CHAPTER-5

HTML BASED WEB PAGE COVERING BASIC TAG

Introduction To HTML: -
- ❖ HTML stands for Hyper Text Markup Language.
- ❖ HTML is a language for developing WebPages.
- ❖ It is not a programming language, it is a markup language.
- ❖ A markup language is a collection of markup tags.
- ❖ HTML uses markup tags to describe web pages.
- ❖ HTML tags are keywords surrounded by angle brackets ($<\ >$).

Let us analyze the word HTML.

Hyper Text: - Hypertext is the text used to link various web pages. It is the text on a web page, which on clicking opens a new web page.

Mark-up : - It means highlighting the text either by underlining or displaying it in different colors or both.

Language : - It refers to the way of communication between WebPages, which has its own syntax and rules.

Basic Requirements of HTML : -
1. Browser: - It is an application software package used to view and explore information on World Wide Web. A list of web browsers are:
- ❖ Internet Explorer
- ❖ Netscape Navigator
- ❖ Mozilla Firefox
- ❖ Google Chrome
- ❖ Opera etc

2. Editor: - The simple word processor (**Notepad**) is called a text editor and used for writing HTML codes or tags for creating or developing web pages.
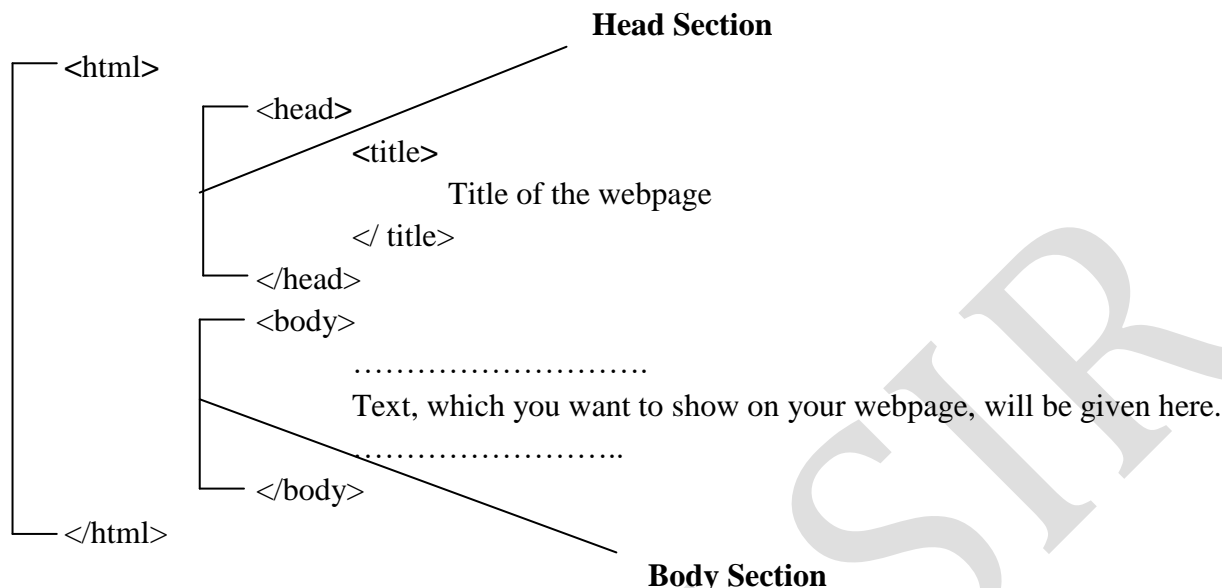
Structure of HTML : -
The general structure of HTML document has two sections: Head and Body.

1. Head section: - The Head section contains the Title that identifies the first part of your HTML coded document.

2. Body section: - The body section is where you do most of the works that include text, graphics and other HTML elements that provide control and formatting of a page like: fonts, paragraph, list and other elements.

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The general format of HTML document is :

Head Section

```
<html>
        <head>
                <title>
                        Title of the webpage
                </ title>
        </head>
        <body>
                ……………………….
                Text, which you want to show on your webpage, will be given here.
                ……………………..
        </body>
</html>
```

Body Section

Basic HTML Elements / Tags: -

Definition: - A Tag is an element, which instructs the web browser , what to show and how to show.

Each Tag giving a specific instruction is enclosed in < > angle brackets.

HTML tags are of two types:

1. Paired Tag: -
- ❖ A paired tag has set of two commands, i.e. starting & ending commands or tags.
- ❖ The first tag (<html>) in a pair is the start tag; the second tag (</html>) is the end tag.
- ❖ Start and end tags are also called opening tags and closing tags.

2. Singular Tag:-
- ❖ The second type of tag is the singular or stand-alone tag.
- ❖ A stand-alone tag does not have a closing tag.
- ❖ For example : <br > tag. There is no ending tag.
- ❖ Sometimes it is called as Unpaired tag.

