CHAPTER 4 VISUAL ELEMENTS AND GRAPHICS

A key component of a compelling website is the use of interesting and appropriate graphics. This chapter introduces you to working with visual elements on web pages.

4.1 CONFIGURING LINES AND BORDERS

In this section, you'll explore two coding techniques to configure a line on a web page:

1. The HTML horizontal rule element
2. The CSS border and padding properties.

The Horizontal Rule Element

- A horizontal rule element, <hr>, visually separates areas of a page and configures a horizontal line across a web page.
- Since the horizontal rule element does not contain any text, it is coded as a void tag and not in a pair of opening and closing tags.

HANDS ON PRACTICE 4.1

1. Extract the Lab 4 data files to the destination of your choosing
2. Open starter1.html with your notepad++
3. Find the line of the code and Add an <hr> tag after the opening div element.

```
<div>Copyright &copy; 2012 Your Name Here</div>
```

4. Save your file as hr.html, and test it in a browser
5. The lower portion of your web page should look similar to the partial screenshot shown in Figure 1.

Figure 1 The <hr> tag configures a horizontal line

The border and padding Properties

The border Property

6. The border property configures the border, or boundary, around an element. By default, the border has a width set to 0 and does not display.
7. You can set the border-width, border-color, and border-style with the border property.
8. individual settings can be configured for the top, right, bottom and left borders using the border-top, border-right, border-bottom, and border-left properties.

The border-style Property

9. The border-style property configures the type of line displayed in the border.
10. The formatting options include inset, outset, double, groove, ridge, solid, dashed, and dotted.

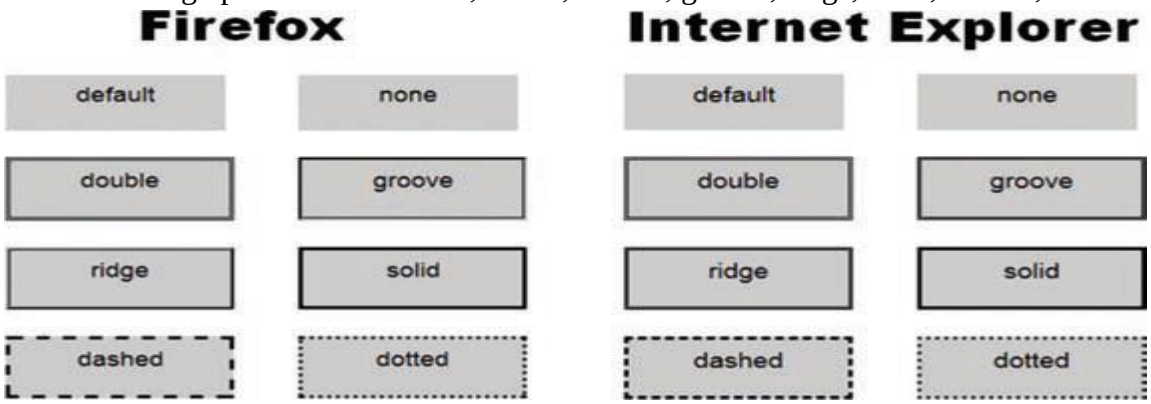

Figure 2 Not all border-style values are rendered the same way by popular browsers

The CSS to configure the borders shown in Figure 2 uses a border-width of 3 pixels, the value indicated for the border-style property, and a border-color of #000000. For example, the style rule to configure the dashed border follows:

```
.dashedborder { border-width: 3px;
                border-style: dashed;
                border-color: #000033; }
```

A shorthand notation allows you to configure all the border properties in one style rule by listing the values of border-width, border-style, and border-color, as in the following example:

```
.dashedborder { border: 3px dashed #000033; }
```

The padding Property

11. Configures empty space between the content of the HTML element (usually text) and the border.
12. By default, the padding is set to 0. If you configure a background color for an element, the color is applied to both the padding and the content areas. You'll apply the padding and border properties in the next Hands- On Practice.

HANDS ON PRACTICE 4.2

In this Hands-On Practice you will work with the border and padding properties

13. Launch starter1.html with your notepad++
14. You will modify the CSS style rules for the h1 element selector, h2 element selector, and footer id.
15. Edit the CSS style rules as follows:

1. Code a style for the h1 element selector to set the padding to 15 pixels. The code follows:

```
h1 {padding: 15px;}
```

2. Add a style rule to the h2 element selector to configure a 2-pixel, dashed, bottom border in the color #191970. The code follows:

```
border-bottom: 2px dashed #191970;
```

3. Add styles to the footer element selector to configure a thin, solid, top border in the color #aeaed4 along with 10 pixels of top padding. Also configure the footer to have grey text. The new style declarations follow:

```
border-top: thin solid #aeaed4;
padding-top: 10px;
color: #333333;
```

16. Save your file as border.html.
17. Test your page in multiple browsers

Figure 3. CSS border and padding properties add visual interest to the page

Figure 4. Internet Explorer renders the dashed border differently than Firefox

○ 4.2 TYPES OF GRAPHICS

Graphics can make web pages compelling and engaging. This section discusses features of graphic files commonly used on the Web: GIF, JPEG, and PNG. A new web graphic format, WepP, is also introduced.

