

Introduction of HTML

- HTML stands for "Hyper Text Markup Language".
- "Hyper Text" is a piece of text works as a link.
- "Markup Language" is a language for writing layout information within documents.
- It is the most widely used language on web to develop web pages.
- HTML was created by TIM BERNERS-LEE in late 1991.
- HTML is a client side scripting language.
- It is platform independent language.
- It is used to design static web pages.
- It is not a case sensitive language.
- It is a tag-based language.

Structure of HTML & HTML elements

Structure of HTML

<!DOCTYPE html>

<html>

<head>

Contains document header tags

<title>

Contains the title of the page

</title>

</head>

<body>

Contains document body related tags

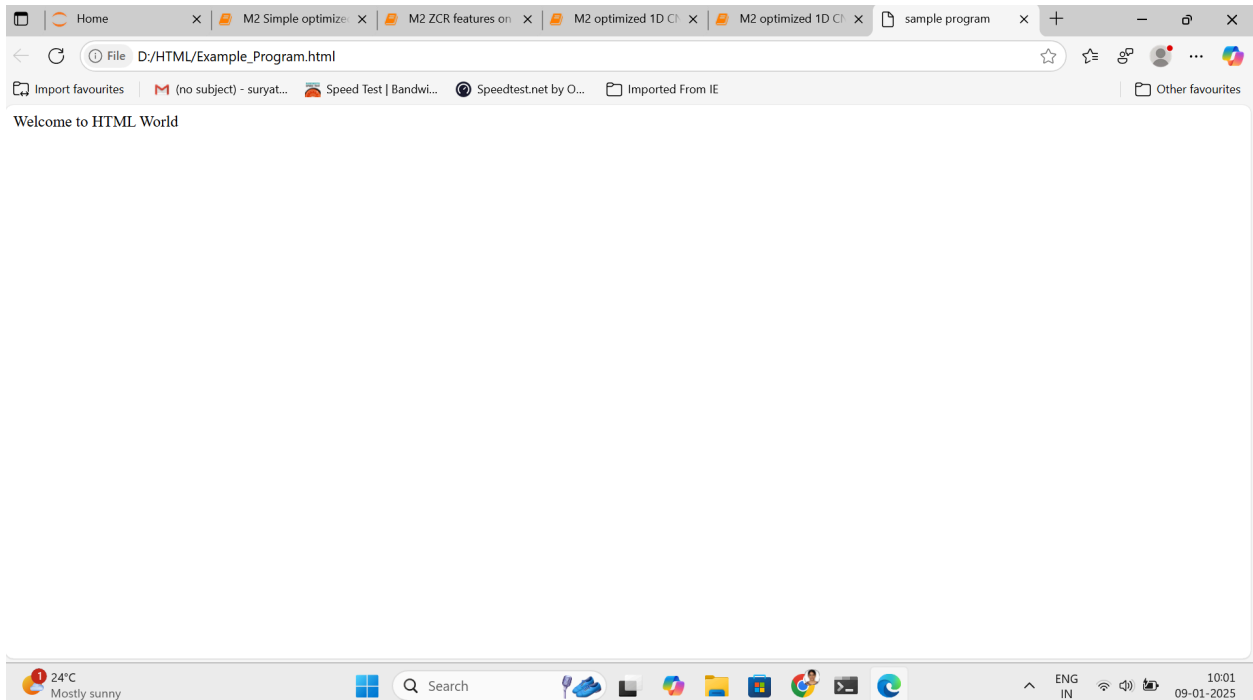
</body>

</html>

- The `<!DOCTYPE html>` declaration defines that this document is an HTML5 document
- The `<html>` element is the root element of an HTML page. The text between `<html>` and `</html>` describes an HTML document.
- The `<head>` element contains meta information about the HTML page. The text between `<head>` and `</head>` provides information about the document.
- The `<title>` element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab). The text between `<title>` and `</title>` provides a title for the document.
- The `<body>` element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc. The text between `<body>` and `</body>` describes the visible page content.

Example program:

```
<html>  
  <head>  
    <title> sample program</title>  
  </head>  
  <body>  
    Welcome to HTML World  
  </body>  
</html>
```



HTML Elements:

- Html documents are made up of HTML elements.
- HTML documents are written with a start tag and end with an end tag.
- The content is placed in between start and end tag.

Syntax:

`<tag name> content </tag name>`

Example:

`<body> welcome to html world </body>`

HTML Attributes:

- Attributes provide additional information about HTML elements.
- Attributes are always specified in the start tag.
- Attributes come in name/value pairs like `name="value"`
Examples are href, src, alt, width, height etc.
- Where href attribute provides address information for links.

- Where alt attribute provides an alternate text for an image.
- Where [src](#) attribute provides URL for an image.
- Where [width and height](#) attributes provide width and height for an image.

What is Tag?

- HTML tags are keywords enclosed between angular brackets.

Syntax:

`<tag name>`

- HTML tags can be divided into two types.
- Paired Tag: It contains both opening and ending tags.

Example:

`<body> </body>`

- Unpaired Tag: It contains only start tag and it does not contain an end tag.

Example:

`<hr>` and `
` are unpaired tags

Header Tags

- Any document starts with a heading.
- HTML has six levels of headings which use the elements `<h1>`, `<h2>`, `<h3>`, `<h4>`, `<h5>` and `<h6>`
- `<h1>` is used for most important headings.
- `<h6>` is used for least important headings.

Example Program:

