**19Z612-APPLICATION DEVELOPMENT LABORATORY**

**STUDY EXERCISE - ADDING OF IMAGES, HYPERLINKS, FORMS AND VIDEOS IN HTML.**

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B.E-CSE (G1)

**HTML IMAGES:**

* The HTML <img> tag is used to embed an image in a web page.
* Images are not technically inserted into a web page; images are linked to web pages.
* The <img> tag creates a holding space for the referenced image.
* The <img> tag is empty, it contains attributes only, and does not have a closing tag.
* The <img> tag has two required attributes:
  + src - Specifies the path to the image
  + alt - Specifies an alternate text for the image
* Syntax

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| <img src="url" alt="alternate text"> |

* The src Attribute
* The required src attribute specifies the path (URL) to the image.
* When a web page loads, it is the browser, at that moment, that gets the image from a web server and inserts it into the page.
* Therefore, make sure that the image actually stays in the same spot in relation to the web page, otherwise your visitors will get a broken link icon.
* The broken link icon and the alt text are shown if the browser cannot find the image.

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| Example | Output |
| <html>  <body>  <h2>The src Attribute</h2>  <img src="rose.jpeg" width="200" height="200">  </body>  </html> |  |

* The alt Attribute
* The required alt attribute for the <img> tag specifies an alternate text for an image, if the image for some reason cannot be displayed.
* This can be due to a slow connection, or an error in the src attribute, or if the user uses a screen reader.

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>The alt Attribute</h2>  <img src="earth.jpg" alt="rose" width="200" height="200">  </body>  </html> |  |

* If we try to display an image that does not exist, the value of the alt attribute will be displayed instead.

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <img src="img\_typo.jpg" alt="Girl witha jacket">  </body>  </html> |  |

* Image Size - Width and Height
* The <img> tag should also contain the width and height attributes, which specify the width and height of the image (in pixels).

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| Example | Output |
| <html>  <body>  <h2>Width and Height Attributes</h2>  <img src="lotus.jpeg" width="200" height="200">  </body>  </html> |  |

* Images in Another Folder
* If you have your images in a sub-folder, you must include the folder name in the src attribute:

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>Images in Another Folder</h2>  <img src="/images/html5.gif" alt="HTML5 Icon" style="width:128px;height:128px;">  </body>  </html> |  |

* Images on Another Server/Website
* Some web sites point to an image on another server.
* To point to an image on another server, you must specify an absolute (full) URL in the src attribute:

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| Example | Output |
| <!DOCTYPE html>  <html>  <head>  </head>  <body>  <h2>Images on Another Server  </h2>  <img src="https://www.w3schools.com/images/w3schools\_green.jpg" alt="W3Schools.com" style="width:104px;  height:142px;">  </body>  </html> |  |

* Animated Images
* HTML allows animated GIFs:

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>Animated Images</h2>  <img src="programming.gif" alt="Computer man" style="width:48px;height:48px;">  </body>  </html> |  |

* Image as a Link
* To use an image as a link, put the <img> tag inside the <a> tag:

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>Image as a Link</h2>  <a href="default.asp">  <img src="smile-4397\_256.gif" alt="HTML tutorial" style="width:42px;height:42px;">  </a>  </body>  </html> |  |

* Image Floating
* Use the CSS float property to let the image float to the right or to the left of a text:

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| Example | Output |
| <html><body>  <h2>Floating Images</h2>  <p><strong>Float the image to the right:</strong></p>  <p>  <img src="smiley.gif" alt="Smiley face" style="float:right;width:42px;height:42px;">  A paragraph with a floating image.  </p><br>  <p><strong>Float the image to the left:</strong></p><p>  <img src="smiley.gif" alt="Smiley face" style="float:left;width:42px;height:42px;">  A paragraph with a floating image.  </p>  </body></html> |  |

* Background Image on a HTML element
* To add a background image on an HTML element, use the HTML style attribute and the CSS background-image property:

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>  Background Image  </h2>  <p style="background-image: url('img\_girl.jpg');">  HTML  <br>  Hypertext Markup Language<br>  is a markup language <br>  for the web that defines the structure of web pages  <br>  It is one of the most basic building blocks of every website<br>  so it's crucial to learn  <br>  if you want to have a career in web development.  HTML<br>  Hypertext Markup Language  <br> is a markup language  <br>  for the web that defines the structure of web pages  <br>  It is one of the most basic building blocks of every website<br>  so it's crucial to learn<br>  if you want to have a career in web development.  </p>  </body>  </html> |  |

* Background Image on a Page
* If you want the entire page to have a background image, you must specify the background image on the <body> element:

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| Example | Output |
| <!DOCTYPE html>  <html>  <head>  <style>  body {  background-image: url('img\_girl.jpg');  }  </style>  </head>  <body>  <h2>Background Image</h2>  <p>Html</p>  </body>  </html> |  |

* Image Maps
* The HTML <map> tag defines an image map. An image map is an image with clickable areas. The areas are defined with one or more <area> tags.

