

UNIT 1 Introduction to Web Designing & HTML Documents

❖ Historical Roots of HTML:

- ❑ **The HTML stands for Hyper Text Markup Language.** It is a basic web programming language which is used to make webpages.
- ❑ Before developing HTML the data sharing is very difficult among different nature of computers, Computers were available in so many different screen sizes, operating systems, and system structures. That means one computer environment did not supported easily to another computer environment.
- ❑ Such problem faced by **Sir Tim Berners-Lee**. He is best known as the inventor of the World Wide Web, he was a researcher scientist at **CERN (The European Council for Nuclear Research)** laboratory in Geneva, Switzerland.

In 1989, Berners-Lee developed the **hypertext system** that could be used as an interface to access scientific information and this information displayed equally well on different computers as like Macintosh systems, NeXT Workstations, IBM PCs with Windows OS. This system was based on software technology which was worked on a various server computers available in network.

Berners-Lee developed the first versions of HTML, at first he concentrate on sharing the content and structure of the system and then later he considered the presentation. Hence, first webpage had become as static webpage. Hypertext documents are navigating using Hyperlinks.

Berners-Lee developed a system to access multiple data to visit single web page, that system later called as World Wide Web.

In 1989: Developed hypertext system.

In 1990: Developed a text mode browser to access hypertext system.

In 1991: Hypertext system was implemented officially at CERN.

In 1992: Hypertext system named as WWW (World Wide Web)

In 1993: Graphical browser Mosaic used to run www.

In 1994: Most Popular Browser Netscape Navigator used to run www.

In 1995: Microsoft's Internet Explorer used to run www.

➤ **To access website we need to do this:**

1. Hyperlinks are usually visible as underlined words and get activated by mouse click.
 2. In website taking the user to another page you can create hyperlinks on text or graphics.
 3. So to read a topic you can click on the hyperlinked text, using this way you can move from one page to another by simply clicking on some underlined text.
 4. The user visits a number of different web pages located all over the world.
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❖ WebPage:

Definition: "A webpage is a computer file document commonly written in HTML that is accessible throughout the Internet (www) or other network using Internet browser software."

A web page is accessed by entering a URL address and may contain text, graphics, and hyperlinks to other web pages and files.

Web Page content:

In web page there are two king of information stored–

1. Visible information:

That means a data which is visible to user, there are normally five different categories of data can displayed in webpage Such as **1) Text 2) Images/Photos 3) Audio 4) Video 5) Other (MS Word, MS Excel, PDF Documents and software)**

2. Hidden information:

The hidden information on web pages includes HTML tag elements, Programming language coding.

☐ **How to open a web page?**

To view a web page requires a browser (e.g., Internet Explorer, Firefox, or Chrome). For example, you are reading this web page using a browser. Once in a browser, you can open a web page by entering the URL in the address bar. For example, typing "https://www.Example.com" opens the webpage of Example.com website. If you don't know the URL of the website you want to visit, you can use a search engine (www.google.com) to find the web page or use the search on the website containing the web page.

❖ Website:

Definition: “Website is a collection of interlinked and interrelated webpages that can access throughout the internet (www).”

- ❑ A website is collection of more than one web page. Each website has its own address known as URL.

For example, <http://www.example.com/home.html>

- ❑ When someone gives you their web address, it generally wants to takes you to their website's home page, which should introduce you to what that site offers in terms of information or other services.

➤ **Why Do People Visit Websites?**

Generally, people look at websites for two primary reasons:

1. To find information: Now a day people used internet for getting information about anything, someone wants to read news, watching knowledgeable videos, to know something new.

2. To complete a task: This means doing work on internet such as, email, purchasing online product, filling scholarship form, online booking, creating online account in any website.

- ❑ Websites have many functions; a website can be a personal website, a commercial website, a government website or a non-profit organization website. Websites can be the work of an individual, a business or other organization, and are typically dedicated to a particular topic or purpose.
- ❑ A website is stored on a computer system known as a web server, also called as HTTP server.

Types of website:

1 Static Website: Static websites contain static text that is displayed on the screen; it just shows data content but does not calculate or processed depending upon user input. It has basic presentation and no database. Ex: College

2 Dynamic Website: A dynamic website changes or customizes itself behavior frequently and automatically such as user registration form, login form, online shopping websites, Interactive database oriented e-commerce websites, web-banking websites.

Ex: google.com, facebook.com, youtube.com, amazon.in, snapdeal.com, flipkart.com etc.

Website has **.html** file extension. For example, the file name "Home.html".

❖ Structure of HTML document and Basic Tags:

Below program is Structure of HTML:

```
<html>
  <head>
    <title>Home</title>
  </head>
  <body>
    This is a basic structure HTML page.
  </body>
</html>
```

❖ Basic Tags:

There are four basic tags: 1.<HTML>, 2.<HEAD>, 3.<TITLE>, 4.<BODY>

1. <HTML> :

- ☐ <HTML> tag is a main tag contains all other tags which is a structure and skeleton of HTML code.
- ☐ The first tag in your html document is <html>. This tag tells your browser that this is the start of an html document. The last tag in your document is </html>.
- ☐ This tag tells your browser that this is the end of the html document. This is the standard structure tag of an HTML. Make sure that you use <HTML> element at once in whole html page it never repeat and placed in between code more than one time.
- ☐ It is compulsory kind of tag to make web page. Html contains all other basic tags which is head, title, body.

2. <HEAD> :

- ☐ The <head> element is just a container for all other header elements. It should be the first thing to appear after the opening <html> tag. <head> element should contain a <title> element indicating the title of the document.
- ☐ Other tag under head: <script>, <style>, <link>.

3. <TITLE> :

- ☐ <TITLE> tag is used to display webpage title name. Page titles are very useful to know just what subject data is on your website. There can only be one title per page.
- ☐ Please note that this is one of the tags that will go within the HEAD tags. It displays at the very top of a browser window.

4. <BODY> :

- ❑ The <body> element appears after the <head> element and contains the part of the Web page that you actually see in the main browser window, which is sometimes referred to as body content.
- ❑ All tags which apply some effects to text, image or anything that means everything you seen and appearing on web page that are placed between under <body> tag and </body> tag.

HTML - Attributes of the body tag

- **bgcolor**: This attribute sets the background color of webpage. **Ex:** <body bgcolor="yellow">
- **text**: This attribute sets the text color for the webpage. **Ex:** <body text="red" >

➤ What is Tag?

Tag is an instruction given to web browser to show formatted data in webpage. Following are types of tags.

- 1) **Singular (Unpaired) tag**: this type of tag consists of only starting tag to provide single action. Some tag don't require end tag because they don't have enclosed content.

Ex:-
, <HR> tag.

- 2) **Paired tag**: this type of tag consist of start tag & respectively end tag to define the scope.

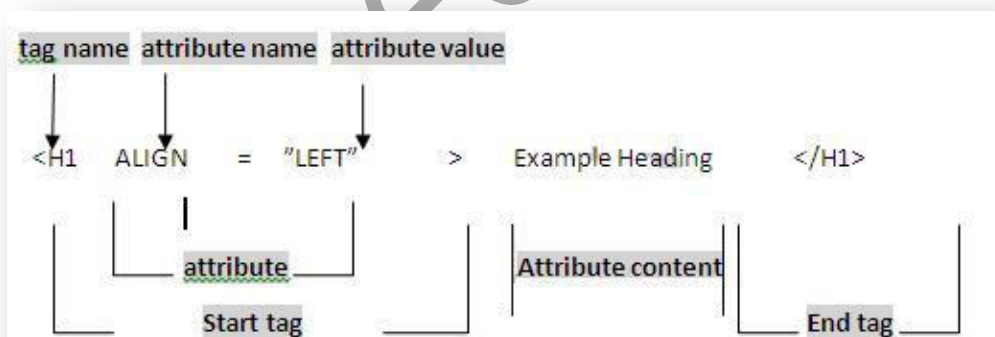
Start tag is a symbol for surrounded by angle bracket's <HTML> & end tag is represented by forward slash within angle bracket such as </HTML>.

