



WPDD202: Webpage Design & Development

Resource Material

Web Design with HTML & CSS3:
Comprehensive, 8th Edition

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Chapter 3

Enhancing a Website with Links and Images

Chapter Objectives

- Describe types of hyperlinks
- Create relative links, absolute links, email links, and telephone links
- Describe image file formats
- Describe the image tag and its attributes
- Add images to a website
- Explain div elements and attributes

Chapter Objectives (continued)

- Use a div element to mark a page division
- Define the class attribute
- Describe and use HTML heading tags
- Describe the types of lists in an HTML document
- Create an unordered list and a description list
- Test and validate links on a webpage

Adding Links to a Webpage

- **Hyperlink** – It is a link on a webpage that allows users to navigate a website and move from one page to another
- **Link** – It is text, an image, or other webpage content that visitors tap or click to instruct the browser to go to a location in a file
- **Text link** – Also known as hypertext link. When text is coded as a hyperlink, it appears as underlined text in a color different from the rest of the webpage text
- **Image link** – It is used to indicate an image as a link and some websites display a border around the image

Anchor element

- It is used to create a hyperlink on a webpage
- The `<a>` and `` are the start and the end tags
- Include the `href` attribute in the starting anchor tag to identify the webpage, email address, file, telephone number, or other content to access
- The value of the `href` attribute is the content for a link

Relative link

- It is a hyperlink that links to other webpages within the same website
- It is created by using an anchor tag with an `href` attribute that designates the file name of the webpage or the path and the file name of the webpage

Relative link (continued)

- The Figure 3-2 shows an example of a relative link

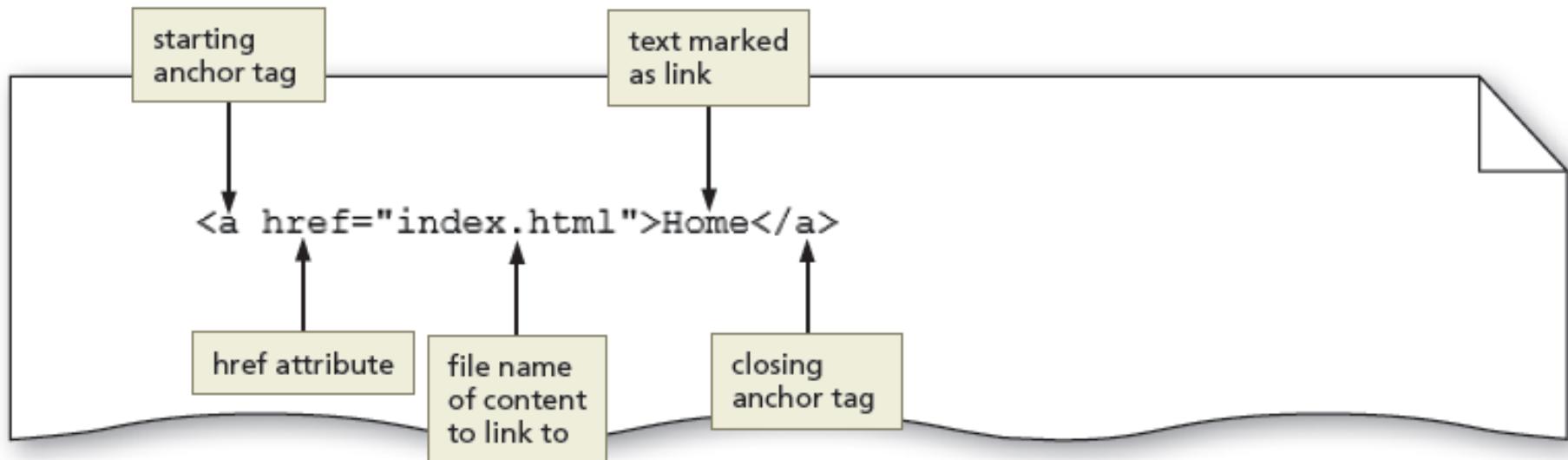


Figure 3-2

Absolute link

- It is a hyperlink that links to other webpages outside of a website
- It is created using an `anchor` element with an `href` attribute that designates a website URL

Absolute link (continued)