Difference between Empty tag and container tag: -

Empty Tag	Container Tag
(i) Empty tag is a tag without content or a closing tag.	(i) Container tag consist of opening tag + content + closing tag.
(ii) Empty tags are used to insert something like if you insert image or a line break etc.	(ii) Container tags are used to enclose texts, images etc.
(iii) It is also called Unpaired or singular or stand-alone tag.	(iii) It is also called paired tag.
(iv) Example : , <hr> , <img> etc	(iv) Example :<html>,<head>, <body>, <p>etc

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Every HTML page should contain certain standard HTML tags. There are four tags that are required for every page. They are :

1. <HTML> </HTML>
2. <HEAD> </HEAD>
3. <TITLE> </TITLE>
4. <BODY> </BODY>

1. <HTML>: -

- ❖ Every HTML document starts with <HTML> tag and ends with </HTML> tag, which identifies that it is a standard HTML document.
- ❖ Everything is written with in these tags.
- ❖ If the commands are not enclosed in tags then a web browser will assume the commands as text.

Syntax :

    <HTML>

        …………..

        …………..

    </HTML>

2. <HEAD> & <TITLE> : -

- ❖ The <TITLE> tag has to be given within the <HEAD> tag.
- ❖ It contains the title of the document.
- ❖ The title should be short and it is recommended to include less than 64 characters in a Title.
- ❖ The main element in the Head section is the <TITLE> tag.
- ❖ Generally, the title appears in the title bar of the web browser window.

Syntax:

    <HEAD>

        <TITLE>

          The Title is included here

        </TITLE>

    </HEAD>

3. <BODY> : -

- ❖ The <BODY> tag includes text that contains the information about the document that gets displayed on the web page along with all other tags and attributes.
- ❖ In <BODY> tag only we use all formatting elements, images, heading, list, hypertext, links etc to enhance the appearance of a web page.

Syntax:

```
<HTML>
    <HEAD>
        <TITLE>
            …………..
        </TITLE>
    <HEAD>
    <BODY>
        The body is included here
        ………………………..
    </BODY>
<.HTML>
```

Commonly used Elements/Tags used in HTML: -

1. BOLD: The Bold element specifies that the text should be displayed in bold face.

  Syntax: <B>………….</B>

  Example: <B> Asish </B>

  Output: **Asish**

2. ITALIC: The Italic element specifies that the text should be displayed using the italic font.

  Syntax: <I>................</I>

  Example: <I>Kumar</I>

  Output: *Kumar*

3. UNDERLINE: The Underline element states that the enclosed text should be underlined.

  Syntax: <U>………….</U>

  Example: <U> Satapathy </U>

  Output: <u>Satapathy</u>

4. BIG: The Big element specifies that the enclosed text should be displayed using a bigger font (compared with the current font).

  Syntax: <BIG>………….</BIG>

  Example: <BIG> Lect. in I.T. </BIG>

  Output: Lect. in I.T.

5. SMALL: The Small element specifies that the enclosed text should be displayed using a smaller font (compared with the current font).

  Syntax: <SMALL>………….</SMALL>

  Example: <SMALL> Lect. in I.T. </SMALL>

  Output: Lect. in I.T.

6. BLINK: Surrounding any text with this element will cause the selected text to blink on the viewing page.

  Syntax: <BLINK>……………..<BLINK>

Note: - The <BLINK> </BLINK> element is currently only supported by the Netscape Navigator browser. In the Internet Explorer <MARQUEE> </MARQUEE> is used to get the same effect.

    Syntax: <MARQUEE>......................</MARQUEE>

    Example: <MARQUEE> This is basic example of marquee </MARQUEE>

    Output:

                                 This is basic example of marquee

7. **STRIKE:** The Strike element states that the enclosed text should be displayed with a horizontal line striking through the text.

    Syntax: <STRIKE>......................</STRIKE>

    Example: <STRIKE> BRAHMAPUR </STRIKE>

    Output: ~~BRAHMAPUR~~

8. **SUBSCRIPT:** The Subscript element specifies that the enclosed text should be displayed as a subscript using a smaller font (compared to the rest of the text).

    Syntax: _{......................}

    Example: a ₁ - a ₂ = b ₁ - b₂

    Output: $a_1 - a_2 = b_1 - b_2$

9. **SUPERSCRIPT**: The Superscript element specifies that the enclosed text should be displayed as a superscript using a smaller font (compared to the rest of the text).

    Syntax: ^{......................}

    Example: (a + b) <SUP>2</SUB> = a ²+b²+2ab

    Output: $(a + b)^2 = a^2 + b^2 + 2ab$

10. **TYPEWRITER:** The Teletype element specifies that the text should be rendered in fixed width typewriter font.

    Syntax: <TT>………….</TT>

    Example: <TT>Local Echo is on</TT>

    Output: `Local Echo is on`

How to create a webpage using HTML code in Notepad: -

Step -1 : Click On Start -> All Programs -> Accessories -> Choose Notepad

Step -2 : After open, write the necessary HTML code in Notepad.

