

Unit 1: Introduction to HTML

HTML(Hypertext Markup Language) is a standard language that helps us to build web pages on the internet. Html contains a series of tag elements that can be used as a way to tell your web browsers about the structure of your web page, like where the headings are, where the images are, and so on. Some browsers does not support some html tag elements. HTML, is a Markup language that can become more interactive and attractive by using CSS and JS within it.

Example of html Tag elements are:

<html></html>, <p> </p>,
, <hr>, <table> </table> ...E.t.c.

Structure of HTML

```
<!DOCTYPE html>
<html>
<head>
<title> Page title </title>
<!-- header for the website -->
</head>
<body>

<!-- body section of the website -->

</body>
</html>
```

1.1 Getting Started with a Simple Web Page

To build a webpage / website, you need to follow these steps:

- Create a html file using any text editor (example: NOTEPAD, SUBLIME, VISUAL STUDIO, VIM ETC.)
- Add all the details that you want to see on your website in that html file.
- Save the file as file_name.html extension.
- Right click on the file where you saved and go to open with option and select any browser (e.g. internet Explorer, Google chrome, Firefox, Opera, Safari) to open the file

Example for Creating a Simple First Web Page :

```
<!DOCTYPE html>
<html>
<head>
<title>My First Web Page!</title>
</head>
<body>
<h1>Hello World!</h1>
</body>
</html>
```

1.2 Block and Inline Elements

Html contains two types of elements: Inline and Block. A web page is developed by the combination of Inline and Block elements.

Inline Elements: Inline elements are those elements that do not start on a new line when you insert the element in the code. Using Inline elements, you can add space to the left or right side of an inline element but you cannot add space on the top and bottom of the element. Some Inline Elements are ``, `<a>`, ``, ``, `<sub>`, `<sup>`, `<time>`, `<label>` ..etc.

```
<html>
<body>
<p> The span tag is an <span> inline element.</span> Another inline element is
label also.</p>
</body>
</html>
```

Output:

The span tag is an inline element. Another inline element is label also.

Block Elements: Block elements are working as just opposite of Inline elements. Block elements start on a new line and they take full width of the webpage for the content. You can add top and bottom margins to these elements and they also create a larger structure than inline elements. Some Block Elements are `<div>`, `<p>`, ``, `<form>`, `<video>`, `<h1>` to `<h6>`, `<table>` ...etc.

```
<html>
<body>
```

```

<p> Hello web developers.</p>
<h1> you need to know html</h1>
<h2> you need to know css</h2>
<h3> you need to know javascript</h3>
</body>
</html>

```

Output:

Hello web developers.

you need to know html

you need to know css

you need to know javascript

Difference Between Block Elements and Inline Elements

Block Elements	Inline Elements
<ul style="list-style-type: none"> Block elements always start on a new line 	<ul style="list-style-type: none"> Inline elements don't start on a new line.
<ul style="list-style-type: none"> You can add top and bottom margins to the Block Elements. 	<ul style="list-style-type: none"> Inline Elements don't have Top and Bottom margins.
<ul style="list-style-type: none"> Block elements cannot break among the lines 	<ul style="list-style-type: none"> Inline elements can break among the lines.
<ul style="list-style-type: none"> Inline Elements cannot contain Block Elements. 	<ul style="list-style-type: none"> Block Elements can contain Inline Elements.
<ul style="list-style-type: none"> Border and padding of any type are accepted in inline elements that can make any changes to the files. 	<ul style="list-style-type: none"> Block elements accept only width, margins, border, height, and padding.
<ul style="list-style-type: none"> Width and height are considered in Block Elements. 	<ul style="list-style-type: none"> Width and heights are not considered in inline elements.
Examples of Block Elements are :	Examples of Inline Elements :
<pre> <div>, <p>, , <main>, <nav>, , <form>, <video>, <table>, <aside>, <article>. </pre>	<pre> , <a>, <code>, , , <cite>, <button>, <input>, <textarea>, <select>, <small>.. </pre>

1.2 Presentation and Phrase Elements

Presentation Elements

If you use a word processor and powerpoint presentation, you are familiar with the ability to make text bold, italicized or underlined; these are just three of the ten options available to indicate how text can appear in HTML and XHTML.

- Heading Title text `<h1></h1>` to `<h6></h6>` element
- Paragraph `<p></p>` element
- Block-level container `<div></div>` element
- Bold text- The `` element
- Italic Text –The `<i></i>` element
- Underlined Text- The `<u></u>` Element
- `<center>`center the elements `</center>`
- `<marquee>`horizontally scrolling the elements`</marquee>`

Phrase Element: The HTML phrase tags are special purpose tags, which defines the structural meaning of a block of text. Following is the list of phrase tags, some of which we have already discussed in HTML formatting.