- The Figure 3-3 shows an example of an absolute link

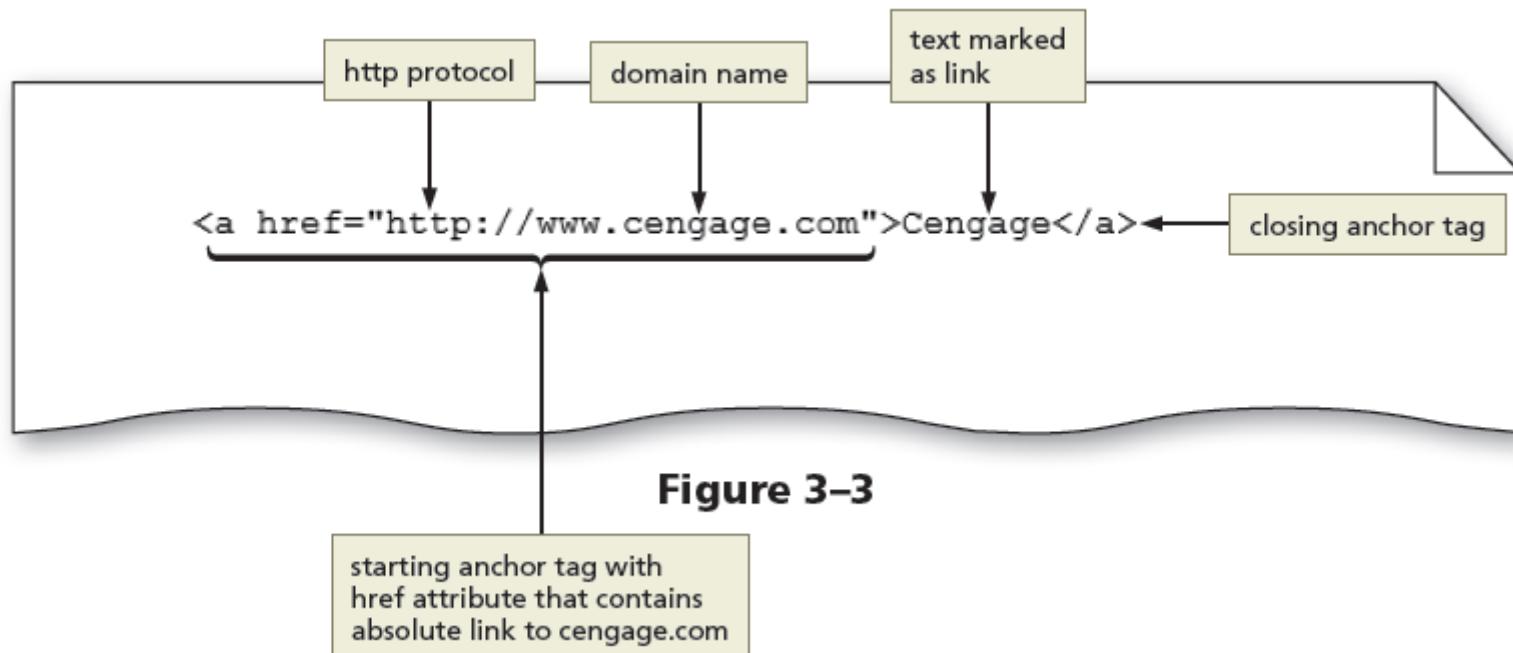


Image link

- Images can be used to link to another page within the site, another website, an email address, or a telephone number

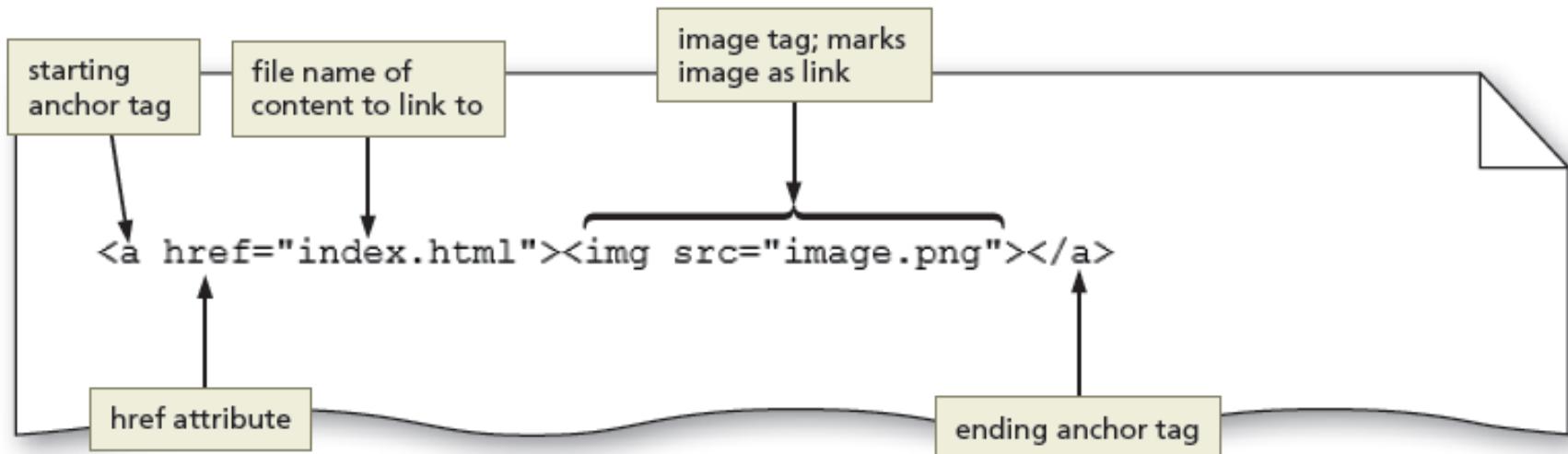


Figure 3-4

Email link

- It is a hyperlink that links to an email address
- Use `anchor` elements to link to an email address by including the `href` attribute followed by "mailto:" and then the email address

Email link (continued)

