

WEBTECHNOLOGY

HTML stands for Hypertext Markup Language. It is used to display the document in the web browsers. HTML pages can be developed to be simple text or to be complex multimedia program containing sound, moving images and java applets. HTML is considered to be the global publishing format for Internet. It is not a programming language. HTML was developed by Tim Berners-Lee. HTML standards are created by a group of interested organizations called W3C (world wide web consortium). In HTML formatting is specified by using tags. A tag is a format name surrounded by angle brackets. End tags which switch a format off also contain a forward slash.

BASIC HTML TAGS

Body tag :

Body tag contain some attributes such as bgcolor, background etc. bgcolor is used for background color, which takes background color name or hexadecimal number and #FFFFFF and background attribute will take the path of the image which you can place as the background image in the browser.

```
<body bgcolor="#F2F3F4" background="c:\amer\imag1.gif">
```

Paragraph tag:

Most text is part of a paragraph of information. Each paragraph is aligned to the left, right or center of the page by using an attribute called as align.

```
<p align="left" | "right" | "center">
```

Heading tag:

HTML is having six levels of heading that are commonly used. The largest heading tag is <h1>. The different levels of heading tag besides <h1> are <h2>, <h3>, <h4>, <h5> and <h6>. These heading tags also contain attribute called as align.

```
<h1 align="left" | "right" | "center"> . . . <h2>
```

hr tag:

This tag places a horizontal line across the system. These lines are used to break the page. This tag also contains attribute i.e., width which draws the horizontal line with the screen size of the browser. This tag does not require an end tag.

```
<hr width="50%">
```

base font:

This specifies format for the basic text but not the headings.

```
<basefont size="10">
```

font tag:

This sets font size, color and relative values for a particular text.

```
<font size="10" color="#f1f2f3">
```

bold tag:

This tag is used to make the selected text as bold style.

```
<b> ..... </b>
```

Italic tag:

This tag is used to make the selected text as italic style.

```
<i>.....</i>
```

UnderLine :

This tag is used to make the selected text as under lined style.

Syntax: <U> text</U>

strong tag:

This tag is used to always emphasize the text

```
<strong>.....</strong>
```

tt tag:

This tag is used to give typewriting effect on the text

```
<tt>.....</tt>
```

sub and sup tag:

These tags are used for subscript and superscript effects on the text.

```
<sub> .....</sub>
```

```
<sup>.....</sup>
```

Break tag:

BR tag means blank return tag. This tag is used to break the line and start from the next line.

```
<br>
```

& < > "

These are character escape sequences which are required if you want to display characters that HTML uses as control sequences.

Example: < can be represented as <.

Anchor tag:

This tag is used to link two HTML pages, this is represented by <a>

```
<a href=" path of the file"> some text </a>
```

href is an attribute which is used for giving the path of a file which you want to link.

Marquee tag:

This tag is used for moving or scrolling a text on the webpage. The text can be moved in any direction i.e., from left-right, right-left, up Or down, down-up.

```
<marquee [direction=up/down/left/right"]
```

```
[Bg color="color name/hexadecimal"]
```

```
Text
```

```
</marquee>
```

Lists:

One of the most effective ways of structuring a web site is to use lists. Lists provides straight forward index in the web site. HTML provides three types of list i.e.,

1. unordered list,
2. ordered list and
3. definition list.

Lists can be easily embedded easily in another list to provide a complex but readable structures. The different tags used in lists are explained below.

```
<li> .....</li>
```

The ordered(numbered) and unordered(bulleted) lists are each made up of sets of list items. This tag is used to write list items

Unordered list:

```
<ul type="disc" | "square" | "circle" > .....</ul>
```

This tag is used for basic unordered list which uses a bullet in front of each tag, every thing between the tag is encapsulated within tags.

ordered list,

```
<ol type="1" | "a" | "I" start="n">.....</ol>
```

This tag is used for unordered list which uses a number in front of each list item or it uses any element which is mentioned in the type attribute of the tag, start attribute is used for indicating the starting number of the list.

definition list.

```
<dl>..... </dl>
```

This tag is used for the third category i.e., definition list, where numbers or bullet is not used in front of the list item, instead it uses definition for the items.

<dt>.....</dt>

This is a sub tag of the <dl> tag called as definition term, which is used for marking the items whose definition is provided in the next data definition.