Graphic Interchange Format (GIF) Images

GIF images are best used for line drawings containing mostly solid tones and simple images such as clip art. The maximum number of colors in a GIF file is 256. GIF images have a .gif file extension.

Figure 5 This logo is a GIF

Joint Photographic Experts Group (JPEG) Images

18. JPEG images are best used for photographs. In contrast to a GIF image, a JPEG image can contain 16.7 million colors. However, JPEG images cannot be made transparent, and they cannot be animated. JPEG images have a .jpg or .jpeg file extension.

Portable Network Graphic (PNG) Images

19. PNG images combine the best of GIF and JPEG images and will be a replacement for GIF images in the future. PNG (pronounced “ping”) graphics can support millions of colors, support variable transparency levels, and use lossless compression.

Image Type	File Extension	Compression	Transparency	Animation	Colors	Progressive Display
GIF	.gif	Lossless	Yes	Yes	256	Interlacing
JPEG	.jpg or .jpeg	Lossy	No	No	Millions	Progressive
PNG	.png	Lossless	Yes	No	Millions	Interlacing

Figure 6 Overview of common web graphic files

○ 4.3 IMAGE ELEMENTS

- The image element configures graphics on a web page. These graphics can be photographs,banners, company logos, navigation buttons, and so on.
- The image element is a void element and is not coded as a pair of opening and closing tags. The following code example configures an image named logo.gif, which is in the same folder as the web page:

```
<img src="logo.gif" height="200" width="500" alt="My Company Name">
```

- The **src attribute** specifies the file name of the image.
- The **alt attribute** provides a text replacement, typically a text description, of the image.
- The browser reserves the correct amount of space for your image if you use the height and width attributes with values either equal to or approximately the size of the image.

Attribute	Value
`align`	`right`, `left` (default), `top`, `middle`, `bottom`; obsolete—use the CSS float or position property instead (see Chapter 6)
`alt`	Text phrase that describes the image
`border`	Image border size in pixels; `border="0"` prevents the border of an image hyperlink from being displayed; obsolete—use the CSS border property instead
`height`	Height of image in pixels
`hspace`	Amount of space, in pixels, that is blank to the left and right of the image; obsolete—use the CSS `padding` property instead
`id`	Text name—alphanumeric, beginning with a letter, no spaces; the value must be unique and not used for other `id` values on the same web page document
`name`	Text name—alphanumeric, beginning with a letter, no spaces; this attribute names the image so that it can be easily accessed by client-side scripting languages such as JavaScript; obsolete—use the `id` attribute
`src`	The URL or file name of the image
`title`	A text phrase containing advisory information about the image; typically more descriptive than the alt text
`vspace`	Amount of space, in pixels, that is blank above and below the image; obsolete—use the CSS `padding` property instead
`width`	Width of image in pixels

Figure 7 Attributes of the <img> tag

Image Hyperlinks

- The code to make an image function as a hyperlink is very easy. To create an image link, all you need to do is surround your image element with anchor tags.
- For example, to place a link around an image called home.gif, use the following HTML code:

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

- **When an image is used as a hyperlink, the default on some browsers is to show a blue outline (border) around the image. If you would prefer not to display this outline, you could use the border="0" attribute in your image tag as follows:**

```
<a href="index.html"><img src="home.gif" height="19" width="85"
alt="Home" border="0"></a>
```

HANDS ON PRACTICE 4.3

In this Hands-On Practice you will add a graphical logo banner and image navigation buttons to a web page. Then you'll configure the image buttons as image links

- Create a new folder called trilliumch4.
- The graphics used in this Hands-On Practice are located in starters folder.
- Save the trilliumbanner.jpg, home.gif, services.gif, and contact.gif files in your trilliumch4 folder.
- Save starter2.html into your trilliumch4 folder
- Launch a browser to display the starter2.html web page; notice that a monochromatic green color scheme has been configured with CSS.
- Notice that a monochromatic green color scheme has been configured with CSS. When you are finished with this Hands-On Practice, your page will look similar to the one shown in Figure 8.

Figure 8 The new Trillium Home page with a logo banner

1. Launch a text editor, and open starter2.html in the trilliumch4 folder.
   - Replace the text contained between the <h1> opening and closing tags. Code an image element to display trilliumbanner.jpg in this area. Remember to include the src, alt, height, and width attributes. Sample code follows:

     ```
     <img src="trilliumbanner.jpg" alt="Trillium Media Design"
     width="700" height="86">
     ```

   - Edit the embedded CSS to configure styles for the h1 element selector to have the same height as the image. Add the following style rule:

     ```
     h1 { height: 86px;}
     ```

2. Configure the image links. Notice that the anchor tags are already coded; you'll just need to convert the text links to image links. However, before you start changing the code, let's take a minute to discuss accessibility. Whenever the main navigation consists of media, such as an image, some individuals may not be able to see the images (or may have images turned off in their browser). To provide navigation that is accessible to all, configure a set of plain-text navigation links in the page footer area as follows:
   - Copy the <nav> element containing the navigation area to the lower portion of the page, and paste it above the closing main tag.
   - Modify the style rules for the nav element selector. Change the font size to .75em.

