HyperText Markup Language(HTML)

Introduction to HTML

HTML is an acronym which stands for Hyper Text Markup Language. **Hypertext Markup Language** is the standard markup language for creating Web pages. **Hyper Text** means "Text within Text". That is HyperText is text which contains links to other texts and sources. HTML describes the structure of Web pages using markup tags. The markup tags tell the web browser how to display the page. **Markup** refers to the sequence of characters or other symbols that is inserted at certain places in a text file to indicate how file should look when it is printed or displayed on a browser. The markup indicators are often called as tags.

A HTML file must have .htm or .html extension. A HTML file can be created using a simple text editor(notepad, notepad++).

History

Tim Berners-Lee is the inventor of the Web. The HTML that Tim invented was strongly based on SGML (Standard Generalized Mark-up Language), an internationally agreed upon method for marking up text into structural units such as paragraphs, headings, list items and so on. SGML could be implemented on any machine. The idea was that the language was independent of the formatter (the browser or other viewing software) which actually displayed the text on the screen. The use of pairs of tags such as <TITLE> and </TITLE> is taken directly from SGML, which does exactly the same. The SGML elements used in Tim's HTML included P(paragraph); H1 through H6 (heading level 1 through heading level 6); OL (ordered lists); UL (unordered lists); LI (list items) and various others. What SGML does not include, of course, are hypertext links: the idea of using the anchor element with the HREF attribute was purely Tim's invention, as was the now-famous `www.name.name' format for addressing machines on the Web.

Basing HTML on SGML was a brilliant idea: other people would have invented their own language from scratch but this might have been much less reliable, as well as less acceptable to the rest of the Internet community. Certainly the simplicity of HTML, and the use of the anchor element A for creating hypertext links, was what made Tim's invention so useful.

Features

HTML is a standardized system for tagging text files to achieve font, colour, graphic, and hyperlink effects on World Wide Web pages. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts in languages such as JavaScript which affect the behavior of HTML webpages. Web browsers can also refer to

Cascading Style Sheets (CSS) to define the appearance and layout of text and other material. Web browsers receive HTML documents from a web server or from local storage and render them into multimedia web pages.

Advantages and Disadvantages of HTML

Advantages

- HTML is widely used to create webpages.
- Almost all browser supports HTML.
- It is easy to learn and use.
- No need to have additional software for execution.

Disadvantages

- It can create only static webpages.
- Need to write lengthy code for making simple webpage.
- Security features are minimal.

HTML Documents

HTML documents are text files made up of HTML elements. HTML elements are the building blocks of HTML pages. The HTML elements are defined using HTML tags.

HTML Tags

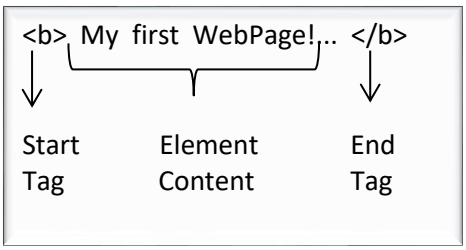
- HTML tags are used to mark-up HTML elements.
- HTML tags are surrounded by two characters '<' and '>'.
- The surrounding characters are called Angle brackets.
- HTML tags normally come in pairs like and .
- The first tag in a pair is the start tag and the second tag is the end tag.
- The text between the start and the end tag is the Element content.
- HTML tags are not case-sensitive, means the same as <B>.

HTML Document

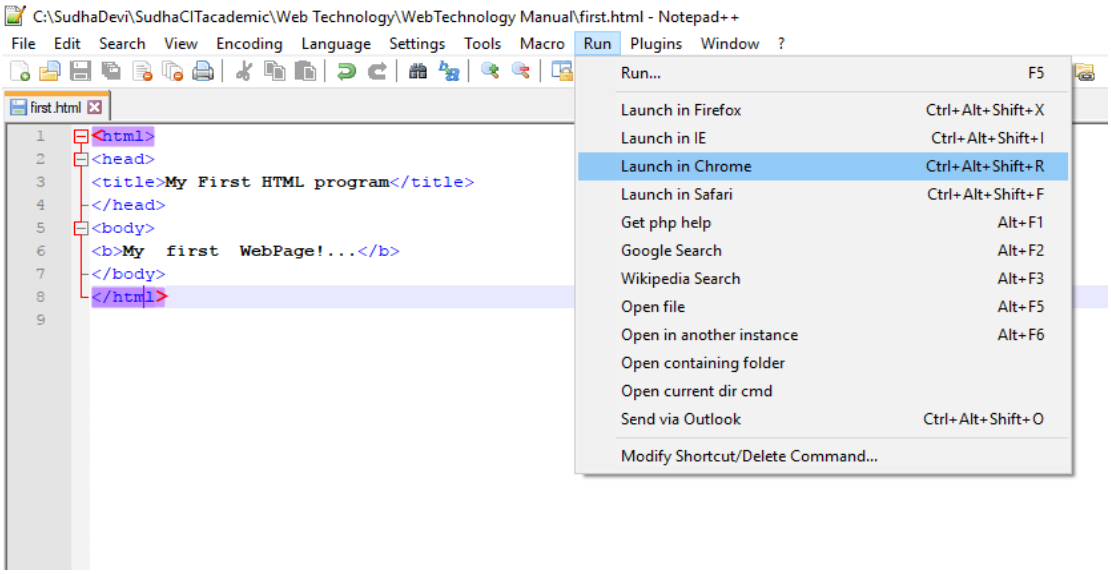
HTML document – Example

File name – first.html

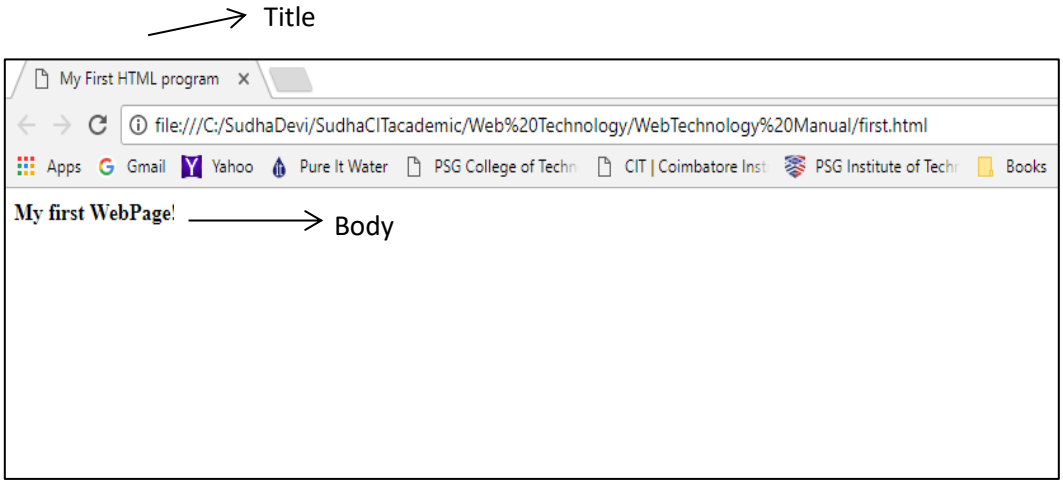
```
<html>
<head>
<title>My First HTML program</title>
</head>
<body>
<b>My  first  WebPage!...</b>
</body>
</html>
```



HTML code in Notepad++



OUTPUT



Tag Attributes

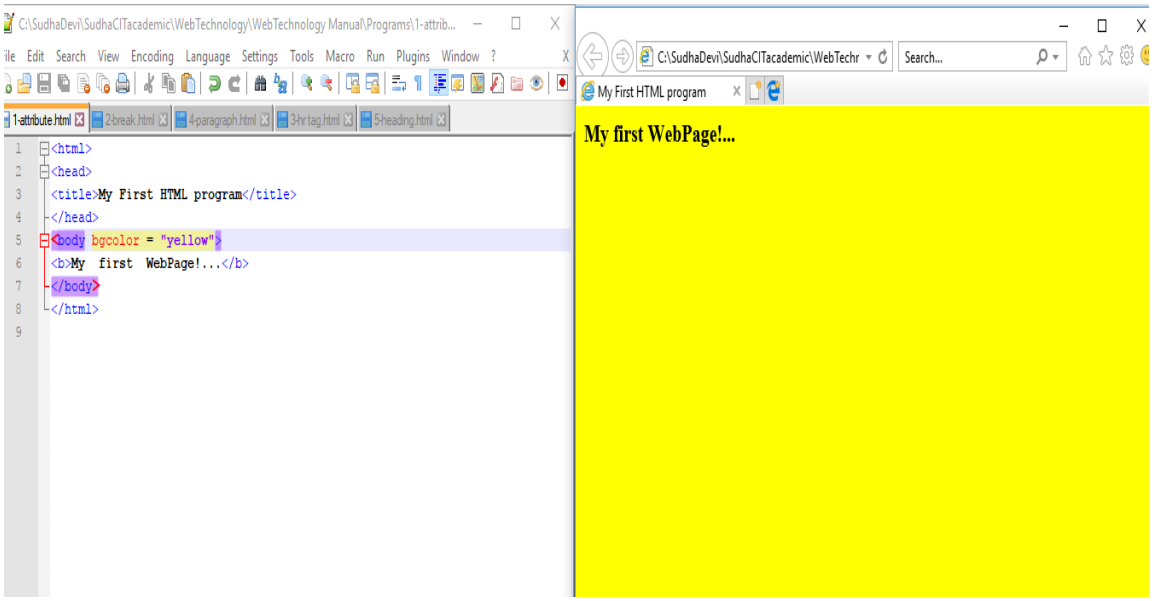
Tags can have attributes(properties). Attributes provide additional information about the HTML elements on the page.

For example, the tag <body> defines the body element of the HTML page.

<body bgcolor = “yellow”>

where bgcolor is an attribute of body tag.

It tells the browser that the background colour of the page should be red. Attributes always come in name/value pairs like this: name = “value”. Attributes are always added to the start tag of an HTML element.



HTML Character Entities

In HTML some characters like, for e.g. the '<' character have a special meaning in HTMl (i.e. used as an opening ancular bracket for tags) and therefore cannot be used in the text. If the browser has to actually display these characters, then the character entities must be inserted in the HTML source code.

A character entity has 3 parts:

1. an ampersand (&)
2. an entity name or a '#' and an entity number
3. a semicolon (;)

Some character entities:

To display	Description	Entity name	Entity number
<	Less than	<	<
>	Greater than	>	>
&	Ampersand	&	&
"	Quotation	"	"

Container tags and Empty tags:

In HTML, for some tags, for e.g. the title tag comes in pair; an opening tag and a closing tag. Such types of tags are called as container tags. E.g., <html>, <p>, etc,.

All other tags that do not require a closing tag are called as empty tags. E.g., <ht>, <br>, etc,.

List of HTML tags

1. **HTML Document**

   <html> tag

   The <html> tags identify the document as an HTML document. The HTML document starts with <html> and ends with </html>. The <html> tag is the container for all other HTML elements. The document text and formatting codes for the web page are written within these two tags.

2. **Head section of HTML Document**

   2.1 <head> tag

   The <head> tag contains information about the document, including its title, scripts used, style definitions and document descriptions (to find additional information about the document). The <head> tag contains metadata and instructions for the browser that is not directly visible on the web page.

   2.2 <title> tag

   The <title> tag contains the document title. The title does not appear within the browser window, but is usually visible in the browser's title bar. It is used as the Bookmark name when adding a web page to the Favorites.

   2.3 <meta> tag

   The <meta> tag contains information or metadata that is not directly visible on the web page, but is used by browsers and search engines.

   2.4 <script> tag

   The <script> tag is used to embed or reference a client-side script such as JavaScript.

   Example:

```
<html>
<head>
<title>Example</title>
<meta name="keywords" content="html, meta, tag, element">
<script type="text/javascript">
    ...
</script>
</head>
<body>
   ...
</body>
</html>
```

3. <body> tag

The <body> tag defines the main content of the HTML document or the section of the HTML document that will be directly visible on your web page. The <body> tag encloses all the tags, attributes and information that have to be displayed in the browser.

Attributes	Description
bgcolor = “yellow”	Background colour of the document
text = “black”	Sets the colour for all text within the document
alink = “blue”	Sets the colour for active links, which are the links at the time the visitor clicks on them
vlink = “purple”	Sets the colour for links the visitor has recently followed with a colour name
link = “green”	Sets the colour for unvisited links with a colour name

Example:

<body bgcolor="cyan" text="black" link="blue" vlink="purple" alink="red" background="background.jpg">

4. Comment tag

To include comments in the HTML document, the comment tag is used. It is used to enhance the programmer’s understanding and nothing will be displayed in the browser. The comment tag is : <!-- Sample -->.

For e.g., <!—This can be viewed in the HTML part of the document only -->

5. Break tag

Break tag (<br>) is a non-paired tag. It is used to break the paragraph lines into several shorter lines with no space between them.