`<html>`

<body>

<h1>Heading 1</h1>

<h2>Heading 2</h2>

<h3>Heading 3</h3>

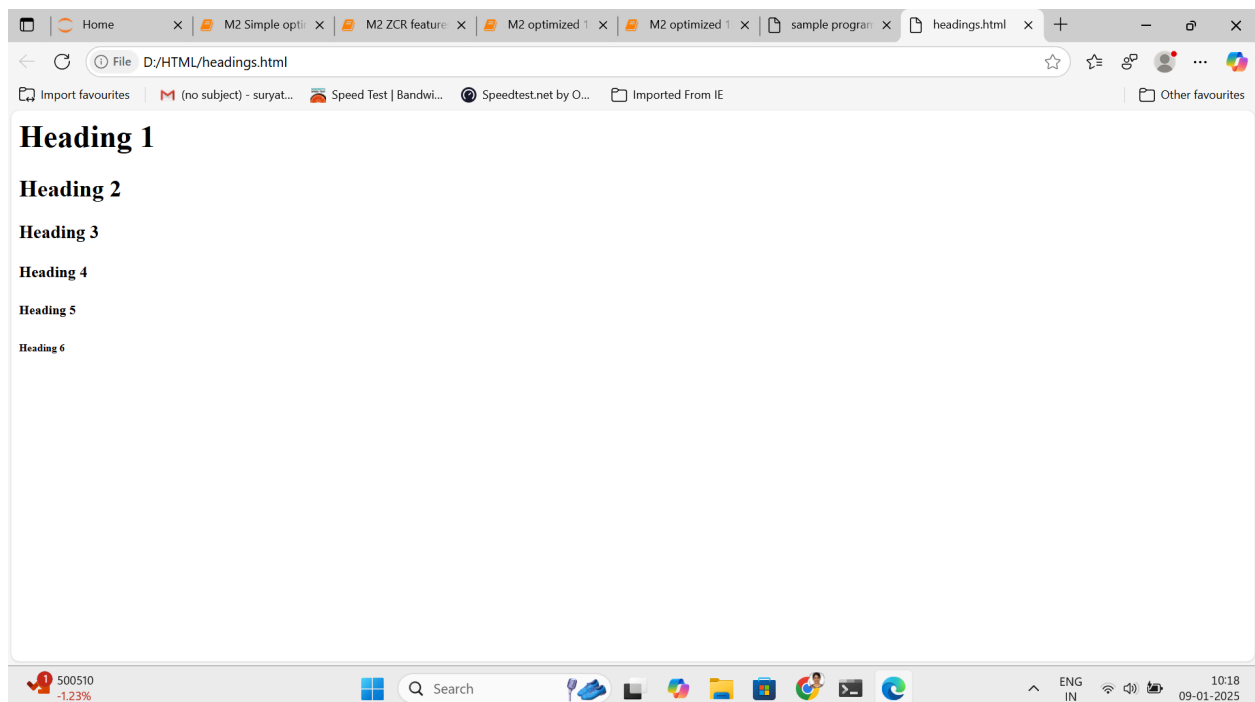
<h4>Heading 4</h4>

<h5>Heading 5</h5>

<h6>Heading 6</h6>

</body>

</html>



Paragraph Tag

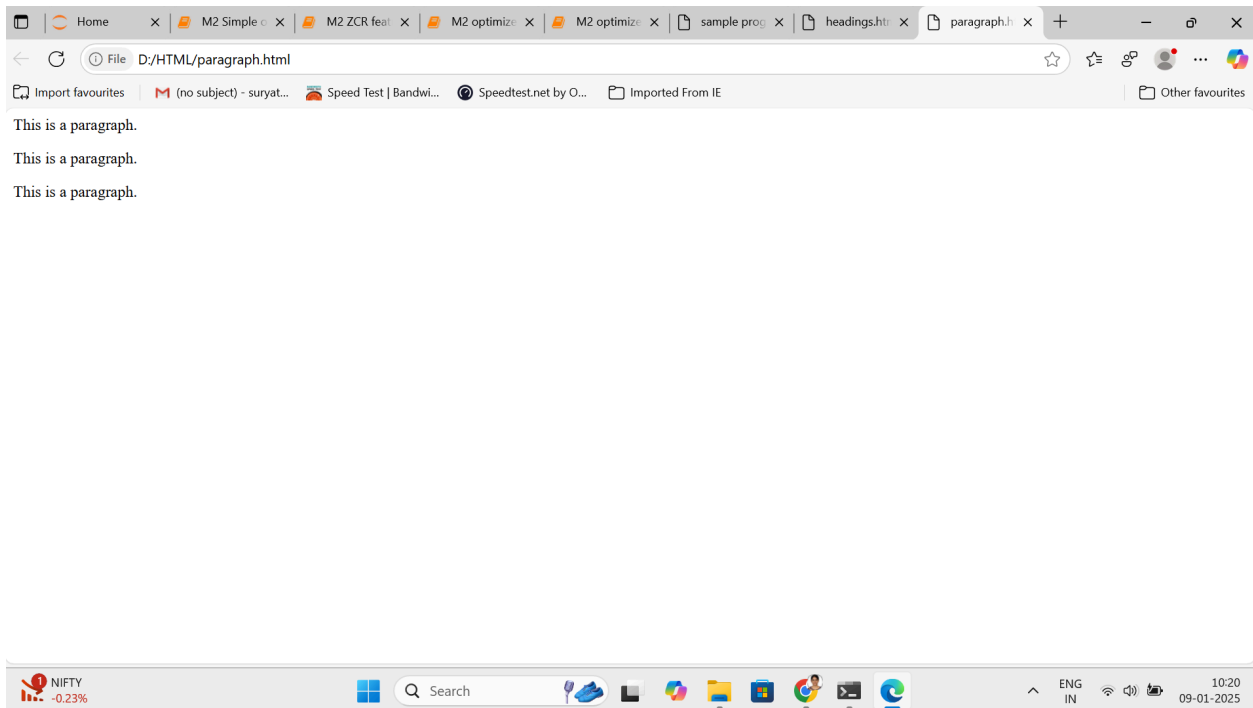
- The <p> tag offers a way to structure our text into different

paragraphs.

- Each paragraph of text should be placed in between `<p>` and `</p>`.

Example:

```
<html>
  <body>
    <p>This is a paragraph.</p>
    <p>This is a paragraph.</p>
    <p>This is a paragraph.</p>
  </body>
</html>
```