Syntax: Start tag <tagname> Text End tag </ tagname >

Ex: <Title> Home </Title>

➤ Attributes:

Tags can also have attributes, which are extra bits of information. **Attributes appear inside the opening tag only and their value followed by = sign is always inside double quotation marks ""**.



Formatting Tags:

❖ Heading tag - `<h?>Text</h?>`

One of the earliest means of formatting text was the heading tag. It is available in six levels of importance from `<h1>` down to `<h6>`, If you have documents with genuine headings, then there are HTML tags specifically designed just for them.

They are h1, h2, h3, h4, h5 and h6, h1 being the biggest of headings and h6 being the smallest

Program:

```
<html>
  <head><title>Font Size Example</title></head>
  <body>
    <h1>This is a main big heading </h1>
    <h2>This is a main sub heading </h2>
    <h3>This is a sub heading </h3>
    <h4>This is a heading </h4>
    <h5>This is a small heading </h5>
    <h6>This is a smallest heading </h6>
  </body>
</html>
```

Output:

This is a main big heading
This is a main sub heading
This is a sub heading
This is a heading
This is a small heading
This is a smallest heading

Note that the h1 tag is only used once - it is supposed to be the main heading of the page and have bigger and bold text appearance. h2 to h6 can be used repeatedly, but they should always be used in order, For example, h4 should be a sub-heading of an h3, and h3 which should be a sub-heading of an h2.

- ❑ The paragraph tags are used to define a block of text as a paragraph.
- ❑ When a block of text is surrounded by the paragraph tags, the browser automatically adds new line before and after the paragraph text.
- ❑ The `<p>` element offers a way to structure your text. Each paragraph of text should go in between an opening `<p>` and closing `</p>` tag

If you are using an empty paragraph tag like this `<p> </p>` it will create new line

But if you want extra space after it or if this is what you want as the formatting for all paragraphs, use ** ** if you want extra space in between text.

Paragraph tag is basic text formatting tag which specifically used to create multiple line of text.

- **align** – Align is used to apply aligning to the text as **left**, **right**, **center**.
 - **Ex:** `<p align="right">Text</p>`

❖ **PRE Tag - Preformatted Text** - `<pre></pre>`

- ❑ Any text between the pre tags, including spaces, carriage returns and punctuation, will appear in the browser as it would in a text editor (normally browsers ignore multiple spaces, new line enter key press)
- ❑ Using the PRE tag to define sections of the page as formatted by the typing itself was a quick and easy way to get the text to display as you expected it to. This is because pre-formatted text is defined as text in which the structure is defined by typographic conventions rather than by the HTML.
- ❑ Typical HTML ignores more than one white space and carriage returns in the document. This means that carriage returns, spaces, and tab characters are all ignore. If you typed the above quote into a typical HTML tag like the P tag, you would end up with one line of text:

Code without PRE tag:	Output:
<pre><p> A P P L E </p></pre>	A P P L E

Try the PRE tag on your website with various different spacing and carriage returns.

For example, try pasting the following code into your web page HTML (leave the spaces exactly as they are written):

Code with PRE tag:	Output:
<pre><pre> A P P L E </pre></pre>	A P P L E

The PRE tag leaves the whitespace characters alone. So line breaks, spaces, and tabs are all maintained in the browser.

❖ List Tags:

Introduction to lists

List tag is to create lists in web page. HTML offers some tags for specifying lists of information. All lists must contain one or more list elements (items).

There are three types of lists are present:

- 1) **Ordered List- **
- 2) **Unordered List- **
- 3) **Definitions- <DL>**

Lists are especially useful in web pages to draw attention to short pieces of information. Keep that in mind when you create your lists, and try to include short phrases, instead of long sentences, in each list item.

1] Ordered List- tag:

An ordered list is one in which each item is presented by a number or letter. Ordered list always represent data in sequence or order either it is number or alphabet.

Program:	Output:
<pre><html> <head> <title>Font Size Example</title> </head> <body> <ol type="I">Courses: BCA BSc(CS) BSc(SE) BBA </body> </html></pre>	<p>Courses:</p> <ul style="list-style-type: none">I. BCAII. BSc(CS)III. BSc(SE)IV. BBA

➤ tag : Values of TYPE Attributes:

Values of TYPE Attribute	Numbering Style	Example
1	Numbers	1, 2, 3, 4, 5, 6
a	Lowercase Alphabet	a, b, c, d, e, f
A	Uppercase Alphabet	A, B, C, D, E, F
i	Lowercase Roman Numbers	i, ii, iii, iv, v, vi
I	Uppercase Roman Numbers	I, II, III, IV, V, VI

2] Unordered List- tag:

The second type of list is similar to the first, except unordered lists don't use numbers or letters. As the name suggests, unordered lists means it is not follow order (Number sequence) for elements of list.

UL lists use bullet symbol to represent each list item. As OL lists UL also use tags to represent each list items.

The following is an example of an unordered list:

Program:	Output:
<pre><html> <head> <title>Font Size Example</title> </head> <body> <ul type="square">Name of the colors: red green blue </body> </html></pre>	<p>Name of the colors:</p> <ul style="list-style-type: none">■ Red■ Green■ Blue

In the above example we used square value to TYPE attribute hence list will appear with square bullet symbol, if user want to change the bullet symbol then user can use following options.

Three possible options exist for bullet style:

<UL TYPE="disc">

- **disc** Usually displayed as a small, filled-in circle

<UL TYPE="circle">

- **circle** Usually displayed as an open circle

<UL TYPE="square">

- **square** Usually displayed as an square.

<UL TYPE="square">

Initially, all unordered lists default to the disc style, which is usually represented as a small, filled-in circle. However, if you nest unordered lists—that is, if you include an unordered list in another unordered list—the default value changes.

3] Definition Lists <DL> tag

The third type of list you can create in HTML is called a definition list. As its name suggests, you might use a definition list to show terms and their definitions. For example, in the following list, the term is listed on the first line, and then the definition is on the line below the term.

<DL> Definition List, <DT> Definition Title, <DD> Definition Description

Code:

```
<dl>
  <dt>HTML</dt>
  <dd>Hypertext Markup Language is the web scripting language used to create documents for the World Wide Web.</dd>
</dl>
```

Output:

HTML:

Hypertext Markup Language is the web scripting language used to create documents for the World Wide Web.

❖ Horizontal Rule - <hr>

The **HTML <hr> element** represents the page break between paragraph-level elements (for example, a change of scene in a story, or a shift of topic with a section). In previous versions of HTML, it represented a horizontal rule. It may still be displayed as a horizontal rule in visual browsers, but is now defined in semantic terms, rather than presentational terms.

- it is an empty element.
- *Tag <hr>* must have start tag, but must not have an end tag.

Attributes:

This element includes the global attributes.

Color	Sets the color of the rule through color name or hexadecimal value.
Size	Sets the height, in pixels or percentage, of the rule.
width	Sets the length of the rule on the page through a pixel or percentage value.
Align	Sets the alignment of the rule on the page. If no value is specified, the default value is center. Note: Do not use align when width of rule line is 100%.

Example :

```
<p>This is the first paragraph of text. HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. </p>  
<hr color="red" size="10%" width="50%" align="right">  
<p>This is second paragraph of text. HyperText Markup Language, commonly referred to as HTML, is the standard markup language used to create web pages.</p>
```

Output:

This is the first paragraph of text. HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms.

This is second paragraph of text. HyperText Markup Language, commonly referred to as HTML, is the standard markup language used to create web pages.

❖ The <div> tag:

It is nothing more than a container unit that encapsulates other page elements and divides the HTML document into sections. Web developers use <div> elements to group together HTML elements and apply CSS styles to many elements at once. For instance, by wrapping a set of paragraph elements into a <div> element, the developer can take advantage of CSS styles and apply a font to all paragraphs at once by applying a font style to the <div> tag instead of coding the same style for each paragraph element.

Group together text elements within a <div> tag to slice up HTML documents.