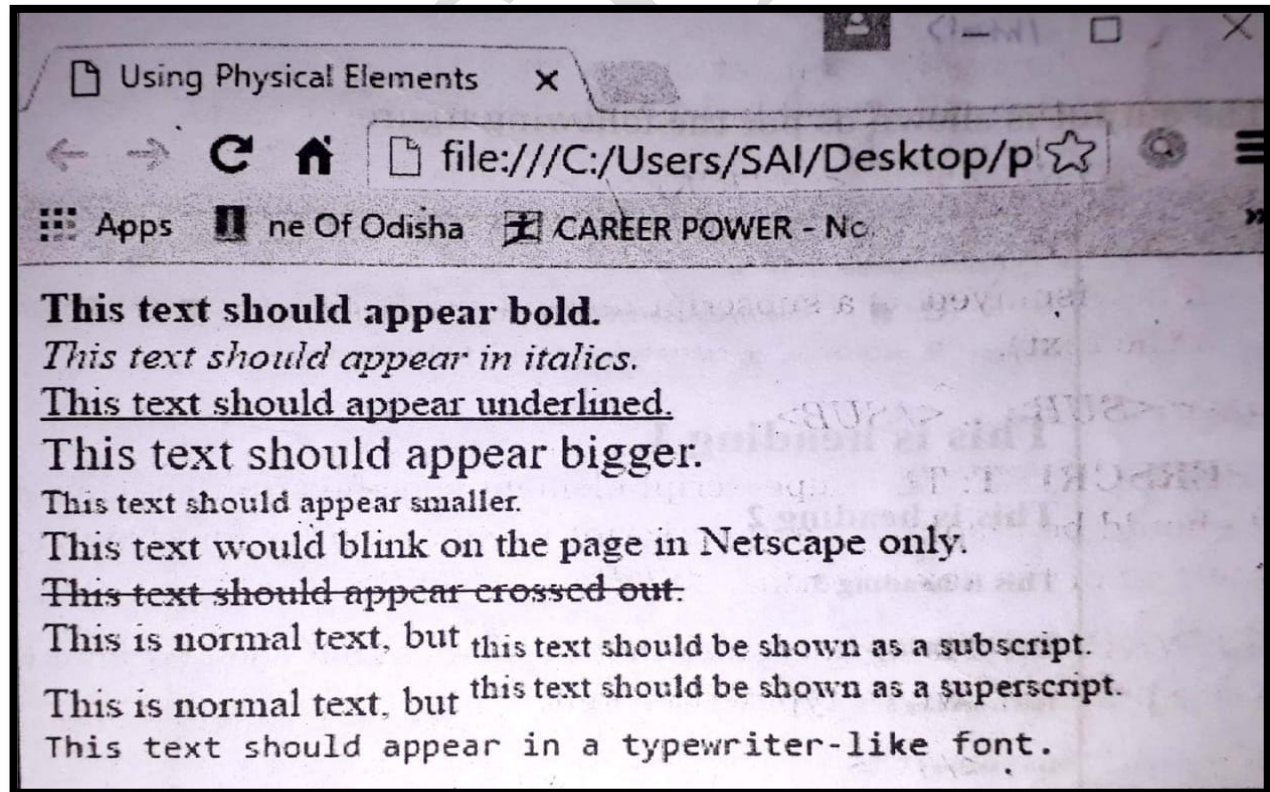**Step-3 :** After writing the code Click on File -> Save As

Step-4 : Choose the path you have to save and save the file with .html or .htm . (Example: D:/asish.html)

Step -5: Now Simply, open the saved HTML file in any browser: (or) Double click on the file (or) right-click on the file and choose "Open with" option to select the browser you want.

Example: Type the following HTML code in your Notepad:

```
physical element - Notepad
File  Edit  Format  View  Help
<HTML>
<HEAD>
        <TITLE>Using Physical Elements</TITLE>
</HEAD>
<BODY>
        <B>This text should appear bold.</B><BR>
        <I>This text should appear in italics.</I><BR>
        <U>This text should appear underlined.</U><BR>
        <BIG>This text should appear bigger.</BIG><BR>
        <SMALL>This text should appear smaller.</SMALL><BR>
        <BLINK>This text would blink on the page in Netscape only.</BLINK><BR>
        <STRIKE>This text should appear crossed out.</STRIKE><BR>
        This is normal text, but <SUB>this text should be shown as a subscript.</SUB><BR>
        This is normal text, but <SUP>this text should be shown as a superscript.</SUP><BR>
        <TT>This text should appear in a typewriter-like font.</TT>
</BODY>
</HTML>
```

Output: -

Using Physical Elements

file:///C:/Users/SAI/Desktop/p

Apps ne Of Odisha CAREER POWER - No

This text should appear bold.
This text should appear in italics.
<u>This text should appear underlined.</u>
This text should appear bigger.
This text should appear smaller.
This text would blink on the page in Netscape only.
~~This text should appear crossed out.~~
This is normal text, but this text should be shown as a subscript.
This is normal text, but this text should be shown as a superscript.
This text should appear in a typewriter-like font.