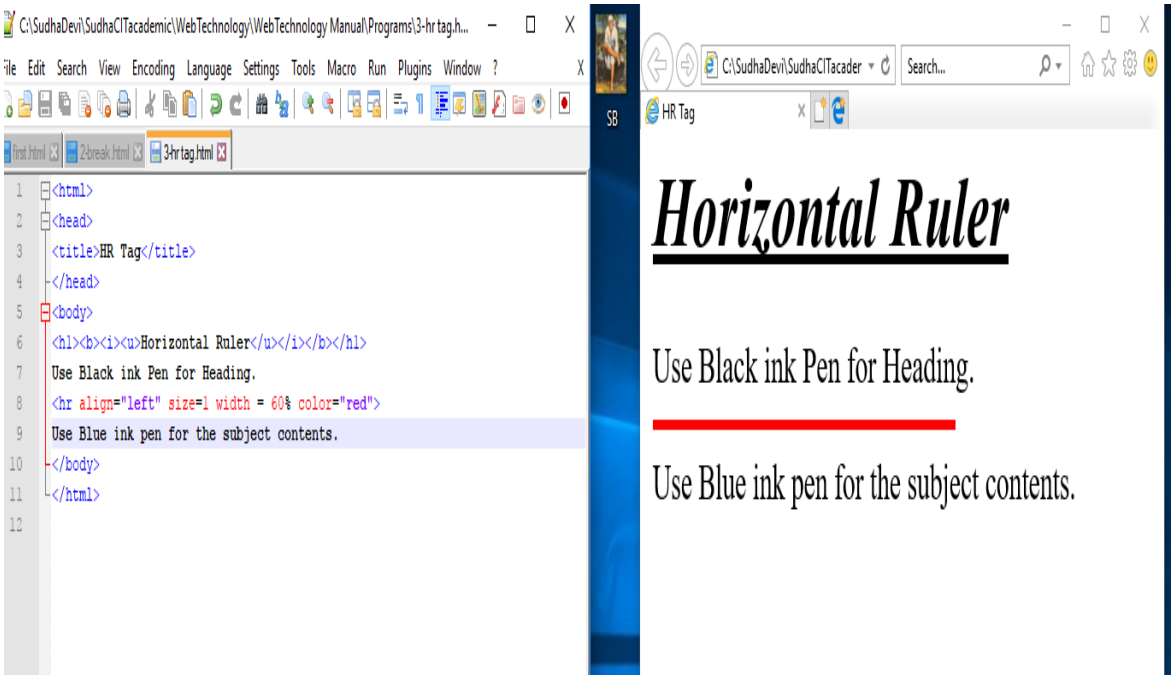
Example:

```
<html>
<head>
<title>Break Tag</title></head>
<body>
<!—This code says about break tag →
<h1><b><u><i>Break
Tag</i></u></b></h1>
This is a Pen.<br> This is a Pencil.
</body></html>
```

6. Horizontal Ruler Line

Horizontal rules are lines that break up long sections of text or it helps in improving the overall document design. Long passages of text should often be broken into sections with headings and optionally, horizontal rules. <hr> tag is a non-paired tag.

Attributes	Description
size = “n”	Specifies rule height
width = “n”	Specifies rule width (length)
align = “left/center/right”	Aligning ruler to left/center/right
Noshade	Rule has no shading
color=”red”	Ruler colour



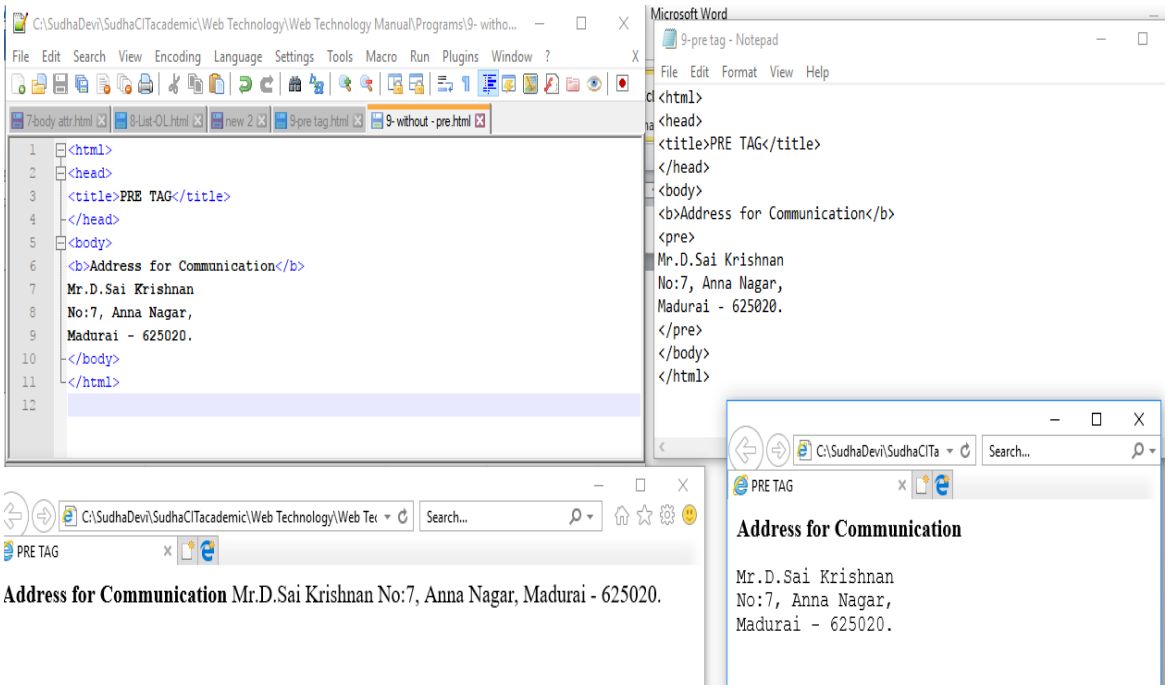
7. Center Tag

The tag is used to align the contents to center.

8. Preserve formatting Tag

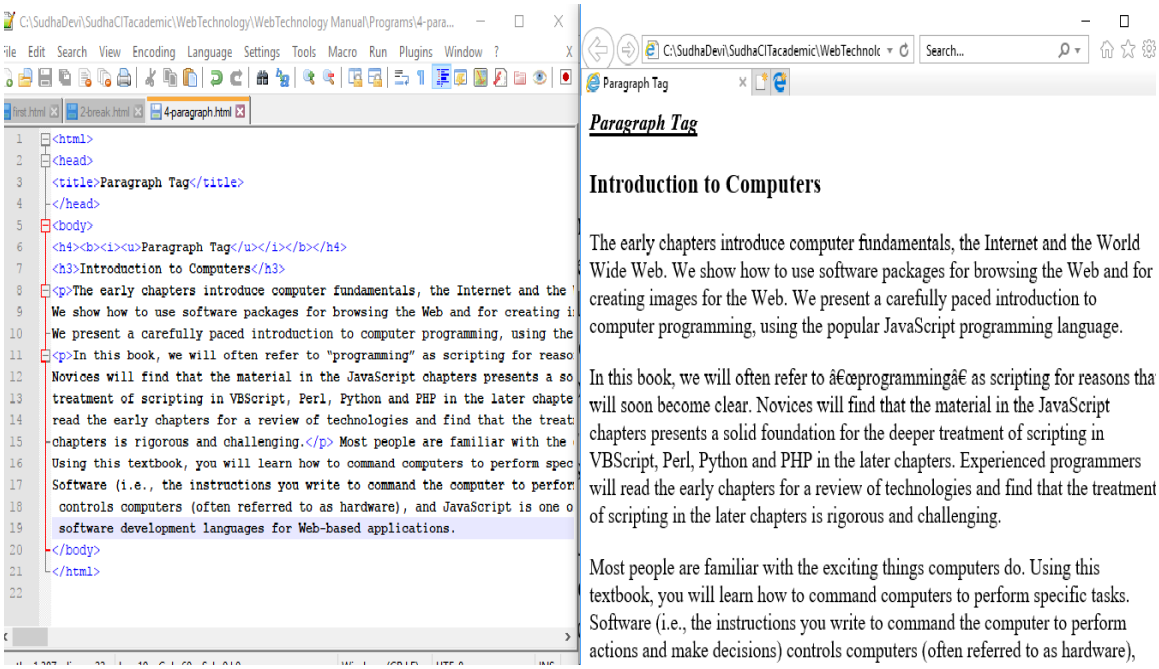
The <pre> tag is effective for formatting program code. Usually the contents inside the <pre> tag appears in a fixed width font with ample space between words and lines (The

<pre> tag defines preformatted text preserving both whitespace and line breaks in the HTML document).



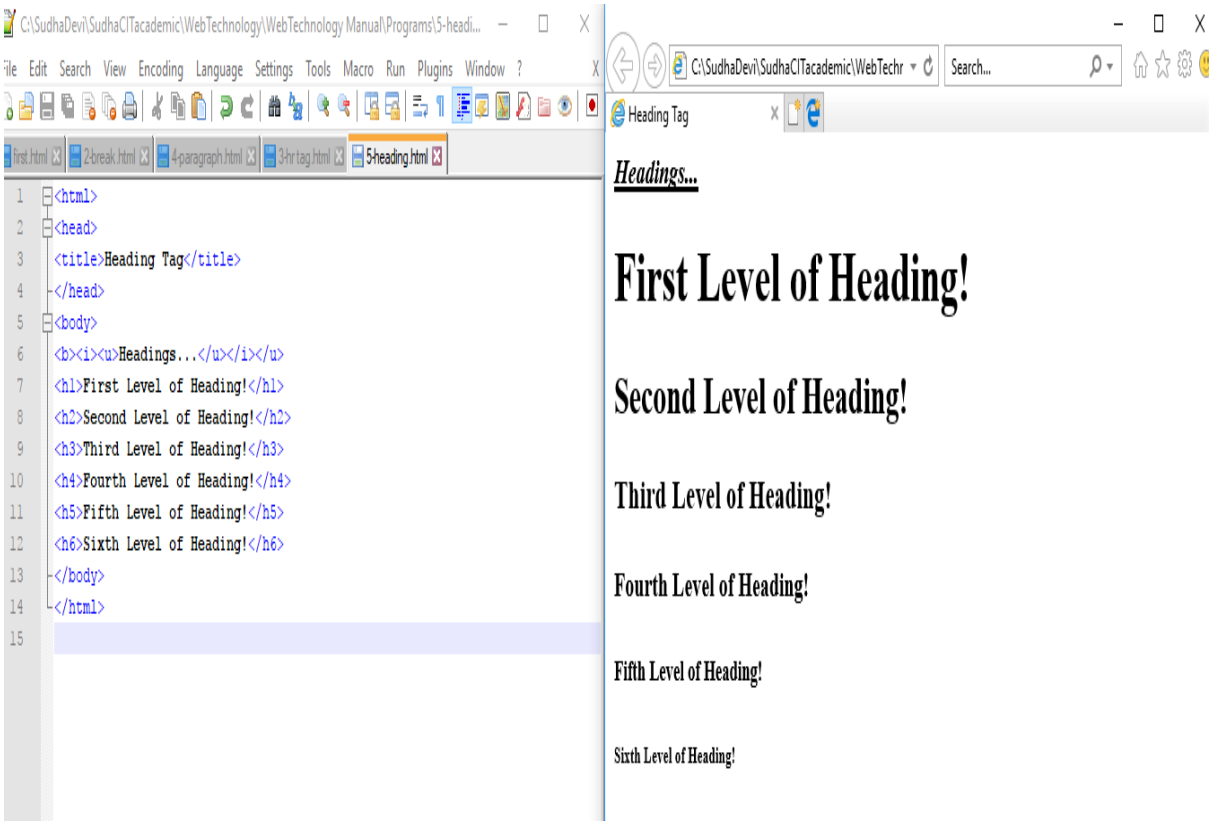
9. Paragraph Tag

The paragraph tag <p> is used to start a new paragraph. The value left/center/right is given for the attribute align.



10. Heading Tag

Headings break up large areas of text, announce topics to follow, and arrange information according to a logical hierarchy. HTML provides six levels of headings: <h1>, <h2>, <h3>, <h4>, <h5> and <h6>. <h1> is the largest of the headings and <h6> is the smallest. The attribute align takes the value left/center/right.



11. Nonbreaking spaces

If the client browser needs to break text, then a nonbreaking space entity ** ** must be used instead of a normal space.

12. Marquee Tag

An HTML marquee is a scrolling piece of text displayed either horizontally across or vertically down the webpage depending on the settings. This is created by using HTML <marquee> tag.

```
<body>
    <marquee width = "50%">This example will take only 50% width</marquee>
 </body>
```

Attribute	Description
width	This specifies the width of the marquee. This can be a value like 10 or 20% etc.
height	This specifies the height of the marquee. This can be a value like 10 or 20% etc.
direction	This specifies the direction in which marquee should scroll. This can be a value like up, down, left or right.
behavior	This specifies the type of scrolling of the marquee. This can have a value like scroll, slide and alternate.
scrolldelay	This specifies how long to delay between each jump. This will have a value like 10 etc.
scrollamount	This specifies the speed of marquee text. This can have a value like 10 etc.
loop	This specifies how many times to loop. The default value is INFINITE, which means that the marquee loops endlessly.
bgcolor	This specifies background color in terms of color name or color hex value.
hspace	This specifies horizontal space around the marquee. This can be a value like 10 or 20% etc.
vspace	This specifies vertical space around the marquee. This can be a value like 10 or 20% etc.

13. Embed Tag

Sometimes it is required to add music or video into the web page. The way to add video or sound to the web site is to include the tag called **<embed>**. We can also include a **<noembed>** tag for the browsers which don't recognize the <embed> tag. We could, for example, use <embed> to display a movie of our choice, and **<noembed>** to display a single JPG image if browser does not support <embed> tag.

14. Image Tag

The HTML <img> tag is used to put an image in an HTML document.

Attribute	Description
Align	Specifies the alignment for the image. It takes value as top/bottom/center/left/right.
alt	Specifies alternate text to be displayed.

border	Specifies the width of the image border.
height	Specifies the height of the image.
hspace	Amount of white space to be inserted to the left and right of the object.
ismap	Defines the image as a server-side image map.
longdesc	Specifies a URI/URL of a long description - this can elaborate on a shorter description specified with the alt attribute.
src	the url of an image
usemap	Defines the image as a client-side image map and used alongwith <map> and <area> tags. It takes value #mapname
vspace	Deprecated − Amount of white space to be inserted to the top and bottom of the object.
width	Sets the width of an image in pixels or in %.

Example:

```
<body>
    <img src = “C:\...\Web Technology Manual\Pictures\sky.jpg”
                        alt = "HTML Tutorial" height = "150" width = "140">
  </body>
```

15. Character tags/Formatting tags

A tag that is applied to an individual character is known as a character tag. These tags are used to style the text in different ways.

