Session 5

Displaying Graphics

Session Overview

In this session, you will be able to:

- Explain the important characteristics defining a graphic format
- Explain the various graphic formats that are recommended for the Web
- Insert various elements related to graphics in HTML
- Use and apply image sizing and padding property for graphics
- Use and apply thumbnails for graphics

Introduction

- After the release of HTML5 and CSS3, most of the Web designers develop graphic-based Web pages.
- CSS3 has allowed the designers to style their graphical Web pages with ease.
- Currently, HTML5 applications provide amazing experiences with the use of new CSS3 animations.
- The introduction of mobile applications has also allowed the users to expand their Web usage to mobile devices.
- Even CSS3 has introduced new features specifically for mobile devices.

Graphic Formats

The most commonly used formats are:

- Joint Photographic Experts Group (JPEG)
- Graphics Interchange Format (GIF)
- Portable Network Graphics (PNG).

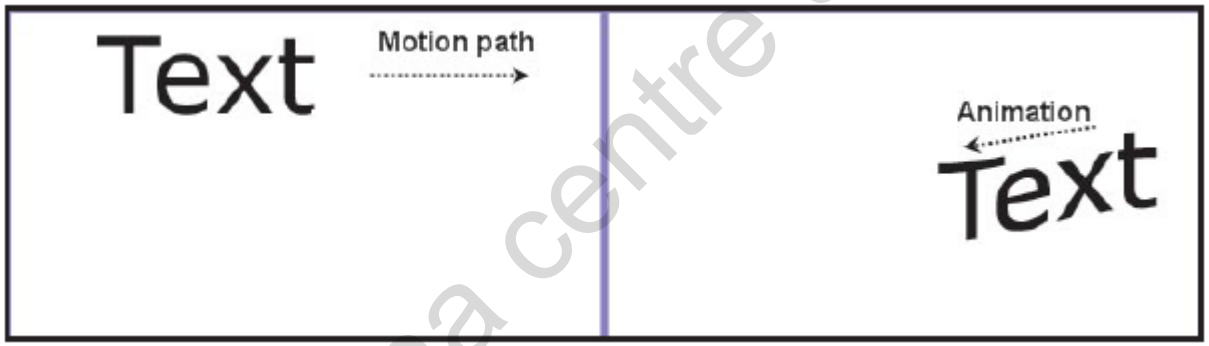
Graphic Formats

The difference between each graphic format depends on the following characteristics:

- Color depth: It is defined by the number of distinct colors that are represented by a hardware or software
- Compression/file size: As graphic files are large, images are compressed using various techniques. Compression stores the original images in a reduced number of bytes using an algorithm as follows:
  - Lossless compression: In this algorithm, the file size is reduced but a copy of the original uncompressed image is preserved
  - Lossy compression: It is able to give smaller file sizes when compared to lossless compression.

Graphic Formats

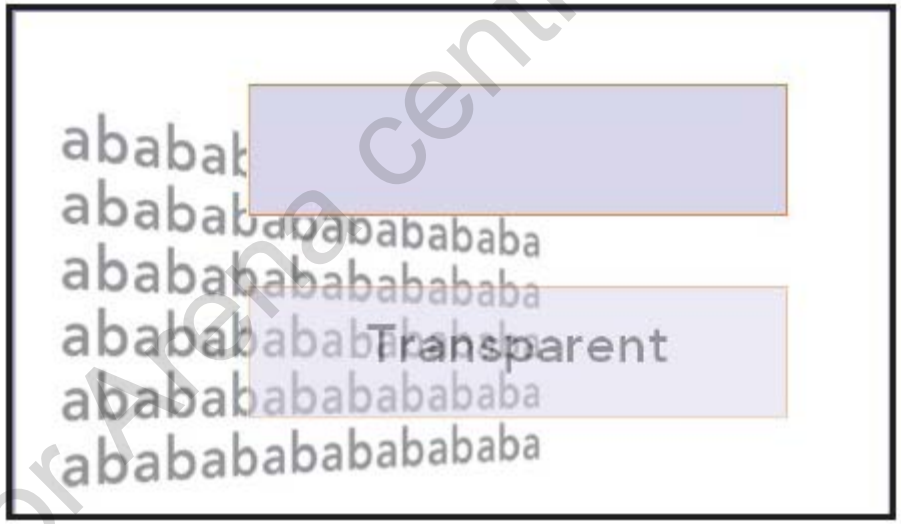
- Animation: Some graphic formats consist of a series of frames that are played one after the other, giving an impression of animation.



Animated Graphic

Graphic Formats

- Transparency: It is very common to display an image on a Web page, where the background color appears directly through it. Thus, the background color of the Web page is seen through that portion of the image which is transparent.



Transparent Image

Graphic Formats for the Web

Following are the graphic formats that are recommended for Web usage:

- JPEG: It uses a lossy compression, which means that the quality is lost while compressing the image. Mostly, JPEG is about half the size of PNG.
- PNG: It uses lossless compression, which means there is no loss of any image detail. PNG was designed for transferring images on the Internet and not for professional-quality print graphics, and hence it does not support non-RGB color spaces such as CMYK.
- GIF: It uses lossless compression, which means that there is no loss in quality when the image is compressed.

Graphic Insertion

- Text transform: The text-transform property is used for changing the case of the letters in a text.

- Text decorations and word spacing: The text-decorations and the word-spacing properties provide different values, allowing the user to specify the decoration and word spacing of the text in an element.

- Font Styles: The font properties allow specifying the font for the text. They allow changing the different font attributes of the text such as font, size, and style of the text. However, the browser must support the font specified by the font properties.

