HTML5 and CSS3 Illustrated

Unit F:
Inserting and Working with Images

UNIT
F
HTML5 and CSS3

Objectives

- Evaluate image file types

- Insert images

- Align images

- Control page flow

Objectives (continued)

- Insert a background image

- Associate images with related text

- Use images as links

- Insert a favicon

Evaluating Image File Types

- Images can be added to a Web page by linking to a separate file

- Different image file types:
  - <u>Bitmap image:</u> represented as grid of dots of specified colors
    - e.g., JPG, GIF, and PNG
  - <u>Vector graphic:</u> encoded as geometric shapes
    - e.g., SVG

Evaluating Image File Types (continued)

- Common file formats:
  - JPG: optimized for many colors
    - photographs
  - GIF: optimized for areas with defined borders, few colors
    - Line drawings
    - Supports transparent pixels
  - PNG: allows user to specify opacity level for areas
  - SVG: no decrease in quality when scaled

Evaluating Image File Types (continued)

- Bitmap should be created and formatted for use on Web

  - Created and displayed at set resolution and size

- <u>Resolution</u>: how close dots should be in the output

  - Measured in dots per inch (dpi)

  - High resolution = more detail, large file size

Evaluating Image File Types (continued)

- <u>Size:</u> length and width of image
  - ➢ <u>Pixels</u>: individual dots that make up the image
  - ➢ Bitmaps display optimally at native size
  - ➢ Scaling affects download time and image quality

Inserting Images

- <u>img element</u>: used to add an image to HTML document
  - One-sided element
  - Must include two attributes:
    - <u>src</u>: path and filename to the image file
    - <u>alt</u>: text to display if image is unavailable
  - Inline element by default
    - Can be wrapped in block element for alignment purposes
    - Within text, aligned to text baseline

Inserting Images (continued)

- Width and height attributes:
  - Not required
  - Can be used to specify the native dimensions of an image
    - Allow a visual user agent to maintain blank space preserving the layout of the Web page
  - Always in pixels, no need to specify units

Inserting Images (continued)

- HTML code with img elements

img element for the logo graphic

img elements replace special characters

Aligning Images

- <u>figure element</u>: used to mark images that add information to a Web page
  - Semantic element
  - Enables user agent to link figure element contents to another location without affecting information conveyed

- <u>CSS float attribute:</u> enables Web page elements to flow around figure
  - Left and right values align figure

Aligning Images (continued)

- ## Use of CSS float property and resulting Web page

float property takes element out of top-to-bottom flow of page and allows other page elements to appear next to it

```
font-family: tahoma, arial, helvetica, sans-serif;
}
figure {
    display: block;
    float: right;
    margin: 0 0 0.5em 1em;
    padding: 0;
}
footer {
```

Home | About Us | Rooms | Reservations | Local Weather | Directions

Paragraphs below image flow to left

Lakeland Reeds is a rustic bed and breakfast on Twin Lakes near rural Marble, Minnesota. Convenient to US 2 and 169, the fresh air and quiet make for an Ideal weekend escape from the rush of city life.

45 Marsh Grass Ln. 🍃 Marble, MN 55764 🍃 (218) 555-5253

float: right name–value pair aligns element with right side of parent element and lets elements below it flow around it

Controlling Page Flow

- CSS float property not always sufficient for desired page layout

- <u>CSS clear property:</u> prevents floated elements from being displayed to the side of another element
  - Allows more precise control of Web page flow

Controlling Page Flow (continued)

- Use of CSS clear property and resulting Web page

clear property added to style rule for footer element

```
footer {
    display: block;
    background: #B8944D;
    padding: 0.25em;
    margin: 0;
    clear: right;
}
```


Skip navigation

Lakeland Reeds
Bed & Breakfast

Home | About Us | Rooms | Reservations | Local Weather | Directions

Lakeland Reeds is a rustic bed and breakfast on Twin Lakes near rural Marble, Minnesota. Convenient to US 2 and 169, the fresh air and quiet make for an ideal weekend escape from the rush of city life.

clear property causes footer element to be displayed without floated elements to its right

45 Marsh Grass Ln. • Marble, MN 55764 • (218) 555-5253

Inserting a Background Image

- Image can be background of Web page or element
  - Specify path and filename as value for background property
  - Important to maintain contrast between background and text
  - Specify background color in case image not available or not supported

- Tiling: displaying images repeatedly
  - Used by user agents to fill screen space

Inserting a Background Image (continued)

- Syntax of background property:
  - background: url("*url goes here*")
  - Background: *color_indicator*

