

Unit III

HTML: Elements of HTML & Syntax, Comments, Headings, Paragraph, Span, Pre Tags, Backgrounds, Formatting tags, Images, Hyperlinks, div tag, List Type and its Tags, Table Layout, div, Use of Forms in Web Pages.

HTML is an acronym which stands for **Hyper Text Markup Language** which is used for creating web pages and web applications.

Tim Berners-Lee is known as the father of HTML. The first available description of HTML was a document called "HTML Tags" proposed by Tim in late 1991. The latest version of HTML is HTML5,

Hyper Text: HyperText simply means "Text within Text." A text has a link within it, is a hypertext. Whenever you click on a link which brings you to a new webpage, you have clicked on a hypertext.

Markup language: A markup language is a computer language that is used to apply layout and formatting conventions to a text document. Markup language makes text more interactive and dynamic. It can turn text into images, tables, links, etc.

Web Page: A web page is a document which is commonly written in HTML and translated by a web browser. A web page can be identified by entering an URL. A Web page can be of the static or dynamic type. **With the help of HTML only, we can create static web pages.**

```
<html>
<head>
<title>Web page title</title>
</head>
<body>
<h1>Write Your First Heading</h1>
<p>Write Your First Paragraph.</p>
</body>
</html>
```

Description of HTML Example

<!DOCTYPE>: It defines the document type or it instruct the browser about the version of HTML.

<html > : This tag informs the browser that it is an HTML document. Text between html tag describes the web document. It is a container for all other elements of HTML except <!DOCTYPE>

<head>: It should be the first element inside the <html> element, which contains the metadata (information about the document). It must be closed before the body tag opens.

<title>: As its name suggested, it is used to add title of that HTML page which appears at the top of the browser window. It must be placed inside the head tag and should close immediately. (Optional)

<body> : Text between body tag describes the body content of the page that is visible to the end user. This tag contains the main content of the HTML document.

<h1> : Text between <h1> tag describes the first level heading of the webpage.

<p> : Text between <p> tag describes the paragraph of the webpage.

Versions

Since the time HTML was invented there are lots of HTML versions in market, the brief introduction about the HTML version is given below:

HTML 1.0: The first version of HTML was 1.0, which was the barebones version of HTML language, and it was released in 1991.

HTML 2.0: This was the next version which was released in 1995, and it was standard language version for website design. HTML 2.0 was able to support extra features such as form-based file upload, form elements such as text box, option button, etc.

HTML 3.2: HTML 3.2 version was published by W3C in early 1997. This version was capable of creating tables and providing support for extra options for form elements. It can also support a web page with complex mathematical equations. It became an official standard for any browser till January 1997. Today it is practically supported by most of the browsers.

HTML 4.01: HTML 4.01 version was released on December 1999, and it is a very stable version of HTML language. This version is the current official standard, and it provides added support for stylesheets (CSS) and scripting ability for various multimedia elements.

HTML5 : HTML5 is the newest version of HyperText Markup language. The first draft of this version was announced in January 2008. There are two major organizations one is W3C (World Wide Web Consortium), and another one is WHATWG (Web Hypertext Application Technology Working Group) which are involved in the development of HTML 5 version, and still, it is under development.

Features of HTML

- 1) It is a very **easy and simple language**. It can be easily understood and modified.
- 2) It is very easy to make an **effective presentation** with HTML because it has a lot of formatting tags.
- 3) It is a **markup language**, so it provides a flexible way to design web pages along with the text.

- 4) It facilitates programmers to add a **link** on the web pages (by html anchor tag), so it enhances the interest of browsing of the user.
- 5) It is **platform-independent** because it can be displayed on any platform like Windows, Linux, and Macintosh, etc.
- 6) It facilitates the programmer to add **Graphics, Videos, and Sound** to the web pages which makes it more attractive and interactive.

Comments

Comments are some text or code written in your code to give an explanation about the code, and not visible to the user. Comments which are used for HTML file are known as HTML comments. Anything written between these tags will be ignored by the browser, so comments will not be visible on the webpage.

Comments of any code make code easy to understand and increase readability of code. Comments are also part of the code, which gives an explanation of the code.

You can add comments in your HTML file using `<!-- ... -->` tag. So if you will write anything between these comment tag that will be treated as comment and browser will not read it.