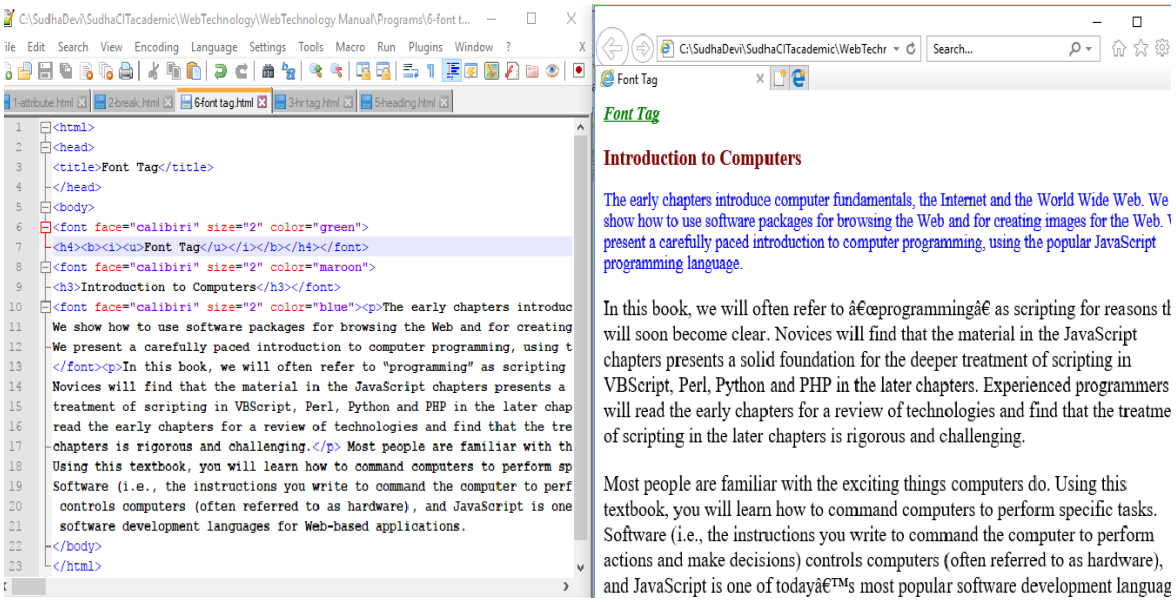
Tag	**Description**	**Renders as**
<b>	bold	displays text as bold
<i>	italics	displays text as italic
<u>	underline	underlines the text
<big>	big	displays text in a big font
	strong	displays text as bold; applies stronger

		emphasis
<small>	small	displays text in a small font
<del>	deleted text	displays text with a line through it; renders differently in Netscape and Internet Explorer
	emphasis	emphasizes the text in some way usually as italic.
<s> or <strike>	strike	displays text with a line through it
<sub>	subscript	displays the text as subscript — text that displays below the baseline of the text
<sup>	superscript	displays the text as superscript — text that has baseline above the baseline of the rest of the text
<tt>	teletype	displays the text with fixed-width font
<cite>	citation	emphasizes the text in italics.
<code>	code sample	displays some characters as code usually in Courier font (i.e., fixed-width font)
<dfn>	definition	italics; renders differently in Netscape and Internet Explorer
<ins>	inserted text	underlined; renders differently in Netscape and Internet Explorer
<samp>	code sample	fixed-width font
	strong	text is emphasized more strongly than usually as bold.
<var>	program variable	italics
<kbd>	keyboard	defines a keyboard input
<abbr>	abbreviation	defines an abbreviation or acronym
<acronym>	acronym	defines an acronym
<address>	address	defines contact information for the author/owner of a document/article
<blockquote>	block quote	defines a section that is quoted from another source

16. Font Tag

The <font> tag is used to specify the font characteristics for the document, including colour, size, typeface etc.

Attributes	Description
size = “n”	Specifies font size using a scale of 1 through 7. 3 is the default size. We can also specify the relative size by using + or – (size=”+2”)
color=”red”	Specifies font colour in #RRGGBB numbers or with colour names
Face=”arial”	Specifies typefaces as a list of possible typefaces, in order of preference, separated by commas (face=”verdana, arial, times new roman”)



17. Lists

Lists are used to provide information in a structured, easy-to-read format.

1. Unordered List (Bulleted List)
2. Ordered List (Numbered List)
3. Definition List (Description List)

List Tags

<ul> Specifies that the information should appear as an unordered list

<ol> Specifies that the information should appear as an ordered list

<dl> Specifies that the information should appear as a definition list

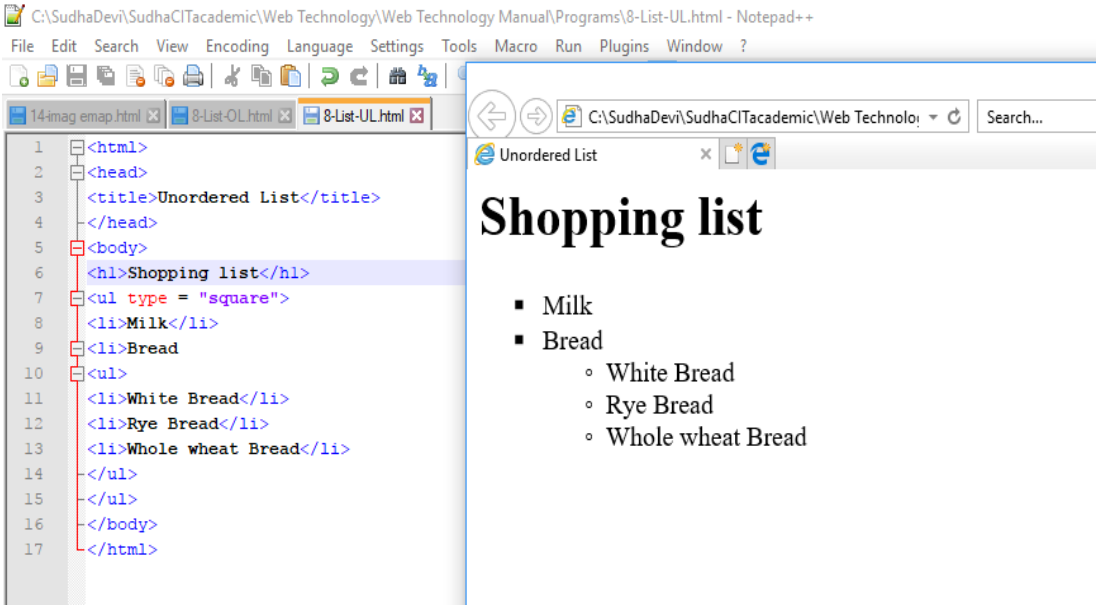
<li> Specifies a line item in either ordered or unordered list

Unordered List

The <ul> tag defines an unordered list in the HTML document.

Attribute

type = “square / circle / fill round”



Ordered List

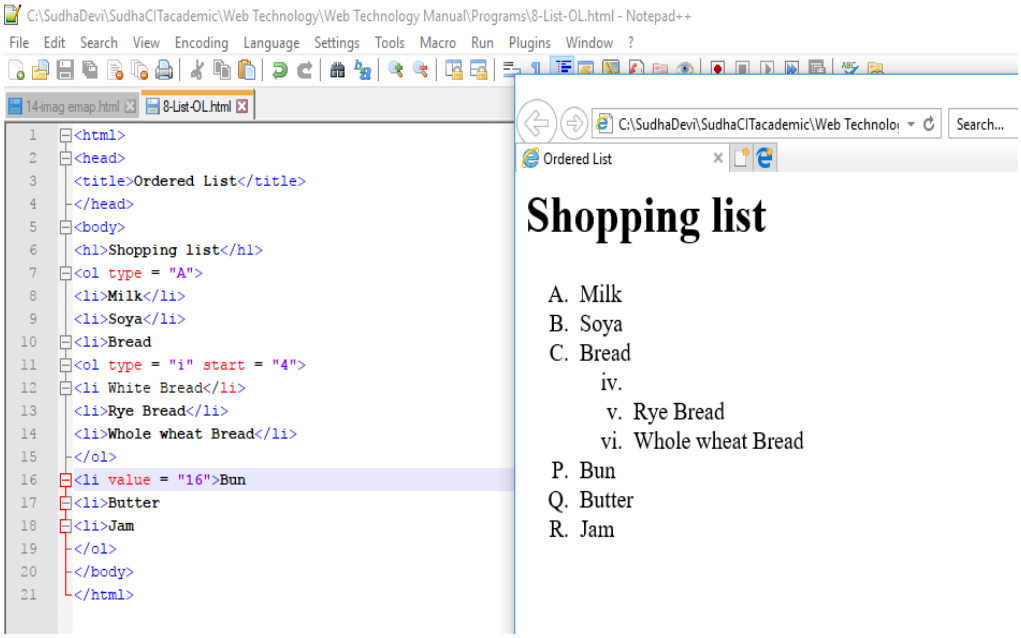
The <ol> tag defines an ordered list in the HTML document.

Attribute

type =”A / a / i / I / 1”

start = number

value = intermediate value - can change the specific numbers within the list

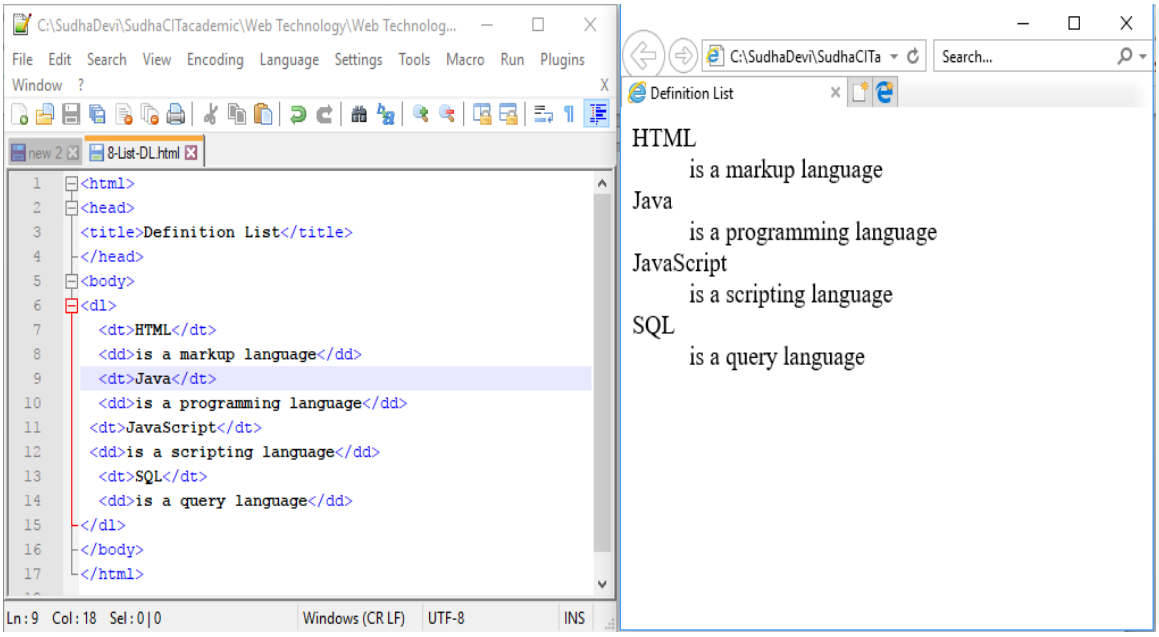


Definition List (Description List)

It is a list of terms and explanation. It is used to provide glossary-type information. That is, Definition List displays elements in definition form like in a dictionary.

The 3 definition list tags are given below:

1. **<dl> tag** specifies that the information should appear as a definition list.
2. **<dt> tag** defines definition term.
3. **<dd> tag** defines definition description.



18. Hyper Links

Hyperlinks allow visitors to navigate between Web sites by clicking on words, phrases, and images. The anchor tag, <a> defines a hyperlink to a URL or a target within the HTML document. When a page is shown, some of its words may need further explanation. Such words are called “hot text” and they appear in different colour. When the cursor is moved to the hot text, a hand symbol appears. When it is clicked another HTML file will be opened and that will have the required explanation. A hot text is created with an anchor tag <a>.

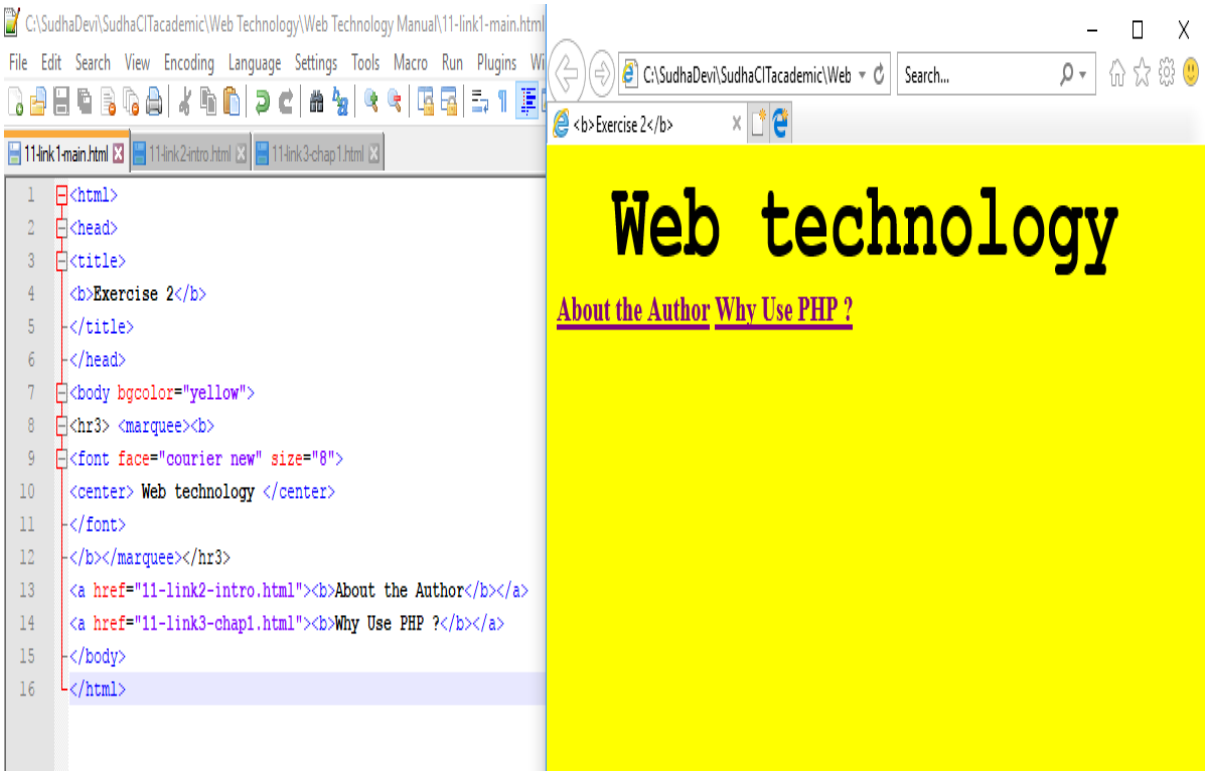
Example:

```
<html>
<body>
<a href="filename.html">Hyperlink text to display on screen</a>
</body>
</html>
```