- The Figure 3-5 shows an example of an email link

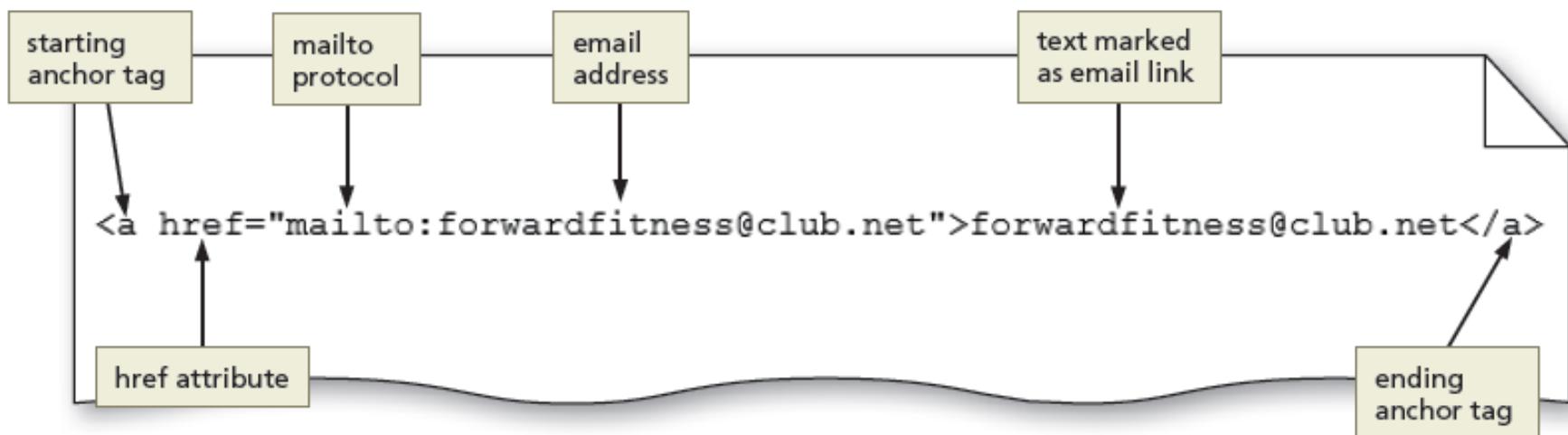


Figure 3-5

Telephone link

- It is a hyperlink that links to a telephone number
- Use an `anchor` element to link to a telephone number by including the `href` attribute, followed by "tel:+1*number*" where +1 is the international dialing prefix and *number* is the phone number

Telephone link (continued)

- The Figure 3-7 shows an example of a telephone link

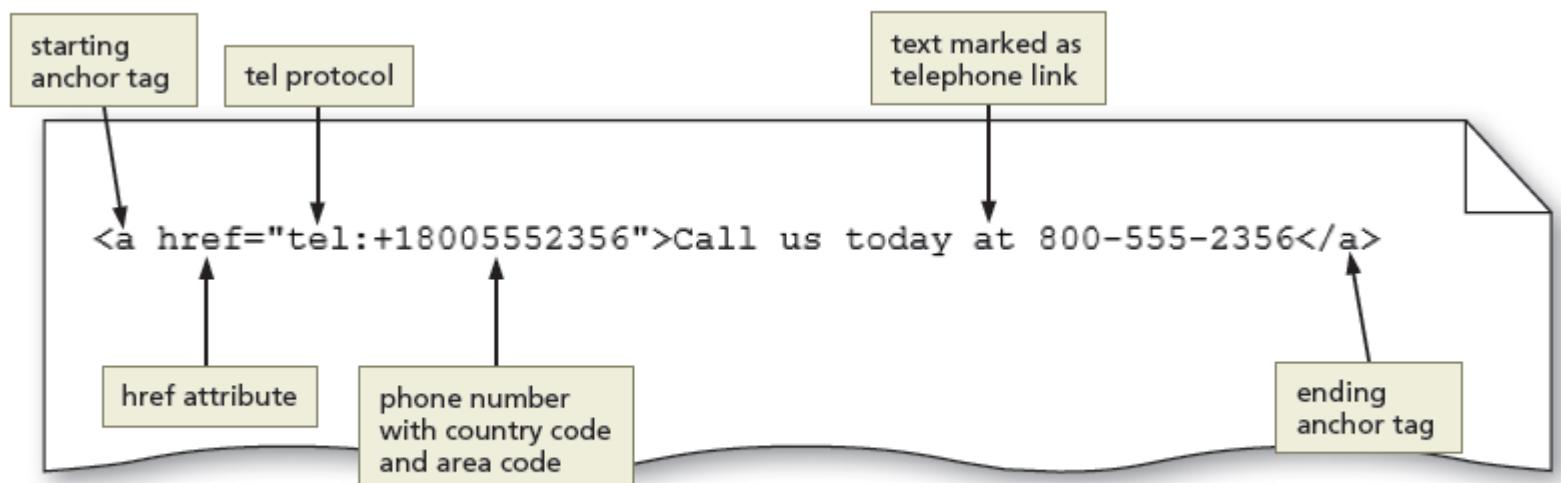


Figure 3-7

Adding Images to a Website

- Images include photos, drawings, diagrams, charts, and other graphics that convey visual information
- Images should support the purpose of the webpage or illustrate the content

Image File Formats

- Image files are created in several formats such as:
 - Graphics Interchange Format (**GIF**) – It supports transparency and frame animation
 - **Lossless compression** – To compress an image, GIF uses this technique to maintain the file's color information
 - Portable Network Graphics (**PNG**) – It supports transparency, but not animation

Image File Formats (continued)

- Joint Photographic Experts Group (**JPG** or **JPEG**) – It is a standard file format for digital photos
 - **Lossy compression** – To reduce file size, this technique is used to discard some of the color information in the image
- Scalable Vector Graphics (**SVG**) – It is a format that uses markup language to create two-dimensional graphics, images, and animations

