Visual Elements and Graphics
The Horizontal Rule

- Is used to visually separate areas of a page
- To create a horizontal rule, use the tag `<hr />`
- Horizontal rules are centered within their container element
The Horizontal Rule Element

- Configures a horizontal line

```
<hr />
```
The CSS border Property

- The border property configures the border or boundary around an element.
- The default setting has the border width set to zero causing it not to display.
- We can set the border-width, border-color and border-style.
- We can also individually set the border-top, -right, -bottom and -left.

```css
h2 { border: 2px solid #ff0000 }
```
CSS Borders:
Block / Inline Elements

- **Block element**
  - default width of element content extends to browser margin (or specified width)

- **Inline element**
  - Border closely outlines the element content

```css
h2 { border: 2px solid #ff0000; }
a  { border: 2px solid #ff0000; }
```
Browser Display Can Vary

## CSS border-style Values

<table>
<thead>
<tr>
<th>Firefox</th>
<th>Internet Explorer</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>default</td>
</tr>
<tr>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>inset</td>
<td>inset</td>
</tr>
<tr>
<td>outset</td>
<td>outset</td>
</tr>
<tr>
<td>double</td>
<td>double</td>
</tr>
<tr>
<td>groove</td>
<td>groove</td>
</tr>
<tr>
<td>ridge</td>
<td>ridge</td>
</tr>
<tr>
<td>solid</td>
<td>solid</td>
</tr>
<tr>
<td>dashed</td>
<td>dashed</td>
</tr>
<tr>
<td>dotted</td>
<td>dotted</td>
</tr>
</tbody>
</table>
Configuring Specific Sides of a Border

- Use CSS to configure a line on one or more sides of an element
  - border-bottom
  - border-left
  - border-right
  - border-top

h2 { border-bottom: 2px solid #ff0000 }
The CSS padding Property

- Configures empty space between the content of the XHTML element and the border
- Set to 0px by default

```css
h2 { border: 2px solid #ff0000;
padding: 5px; }
```

Heading with Border

No padding configured:

Heading with Border
Configuring Padding on Specific Sides of an Element

- Use CSS to configure padding on one or more sides of an element
  - padding-bottom
  - padding-left
  - padding-right
  - padding-top

```css
h2 { border: 2px solid #ff0000;
    background-color: #cccccc;
    padding-left: 5px;
    padding-bottom: 10px;
    padding-top: 10px; }
```
CSS padding Property Shorthand:

two values

- Two numeric values or percentages
  - first value configures top and bottom padding
  - the second value configures left and right padding

```css
h2 { border: 2px solid #ff0000;
    background-color: #cccccc;
    padding: 20px 10px;
}
```
CSS padding Property Shorthand: four values

- Four numeric values or percentages
  - Configure top, right, bottom, and left padding

```css
h2 { border: 2px solid #ff0000;
   width: 250px;
   background-color: #cccccc;
   padding: 30px 10px 5px 20px;
}
```
h1 { background-color:#191970;
    color:#E6E6FA;
    padding: 15px;
    font-family: Georgia, "Times New Roman", serif; }

h2 { background-color:#AED4AED4;
    color:#191970;
    font-family: Georgia, "Times New Roman", serif;
    border-bottom: 2px dashed #191970; }
Types of Graphics

- Graphic types commonly used on Web pages:
  - GIF
  - JPG
  - PNG
• Graphics Interchange Format
• Best used for line art and logos
• Maximum of 256 colors
• One color can be configured as transparent
• Can be animated
• Uses lossless compression
• Can be interlaced
- Joint Photographic Experts Group
- Best used for photographs
- Up to 16.7 million colors
- Use lossy compression
- Cannot be animated
- Cannot be made transparent
- Progressive JPEG – similar to interlaced display
PNG

• Portable Network Graphic
• Support millions of colors
• Support multiple levels of transparency  
  (but browsers do not – so limit to one transparent color for Web display)
• Support interlacing
• Use lossless compression
• Combines the best of GIF & JPEG
• Browser support is growing
XHTML Image Element

- Configures graphics on a Web page

```html
<img src="cake.gif" alt="birthday cake" height="100" width="100" />
```

- **src Attribute**
  - File name of the graphic
- **alt Attribute**
  - Configures alternate text content (description)
- **height Attribute**
  - Height of the graphic in pixels
- **width Attribute**
  - Width of the graphic in pixels
**XHTML <img /> Alignment**

**Vertical Alignment**

align="top"

default alignment

align="middle"

**Horizontal Alignment**

The XHTML tag for this star image is coded with align="right". This causes the text to be placed to the left and wrap around the image. If the text continues, it will wrap under the image.

