Web Basics – HTML5

Lesson 6. Image Handling

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Lesson Objectives

➢ **After completing this module, you will be able to:**
- Understand the role of images in web pages
- Learn to add images to web pages
- Learn to use images as hyperlinks

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6.1 Roles of images in web pages

➢ **Web pages are comprised of text and images.**
➢ **Some of the roles of images in web pages are**
   – To make web page content more interesting to be read
   – To increase clarity on web page content by transmitting right message
   – Provoking reactions
   – To ensure that the user response is anticipated

➢ **Some of the widely used image formats**
   – GIF : Graphical Interchangeable Format
   – JPEG : Joint Photographic Expert Group
   – PNG : Portable Network Graphics

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GIF images are quickly downloadable, because its size is less. It is used for animated images, thumbnails, B/W image . It supports only 256 colors

JPEG images uses lossy compression method, meaning that some original image information is lost and cannot be restored, possibly affecting image quality.

PNG images are lossless, portable, well-compressed storage of raster images. It supports image transparency

6.2 Adding images in webpages

➢ **Images are added into a HTML document using <img> tag.**
➢ **<img> tag has 2 required attributes such as src and alt**

➢ **Syntax:**

  – The src attribute defines the url (web address) of the image
  – Alt attribute defines alternative text to display for non-graphical browsers. The alt
    attribute is required

➢ **Example:**

<img src="html5.gif" alt="The official HTML5 Icon">

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6.2: Adding images in webpages
Attributes of an Inline Image

➢ **Other attributes of <img> tag are:**
  – Width: Sets the width of the image.
  – Height: Sets the height of the image.
  – ismap: Specifies an image as a server-side image-map
  – usemap: Specifies an image as a client-side image-map

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After you have the image, save it in GIF format. Then, use the <IMG SRC> tag to include the image in your document. The <img> tag is empty, which means that it contains attributes only and it has no closing tag.
<IMG SRC="BALLOON.GIF">
Following list shows attributes and options you can include inside the tag:
Alt: Alternative text to display for non-graphical browsers
Align: Aligns graphic with surrounding text. Values include left, right, and center
Vwidth: Spacing above and below an image and surrounding text.
Hwidth: Spacing between an image and surrounding text.
Border: Sets a border around a graphic. It takes a numerical value to determine border thickness. A higher number indicates a thicker border.
Width: Sets the width of the image.
Height: Sets the height of the image.

6.2: Adding images in webpages
Text & Image Alignment (Code)

➢ **Style Attribute:**
  – Can be used in <img> tag to define the alignment of text and image.

Style Attribute Value	Description
vertical-align:bottom	The bottom of the element is aligned with the lowest element on the line
vertical-align:middle	The element is placed in the middle of the parent element
vertical-align:top	The top of the element is aligned with the top of the tallest element on the line
float:right	The element floats to the left
float:left	The element floats to the right
float:none	The element floats to the none

➢ **<BR CLEAR=LEFT/RIGHT> can be used to stop text flowing around an image**

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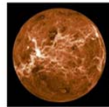
Insert the <BR CLEAR=LEFT/RIGHT> command at the spot in the descriptive text where text is to stop flowing around the image.

6.2: Adding images in webpages
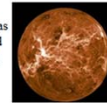
Demo

➢ **ImageDemo.html**
➢ **ImageAlign.html**

The Example of image alignment

HTML allows for simple aligning of text and images by adding the style attributes to the tag. HTML 5 expanded this attribute by specifying float:left and float:right options. When you use these options, text flows down the right or left side of an image aligned to them. The text flow continues until either the text passes the image, the text ends, or the browser encounters a tag.

HTML5 allows vertical alignment of text and images by adding the style attribute with values as vertical-align:bottom, vertical-align:top,.. When you use these options, text is vertically aligned top/bottom/middle. The text flow continues until either the text passes the image, the text ends, or the browser encounters a br tag with clear attribute.

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6.3: Image as Link
Use of Image as a Hyperlink (Code)

➤ **Images used as hyperlinks:**

```
<A href="6image1.html"><img src="home.gif"></a>
```

➤ **Images contained within a table:**

```
<table>
<tr><th>Product</th><th>Cost</th><th>Image</th></tr>
 <tr> <td>Pencil</td> <td>$8</td>
        <td><img src="pencil.gif"></td> </tr>
 <tr> <td>Brush</td> <td>$15</td>
        <td><img src="paintbrush.gif"></td></tr></table>
```

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Use Image as Link
To create an image link, place the <IMG SRC> tag with the image URL between <A HREF="URL">……</A> tags.

```
<H2>MY FIRST IMAGE LINK</H2>
<A HREF="BALLOON.HTM"><IMG
SRC="BALLOON.GIF"></A>Click on it to have
additional information on it.<P>
```

6.3: Image as Link
Demo

➢ **ImageLink.html**

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6.4: Image Maps
Image Maps

➢ **Image Maps come in two flavours:**
  – Server-side maps: Contain linking information on the server
  – Client-side maps: Linking information is bundled along with the HTML document

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Difference Between Client Server-side Image Maps:
In Server-side image maps, when you click an image leading to multiple links, you actually invoking a cgi-bin program. The program reads a separate map file that tells it where to go based on the section of the image you click. The program returns the destination to the web browser, which opens the page. Image map is server-side because the web browser needs to contact the remote host to know which site it should contact.