HTML Div Element Code:

```
<div id="myDiv" name="myDiv" title="Example Div Element">  
  <h5>Subtitle</h5>  
  <p>This paragraph would be your content paragraph...</p>  
  <p>Here's another content article right here.</p>  
</div>
```

With these text elements now grouped together under a <div> element, we can alter the appearance of each underlying element collectively by applying a *style* attribute to the <div> tag.

HTML Div Element Code:

```
<html>  
  <head> <title> Example of Div Tag </title> </head>  
  <body>  
    <div id="myDiv1" name="myDiv1" title="Example Div Element1"  
      style="color: Blue; border: 1px solid black;">  
      <h5>Paragraph1</h5>  
      <p>This paragraph would be your content paragraph...</p>  
      <p>Here's another content article right here.</p>  
    </div>  
    <div id="myDiv2" name="myDiv2" title="Example Div Element2"  
      style="color: Red; border: 1px solid black;">  
      <h5> Paragraph2</h5>  
      <p>This paragraph would be your content paragraph...</p>  
      <p>Here's another content article right here.</p>  
    </div>  
  </body>  
</html>
```

HTML Output:

Paragraph1

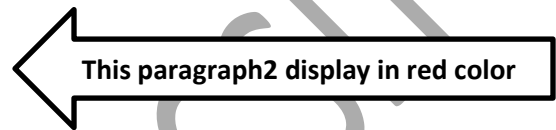
This paragraph would be your content paragraph...

Here's another content article right here.

Paragraph2

This paragraph would be your content paragraph...

Here's another content article right here.



➤ **Attributes:**

Attribute	Value
align	left right center justify

Elements housed within a <div> tag acquire any styles or properties applied to the master div element. Therefore the paragraph and heading elements should now be display in blue color. In addition, we've applied a border to the <div> element just to help visualize the grouping of elements together.

❖ The HTML tag

It is used for grouping and applying styles to inline elements. Span used on single part of data where div used for group portion of data.

In HTML, span and div elements are used to define parts of a document so that they are identifiable when no other HTML element is suitable. While other HTML elements such as p (paragraph), em (emphasis) and so on accurately represent the effect of the content, the use of span and div leads to better accessibility for readers and easier maintainability for authors. Where no existing HTML element is applicable, span and div can valuably represent parts of a document.

Span tag represents an inline portion of a document, for example words within a sentence. Div tag represents a block-level portion of a document such as a few paragraphs, or an image with its caption.

There is a difference between the span tag and the div tag. The span tag is used with inline elements whilst the div tag is used with block-level content.

Example

```
<html>
  <head>
    <title>HTML span Tag</title>
  </head>
  <body>
    <p>This is a paragraph <span
    style="color:#FF0000;">
    This is a paragraph</span>
    This is a paragraph</p>
    <p><span style="color:#8866ff;">
    This is another paragraph</span></p>
  </body>
</html>
```

❖ The Tag :

Fonts play very important role in making a website more user friendly and increasing content readability. Font face and color depends entirely on the computer and browser that is being used to view your page but you can use HTML tag to add style, size, and color to the text on your website. The font tag was brought in early in HTML's life to allow designers to change the size, typeface and color of their text.

➤ Font Attributes

The tag provides no real functionality by self, but with the help of a few attributes, this tag is used to change the style, size, and color of HTML text elements. The size, color, and face attributes can be used all at once or individually, providing users with the ability to create dynamic font styles for any HTML element. To change any of the font attributes at any time within your webpage, simply use the tag. The text that follows will remain changed until you close with the tag. You can change one or the entire font attributes within one tag.

There are three main font attributes are as follows:

1 Size

2 Color

3 Face

1. Size:

You can set content font size using size attribute. The range of accepted values is from 1(smallest) to 7(largest). The default size of a font is 3.

Program:

```
<html>
<head><title>Font Size Example</title></head>
<body>
  <font size="1">Font size="1"</font> <br>
  <font size="2">Font size="2"</font> <br>
  <font size="3">Font size="3"</font> <br>
  <font size="4">Font size="4"</font> <br>
  <font size="5">Font size="5"</font> <br>
  <font size="6">Font size="6"</font> <br>
  <font size="7">Font size="7"</font> <br>
</body>
</html>
```

Output :

Font size="1"
Font size="2"
Font size="3"
Font size="4"
Font size="5"
Font size="6"
Font size="7"

- Font Color:** You can set any font color you like using color attribute. You can specify the color that you want by the color name for that color.
- Font Face:** Choose a different font face by specifying any font you have installed. Font face is synonymous with font type. You can set font face using face attribute but be aware that if the user

viewing the page doesn't have the font installed, they will not be able to see it. Instead user will see the default font face applicable to the user's computer.

As a web designer, be aware that if you specify a custom font type and users viewing the page don't have the exact same Font installed, they will not be able to see it. Instead the chosen font will default to Times New Roman. To reduce the risk of running into this situation, you may provide a list of several fonts with the face attribute, such as outlined below.

Program to demonstrate font size, color, and face attributes.

```
<html>
<head>
<title>FontFace</title>
</head>
<body>
  <font face="Times New Roman" size="5" color="red"> Times New Roman </font> <br/>
  <font face="Verdana" size="5" color="yellow"> Verdana </font> <br>
  <font face="Comicsans MS" size="5" color="blue">Comic Sans MS</font> <br>
  <font face="Agency FB" size="5">Wild West</font> <br>
</body>
</html>
```

This will produce following result:

Times New Roman
Verdana
Comic Sans MS
Agency FB

❖ **Address- <address>Text</address>**

The address element isn't used for the purpose that you may expect—that being to mark up a physical location *alone*. Instead, it's used to indicate the contact point for the document in which it appears. This element would usually appear in a header or footer on the page.

An address element *may* contain a geographic location, but it doesn't *have* to; it could also contain a mixture of contact points. In the example shown, the address element includes an email point of contact, a mailing location, and a telephone number.

The basic purpose to write postal address in <address> tag is to find our address webpage in google search engine easily, because search engine software always searches our address text with the help of <address> tag.

The contact details of the “XYZ College” are marked up with address in this example:

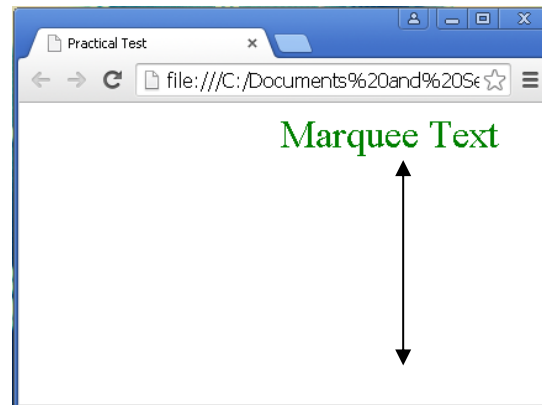
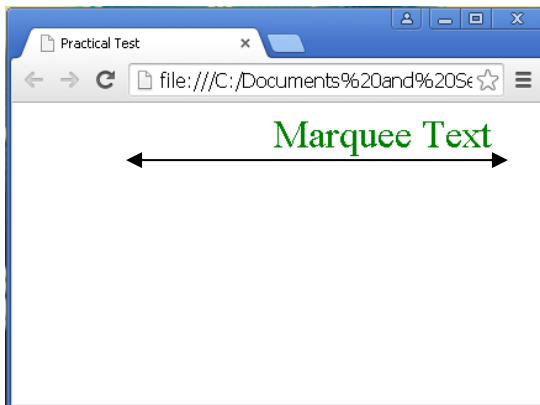
```
<address> Name of the XYZ College: <br>
Gandhi Nagar, Nehru Road, New Delhi.<br>
Pin: 123 456 <br>
Mob +91 3212 123 222 <br>
Fax 321 123 33
</address>
```

Used For ...

This element is used to represent contact related information to the user like Address, Email, Fax, Mobile, Contact number.