- Abbreviation tag : `<abbr>`
- Acronym tag: `<acronym></acronym>` (not supported in HTML5)
- Marked tag: `<mark></mark>`
- Strong tag: ``
- Emphasized tag : ``
- Definition tag: `<dfn></dfn>`
- Quoting tag: `<blockquote></blockquote>`
- Short quote tag : `<q></q>`
- Code tag: `<code></code>`
- Keyboard tag: `<kbd></kbd>`
- Address tag: `<address></address>`

Example Demonstrating all the phrase element:

```
<!DOCTYPE html>
<html>
  <head>
    </head>
  <body>
    <h2> phrase elements</h2>
    <p>An <abbr title = "Hypertext Markup language">HTML
    </abbr>language is used to create web pages.
    </p>
    <p>This tag will <mark>highlight</mark> the text.</p>
    <p>In HTML, it is recommended to use <strong>lower-
    case</strong>, while writing a code.
    <p>HTML is an <em>easy </em>to learn language.</p>
    <p><dfn>HTML </dfn> is a markup language. </p>
    <blockquote
      cite="https://www.keepinspiring.me/famous-
      quotes/"><p>"The first step toward success is taken when
      you refuse to be a captive of the environment in which you
      first find yourself."</p></blockquote>
    <cite>-Mark Caine</cite>
    <h2> <q> elements define short quotations </h2>
    <p>Steve Jobs said: <q>If You Are Working On Something
    That You Really Care About, You Don?t Have To Be Pushed.
    The Vision Pulls You.</q>?</p>
    <h2> code element</h2>
    <p><code>class Simple{ public static void main(String
    args[]){
      System.out.println("Hello Java"); }</code>
    </p>
    <h2>Keyboard input. </h2>
```

<p>Please press <kbd>Ctrl</kbd> + <kbd>Shift</kbd> + <kbd>t</kbd> to restore page on chrome.</p>

```
<h2>Address Tag</h2>
<address> You can ask your queries by contact us on <a href="">example123@newdomain.com</a>
<br> You can also visit at: <br>58 S. Garfield Street. Villa Rica, GA 30187.
</address>
</body>
</html>
```

1.4 Empty and Non-empty Elements

Empty Elements: Those elements that have no content with it and are self containing tags are called empty elements. Empty element does not require closing tags. Empty tags are also known as unpaired tags. For example:

```
<br>,
<hr>,
,
<input type="text" name="username">,
<meta charset="UTF-8">,
<link rel="stylesheet" href="styles.css">,
<embed src="video.mp4" type="video/mp4">,
<col span="2" style="background-color:red">,
<base href="https://www.example.com/">....etc.
```

Non-Empty Elements: Those elements that have content with it in between, have both opening and closing tags are called Non- Empty Elements. Non-Empty Elements are also known as paired tags. For

Example:

```
<p>This is paragraph</p>,
<h1>heading 1</h1> to <h6>heading 6</h6>,
<a href="https://www.parajulirajesh.com.np">Click here</a> ,
<ul> <li>Item 1</li> <li>Item 2</li> </ul>,
<table> </table>,<tr></tr>,<th></th>,<td></td>
<form></form>
<div></div>,<span></span>....etc
```

1.5 HTML character entities

HTML character entities are special codes used to represent characters that have special meanings in HTML, or characters that cannot easily be typed on a keyboard. These entities begin with an ampersand (&) and end with a semicolon (;). Here are some common HTML character entities:

Basic Latin Characters:

< - Less than (<)
> - Greater than (>)
& - Ampersand (&)
" - Double quote (")
' - Single quote or apostrophe (')

Special Characters:

© - Copyright symbol (©)
® - Registered trademark symbol (®)
™ - Trademark symbol (™)
 - Non-breaking space()

Mathematical and Scientific Symbols:

± - Plus-minus symbol (±)
× - Multiplication symbol (×)

÷ - Division symbol (÷)
∑ - Summation symbol (Σ)
√ - Square root symbol (√)

Accented Characters and Diacritics:

é - Lowercase e with acute accent (é)
À - Uppercase A with grave accent (À)
ñ - Lowercase n with tilde (ñ)

Arrows:

← - Left arrow (←)
↑ - Up arrow (↑)
→ - Right arrow (→)
↓ - Down arrow (↓)

Currency Symbols:

€ - Euro symbol (€)
£ - Pound sterling symbol (£)
¥ - Yen symbol (¥)
$ - Dollar symbol (\$)

1.6 HTML List, Table, Links (Internal and External)

HTML LIST:

List is a collection of items, and one of the best ways of representing information. In HTML, lists are one of the most frequently used elements, whether it's for navigation or for representing general content. HTML Lists are used to specify lists of information. All lists may contain one or more list elements. There are three different types of HTML lists:

1. Ordered List or Numbered List (ol)
2. Unordered List or Bulleted List (ul)
3. Description List or Definition List (dl)

1.HTML Ordered List: It is also known as numbered list. The ordered list starts with `` tag and the list items start with `` tag. In ordered list, we use type attribute to define its type which represent the lists like type="A", it lists the items in A list_items, B list_items, etc. By defaults, All the list items are marked with numbers.