Image File Formats (continued)

Table 3-3 Choosing an Image File Format

Format	Pros	Cons	Use for
GIF	Small file size; supports transparency and animation	Limited to 256 colors	Line drawings; replaced by PNG file format
PNG	Small file size; supports transparency and more than a million colors	Does not support animation	Images that are not digital photos
JPG	Supports more than a million colors	Larger file size	Digital photos
SVG	Flexible; scalable; no files needed because graphics are created with code	Not supported by older browsers and not all modern browsers support it 100 percent	Shapes, lines, text, and gradients

Image Dimensions and File Size

- **Pixel** – It is the smallest element of light or color on a device displaying images
- The common resolution for laptops is 1366 x 768 pixels
- The disadvantage of an image with a high resolution is that it also has a large file size
- Use graphic or photo editors to **optimize** an image with a large file size to reduce its file size and load time

Image Tag and Its Attributes

- – The **image tag** is an empty HTML tag used to add an image to a webpage
- The image tag includes attributes such as:
 - **src** – It identifies the image file being inserted
 - **alt** – It specifies alternate text in case the image cannot be displayed in a browser
 - **height** – It defines the height of an image in pixels
 - **width** – It defines the width of an image in pixels

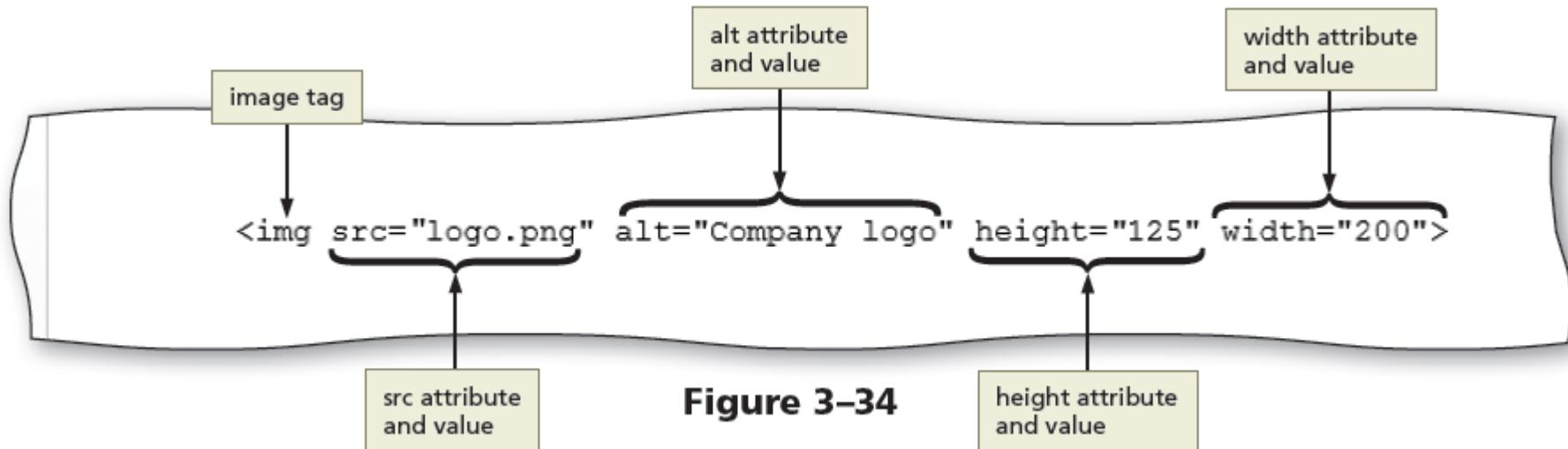
Image Tag and Its Attributes (continued)

Table 3-4 Image Element Attributes

Attribute	Function
src	Identifies the file name of the image to display
alt	Specifies alternate text to display when an image is being loaded Especially useful for screen readers, which translate information on a computer screen into audio output Should briefly describe the purpose of the image in 50 characters or less
height	Defines the height of the image in pixels, which improves loading time
width	Defines the width of the image in pixels, which improves loading time

Image Tag and Its Attributes (continued)

- The Figure 3-34 shows an example of an image tag with attributes



Div element

- Div element defines an area or a division in a webpage
- It uses the `<div>` and `</div>` tags
- It can be used within the `main` element to further divide the primary content area into separate sections

Div element (continued)

- The Figure 3-41 shows a wireframe with four div elements inside the main element