Heading Tags:-

- ❖ Any document starts with a heading.
- ❖ You can use different sizes for your headings.
- ❖ HTML also has six levels of headings, which use the elements **<h1>, <h2>, <h3>, <h4>, <h5>,** and **<h6>**.
- ❖ While displaying any heading, browser adds one line before and one line after that heading.
- ❖ The lower the number, the larger the heading size.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>Heading Tag Example</title>
</head>
<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>
```

Output:
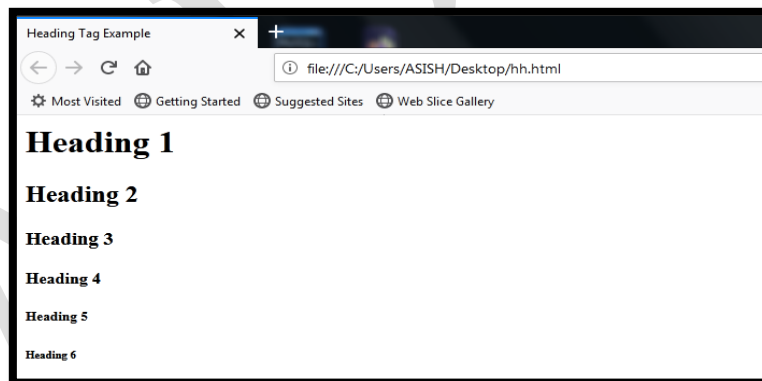
Line Break Tag: -

- ❖ If you want a line break (a new line) without starting a new paragraph, use the <br /> tag.
- ❖ The <br /> element is an empty HTML element.
- ❖ It has no end tag.
- ❖ The <br /> tag has a space between the characters br and the forward slash.

Example: Type the following HTML code in your Notepad:

```html
<html>
<head>
<title>Line Break Example</title>
</head>
<body>
Hello Students<br />How are you??? <br>
Hope you all stay safe at your home…... <br>
 Thanks <br>
</body>
</html>
```

Output:-
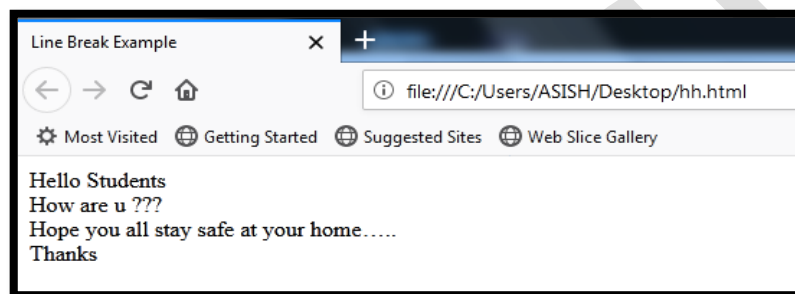
Section Separator Tag : -

- ❖ Horizontal lines are used to visually break up sections of a document.
- ❖ The <hr> tag creates a line from the current position in the document to the right margin and breaks the line accordingly.
- ❖ **<hr />** tag is an example of the **empty** element, where you do not need opening and closing tags, as there is nothing to go in between them.

Example: Type the following HTML code in your Notepad:

```html
<html>
<head>
<title>Horizontal Line Break Example</title>
 </head>
 <body>
        This is the first line and should be display on top.
        <hr>
        This is the next line and should be display on bottom.
 </body>
 <html>
```

Output: -

Paragraph Tag: -

❖ HTML document are divided into paragraphs.

❖ Paragraphs are defined with the <p> tag.

❖ Each paragraph if text should go in between an opening <p> and a closing </p> tag.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>Paragraph Example</title>
</head>
<body>
        <p> Here is a first paragraph of text. <br>
            HTML stands for Hyper Text Markup Language. It is not a
            programming language. It is a markup language.
        </p>
        <p> Here is a second paragraph of text. <br>
            HTML language is generally used for web page designing.
        </p>
</body>
<html>
```

Output:-
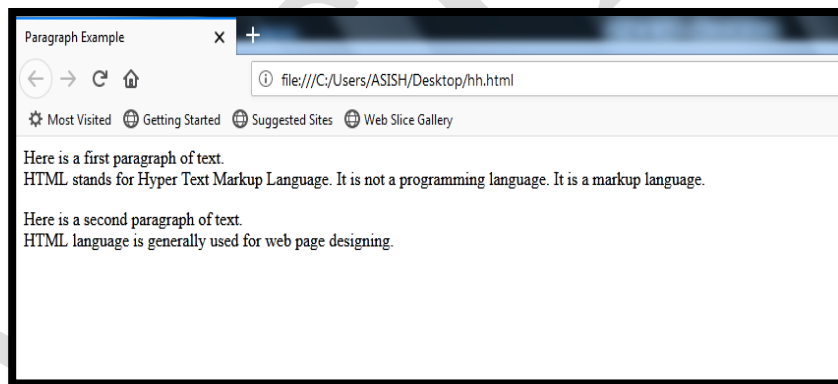
Attribute: -

❖ An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag.