❖ <Marquee> Tag:

This proprietary element originally introduced by Internet Explorer specifies a scrolling, sliding, or bouncing text marquee. Marquee tag is used as a animation tag to scroll, rotate, move, slide a text or image or anything that contain <marquee> start tag and </marquee> end tag in web page. Data can slide with horizontal and vertical direction using some attributes.



Attributes:

Settings of the movement using below attributes:

1) behavior: Sets how the text is scrolled within the marquee. Possible values are 1. scroll 2. slide 3. alternate.	If no value is specified, the default value is scroll. Ex. <code><marquee behavior="slide">TEXT</marquee></code>
2) direction: Sets the direction of the scrolling within the marquee. Possible values are 1. Left 2. Right 3. Up 4. Down	If no value is specified, the default value is left. Ex. <code><marquee direction="down">SCROLLING DIRECTION DOWN TEXT</marquee></code>
3) loop: Sets the number of times the marquee will scroll on page. If no value is specified which means the marquee will scroll continuously.	Ex. <code><marquee loop="3">LOOP TEXT</marquee></code>
4) scrollamount: Sets the amount of scrolling speed for marquee text. The default value is 6. Use more than 6 for faster speed .	Ex. <code><marquee scrollamount="100">FASTER TEXT</marquee></code>
5) scrolldelay: Sets the interval between each scroll movement in milliseconds. The default value is 85. Note that any value smaller than 60 is ignored. use more than 85 for slower speed of marquee. <code><marquee scrolldelay="150">DELAYED TEXT</marquee></code>	

❖ Text-Level Elements & other different formatting tags.

1) Bold - `Text`

The text in between the tags will be bold, and stand out against text around it, the same as in a word processor.

Place the bold tag inside other elements to highlight important words and give feeling to your text.

You may also use it to separate words from their meaning in a dictionary fashion.

```
<p><b>Cardio:</b> Latin word meaning of the heart.</p>
```

Output:

Cardio: Latin word meaning of the heart.

The idea here is to use the bold tag in quick formatting situations. It is not a good idea to bold entire paragraphs or other elements simply because you want the text to be larger or fatter.

2) Italic - `<i>Text</i>`

Also working the same way as a word processor, italics display the text at a slight angle. This tag is used to make text cursive or running and you can use `<i>` tag in paragraph. You can make note, comment of author in website etc using this tag.

```
<p><b>Cardio:</b> <i>Latin word meaning of the heart.</i></p>
```

Output: **Cardio:** *Latin word meaning of the heart.*

3) Underline - `<u>Text</u>`

Again, the same as underline in a word processor. If you want to make text underlined and considered to important then you have to use this tag.

```
<u><h1>Introduction of HTML:</h1></u>
```

Output: Introduction of HTML:

Note that html links are already underlined and don't need the extra tag.

4) Superscript - `^{Text}`

Superscript refer to text that are positioned slightly higher the text on the line. For example, a footnote or endnote number reference is an example of superscript.

```
12 <sup>th</sup> or 3 <sup>rd</sup> or E= mc<sup>2</sup>
```

Output: 12th or 3rd or E=mc²

5) Subscript - `_{Text}`

Subscript refer to numbers that are positioned slightly lower than the text on the line. For example, a scientific formula might use subscript text.

O `₂`

Output: O₂

6) Strikethrough - `<strike>Text</strike>`

Puts a line right through the center of the text, crossing it out. Often used to show that text is old and no longer relevant. Also works by using `<s></s>` instead.

This is `<strike>Deleted</strike>` text and now `<s>no longer</s>` used.

Output: This is ~~Deleted~~ text and now ~~no longer~~ used.

7) Center - `<center>Text</center>`

A useful tag, as it says, it makes text, image, table, everything in between the tags centered (in the middle of the page).

8) Mark - `<mark>Text</mark>`

This is a tag which appear text highlighted means this text will appear with background yellow color.

`<mark>`This text will highlighted with yellow background color.`</mark>`

Output: This text will highlighted with yellow background color.

----- The End -----

UNIT II

Technologies for Web Application

❖ WWW:

Full form of **www is world wide web** and it is an advanced finding information system. It is being developed very fast. WWW is based on hypertext System.

The concept of the Web was invented at **CERN (European Council for Nuclear Research)** in 1992 by Tim-Berners Lee, He is the father of the Web or Internet.

The principle of the Web is based on using hyperlinks to navigate between documents (called web pages) with software called a Web Browser. A web page is a simple text file written in a markup language (called HTML) that convert the layout of the document, graphical elements, and links to other documents, all with the help of tags.

Besides the links which connect formatted documents to one another, the web uses the HTTP protocol to link documents hosted on distant computers (called web servers). On the www, documents are identified with a unique address, called a URL, which can be used to locate any resource on the internet, no matter which server may be hosting it.

A URL looks something like this:

<http://www.mywebsite.com/webfolder/Home.html>

Which means, when the user is browsing on the www he can put up a word or expression within a text and request for more information about it.

WWW can be started by the command www. then domain name of the website and finish with top-level domains .com or .in etc **Ex: www.mywebsite.com**

Advantages:	Disadvantages:
<ol style="list-style-type: none">1. You can find all type of information2. You can purchase things online3. You can watch or listen to media4. You can play online games5. You can check your online bank account6. You can find friends, etc...	<ol style="list-style-type: none">1. Online data not secure2. Hacking3. You can get computer virus infections4. Online fraud. <p>Etc...</p>

❖ Web Browser:

Web browser is software to provide an interface to displaying, presenting, accessing and browsing information resources of web pages on internet and navigate between one website to another in an easy manner. Now a day's website becomes more popular because it is effective way of advertising and selling products of company.

HTML is simply collection of codes, code means it is collection of some meaningful symbols which is having some structure and format to create a web document. Those structured combination of symbols are only recognized by special software called as web browser, web browser can read HTML symbolic program structure and displays a suitable human readable form on display screen.

The web pages are written in HTML language in the form of code but whenever you open that HTML web page in web browser software you don't see html code, it displays a formatted and readable data. Web page is a document, typically written in plain text mixed together with formatting instructions (tags) of Hyper Text Markup Language (HTML). Web pages are accessed and transported outside the computer in internet with a protocol called as **HTTP** (Hyper Text Transfer Protocol)

Protocol is tiny software which defines rules and regulations to transfer data and communicate another computer across the internet.

Web browser supports numerous protocols such as **HTTP, FTP, TELNET**, etc...

Web browser perform various **task as like file downloading, file uploading, email attachment, save web page content, play videos from website, print webpage etc.** It also **bookmarks** (saving address of a web page in web browser) your favorite web page.

➤ **Available Web browsers in internet:**

1. **Mosaic:** Mosaic was older browse, it was first graphical web browser. Mosaic was developed at the National Center for Supercomputing Applications and released the browser in 1993.
2. **Netscape Navigator:** It was first released in 1994. Mosaic was developed with another name netscape navigator. This is the first most popular commercial web browser in older days
3. **Microsoft Internet Explorer:** Microsoft is a software company which designed and developed a web browser for windows operating system named as Microsoft Internet Explorer. It is present default as web browser in any newly installed windows operating system. Today this is one of the most usable browser on internet.

4. **Mozilla Firefox:** After days creator of Netscape navigator developed a new browser called Mozilla Firefox. Firefox is rapidly gaining ground right behind internet explorer because of its tabbed browsing, superior security features, and fast loading web page.
5. **Google Chrome:** Google specialized in web search engine it is a copyright product of Google. It is a light weight and fast accessing browser.
6. **Mac Safari:** Macintosh (Mac) is a computer system of Apple company. Safari is a web browser works on Macintosh OS. It has a rich graphical appearance.
7. **Opera:** It is popular mobile web browser and also available in desktop PC.

Following are some common basic options available on any web browser:

Title Bar, Menu Bar, Toolbar Bar, Address Bar, Display Window, Scroll Bar, Status Bar.