The XHTML tag for this star image is coded with align="left". This causes the text to be placed to the right and wrap around the image. If the text continues, it will wrap under the image.
Adding Vertical Space
  ◦ vspace Attribute

Adding Horizontal Space
  ◦ hspace Attribute

Note: A more modern approach is to use the CSS padding property
Accessibility & Images

- **Required:**
  - Configure the alt attribute
    - Alternate text content to convey the meaning/intent of the image
    - NOT the file name of the image
    - Use alt="" for purely decorative images

- **Optional:**
  - Configure the longdesc attribute
    - Used when meaning cannot be conveyed in the alt text
    - Usually a URL to a Web page with text
To create an image link use an anchor element to contain an image element:

```html
<a href="index.html"><img src="home.gif" height="19" width="85" alt="Home" /></a>
```

- Browsers automatically add a border to image links.
- Configure CSS to eliminate the border:

```css
img {border:0 }
```
CSS background-image Property

- Configures a background-image
- By default, background images tile (repeat)

```css
body { background-image: url(background1.gif); }
```
CSS background-repeat Property

- repeat-y
- repeat-x
- no-repeat
Using background-repeat

trilliumbullet.gif:  

h2 { background-color: #d5edb3;
color: #5c743d;
font-family: Georgia, "Times New Roman", serif;
padding-left: 30px;
background-image: url(trilliumbullet.gif);
background-repeat: no-repeat;
}

New Media and Web Design
Choosing Names for Image Files

- Use all lowercase letters
- Do not use punctuation symbols and spaces
- Do not change the file extensions *(should be .gif, .jpg, .jpeg, or .png)*
- Keep your file names short but descriptive
  - i1.gif is probably too short
  - myimagewithmydogonmybirthday.gif is too long
  - dogbday.gif may be just about right
Organizing Your Site

- Place images in their own folder
- Code the path to the file in the src attribute

```html
<img src="images/home.gif" alt="Home" height="100" width="200" />
```
Other Image Topics

- Thumbnail Images
- Favorites Icon
- Image Maps
- Sources for Graphics
- Guidelines for Using Images
- Accessibility & Visual Elements
Thumbnail Image

- A small image configured to link to a larger version of that image.
A square image associated with a Web page

Usually named: favicon.ico

May display in the browser address bar, tab, or favorites/bookmarks list

Configure with a link tag:

```html
<link rel="icon" href="favicon.ico" type="image/x-icon" />
```
• `<map>` element
  ◦ Defines the map

• `<area />` element
  ◦ Defines a specific area on a map
  ◦ Can be set to a rectangle, circle, or polygon
    • `href` Attribute
    • `shape` Attribute
    • `coords` Attribute
<map name="boat" id="boat">
  <area href="http://boat.com" shape="rect"
       coords="24, 188, 339, 283" alt="fishing boat" />
</map>

<img src="boat.jpg" usemap="#boat" alt="Lake Michigan"
     width="416" height="350" />
Sources for Graphics

- Create them yourself using a graphics application:
  - Adobe Photoshop
  - Adobe Fireworks
  - Google’s Picasa (http://picasa.google.com/)
- Download graphics from a free site
- Purchase/download professional-quality graphics
- Purchase a graphics collection on a CD
- Take digital photographs
- Scan your photographs
- Scan your drawings
- Hire a graphic designer to create graphics
Guidelines for Using Images

- Consider image load time
- Reuse images
- Consider image file size with image quality
- Screen Resolution
- Specify dimensions
- Gamma – brightness & contrast
Images and Accessibility

- Don't rely on color alone.
  - Some visitors may have color perception deficiencies. Use high contrast between background and text color.

- Provide a text equivalent for non-text elements.
  - Use the alt attribute on your image elements

- If your site navigation uses image links, provide simple text links at the bottom of the page.