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>  Image Maps  </h2>  <img src="workplace.jpg" alt="Workplace" usemap="#workmap" width="200" height="200">  <map name="workmap">  <area shape="rect" coords="34,44,270,350" alt="Computer" href="computer.htm">  <area shape="rect" coords="290,172,333,250" alt="Phone" href="phone.htm">  <area shape="circle" coords="337,300,44" alt="Cup of coffee" href="coffee.htm">  </map>  </body>  </html> |  |

* HTML <picture> Element
* The HTML <picture> element gives web developers more flexibility in specifying image resources.
* The <picture> element contains one or more <source> elements, each referring to different images through the srcset attribute. This way the browser can choose the image that best fits the current view and/or device.
* Each <source> element has a media attribute that defines when the image is the most suitable.

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| Example | Output |
| <!DOCTYPE html>  <html>  <head>  <meta name="viewport" content="width=device-width, initial-scale=1.0">  </head>  <body>  <h2>The picture Element</h2>  <picture>  <source srcset="img\_avatar.png">  <source srcset="img\_girl.jpg">  <img src="img\_beatles.gif" alt="Beatles" style="width:20;">  </picture>  </body>  </html> |  |

## **HTML LINKS – HYPERLINKS:**

* HTML links are hyperlinks.
* You can click on a link and jump to another document.
* When you move the mouse over a link, the mouse arrow will turn into a little hand.
* HTML Links – Syntax
* The HTML <a> tag defines a hyperlink.
* It has the following syntax:

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| <a href="url">link text</a> |

* The most important attribute of the <a> element is the href attribute, which indicates the link's destination.
* The link text is the part that will be visible to the reader.
* Clicking on the link text, will send the reader to the specified URL address.
* Example

<!DOCTYPE html>

<html>

<body>

<h1>Hyperlinks</h1>

<p><a href="https://www.w3schools.com/">Visit W3Schools.com!</a></p>

</body>

</html>

* Output

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| Example | Output |
|  |  |

* HTML Links - The target Attribute
* By default, the linked page will be displayed in the current browser window. To change this, you must specify another target for the link.
* The target attribute specifies where to open the linked document.
* The target attribute can have one of the following values:
  + - \_self - Default. Opens the document in the same window/tab as it was clicked
    - \_blank - Opens the document in a new window or tab
    - \_parent - Opens the document in the parent frame
    - \_top - Opens the document in the full body of the window
* Absolute URLs and Relative URLs
* Both examples above are using an absolute URL (a full web address) in the href attribute.
* A local link (a link to a page within the same website) is specified with a relative URL (without the "https://www" part):
* Example

<!DOCTYPE html>

<html>

<body>

<h2>Absolute URLs</h2>

<p><a href="https://www.w3.org/">W3C</a></p>

<p><a href="https://www.google.com/">Google</a></p>

<h2>Relative URLs</h2>

<p><a href="html\_images.asp">HTML Images</a></p>

<p><a href="/css/default.asp">CSS Tutorial</a></p>

</body>

</html>

* Output

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**HTML FORMS:**

* An HTML form is used to collect user input. The user input is most often sent to a server for processing.
* Example

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| Example | Output |
| <html>  <body>  <h2>  HTML Forms  </h2>  <form action="/action\_page.php">  <label for="fname">First name:  </label>  <br>  <input type="text" id="fname" name="fname" value="Kamali">  <br>  <label for="lname">Last name:</label>  <br>  <input type="text" id="lname" name="lname" value="A"><br><br>  <input type="submit" value="Submit">  </form>  </body>  </html> |  |

* The <form> Element
* The HTML <form> element is used to create an HTML form for user input:

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| <form>  .  .  form elements  .  .  </form> |

* The <form> element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc.

The HTML <form> Elements are..

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* The <input> Element
* One of the most used form elements is the <input> element.
* The <input> element can be displayed in several ways, depending on the type attribute.