Example of ordered list:

```
<!DOCTYPE html>
<html>
<head>
<title>Book list</title>
</head>
<body>
<h2>An ordered HTML List of Books Name</h2>
<ol type="A">
<li>Web Technology</li>
<li>Digital Logics</li>
<li>Math</li>
<li>English</li>
</ol></body>
</html>
```

2.HTML Unordered List: Unordered list is also known as bulleted list. The Unordered list starts with `` tag and list items start with the `` tag. In unordered list, we use 'type' attribute to define its type which represent the lists like type="square", it lists the items in square symbol list_item, square symbol list_item, etc. By defaults, All the list items are marked with Bullets.

Example of Unordered list:

```
<!DOCTYPE html>
<html>
<head>
<title>Book list</title>
</head>
<body>
<h2>An unordered HTML List of Books Name</h2>
<ul type="disc">
<li>Web Technology</li>
<li>Digital Logics</li>
<li>Math</li>
```

```
<li>English</li>
</ul>
</body>
</html>
```

3.HTML Description List or Definition List: It is also known as definition list where entries are listed like a dictionary or encyclopedia. The description list is very useful when you want to present glossary, list of terms or other name-value list.

Example of Definition / description list:

```
<!DOCTYPE html>
<html>
<body>
<h2>A Description List</h2>
<dl>
<dt>COURSE</dt>
<dd>- Ghodaghodi Multiple Campus has BICTE course. </dd>
<dt>LIBRARY</dt>
<dd>- Ghodaghodi Multiple Campus has LIBRARY Facility.</dd>
<dt>BUS</dt>
<dd>- Ghodaghodi Multiple Campus has bus Facility for students.</dd>
</dl>
</body>
</html>
```

HTML Table: In general, table is created by row and column. In html, We can create a table to display data in tabular form, using `<table>` element, with the help of `<tr>` , `<td>`, and `<th>` elements.

In Each table, table row is defined by `<tr>` tag, table header is defined by `<th>`, and table data is defined by `<td>` tags.

```
<html>
<head>
<title>Creating a table in HTML
</title>
</head>
<body>
<h1> HTML Table</h1>
```

```

<table border="1" cellspacing="0">
<tr>
<th>S_Name</th>
<th>S_Course</th>
<th>S_Marks</th>
</tr>
<tr>
<td>Rajesh</td>
<td> Web Technology</td>
<td> 90</td>
</tr>
<tr>
<td>Vishal</td>
<td> Operating System</td>
<td> 95</td>
</tr>
<tr>
<td>Pratik</td>
<td> C Programming</td>
<td> 80</td>
</tr>
</body>
</html>

```

HTML LINKS: HTML links are hyperlinks.

Syntax:

```

<a href="url" target="_blank, _self">link text</a>
    _blank: open in new window
    _self: open in same window

```

By default, links will appear as follows in all browsers:

- An unvisited link is underlined and blue.
- A visited link is underlined and purple
- An active link is underlined and red

Internal Link: An internal link is used in html page to navigate properly in the webpage. If you want to go to any specific location in the same page by clicking on a link, you can create an internal link in the webpage. tag is used for link creation in html page.

```
<!DOCTYPE html>
<html>
<head>
<title> Internal link example </title>
</head>
<body>
<p>Welcome to my web-page. This is an example of internal link creation in html web-page.</p><br>
<a name= “html”> Introduction to Html </a>
<p> Html is hyper text mark-up language.</p><br><br>
<a name= “css”> Introduction to CSS </a>
<p> Cascading Style Sheet is used for styling the web pages</p><br><br>
<a href= “#html”> html</a><br>
<a href= “#css”> css</a>
</body>
</html>
```

External Link: An external link is used to interconnect two html webpages. When you want to navigate to some other page or any other URL by clicking on a link on webpage, external links are created. An external link can be created by using anchor tag in html web page.

```
<!DOCTYPE html>
<html>
<head>
<title> This is Page1 </title>
</head>
<body>
<h1> Page 1</h1>
<br>
<a href= “Page2.html”> Back</a>
</body>
</html>
```

1.7 Multimedia Contents (Image, Audio, Video and YouTube player)

The term “multimedia” refers to almost anything that can be heard or seen for e.g., sound, music, images, records, videos, films, animations, etc. Web pages can include multimedia elements of various formats and types.