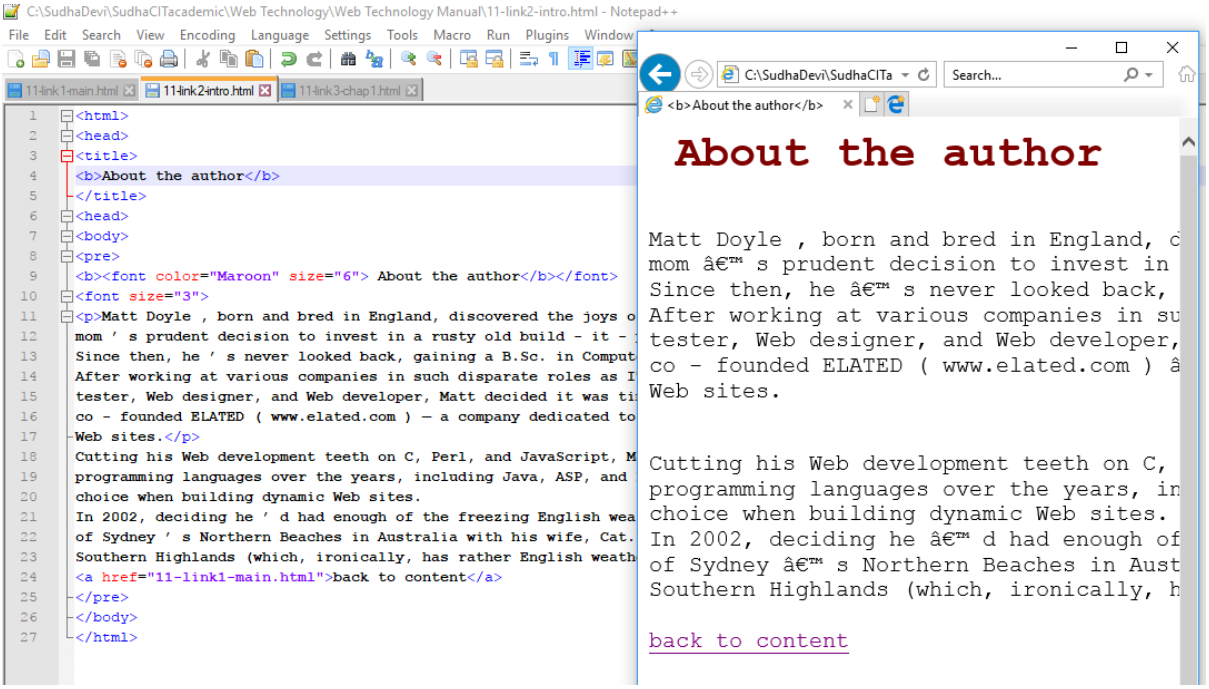
Using Hyperlink it is possible to either link to the other part of the same document or to another new file.

Example : Linking to another file

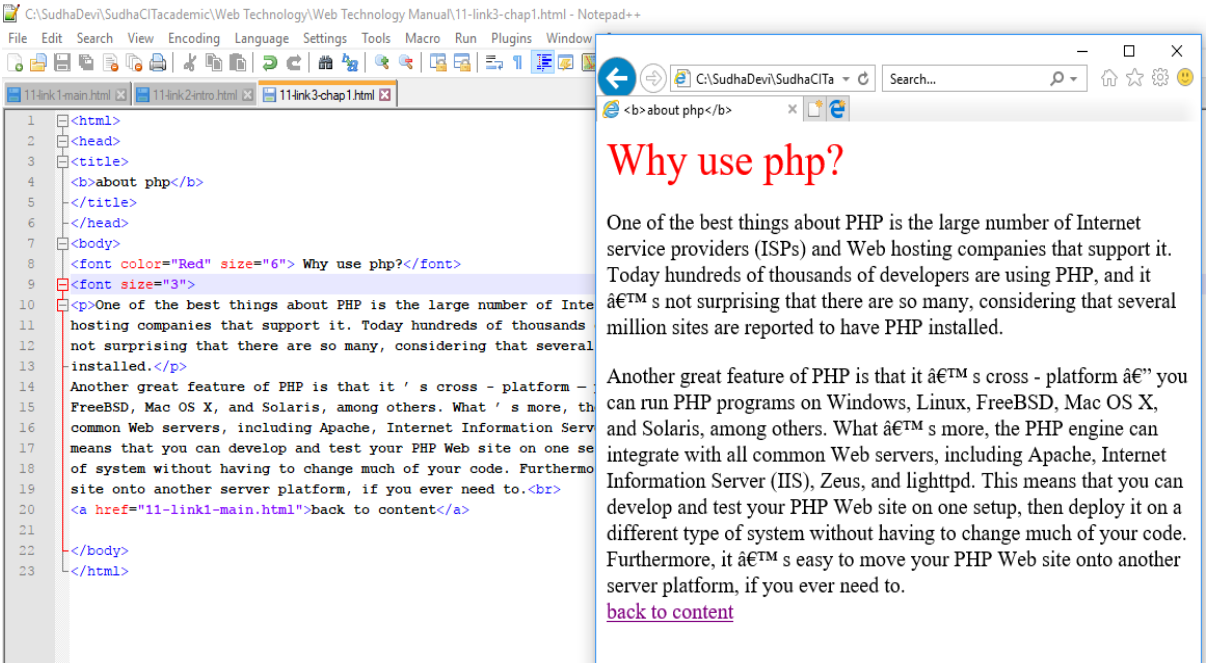
File – 11-link1-main.html



File – 11-link2-intro.html

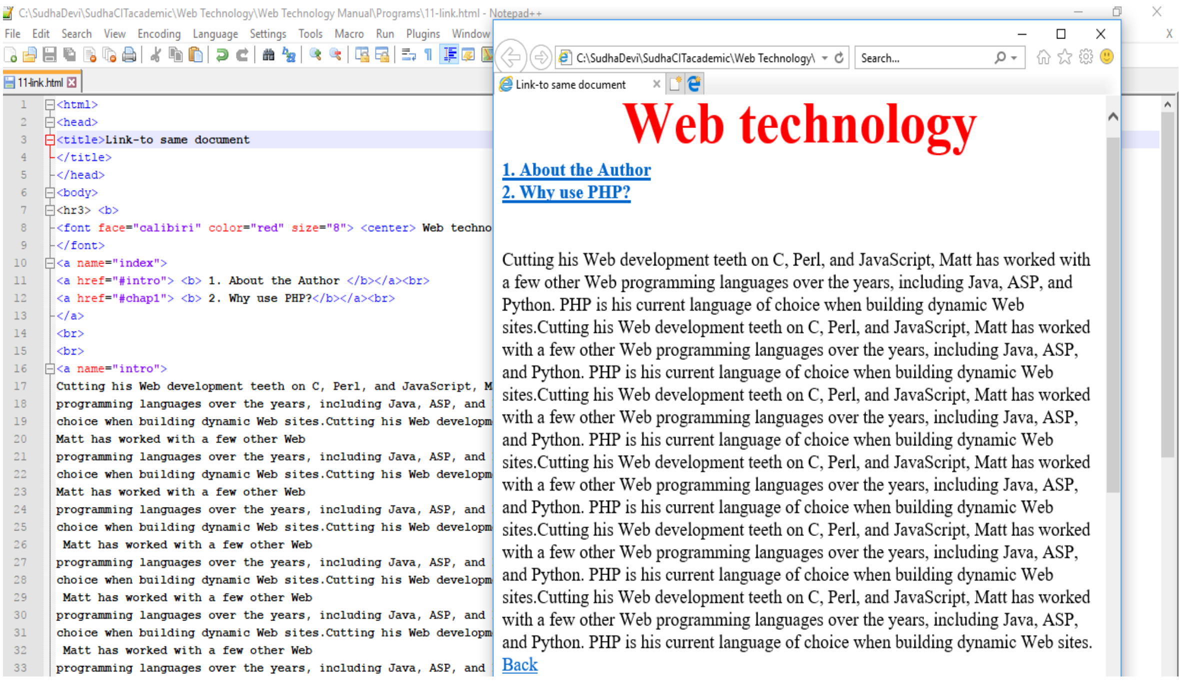


File – 11-link3-chap1.html



Example: Linking to another part of the same document

```
<html>
<head>
<title>Link-to same document</title></head>
<body>
<hr3> <b>
<font face="calibiri" color="red" size="8"> <center> Web technology </center>
</b></hr3></font>
<a name="index">
    <a href="#intro"> <b> 1. About the Author </b></a><br>
    <a href="#chap1"> <b> 2. Why use PHP?</b></a><br>
</a><br><br>
<a name="intro">
    Cutting his Web development teeth on C, Perl, and JavaScript, Matt has worked with
    a few other Web programming languages over the years, including Java, ASP, and
    Python....
</a>
<a href="#index"> Back </a><br>
<a name="chap1">
    you can develop and test your PHP Web site on one setup, then deploy it on a
    different type of system without having to change much of your code....
</a>
<a href="#index"> Back </a>
</body></html>
```

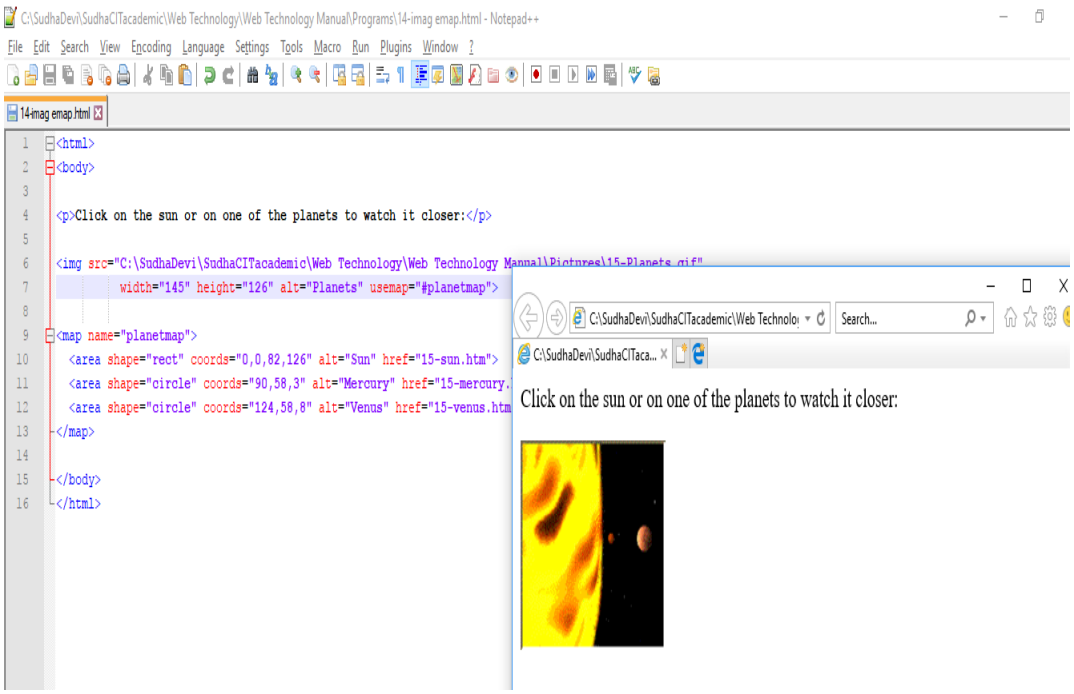


19. Image map

The <map> tag is used to define a client-side image-map. An image-map is an image with clickable areas. The required name attribute of the <map> element is associated with the <img>'s usemap attribute and creates a relationship between the image and the map. The <map> element contains a number of <area> elements, that defines the clickable areas in the image map.

Example:

```
<html>
<body>
<p>Click on the sun or on one of the planets to watch it closer:</p>
<img src="C:\...\Web Technology Manual\Pictures\15-Planets.gif"
            width="145" height="126" alt="Planets" usemap="#planetmap">
<map name="planetmap">
  <area shape="rect" coords="0,0,82,126" alt="Sun" href="15-sun.htm">
  <area shape="circle" coords="90,58,3" alt="Mercury" href="15-mercury.htm">
  <area shape="circle" coords="124,58,8" alt="Venus" href="15-venus.htm">
</map>
</body>
</html>
```



20. Tables

Tables are very efficient means of displaying information in a concise and precise form. Instead of writing several pages of explanation, a table can effectively give all necessary information.

Components of a Table

- Table Caption
- Table header row
- Table – Rows and Columns

Tables are defined with the <table> tag. Headings in a table are defined with the <th> tag. It defines a header cell that can appear in the first row of an HTML table. A table is divided into rows with the <tr> tag. Each row is divided into data cells with the <td> tag. The <td> "table data" is the content of a data cell. A data cell can contain text, images, lists, paragraphs, etc,. The <caption> tag defines the title of a table in the HTML document.