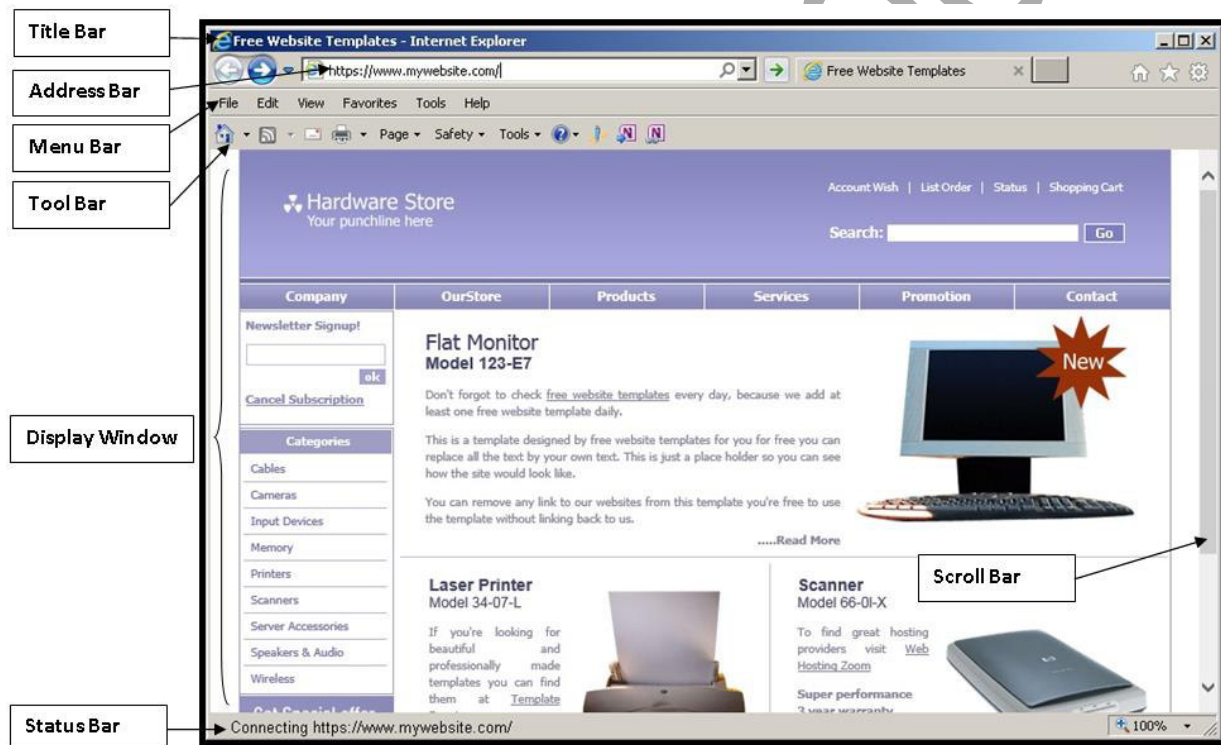


Fig. Internet explorer web browser.

❖ URL

Several HTML elements or tags may contain an attribute such as ``, which takes a URL as value. URL stands for Uniform Resource Locators, URL are addresses of Web documents. More generally, URLs can be used on the Web to open website on the Web.

There are two types of URLs:

- 1) **Absolute URL (Full URL)**
- 2) **Relative URL (Short URL)**

1) Absolute URLs

The general syntax of absolute URLs is the following:

Syntax: *protocol://DomainName:port/path/filename*

Example: *http://www.example.com:8080/WebFolder/index.html*

1. Protocol:

It specifies the information system to be used to access the resource; possible values include the following:

- **http** a Web document (to be accessed using Hypertext Transfer Protocol, HTTP)
- **ftp** a resource to be retrieved using FTP (File Transfer Protocol), usually a file in a so-called FTP server,

2. domain name:

It is the name of the website, e.g. `www.google.com`.

3. Port no.:

All the information can send and receive in computer through various port numbers, some information which is more secure such as banking transaction always go through secure port number and some general information send and received by Port no. 8080.

4. Path:

It is a directory (folder) path within the host, where your Website, images, css, pdfs are contain.

5. Filename:

It is a file name such as `webpage.html` or image within the directory or actual object which is going to access via url.

2) Relative URLs

What is Relative URL?

A relative URL is a short URL it points to a resource webpage to the current directory. Consider the situation where all webpages of your website is contain in one folder and home page is a start page of your website, so whenever user wants to open your website user just type domain name and automatically home.html webpage will get as start page of website.

When you link another webpage with homepage and that another webpage is in same directory where home.html page resides then the relative URL is used to mansion just name of the webpage. As an example, if you need to create a link in your home page to a file called ContactUs.html, which resides in the same directory as your home page, you can simply use the file name, the below code refers link for ContactUs.html webpage which present in Home.html as follows:

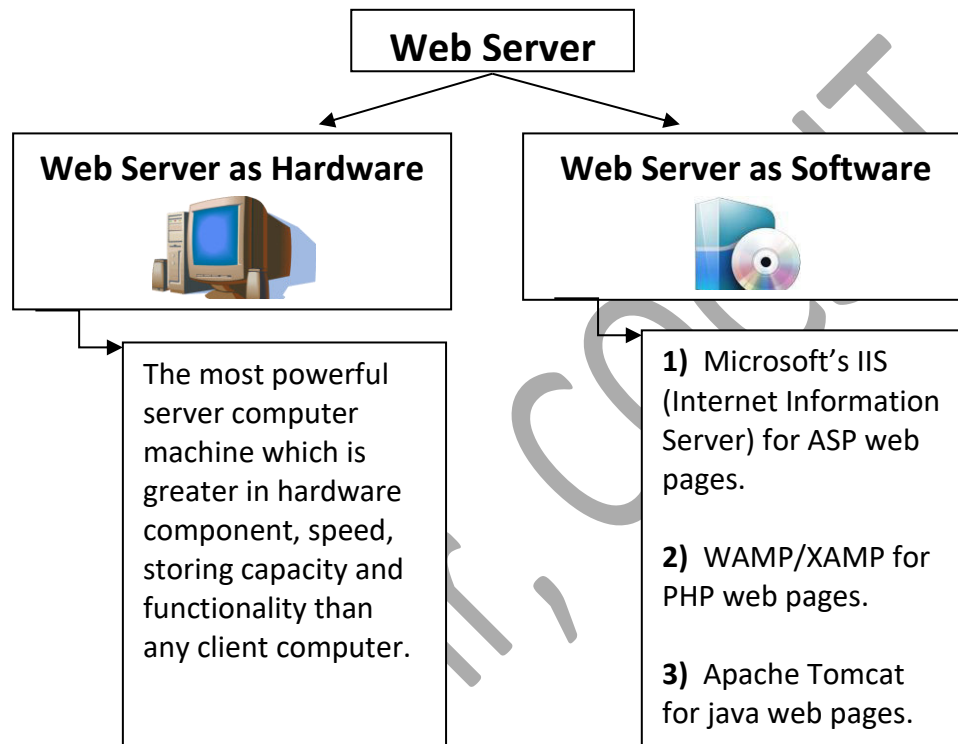
```
<a href="ContactUs.html"> Contact Us </a>
```

Here, no need to mansion domain name in front of webpage name.

But if you want to open contact page of another college which is not a part of your website it is a part of another website then you have to follow absolute URL to mansion domain name as well as ContactUs.html such as ` Contact Us `

❖ Web Server :

Web server is a combination of the High speed hardware computer and the Web server software. It will help to serve web content (Webpage, stored media) to the user that can be accessed through the Internet.