3. Now, focus on the top navigation area. Replace the text contained between each pair of anchor tags with an image element. Use home.gif for the link to index.html, services.gif for the link to services.html, and contact.gif for the link to contact.html. Sample code follows:

   ```
   <a href="index.html"><img src="home.gif" alt="Home" width="120"
   height="40"></a>
   ```

4. Edit the embedded CSS to create a new style rule that configures no border for the img element selector. The code follows:

   ```
   img { border-style: none; }
   ```

- Save your page as index.html in the trilliumch4 folder. Launch a browser, and test your page. It should look similar to the one shown in Figure 4.10. Note: If an image did not display on your web page, verify that you have saved the trilliumbanner.jpg, home.gif, services.gif, and contact.gif files in the trilliumch4 folder and that you have spelled the file name correctly in the <img> tag.

- As you test your page, resize the browser window, make it smaller, and note how the image links move around. To prevent them from moving, add a new style rule to the body selector that sets a minimum width for the page. This rule will cause the browser to automatically display a horizontal scroll bar if a visitor to the web page resizes the browser window below the size specified. Sample code follows:

```
min-width: 700px;
```

- Save and test your page again

Optimize an Image for the Web

Photos taken with a digital camera are too large—in both their dimensions and their file size—to display well on a web page. Recall that image optimization requires balancing image quality and file size. It is the process of creating an image with the lowest file size that still renders with good quality. Adobe Photoshop and Adobe Fireworks are often used by web professionals to optimize images for the Web. GIMP (http://gimp.org) is a popular open-source image editor that supports multiple platforms. Pixlr offers a free, easy-to-use, online photo editor at http://pixlr.com/editor.

HANDS ON PRACTICE 4.4

In this Hands-On Practice you will configure an image with a caption on a web page. The photo used in this Hands-On Practice is located in the starters folder.

STEP 1:

- Save the myisland.jpg file in a folder named mycaption.
- Open and edit template.html with notepad++
- Modify the title element to tropical island
- Add an image tag to the body section to display the myisland.jpg image as follows:

```
<img src="myisland.jpg" alt="Tropical Island" height="480" width="640">
```

- Save the file as index.html in the mycaption folder. Launch a browser to test your page. It should look similar to the page shown in Figure 9.

Figure 9 The image is displayed on the web page

STEP 2:

- Configure a figure caption and border for the image.
- Add embedded CSS to the head section that configures an id named figure that is 640 pixels wide, has a border, has padding set to 5px, and has centered text using the Papyrus font typeface (or the default fantasy family font). The code follows:

```
<style>
#figure { width: 640px;
          border: 1px solid #000000;
          padding: 5px;
          text-align: center;
          font-family: Papyrus, fantasy; }
</style>
```

- Edit the body section to add a div to contain the image.
- Add the text "Tropical Island Getaway" below the image but within the div element
- Assign the div to the id named figure. Save the file as index.html in the mycaption folder.
- Launch a browser to test your page. It should look similar to the page shown in Figure 10.

Figure 10 CSS configures the placement of the border and figure caption

○ 4.4 HTML5 VISUAL ELEMENTS

In Hands-On Practice 4.4, you configured an image and a caption on a web page. You used a div element to contain the image and text caption. In this section, you'll explore an approach that implements new HTML5 elements and requires a modern browser that supports HTML5 such as Safari, Firefox, Chrome, Opera, or Internet Explorer (version 9 or later).

HTML5 Figure Element

The block display figure element comprises a unit of content that is self-contained, such as an image, along with one optional figcaption element.

HTML5 Figcaption Element
The block display figcaption element provides a caption for a figure.

HANDS ON PRACTICE 4.5

In this Hands-On Practice you will configure an area on a web page that contains an image with a caption by using the HTML5 figure and figcaption elements.

- Save the myisland.jpg file in a folder named mycaption2

STEP 1

- Open template.html with notepad++
- Modify the title element
- Add an image tag to the body section to display the myisland.jpg image as follows:

```
<img src="myisland.jpg" alt="Tropical Island" height="480"
width="640">
```

- Save the file as index.html in the mycaption2 folder. Launch a browser to test your page. Your page should like figure 9.

