

Introduction to HTML

HTML stands for Hyper Text Markup Language. Using HTML we can create a Web Page which can be viewed through a Web Browser over Internet.

HTML describes the contents of a web page with Markup Tags. Tags are defined by angle brackets <>. <> is called the Opening Tag or the Start Tag. The Closing Tag or the End Tag is defined as </>. The whole HTML document is enclosed in between the opening <html> tag and the closing </html>tag. An HTML file has a .html or .htm extension.

HTML Page Structure

Below is a visualization of an HTML page structure:

```
<html>

<body>

<h1>This a Heading</h1>

<p>This is a paragraph.</p>

<p>This is another paragraph.</p>

</body>

</html>
```

HTML Versions

Since the early days of the web, there have been many versions of HTML:

Version	Year
HTML	1991
HTML+	1993
HTML 2.0	1995
HTML 3.2	1997
HTML 4.01	1999
XHTML 1.0	2000
HTML5	2012
XHTML5	2013

HTML Head

The Head element in HTML is important because it contains meta-information (meta: information-about) of a certain document. In general, the information contained in the Head element is not displayed in the browser. You have learned in the beginning of this tutorial that the Title of a HTML document is contained in the Head and displayed in the Header of the browser.

The standard tags that are allowed inside the Head element are <title>, <meta>, <base>, <style>, <link> and <script>. Use of other tags like a <p> tag or a <h1> is not recommended in the Head but some browsers allow this and display the contents of such tags in the body of the document.

Title:- To give a title to a document, we use the <title> tag inside the Head of the document.

Meta:- It contains the keywords for search engines based on which a search engine searches for relative information.

Base: This is used to define a base URL for all the links contained in a document.

Style:- The Style tag is used in the Head element to define the formatting style of the document.

Link:- The Link element of Head of HTML document defines a relationship of the current document with another linked document.

Script:- The <Script> tag is used in the Head to add a script (e.g., javascript) to HTML which makes a web page more dynamic.

HTML Headings

In HTML, six types of headings are used, viz, H1, H2, H3, H4, H5 and H6. Headings are important in maintaining the flow of the contents, i.e., the hierarchical structure of the document. H1 is the most important and H6 is the least important heading.

Each heading has an Opening tag and a Closing tag. The use of headings can be shown as below---

```
<h1>This is the first heading</h1>
<h2>This is the second heading</h2>
<h3>This is the third heading</h3>
<h4>This is the fourth heading</h4>
<h5>This is the fifth heading</h5>
<h6>This is the sixth heading</h6>
```

Paragraph

Paragraphs in an HTML page are encoded within <p> and </p> tags. However, the end tag is optional. The space between two paragraphs are automatically specified in HTML. We can insert a line break at any point of the document by using a
 tag.

Look at the following example---

```
<p>This is my first paragraph.</p>
```

Formatting Elements

There are three basic formatting elements used in HTML to make a text Bold, Italic and Underlined.

To make a text bold, and tags are used.or

To make a text italic, <i> and </i> tags are used.or

To make text underlined, <u> and </u> tags are used.

<p> This is a normal paragraph </p>

<p> This is a normal paragraph </p>

<p> This is a normal paragraph </p>

<p> This is a<i> normal </i> paragraph </p>

<p> This is a normal paragraph </p>

<p> This is a <u> normal </u> paragraph </p>

<p> This is a<ins> normal </ins> paragraph </p>

<p> This is a<s> normal </s> paragraph </p>

<p> This is a normal paragraph </p>

<p> This is a^{normal} paragraph </p>

<p> This is a_{normal} paragraph </p>

<p> This is a<code> normal </code> paragraph </p>

<p> This is a <kbd>normal</kbd> paragraph </p>

<p> This is a <mark> normal</mark> paragraph </p>

<p> This is a<big> normal </big> paragraph </p>

<p> This is a<small> normal </small> paragraph </p>

<p> This is a<samp> normal </samp> paragraph </p>

<!-- -----There are two types of container tag ----- -->

<!-- -----Block element tag----- -->

<p> Kalyani </p>

<p> madhu </p>

<p> Chandani </p>

<!-- -----inline element tag----- -->

Kalyani

 Madhu

 Chandani

<!-- -----There are two types of tag ----- -->

<p> Lorem ipsum dolor sit amet, consectetur adipisicing elit. Vitae possimus distinctio dolorem alias temporibus consequuntur, architecto recusandae iure nihil animi molestias sunt, ipsam, earum, labore veniam sed blanditiis id iusto. </p> **<!-- Container Tag -->**