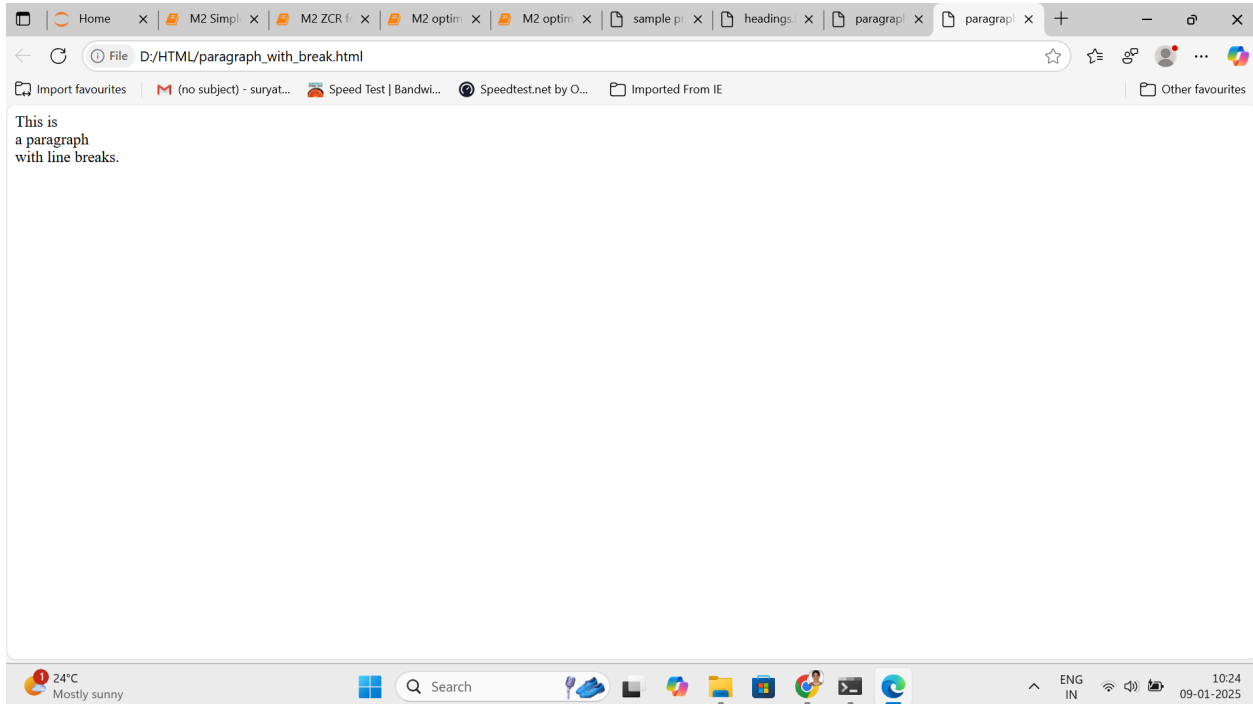


Line break Tag

- The `
` tag is an example for unpaired tag.
- It causes a line break.

Example:

```
<html>
  <body>
    <p>This is<br>a paragraph<br>with line breaks.</p>
  </body>
</html>
```



Centering content

- We can use <center> tag to put any content at the center of the page or any table cell.

Example:

```
<html>
  <body>
    <center>
      <h1>SRKR Engineering College</h1>
    </center>
```

```
    </body>
</html>
```

- In the above example, we have written the <h1> tag inside the <center> tag. Therefore, the contents of <h1> tag can be displayed on the center of the webpage.

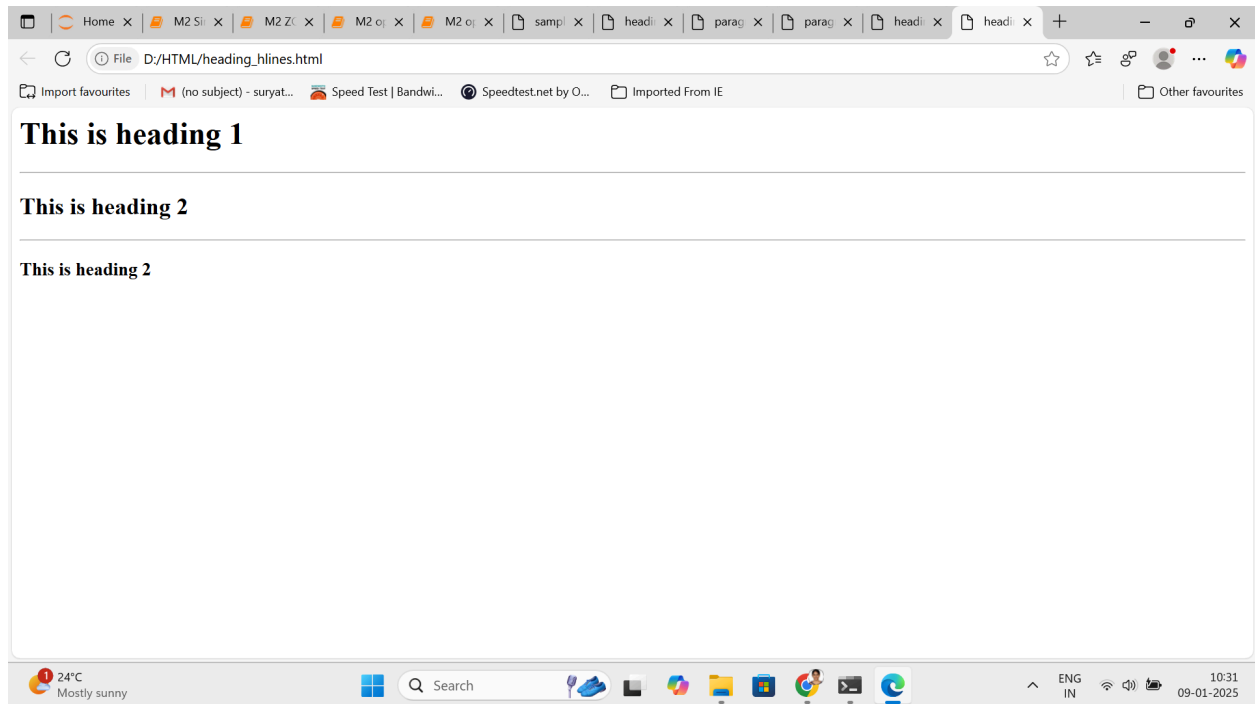
Horizontal Lines

Horizontal lines are used to visually breakup sections of a document. The <hr> tag creates a horizontal line.

Example:

```
<html>
  <body>
    <h1>This is heading 1</h1>
    <hr>
    <h2>This is heading 2</h2>
    <hr>
    <h3>This is heading 2</h3>
  </body>
</html>
```

- In the above program, we have three header tags but they are separated by using <hr> tag. That means that every heading will be printed by separating with horizontal line.