STEP 2

- Configure a figure caption and border for the image
- Add embedded CSS to the head section that configures the figure element selector to be 640 pixels wide, with a border, and with padding set to 5px.
- Configure the figcaption element selector to have centered text using the Papyrus font typeface (or the default fantasy family font). The code follows:

```
<style>
figure { width: 640px;
         border: 1px solid #000000;
         padding: 5px; }
figcaption { text-align: center;
             font-family: Papyrus, fantasy; }
</style>
```

- Edit the body section
- Below the image, add a figcaption element that contains the following text: "Tropical Island Getaway."
- Configure a figure element that contains both the image and the figcaption. The code follows:

```
<figure>
  <img src="island.jpg" width="640" height="480" alt="Tropical
  Island">
  <figcaption>
  Tropical Island Getaway
  </figcaption>
</figure>
```

- Save the file as index.html in the mycaption2 folder. Launch a browser to test your page. It should look similar to the page shown in Figure 11.

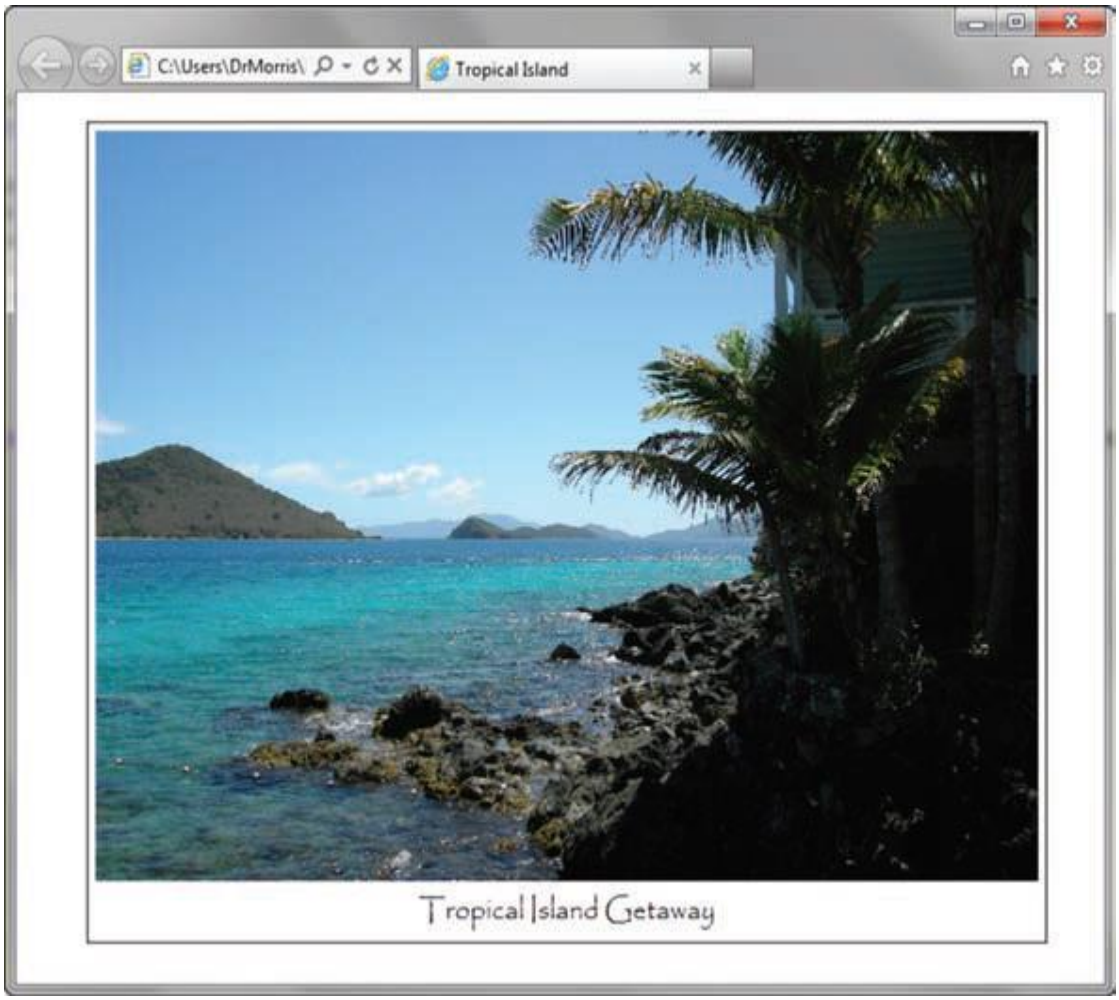

Figure 11 The HTML5 figure and figcaption elements were used in this web page

4.5 BACKGROUND IMAGES

Back in Chapter 3, you learned how to configure background color with the CSS background-color property. For example, theThe following CSS code configures the background of a web page to be a soft yellow:

```
body { background-color: #ffff99; }
```

The background-image Property

Use the CSS background-image property to configure a background image. The following CSS code configures the HTML body selector with a background of the graphic texture1.png located in the same folder as the web page file:

```
body { background-image: url(texture1.png); }
```

Using Both Background Color and a Background Image

You can configure both a background color and a background image. The background color (specified by the background-color property) will display first. Next, the image specified as the background will be displayed as it is loaded by the browser.