 Empty Tag

Image

Images are often used in a web page. To add an image in HTML, we use the tag. The path of the location of the image is written in the "src" attribute. If the image is located in the same folder as the web page then only the name of the image file is included. We can also format the size of an image by specifying its width & height.

Take the following example:

The ALT attribute of an image:

The Alt attribute is used to give a short description of an image in case the image is not loaded in the web page due to some reason.

Attribute Name	Attribute Value	Description

SRC	"Location Path" or the "Address" or the "URL" of the image	It describes directory path of the location of an image file. To display an image in a web page the SRC attribute is used.
WIDTH	Width of an image, e.g., 100 pixels (100px), 80px, ...	It sets the image to a size of definite width
HEIGHT	Height of an image, e.g., 100px, 80px, ...	It sets the image to a size of definite height
ALT	A short description of the image, e.g., "image of a boy" or "image of a house" ... etc.	ALT attribute is used to give a short description of an image when it is not loaded in a page due to some reason
BORDER	1, 2, 3, ...	It sets a border to an image. Greater the value of the BORDER, thicker is the border of the image.
ALIGN	Left, middle, Right	It aligns an image to the Left, Middle or Right in a web page.
VSPACE	1, 2, 3, ...	It is used to insert a vertical space between the image and any object above & below of it.
HSPACE	1, 2, 3, ...	It is used to insert a horizontal space between the image and any object left & right of it.

<hr width="50%" size="5" align="center">

The Anchor Element

HTML provides the facility of links in a web page to other web pages. By clicking on some text as a link, we can go to a different web page. This is called Hyper Linking of web pages. This makes a web page dynamic. For example,

megha

 Download

 Kalyani

 Madhu

Lists in HTML

Three different types of lists are used in HTML. Unorderd list, Ordered list and Definition list.

(i) **Unordered list** is one in which the listing of the items is unordered. The tag defines an Unordered list and items are described by the tag. The Bullets appear as the default style in an Unordered list. We can also specify the style format as "circle" or "square" in the type attribute, two main attributes are used, viz., ID and TYPE

Attribute Name	Attribute Value	Description
ID	ID Name	ID describes the identity of the list
TYPE	Circle, Square, Disc	Type of list, i.e., Circle bulleted, Square bulleted or Disc bulleted list

 Range 100 To 500

 Range 500 To 1500

 Range 1500 To 2500

 Range 2500 To 3500

 Range 3500 To 4500

<ul type="square">

 Range 100 To 500

 Range 500 To 1500

 Range 1500 To 2500

 Range 2500 To 3500

 Range 3500 To 4500

<ul type="circle">

 Range 100 To 500

 Range 500 To 1500

 Range 1500 To 2500

 Range 2500 To 3500

 Range 3500 To 4500

<ul type="none">

 Range 100 To 500

 Range 500 To 1500

 Range 1500 To 2500

 Range 2500 To 3500

 Range 3500 To 4500

(ii) Similarly, an Ordered list is defined by tag.

List of some vehicles:

<ol type="1" start="101">

 Range 100 To 500

 Range 500 To 1500

 Range 1500 To 2500

 Range 2500 To 3500

 Range 3500 To 4500

<ol type="I">

 Range 100 To 500

 Range 500 To 1500

 Range 1500 To 2500

 Range 2500 To 3500

 Range 3500 To 4500

<ol type="i">

 Range 100 To 500

 Range 500 To 1500

 Range 1500 To 2500

 Range 2500 To 3500

 Range 3500 To 4500

<ol type="a">

 Range 100 To 500

 Range 500 To 1500

 Range 1500 To 2500

 Range 2500 To 3500

 Range 3500 To 4500

<ol type="A">

 Range 100 To 500

 Range 500 To 1500

 Range 1500 To 2500

 Range 2500 To 3500

 Range 3500 To 4500

1,2,3,...is the default ordering style (type="1") in an Ordered list. The type of ordering can be changed by specifying the value of the type attribute as "i" for Roman, "A" for alphabets etc.