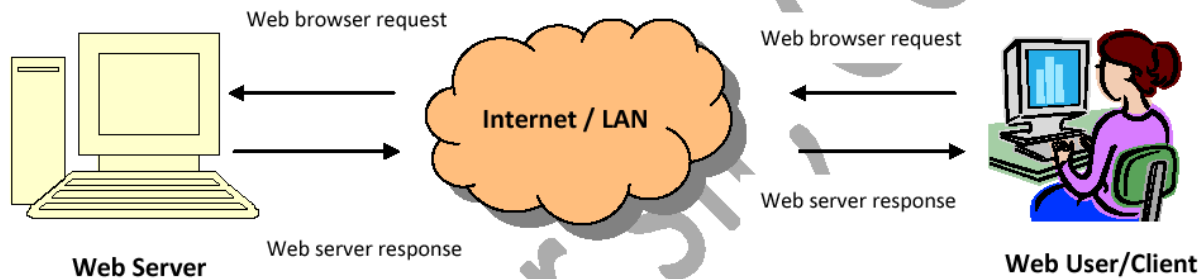
The most common use of web servers:

1. Hosting and publishing websites
2. Data storage
3. Running web applications
4. Handling email accounts
5. FTP data other web content sharing
6. Multiplayer Game website

Overview

- The primary function of a web server is to store, process and deliver web pages to clients. The communication between client and server takes place using the Hypertext Transfer Protocol (HTTP). Pages delivered are most frequently HTML documents, which may include images, style sheets and scripts in addition to text content.

- When a the client's web browser request a website, The web server then reads the request and check the web page file, if it exists then sends a response to the client's web browser. The response will describe the content of the file and contain the file itself if an error occur then error message will transmit to saying that the file does not exist or is unavailable.



- If web server is considered as hardware web servers are not always used for serving the World Wide Web. They can also be found embedded in devices such as printers, routers, webcams and serving only a local area network. The web server may then be used as a part of a system for monitoring and/or administering. This usually means that no additional software has to be installed on the client computer; since only a web browser is required (which now is included with most operating systems).

History: In 1989 Tim Berners-Lee proposed a new project to CERN as www, with the goal of easing the exchange of information between scientists by using a hypertext system. WWW ran on world's first web server, used in CERN is **NeXTSTEP**.

Category of web servers:

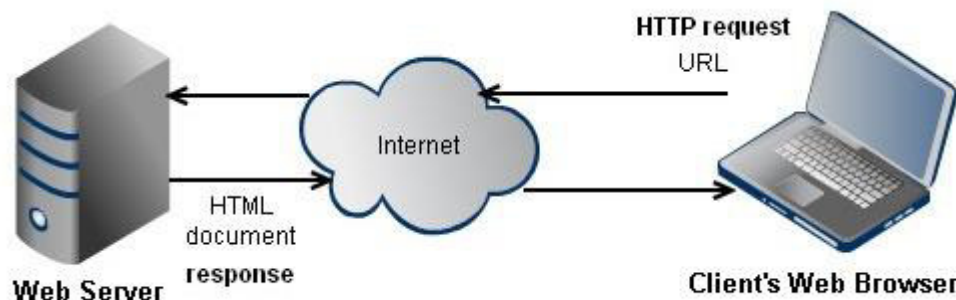
- 1. HTTP Server** – A web server which supply webpage to user in internet. This pages runs on the client browser. It generally contains the static pages.
 - 2. FTP Server** – A FTP Server is file storage server where documents and media files are stored in massive amount. This type of server used for file transfer from one machine (Computer) to another using the internet or LAN. It uses File Transfer Protocols to transfer file from one computer to another.
 - 3. Mail Server** - A Mail Server store and retrieve email messages from client's mail box.
-

❖ Web Protocols:

1) HTTP:

Hypertext Transfer Protocol (In short HTTP) is a communications protocol. It is used to send and receive webpages and files on the internet. It was developed by Tim Berners-Lee. HTTP version 1.1 is the most common used version today. This is the foundation for data communication for the World Wide Web (i.e. internet) since 1990.

HTTP is client/server protocol. Basically, HTTP is a TCP/IP based communication protocol, that is used to deliver data (HTML files, image files, query results, etc.) on the World Wide Web. **The default port is TCP 80**, but other ports can be used as well. It provides a standardized way for computers to communicate with each other. HTTP specification specifies how clients' request data will be constructed and sent to the server, and how the servers respond to these requests.



Basic Features:

There are three basic features of HTTP

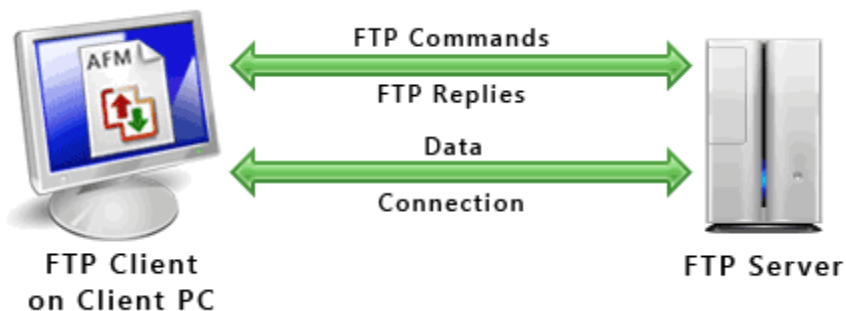
- **HTTP is connectionless:** The HTTP client, i.e., a browser creates an HTTP request and after a request is made, the client disconnects from the server and waits for a response. The server processes the request and re-establishes the connection with the client to send a response back. The server and client are aware of each other only during a current request. Afterwards, both of them forget about each other. Due to this nature of the protocol. Browser send request and wait for response for that there is no need to create and maintain current live connection.
 - **HTTP is media independent:** It means, any type of data can be sent by HTTP as long as both the client and the server know how to handle the data content.
-

2) FTP Protocol:

The **File Transfer Protocol (FTP)** is a standard network protocol used to transfer computer files between a client and server on a computer network. The original specification for the File Transfer Protocol was written by Abhay Bhushan, he is the author of the File Transfer Protocol (which he started working on while he was a student at IIT-Kanpur).

FTP is state-full connection protocol that means FTP is built on a client-server model architecture and uses separate online live data connections between the client and the server. FTP by default use port number 21.

The first FTP client applications were command-line programs but now it developed for newer operating systems which had graphical user interfaces like windows, and are still worked with most Windows, MAC, Unix, and Linux operating systems.



FTP protocol having two types

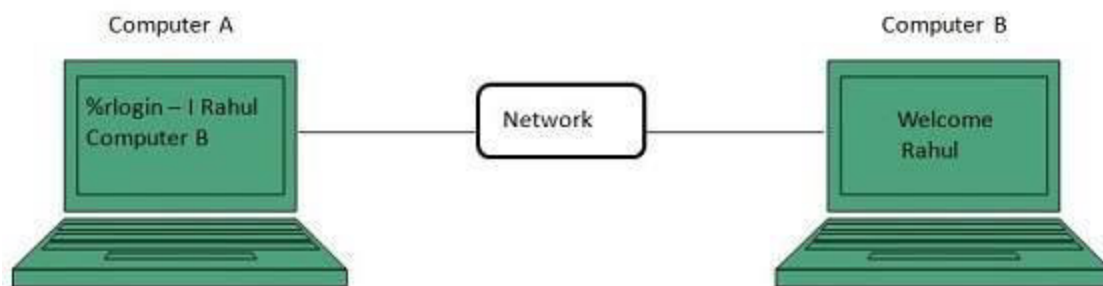
1. **Login FTP:** FTP login uses a normal username and password scheme for granting access. The username is sent to the server using the USER command, and the password is sent using the PASS command. If the information provided by the client is accepted by the server, the server will send a response to the client and the session will be established and from then secure data transfer can be stated.
 2. **Anonymous FTP:** Anonymous means unknown. In this type of FTP user may not enter username and password to access FTP service. Users typically log into the service with an 'anonymous' account when prompted for user name. Although users are commonly asked to send their email address instead of a password, no verification is actually performed on the supplied data. Many FTP hosts whose purpose is to provide software updates will allow anonymous logins.
-

3) Telnet Protocol:

Telnet is a protocol used to log in to remote (longer distance) computer on the internet or network. Telnet was developed **in 1969**. Historically, Telnet provided access to a command-line interface (Text mode like DOS operating system) on a remote computer, but now telnet concept becomes remote desktop login with graphical interface.

There are number of Telnet clients having user friendly interface. The following diagram shows a person is logged in to computer A, and from there, he remote logged into computer B. now whatever commands and task performed by user in computer A all actions actually implement in Computer B at same time.

