

HTML Elements

Image

- HTML image is defined with tag. This tag is used to display an image in the web browser.
- There are different approaches to add an image, but when images are content, like images in a gallery or image of a product in a product details page, the tag is the appropriate approach.

```

```

List

- List in HTML is defined in tag, and it is called a list of items.
- There are common types of list in HTML:
 - o Ordered List
 - Ordered list is defined in tag.
 - This list displays the items in an order. Examples of these are numbered list and lettered list.
 - o Unordered List
 - Unordered list is defined in tag.
 - This list is a collection of items in no particular order. An example of this is a bulleted list.

```
<h3>Unordered List</h3>
<ul>
  <li>one</li>
  <li>two</li>
  <li>three</li>
</ul>

<h3>Ordered List</h3>
<ol>
  <li>Apple</li>
  <li>Banana</li>
  <li>Mango</li>
</ol>
```

Span

- Span is defined in tag.
- It is used to group inline-elements, and it is equivalent to the "div" element.
- It is generally used to mark text that will receive special formatting using CSS.

```
<p>
  Fundamentals of
  <span style="color:blue;">
    web programming
  </span>
</p>
```

Navigation

- Navigation is defined in <nav> tag.
- This element represents a section of a page that contains links to other pages or other parts on the same page.

```
<nav>
  <a href="#">
    Home
  </a>
  |
  <a href="#">
    Profile
  </a>
  |
  <a href="#">
    About Us
  </a>
</nav>
```

HTML Attributes

title

- The title attribute shows extra information about an element.

alt

- Will display a short description if the image cannot be displayed.

src

- This attribute is used to locate an external resource. The external resource could be an image or a javascript file, which is located in specific folders on a project.

href

- The href attribute is used to specify the URL of a web page or an external resource. These external resources are HTML files, which are located in specific folders on a project.
- The anchor <a> and <link> tag are the common elements that are using this attribute.

style

- Style attribute defines a design for an HTML Document.
- Using this attribute, it is commonly called an inline style sheet, in which a style rule that is placed within the HTML element.

Id

- Defines a unique id of an element in HTML.
- The sharp or hash "#" specifies an id in CSS, followed by the id name.

Class

- Defines a class name of an element.
- Dot or period "." specifies a class in CSS followed by the class name.

Table and DIV

Table

- **<thead>**
 - o This element is used to group the header content in a table.
- **<tfoot>**
 - o This element is used to group the footer content in a table.
- **<tbody>**
 - o This element is used to group the body content in a table.

Division

- Division in html defined in <div> element.
- This element is commonly known as a container of other elements in HTML. CSS is used to cut out the sections.

Forms

Form Control Elements

- Defines the different input controls in the HTML Form.
- **Text Input Control**
 - o This control is used to gather text information from users.
 - o A text input control is defined in **<input>** tag followed by a **type** attribute.
 - o Here are the different text inputs:
 - **Text**
 - This type of text input control creates a single line of text entry box and can input different types of characters.
 - **Password**
 - This type of text input control creates a single line of text entry box for a password.
 - It is used to mask the user entry bullets or other characters that will hide the entered password.

- **Email**
 - This type of text input control creates a single line of entry box for entering an email address.
 - A message will prompt if a user entered an invalid email address.
- **Number**
 - This type of text input control creates a single line of entry box for entering a number.
 - A message will prompt if a user entered a different character.
- **URL**
 - This type of text input control creates a single line of entry box that is suitable for entering a URL.
 - A message will prompt if the user entered an invalid URL.

```
<!-- text input control -->
<input type="text" placeholder="text"/>

<input type="password" placeholder="password"/>

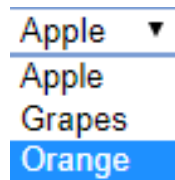
<input type="email" placeholder="e-mail"/>

<input type="number" placeholder="number"/>

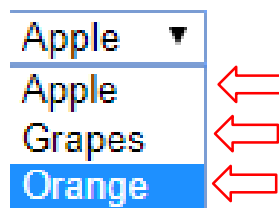
<input type="url" placeholder="url"/>
```

- Choice Control

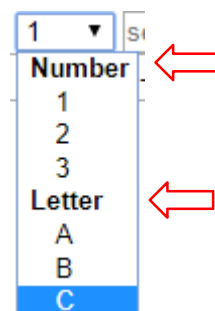
- This control provides users a set of different options.
- Some certain elements and attributes are used to create different types of choice control.
- The following choice controls are:
 - **<select>**
 - This kind of element is used to create a multiline box for selecting one or more items.
 - It is also known as a drop-down list.



- **<option>**
 - The option element contains the items for the select element.

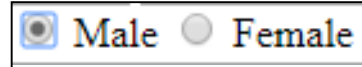


- **<optgroup>**
 - This element is used to group the option items.



- **<input type="radio">**

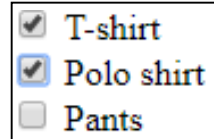
- This choice control is used as an input tag and is defined in a type attribute.
- It is used to provide a single selection within the given items.



A form showing two radio buttons. The first is selected and labeled "Male". The second is not selected and labeled "Female".

▪ **<input type="checkbox">**

- This choice control also used an input tag and is defined in a type attribute.
- This control is used to allow the user to select from multiple items.