❖ All attributes are made up of two parts − a **name** and a **value.**

❖ The **name** is the property you want to set.
For example, the paragraph **<p>** element in the example carries an attribute whose name is **align**, which you can use to indicate the alignment of paragraph on the page.

❖ The **value** is what you want the value of the property to be set and always put within quotations.

❖ The below example shows possible values of align attribute: **left, center**, **right and justified**.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>Align Attribute  Example</title>
</head>
<body>
<p align="left">This is left aligned</p>
<p align="center">This is center aligned</p>
<p align="right">This is right aligned</p>
<p align="justified">This is justified aligned</p>
</body>
</html>
```

Output:-
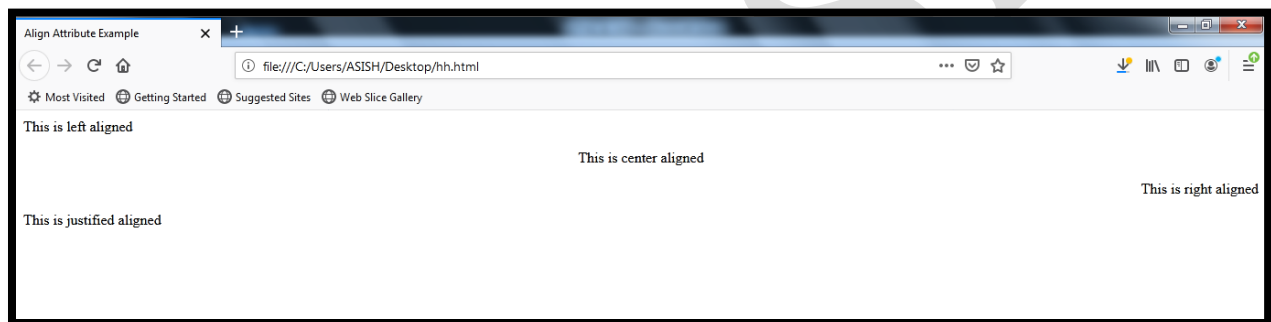
Font Tag : -

❖ The Font element is change the color,size and face of the font.
❖ Font tag has the following attributes :

    a) **FACE : -** This attribute allows you to change the face of the HTML document.For Example-Times New Roman, Arial,Impact,Arial Black, Cambria,Monotype Corsiva,Wide Latin etc.

    b) **COLOR :-** This attribute defines the text color to be set.Colors can either be set by using one of the color names or as a hex **'rrggbb'** trplet value. Where r-red,   g-green, b-blue. For Example-

Color Name	Color Code
RED	#FF0000
BLUE	#0000FF
CYAN	#00FFFF
YELLOW	#FFFF00
WHITE	#FFFFFF
BLACK	#000000
ORANGE	#FFA500
GREEN	#008000

    In color attribute, we can write either the color name or color code.Color codes are hexadecimal number.

    c) **SIZE :-** This attribute defines the size of the font, in a range from 1(smallest) to 7(largest).The default size of a font is 3.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>Font tag Example</title>
</head>
<body>
<font face="Arial Black" color="red" size="1">Example Using Font Tag</font><br>
<font face="Times New Roman" color="Green" size="2">Example Using Font Tag</font><br>
<font face="Impact" color="#00FFFF" size="3">Example Using Font Tag</font><br>
<font face="Wide Latin" color="blue" size="4">Example Using Font Tag</font><br>
<font face="Monotype Corsiva" color="blue" size="5">Example Using Font Tag</font><br>
<font face="Arial" color="Maroon" size="6">Example Using Font Tag</font><br>
<font face="Cambria" color="Purple" size="7">Example Using Font Tag</font><br>
<font face="Castellar" color="Yellow" >Example Using Font Tag</font><br>
</body>
</html>
```

Output:-

Table Tag:-
- ❖ Tables are defined using the **<table>** tag.
- ❖ A table is divided into rows with the **<tr>** tag and each row is divided into cells using the **<td>** tag. The letters td stands for "**table data**", which is the content of a data cell.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Tables</title>
</head>
<body>
<table border = "1">
<tr>
<td>Row 1, Column 1</td>
<td>Row 1, Column 2</td>
```

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```
</tr>
<tr>
<td>Row 2, Column 1</td>
<td>Row 2, Column 2</td>
</tr>
</table>
</body>
</html>
```