<dd></dd>

This is a sub tag of the <dd> tag, definition of the terms are enclosed within these tags. The definition may include any text or block.

Image Tags

 Defines an image

<map> Defines an image map

<area> Defines an area inside an image map

TABLES

Tables are defined with the <table> tag. A table is divided into rows (with the <tr> tag), and each row is divided into data cells (with the <td> tag). The letters td stands for "table data," which is the content of a data cell.

Example:

```
<table border="1">
```

```
<tr>
```

```
<td>Row 1, cell 1</td>
```

```
<td>Row 1, cell 2</td>
```

```
</tr>
```

```
</table>
```

Tags and their Description:

<Table> Defines a table

<th> Defines a table header

<tr> Defines a table row

<td> Defines a table cell

FRAMES

With frames, you can display more than one HTML document in the same browser window. Each HTML document is called a frame, and each frame is independent of the others.

The Frameset Tag

The <frameset> tag defines how to divide the window into frames.

The Frame Tag

The <frame> tag defines what HTML document to put into each frame.

Example:

```
<frameset cols="25%, 75 %">
```

```
<frame src="frame_a.htm">
<frame src="frame_b.htm">
</frameset>
```

Tags and their Description:

<frameset> Defines a set of frames

<frame> Defines a sub window (a frame)

FORMS:

HTML Forms are used to collect some data from the site visitor. For example during user registration we collect the information such as name, email address, credit card, etc. A form will take input from the site visitor and then will post it to a back-end application such as CGI, ASP Script or PHP script etc. The back-end application will perform required processing on the passed data based on defined business logic inside the application.

There are various form elements available like text fields, textarea fields, drop-down menus, radio buttons, checkboxes, etc.

```
<form action="URL" method = "post" | "get">.....</form>
```

Input

The most used form tag is the `<input>` tag. The type of input is specified with the type attribute.

Text Fields

Text fields are used when you want the user to type letters, numbers, etc. in a form.

```
<form>
```

First name:

```
<input type="text" name="firstname">
```

```
<br>
```

Last name:

```
<input type="text" name="lastname">
```

```
</form>
```

Radio Buttons

Radio Buttons are used when you want the user to select one of a limited number of choices.

```
<form>
```

```
<input type="radio" name="sex" value="male"> Male
```

```
<br>
```

```
<input type="radio" name="sex" value="female"> Female
```

```
</form>
```

Checkboxes

Checkboxes are used when you want the user to select one or more options of a limited number of choices.

```
<form>
<input type="checkbox" name="bike">
I have a bike
<br>
<input type="checkbox" name="car">
I have a car
</form>
```

Basic HTML Tags

<html>	:	Defines an HTML document
<body>	:	Defines the document's body
<h1> to <h6>	:	Defines header 1 to header 6
<p>	:	Defines a paragraph <p align="left right center justify">
 	:	Inserts a single line break
<hr>	:	Defines a horizontal rule
<!-->	:	Defines a comment

Text Formatting Tags

	:	defines bold text
<i>	:	It is used to defines italic text
<u>	:	It is used to underlone the text. (Deprecated. Use styles instead)
<strike>	:	It is used to display text in strikethrough style. (Deprecated. Use instead)
<big>	:	It is used to defines big text than the current deafult font.
<small>	:	It is used to defines small text than the current deafult font.
<sub>	:	Defines subscripted text
<sup>	:	Defines superscripted text
	:	Defines emphasized text, usally displays text as italic
	:	Defines deleted text
	:	Defines strong text
<ins>	:	Defines inserted text

List Tags

	:	Defines an ordered list
	:	Defines an unordered list
	:	Defines a list item

<code><dl></code>	:	Defines a definition list
<code><dt></code>	:	Defines a definition term
<code><dd></code>	:	Defines a definition description
<code><dir></code>	:	Deprecated. Use <code></code> instead
<code><menu></code>	:	Deprecated. Use <code></code> instead

CASCADING STYLE SHEETS:

One of the most important aspects of HTML is the capability to separate presentation and content. A style is simply a set of formatting instructions that can be applied to a piece of text. There are three mechanisms by which we can apply styles to our HTML documents.

- **Inline Style Sheet:**

Style can be defined within the basic HTML tag.

- **Internal Style Sheet:**

Style can be defined in the `<head>` tag

- **External Style Sheet:**

Styles can be defined in external files called stylesheets which can then be used in any document by including the stylesheet via a URL.