- If the background image does not load for some reason, the background color will still have the expected contrast with your text color
- If the background image is smaller than the web browser window and the web page is configured with CSS not to automatically tile (repeat the image), the background color of the page will display in areas not covered by the background image.

The CSS for a page with both a background color and a background image follows:

body { background-color: #99cccc;
background-image: url(background.jpg); }

Browser Display of a Background Image

You may think that a graphic created to be the background of a web page would always be about the size of the browser window viewport. However, the dimensions of the background image are often much smaller than the typical viewport. The shape of a background image is often either a thin rectangle or a small rectangular block. Unless otherwise specified in a style rule, browsers repeat, or tile, these images to cover the page's background, as shown in Figures 12 and 13. The images have small file sizes so that they download as quickly as possible.

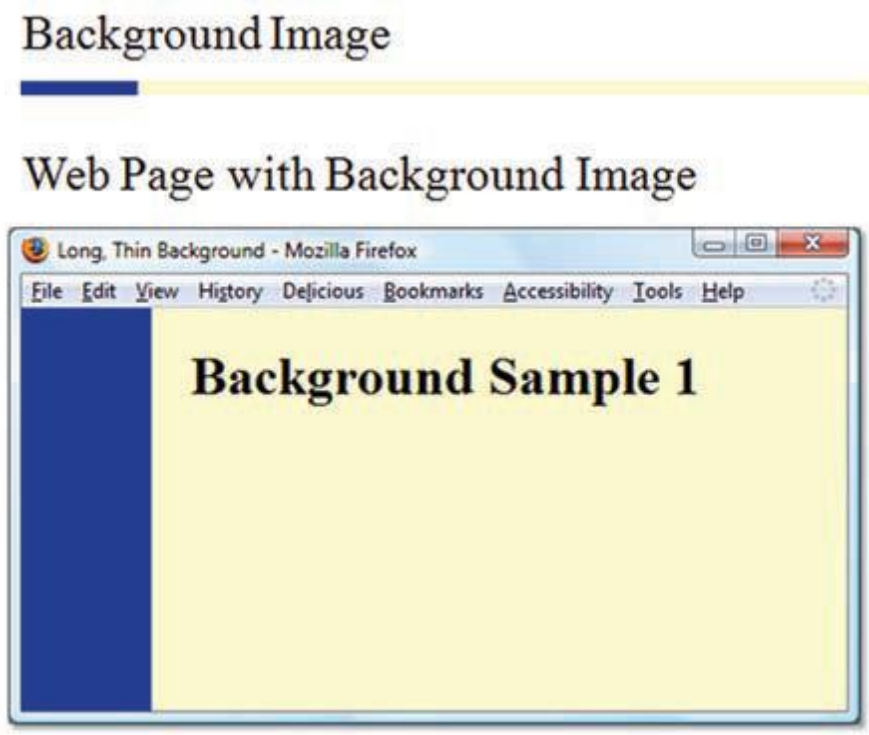

Figure 12. A long, thin background image tiles down the page

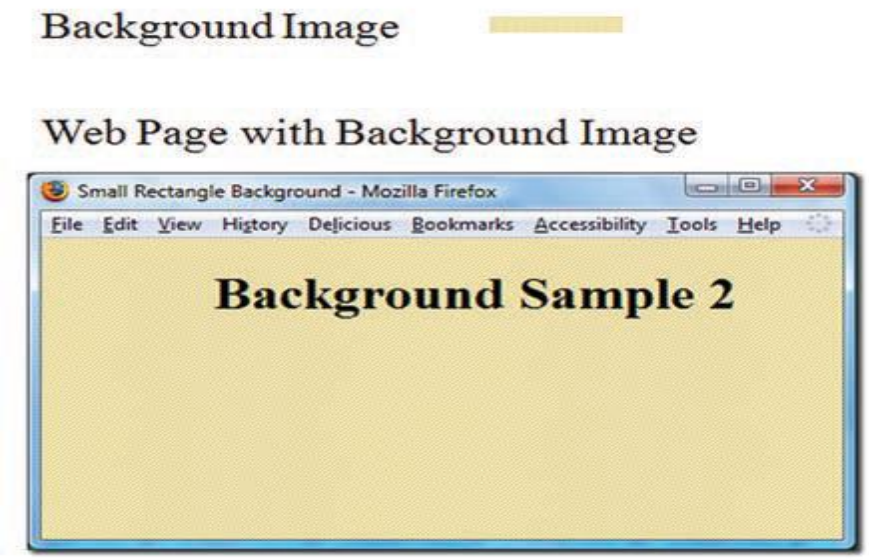

Figure 13. A small rectangular background is repeated to fill the web page window

The background-repeat Property

As just discussed, the default behavior of a browser is to repeat, or tile, background images to cover the entire element's background. This behavior also applies to other elements, such as backgrounds for headings, paragraphs, and so on. You can modify this tiling behavior with the CSS background-repeat property.