Following is the list of tags associated with HTML table:

Tag	**Description**
<table>	It defines a table
<tr>	It defines a row in a table
<th>	It defines a header cell in a table
<td>	It defines a cell in a table
<caption>	It defines the table caption
<colgroup>	It specifies a group of one or more columns in a table for formatting
<col>	It is used with <colgroup> element to specify column properties for each column
<tbody>	It is used to group the body content in a table
<thead>	It is used to group the header content in a table
<tfooter>	It is used to group the footer content in a table

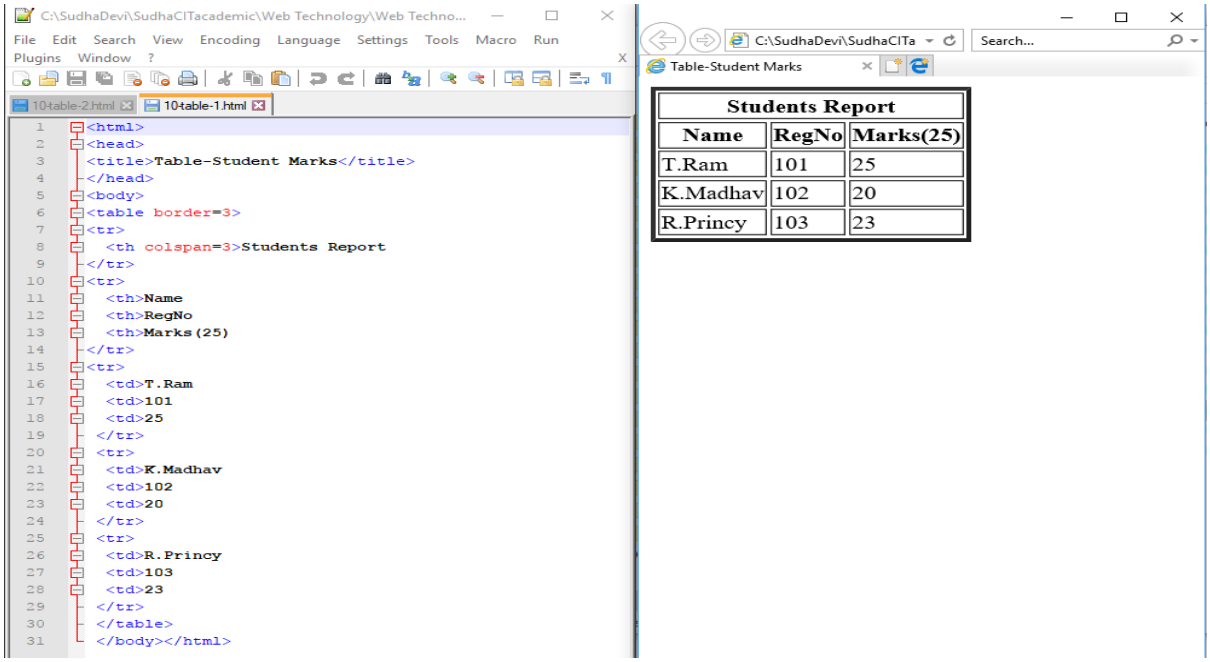
Attributes of <table> tag	Description
align	Alignment of the table. Can be one of the following values: left, center, right
valign	Alignment of the table. Can be one of the following values: top, bottom, center
width	Width of the table
border	Size of the frame surrounding table
cell padding	Space between the content of a cell and the border
cell spacing	Size of the space between cells
bgcolor	Background color of the table
background	Background design
frame	Side of the table frame is displayed. Can be one of the following values: above, hsides, lhs, border, void, below, vsides, rhs, box
rules	Lines that should be displayed. Can be one of the following values: none, groups, rows, columns, all
summary	Alternative text displayed when table cannot be displayed

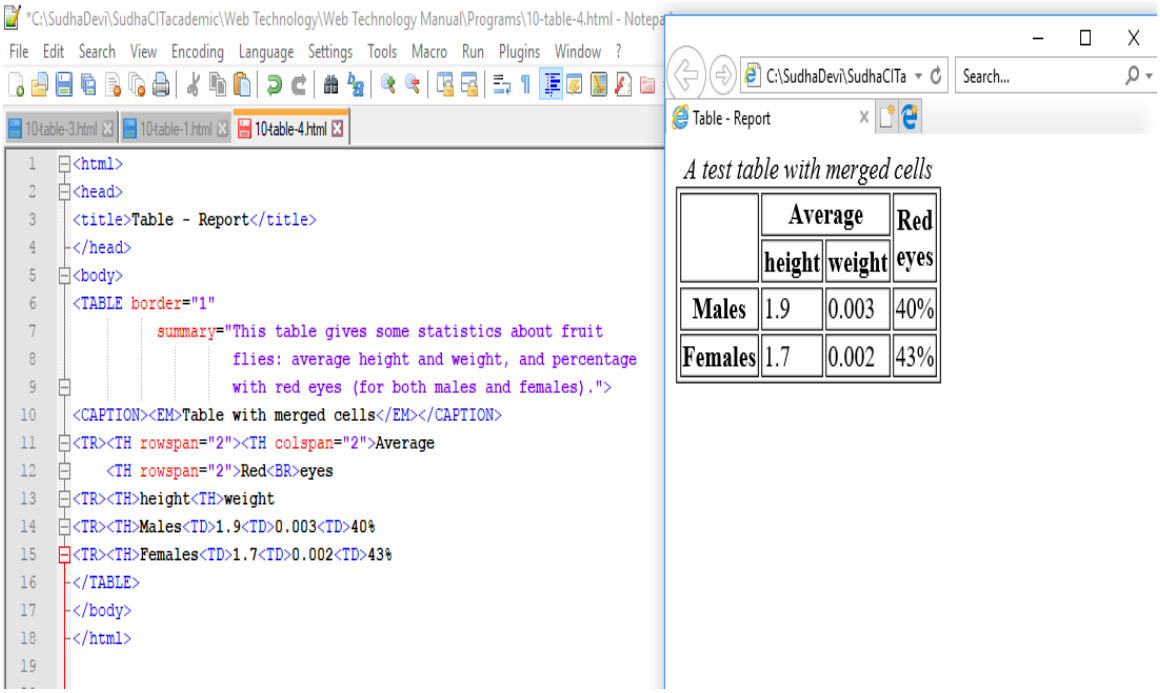
Attributes of <th> tag	Description
bgcolor	Background color of cell
colspan	Number of columns the cell extends (Default is 1, max value is 1000)
rowspan	Number of rows that the cell extends (Default is 1, max value is 65534)
valign	Vertical alignment of text. Can be one of the following values: baseline, bottom, middle, top

Attributes of <tr> tag	Description
align	Horizontal alignment of text in each cell within the row. Can be one of the following values: left, center, right, justify, char
bgcolor	Background color of each cell within a row
valign	Vertical alignment of text of each cell within a row. Can be one of the following values: baseline, bottom, middle, top

Attributes of <td> tag	Description
Align	Horizontal alignment of text. Can be one of the following values: left, center, right, justify, char
bgcolor	Background color of cell
colspan	Number of columns the cell extends (Default is 1, max value is 1000)
rowspan	Number of rows that the cell extends (Default is 1, max value is 65534)
valign	Vertical alignment of text. Can be one of the following values: baseline, bottom, middle, top

Example:

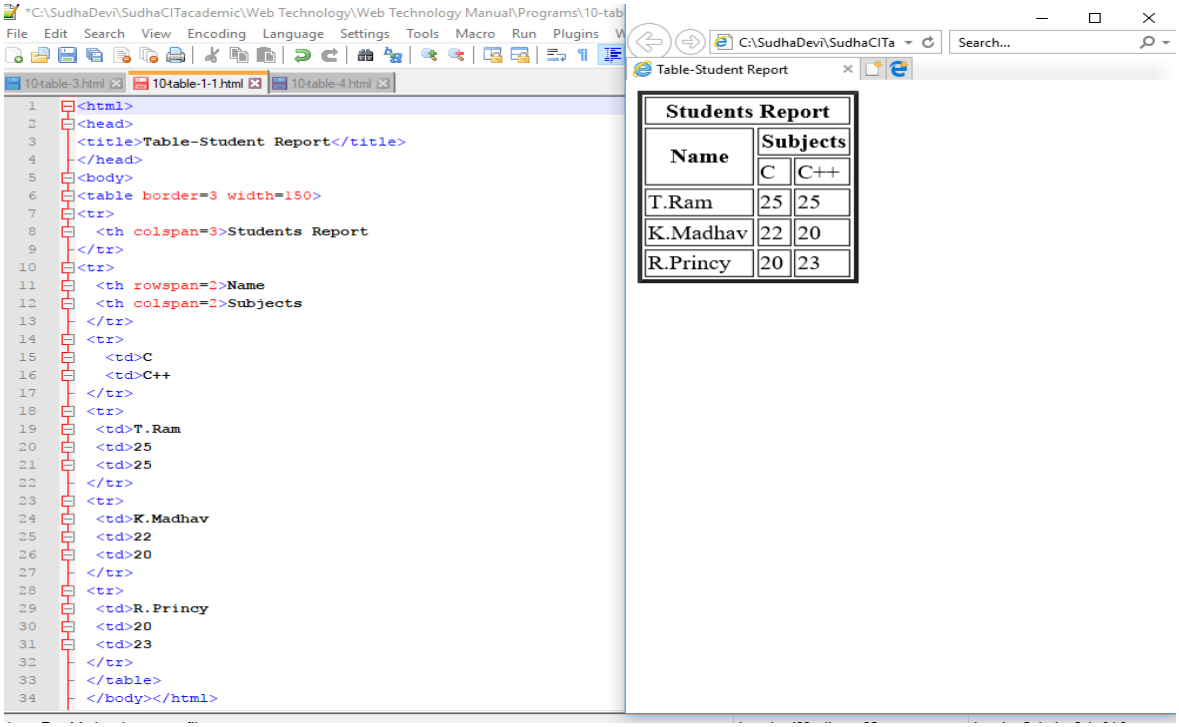




```
<html>
<head>
<title>Table - Report</title>
</head>
<body>
<TABLE border="1"
          summary="This table gives some statistics about fruit
                   flies: average height and weight, and percentage
                   with red eyes (for both males and females).">
<CAPTION><EM>Table with merged cells</EM></CAPTION>
<TR><TH rowspan="2"><TH colspan="2">Average
    <TH rowspan="2">Red<BR>eyes
<TR><TH>height<TH>weight
<TR><TH>Males<TD>1.9<TD>0.003<TD>40%
<TR><TH>Females<TD>1.7<TD>0.002<TD>43%
</TABLE>
</body>
</html>
```

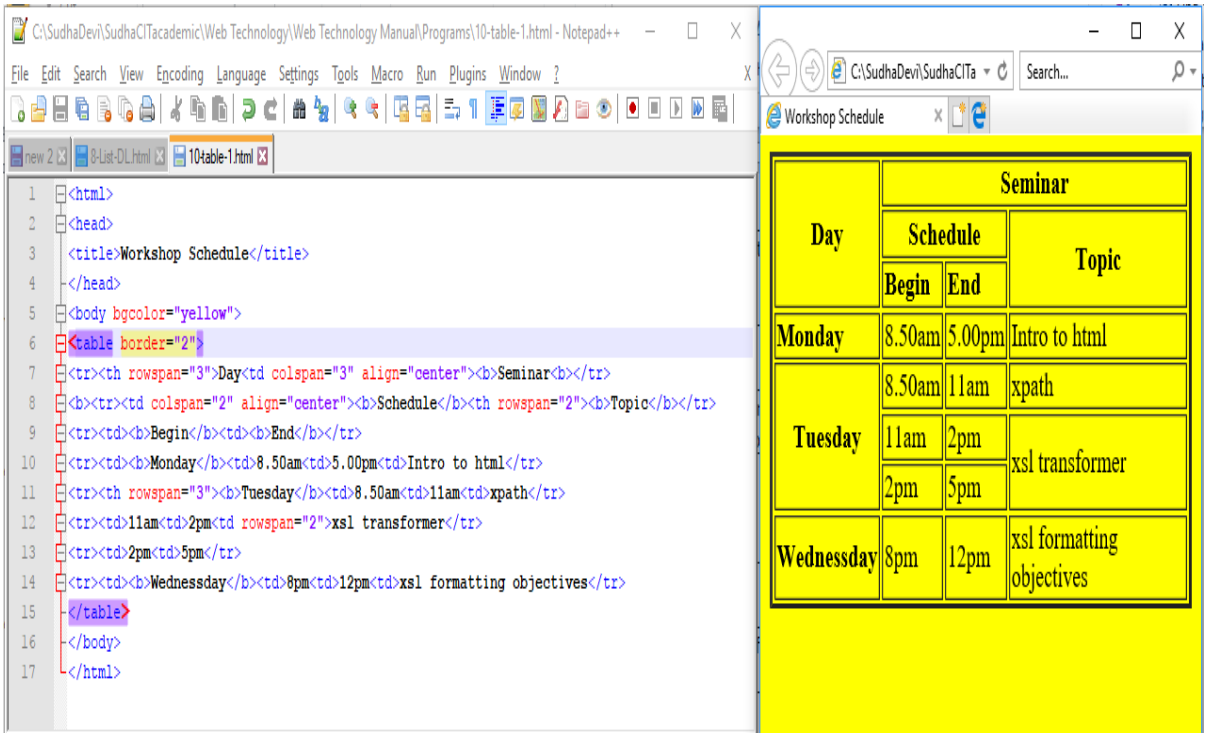
A test table with merged cells

	Average		Red eyes
	height	weight	
Males	1.9	0.003	40%
Females	1.7	0.002	43%



```
<html>
<head>
<title>Table-Student Report</title>
</head>
<body>
<table border=3 width=150>
<tr>
  <th colspan=3>Students Report
</tr>
<tr>
  <th rowspan=2>Name
  <th colspan=2>Subjects
 </tr>
 <tr>
   <td>C
   <td>C++
 </tr>
 <tr>
  <td>T.Ram
  <td>25
  <td>25
 </tr>
 <tr>
  <td>K.Madhav
  <td>22
  <td>20
 </tr>
 <tr>
  <td>R.Princy
  <td>20
  <td>23
 </tr>
 </table>
 </body></html>
```

Students Report		
Name	Subjects	
	C	C++
T.Ram	25	25
K.Madhav	22	20
R.Princy	20	23