Telnet is connection oriented protocol that means it work on state-full principle and compulsory needs current online live data connection. The result of this request would be an invitation to log on with a userid and a prompt for a password. If accepted, you would be logged-in like any user who used this computer every day. **Telnet use port no 23.** Telnet is most likely to be used by program developers and anyone who has a need to use specific applications or data located at a particular longer distance host computer.



Security: In this system security is a major issue. The number of people attempting to hack other people's servers, due to this security-related issues telnet becomes more secure with the help of the Secure Shell (SSH) protocol.

❖ Hyperlink (Anchor) Tag & it's all attributes,-

The HTML *anchor* element is used to create a link to a resource (another web page, a file, etc.) or to a specific place within a web page.

Syntax: ` text `

Example: ` text `

The anchor tag alone won't do anything without an attribute and value, so let's look at the attributes we can use.

➤ **HREF Attribute:**

Href is short for *hypertext reference*. To create a link, you have to know the web address url of the file you want to link to, whether it's another web page of your own site, another website, or a link to file such as a PDF document, sound file, image, or another type of file.

Suppose you want to link to the front page of website site.

The web address is: *http://www.google.com*. You'd code the link like this:

`Use this link to search Google`

This is the text in between the opening and closing a tags in the example code.

When a visitor to your web site moves the mouse over a link, it usually changes to a hand to show the text can be clicked.



The location of the link is usually printed in the bottom part of the browser window, which is also called the *status bar*.

The *href* part, shown in dark blue text with underlined. This is the attribute that defines the address of the file you want to link to.

The equal sign always connects an attribute to the attribute's value. So in this case, *href* is the attribute, and *http://www.google.com* is the value. The value is always enclosed in quotation marks.

Click here to visit Google is the anchor text, or sometimes called the link text. This is the part of a link that is clickable.

If you link to a page on another site you need to use the full web address as shown in the example above. If you're linking to a different page on your own same site you only need to use the page name and extension if the page is keep in the same directory.

For example, suppose you want to link to a page you've saved with the name of *HomePage.html*. You'd code it like this:

```
<a href="HomePage.html">Home Page</a>
```

By linking to your own internal pages *without* using the full web address your pages will load faster. If you use the full web address the browser goes back out to the Internet to find your site all over again, which takes longer. If you don't use the full path the browser only checks on your site for the file.

File names, which includes the name of the web page and the extension, are case sensitive. That means you must use the same capitalization in the web address of the file that was used when the file was saved.

➤ TARGET Attribute

The *target* attribute allows you to determine where the link will open. With a framed site, it allows you to target a link to a specific frame. The most common use is to have off-site links open in a new browser window or new tab in same browser window. Target attribute specifies the target window for a hypertext source link that references frames. The information linked to target will be displayed in the named window.

- ❑ **_blank** : it open clicked web url webpage in new window of web browser;
- ❑ **_self** : Opens the linked document in the same frame as it was clicked (this is default);

Here's how to open a link in a new window:

```
<a href="http://www.site.com" target="_blank">Link Text</a>
```

By adding the part **target="_blank"** to a link, the link will open in a new window or a new tab, depending on the browser in use and how it's configured.

❖ Creating Email Hyperlinks (using mail to anchor):-

Although links to and within web pages are the most common types of links you'll create, you can also link to other types of content on the Internet.

E-Mail Addresses

When you want to give someone easy access to your e-mail address, you can include it on your page as a mailto link. This means instead of using http:// in front of your link, you use the e-mail protocol mailto: to preface your e-mail address.



Clicking this link in a browser causes the visitor's e-mail program to launch. Then it opens a new e-mail message and places your e-mail address in the To: box of that message.

NOTE :

- For a mailto link to work, visitors to your web site must have an offline e-mail program (such as Microsoft Outlook or Mac Mail) set up on their computers. E-mail links like these may not work if the visitor uses only a web-based e-mail service such as Gmail or Hotmail.
- There actually is not a separate HTML tag for creating an HTML email link.

Email Link:

- By adding a couple extra onto the email address in *href* you can have both the SUBJECT and the BODY of the email automatically populated for your visitors. This is great when receiving emails from a website to an email account that handles more mail than just from that one link on your site.
- By defining a uniform subject that people will automatically have when clicking the link you will be able to tell right away whether or not an email came from the website or from another source (as long as your visitors don't mess with the subject that you give them).
- **Subject** - Insert the subject of the email with the information that you provide.
- **Body** - Insert the body of the email with the information that you provide.

Complete email HTML Code:

```
<a href="mailto: companyemailid@gmail.com ?subject=Regarding Something &body=Dear sir,">
Email Us</a>
```

Mailto: The anchor <A> tag can also be used for enabling emailing, which helps visitors to send feedback through your web site. This is all fine as long as the visitor has his email client configured to send emails. However, if this is not the case, his computer will inform to him about it and the email will not be sent till an email client is configured.

Using the mailto value along with an email address in the HREF attribute of the anchor tag will create a link, which when clicked will open the default email client email compose window with already filling to part then subject part and body part with above data.

❖ The Role of Images on the Web – The Img tag & it's all attributes:-

The image tag is used to place an image on the web page. Place image inside the page content is also called as inline image.

The Basics - How it Works

It is very important to understand that images are not technically "part" of the web page file, they are separate files which are inserted into the page when it is viewed by a browser. So a simple web page with one image is actually two files - the HTML file and the image file. The example on the right illustrates this.

In this example the two files are both located in the same folder. The HTML file includes an image tag which refers to *image1.jpg*.

When the HTML file is displayed in a browser, it requests the image file and places it on the page where the tag appears.

HTML and Image File


mysite.com

index.html


image1.jpg

```
<html>
<head>
<title>Picture Page</title>
</head>
<body>
Here's a picture:<br>

</body>
</html>
```



Resulting Page:



Attributes of tag:

1) Src (Source) Attribute:

As you can see, the most important attribute of the image tag is **src**, which means *source* and tells the browser where the image file is.

Ex: ``

2) Size Attributes:

The size attributes define the width and height of the image. They look like this:

``

If your image is present on c drive of your computer then you have to mention c:\ in front of image name in src attribute. These attributes are optional but strongly recommended as to set the size of width and height for image.

You can mention width and height attribute values either in Percentage or in Pixel value such as

In Percentage: ``

In Pixel: ``

3) Alt Attributes

These two attributes are very similar and can be confusing. Basically, it makes sense to treat them as the same thing and use them both.

Alt attribute define a short piece of text which appears instead of the image if the image cannot be displayed (for whatever reason), and as a "tool-tip" when you hold your mouse over the image it appears as text.

Beside image is alt attribute output.



``

If no alt or title tag is specified, the results vary depending on the browser and user settings. Some will show nothing, some will show the file name.



4) Align attribute:

You can use the align attribute to position the image:

```
</img>
```

The following alignment options are available: **left, right, center.**

5) Border attribute:

The border attribute places a border around the image. In the following example a 1-pixel border is applied:

```
</img>
```

If no border attribute is specified, no border is applied, *except* when the image is used as a hyperlink. In this case a 1-pixel border is applied. If you want to make an image into a hyperlink without a border, specify a zero border like so:

```
</img>
```

➤ Image Formats for the Web:

There are four basic formats you will find on the Web. Each denoted to the browser by a different suffix extension.

- ➔ **.jpeg or .jpg:** JPEG stands for **J**oint **P**hotographic **E**xperts **G**roup
- ➔ **.gif:** This is an acronym for **G**raphics **I**nterchange **F**ormat.
- ➔ **.png** Pronounced as 'ping', this stands for **P**ortable **N**etwork **G**raphic.
- ➔ **.bmp** (pronounced "bimp") This is a "bitmap."

❖ Using Images as links:-

It also mentioned that external images that are images whose don't appear inline with other content on a Web page. Instead, they are referenced externally and viewed separately from the page where they are referenced.

- ➔ The main difference between an external image and an **inline image is that an external image isn't displayed automatically. You must click a link to view it.**
- ➔ External images are coded using the <a> tag, which establishes a hyperlink to the image.