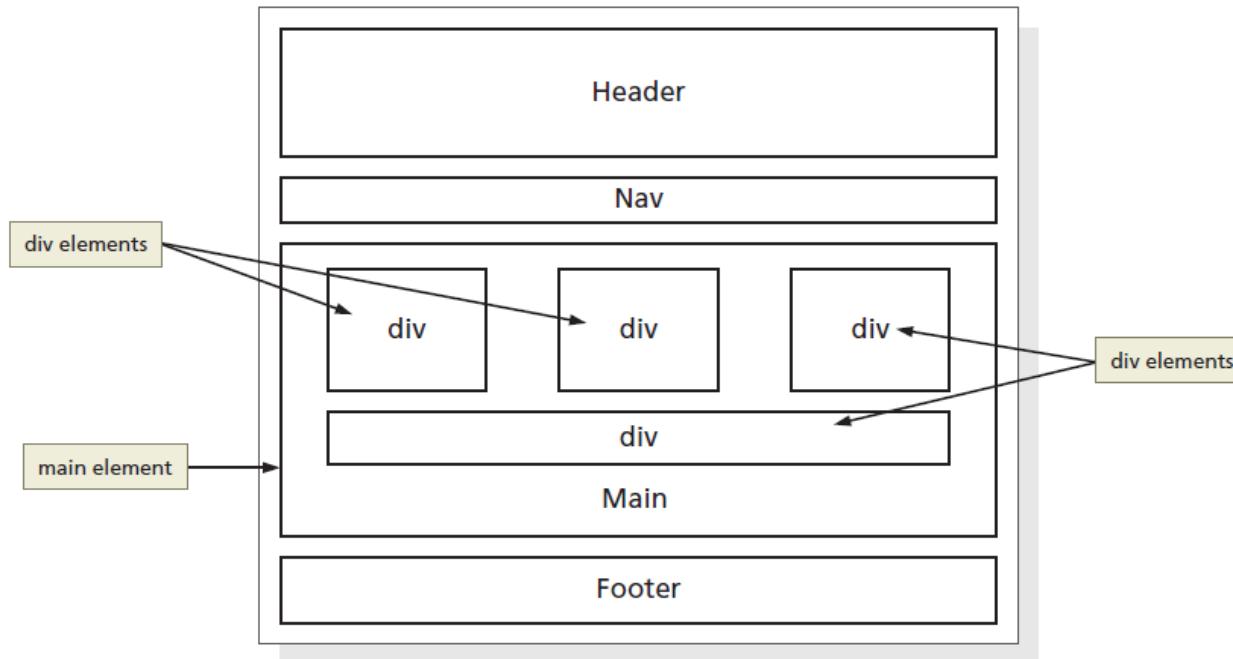


Figure 3-41

Div attributes

- Div elements have attributes that provide information about the element
- The `id` is a div attribute which identifies a unique area on a webpage and distinguishes it from other page divisions

Div attributes (continued)

- The Figure 3-43 shows the revised wireframe with the `div` element and `id` attribute value defined as `container`

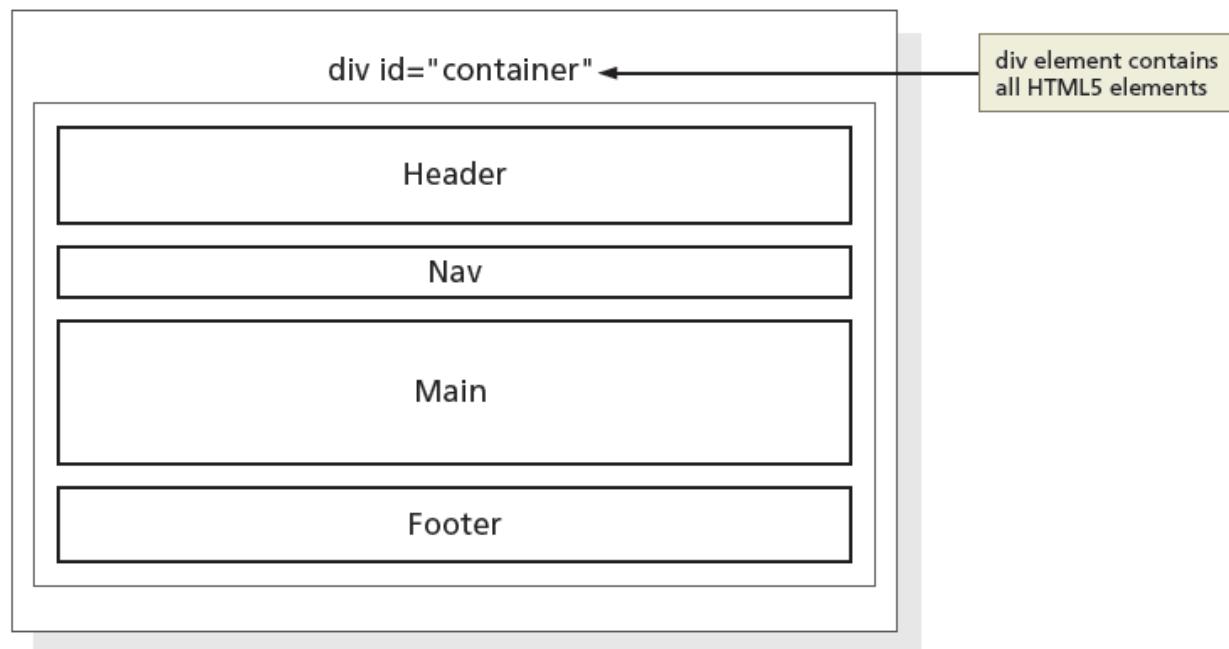


Figure 3-43

Class Attributes

- A class attribute name can be applied to more than one div or other HTML element on a webpage
- The Figure 3-48 shows an example of a class attribute used within an image tag