Html formatting elements:

- Formatting elements were designed to display special types of text.
- **** - Defines bold text
- **** - Defines Important text
- **<i>** - Defines Italic text
- **** - Defines emphasized text
- **<mark>** - Defines Marked or highlighted text
- **<small>** - Defines Smaller text
- **** - Deleted text
- **<ins>** - Defines Inserted text
- **<sub>** - Defines Subscript text
- **<sup>** - Defines Superscript text

Example:

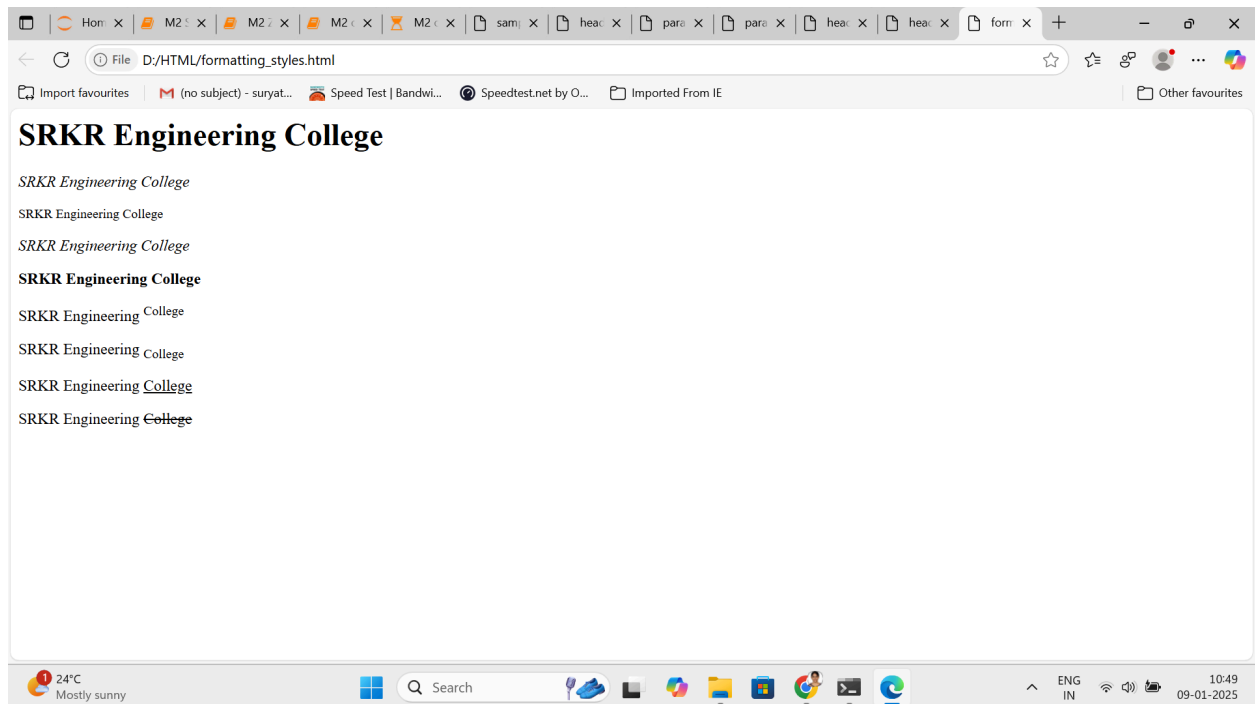
```
<html>

  <body>

    <h1><b> SRKR Engineering College</b></h1>
    <p><em>SRKR Engineering College</em></p>
    <p><small>SRKR Engineering College</small></p>
    <p><i>SRKR Engineering College</i></p>
    <p><strong>SRKR Engineering College</strong></p>
    <p>SRKR Engineering <sup>College</sup></p>
    <p>SRKR Engineering <sub>College</sub></p>
    <p>SRKR Engineering <ins>College</ins></p>
    <p>SRKR Engineering <del>College</del></p>

  </body>

</html>
```



Text Alignment

- We can align the text at left, right and at the center using a <div> tag.

Example:

```
<html>
  <body>
    <div align="center">SRKR</div>
    <div align="left">SRKR</div>
    <div align="right">SRKR</div>
  </body>
</html>
```

- In the above example, we have written the <div align="center"> that means that the text written inside that tag can be aligned at center of the web page.
- Similarly we have written <div align="left"> and <div align="right"> that means that the text can be aligned at left and right respectively. That output is shown in the below output screen.

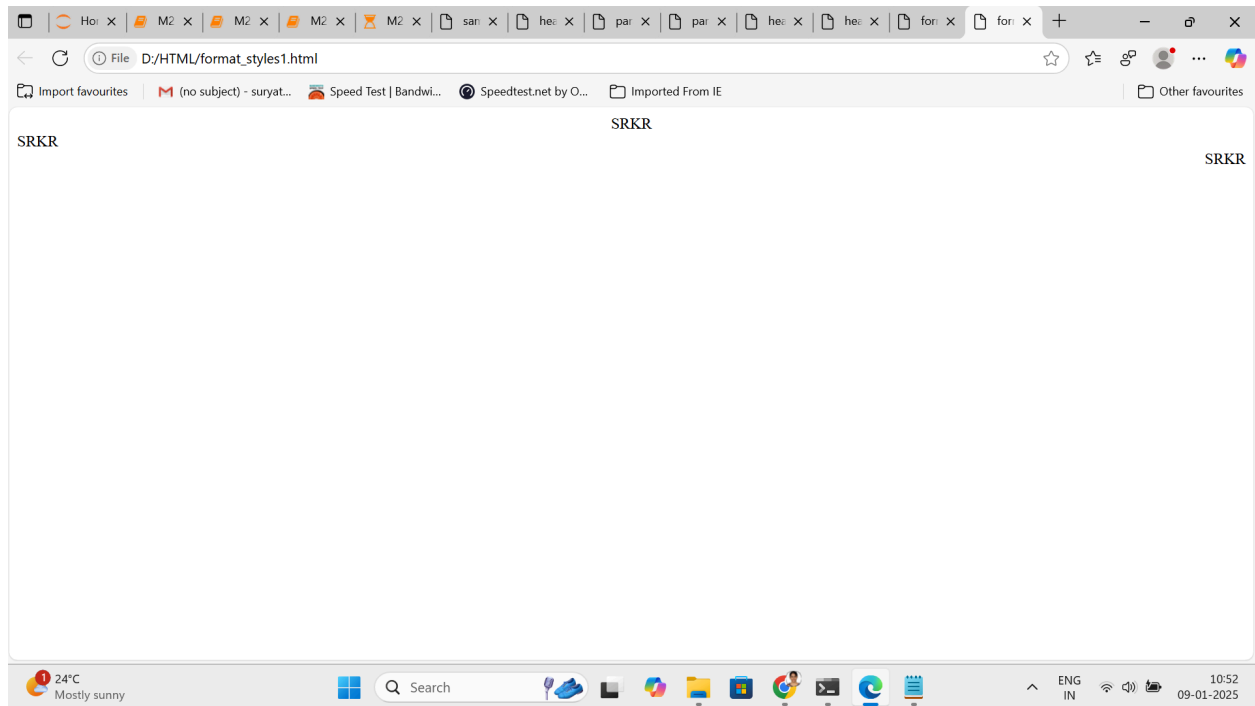


Image Tag

- We can insert any image on our webpage by using `` tag.
- The `` tag is an unpaired tag, which means that it can contain only a list of attributes and it has no closing tag.