`<!-- Write commented text here -->`

Heading

A HTML heading or HTML h tag can be defined as a title or a subtitle which you want to display on the webpage. When you place the text within the heading tags `<h1>.....</h1>`, it is displayed on the browser in the bold format and size of the text depends on the number of heading.

There are six different HTML headings which are defined with the `<h1>` to `<h6>` tags, from highest level h1 (main heading) to the least level h6 (least important heading). h1 is the largest heading tag and h6 is the smallest one. So h1 is used for most important heading and h6 is used for least important.

`<h1>`Heading no. 1`</h1>`

`<h2>`Heading no. 2`</h2>`

`<h3>`Heading no. 3`</h3>`

`<h4>`Heading no. 4`</h4>`

`<h5>`Heading no. 5`</h5>`

`<h6>`Heading no. 6`</h6>`

Paragraph

HTML paragraph or HTML p tag is used to define a paragraph in a webpage. Let's take a simple example to see how it work. It is a notable point that a browser itself add an empty line before and after a paragraph. An HTML <p> tag indicates starting of new paragraph.

```
<p>This is first paragraph.</p>
<p>This is second paragraph.</p>
<p>This is third paragraph.</p>
```

 tag

HTML tag is used as a generic container of inline elements. It is used for styling purpose to the grouped inline elements (using class and id attribute or inline style).

The tag does not have any default meaning or rendering. The tag can be useful for the following task:

- To change the language of a part of the text.
- To change the color, font, background of a part of text using CSS
- To apply the scripts to the particular part of the text.

HTML is much similar as <div> tag, but <div> is used for block-level elements and tag is used for inline elements.

```
<html>
<head>
  <title>Span Tag</title>
</head>
<body>
  <h2>Example of span tag</h2>
  <p>I have choosen only
    <span style="color: red;">red</span>,
    <span style="color: blue;">blue</span>, and
    <span style="color: green;">green</span> colors for my painting.
  </p>
</body>
</html>
```

Pre tag

The **HTML <pre> tag** is used *to specify pre formatted texts*. Texts within `<pre>.....</pre>` tag is displayed in a fixed-width font. Usually it is displayed in Courier font. It maintains both space and line break.

It is widely used to display language examples e.g. Java, C#, C, C++ etc because it displays the code as it is typed.

```
<pre>
```

```
This is a formatted text
```

```
    by using the HTML pre tag. It maintains  
        both space and line break.
```

```
</pre>
```

Background-color

The **<bgcolor>** is the attribute to set the background color of an HTML element. This attribute is used with the following tags:

- **<body>**
- **<table>**
- **<marquee>**
- **<td>**
- **<th>**
- **<tr>**

```
<body bgcolor="PINK">
```

Background Image

The **<background>** attribute in the **HTML** document is used to specify the background image on a HTML page or a table. You can pass the path of an image as a value of **background attribute** to set the image of your HTML page or table.

```
<body background=1.JPG>
```

Formatting

HTML Formatting is a process of formatting text for better look and feel. HTML provides us ability to format text without using CSS. There are many formatting tags in HTML. These tags are used to make text bold, italicized, or underlined. There are almost 14 options available that how text appears in HTML and XHTML.

In HTML the formatting tags are divided into two categories:

- Physical tag: These tags are used to provide the visual appearance to the text.
- Logical tag: These tags are used to add some logical or semantic value to the text.

Element name	Description
	This is a physical tag, which is used to bold the text written between it.
	This is a logical tag, which tells the browser that the text is important.
<i>	This is a physical tag which is used to make text italic.
	This is a logical tag which is used to display content in italic.
<mark>	This tag is used to highlight text.
<u>	This tag is used to underline text written between it.
<sup>	It displays the content slightly above the normal line.
<sub>	It displays the content slightly below the normal line.

Bold Text

HTML and formatting elements

The HTML element is a physical tag which display text in bold font, without any logical importance. If you write anything within element, is shown in bold letters.

The HTML tag is a logical tag, which displays the content in bold font and informs the browser about its logical importance. If you write anything between ??????., is shown important text.

Italic Text

HTML <i> and formatting elements

The HTML <i> element is physical element, which display the enclosed content in italic font, without any added importance. If you write anything within <i>.....</i> element, is shown in italic letters.

The HTML tag is a logical element, which will display the enclosed content in italic font, with added semantics importance.

Marked formatting

If you want to mark or highlight a text, you should write the content within <mark>.....</mark>.