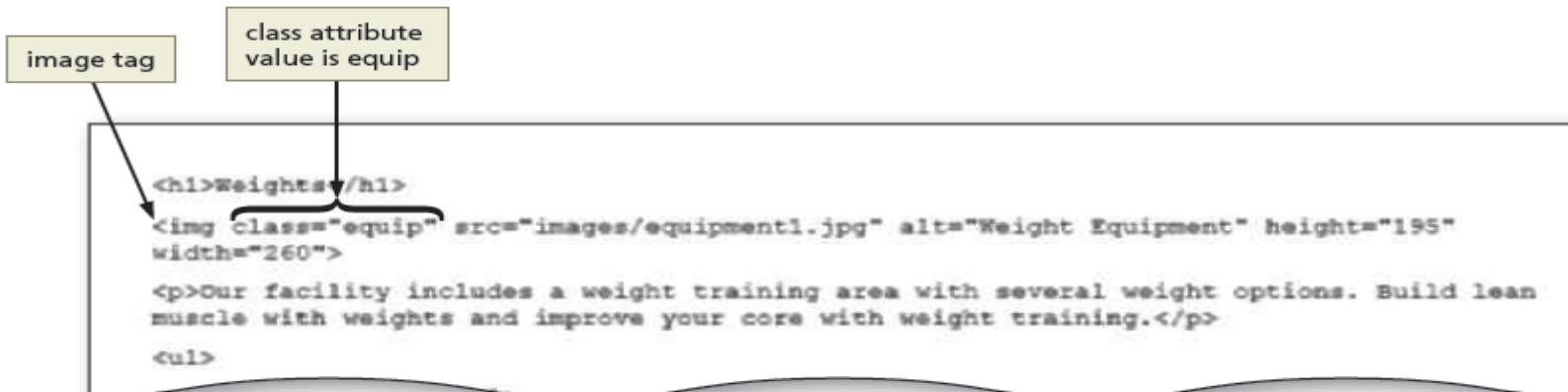


Figure 3-48

Div id and class

ids are unique

- Each element can have only one id
- Each page can have only one element with that id

classes are NOT unique

- You can use the same class on multiple elements.
- You can use multiple classes on the same element.

Adding Headings and Lists

- **Heading elements** – Provide a title or heading before a paragraph of text or section of a page
- **Heading levels** – There are 6 levels of headings (h1, h2, h3, h4, h5, and h6), with level 1 being the most important and level 6 the least

Adding Headings and Lists (continued)

- **List** – It structures text into an itemized format
- The different types of lists are:
 - **Unordered list**
 - It displays each item of information in no specific sequence
 - The `` and `` are the start and end tags for an unordered list
 - `` and `` are the start and end list item tags

Adding Headings and Lists (continued)

- The following code creates a bulleted list of two items:

```
<ul>  
  <li>First item</li>  
  <li>Second item</li>  
</ul>
```

Adding Headings and Lists (continued)

- **Ordered list**

- It displays information in a series using numbers or letters
- The `` and `` are the start and end tags for an ordered list
- `` and `` are the start and end list item tags
- The following code creates a numbered list of two items:

```
<ol>
<li>First item</li>
<li>Second item</li>
</ol>
```

Adding Headings and Lists (continued)

