `onenterbackward`

   D. `onenter`

(Continued on the following page)

10. What does a WTAI instruction do?

A. Allows forms to be submitted

B. Allows the device to initiate a phone call

C. Allows a variable to appear

D. Allows passwords to be entered

11. What would this bit of WML do?

```
<postfield name="number"
value="$(number)" />
```

A. Put a number in a variable field

B. Specify a number to submit for processing

C. Ask a user to input a number

D. Create a `go` element

Fill-in-the-blank

1. The file extension used for images saved for mobile devices is wbmp.

2. The tags that can create a WML link include `a` and `anchor`

Students may also suggest `refresh` or `prev`.

3. The tag often used to format buttons on the mobile device is `do`.

4. The value entered for a timer variable is time expressed in tenths of seconds.

5. You create a menu with a `select` element.

6. You create the items in the menu list with the `option` element.

7. To make the same content appear on all the cards in a deck, use the `template` element.

8. Rules for whether or not someone is allowed to access a particular WML deck are set in an `access` element.

Definitions

1. Explain what the `go` tag does.

   ☞ It defines the `href` of the link that will be activated with the user clicks the link. It can contain a link to another card in the same deck or a card in a different deck.

2. How do you start a WML page?

   ☞ Write the XML version, the WML `DOCTYPE` declaration, and then enclose the contents in `<wml></wml>` to complete the deck.

3. Explain how you could add a card to your theater show times deck that would allow users to specify the number of tickets they wanted to purchase?

   ☞ Start the card with a tag like `<card id="somelabel" title="Tickets Needed">`. Use content like `<p>`Number of tickets? `<input type="text" name="somename" format="2N" /> </p>` to create an input box in which the user could enter up to a two digit number of tickets to purchase. Then close the card with `</card>`.

   ☞ There must also be a cgi script to process the form, just as in (X)HTML forms. Each variable from the `input`, `select` or `setvar` elements to be submitted must be specified in a `postfield` tag after the link to the cgi script tag.

4. Describe what the `access` element does.

   ☞ Sets up domains that a link must come from in order to access the deck's contents. Links from other domains or paths will be denied access to the deck.

Chapter 24: Testing and Debugging Web Pages ◆ Study Guide

Learning Objectives

- Identify and use (X)HTML and CSS validators.
  - (X)HTML validators compare your (X)HTML document to the appropriate (X)HTML DOCTYPE and return results telling you if your (X)HTML is valid. If it is not, it points out the places where the code is not valid. CSS validators test your CSS against the CSS specifications and return results telling you if your CSS is valid. If it is not, it points out the places where the CSS is not valid.
- Identify common mistakes and typos in (X)HTML coding.
  - Missing quotation marks, misspelled or mistyped words, unclosed tags, and missing # signs in hexadecimal colors are common errors in (X)HTML. In CSS, problems often arise from errors with colons and semi-colons, brackets, and spacing.
  - It is common to search for the mistake in the spot where it appears, but often the mistake is caused by some oversight in the code before the mistake becomes apparent. An unclosed tag or a forgotten quotation mark on the page somewhere above the spot that seems broken may be causing the problem.
- Compare and test Web pages in several browsers on different platforms.
  - You can have several levels of Netscape installed on the same computer for testing. To test in different levels of IE, you need multiple computers. Don't forget browsers such as the default AOL browser, which millions of visitors use. To really cover all the possibilities, check IBM's Home Page Reader (*http://www-3.ibm.com/able/hpr.html*). It reads a Web page aloud. Home Page Reader costs $150 and only works on Windows. There is information about the text only browser called Lynx at *http://www.trill-home.com/lynx.html*.
- Understand how to correct problems such as code showing in the browser window, images that don't appear, blank pages and browser variations.
  - Sites that seem to work on the student's computer may have problems when uploaded to a server in Chapter 25. Incorrect relative paths to images or for links are a common problem. Often students experience problems on the server because they fail to put files on the server in a folder structure that exactly mirrors the structure they have on their hard drive. Forgetting to upload the CSS file can produce a "File Not Found" error that may make a student think the (X)HTML file is not found, when the browser is actually looking for the CSS file. Look in the location bar for the file name when this happens to read the name of the file the browser is unable to find.