Graphic Insertion

- The IMG element is an empty element, which allows the user to insert an image in a Web page.
- The <*img*> tag reserves a space for the image and does not insert the image in the HTML page.
- It creates a link between the image and the HTML page.

Graphic Insertion

- In Code snippet 1, the *src* attribute specifies the name of the image and also indicates that the image is present in the same folder where the HTML file is saved.

Code snippet 1:

```
<body>
<img src="UNO.jpg" width="225" height="151"/>
</body>
```

- An image can also be stored in a sub-folder of the folder containing the HTML as shown in snippet 2.

Code snippet 2:

```
<body>
<img src="image_folder/UNO.jpg" width="225" height="151"/>
</body>
```

Graphic Insertion

- To align the image, the float style attribute can be used to specify the inline style for the element.

Code snippet 3:

```
<body>
<img src="image_folder/UNO.jpg" style="float:left"/>
</body>
```

- While the content of the <*figure*> element is related to the main flow, its position is independent of the main flow, and if removed it does not affect the flow of the document.

Code snippet 4:

```
<figure>
<img src="logo.gif" style="float: left">
width="304" height="228" />
</figure>
```

Graphic Insertion

- The main advantage of using the <*figure*> tag is that it allows the user to use the <*figcaption*> tag along with it.

Code snippet 5:

```
<figure>
<img src="logo.gif">
<figcaption>This diagram shows the logo of a product.</figcaption>
</figure>
```

Graphic Insertion

- The <*figure*> tag can also assign styles and other attributes to the <*figure*> element using an external or internal style sheet. A single caption to a group of images can also be added using the <*figure*> tag.
- A single caption to a group of images can also be added using the <*figure*> tag.

Code snippet 6:

```
<figure>
<img src="flower1.jpg">
<img src="flower2.jpg">
<img src="flower3.jpg">
<figcaption>The different types of flowers</figcaption>
</figure>
```

CSS Image Sizing and Padding

- The size of an image is specified in pixels. The height and width property sets the height and width of the image.
- Code snippet 7 demonstrates the CSS code for setting the height and width property for an image.

Code snippet 7:

```
p.ex
{
height:100px;
width:100px;
}
```

CSS Image Sizing and Padding

- The CSS padding property is used to specify the space between the element border and the element content.
- It is used to separate the content from the surrounding element.
- The background color of the element also affects the padding property.

CSS Image Sizing and Padding

- Code snippet 8 shows that the value for padding is set for all the sides.
- However, instead of using different padding for different sides, users can use a shorthand property.
- The shorthand property for all the padding properties is padding. This property can be used to specify one to four values for each image.

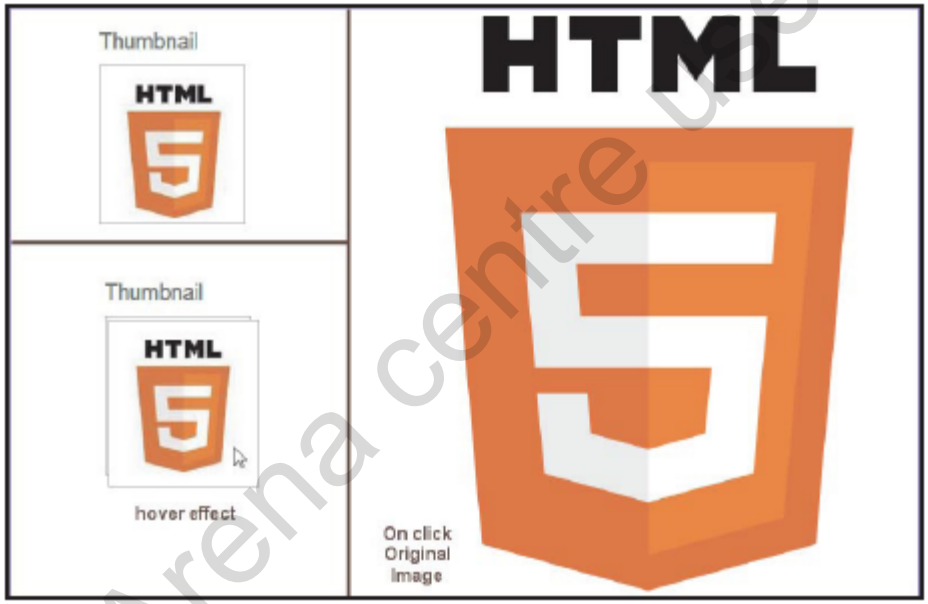
Code snippet 8:

```
padding-top:10px;

padding-bottom:10px;

padding-right:15px;

padding-left:15px;
```

Thumbnail Graphics

- The speed of loading a page on a Web site is reduced if high-resolution graphics are used.
- High-resolution graphics are required to improve the effectiveness of the site and cannot be avoided.
- A thumbnail is a small image, or a part of a larger image.
- Clicking the thumbnail image will link to the larger original image, which can be viewed and downloaded.
- Even a hover effect can be given through CSS and JavaScript.

Thumbnail Graphics



Output of the Thumbnail with Hover Effects

Summary

- HTML5 and CSS3 have allowed designers to style their graphical Web pages with ease.
- There are many graphic formats. The difference between each graphic format depends on the color depth, compression size, animation and transparency.
- The most commonly used formats are Joint Photographic Experts Group (JPEG), Graphics Interchange Format (GIF), and Portable Network Graphics (PNG).
- Various elements related to graphics that can be inserted in an HTML document are <*img*>, <*src*>, <*figure*>, <*img*> and <*figcaption*>.
- The size of an image is specified in pixels by using the image sizing property.
- The CSS padding property is used to specify the space between the element border and the element content.