Underlined Text

If you write anything within <u>.....</u> element, is shown in underlined text.

Subscript Text

If you put the content within _{.....} element, is shown in subscript ; means it is displayed half a character's height below the other characters.

```
<html>
<head>
<title> Formatting tags</title>
</head>
<body>
<b> hello</b>
<strong> hello</strong>
<i> hello</i>
<em> hello</em>
<mark> hello</mark>
<u> hello</u>
H<sub>2</sub>SO<sub>4</sub>
A<sup>
</body>
</html>
```

Image

HTML img tag is used to display image on the web page. HTML img tag is an empty tag that contains attributes only, closing tags are not used in HTML image element.

Attributes of HTML img tag

The src and alt are important attributes of HTML img tag. All attributes of HTML image tag are given below.

1) *src*

It is a necessary attribute that describes the source or path of the image. It instructs the browser where to look for the image on the server.

The location of image may be on the same directory or another server.

2) *alt*

The alt attribute defines an alternate text for the image, if it can't be displayed. The value of the alt attribute describe the image in words. The alt attribute is considered good for SEO prospective.

3) *width*

It is an optional attribute which is used to specify the width to display the image. It is not recommended now. You should apply CSS in place of width attribute.

4) *height*

It h3 the height of the image. The HTML height attribute also supports iframe, image and object elements. It is not recommended now. You should apply CSS in place of height attribute.

```

```

Hyperlink

The **HTML anchor tag** defines a *hyperlink that links one page to another page*. It can create hyperlink to other web page as well as files, location, or any URL. The "href" attribute is the most important attribute of the HTML a tag, and which links to destination page or URL.

A webpage can contain various links that take you directly to other pages and even specific parts of a given page. These links are known as hyperlinks.

href attribute of HTML anchor tag

The href attribute is used to define the address of the file to be linked. In other words, it points out the destination page.

```
<a href="second.html">Click for Second Page</a>
```

DIV Tag

The div tag is known as Division tag. The div tag is used in HTML to make divisions of content in the web page like (text, images, header, footer, navigation bar, etc). Div tag has both open(<div>) and closing (</div>) tag and it is mandatory to close the tag. The Div is the most usable tag in web development because it helps us to separate out data in the web page and we can create a particular section for particular data or function in the web pages.

- Div tag is Block level tag
- It is a generic container tag
- It is used to the group of various tags of HTML so that sections can be created and style can be applied to them.

The div tag is generally used by web developers to group HTML elements together and apply CSS styles to many elements at once.

```
<div style="border:1px solid pink;padding:20px;font-size:20px">
<p>Welcome to Javatpoint.com, Here you get tutorials on latest technologies.</p>
<p>This is second paragraph</p>
</div>
```

Div tag and span tag

div tag	span tag
HTML div is a block element.	HTML span is an inline element
HTML div element is used to wrap large sections of elements.	HTML span element is used to wrap small portion of texts, image etc.

Lists

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)

HTML Ordered List or Numbered List

In the ordered HTML lists, all the list items are marked with numbers by default. It is known as numbered list also. The ordered list starts with `` tag and the list items start with `` tag. **HTML Ordered List** or Numbered List displays elements in numbered format. The HTML `ol` tag is used for ordered list. We can use ordered list to represent items either in numerical order format or alphabetical order format, or any format where an order is emphasized. There can be different types of numbered list:

- Numeric Number (1, 2, 3)
- Capital Roman Number (I II III)
- Small Roman Number (i ii iii)
- Capital Alphabet (A B C)
- Small Alphabet (a b c)

Unordered List or Bulleted List

In HTML Unordered list, all the list items are marked with bullets. It is also known as bulleted list also. The Unordered list starts with `` tag and list items start with the `` tag. **HTML Unordered List** or Bulleted List displays elements in bulleted format. We can use unordered list where we do not need to display items in any particular order. The HTML `ul` tag is used for the unordered list. There can be 4 types of bulleted list:

- disc
- circle
- square
- none

Description List or Definition List

HTML Description list is also a list style which is supported by HTML and XHTML. It is also known as definition list where entries are listed like a dictionary or encyclopedia.

The definition list is very appropriate when you want to present glossary, list of terms or other name-value list. The HTML definition list contains following three tags:

1. **<dl> tag** defines the start of the list.
2. **<dt> tag** defines a term.
3. **<dd> tag** defines the term definition (description).