Attribute Name	Attribute Value	Description
ID	ID Name	ID describes the identity of the list
TYPE	Numbers: 1, 2, 3,... Alphabets: A, B, C,... and a, b, c,... Roman Letters: I, II, III,... and i, ii, iii,...	Type of list, i.e., the items are ordered in the list according to Numbers, Alphabets or Roman Letters
START	1, 2, 3, ...	It is any Number assigned to the first item of the list

(iii) A Definition list is one in which definition or description of the items are given. A Definition list is defined by <dl> tag. The items are encoded in <dt> (definition term) tag and the description of the items are encoded in <dd> (definition data) tag.

List of some beverages:

<dl>

<dt> Coffee </dt>

<dd>Hot Coffee </dd>

<dd> Cold Coffee </dd>

<dd> Choclote Coffee </dd>

<dt> Tea </dt>

<dd>Hot Tea </dd>

<dd> Cold Coffee </dd>

<dd> Black Coffee </dd>

<dt> Maggie </dt>

<dd>Plain </dd>

<dd> Masala </dd>

<dd> Cheez </dd>

</dl>

Background

In HTML, the background of a web page can be set to any color or any image. The background attributes are shown in the following table---

Attribute Name	Attribute Value	Description
BGCOLOR	Color Values, e.g., #ADD8E6, #E0FFFF,... Color Names, e.g., LightBlue, LightCyan,...	It sets the background to the color specified as its value
BACKGROUND	Source of an image	It sets the background to the image specified as its value

Tables:- Tables are very important in designing a web page. They are frequently used in HTML for representing data in a well-mannered form.

A Table is created using the <table> tag. It is divided into Table Rows using the <tr> tag. Table rows are further divided into cells using <td> tag containing Table Data. A table data generally consists of texts, images, lists etc. A table itself may be a table data. Cells in a table may remain empty also. It is necessary to use the end </table> tag to make a table in HTML.

```
<table>
<tr><td>Table Data</td></tr>
<tr><td>Table Data</td></tr>
</table>
```

Attribute Name	Attribute Value	Description
BORDER	1, 2, 3, ...	It sets the border of a table to a size specified as its value.
BORDERCOLOR	Color values or Color Names	It sets the border of a table to a color specified as its value.
BGCOLOR	Color values or Color Names	It sets the background of a table to a color specified as its value. It is also used for a specific row or a specific cell.
WIDTH	100%, 50%, 25%, ... etc.	It sets the width of a table or the width of cells to a specific size.
CELLSPACING	Any Number like 10, 5, 20, ... etc.	It inserts a space between the cells of a table of a size specified as its value.
CELLPADDING	Any Number like 10, 5, 20, ... etc.	It inserts a space between the content and the border of a cell of a size specified as its value.

ALIGN	Left, Middle, Right	It aligns the contents of a cell as left, middle and right.
ROWSPAN	2, 3, ...	It divides a cell into two or more rows, e.g., two rows when rowspan="2", three rows when rowspan="3", ... and so on.
COLSPAN	2, 3, ...	It divides a cell into two or more columns, e.g., two columns when colspan="2", three columns when colspan="3", ... and so on.

Cellspacing and Cellpadding:

CELLSPACING is used in a table to insert a space between the cells.Ex:-

```
<table border="1" width="50%" align="middle" cellspacing="10">
```

CELLPADDING in a table is used to insert a white space between the content and the border of the cells.

Rowspan and Colspan:

- (i) ROWSPAN is used in a table to divide a cell into two or more rows.
- (ii) COLSPAN is used in a table to divide a cell into two or more columns.