HTML provides several ways to add and embed multimedia content to web pages, including text, images, audio, and video and youtube player. Here are some of the HTML multimedia tags that are commonly used:

- **<p>** - Mostly the **<p>** tag is used to display long texts on a web page. You can specify the text using the "**<h1>-<h6>**" tags and other various tags are available to write text on webpages, and you can also specify text without using tags, by simply writing text inside body tag.
- **** - The **** tag is used to display images on a web page. You can specify the source of the image using the "src" attribute, and you can also specify alternative text using the "alt" attribute.

For Example:

```
<!DOCTYPE html>
<html>
<body>
<h2>HTML Image</h2>

</body>
</html>
```

- **<audio>** - The **<audio>** tag is used to embed audio content on a web page. You can specify the source of the audio using the "src" attribute, and you can also provide fallback content for browsers that don't support the **<audio>** tag using the **<object>** or **<embed>** tags.

For Example:

```
<!DOCTYPE html>
<html>
<body>
<audio controls autoplay unmuted loop>
<source src="horse.ogg" type="audio/ogg">
<source src="horse.mp3" type="audio/mpeg">
Your browser does not support the audio element.
</audio>
</body>
</html>
```

- `<video>` - The `<video>` tag is used to embed video content on a web page. You can specify the source of the video using the "src" attribute, and you can also specify the dimensions and other settings using various attributes.

For Example:

```
<!DOCTYPE html>
<html>
<body>
<video width="320" height="240" autoplay unmuted loop>
<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>
```

- `<source>` - The `<source>` tag is used to provide alternative versions of a multimedia element. For example, you can provide multiple sources for an `<audio>` or `<video>` element to ensure compatibility with different browsers and devices.

- <iframe> - The <iframe> tag is used to embed content from another web page or website within the current page. This can be used to embed videos, maps, social media content, and other types of multimedia.

Youtube Video embed using Iframe Tag (Copy embed link from youtube video and paste it inside your html page where you want to show youtube video on your web page.

For Example:

```
<iframe width="560" height="315"
src="https://www.youtube.com/embed/TU0XjMJ73Og?si=-
dT2VBophuVzBBHC" title="YouTube video player"
frameborder="0" allow="accelerometer; autoplay; clipboard-write;
encrypted-media; gyroscope; picture-in-picture; web-share"
referrerpolicy="strict-origin-when-cross-origin"
allowfullscreen></iframe>
```

1.8 Form Elements (text, password, file, radio, checkbox, textarea, hidden, select option, button, date, email)

In general, we used manual form to collect data, but in recent days, we use electronic form to collect data which is created by using html.

Example of creating form in html with having all the input types.

```
<!Doctype Html>
<Html>
<Head>
<Title>
Create a Registration form
</Title>
</Head>
<Body>
```

The following tags are used in this Html code for creating the Registration form:

```
<br>
<form>
<label> Firstname </label>
```

```
<input type="text" name="firstname" size="15"/> <br> <br>
<label> Lastname: </label>
<input type="text" name="lastname" size="15"/> <br> <br>
<label>
Course :
</label>
<select>
<option value="Course">Select Course</option>
<option value="BICTE">BICTE</option>
<option value="BBS">BBS</option>
<option value="MBS">MBS</option>
<option value="MBA">MBA</option>
<option value="MA">M.A</option>
<option value="BA">BA</option>
</select>
<br>
<br>
<label>
Gender :
</label><br>
<input type="radio" name="gender"/> Male <br>
<input type="radio" name="gender"/> Female <br>
<input type="radio" name="gender"/> Other
<br>
<br>
<label>
Hobbies:
</label>
<br>
<input type="checkbox" name="Programming"> Programming <br>
<input type="checkbox" name="Cricket"> Cricket <br>
<input type="checkbox" name="Football"> Football <br>
<input type="checkbox" name="reading Novel"> Reading Novel <br>
<br>
<br>
<label>
Phone :
</label>
<input type="text" name="phone" size="10"/> <br> <br>
```

```
<br>
<label>
Date:
</label>
<input type="date" name="date"> <br> <br>
Address
<br>
<textarea cols="80" rows="5" value="address">
</textarea>
<br> <br>
Email:
<input type="email" id="email" name="email"> <br>
<br> <br>
Password:
<input type="Password" id="pass" name="pass"> <br>
<br> <br>
<input type="hidden" id="regisId" name="regisId" value="1020">
<br><br>
<input type="submit" value="Submit">
<input type="reset" value="Reset">
</form>
</Body>
</Html>
```

HTML <input type="hidden">

The <input type="hidden"> defines a hidden input field.

A hidden field lets web developers include data that cannot be seen or modified by users when a form is submitted.

A hidden field often stores what database record that needs to be updated when the form is submitted.

Note: The hidden field is not shown to the user, but the data is sent when the form is submitted. While the value is not displayed to the user in the page's content, it is visible (and can be edited) using any browser's developer tools or "View Source" functionality. Do not use hidden inputs as a form of security!