A form showing three checkboxes. The first two are checked and labeled "T-shirt" and "Polo shirt". The third is not checked and labeled "Pants".

```
<!-- Choice Control -->
<select name="fruits">
  <option value="apple">Apple</option>
  <option value="grape">Grapes</option>
  <option value="Orange">Orange</option>
</select>

<select name="Charater">
  <optgroup label="Number">
    <option>1</option>
    <option>2</option>
    <option>3</option>
  </optgroup>
  <optgroup label="Letter">
    <option>A</option>
    <option>B</option>
    <option>C</option>
  </optgroup>
</select>
```

```
<input type="radio" name="gender" value="male"/>
  Male
<input type="radio" name="gender" value="female"/>
  Female

<input type="checkbox" name="clothes" value="tshirt"/>
  T-shirt
<input type="checkbox" name="clothes" value="poloshirt"/>
  Polo shirt
<input type="checkbox" name="clothes" value="pants"/>
  Pants
```

- **Button Control**

- This type of control is used to create a button with a different set of functions.
- A button is defined in <button> and <input> tag. In input tag, a type of attribute is used to define its function.
- Here are the button controls in HTML Form:

▪ **<input type="submit">**

- This type of button provides a function that will submit data to the server.

▪ **<input type="reset">**

- This type of button provides a function that resets the user's input.

▪ **<input type="button">**

- This type of button requires a javascript to perform its action.

▪ **<input type="image">**

- This type of button uses an image for its display.

▪ **<button>**

- This element may require a javascript, but the difference in <input type="button">,

- This input tag uses a text for its display. The button element, both text, and image can be included.

```
<input type="submit" value="submit"/>

<input type="reset" value="reset"/>

<input type="button" value="Next ">/>

<input type="image" src="images.png" width="40px" height="40px">

<button>Button</button>
```

- Date and Time Control

- Date and time control is defined in **<input>** tag followed by a **type** attribute.
- This form element is used to create different date and time inputs.
- Here are the date and time control in HTML Form:
 - **<input type="date">**
 - This type of control creates a general date input control.
 - It has a date format of "yyyy-mm-dd"
 - **<input type="time">**
 - This type of control creates a time input control.
 - It has a time format of "HH:MM:SS" for hours:minute:seconds.
 - **<input type="month">**
 - This type of control creates a month in a year that a user can enter.
 - It has a format of "yyyy-mm".
 - **<input type="week">**
 - This type of input control creates a week in a year in which a user can specify.
 - It has a format of "yyyy-W##".

```
<!-- Date and Time Control -->

<input type="date"/>

<input type="time"/>

<input type="datetime"/>

<input type="month"/>

<input type="week"/>
```

Multimedia and Graphics

Multimedia

- In HTML, multimedia is another feature of a website.
- Audio and video have been a significantly important part of the web experience for many users. You can watch different genres of movies, online video streaming of different events, and listening to different music online.

Graphics

- In HTML, graphics is used to enhance the appearance of a website. It may contain different images and animations for its content.

Video

- Video is defined in **<video>** element.
- In HTML, there are common video formats that are allowed on a website. There are MP4, WebM and Ogg video

format.

- <source>

- This element is used to get the source file of a video.
- This element has different attributes.
 - The control attribute specifies the video controls, like play, pause, and volume.
 - The width and height specify the physical size of the video.

```
<video poster="playbutton.png"
width="380" height="240" controls>
  <source src="samplevid.mp4" type="video/mp4"/>
</video>
```

Audio

- Audio is defined in <audio> element
- Audio has the common formats that are allowed on a website. There are MP3 and WAV audio formats.
- <source> element is used to get the source file of a video.
- This element has the same attribute as the video element. The attributes are control, width, and height.

```
<audio controls>
  <source src="sampleaudio.mp3"/>
</audio>
```

Canvas

- A canvas is defined in <canvas> element.
- This element is a two-dimension drawing surface that uses JavaScript coding to perform the actual drawing.
- To create a canvas, some attributes are involved. The style, width, and height attribute.

```
<canvas id="canvas1"
width="100" height="100"
style="border:1px solid black; margin-bottom:10px;">
</canvas>
```

```
<canvas id="canvas2" width="200" height="100"
style="border:2px solid red; margin-left:10px;
margin-bottom:10px;">
</canvas>
```

```
<br>
<canvas id="canvas3" width="300" height="100"
style="border:2px solid blue;">
</canvas>
```

<script>

```
var c = document.getElementById("canvas2");
var ctx = c.getContext("2d");
ctx.moveTo(200,0);
ctx.lineTo(0,100);

ctx.moveTo(0,0);
ctx.lineTo(200,100);
ctx.stroke();
```

```
var c1 = document.getElementById("canvas3");
var ctx1 = c1.getContext("2d");
ctx1.beginPath();
ctx1.arc(40, 50, 10,0,2 * Math.PI);
ctx1.stroke();
```

```
var c2 = document.getElementById("canvas3");
var ctx2 = c2.getContext("2d");
ctx2.beginPath();
ctx2.arc(80, 50, 20,0,2 * Math.PI);
ctx2.stroke();
```

```
var c3 = document.getElementById("canvas3");
var ctx3 = c3.getContext("2d");
ctx3.beginPath();
ctx3.arc(140, 50, 30,0,2 * Math.PI);
ctx3.stroke();
```

```
var c4 = document.getElementById("canvas3");
var ctx4 = c4.getContext("2d");
ctx4.beginPath();
ctx4.arc(220, 50, 40,0,2 * Math.PI);
ctx4.stroke();
```

```
</script>
```

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Lemay, L., Colburn, R., & Kyrnin, J. (2016). *Sams teach yourself HTML, CSS and JavaScript web publishing in one hour a day* (7th Ed.). New Jersey: Pearson Education, Inc.

Krause, J. (2016). *Introducing web development*. California: Apress Media, LLC.