- The values for the background-repeat property include
  - repeat (default)
  - repeat-y (vertical repeat)
  - repeat-x (horizontal repeat)
  - no-repeat (no repeat)

Figure 14 provides examples of the actual background image and the result of applying various background-repeat property values.

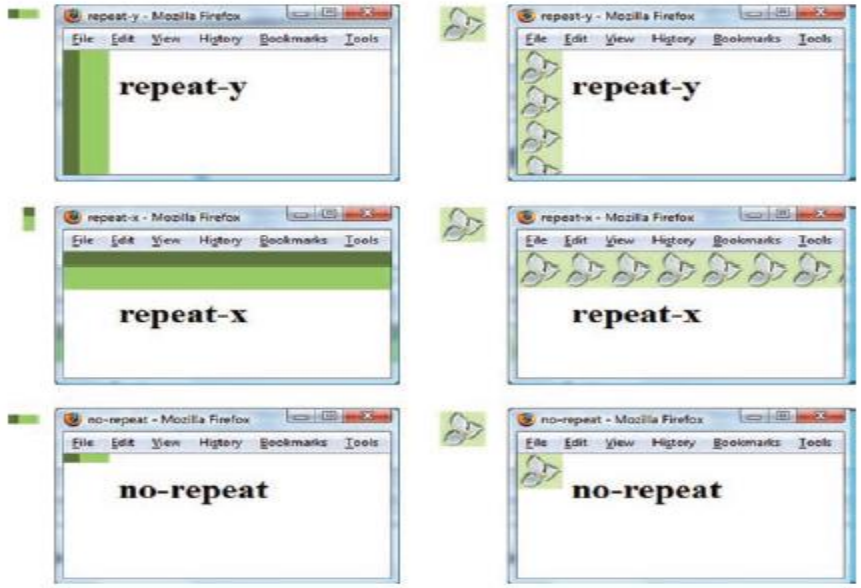

Figure 14 Examples of CSS background - repeat property

The background-position Property

You can specify other locations for the background image besides the default top left location by using the background-position property. Valid values for the background-position property include percentages; pixel values; or left, top, center, bottom, and right.

- The first value indicates horizontal position.
- The second value indicates vertical position.
- If only one value is provided, the second value defaults to center.

Figure 14. The flower background image was configured to display on the right side with CSS

The small flower image has been placed in the background on the right side of the element by using the following style rule:

```
h2 { background-image: url(trilliumbg.gif);
     background-position: right;
     background-repeat: no-repeat; }
```

HANDS ON PRACTICE 4.6

Let's practice using a background image. You will update the index.html file from Hands-On Practice 4.3 (shown in Figure 8). In this Hands-On Practice you will configure the h2 element selector with a background image that does not repeat.

- Obtain the trilliumbullet.gif image from the starters folder
- Save the image in your trilliumch4 folder.

When you have completed this exercise, your page should look similar to the one shown in Figure 15.

Figure 15 The background image in the <h2> areas is configured with background-repeat: no-repeat

- Launch a text editor, and open index.html.
- Modify the style rule for the h2 element selector to configure the background-image and background-repeat properties. Set the background image to be trilliumbullet.gif.
- Set the background not to repeat. The h2 element selector style rules follow:

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

- Save your page as index.html. Launch a browser, and test your page. You may notice that the text in the h2 element is displayed over the background image. In this case, the page would look more appealing if there were more space, or padding, before the beginning of the text displayed by the h2 elements.
- Use the CSS padding-left property to add empty space within the left side of the element. Add the following declaration to the h2 element selector to add empty space before the text:

```
padding-left: 30px;
```

- Save and test your page again. It should look similar to the one shown in Figure 15.

The background-attachment Property

Use the background-attachment property to configure whether the background image remains fixed in place or scrolls along with the page in the browser viewport. Valid values for the background-attachment property include fixed and scroll (the default).

○ 4.6 MORE ABOUT IMAGES

This section introduces several additional techniques used with images on web pages. Topics discussed include image maps, the favorites icon, image slicing, and CSS Sprites.

Image Maps

- An image map is an image that can be used as one or more hyperlinks. An image map willtypically have multiple clickable or selectable areas that link to another web page or website.
- The selectable areas are called hotspots. Image maps can configure selectable areas in three shapes: rectangles, circles, and polygons. An image

map requires the use of the image element, map element, and one or more area elements.

Map Element

- The map element is a container tag that indicates the beginning and ending of the imagemap description. The name attribute is coded to associate the <map> tag with its corresponding image.
- The id attribute must have the same value as the name attribute. To associate a map element with an image, configure the image tag with the usemap attribute to indicate which <map> to use

Area Element

- The area element defines the coordinates or edges of the clickable area. It is a void tag that uses the href, alt, title, shape, and coords attributes. The href attribute identifies the web page to display when the area is clicked. The alt attribute provides a text description for screen readers.
- Use the title attribute to specify text that some browsers may display as a tooltip when the mouse is placed over the area. The coords attribute indicates the coordinate position of the clickable area. Table 16 describes the type of coordinates needed for each shape attribute value.