- The Figure 3-50 shows a webpage with an unordered and an ordered list

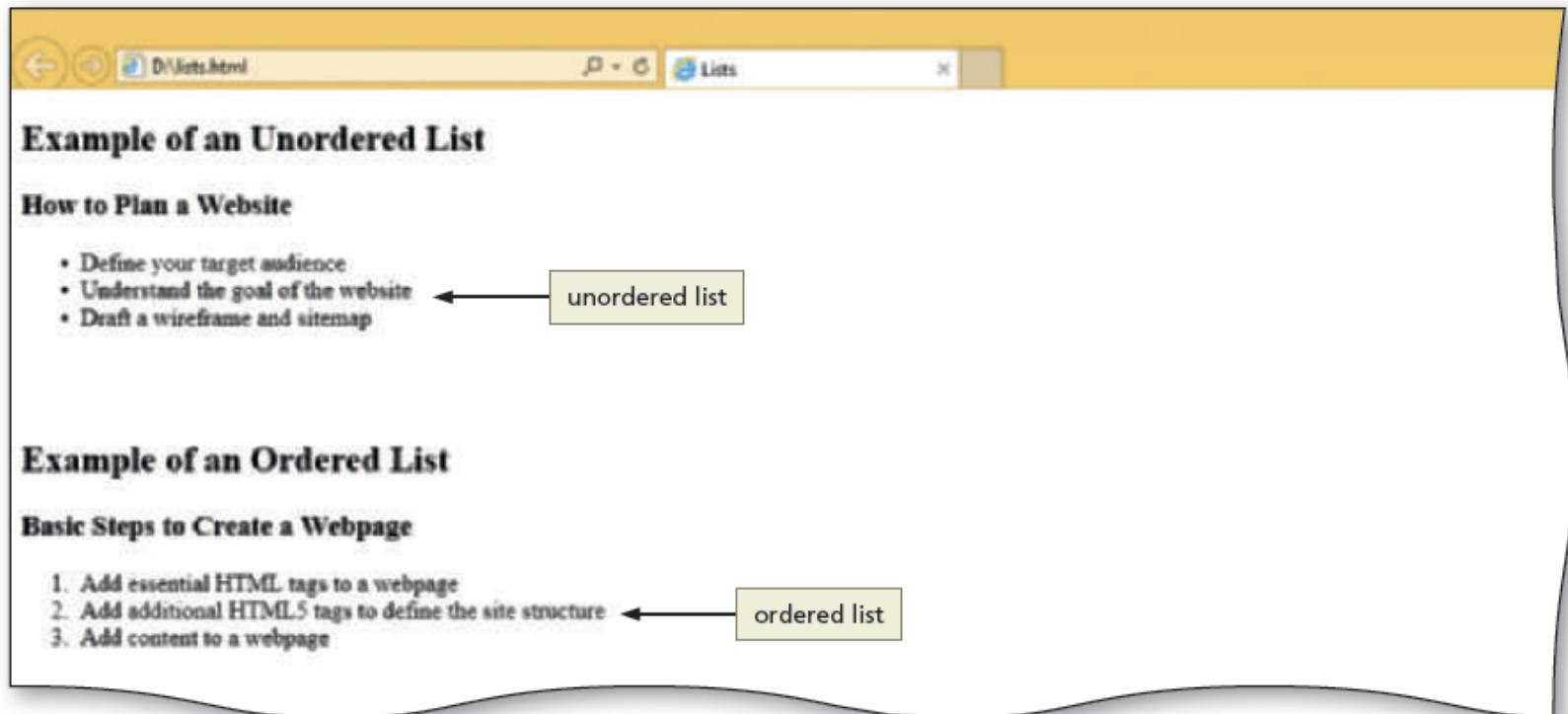


Figure 3-50

Chapter 3: Creating Web Pages with Links, Images

Adding Headings and Lists (continued)

- A **description list** contains terms and descriptions
- The `<dl>` and `</dl>` are the start and end tags for a description list
 - Each term is marked within a pair of `<dt>` and `</dt>` tags
 - Each description or definition is marked between a pair of `<dd>` and `</dd>` tags

Adding Headings and Lists (continued)

- The following code creates a description list of two terms and definitions:

```
<dl>
  <dt>First term</dt>
    <dd>First definition</dd>
  <dt>Second term</dt>
    <dd>Second definition – part 1</dd>
    <dd>Second definition – part 2</dd>
</dl>
```

Adding Headings and Lists (continued)