Frames

In HTML, with the use of frames we can display more than one document in a browser window. The <frameset> tag defines a set of frames. There are two types of frameset used, viz., Horizontal frameset and Vertical frameset. Horizontal frameset divides the window into two or more rows (frames) and the vertical frameset divides the window into two or more columns (frames).

The <frame> tag is used to specify which HTML document is to be put in a specific frame. The SRC attribute tells the Address of that particular HTML document.

The frameset has a closing tag but the frame doesn't have a closing tag.

Horizontal frameset:

```
<frameset rows="30%, 70%">
<frame src="frame1.html">
<frame src="frame2.html">
</frameset>
```

The first frame will cover an area of 30% of the window whether the second frame will cover 70%.

Vertical frameset:

```
<frameset cols="40%, *">
```

```
<frame src="frame1.html">
```

```
<frame src="frame2.html">
```

```
</frameset>
```

The asterisk (*) symbol denotes the remaining portion of the window. The first frame will cover an area of 40% of the window whether the second frame will cover 60%.

The following example will describe how a window can be divided into horizontal and vertical frames--

The basic attributes used in a frame is shown in the following table---

Attribute Name	Attribute Value	Description
SRC	Source of the HTML document	The HTML document which source is the value of this attribute is put in the frame
NAME	Name of the frame	Name of the frame
NORESIZE	noresize	It will make the frames of a window fixed to their size
WIDTH	100%, 25%, 50%, ... etc.	Specifies the width of the frame
FRAMEBORDER	0, 1, 2, 3, ... etc.	Sets the border of a frame to a definite size
SCROLLING	Yes, No, Auto	It makes a frame to scroll when the value is "yes" or "auto" and makes it fixed when the value is "no"

Frames with Noresize:

In the above example, you can see that the three frames, viz., frame1, frame2, frame3 are resizable, i.e., you can alter the size of the frames by dragging them at their inner borders. The size of the frames can be made fixed using the NORESIZE attribute. The value of the attribute in this case is "noresize", i.e., NORESIZE="noresize".

```
<frameset cols="40%, *">
```

```
<frame src="f1.html" noresize="noresize">
```

```
<frameset rows="50%, *">
```

```
<frame src="f2.html" noresize="noresize">
```


Forms and element:- Basically, a HTML Form is used to select and process different types of user inputs. A Form behaves typically like an interface through which users can input different elements, e.g., texts, images etc. which in turn HTML Server will store in a database, process them and return results to the users.

A Form is created by using the <form> tag. A form element (text field, text area etc.) allows users to input different types of information in the form.

```
<form action="html_form_action.asp" enctype="multipart/form-data" method="get"
name="input">
  <input>
</input>
```

</form> The basic attributes of a <form> tag are described as below-

Attribute Name	Attribute Value	Description
Action	The URL of the server side scripting file which receives the user input; it may be any .asp, .php, .jsp, ... type of file. e.g., http://mysite.com/login/registration.php.	Performs an action with the input entered by the user in the form elements
EncType	"application/x-www-form-urlencoded": the default value; "multipart/form-data": used for multiple plain text form data of input element.	This attribute describes the content type that is used to submit the form to the server
Method	Get (default value), Post	It is the HTTP method for sending the form information to the server; the GET method is used for less secured form information and the POST method is used for more secured form information
Name	Name given to the form	Specifies a name to the form for client-side scripting

The Input Element

The <input> tag is the most used form element. There are many types of input elements which are specified by the "type" attribute, e.g.,

Text Field:

Text Field in a form allows users to input text elements like text character, numbers etc.

For ex:- <input type="text" name="firstname">

Password Field:

Password field allows users to insert characters as password given to some element in a form.

For ex:- `<input type="password" name="password">`

Create a Button in a Form:

A Button in a HTML form can be created as an input type element. By clicking a button users request their information to be processed.

For ex:- `<input type="button" name="button" value="Click Me!">`

Submit button

A Submit button can be created as an input element by specifying the type attribute as "Submit". When an user clicks on a submit button, the information entered in the form is submitted to the server.