Shape	Coordinates	Meaning
`rect`	"x1,y1, x2,y2"	The coordinates at point (x1,y1) represent the upper-left corner of the rectangle. The coordinates at point (x2,y2) represent the lower-right corner of the rectangle.
`circle`	"x,y,r"	The coordinates at point (x,y) indicate the center of the circle. The value of r is the radius of the circle, in pixels.
`polygon`	"x1,y1, x2,y2, x3,y3", etc.	The values of each (x,y) pair represent the coordinates of a corner point of the polygon.

Figure 16 Shape Coordinates

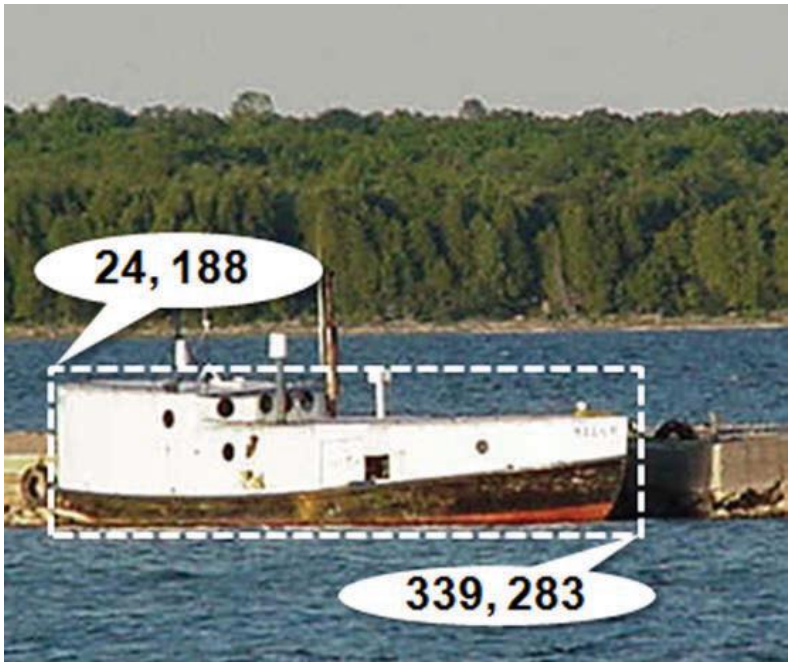

Figure 17 Sample image map

Figure 17 shows an image of a fishing boat. The dotted rectangle around the fishing boat indicates the location of the hotspot.

- The coordinates shown (24, 188) indicate that the top-left corner is 24 pixels from the left edge of the image and 188 pixels from the top of the image.
- The pair of coordinates in the lower-right corner (339, 283) indicates that this corner is 339 pixels from the left edge of the image and 283 pixels from the top of the image.
- The HTML code to create this image map follows:

```
<map name="boat" id="boat">
  <area href="http://www.fishingdoorcounty.com" shape="rect"
        coords="24, 188, 339, 283" alt="Door County Fishing Charter">
</map>
<img src="fishingboat.jpg" usemap="#boat" alt="Door County" width="416"
height="350">
```

The Favorites Icon

Ever wonder about the small icon you sometimes see in the address bar or tab of a browser? That's a favorites icon, usually referred to as a favicon, which is a square image (either 16×16 pixels or 32×32 pixels) associated with a web page. The favicon, shown in Figure 18, may display in the browser's address bar, tab, or the favorites and bookmarks lists.

Figure 18 The favorites icon displays in the browser tab and address bar

Configuring a Favorites Icon

Recall that in Chapter 3, you coded the <link> tag in the head section of a web page to associate an external style sheet file with a web page file. You can also use the <link> tag to associate a favorites icon with a web page. Three attributes are used to associate a web page with a favorites icon: rel, href, and type.

- The value of the rel attribute is icon.
- The value of the href attribute is the name of the image file.
- The value of the type attribute describes the MIME type of the image—which defaults to image/x-icon for .ico files.

The HTML code to associate a favorites icon named favicon.ico to a web page follows:

```
<link rel="icon" href="favicon.ico" type="image/x-icon">
```

Note that to be compatible with Internet Explorer and follow Microsoft's proprietary syntax, you'll also need to code a second link tag:

```
<link rel="shortcut icon" href="favicon.ico" type="image/x-icon">
```

HANDS ON PRACTICE 4.7

Let's practice using a favorites icon. Obtain the favicon.ico file from the student files in the starters folder. In this exercise, you will use your files in the trilliumch4 folder from Hands-On Practice 4.6 as a starting point.