Advanced Table enhancements

- Grouping and Aligning Columns
- Grouping and Aligning Rows

Grouping and aligning columns

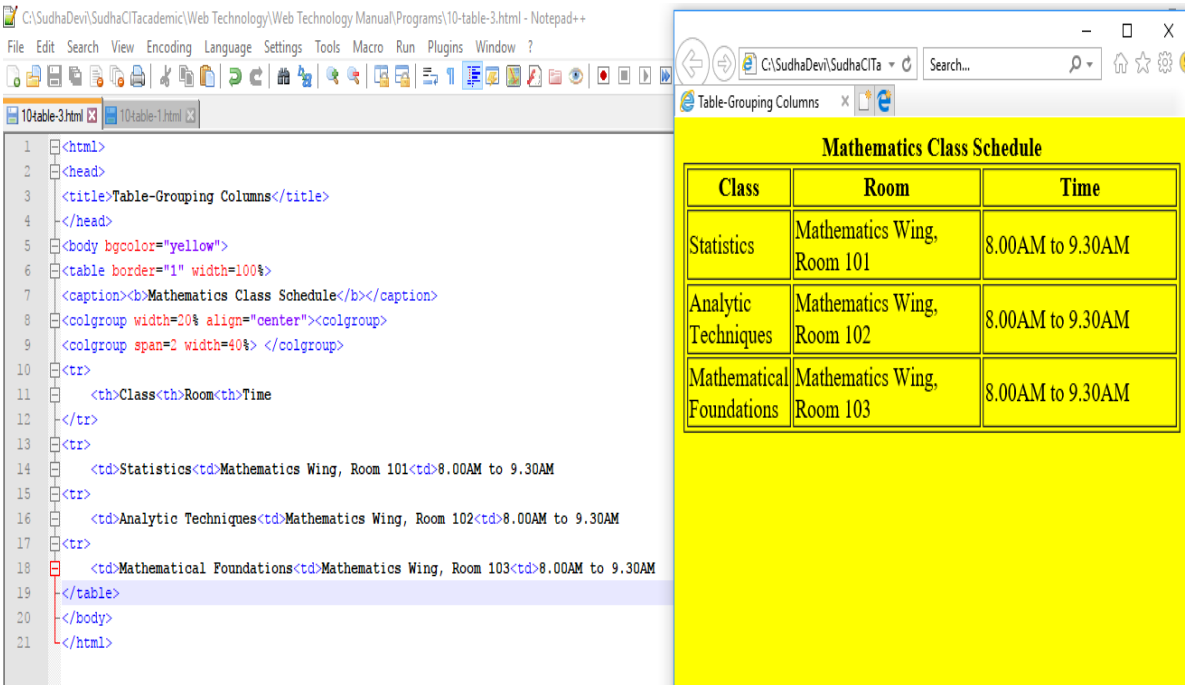
Column groups allow user to create structural divisions within a table. The <colgroup> tag specifies a group of one or more columns in a table for formatting. The <colgroup> tag is useful for applying styles to entire columns, instead of repeating the styles for each cell, for each row. The <colgroup> tag must be a child of a <table> element, after any <caption> elements and before any <thead>, <tbody>, <tfoot>, and <tr> elements. To define different properties to a column within a <colgroup>, use the <col> tag within the <colgroup> tag.

```
<table border=1 width=450>
  <colgroup span=2 width=25></colgroup>
  <colgroup span=4 width=100></colgroup>
</table>

<table border=1 width=450>
   <colgroup span=2 width=75></colgroup>
   <colgroup>
      <col span=1 width=50>
      <col span=2 width=75>
```

```
    <col span=1 width=100>
  </colgroup>
</table>
```

Example:



Grouping and aligning rows

Rows of a table can be grouped into three sections:

- Table head <thead>
- Table body <tbody>
- Table foot <tfoot>

This allows the body of the table to scroll independently of the head and foot of the table. Additionally if the table is printed out in a hard copy, the head and foot of the table will repeat on the top and bottom of each page in the printout.

The table head, foot and body sections are defined by the <thead>, <tfoot>and <tbody> elements. Each of these elements must contain same number of columns.

Example:

```
<html>
<head>
<title>Table-Grouping Columns</title>
</head>
<body>
```

```
<table border="1" width=100%>
<caption><b>Mathematics Class Schedule</b></caption>
<colgroup width=20% align="center"><colgroup>
<colgroup span=2 width=40%> </colgroup>
<thead>
<tr>
  <th>Class<th>Room<th>Time
</tr>
</thead>
<tbody>
<tr>
  <td>Statistics<td>Mathematics Wing, Room 101<td>8.00AM to 9.30AM
<tr>
  <td>Analytic Techniques<td>Mathematics Wing, Room 102<td>8.00AM to 9.30AM
<tr>
  <td>Mathematical Foundations<td>Mathematics Wing, Room 103<td>8.00AM to 9.30AM
<tbody>
<tfoot>
   <th>***<th>***<th>***
</tfoot>
</table>
</body>
</html>
```

Example:

```
  <html>
  <head>
  </head>
  <body>
  <table border="2" frame="hsides" rules="groups"
        summary="Code page support in different versions
              of MS Windows.">
  <caption>CODE-PAGE SUPPORT IN MICROSOFT WINDOWS</caption>
  <colgroup align="center">
  < colgroup align="left">
  < colgroup align="center" span="2">
  < colgroup align="center" span="3">
  <THEAD valign="top">
  <TR>
  <TH>Code-Page<BR>ID
  <TH>Name
  <TH>ACP
  <TH>OEMCP
```

<TH>Windows
NT 3.1
<TH>Windows
NT 3.51
<TH>Windows
95
<TBODY>
<TR><TD>1200<TD>Unicode (BMP of ISO/IEC-10646)<TD><TD><TD>X<TD>X<TD>*
<TR><TD>1250<TD>Windows 3.1 Eastern European<TD>X<TD><TD>X<TD>X<TD>X
<TR><TD>1251<TD>Windows 3.1 Cyrillic<TD>X<TD><TD>X<TD>X<TD>X
<TR><TD>1252<TD>Windows 3.1 US (ANSI)<TD>X<TD><TD>X<TD>X<TD>X
<TR><TD>1253<TD>Windows 3.1 Greek<TD>X<TD><TD>X<TD>X<TD>X
<TR><TD>1254<TD>Windows 3.1 Turkish<TD>X<TD><TD>X<TD>X<TD>X
<TR><TD>1255<TD>Hebrew<TD>X<TD><TD><TD><TD>X
<TR><TD>1256<TD>Arabic<TD>X<TD><TD><TD><TD>X
<TR><TD>1257<TD>Baltic<TD>X<TD><TD><TD><TD>X
<TR><TD>1361<TD>Korean (Johab)<TD>X<TD><TD><TD>**<TD>X
<TBODY>
<TR><TD>437<TD>MS-DOS United States<TD><TD>X<TD>X<TD>X<TD>X
<TR><TD>708<TD>Arabic (ASMO 708)<TD><TD>X<TD><TD><TD>X
<TR><TD>709<TD>Arabic (ASMO 449+, BCON V4)<TD><TD>X<TD><TD><TD>X
<TR><TD>710<TD>Arabic (Transparent Arabic)<TD><TD>X<TD><TD><TD>X
<TR><TD>720<TD>Arabic (Transparent ASMO)<TD><TD>X<TD><TD><TD>X
</table>
</body></html>

CODE-PAGE SUPPORT IN MICROSOFT WINDOWS

Code-Page ID	Name	ACP	OEMCP	Windows NT 3.1	Windows NT 3.51	Windows 95
1200	Unicode (BMP of ISO/IEC-10646)			X	X	*
1250	Windows 3.1 Eastern European	X		X	X	X
1251	Windows 3.1 Cyrillic	X		X	X	X
1252	Windows 3.1 US (ANSI)	X		X	X	X
1253	Windows 3.1 Greek	X		X	X	X
1254	Windows 3.1 Turkish	X		X	X	X
1255	Hebrew	X				X
1256	Arabic	X				X
1257	Baltic	X				X
1361	Korean (Johab)	X			**	X
437	MS-DOS United States		X	X	X	X
708	Arabic (ASMO 708)		X			X
709	Arabic (ASMO 449+, BCON V4)		X			X
710	Arabic (Transparent Arabic)		X			X
720	Arabic (Transparent ASMO)		X			X

Frame and Rules Attributes

The frame attribute affects how the external border of the table is rendered.

The following values apply to the frame attribute:

Attribute	Description
void	Default value. No sides of the external border are visible
above	Renders only the top side of the border
below	Renders only the bottom side of the border
hsides	Renders the top and bottom sides
lhs	Renders only the left hand side
rhs	Renders only the right hand side
vsides	Renders the right and left sides
box	Renders all 4 sides of the border
border	Renders all 4 sides of the border

The rules attribute is similar to frame attribute, except that it defines the rules that appear in between the cells within a table. The following values apply to the rules attribute:

Attribute	Description
none	The default value; No rules are drawn around any of the cells
groups	Rules will appear between row groups as defined by <thead>, <tbody>, <tfoot> and between column groups as defined by <colgroup> and <col>
rows	Rules appear only between rows
cols	Rules appear only between columns
all	Rules appear between all rows and columns

Example:

```
<table border="1" width="100%" frame="hsides" rules="groups">
```

21. HTML Frames

The browser shows the web page through a window. We scroll the web page and see the entire document through the window of the browser. The window is called the container. HTML frames are used to divide the browser window into multiple sections where each section can load a separate HTML document. A collection of frames in the browser window is known as a frameset. The window is divided into frames in a similar way the tables are organized: into rows and columns. Frames have the following characteristics:

- Each frame is given a name
- Each frame will be targeted by a HTML document
- Each frame resizes itself dynamically in response to the changes in the size of the visible client area

Creating Frames

A set of frames is defined using the <frameset> tag. To use frames on a page, use the <frameset> tag instead of <body> tag. The <frameset> tag defines, how to divide the window into frames. The **rows** attribute of <frameset> tag defines horizontal frames and **cols** attribute defines vertical frames. Each frame is indicated by <frame> tag and it defines which HTML document shall open into the frame.

Example:

```
<html>
  <head>
    <title>HTML Frames</title>
  </head>
  <frameset rows = "20%,60%,20%">
       <frame name = "top" src = "/html/top_frame.html">
       <frame name = "main" src = "/html/main_frame.html">
       <frame name = "bottom" src = "/html/bottom_frame.html">
  </frameset>
</html>
```

```
<html>
  <head>
    <title>HTML Frames</title>
  </head>
  <frameset cols = "20%,60%,20%">
       <frame name = "left" src = "/html/left_frame.html">
       <frame name = "main" src = "/html/main_frame.html">
       <frame name = "right" src = "/html/right_frame.html">
  </frameset>
</html>
```

Attributes	Description
Cols	Specifies the number columns in the frameset and the size of each column. Can specify the width of each column in any one of the ways − cols = "40, 60" or cols = "10%, 80%, 10% or cols = "10%, *, 10%".
rows	Specifies the number of rows in the frameset. Can specify the height of each row in any one of the ways - rows = "20%, 80%" rows = "20, 70, 10" or rows = "10%, 70%, *".
border	Specifies the width of the border of each frame.
frameborder	Specifies whether a border should be displayed between frames. This attribute takes value either 1 (yes) or 0 (no).
framespacing	This attribute specifies the amount of space between frames in a frameset. This attribute takes integer value.

The <frame> Tag Attributes

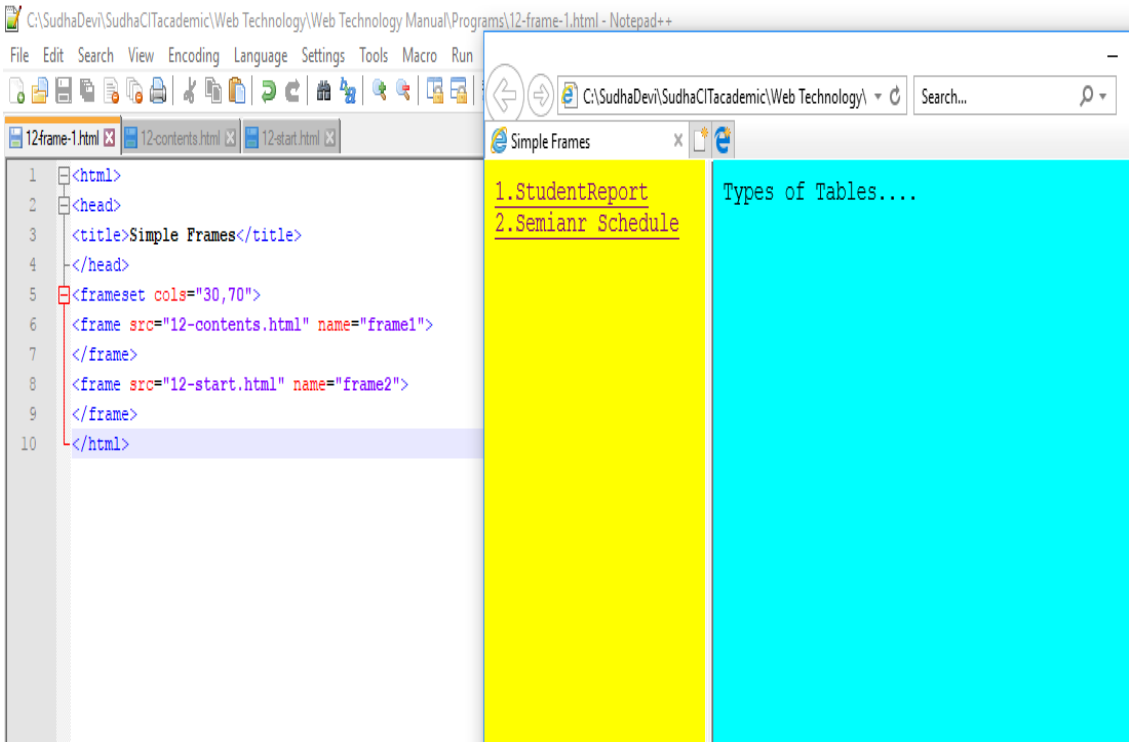
Attribute	Description
src	Source HTML address. Specifies the URL of the HTML document to be displayed in the frame.
name	Name of the frame. Used to identify a frame when specifying the target of HTML documents.
frameborder	Specifies whether or not the borders of the frame are shown; it overrides the value given in the frameborder attribute on the <frameset> tag; this can take values either 1 (yes) or 0 (no).
marginwidth	Specifies the width of the space between the left and right of the frame's borders and the frame's content.
marginheight	Specifies the height of the space between the top and bottom of the frame's borders and its contents.
noresize	Assigns no value. If noresize is given, the frame is not resizable by the user.
scrolling	This attribute controls the appearance of the scrollbars that appear on the frame. This takes values either "yes", "no" or "auto".