Syntax:

``

- Where the attribute `src` specifies the source of the image that means it specifies the location of the image.

Attributes of Image Tag

Alt attribute:

- The `alt` attribute is a mandatory attribute, which specifies an alternate text for an image, if the image cannot be displayed on the web page.

Width and Height:

- We can set image width and height based on our requirement using width and height attributes.
- We can specify width and height of the image in terms of pixels or percentage of its actual size.

Border:

- By default image will have a border around it, we can specify border thickness in terms of pixels using border attribute. Zero means no border.

Align:

- By default image will align at the left side of the page, but we can use align attribute to set in the center or right.

Example:

```
<html>
<body>

</body>
</html>
```



Html Comments

- Html comments are placed in between `<!------->` tags. ❖ Any content between those tags will be treated as comment and will be completely ignored by the browser.

Html Tables

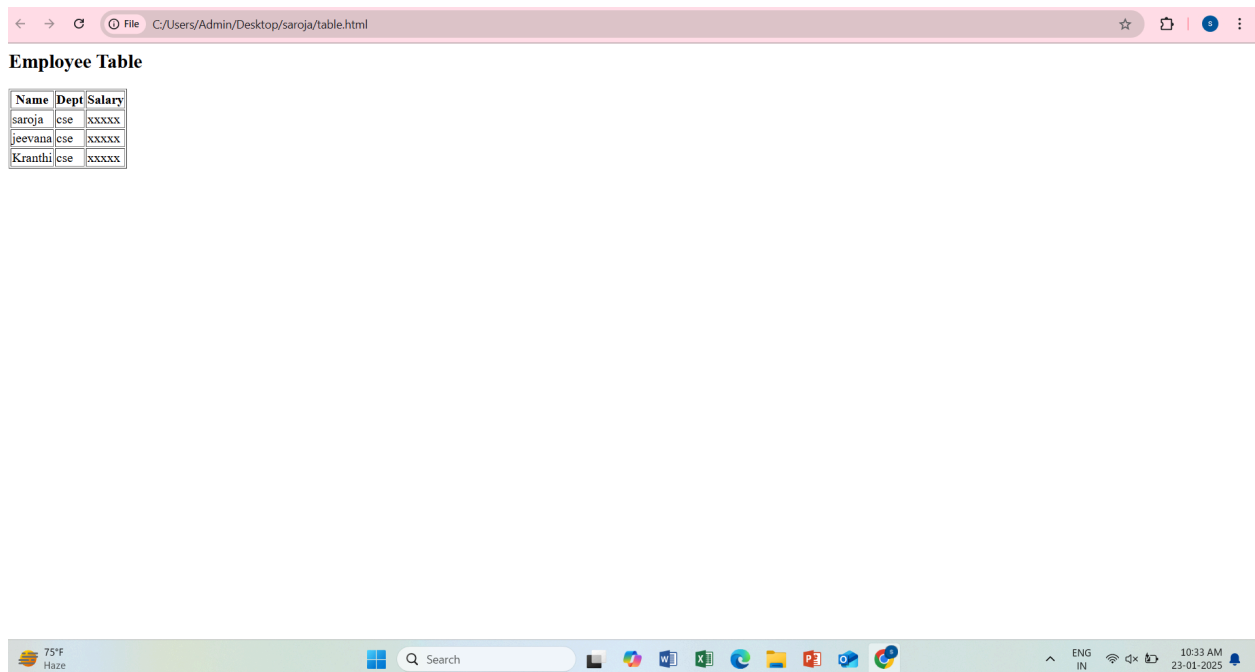
- HTML tables allow web developers to arrange data into rows and columns.
- The html tables are created by using the `<table>` tag.
- Each table row is defined with a `<tr>` tag.
- Each table header is defined with a `<th>` tag.
- Each table data/cell is defined with a `<td>` tag.
- By default, the text in `<th>` elements are bold and centered.
- By default, the text in `<td>` elements is regular and left aligned.

Example:

```
<html>
<body>
<h2>Employee Table</h2>
<table border="3">
<tr>
<th>Name</th>
<th>Dept</th>
<th>Salary</th>
</tr>
<tr>
<td>saroja</td>
<td>cse</td>
<td>xxxxxx</td>
</tr>
<tr>
<td>jeevana</td>
<td>cse</td>
<td>xxxxxx</td>
</tr>
<tr>
<td>Kranthi</td>
<td>cse</td>
<td>xxxxxx</td>
</tr>
</table>
</body>
</html>
```

Program Explanation:

- In the above program, we have created a table by using `<table>` tag and it contains an attribute `border` used to set the table border.
- Inside the table, we have created three rows by using the `<tr>` tag.
- In the first row, we set table heading by using the `<th>` tag.
- The second row and third row contains table data created by using the tag `<td>`



Attributes of `<table>` tag

- There are two attributes called cell padding and cell spacing, which we will use to adjust the white space in our table cells.

Cell padding:

- Cell padding represents the distance between cell borders and content within a cell.

Cell spacing:

- It specifies the space between cells.
- The distance between each cell can be increased by using cell spacing.

Example:

```
<html>
<body>
<h2>Employee Table</h2>
<table border="1" cellpadding="5"
cellspacing="5"> <tr>
<th>Name</th>
<th>Dept</th>
<th>Salary</th>
</tr>
<tr>
<td>srinu</td>
<td>cse</td>
<td>50000</td>
</tr>
<tr>
<td>dilip</td>
<td>cse</td>
<td>50000</td>
</tr>
</table>
```

```
</body>  
</html>
```

Program Explanation:

- In the above program, we have created a table by using `<table>` tag and it contains an attribute `border` used to set the table border.
- The `<table>` tag also contains another two attributes `cellpadding` and `cellspacing`.
- The `cellpadding` attribute specifies the distance between cell border and content within in the cell.
- The `cellspacing` attribute specifies the space between the cells.
- Inside the table, we have created three rows by using the `<tr>` tag.
- In the first row, we set table heading by using the `<th>` tag.
- The second row and third row contains table data created by using the tag `<td>`.