Output:-
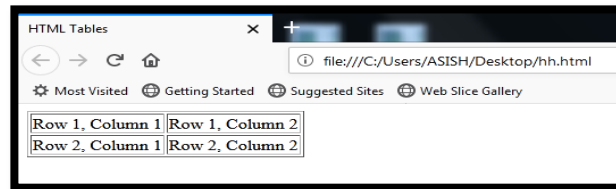
Table Heading :-
- ❖ Table heading can be defined using <th> tag.
- ❖ This tag will be put to replace <td> tag, which is used to represent actual data cell.
- ❖ Normally you will put your top row as table heading as shown below, otherwise you can use <th> element in any row.
- ❖ Headings, which are defined in <th> tag are centered and bold by default.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Table Header</title>
</head>
<body>
<table border = "1">
<tr>
<th>Name</th>
<th>Salary</th>
</tr>
<tr>
<td>Asish Kumar Satapathy</td>
<td>25000</td>
</tr>
<tr>
<td>Anil Kumar Das</td>
<td>57000</td>
</tr>
</table>
</body>
</html>
```

Output:-

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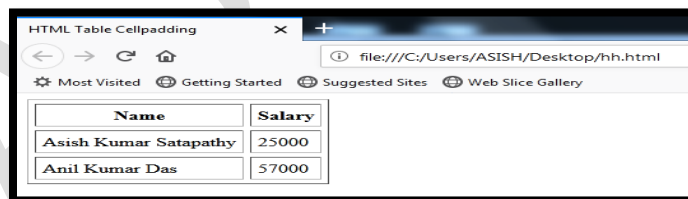
Cellpadding and Cellspacing Attributes :-

- ❖ There are two attributes called **cellpadding** and **cellspacing** which you will use to adjust the white space in your table cells.
- ❖ The **cellspacing** attribute defines space between table cells.
- ❖ **Cellpadding** represents the distance between cell borders and the content within a cell.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Table Cellpadding</title>
</head>
<body>
<table border = "1" cellpadding = "5" cellspacing = "5">
<tr>
<th>Name</th>
<th>Salary</th>
</tr>
<tr>
<td> Asish Kumar Satapathy </td>
<td>25000</td>
</tr>
<tr>
<td> Anil Kumar Das </td>
<td>57000</td>
</tr>
</table>
</body>
</html>
```

Output:-

Colspan and Rowspan Attributes :-

- ❖ If you want to merge two or more columns into a single column, You will use **colspan** attribute.
- ❖ Similar way if you want to merge two or more rows , you will use **rowspan** .

Example: Type the following HTML code in your Notepad:
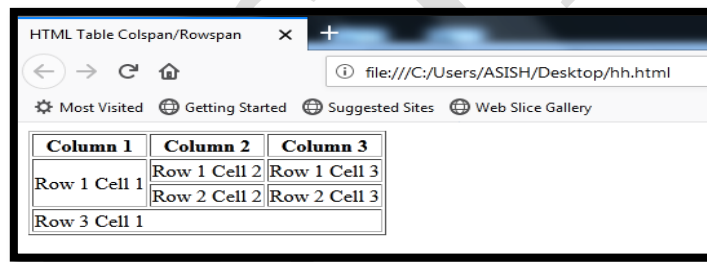
```
<html>
<head>
<title>HTML Table Colspan/Rowspan</title>
```

```
</head>
<body>
<table border = "1">
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
<tr>
<td rowspan = "2">Row 1 Cell 1</td>
<td>Row 1 Cell 2</td>
<td>Row 1 Cell 3</td>
</tr>
<tr>
<td>Row 2 Cell 2</td>
<td>Row 2 Cell 3</td>
</tr>
<tr>
<td colspan = "3">Row 3 Cell 1</td>
</tr>
</table>
</body>
</html>
```
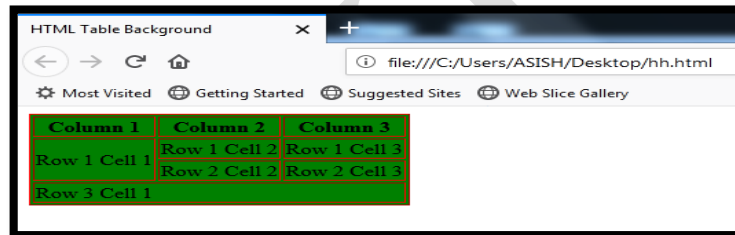
Output:-

Tables Backgrounds :-

- ❖ You can set table background using one of the following two ways –
- ❖ **bgcolor attribute** − You can set background color for whole table or just for one cell.
- ❖ **background attribute** − You can set background image for whole table or just for one cell.
- ❖ You can also set border color also using **bordercolor** attribute.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Table Background</title>
</head>
<body>
<table border = "1" bordercolor = "green" bgcolor = "yellow">
```

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```
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
<tr>
<td rowspan = "2">Row 1 Cell 1</td>
<td>Row 1 Cell 2</td>
<td>Row 1 Cell 3</td>
</tr>
<tr>
<td>Row 2 Cell 2</td>
<td>Row 2 Cell 3</td>
</tr>
<tr>
<td colspan = "3">Row 3 Cell 1</td>
</tr>
</table>
</body>
</html>
```