What is CSS? Explain in detail

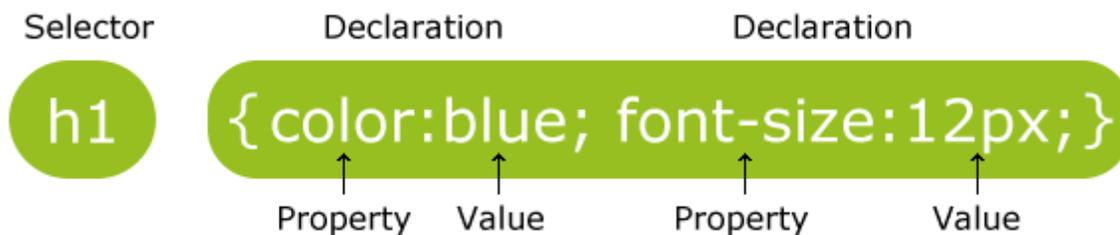
CSS stands for Cascading Style Sheets. Styles define how to display HTML elements. Styles were added to HTML 4.0 to solve a problem. External Style Sheets can save a lot of work. External Style Sheets are stored in CSS files.

CSS is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes.

CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.

CSS Syntax

A CSS rule has two main parts: a selector, and one or more declarations:



- The selector is normally the HTML element you want to style. Each declaration consists of a property and a value.
- The property is the style attribute you want to change. Each property has a value.
- A CSS declaration always ends with a semicolon, and declaration groups are surrounded by curly brackets:

Example

```
p
{
  color:red;
  text-align:center;
}
```

CSS Selectors: CSS selectors are used to "find" (or select) HTML elements based on their element name, id and class.

The element Selector

The element selector selects elements based on the element name. You can select all <p> elements on a page like this (in this case, all <p> elements will be center-aligned, with a red text color):

```
<!DOCTYPE html>
<html> <head>
<style> p { text-align: center; color: red; } </style>
</head>
<body>
<p>Every paragraph will be affected by the style.</p>
<p id="para1">Me too!</p> <p>And me!</p>
</body>
</html>
```

The id Selector

- ☞ The id selector uses the id attribute of an HTML element to select a specific element.
- ☞ The id of an element should be unique within a page, so the id selector is used to select one unique element!
- ☞ To select an element with a specific id, write a hash (#) character, followed by the id of the element.

The style rule below will be applied to the HTML element with id="para1":

```
<!DOCTYPE html>
<html>
<head>
<style>
#para1 {
text-align: center;
color: red;
}
</style>
</head>
<body>
<p id="para1">Hello World!</p>
<p>This paragraph is not affected by the style.</p>
</body>
</html>
```

The class Selector

- ☞ The class selector selects elements with a specific class attribute.
- ☞ To select elements with a specific class, write a period (.) character, followed by the name of the class.
- ☞ In the example below, all HTML elements with class="center" will be red and center-aligned:

```
<!DOCTYPE html>
<html>
<head>
<style>
.center {
```

```
text-align: center;
color: red;
}
</style>
</head>
<body>
<h1 class="center">Red and center-aligned heading</h1>
<p class="center">Red and center-aligned paragraph.</p>
</body>
</html>
```

1. What is Style Sheet? Explain how Styles are used to format the web page

A style is simply a set of formatting instructions that can be applied to the content of a web document. In HTML it is possible to separate presentation and the document content. The style sheets improve HTML page formatting capability. Styles sheets are the best approach for creating attracting attractive web pages.

Types of style sheets:

Style sheets are part of an HTML document, but cannot be replacement to HTML. The purpose of style sheet is to create a style of presentation to the whole document or a group of elements or to a particular element. There are three types of style sheets:

1. In-line Styles
2. Embedded or Internal Styles
3. External Styles.

Inline styles:

An inline style used to apply a unique style for a single element within a web page. To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.

Example for inline style sheets:

```
<!DOCTYPE html>
<html>
<body>
<h1 style="color: green; margin-left: 30px ;"> This is a heading</h1>
```

```
<h2> This is heading two</h2>
<h3> This is heading three </h3>
<p> Inline styles example</p>
</body>
</html>
```

In the above example the style is applicable to the only heading one but not apply heading two, heading3 and paragraph tags.