Get Up and Running Exercises

- Get to know the W3C's validation tools. They provide both (X)HTML and CSS validators. Visit both *http://validator.w3.org/* and *http://jigsaw.w3.org/css-validator/* and familiarize yourself with how the validators work. Test your pages with various `DOCTYPES` or with no `DOCTYPE` at all to see what happens.

  ☜ Have students take a Web page with no deprecated tags and run it through the validator with a strict `DOCTYPE` and with a transitional `DOCTYPE` to see the difference. Review pages 39 and 61 and have students try validating pages with the XML declaration included and with it removed. Also validate pages with the XHTML namespace included and removed. IE 6 for Windows will use quirks mode with a strict `DOCTYPE` if the XML declaration is included!

  ☜ If students have somehow come this far in the book without realizing the importance that mastering the basics will play in their eventual success as Web page designers, this exercise should make that point.

- Work with another student who needs to debug code. Help each other look for problems. Sometimes it is easier to spot the missing quotation mark, the missing closing tag, or the missing semi-colon in someone else's page. Just as you would proofread a paper before handing it in, you should proof your code.

- Visit the Question and Answer forum on www.cookwood.com. You can ask for help there. Note: the correct URL for the Q&A forum at *www.cookwood.com* is *http://www.cookwood.com/cgi-bin/lcastro/htmlbbs.pl*.

Class Discussion Questions

- Under what circumstances will your Web page be validated in standards mode? In quirks mode?

  ☜ With a `DOCTYPE` declaration of strict, the page should be validated using standards mode. However, in IE 6, if the XML declaration is included in the `DOCTYPE`, the page will revert to quirks mode. A transitional `DOCTYPE` or pages with no `DOCTYPE` at all will be validated in quirks mode. In some situations, the URL of the XML namespace will trigger quirks mode.

- Did you discover any personal "common" mistakes to watch yourself for?

  ☜ If a student makes the same mistake every time, it is easy to be alert for it when debugging.

- Why isn't it enough to test your pages in a browser? Why should you use a validator?

  ☜ Testing pages in the browser, while crucial, may not allow the designer to anticipate every possible setup a visitor might have. Writing valid code is a kind of insurance guaranteeing that pages will display as intended now and in the future because they conform to the W3C standards.

Review Questions

Multiple choice

1. Which of these is not a good testing habit to form?

   A. View your page in a browser and test every link

   B. Be sure your email address is on every page

   C. Use the W3C validators

   D. Try the page in different browsers and on different platforms

2. How do you test whether changes you made fixed a problem on your Web page?

   A. Insert comments in the code to note what you changed

   B. Check the URL

   C. Save the page and reload it in the browser window

   D. See if it is a browser support problem

3. If the browser is displaying the (X)HTML instead of the formatted page, what might be the problem?

   A. The Save As command did not work

   B. The CSS file was not uploaded

   C. The page may have been saved with a .txt file extension

   D. There is a space in the file name

4. Your image does not show up on the page. Which one of these is not a possible reason?

   A. You used CMYK format

   B. You have the proper path and file name extension

   C. The image has a space in the file name

   D. The image is in BMP format

5. If your (X)HTML validates but the page looks very different in different browsers, what might the reason be?

   A. A table may not have a closing tag

   B. The browser is using quirks mode

   C. A typo in a tag name

   D. The browser may not support the CSS properties you used

6. What might cause Netscape 4 to display a completely blank page?

   A. Missing closing tags

   B. Missing quotation marks

   C. Invalid CSS

   D. The document is not in standards mode

Fill-in-the-blank

1. The `DOCTYPE` tells the validator which set of rules to use in judging your code.
2. `<p>`Hello, `<em>`world`</p></em>` would not validate because of a nesting problem.
3. `<img src=portrait.jpg" alt="Yours truly" />` would not validate because of a missing quotation mark problem.
4. No quotation marks are used in style sheets except for multiword font names.
5. `p {font-size: 12 px;}` would not validate because of a spacing problem.