For ex:-`<input type="submit" name="submit" value="Login">`

Reset button

A Reset button is used to reset the information entered in a form element to the default value or to change the information previously entered.

For ex:- `<input type="Reset" name="Reset" value="Reset name">`

Image as a button

We can use an image as a button. For this, the "src" attribute is added in the input element which gives the URL of an image to be set as a button. The type attribute is specified as "image" and the value as "InputTypeImage".

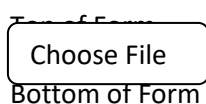
`<input type="image" src="login.jpg" value="InputTypeImage" name="">`



Uploading a File:

To upload a file, we use the input type "File" element in HTML. This can be shown as below---

`<input type="file" name="file" value="Upload File">`



Bottom of Form

The Hidden Input Type:

The "Hidden" input type element is used by the web authors to hide some particular form data from the users. It is useful in carrying user information from form to form as hidden input type for user applications containing several HTML documents.

For ex:-

```
<input type="hidden" name="recipient" value="arnold@roseindia.net">
```

```
<input type="hidden" name="subject" value="HTML Tutorial">
```

Radio Button:

A Radio button in a form is used to allow users select only one input out of a given number of options.

```
<input type="radio" name="vehicle" value="bike" checked="checked"> Bike
```

Checkboxes:

Checkboxes are used in a form to allow users select more than one input out of a given number of options.

```
<input type="checkbox" name="vehicle" value="bicycle" checked="checked"> I've a bicycle
```

The Select Element

The Select element is used in HTML forms to create a drop-down box or a drop-down list. The Select element has three basic optional attributes as shown in the following table -

Attribute Name	Attribute Value	Description
Name	A Unique Name	It is used to give a unique name to the drop-down list.
Size	Any Number, e.g., 1, 2, 3, ...	It is used to define the size of a drop-down list.
Multiple	Multiple	It is used to select multiple items at a time from a drop-down list.

A Simple Drop-Down List:

The following example will show how to create a simple drop-down list---

```
Select a Country:
<select name="country">
<option name="Australia" value="Australia">Australia</option>
<option name="Belgium" value="Belgium">Belgium</option>
<option name="USA" value="USA">USA</option>

</select>
```

Each item to be displayed in the list is written in between the option tags <option> and </option>.

Size of a Drop-Down List: <select name="country" size="3"></select>

Multiple Selection in a Drop-Down List:

```
<select name="country" size="4" multiple="multiple"></select>
```

Text Area

A Text Area is an area where users can write an unlimited number of text characters. A text area is created in a form, using the `<textarea>` tag. The size of a text area is defined by the "rows" and "cols" attributes.

```
<textarea rows="10" cols="50" name="text area">
```

This is a text area

```
</textarea>
```

The HTML `<div>` Element

The HTML `<div>` element is a block level element that can be used as a container for grouping other HTML elements.

The `<div>` element has no special meaning. Except that, because it is a block level element, the browser will display a line break before and after it.

When used together with CSS, the `<div>` element can be used to set style attributes to large blocks of content.

Another common use of the `<div>` element, is for document layout. It replaces the "old way" of defining layout using tables. Using tables is not the correct use of the `<table>` element. The purpose of the `<table>` element is to display tabular data.

The HTML `` Element

The HTML `` element is an inline element that can be used as a container for text.

The `` element has no special meaning.

When used together with CSS, the `` element can be used to set style attributes to parts of the text.

HTML5

The HTML5 is next generation of Hypertext Markup Language or HTML. The goal of HTML5 is to make browser as a application platform. Now HTML5 allows you develop applications using the HTML5 tags. You can develop video player, audio player, animation etc. with the help of HTML5 tags.

There are many features of HTML5 which helps the developers to make attractive UI for their web applications. These features are currently not supported by all the browsers.

Here are the list of features:

contentEditable

Stylable Elements (new)

getElementsByClassName

Cross-Document Messaging

Web Forms 2.0

Drag and Drop

<audio>

<video>

<canvas>

Server-sent DOM Events

Client-side Storage (name/value)

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