Output:-

Here is an example of using background attribute. Here we will use an image available in /images directory.

```
<html>
<head>
<title>HTML Table Background</title>
</head>
<body>
<table border = "1" bordercolor = "green" background = "/images/test.png">
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
<tr>
<td rowspan = "2">Row 1 Cell 1</td>
<td>Row 1 Cell 2</td><td>Row 1 Cell 3</td>
</tr>
<tr>
<td>Row 2 Cell 2</td>
```

```
<td>Row 2 Cell 3</td>
</tr>
<tr>
<td colspan = "3">Row 3 Cell 1</td>
</tr>
</table>
</body>
</html>
```

Output:-

Table Height and Width :-

❖ You can set a table width and height using **width** and **height** attributes.
❖ You can specify table width or height in terms of pixels or in terms of percentage of available screen area.
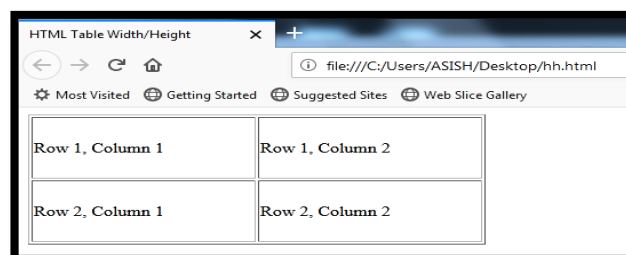
Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Table Width/Height</title>
</head>
<body>
<table border = "1" width = "400" height = "150">
<tr>
<td>Row 1, Column 1</td>
<td>Row 1, Column 2</td>
</tr>
<tr>
<td>Row 2, Column 1</td>
<td>Row 2, Column 2</td>
</tr>
</table>
</body>
</html>
```
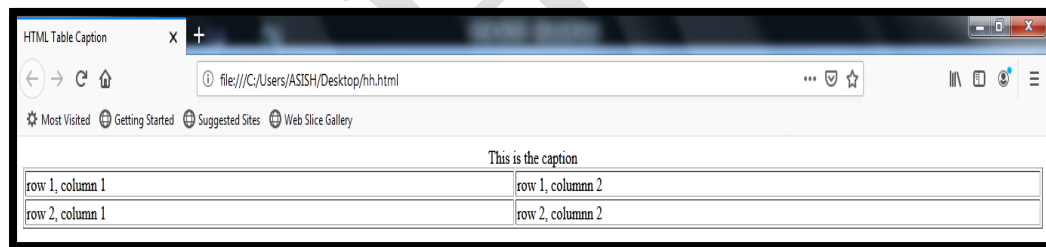
Output:-

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Table Caption :

❖ The **caption** tag will serve as a title or explanation for the table and it shows up at the top of the table.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Table Caption</title>
</head>
<body>
<table border = "1" width = "100%">
<caption>This is the caption</caption>
<tr>
<td>row 1, column 1</td><td>row 1, columnn 2</td>
</tr>
<tr>
<td>row 2, column 1</td><td>row 2, columnn 2</td>
</tr>
</table>
</body>
</html>
```

Output:-

Table Header, Body, and Footer :