Employee Table

| Name | Dept | Salary |
|---------|------|--------|
| saroja | cse | xxxxx |
| jeevana | cse | xxxxx |
| Kranthi | cse | xxxxx |

- In the above table, there is a space between each cell with the value of five.
- In the above table, there is a distance between cell border and content with the value of five.

Colspan Attribute

- It is used to merge two or more columns into a single column. That means it extends the column horizontally.

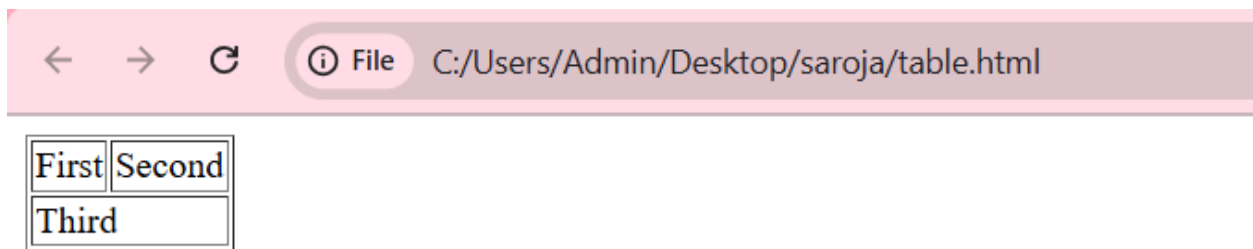
Example:

```
<html>
<body>
<table border="1">
<tr>
  <td>First</td>
  <td>Second</td>
</tr>
```

```
<tr>
  <td colspan="2">Third</td>
</tr>
</table>
</body>
</html>
```

Program Explanation:

- In the above program, we have created a table by using `<table>` tag.
- Inside the table, we have created two rows and in the first row, we have created two data cells by using `<td>` tag.
- In the second row, we have written `<td colspan="2">` means that it merges the two columns into a single column.



- In the above screen, there is a table with two rows and the

first row contains two data cells namely first and second.

- In the second row, we merge the two column data cells into single column data cell by using the attribute `<td colspan="2">`

Rowspan Attribute

- It is used to merge two or more rows into a single row. That means it extends the row vertically.

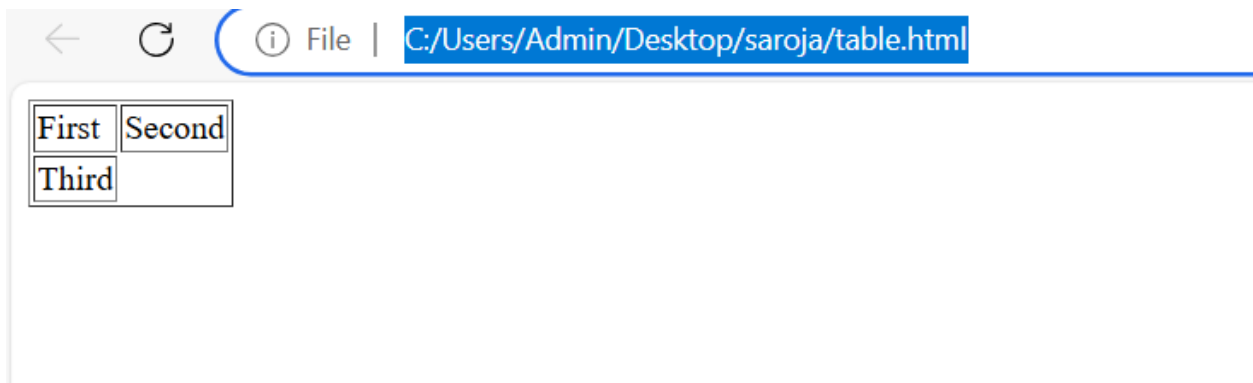
Example:

```
<html>
<body>
<table border="1">
<tr>
  <td rowspan="2">First</td>
  <td>Second</td>
</tr>
<tr>
  <td>Third</td>
</tr>
</table>
</body>
</html>
```

Program Explanation:

- In the above program, we have created a table by using `<table>` tag.

- Inside the table, we have created two rows and in the first row, we have created two data cells by using `<td>` tag.
- In the first data cell we have written `<td rowspan="2">` then it merges two row data cells into single row data cell.
- In the second row, we have created one data cell by `<td>` tag.



- In the above screen, there is table with two rows and the first row contains two data cells namely first and second but the first row data cell is merged using `<td rowspan="2">`

Table backgrounds

- We can set table background in two ways.

bgcolor attribute:

- Using bgcolor attribute we can set background color for whole table or just for one cell.

Example:

```
<table bordercolor="red" bgcolor="yellow">
```

background attribute:

- We can set background image for whole table or for a particular

cell.

Example:

```
<table background="flower.jpg">
```

Table width & height

- We can set table width and height using the attributes width and height respectively.

Example:

```
<table width="400" height="150">
```

Table caption

- Table caption will serve as title or explanation for the table.
- We can place caption at the top or at the bottom of the table. **Example:**

```
<caption align="top">Employee Table</caption>
```

HTML Lists

There are three types of lists in HTML

- Order List
- Unordered List
- Definition List

Ordered List

- The ordered lists are those lists in which the items are arranged in some specific order. That is either ascending or descending order.
- They are denoted with the tag
- The numbering starts from 1 and it is incremented by one for each successive ordered list element tagged with

Type attribute in ordered list

- We can use type attribute for tag to specify the type of
- numbering.
- By default, it is number.
 - <ol type="1"> - Default case numbers
 - <ol type="I"> -Upper case Numerals
 - <ol type="i"> - Lower case Numerals
 - <ol type="A"> -Upper case Letters
 - <ol type="a"> -Lower case Letters