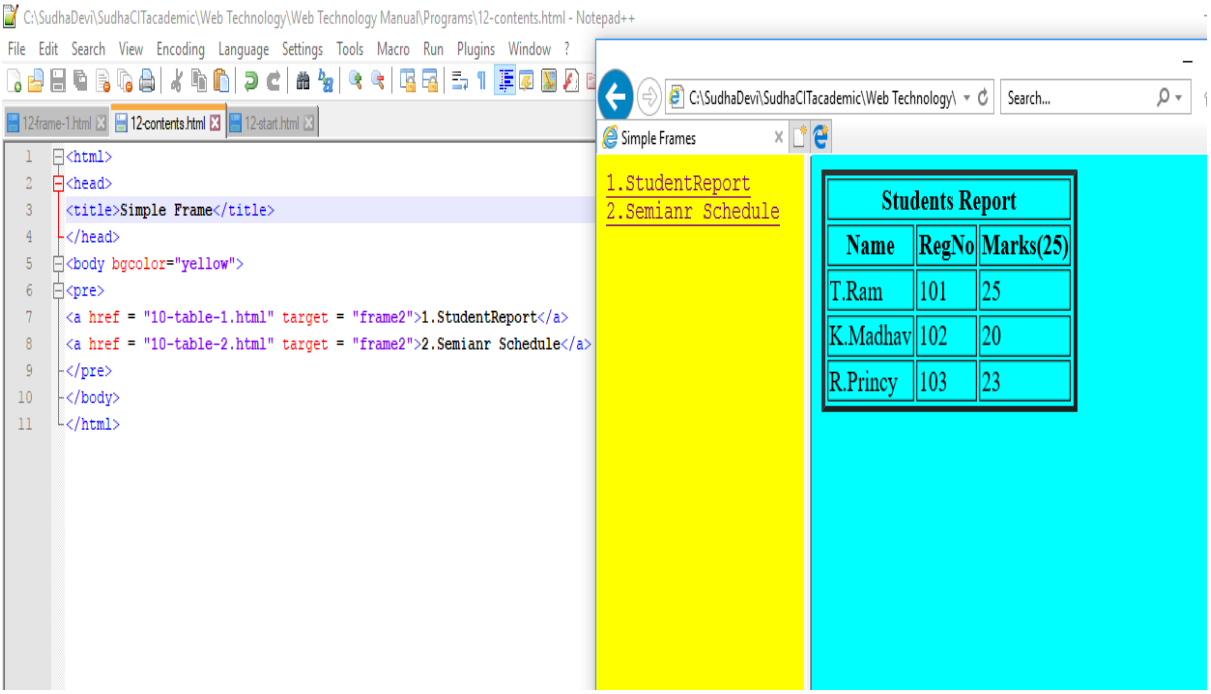
Example:

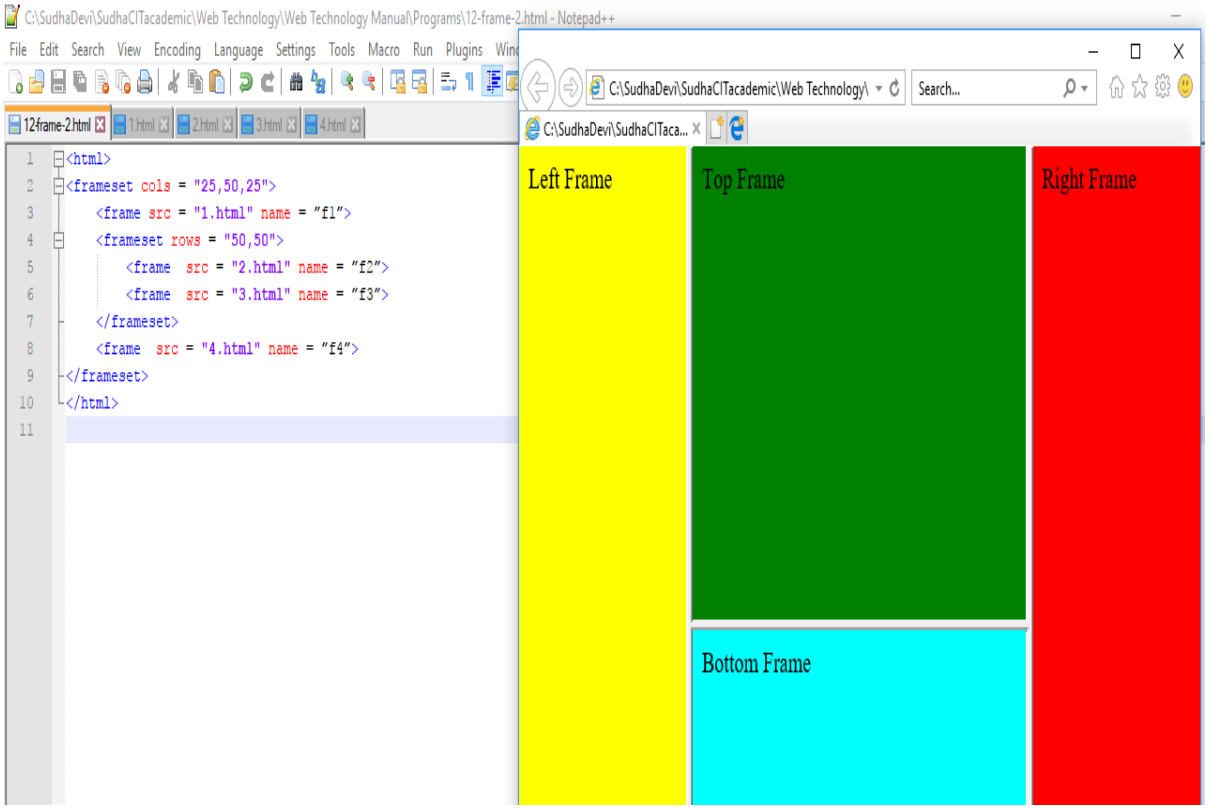
```
<html>
<frameset cols=”30,*”>
        <frame src = ”contents.html” name = ”leftframe” marginwidth = ”30”
                                                marginheight = ”20” scrolling = ”auto”>
        <frame  src = ”start.html” name = ”rightframe” scrolling = ”auto”>
</frameset>
</html>
```

Nested Frames

```
<html>
<frameset cols = "25,50,25">
        <frame src = "1.html" name = ”f1”>
        <frameset rows = "50,50">
                <frame  src = "2.html" name = ”f2”>
                <frame  src = "3.html" name = ”f3”>
        </frameset>
        <frame  src = "4.html" name = ”f4”>
</frameset>
</html>
```




C:\SudhaDevi\SudhaCITacademic\Web Technology\Web Technology Manual\Programs\12-contents.html - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
12-frame-1.html
12-contents.html
12-start.html
<html>
<head>
<title>Simple Frame</title>
</head>
<body bgcolor="yellow">
<pre>
1.StudentReport
2.Semianr Schedule
</pre>
</body>
</html>
C:\SudhaDevi\SudhaCITacademic\Web Technology\
Search...
Simple Frames
1.StudentReport
2.Semianr Schedule
Students Report
Name
RegNo
Marks(25)
T.Ram
101
25
K.Madhav
102
20
R.Princy
103
23


C:\SudhaDevi\SudhaCITacademic\Web Technology\Web Technology Manual\Programs\12-frame-2.html - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins
12-frame-2.html
1.html
2.html
3.html
4.html
<html>
<frameset cols = "25,50,25">
<frame src = "1.html" name = "f1">
<frameset rows = "50,50">
<frame src = "2.html" name = "f2">
<frame src = "3.html" name = "f3">
</frameset>
<frame src = "4.html" name = "f4">
</frameset>
</html>
C:\SudhaDevi\SudhaCITacademic\Web Technology\
Search...
C:\SudhaDevi\SudhaCITaca...
Left Frame
Top Frame
Right Frame
Bottom Frame

22. HTML Forms

The Forms are the tools to improve user interface in the web. An HTML form facilitates the user to enter data that is to be sent to the server for processing. HTML Forms are required, when we want to collect some data from the user. For example: If a user want to purchase some items on internet, he/she must fill the form such as shipping address and credit/debit card details so that item can be sent to the given address.

A form will take input from the user 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.

Form Elements

An HTML form contains **form elements**. A form is defined with the <form> tag. Form elements are different types of input elements, like text fields, password fields, checkboxes, radio buttons, textarea fields, drop-down menus, submit buttons, and more. The **<input>** element is the most important form element. The <input> element can be displayed in several ways, depending on the **type** attribute.

The HTML **<form>** tag is used to create an HTML form as follows:

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

The form attributes include action, post. The attribute "action", specifies the URL to the server side script that will process the form when it is submitted. The attribute "method" takes values get or post; method = "get", retrieves data from the web server whereas method = "post", allows the user to send data to a remote host.

HTML Form Tags

Tag	Description
<form>	It defines an HTML form to enter inputs by the used side.
<input>	It defines an input control.
<textarea>	It defines a multi-line input control.
<label>	It defines a label for an input element.
<fieldset>	It groups the related element in a form.
<legend>	It defines a caption for a <fieldset> element.
<select>	It defines a drop-down list.

<optgroup>	It defines a group of related options in a drop-down list.
<option>	It defines an option in a drop-down list.
<button>	It defines a clickable button.

Input Element

The <input> tag is used to add graphical user components such as text fields, password fields, checkboxes, radio buttons, submit and reset buttons.

Attribute	Description
Type	Indicates the type of input control. The type of controls include text, password, checkbox, radio, submit, reset, hidden
Name	Name of the control which is sent to the server to be recognized and get the value
Value	Used to define the default value to be displayed
Size	Specifies the width of the text-input control
maxlength	Specifies the maximum number of characters a user can enter into the text box
Checked	Sets a check box or radio button to on

Text field

This provides a single line field in which the user types the text content.

Example:

Name : <input type = "text" name="username">

Textarea

This provides a multiline area in which the user can give details that may be longer than a single sentence.

Example:

Address : <textarea name="address" rows="5" cols="10"> </textarea>

Password control

This provides a single-line text input but it masks the character as soon as a user enters it.

Example:

Username : <input type=”text” name=”username”>

Password : <input type=”password” name=”pwd”>

Hidden control

Hidden form controls are used to hide data inside the page which later on can be pushed to the server. This control hides inside the code and does not appear on the actual page. For example, following hidden form is being used to keep current page number. When a user will click next page then the value of hidden control will be sent to the web server and there it will decide which page will be displayed next based on the passed current page.

Example:

<input type = “hidden” name = “pwd”>

Checkbox control

Checkboxes are used when more than one option is required to be selected.

Example:

<input type = “checkbox” name = “chk1”>

Radio Button control

Radio buttons are used when out of many options, just one option is required to be selected.

Example:

<input type = “radio” name = “rb1”>

Dropdown List (Select Box control)

A select box, also called drop down box provides option to list down various options in the form of drop down list, from where a user can select one or more options.

Example:

<select name=”qualification” size=”3”>

<option>MSc(SS)

<option>MSc(DS)

<option>MSc(DCS)

</select>

Button control

There are various ways in HTML to create clickable buttons. You can also create a clickable button using <input>tag by setting its type attribute to **button**. The type attribute can take the following values −

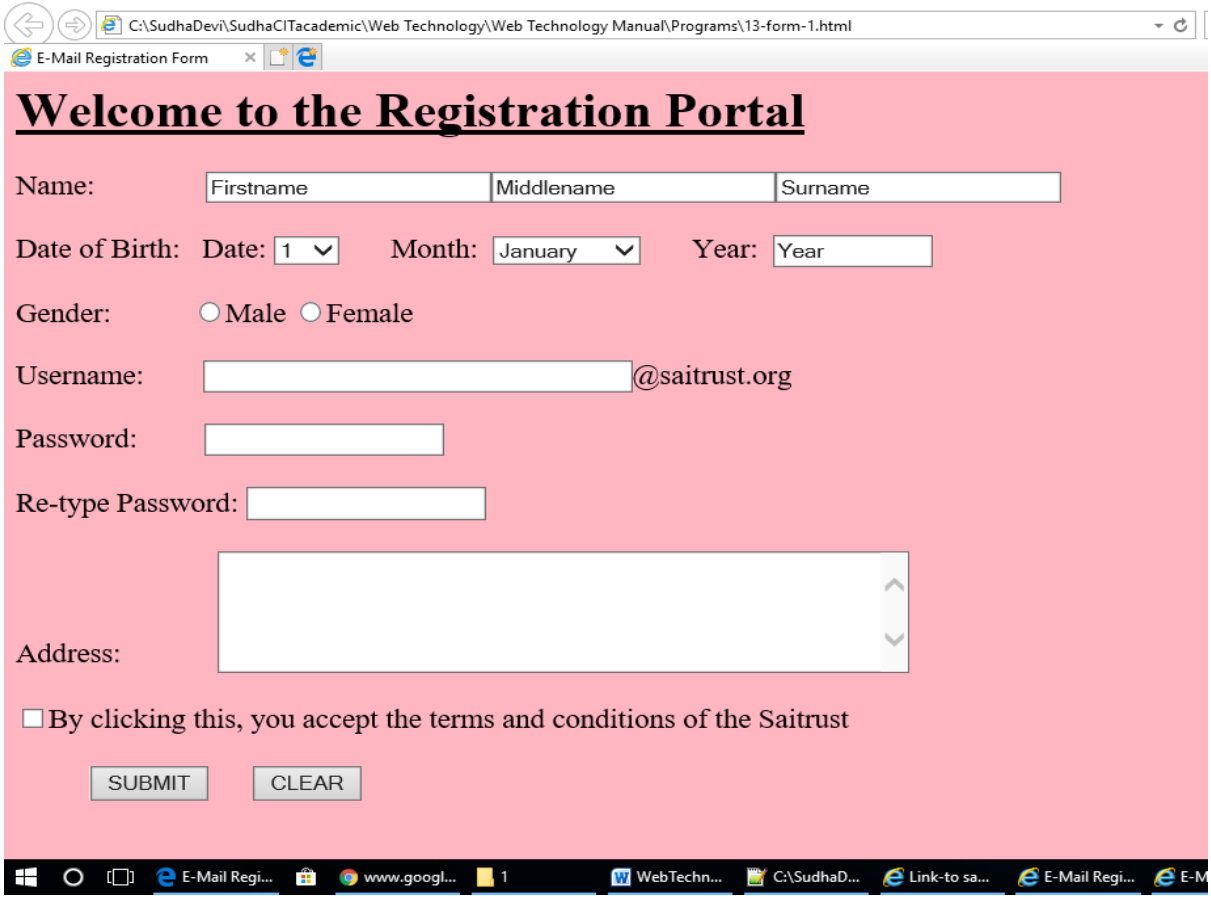
Type	Description
submit	This creates a button that automatically submits a form.
reset	This creates a button that automatically resets form controls to their initial values.
button	This creates a button that is used to trigger a client-side script when the user clicks that button.
image	This creates a clickable button but we can use an image as background of the button.