- When property-value pairs conflict, the one that occurs later in the rule takes precedence

Inserting a Background Image (continued)

- Code for background color and image

```
/* Lakeland Reeds Bed and Breakfast */
@font-face {
  font-family: 'CuprumFFURegular';
  src: url('fonts/Cuprum-webfont.eot');
  src: local('☺'), url('fonts/Cuprum-webfont.woff') format('woff'), url('fonts/c
webfont.svg#webfontKLktnWy4') format('svg');
  font-weight: normal;
  font-style: normal;
  }
body {
  padding: 0;
  margin: 0;
  font-family: tahoma, arial, helvetica, sans-serif;
  background: #6e93c8;
  background: url("images/lake.jpg");

figure {
  display: block;
```

Background color and image
added using background property

Associating Images with Related Text

- **figcaption element:** marks text as a caption for associated image
  - Nested in figure element for the image
  - Provide context, explanation or credit

- **title attribute:** used to specify additional image information
  - Browsers display as floating text during mouse-over
    - When not specified, some browsers display alt text

Associating Images with Related Text (continued)

- Figure caption code and result

figcaption element associates text with an image in a figure

```
<figure id="main">
  <img src="images/sun.jpg" width="369" height="268" alt="" />
  <figcaption><a href="rooms.html#sun">The Sun Room</a></figcaption>
</figure>
```

Figure caption is linked to Web page providing more details about the pictured room

Unholy Vault Designs/Shutterstock.com
Faithe Wempen/sycamoreknoll.com
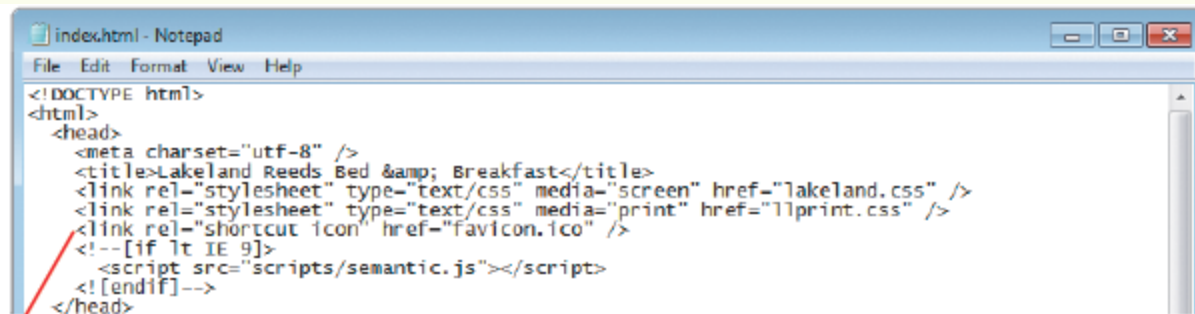Photo/Sasha Vodnik

Using Images as Links

- Images can be used as links
  - Enclose img element within an a element

- Browsers typically add border around linked image to display link state
  - Use pseudo-classes to modify link state colors
  - Use CSS border property to remove the border

Inserting a Favicon

- <u>Favicon:</u> icon associated with Web page in the address bar and on bookmarks
  - 16 x 16 pixels
  - Saved in .ico format

- To specify for all pages of Web site, place in root folder for the site

- To specify for individual page use link element

Inserting a Favicon (continued)

- Code for favicon and resulting page


```
index.html - Notepad

File  Edit  Format  View  Help

<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8" />
    <title>Lakeland Reeds Bed &amp; Breakfast</title>
    <link rel="stylesheet" type="text/css" media="screen" href="lakeland.css" />
    <link rel="stylesheet" type="text/css" media="print" href="llprint.css" />
    <link rel="shortcut icon" href="favicon.ico" />
    <!--[if lt IE 9]>
      <script src="scripts/semantic.js"></script>
    <![endif]-->
  </head>
```

link element associates favicon with Web page in browsers that don't support the other method

Customized favicon for the Lakeland Reeds B&B Web site

Summary

- Bitmap images: represented as grid of dots of specified colors

- Vector graphic: encoded as geometric shapes

- Bitmaps should be created and formatted for use on the Web

- Quality of image is determined by resolution and size

Summary (continued)

- Use one sided img element to insert image

  - ➤ Must include src and alt attributes

- figure element: used to mark images that add information to Web page

- CSS float and clear properties: used to control page flow

Summary (continued)

- Image can be used as page background
  - ➤ User agents tile image if necessary

- figcaption element: can be used to include figure caption

- Images can be used as links when enclosed in an a element

- Favicon: icon associated with Web page in address bar