- ➔ The idea behind the <a> tag is to enclose content that will serve as a hyperlink to some other Web page or **resource** (refer note below), or in this case an image.
- ➔ To reference an external image, you simply sandwich HTML content between <a> start and end tags, and reference the image using the href attribute. Following is an example:

<p>

Here is a picture of me jumping to open jump.jpg image in browser.

</p>

NOTE:

A *resource* is a general term that describes any piece of Web content, such as an image, audio clip, or another Web page.

Generally it displayed in most Web browsers when the viewer clicks the word and open image in separate window.

Notice that the href attribute is used to specify the URL of the external image, in this case the image filename, a relative path. Following is an example of how you might use a small thumbnail image, SmallJump.jpg, to reference a larger external image in browser after clicking:

```
<a href="LongJump.jpg"></a>
```



SmallJump.jpg

This is Smalljump image working as hyperlink image after clicking this image another image will open named as Longjump.jpg



LongJump.jpg

❖ Tables in HTML:

Table is a two-dimensional matrix consisting of rows and columns. Classification of data we use table.

HTML tables are used for displaying data in rows and columns on webpage. Tables are useful to display data in tabular format. Tables are much more powerful. They do not just format and present textual information but can also contain images, forms, hyperlinks and much more.

❑ **Components of the table:**

- 1) Table Caption:-** this is a title of the table which you want to create. For this use <caption> tag
- 2) Table Row :** this is a row of the table which you want to create. For this use <TR> tag
- 3) Table Heading Cell:-** these are the titles given to a table row/column. They are usually displayed as bold. For this use <TH> tag.
- 4) Table Data Cell:-** this is a section made by a table row and column. A table cell can contain text, image or even another table within it. For this use <TD> tag.
- 5) Table Content:-** The text, image, another table, anything itself within the cell is table data.

❖ Table Tags:

Steps to create table:

- A table created using <TABLE> and </TABLE> tags this is the main tag for creating a table and all other tags are present in between these two tags.
- The other tags will be ignored if they are not placed in <TABLE> and </TABLE>.
- Once table is created, the next step is to define the rows within the table and then cells from left to right then second row and its cells and so on. By default, table has no border.
- To create a empty table row <tr> tag is used. A table row starts with <TR> and ends with </TR>.

➤ **Table row <TR> can have two types of cell tags.**

1) cell heading <TH>-----</TH>:

- Cell heading is used to give heading to the fields or cells.
- Its data by default present in bold and center aligned in table.
- <TH> and </TH> tags are used to do this.

2) cell data <TD>-----</TD>:

- Cell data is used to display the data in the cell.
- Cell data starts with <TD> tag and end of cell data is indicated by </TD>.

❑ General format of a 3x3 table:

```
<HTML>
  <HEAD>
    <TITLE>Table Example</TITLE>
  </HEAD>
<BODY>
  <TABLE table border="1" bordercolor="black" cellpadding="0" cellspacing="0"
width="300px">
    <CAPTION>Student List</CAPTION>
    <TR>
      <TH> Roll No </TH>
      <TH> Name </TH>
      <TH> Class </TH>
    </TR>
    <TR>
      <TD>01</TD>
      <TD>Amit</TD>
      <TD>BCA FY</TD>
    </TR>
    <TR>
      <TD>02</TD>
      <TD>Ganesh</TD>
      <TD>BCA FY</TD>
    </TR>
  </TABLE>
</BODY>
</HTML>
```

Output:

Student List		
Roll No	Name	Class
01	Amit	BCA FY
02	Ganesh	BCA FY

❖ **All Attributes of TABLE tag:-**

1) BORDER:-

Border attribute is used with <TABLE> tag to display lines around rows and columns. BORDER attribute can take value depending upon the thickness of the border that you want, value can start with 0 to increased order (0 value represent no border, 1 thin border, 5 Thick border and so on...).

Ex. <TABLE BORDER="1">

2) BORDERCOLOR:-

The BORDERCOLOR attribute sets color to the border of the table. This attribute takes name of color or the equivalent hexadecimal value.

Ex. <TABLE BORDER="1" BORDERCOLOR="RED">

3) BGCOLOR:-

To change the background of the entire table BGCOLOR attribute is used. BGCOLOR attribute takes the value as name of color or its equivalent hexadecimal value.

Ex. <TABLE BGCOLOR="PINK">

4) ALIGN:-

We can align the table to left, right or center location. By default, tables are displayed at left margin. ALIGN attribute take values as LEFT, RIGHT or CENTER.

Ex. <TABLE ALIGN="CENTER">

Table Cell

Left	Center	Right
------	--------	-------

5) VALIGN (vertical align):-

We can align table cell data vertically in terms of TOP, MIDDLE, and BOTTOM. VALIGN attribute is used with TOP, BOTTOM, MIDDLE values. This attribute is also used with table data <td> and table heading <th>.

Ex- <TABLE VALIGN ="TOP"> Or

<TH VALIGN="TOP"> Or <TD VALIGN="TOP">

Table Cell

Top
Middle
Bottom

Note: We can use both attributes together align and valign.

6) WIDTH:-

WIDTH attribute defines how table appears on the screen with horizontal increment of size. Width can be given a value either absolute width in pixel such as <TABLE WIDTH="300"> or width in percentage value such as <TABLE WIDTH="50%">.

Ex-<TABLE WIDTH="300">

7) HEIGHT:

Height attribute defines how table appears on the screen with vertical increment of size.

Width and Height can be given a value either absolute width in pixel such as <TABLE HEIGHT="200"> or height in percentage value such as <TABLE HEIGHT="20%">.

Ex-<TABLE HEIGHT="20%">

8) CELLPADDING:-

Cellpadding is the value that determines the amount of spaces within each cell border and its content data. It tells the browser that how much space to provide between border and text or data within the cell.

It is placed in the <TABLE> tag with a value defined in pixels.

Ex-<TABLE BORDER="1" cellpadding="5">

9) CELLSPACING:-

Cellspacing is used to create space in between all cells in a table.

Use of cell spacing also effects on spacing of the entire table.

Ex-<TABLE cellspacing="5">

10) COLSPAN:-

- These attributes are used to span **(Expand in space) multiple number of columns.**
- COLSPAN attribute is used with <TH>, <TD> tags.
- COLSPAN attribute is used to create a cell that have size of two or more cells of different columns, that means visitor thought it merges the two or more cells of different columns in a single cell of column.
- COLSPAN increase or span cell in horizontal way.
- COLSPAN attribute takes numeric value i.e. how many cells in a column you want to merge.

11) ROWSPAN:-

- These attributes are used to span **(Expand in space) multiple number of rows.**
- ROWSPAN attribute is used with <TH> and <TD> Tags.
- ROWSPAN attribute is used to create a cell that have size of two or more cells in different row, that means visitor thought it merges the two or more cells of different rows in a single cell of column.
- ROWSPAN increase or span cell in vertical way.
- It takes the numeric value i.e how many cells you want to merge and make a single cell.

Program of Colspan and Rowspan:

```
<html>
<head> <title> Table with Colspan and Rowspan attribute </title> </head>
<body>
<table border="1" bordercolor="black" cellpadding="0" cellspacing="0" width="300px">
<caption> Table with Colspan and Rowspan attribute </caption>
  <tr>
    <th colspan="2"> Colspan DATA </th>
  </tr>

  <tr>
    <td rowspan="2"> Rowspan DATA </td>
    <td> Normal DATA </td>
  </tr>
  <tr>
    <td> Normal DATA </td>
  </tr>
</table>
</body>
</html>
```

Output:

Table with Colspan and Rowspan attribute

Colspan DATA	
Rowspan DATA	Normal DATA
	Normal DATA

Another output Example of Colspan:

Class BSc(CS) FY Student List

Div-A		Div-B	
01	Prakash	01	Suraj
02	Pooja	02	Sumit

Another output Example of Rowspan:

Yearly report

Month	Roll No	Name
Jan	01	Suraj
	02	Pooja
Feb	01	Sumit
	02	Rajesh