Example:

```
<html>
<head>
<title>E-Mail Registration Form</title>
</head>
<body bgcolor="#ffb6c1">
<h1><u>Welcome to the Registration Portal</u></h1>
<form>
<font face="calibiri" size="4" color="black">
Name:            
;  
<input type="text" value="Firstname" size="25">
<input type="text" value="Middlename" size="25">
<input type="text" value="Surname" size="25"><br><br>
Date of Birth:  
Date: 
<select name="Date">
<option>1 <option>2 <option>3 <option>4 <option>5 <option>6 <option>7
<option>8 <option>9 <option>10 <option>11 <option>12 <option>13
<option>14 <option>15 <option>16 <option>17 <option>18 <option>19
<option>20 <option>21 <option>22 <option>23 <option>24 <option>25
 <option>26 <option>27 <option>28 <option>29 <option>30 <option>31
</select>
     
Month:  
```

```
<select name="month">
<option>January <option>February <option>March <option>April <option>May
<option>June <option>July1 <option>August <option>September <option>October
<option>November <option>December
</select>
     
Year:  <input type="text" value="Year" size="12"><br><br>
Gender:          
<input type="radio" name="rb">Male
<input type="radio" name="rb">Female<br><br>
Username:        
<input type="text" name="username" size="40">@saitrust.org<br><br>
Password:         
<input type="password" name="pwd"><br><br>
Re-type Password: <input type="password" name="pwd"><br><br>
Address:           &nb
sp; 
<textarea name="adr" rows="5" cols="50">
</textarea><br><br>
<input type="checkbox" name="x">By clicking this, you accept the terms and conditions of
the Saitrust<br><br>
         
<input type="Submit" value="SUBMIT">     
<input type="reset" value="CLEAR">
</form>
</center>
</body>
</html>
```

OUTPUT



Cascading Style Sheet (CSS)

Cascading Style Sheets (CSS) allows document authors to specify the presentation of elements on a Web page (spacing, margins, etc.) separately from the structure of the document (section headers, body text, links, etc.). This separation of structure from presentation simplifies maintaining and modifying a document's layout.

Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.

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 is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML.

Advantages of CSS

* CSS saves time − You can write CSS once and then reuse same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want.
* Pages load faster − If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So less code means faster download times.
* Easy maintenance − To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.
* Superior styles to HTML − CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.
* Multiple Device Compatibility − Style sheets allow content to be optimized for more than one type of device. By using the same HTML document, different versions of a website can be presented for handheld devices such as PDAs and cell phones or for printing.
* Global web standards − Now HTML attributes are being deprecated and it is being recommended to use CSS. So its a good idea to start using CSS in all the HTML pages to make them compatible to future browsers.
* Offline Browsing − CSS can store web applications locally with the help of an offline catche.Using of this, we can view offline websites.The cache also ensures faster loading and better overall performance of the website.
* Platform Independence − The Script offer consistent platform independence and can support latest browsers as well.

CSS Types

* Inline style sheet
* Internal or Embedded style sheet
* External style sheet

Inline style sheet

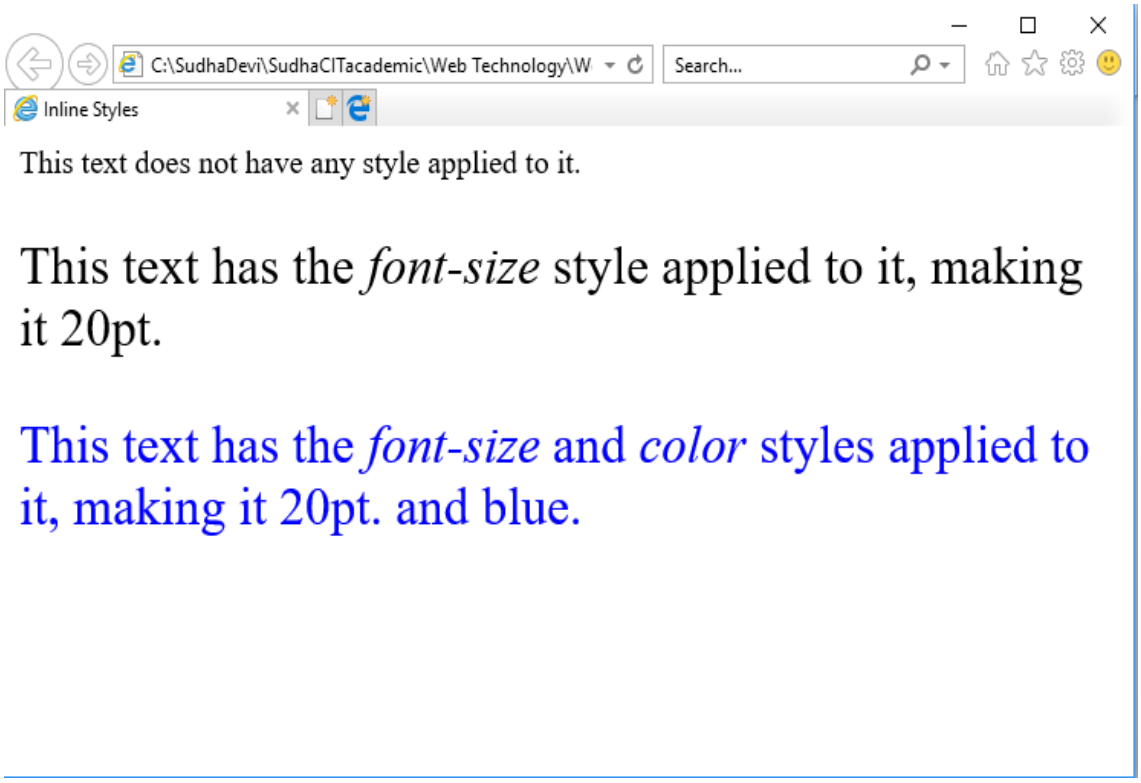
Inline styles declare an individual element's format using attribute style.

Example :

```
<html>
<head>
<title>Inline Styles</title>
</head>
<body>
<p>This text does not have any style applied to it.</p>
<p style = "font-size: 20pt">This text has the
```

font-size style applied to it, making it 20pt.

This text has the font-size and color
styles applied to it, making it 20pt. and blue.
</body>
</html>



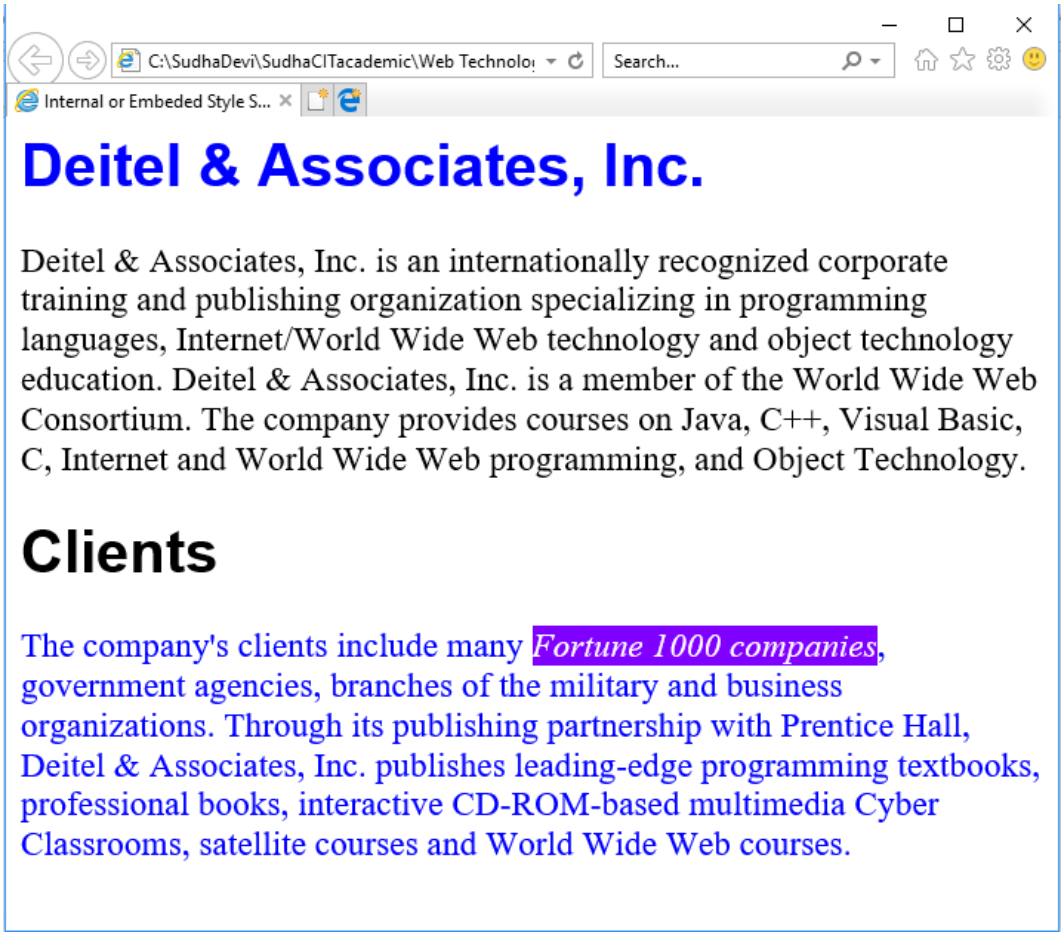
Internal or Embedded style sheet

Embedded style sheets enable a Web-page author to embed an entire CSS document in an HTML document's head section.

Example:

```
<html>
 <head>
<title>Internal or Embeded Style Sheets</title>
<style type = "text/css">
        em      { background-color: #8000ff; color: white }
         h1      { font-family: arial, sans-serif }
         p       { font-size: 14pt }
         .special { color: blue }
</style>
</head>
```

<body>
<h1 class = "special">Deitel & Associates, Inc.</h1>
Deitel & Associates, Inc. is an internationally recognized corporate training and publishing organization specializing in programming languages, Internet/World Wide Web technology and object technology education. Deitel & Associates, Inc. is a member of the World Wide Web Consortium. The company provides courses on Java, C++, Visual Basic, C, Internet and World Wide Web programming, and Object Technology. <h1>Clients</h1>
 The company's clients include many Fortune 1000 companies, government agencies, branches of the military and business organizations. Through its publishing partnership with Prentice Hall, Deitel & Associates, Inc. publishes leading-edge programming textbooks, professional books, interactive CD-ROM-based multimedia Cyber Classrooms, satellite courses and World Wide Web courses.
</body>
</html>



External Style Sheet

Style sheets are a convenient way to create a document with a uniform theme. With external style sheets (i.e., separate documents that contain only CSS rules), Web-page authors can provide a uniform look and feel to an entire Web site. Different pages on a site can all use the same style sheet. Then, when changes to the style are required, the Web-page author needs to modify only a single CSS file to make style changes across the entire Web site.

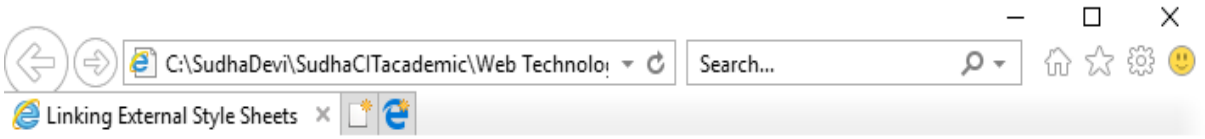
Example:

File-1 : css-external.css

```
a       { text-decoration: none }
 a:hover { text-decoration: underline; color: red;  background-color: #ccffcc }
 li em   { color: red; font-weight: bold; background-color: #ffffff }
 ul      { margin-left: 2cm }
 ul ul   { text-decoration: underline; margin-left: .5cm }
```

File-2 : css-external.html

```
<html>
<head>
<title>Linking External Style Sheets</title>
<link rel = "stylesheet" type = "text/css" href = "css-external.css" />
</head>
<body>
<h1>Shopping list for <em>Monday</em>:</h1>
<ul>
<li>Milk</li>
<li>Bread
  <ul>
  <li>White bread</li>
  <li>Rye bread</li>
  <li>Whole wheat bread</li>
  </ul>
</li>
<li>Rice</li>
<li>Potatoes</li>
<li>Pizza <em>with mushrooms</em></li>
</ul>
<p><a href = "http://www.food.com">Go to the Grocery store</a>
</p>
</body>
</html>
```



Shopping list for *Monday*:

- Milk
- Bread
  - White bread
  - Rye bread
  - Whole wheat bread
- Rice
- Potatoes
- Pizza ***with mushrooms***

Go to the Grocery store

References:

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