Internal/Embedded Style Sheet

An internal style sheet may be used if one single page has a unique style. Internal styles are defined within the <style> element, inside the <head> section of an HTML page:

Syntax

Tag name { style sheet property : value}

For example:

```
Body{ color : blue}
```

If more than one property included , they need to be separated by semicolon.

```
Body { color: blue;bgcolor: purple;}
```

We can also group tags together by separating them with commas.

```
H1,h2,p{ color;blue;bgcolor;yellow}
```

Internal/embedded style sheets are most effective when you have a single html document to format. In such cases, if you want to update your document you just need to adjust the style block.

Example for inline/embedded style sheets:

```
<!DOCTYPE html>
<html>
<head>
<style>
body { background-color: green; }
h1 { color: yellow; margin-left: 40px;}
</style>
</head>
<body>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
</body>
</html>
```

External Style sheets:

With an external style sheet, you can change the look of an entire website by changing just one file. Each page must include a reference to the external style sheet file inside the <link> element. The <link> element goes inside the <head> section. An external style sheet can be written in any text editor. The file should not contain any html tags. Your style sheet should be saved with a .css extension.

Syntax:

```
<link rel=stylesheet href="styles.css" type = "text/css">
```

href: to specify the url of the css file.

Rel: to define the relationship between the current document and the document specified by the href attribute. It takes the value style sheet, which specifies that the referenced file is a style sheet.

Type: It specifies the type of style sheet and is set to text/css, for cascading style sheets, and text/jss, for java script style sheets.

Example for external style sheets:

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
</head>
<body>
<h1>This is a heading</h1>
<p> external style sheets example</p>
</body>
</html>
mystyle.css
body {
    background-color: lightblue;
}
h1 { color: navy; margin-left: 20px;

}
```

CSS Properties

Text Properties:

color: blue;
text-align: center/left/right/justify;
text-decoration: overline/line-through/underline;
text-transform: uppercase/lowercase/capitalize;
text-indent: 10px/-10px;
letter-spacing: 5px/-5px;
line-height: 0.8;
direction: rtl;
word-spacing: 10px;
text-shadow: 3px 2px red;

Font Properties:

1. font-family: arial;
2. font-style: normal/italic/oblique;
3. font-size: 30px;
4. font-weight: normal/bold;
5. font-variant: normal/small-caps;

Border Properties:

1. border-style:
dotted/dashed/solid/double/groove/ridge/inset/outset/none/hidden;
2. border-width: 5px;

border-width: 2px 10px 4px 20px;
3. border-color: red;

Border-color: red green blue yellow;

Note: four values indicates - first for top border, second for right border, third for bottom border, fourth for left border.

Background Properties:

background-color: red;

background-image: url("image_path");

background-repeat: repeat-x/repeat-y/round/no-repeat;

background-attachment: fixed/scroll/local;

background-size: 20px 30px;

background-position: right top/right bottom/left top/left bottom;

or

30px 20px;

Margin Properties:

margin-top: 100px;

margin-bottom: 100px;

margin-right: 150px;

margin-left: 80px;

Link Properties:

a:link - unvisited link

a:hover – when mouse is on it

a:active – when mouse click on it

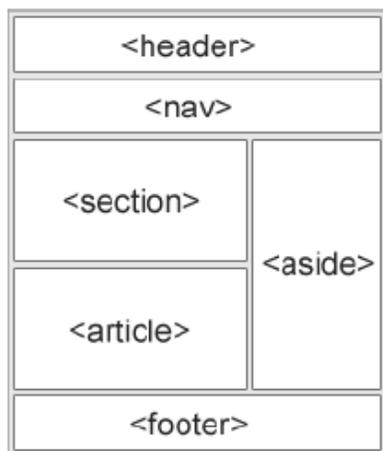
a:visited – after mouse clicked

Layouts:

HTML Layout Elements

Websites often display content in multiple columns (like a magazine or newspaper).

HTML5 offers new semantic elements that define the different parts of a web page:



- <header> - Defines a header for a document or a section
- <nav> - Defines a container for navigation links
- <section> - Defines a section in a document
- <article> - Defines an independent self-contained article
- <aside> - Defines content aside from the content (like a sidebar)
- <footer> - Defines a footer for a document or a section
- <details> - Defines additional details
- <summary> - Defines a heading for the <details> element

TEXT FORMATTING TAGS

Text Color

The `color` property is used to set the color of the text. The color is specified by:

- a color name - like "red"
- a HEX value - like "#ff0000"
- an RGB value - like "rgb(255,0,0)"

```
body {  
  color: blue;  
}
```

```
h1 {  
  color: green;  
}
```

Text Alignment

The `text-align` property is used to set the horizontal alignment of a text.

A text can be left or right aligned, centered, or justified.