1. Launch a text editor, and open index.html. Add the following link tags to the head section of the web page:

```
<link rel="icon" href="favicon.ico" type="image/x-icon">
<link rel="shortcut icon" href="favicon.ico" type="image/x-icon">
```

2. Save your page as index.html. Launch the Firefox browser, and test your page. You should notice the small trillium flower in the Firefox browser tab as shown in Figure 19

Figure 19 The favorites icon displays in the Firefox browser tab

○ 4.8 CSS3 VISUAL EFFECTS

This section introduces new CSS3 properties that provide visual effects on web pages, including background clipping and scaling, multiple background images, rounded corners, box shadows, text shadows, opacity effects, transparent color with RGBA, transparent color with HSLA, and gradients.

The CSS3 background-clip Property

The new CSS3 background-clip property confines the display of the background image with the following values:

• content-box (clips the display to the area behind the content)
• padding-box (clips the display to the area behind the content and padding)
• border-box (default; clips the display to the area behind the content, padding, and border; similar to the padding-box property except that the image will display behind a border configured to be transparent)

Figure 20 div elements configured with different values of the background-clip property. Note that the dashed border is intentionally large in these examples.

Figure 20 The CSS3 background-clip property

The CSS for the first div follows:

```
.test { background-image: url(trilliumsolo.jpg);
        background-origin: content-box;
        background-repeat: no-repeat;
        background-position: right top;
        width: 200px;
        padding: 20px;
        margin-bottom: 10px;
        border: 1px solid #000; }
```

You may have noticed that it's common to use several CSS properties when configuring background images. The properties typically work together. However, be aware that the background-origin property has no effect if the background-attachment property is set to the value "fixed".

The CSS3 background-origin Property

The new CSS3 background-origin property positions the background image, using the following values:

• content-box (positions relative to the content area)
• padding-box (default; positions relative to the padding area)
• border-box (positions relative to the border area)

Figure 21 shows div elements configured with different values of the background-origin property.

The CSS for the first div as follows

```
.test { background-image: url(trilliumsolo.jpg);
        background-origin: content-box;
        background-repeat: no-repeat;
        background-position: right top;
        width: 200px;
        padding: 20px;
        margin-bottom: 10px;
        border: 1px solid #000; }
```

Figure 21 The CSS3 Background-Origin Property

The CSS3 background-size Property

The CSS3 background-size property can be used to resize or scale the background image.

Valid values for the background-size property can be:

• a pair of percentage values (width, height)

If only one percentage value is provided, the second value defaults to auto and is determined by the browser.

• a pair of pixel values (width, height)

If only one numeric value is provided, the second value defaults to auto and is determined by the browser.

• cover

The value cover will preserve the aspect ratio of the image as it scales the background image to the smallest size for which both the height and width of the image can completely cover the area.

• contain

The value contain will preserve the aspect ratio of the image as it scales the background image to the largest size for which both the height and width of the image will fit within the area.

Figure 21 The value of the property REALLY is 100% 100%

The background image of the first div element is not configured with the background-size property and the image only partially fills the space. The CSS for the second div configures the background-size to be 100% 100% so the browser scales and resizes

The CSS for the second div follows:

```
#test1 { background-image: url(sedonabackground.jpg);
         background-repeat: no-repeat;
         background-size: 100% 100%; }
```

CSS3 Multiple Background Images

Let's explore applying multiple background images to a web page.

Figure 22 shows a web page with two background images configured on the body selector: a green gradient image that repeats across the entire browser viewport, and a flower image that displays once in the right footer area.

- Use the CSS3 background property to configure multiple background images.
- Each image declaration is separated by a comma.
- You can optionally add property values to indicate the image's position and whether the image repeats.
- The background property uses a shorthand notation: Just list the values that are needed for relevant properties such as background-position and background-repeat.

Figure 22 The Firefox browser displays multiple background images

HANDS ON PRACTICE 4.8

Let's practice configuring multiple background images. In this Hands-On Practice you will configure the body element selector to display multiple background images on the web page. Obtain the trilliumgradient.png and the trilliumfoot.gif images from the student files starters

folder. Save the images in your trilliumch4 folder. You'll update the index.html file from the previous Hands-On Practice. Launch a text editor, and open index.html.

- Modify the style rule for the body element selector. Configure the background-image property to display trilliumgradient.png. This style rule will be applied by browsers that do not support multiple background images. Configure a background property to display both the trilliumgradient.png image and the trilliumfoot.gif image. The trilliumfoot.gif image should not repeat and should be displayed in the lower right corner. The body selector style rules are as follows:

```
body { background-color: #f4ffe4; color: #333333;
       font-family: Arial; Verdana, sans-serif;
       min-width: 700px;
       background-image: url(trilliumgradient.png);
       background: url(trilliumfoot.gif) no-repeat bottom right,
                   url(trilliumgradient.png); }
```

Save your page as index.html. Launch a browser, and test your page.
Note: The W3C CSS validator currently defaults to CSS level 2.1, but the background property is part of CSS level 3 (CSS3). You need to choose the appropriate CSS level when validating. Visit http://jigsaw.w3.org/css-validator and select "CSS level 3" for the Profile value.