- The Figure 3-51 shows an example of a description list

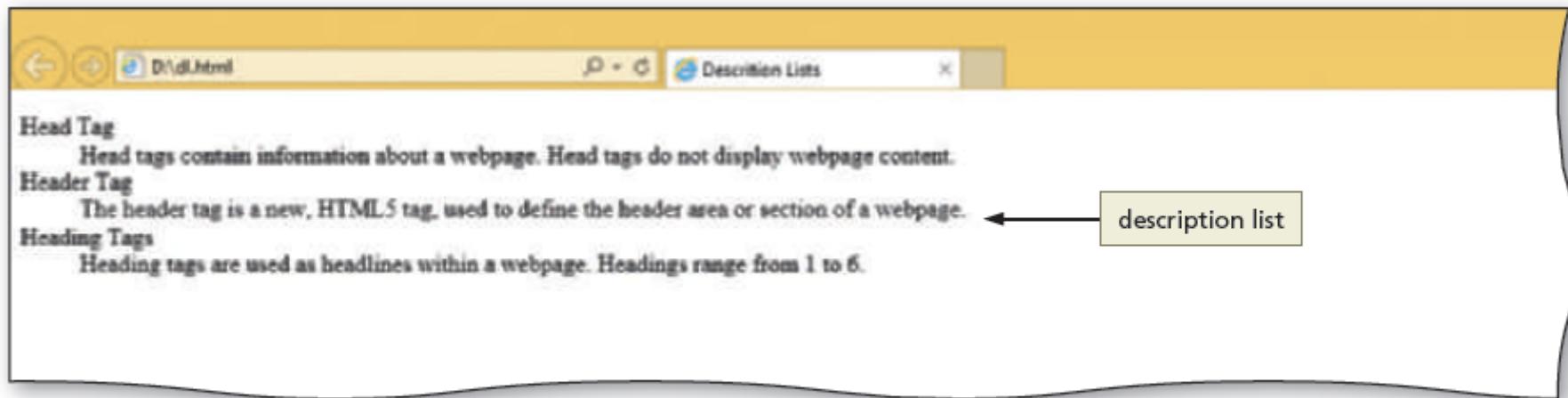


Figure 3-51

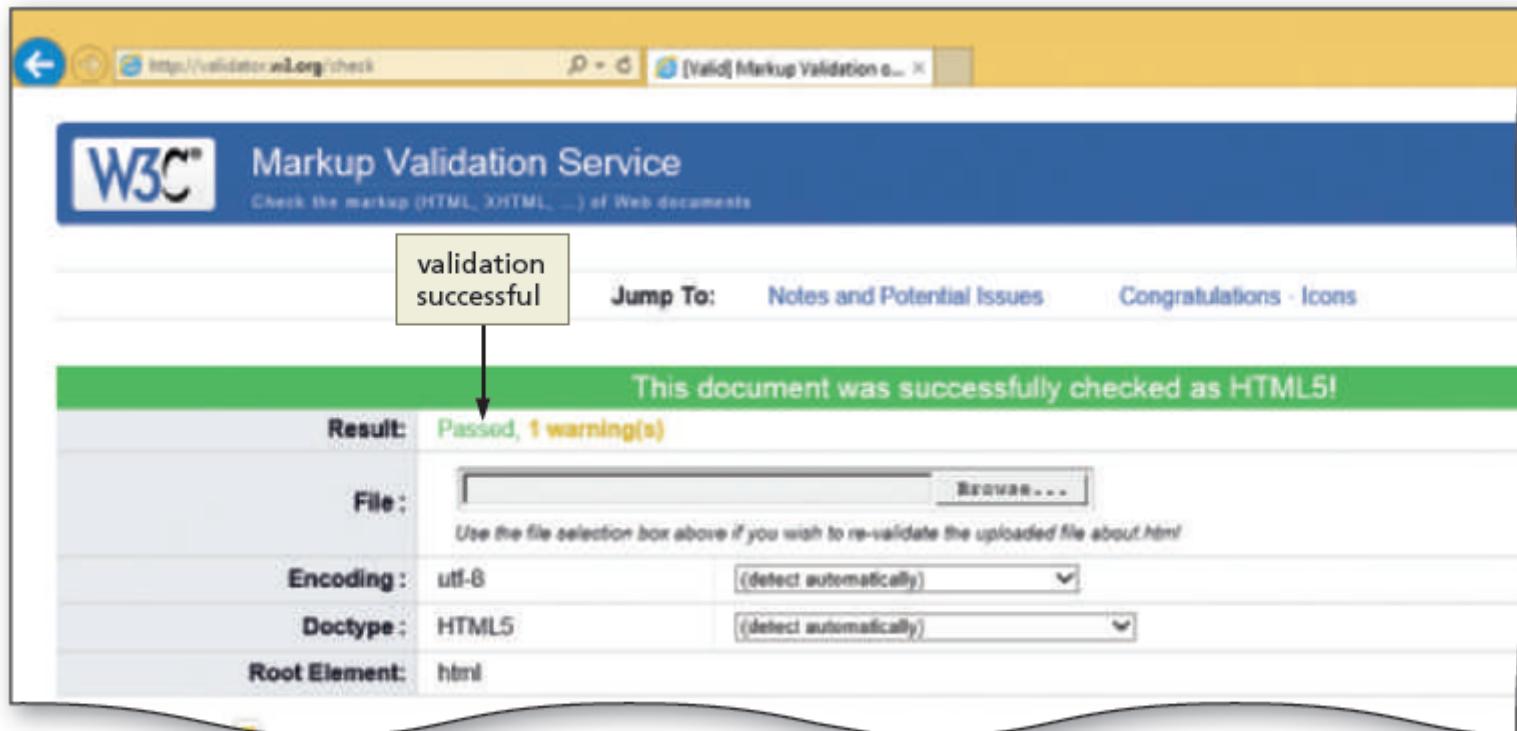
To Validate Webpages

- Perform the following steps to validate an HTML document:
 - Open a browser and type <http://validator.w3.org/> in the address bar to display the W3C validator page
 - Tap or click the Validate by File Upload tab to display the Validate by File Upload tab information
 - Tap or click the Check button to send the document through the validator and display the validation results page

To Validate Webpages (continued)

- Correct the errors if any, save the changes, and run the file through the validator again to revalidate the page
- Perform the above steps to validate HTML pages and correct any errors
- Close the browser, and then close the HTML text editor

To Validate Webpages (continued 2)



Source: validator.w3.org

Figure 3–66



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Chapter E3

Website standards and accessibility

Learning Outcomes

- Describe the evolution of the Internet and the Web
- Explain the need for web standards
- Describe universal design
- Identify benefits of accessible web design
- Identify reliable resources of information on the Web
- Identify ethical use of the Web
- Describe the purpose of web browsers and web servers
- Identify Internet protocols
- Define URIs and domain names
- Describe XHTML and HTML

The Evolution of the Internet

- Internet
- Interconnected network of computer networks
- ARPAnet
- Advanced Research Project Agency
- 1969 – four computers connected
- NSFnet
- National Science Foundation

- Use of the Internet was originally limited to government, research and academic use

- 1991 Commercial ban lifted

Reasons for Internet Growth in the 1990s

- Removal of the ban on commercial activity
- Development of the World Wide Web by Tim Berners-Lee at CERN
- Development of Mosaic, the first graphics-based web browser at NCSA
- Convergence of technologies:
 - Affordable personal computers with GUI Operating Systems
 - Affordable Internet service providers

The World Wide Web

The graphical user interface to information stored on some of the computers connected to the Internet.





Web Standards and the W3C Consortium

W3C – World Wide Web Consortium

- Develops recommendations and prototype technologies related to the Web
- Produces specifications, called Recommendations, in an effort to standardize web technologies
- WAI – Web Accessibility Initiative

Web Accessibility

“The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect.” – Tim Berners-Lee

- Accessible Websites provide accommodations that help individuals to individuals with visual, auditory, physical, and neurological disabilities overcome barriers

- WAI – Web Accessibility Initiative
 - Develops accessibility recommendations
 - WCAG 2.0
 - Web Content Accessibility Guidelines
<http://www.w3.org/WAI/WCAG20/quickref/>

Web Accessibility

Section 508 of the Rehabilitation Act

Requires that government agencies must give individuals with disabilities access to information technology that is comparable to the access available to others

Universal Design

“The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.”

– *The Center for Universal Design*
http://www.design.ncsu.edu/cud/about_ud/about_ud.htm



Information on the Web

- Reliability and information
 - Evaluate the credibility of the site
- Ethical use of information
 - Copyright and the Web

Summary

This chapter provided a brief overview of Internet, Web, and introductory networking concepts.



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