<pre> Aries Bingo Leo Oracle </pre>	<pre> Aries Bingo Leo Oracle </pre>	<pre><dl> <dt>Oracle</dt> <dd>DBMS</dd> </dl></pre>
--	--	---

Table

HTML table tag is used to display data in tabular form (row * column). There can be many columns in a row.

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 tables are used to manage the layout of the page e.g. header section, navigation bar, body content, footer section etc. But it is recommended to use div tag over table to manage the layout of the page.

HTML Table Tags

Tag	Description
<table>	It defines a table.
<tr>	It defines a row in a table.
<th>	It defines a header cell in a table.

<td>

It defines a cell in a table.

```

<table border="1">
<tr><th>First_Name</th><th>Last_Name</th><th>Marks</th></tr>
<tr><td>Sonoo</td><td>Jaiswal</td><td>60</td></tr>
<tr><td>James</td><td>William</td><td>80</td></tr>
<tr><td>Swati</td><td>Sironi</td><td>82</td></tr>
<tr><td>Chetna</td><td>Singh</td><td>72</td></tr>
</table>

```

colspan

If you want to make a cell span more than one column, you can use the colspan attribute. It will divide one cell/row into multiple columns, and the number of columns depend on the value of colspan attribute.

rowspan

If you want to make a cell span more than one row, you can use the rowspan attribute. It will divide a cell into multiple rows. The number of divided rows will depend on rowspan values.

Form

An **HTML form** is a section of a document which contains controls such as text fields, password fields, checkboxes, radio buttons, submit button, menus etc.

An HTML form facilitates the user to enter data that is to be sent to the server for processing such as name, email address, password, phone number, etc. . forms are required if you want to collect some data from of the site visitor.

Form Tags

Let's see the list of HTML 5 form tags.

Tag	Description
<form>	It defines an HTML form to enter inputs by the used side.
<input>	It defines an input control.
<textarea>	It defines a multi-line input control.

<label>	It defines a label for an input element.
<select>	It defines a drop-down list.
<option>	It defines an option in a drop-down list.
<button>	It defines a clickable button.

<input> element

The HTML <input> element is fundamental form element. It is used to create form fields, to take input from user. We can apply different input field to gather different information from user.

TextField Control

The type="text" attribute of input tag creates textfield control also known as single line textfield control. The name attribute is optional, but it is required for the server side component such as JSP, ASP, PHP etc.

<textarea> tag

The <textarea> tag in HTML is used to insert multiple-line text in a form. The size of <textarea> can be specify either using "rows" or "cols" attribute or by CSS.

Label Tag

It is considered better to have label in form. As it makes the code parser/browser/user friendly.

If you click on the label tag, it will focus on the text control. To do so, you need to have for attribute in label tag that must be same as id attribute of input tag.

Password Field Control

The password is not visible to the user in password field control.

Radio Button Control

The radio button is used to select one option from multiple options. It is used for selection of gender, quiz questions etc. If you use one name for all the radio buttons, only one radio button can be selected at a time.

Using radio buttons for multiple options, you can only choose a single option at a time.

Checkbox Control

The checkbox control is used to check multiple options from given checkboxes.

Submit button control

HTML **<input type="submit">** are used to add a submit button on web page. When user clicks on submit button, then form get submit to the server.

```
<!DOCTYPE html>
<html>
<head>
<title>Form in HTML</title>
</head>
<body>
<h2>Registration form</h2>
<form>
<legend>User personal information</legend>
<label>Enter your full name</label><br>
<input type="text" name="name"><br>
<label>Enter your email</label><br>
<input type="email" name="email"><br>
<label>Enter your password</label><br>
<input type="password" name="pass"><br>
<label>confirm your password</label><br>
<input type="password" name="pass"><br>
<br><label>Enter your gender</label><br>
<input type="radio" id="gender" name="gender" value="male"/>Male <br>
<input type="radio" id="gender" name="gender" value="female"/>Female <br/>
<input type="radio" id="gender" name="gender" value="others"/>others <br/>
<br>Enter your Address:<br>
<textarea></textarea><br>
<input type="submit" value="sign-up">
</form>
</body>
</html>
```

Registration form

User personal information

Enter your full name

Enter your email

Enter your password

confirm your password

Enter your gender

- ☐ Male
☐ Female
☐ others

Enter your Address:

sign-up