Chapter 25: Publishing Your Pages on the Web ◆ Study Guide

Learning Objectives

- Understand how to find a host for a Web site.
  - Web hosting services range from free to very expensive. Students need to know to investigate a hosting company to see if it meets their needs.
- Understand how to obtain a domain name for a Web site.
  - Domain name registrars abound, with pricing ranging from under $10 a year to about $35 a year. Perhaps as important as the cost is the question of how easy a particular company is to deal with. Students should learn how to investigate various companies that register domains to find one that suits their needs.
- Use FTP to transfer files to a server.
  - In addition to the basic concepts of "Put" and "Get" used by the file transfer protocol (FTP), students must understand when to transfer files as text or as binary and how to maintain the correct directory structure on the server.
  - AOL, although it allows users to upload by FTP, also has a Web based interface called "myftpspace" which can be used to transfer files to the AOL servers. There are other services as well, for example Geocities, which uses a Web based interface for uploading. While this works, using the tools designed to FTP, such as Fetch or WS_FTP, is faster.

Get Up and Running Exercises

- Visit some Web hosting sites and compare their services and pricing. Look at these and more: *www.pair.com*, *www.he.net*, *www.netfirms.com*, *www.interland.com*, and *www.findmyhosting.com*.
  - Have students chart the key features of several hosting services. They should compare costs, storage space, email accounts, cgi-bin availability, shopping cart availability, technical support, and other features.
- Visit some domain registrar sites starting with the list at *www.internic.net/alpha.html*. For example, check out *www.godaddy.com* and *www.pairNIC.com*. See if a domain name you want is available.

Class Discussion Questions

- Which FTP software is the best choice for you?
  - In addition to WS_FTP, mentioned in the text, another popular Windows tool is cuteFTP. In addition to Fetch, mentioned in the text, another popular Mac tool is Transmit. (Most HTML editors come with built-in FTP tools.) Since FTP software is fairly simple, there are not many comparison points to use beyond operating system and personal preference.
- There are thousands of Web hosting companies. How do you make a wise choice as to which one to use?
  - Ask others who may have used that company. Read the sites that offer ratings on hosting companies. See what features they have and at what price. See how accessible they are for technical support. See what amount of "up time" they guarantee. Review their Web site carefully to see if their directions and help are clear and adequate.
- Once you have chosen a hosting company and you are ready to upload your files to the server, how do you get answers or help?
  - The hosting company you chose will have information in a specific area of their Web site. Usually this area is called "Support," but may have labels like "Webmaster Information" or "Developer Information." It will provide information about uploading, FTP address, the path to perl, how to use cgi-bin directories, how to set up email forwarding, how to set up MySQL, where to find server logs, and more. If all that published help doesn't answer a question, there is usually an email address for support or a phone number for technical help. Many hosting companies offer toll-free phone numbers for 24-hour free technical support. Others may offer free support by email only, with a phone number available that is not toll free.

Review Questions

Multiple choice

1. If your Web site contained a large number of sound files, which would be a feature you would want in a hosting package?

   A. cgi-bin directory

   B. 200 MB storage space

   C. 20 mailboxes

   D. FrontPage extensions

2. If your Web site asks visitors to complete and submit forms, which would be a feature you would want in a hosting package?

   A. cgi-bin directory

   B. 200 MB storage space

   C. 20 mailboxes

   D. FrontPage extensions

3. What is one advantage of having your own domain name?

   A. It gives you a host

   B. It is less expensive than not having a domain name

   C. It can be transferred from one host to another

   D. It is the only way to get a URL

4. What can you do with an FTP application such as WS_FTP?

   A. create an (X)HTML file

   B. put and get files

   C. find the path to perl

   D. set the domain name

5. What is indicated by the URL *http://members.aol.com/screenname*.

   A. The Upload button went to the correct directory

   B. An anonymous user is logged in

   C. Only members of AOL can see the site

   D. An AOL member has a Web site on an AOL server

6. What would be the best choice for a domain name for a company selling candles?

   A. www.candles.com

   B. www.the_candle_store.com

   C. www.alloccasioncandles.net

   D. www.candle-connect.com

Fill-in-the-blank

1. The *dell* in *www.dell.com* is the domain (or server) name.
2. The *lcastro* in *www.crocker.com/~lcastro* is the username.
3. HTML files should be uploaded as text (or ASCII).
4. Image files should be uploaded in binary mode.
5. FTP stands for file transfer protocol.

Definitions

1. What is a server?

   A server is a computer that transfers requested Web pages to a visitor's computer for viewing. Most servers are using HTTP (HyperText Transfer Protocol), but servers can be set up to use other protocols such as FTP.