Example

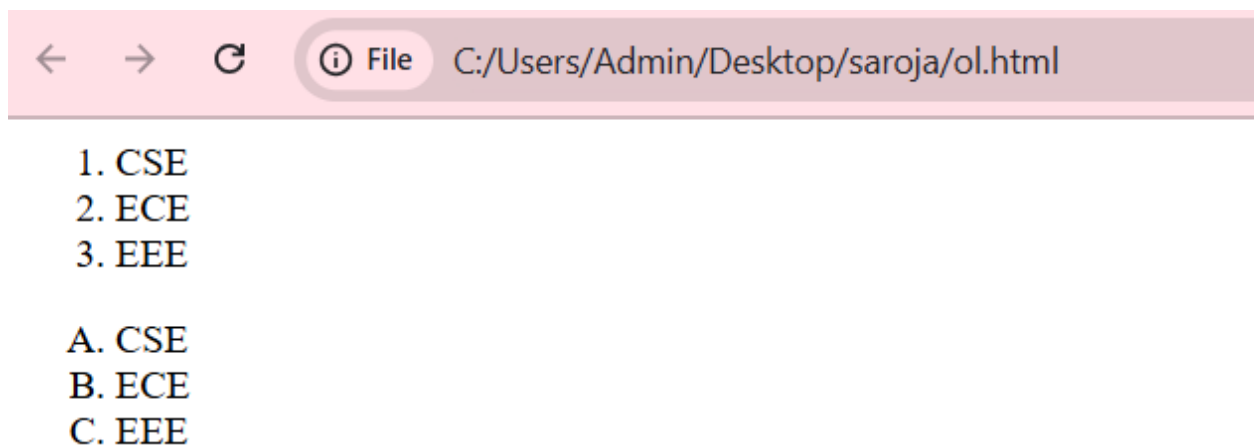
```

<html>
<body>
<ol type="1" start="1">
<li>CSE</li>
<li>ECE</li>
<li>EEE</li>
</ol>
<ol type="i">
<li>CSE</li>
<li>ECE</li>
<li>EEE</li>
</ol>
<ol type="A">
<li>CSE</li>
<li>ECE</li>
<li>EEE</li>
</ol>
</body>
</html>

```


Program Explanation:

- In the above program, we have created three ordered lists. In the first ordered list, we have written `<ol type="1" start="1">` means that type of the list is numbers and starts from 1.
- In the second ordered list, we have written `<ol type="i">` means that it creates list of items as lower case numerals.
- In the second ordered list, we have written `<ol type="A">` means that it creates list of items as Upper case letters.



- In the above screen, first list contains list of items as numbers.
- Second list contains list of items as lower case numerals.
- Third list contains list of items as Upper case letters.

Unordered List

- The unordered lists are those lists in which the items are not arranged in any order.
- They are denoted with the tag
- The list of items can be specified with the tag

Type attribute in unordered list

- We can use type attribute for tag to specify the type of bullet.
- By default, it is disc.

<ul type="square"> - It defines Square bullet

<ul type="disc"> - It defines Disc bullet

<ul type="circle"> - It defines Circle bullet

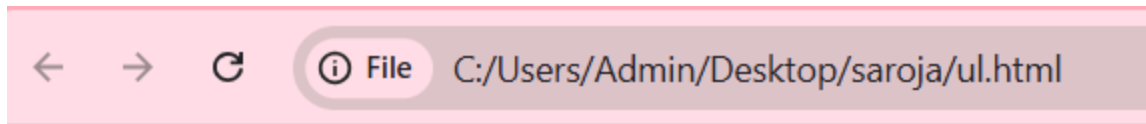
Example

```
<html>
<body>
<ul type="square">
<li>CSE</li>
<li>ECE</li>
<li>EEE</li>
</ul>
<ul type="disc">
<li>CSE</li>
<li>ECE</li>
<li>EEE</li>
</ul>
<ul type="circle">
<li>CSE</li>
```

```
<li>ECE</li>
<li>EEE</li>
</ul>
</body>
</html>
```

Program Explanation:

- In the above program, we have created three unordered lists. In the first unordered list, we have written `<ul type="square">` means that list of items can be displayed with square type of bullets.
- In the second unordered list, we have written `<ul type="disc">` means that list of items can be displayed with disc type of bullets.
- In the second unordered list, we have written `<ul type="circle">` means that list of items can be displayed with circle type of bullets.



- CSE
- ECE
- EEE

- CSE
- ECE
- EEE

- CSE
- ECE
- EEE

- In the above screen, the first list contains list of items with squared bullets.
- The second list contains list of items with disc bullets.
- The third list contains list of items with circle bullets.

Definition List

- Html and XHTML support a list style called definition lists.
- Where entries are listed like a dictionary or encyclopedia.
 - <dl> - Denotes the start of the list
 - <dt> - Denotes the term
 - <dd> - Denotes the definition of term
 - </dl> - Denotes the end of the list

Example:

```
<html>
<body>
<dl>
<dt><b>HTML</b></dt>
<dd>Stands for Hyper Text Markup Language</dd>
</dl>
<dl>
<dt><b>HTTP</b></dt>
<dd>Stands for Hyper Text Transfer Protocol</dd>
</dl>
</body>
</html>
```

Program Explanation:

- In the above program, we have created two definition lists by using <dl> tag.
- In the both the definition lists, we have created a data term by using <dt> tag and we have created data definition by using <dd> tag.

In the above screen, we have two definition lists.

- The first definition list contains the data term "HTML" and data definition "Stands for Hyper Text Markup Language".
- The first definition list contains the data term "HTTP" and data definition "Stands for Hyper Text Transfer Protocol".

HTML Links

- Hyperlinks allow visitors to navigate between websites by clicking on words, Phrases and images.
- A link is specified using <a> tag and this is called as anchor tag.
- Anything between the opening <a> tag and the closing tag becomes part of the link and a user can click that part to reach the linked document.

Syntax:

`link text`

Where href specifies the destination address.

Example:

`google`

In the above example, by clicking on the linked text "google" we can navigate to the google page.