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>  The input Element  </h2>  <form action="/action\_page.php">  <label for="fname">  First name:</label>  <br>  <input type="text" id="fname" name="fname">  <br>  <br>  <input type="submit" value="Submit">  </form>  </body>  </html> |  |

* The <select> Element
* The <select> element defines a drop-down list:

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>  The select Element  </h2>  <form action="/action\_page.php">  <label for="cars">Choose a car:</label>  <select id="cars" name="cars">  <option value="volvo">Volvo</option>  <option value="saab">Saab</option>  <option value="fiat">Fiat</option>  <option value="audi">Audi</option>  </select>  <input type="submit">  </form>  </body>  </html> |  |

* The <option> element
* The <option> element defines an option that can be selected.
* By default, the first item in the drop-down list is selected.
* To define a pre-selected option, add the selected attribute to the option:

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>Pre-selected Option</h2>  <form action="/action\_page.php">  <label for="flower">Choose a flower:</label>  <select id="flower" name="cars">  <option value="Rose">Rose</option>  <option value="Lily">Lily</option>  <option value="Lotus" selected>Lotus</option>  <option value="Tulip">Tulip</option>  </select>  <input type="submit">  </form>  </body></html> |  |

## 

## Visible Values:

* Use the size attribute to specify the number of visible values:

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>Visible Option Values</h2>  <form action="/action\_page.php">  <label for="cars">Choose a car:</label>  <select id="cars" name="cars" size="3">  <option value="volvo">Volvo</option>  <option value="saab">Saab</option>  <option value="fiat">Fiat</option>  <option value="audi">Audi</option>  </select><br><br>  <input type="submit">  </form>  </body>  </html> |  |

* Allow Multiple Selections:
* Use the multiple attribute to allow the user to select more than one value:

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| Example | Output |
| <html>  <body>  <h2>Allow Multiple Selections</h2>  <form action="/action\_page.php">  <label for=" flower">Choose a flower:</label>  <select id=" flower" name=" flower" size="4" multiple>  <option value="Lili">Lili</option>  <option value="Rose">Rose</option>  <option value="Lotus">Lotus</option>  <option value="Daisy">Daisy</option>  </select><br><br>  <input type="submit">  </form>  </body>  </html> |  |

* The <textarea> Element
* The <textarea> element defines a multi-line input field (a text area):
* The rows attribute specifies the visible number of lines in a text area.
* The cols attribute specifies the visible width of a text area.

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>Textarea</h2>  <form action="/action\_page.php">  <textarea name="message" rows="5" cols="10">This is kamali</textarea>  <br><br>  <input type="submit">  </form>  </body>  </html> |  |

* The <button> Element
* The <button> element defines a clickable button:

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>The button Element</h2>  <button type="button" onclick="alert('Hello World!')">Click Me!</button>  </body>  </html> |  |

* The <fieldset> and <legend> Elements
* The <fieldset> element is used to group related data in a form.
* The <legend> element defines a caption for the <fieldset> element.

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>  Grouping Form Data with Fieldset  </h2>  <form action="/action\_page.php">  <fieldset>  <legend>Personalia:</legend>  <label for="fname">First name:</label><br>  <input type="text" id="fname" name="fname" value="Kamali">  <br>  <label for="lname">Last name:</label>  <br>  <input type="text" id="lname" name="lname" value="A">  <br>  <br>  <input type="submit" value="Submit">  </fieldset>  </form>  </body>  </html> |  |

* The <datalist> Element
* The <datalist> element specifies a list of pre-defined options for an <input> element.
* Users will see a drop-down list of the pre-defined options as they input data.
* The list attribute of the <input> element, must refer to the id attribute of the <datalist> element.

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| Example | Output |
| <html><body>  <h2>The datalist Element</h2>  <form action="/action\_page.php">  <input list="browsers" name="browser">  <datalist id="browsers">  <option value="Edge">  <option value="Firefox">  <option value="Chrome">  <option value="Opera">  <option value="Safari">  </datalist>  <input type="submit">  </form>  </body></html> |  |

* The <output> Element
* The <output> element represents the result of a calculation (like one performed by a script).

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| Example | Output |
| <html>  <body>  <h2>The output Element</h2>  <p>The output element represents the result of a calculation.</p>  <form action="/action\_page.php"  oninput="x.value=parseInt(a.value)+parseInt(b.value)">  0  <input type="range" id="a" name="a" value="50">  100 +  <input type="number" id="b" name="b" value="50">  =  <output name="x" for="a b"></output>  <br><br>  <input type="submit">  </form>  </body>  </html> |  |

* The <input> Element
* The HTML <input> element is the most used form element.
* An <input> element can be displayed in many ways, depending on the type attribute.