2. What is an ISP?

   An Internet Service Provider gives access to the Internet. Internet Service Providers often also give their customers an email account. Many offer small amounts of server space for Web sites as part of the basic charge.

3. What is a host?

   A hosting company has large numbers of servers where various domains and Web sites are stored and served to visitors. This term is also often used interchangeably with "server."

Chapter 26: Getting People to Visit ◆ Study Guide

Learning Objectives

- Use keywords for search engine results.
  - Keywords focus on the site's chief content and should be used in titles, headings, and body text. At one time `meta` tags were extremely important for keywords, but many search engines have stopped using them.
- Use a description that will appear in search engine results.
  - A description in a `meta` tag is less valuable than well-written text on the page.
- Understand the uses of `meta` tags.
- Understand techniques that will improve search engine placement.
- Understand how to keep search engines from indexing pages in a site.
  - The `robots` meta tag can be used to instruct search robots not to index, follow page links, or archive pages.
- Submit a site to a search engine.

Get Up and Running Exercises

- Visit *www.searchenginewatch.com*. This site provides valuable information specific to each search engine that can help you place well in search results.
- Think about the keywords that would bring people to your site. Search on those keywords. Study the titles, headings, text, and `meta` tags of the top five sites that use the same keywords you would use on your site. Check the link popularity of the top five sites by typing `link:topsite.com` in the Google search box, where *topsite* is the name of one of the top sites returned from your keyword search.
- Visit Yahoo and Google and find the pages that would allow you to submit your site. If you have a site on the Web, go through the steps to enter your URL to submit the site.
  - On Google, click the Directory tab to begin searching for the appropriate category for the site. When you are in the correct category, look at the bottom of the page for Submit a Site. Clicking Submit a Site will take you to a submission form for the category you were in. Sites can be submitted in more than one category. It pays dividends to search for sites similar to yours in advance and take note of the categories these sites were placed in. Then when submitting your own site, you can be sure to submit it in those categories. The process is similar on Yahoo, except that when you click the Suggest a Site link, they offer you a choice as to whether you want to pay for a listing or take the free listing.

Class Discussion Questions

- How did the top five sites in your keyword search exercise achieve their top rankings?

  ☞ Students should generalize based on their independent searches. They may conclude that focused keyword use and link popularity are major factors in reaching top ranking. They may notice that out-of-date sites or sites with barriers such as frames don't place well in the search engines.

- What are some Web design practices that hurt your ranking in the search engines?

  ☞ Some suggestions include using frames, using only images for text and not having any text on the page, not having meaningful titles. Other things to avoid including "spamming" the search engines by putting words on the page in a color that makes them invisible to the viewer, and using keywords that are not related to the content of your site. Avoid putting things like "Under Construction" or "Bookmark this Page" at the top of the page as this is interpreted to be the most important text on the page by the search engine.

Review Questions

Multiple choice

1. Which of the following would not be a good way to use a keyword?

A. Use it in the page title

B. Repeat it 50 times in a font color that matches the page background

C. Use it several times in the text on the page that contains the main content

D. Use it in an image's alt text

2. Which `meta` tag is used to attract visitors to your content?

A. `<meta name="copyright" content="&copy; year holder" />`

B. `<meta name="robots" content="noindex" />`

C. `<meta name="keywords" content="keyword, keyword phrase, keyword" />`

D. `<meta name="robots" content="noarchive" />`

3. Which `meta` tag is used to keep search engines from indexing your page?

A. `<meta name="copyright" content="&copy; year holder" />`

B. `<meta name="robots" content="noindex" />`

C. `<meta name="keywords" content="keyword, keyword phrase, keyword" />`

D. `<meta name="robots" content="noarchive" />`

4. What might not improve your link popularity?

A. Get other sites to link to you

B. Only register with specialized search engines

C. Submit your site to major search engines and specialized search engines

D. Offer authoritative content that people need

Definitions

1. What is search engine optimization?

Preparing a site and marketing it in such a way as to achieve top search engine rankings.

2. What is a crawler page?

A crawler page is a page with links to every important page in your site. It is set up to provide the search engines with an entry into your site that can be followed so that everything you want indexed gets noticed. The URL of the crawler page is submitted to the search engine. A crawler page can also serve as a site map.