Target attribute in <a> tag

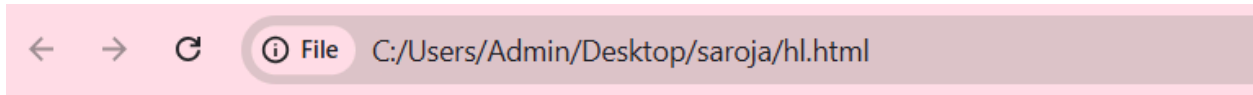
- This attribute is used to specify the location where the linked document is to be opened.
- `_blank` - opens the linked document in new window.
- `_self` - opens the linked document in the same window.
- `_parent` - opens the linked document in the parent frame.
- `_top` - opens the linked document in the full body of the frame.
- `targetframe` - opens the linked document in a named target

Example

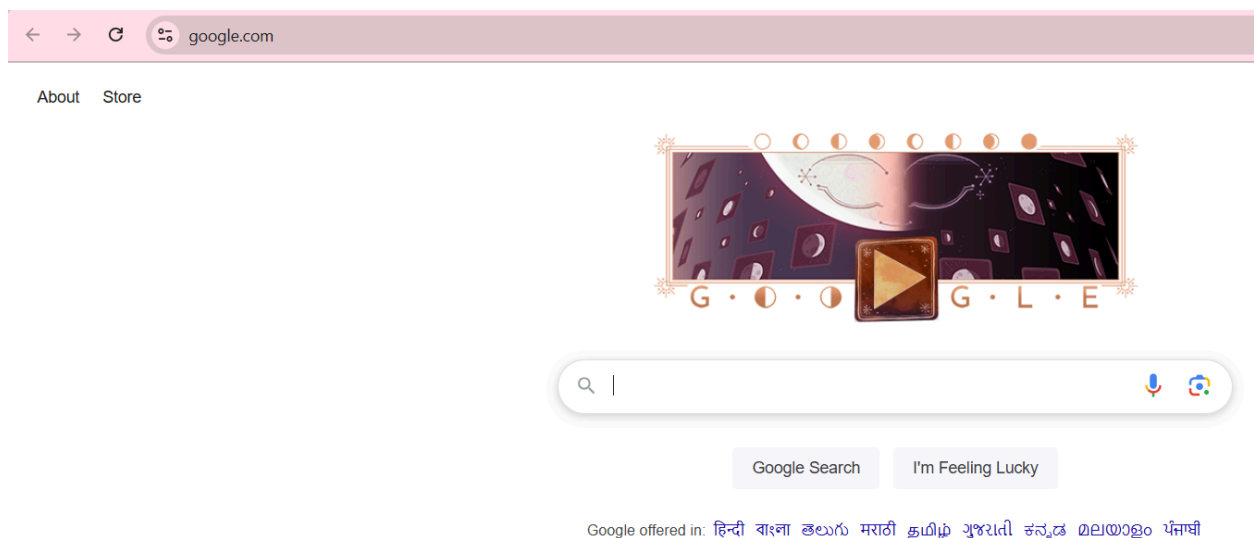
```
<html>
<body>
<a href="http:\\www.google.com" target="_blank" >clickhere</a>
</body>
</html>
```

Program Explanation:

- In the above example, we have created an anchor tag to navigate to google page by clicking on the linked text.
- In the anchor tag we have an attribute `target="_blank"` to open the linked document in the new window.



[clickhere](#)



- In the above screen, by clicking on the linked text "[clickhere](#)" it

opens the google page on the new tab because of `target=_blank` attribute.

HTML Frames

- Html frames are used to divide the browser window into multiple sections where each section can load a separate document.
- Collection of frames in the browser window is known as frameset.

Creating Frames

- In order to use frames on a page we use `<frameset>` tag instead of `<body>` tag.
- It defines how to divide the window into frames.
- Each frame is indicated by using `<frame>` tag which defines which html document shall open into the frame.

`<frameset>` tag attributes

cols attribute:

- It specifies how many columns are contained in the frameset and size of each column.
- We can specify the width of column in four ways.

- Absolute values in pixels

Example: `cols="100,100"`

- A percentage of browser window

Example: `cols="10%,90%"`

- Using wild card symbol

Example: `cols="10%,*"`

- Relative width of the browser window

rows attribute:

- It specifies how many rows are contained in the frameset and

size of each row.

border attribute:

- This attribute specifies the width of the border of each frame in pixels.

Example: border="5"

frameborder attribute:

- This attribute specifies a three dimensional border between frames. It takes values of 1 or zero (no)

Example: frameborder="0"

framespacing attribute:

- This attribute specifies amount space between frames in a frameset.

Example: framespacing="10"

<frame> tag attributes

src attribute:

- This attribute is used to give the file name that should be loaded in the frame. Its value can be any URL.

Example: src="head.html"

name attribute:

- This attribute allows us to give a name to a frame.

Example: name="topframe"

marginwidth attribute:

- This attribute allows us to specify the width of the space between the left and right of the frame borders and the frames content.

Example: marginwidth="10"

marginheight attribute:

- This attribute specifies the height of the space between the top and bottom of the frame borders and its contents.

Example: marginheight="10"

noresize attribute:

- By default, we can resize any frame by clicking and dragging on the borders of a frame. The noresize attribute prevents a user being able to resize the frame.

Example: noresize="noresize"

scrolling attribute:

- This attribute controls the appearance of the scrollbars that appear on the frame.
- It takes either "yes" or "no" or "auto" values.

Example: scrolling="no"

Example: start.html

```
<html>
<head>
<title>home page</title>
</head>
<frameset cols="200,*" frameborder="1" border="0"
framespacing="0">
<frame src="left.html" name="leftframe" scrolling="no"
noresize="noresize" />
<frame src="right.html" name="rightframe" />
</frameset>
<noframes>
<body>
```

Browser does not support frames

```
</body>
```

```
</noframes>
```

```
</html>
```

Program Explanation:

- In the above example, we have divided the browser window into two columns by using `<frameset cols="200,*">` tag.
- In the first column, we have mentioned the source file name as "left.html" by using `<frame src="left.html">` tag.
- In the second column, we have mentioned the source file name as "right.html" and name of the frame is "rightframe" using `<frame src="right.html" name="rightframe">` tag.
- In the above example, we have written the `<noframes>` tag to intimate to the user when the browser doesnot support frames concept.

Example: left.html

```
<html>
```

```
<body bgcolor="pink">
```

```
<a href="reg.html" target="rightframe">Registration</a><br><br>
```

```
<a href="login.html" target="rightframe">Login</a><br><br>
```

```
</body>
```

```
</html>
```

Program Explanation:

- In the above program, we have created two hyper links on the first column of frame.
- In both the hyper links, we have written `target="rightframe"` means that if we click on that hyper link then the document

should be opened on that rightframe.

Example: [right.html](#)

```
<html>
```

```
<body>
```

```
<p>click on any link on the left side and see the result here</p>
```

```
</body>
```

```
</html>
```