Client-side image maps, in contrast, do not require a cgi-bin program to function. The image map is actually an HTML construct that can be contained on the same page as the clickable image. Rather than the program on the remote host figuring out what site to go to, the web browser itself knows what regions of the image are associated with which sites. The browser, rather than the remote host, interprets the image map.

Client-side image maps are usually faster than server-side image maps and, in general, easier to create.

Their main disadvantage is that older browsers, and less fully featured ones, may not support them. Fortunately, it is usually possible to create a clickable image that can have both a server-side and a client-side image map.

Include Client-side Image Maps

Netscape and Microsoft's Internet Explorer support client-side image maps in which the different regions of the image are specified within the document or in another HTML document. No CGI applications are required to read client-side image maps. Therefore, they work even while not connected to the Internet. Perform the following steps:

1. Open your document, and then load an image with a viewer such as   Photoshop. This allows you to get the pixel locations from the image so you can specify them in links.
2. Identify areas on the image that you wish should serve as links.
3. Note pixel locations of the upper-left and lower-right corners of the rectangle.
4. In the HTML document, insert the <MAP> and </MAP> tags.
5. Use the NAME attribute for <MAP> to give a unique name to the image map.
6. Between <MAP> and </MAP> tags, insert an <AREA> tag. There should be one <AREA> tag for each link on the map.
7. SHAPE attribute of <AREA> identifies the shape of the area in the image map. As only rectangles are currently supported, SHAPE takes only one value, "RECT".
8. COORDS attribute identifies boundaries of the area on the image map. For RECT, COORD has four values, separated by commas: x and y coordinates of the upper-left and lower-right corners.

6.4: Image Maps
Clickable Image Maps – Client Side (Contd) (Code)

➢ **Usemap attribute of <img> refers to the image map**

```
<map name="mymap">
<area shape="RECT" coords="10, 10, 30, 50" href="info1.htm"/>
<area shape="RECT" coords="50, 50, 70, 70" href="info2.htm"/>
<area shape="RECT" coords="90, 90, 120, 95" href="info3.htm"/>
</map>
<img src="IMAGEMAP.GIF" alt="An Imagemap" usemap="#mymap"/>
```

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For each area, the HREF attribute identifies the URL of the document that should be loaded if the user selects that area. Document can be a local file or a document on another server

You can reference the image map information to an image on the page by adding the USEMAP attribute to the <IMG> element. USEMAP is set equal to the name of map information from the NAME attribute of <MAP>.

<IMG SRC="IMAGEMAP.GIF" ALT="An Imagemap"
          USEMAP="#mymap">

6.4: Image Maps
Client-Side Maps (Code)

➢ **Example:**

```
<A Href="http://www.webdevelopersnotes.com/">
<Img Src="home.gif" Width="152" Height="25" Alt="Back to homepage"/>
</A>
```

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<u>Create Server-side Clickable Image Map</u>

Server side maps also have a main viewable image (IMG) like client-side maps. Instead of the usemap attribute, they set only the Boolean attribute ismap.

When a user activates a region of a server-side image map with a mouse, pixel coordinates of the click are sent to the server-side agent specified by the href attribute of the 'A' element. Server-side agent interprets the coordinates and performs some action.

For server-side image maps, the client browser just sends the coordinates of a mouse click to the server where calculations are made and the appropriate page is sent back to the client. Because of this essentially visual (and mouse) method of selecting a new page, there is no way to make server-side image maps accessible.

With server-side image maps, "active regions" in the picture only display a set of coordinates. Browsers cannot indicate to the user the URL that will be followed when a region of the map is activated. Therefore, a redundant text link is necessary to provide access to the page.

Demo

➢ **clientsideimagemap.html**

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```
<!DOCTYPE html>
<html>
<head><title>Client-Side Image Map</title></head>
<body>
<map name="menu">
<area shape=rect coords="4,4,96,36" href="home.htm" >
<area shape=poly coords="5,39,95,104,95,39,5,39" href="fun.htm">
<area shape=poly coords="4,44,95,113,6,114,4,44" href="games.htm">
<area shape=circle coords="51,164,36" href="work.htm">
<area shape=rect coords="16,215,89,284" href="6clientsideimagemap.htm">
<area shape=default href="6clientsideimagemap.htm">
</map>
<img usemap="#menu" src="image_map_example.jpg"
height="300" width="100" />
</body></html>
```

Lab

> **Lab 5**

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Lesson Summary

➢ **In this lesson, you have learnt about:**
  – Role of images in web pages
  – How to add images in web pages
  – How to use images as hyperlinks

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Review - Questions

➢ **Question 1: Client-side image maps are usually faster than server-side image maps.**
  – True/ False

➢ **Question 2: _____ contain the linking information on the server.**

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