```
h1 {  
  text-align: center;  
}
```

```
h2 {  
  text-align: left;  
}
```

```
h3 {  
  text-align: right;  
}
```

Text Decoration

The `text-decoration` property is used to set or remove decorations from text.

The value `text-decoration: none;` is often used to remove underlines from links:

Text Transformation

The `text-transform` property is used to specify uppercase and lowercase letters in a text.

It can be used to turn everything into uppercase or lowercase letters, or capitalize the first letter of each word:

```
p.uppercase {  
  text-transform: uppercase;  
}
```

```
p.lowercase {  
  text-transform: lowercase;  
}
```

```
}  
  
p.capitalize {  
  text-transform: capitalize;  
}
```

Text Indentation

The `text-indent` property is used to specify the indentation of the first line of a text:

```
p {  
  text-indent: 50px;  
}
```

Letter Spacing

The `letter-spacing` property is used to specify the space between the characters in a text.

```
h1 {  
  letter-spacing: 3px;  
}  
  
h2 {  
  letter-spacing: -3px;  
}
```

Line Height

The `line-height` property is used to specify the space between lines:

```
p.small {  
  line-height: 0.8;  
}  
  
p.big {  
  line-height: 1.8;  
}
```

Text Direction

The `direction` property is used to change the text direction of an element:

```
p {  
  direction: rtl;  
}
```

Word Spacing

The `word-spacing` property is used to specify the space between the words in a text

```
h1 {  
  word-spacing: 10px;
```

```
}
```

```
h2 {  
  word-spacing: -5px;  
}
```

Text Shadow

The `text-shadow` property adds shadow to text.

```
h1 {  
  text-shadow: 3px 2px red;  
}
```

FONT PROPERTIES:

Font Family

The font family of a text is set with the `font-family` property.

```
p {  
  font-family: "Times New Roman", Times, serif;  
}
```

Font Style

The `font-style` property is mostly used to specify italic text.

This property has three values:

- normal - The text is shown normally
- italic - The text is shown in italics
- oblique - The text is "leaning" (oblique is very similar to italic, but less supported)

```
p.normal {  
  font-style: normal;  
}  
  
p.italic {  
  font-style: italic;  
}  
  
p.oblique {  
  font-style: oblique;  
}
```

Font Size

The `font-size` property sets the size of the text.

```
h1 {  
  font-size: 40px; /* 16px=1em */  
}
```

```
h2 {  
  font-size: 30px;  
}
```

```
p {  
  font-size: 14px;  
}
```

Font Weight

The `font-weight` property specifies the weight of a font:

```
p.normal {  
  font-weight: normal;  
}
```

```
p.thick {  
  font-weight: bold;  
}
```

Font Variant

The `font-variant` property specifies whether or not a text should be displayed in a small-caps font.

In a small-caps font, all lowercase letters are converted to uppercase letters. However, the converted uppercase letters appears in a smaller font size than the original uppercase letters in the text.

```
p.normal {  
  font-variant: normal;  
}
```

```
p.small {  
  font-variant: small-caps;  
}
```

Different List Item Markers

The `list-style-type` property specifies the type of list item marker.

The following example shows some of the available list item markers:

```
ul.a {  
  list-style-type: circle;  
}
```

```
ul.b {  
  list-style-type: square;  
}
```

```
}  
  
ol.c {  
    list-style-type: upper-roman;  
}  
  
ol.d {  
    list-style-type: lower-alpha;  
}
```

An Image as The List Item Marker

The `list-style-image` property specifies an image as the list item marker:

```
ul {  
    list-style-image: url('sqpurple.gif');  
}
```

Position The List Item Markers

The `list-style-position` property specifies the position of the list-item markers (bullet points).

```
ul.a {  
    list-style-position: outside;  
}  
  
ul.b {  
    list-style-position: inside;  
}
```

Remove Default Settings

The `list-style-type:none` property can also be used to remove the markers/bullets. Note that the list also has default margin and padding. To remove this, add `margin:0` and `padding:0` to `` or ``:

```
ul {  
    list-style-type: none;  
    margin: 0;  
    padding: 0;  
}
```