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* Text Fields
* The <input type="text"> defines a single-line input field for text input

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| Example | Output |
| <html><body>  <h2>Text input fields</h2>  <form>  <label for="fname">First name:</label><br>  <input type="text" id="fname" name="fname" value="Kaaviyaa"><br>  <label for="lname">Last name:</label><br>  <input type="text" id="lname" name="lname" value="A">  </form></body>  </html> |  |

* The <label> Element
* The <label> tag defines a label for many form elements.
* The <label> element is useful for screen-reader users, because the screen-reader will read out loud the label when the user focuses on the input element.
* The <label> element also helps users who have difficulty clicking on very small regions (such as radio buttons or checkboxes) - because when the user clicks the text within the <label> element, it toggles the radio button/checkbox.
* The for attribute of the <label> tag should be equal to the id attribute of the <input> element to bind them together.
* Radio Buttons
* The <input type="radio"> defines a radio button.
* Radio buttons let a user select ONE of a limited number of choices.

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| Example | Output |
| <html><body>  <h2>Radio Buttons</h2>  <p>Choose your favorite Web language:</p>  <form>  <input type="radio" id="html" name="fav\_language" value="HTML">  <label for="html">HTML</label><br>  <input type="radio" id="css" name="fav\_language" value="CSS">  <label for="css">CSS</label><br>  <input type="radio" id="javascript" name="fav\_language" value="JavaScript">  <label for="javascript">JavaScript</label>  </form> </body></html> |  |

* Checkboxes
* The <input type="checkbox"> defines a checkbox.
* Checkboxes let a user select ZERO or MORE options of a limited number of choices.

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| Example | Output |
| <html><body>  <p>The <strong>input type="checkbox"</strong> defines a checkbox:</p>  <form action="/action\_page.php">  <input type="checkbox" id="vehicle1" name="vehicle1" value="Bike">  <label for="vehicle1"> I like bike</label><br>  <input type="checkbox" id="vehicle2" name="vehicle2" value="Car">  <label for="vehicle2"> I like car</label><br>  <input type="checkbox" id="vehicle3" name="vehicle3" value="Boat">  <label for="vehicle3"> I like boat</label><br><br>  <input type="submit" value="Submit">  </form> </body></html> |  |

* The Submit Button
* The <input type="submit"> defines a button for submitting the form data to a form-handler.
* The form-handler is typically a file on the server with a script for processing input data.
* The form-handler is specified in the form's action attribute.

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <h2>  HTML Forms  </h2>  <form action="/action\_page.php">  <label for="fname">  First name:</label>  <br>  <input type="text" id="fname" name="fname" value="Kala">  <br>  <label for="lname">Last name:  </label>  <br>  <input type="text" id="lname" name="lname" value="A"><br><br>  <input type="submit" value="Submit">  </form>  </body>  </html> |  |

* The Name Attribute for <input>
* Notice that each input field must have a name attribute to be submitted.
* If the name attribute is omitted, the value of the input field will not be sent at all.

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| Example | Output |
| <html>  <body>  <h2>The name Attribute</h2>  <form action="/action\_page.php">  <label for="fname">First name:  </label>  <br>  <input type="text" id="fname" value="Kamali"><br><br>  <input type="submit" value="Submit">  </form>  </body>  </html> |  |

**HTML VIDEO:**

* The HTML <video> element is used to show a video on a web page.
* The <video> tag is used to embed video content in a document, such as a movie clip or other video streams.
* The <video> tag contains one or more <source> tags with different video sources.
* The browser will choose the first source it supports.
* The text between the <video> and </video> tags will only be displayed in browsers that do not support the <video> element.
* There are three supported video formats in HTML: MP4, WebM, and OGG.
* HTML Video Tags

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| Example | Output |
| <html>  <body>  <h1>  The video element  </h1>  <video width="320" height="240" controls>  <source src="movie.mp4" type="video/mp4">  <source src="movie.ogg" type="video/ogg">  Your browser does not support the video tag.  </video>  </body>  </html |  |

* HTML Video - Methods, Properties, and Events
* The HTML DOM defines methods, properties, and events for the <video> element.
* This allows you to load, play, and pause videos, as well as setting duration and volume.
* There are also DOM events that can notify you when a video begins to play, is paused, etc.

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| Example | Output |
| <!DOCTYPE html>  <html>  <body>  <div style="text-align:center">  <button onclick="playPause()">Play/Pause</button>  <button onclick="makeBig()">Big</button>  <button onclick="makeSmall()">Small</button>  <button onclick="makeNormal()">Normal</button>  <br><br>  <video id="video1" width="420">  <source src="mov\_bbb.mp4" type="video/mp4">  <source src="mov\_bbb.ogg" type="video/ogg">  Your browser does not support HTML video.  </video>  </div>  <script>  var myVideo = document.getElementById("video1");  function playPause() {  if (myVideo.paused)  myVideo.play();  else  myVideo.pause();  }  function makeBig() {  myVideo.width = 560;  }  function makeSmall() {  myVideo.width = 320;  }  function makeNormal() {  myVideo.width = 420;  }  </script> </body>  </html> |  |