❖ Tables can be divided into three portions − a header, a body, and a foot. The head and foot are rather similar to headers and footers in a word-processed document that remain the same for every page, while the body is the main content holder of the table.
❖ The three elements for separating the head, body, and foot of a table are −
❖ **<thead>** − to create a separate table header.
❖ **<tbody>** − to indicate the main body of the table.
❖ **<tfoot>** − to create a separate table footer.
❖ A table may contain several <tbody> elements to indicate different pages or groups of data.
❖ But it is notable that <thead> and <tfoot> tags should appear before <tbody>.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Table</title>
</head>
```

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```
<body>
<table border = "1" width = "100%">
<thead>
<tr>
<td colspan = "4">This is the head of the table</td>
</tr>
</thead>
<tfoot>
<tr>
<td colspan = "4">This is the foot of the table</td>
</tr>
</tfoot>
<tbody>
<tr>
<td>Cell 1</td>
<td>Cell 2</td>
<td>Cell 3</td>
<td>Cell 4</td>
</tr>
</tbody>
</table>
</body>
</html>
```
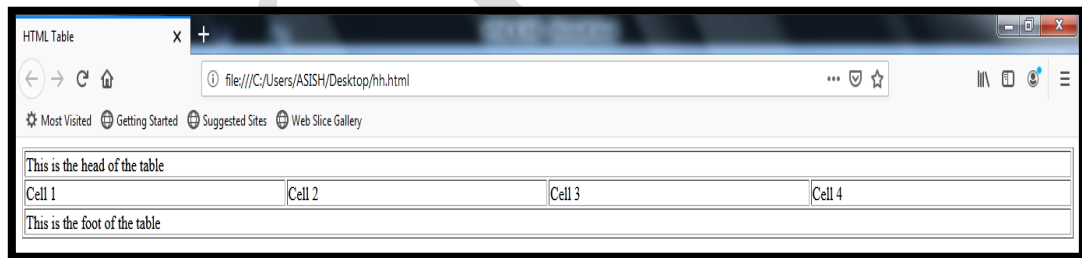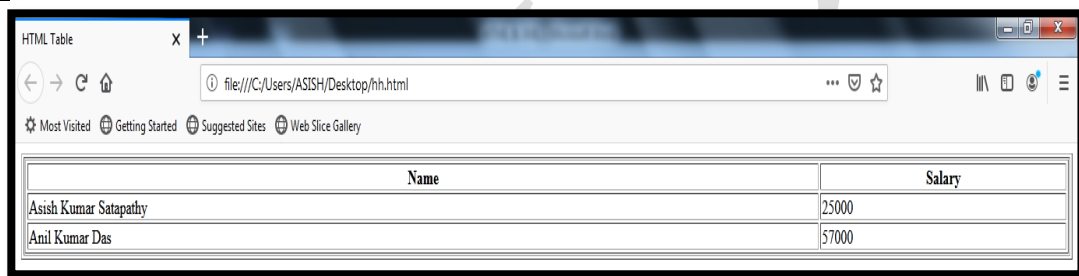
Output:-

Nested Tables:
- ❖ You can use one table inside another table.
- ❖ Not only tables you can use almost all the tags inside table data tag <td>.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Table</title>
</head>
<body>
<table border = "1" width = "100%">
<tr>
<td>
<table border = "1" width = "100%">
<tr>
```

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```
<th>Name</th>
<th>Salary</th>
</tr>
<tr>
<td>Asish Kumar Satapathy</td>
<td>25000</td>
</tr>
<tr>
<td>Anil Kumar Das</td>
<td>7000</td>
</tr>
</table>
</td>
</tr>
</table>
</body>
</html>
```

Output:-

List Tag:-

HTML supports three types of lists.
1. − An unordered list. This will list items using plain bullets.
2. − An ordered list. This will use different schemes of numbers to list your items.
3. <dl> − A definition list. This arranges your items in the same way as they are arranged in a dictionary.

1. HTML Unordered Lists :

❖ An unordered list is a collection of related items that have no special order or sequence.

❖ This list is created by using HTML <ul> tag.

❖ Each item in the list is marked with a bullet.

❖ Each list item starts with the <li> tag.

❖ By default it is a disc.

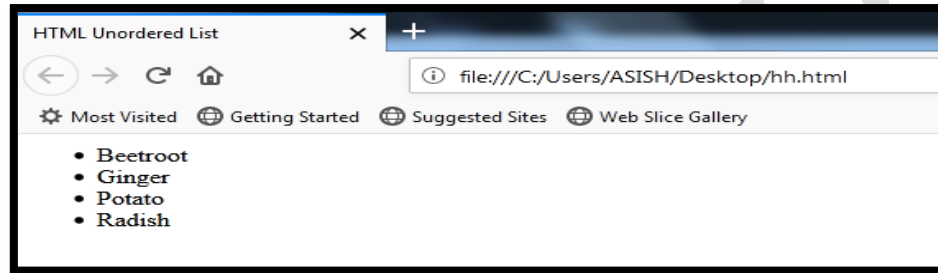**Example:** Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Unordered List</title>
</head>
```

```
<body>
<ul
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ul>
</body>
</html>
```

Output:-

The type Attribute:

You can use type attribute for <ul> tag to specify the type of bullet you like. By default, it is a disc. Following are the possible options −
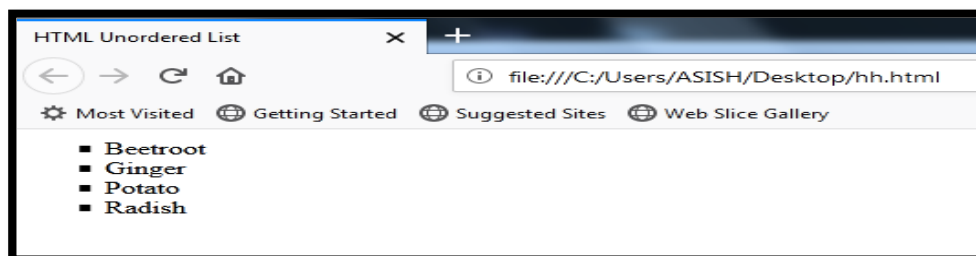
<ul type = "square">

<ul type = "disc">

<ul type = "circle">

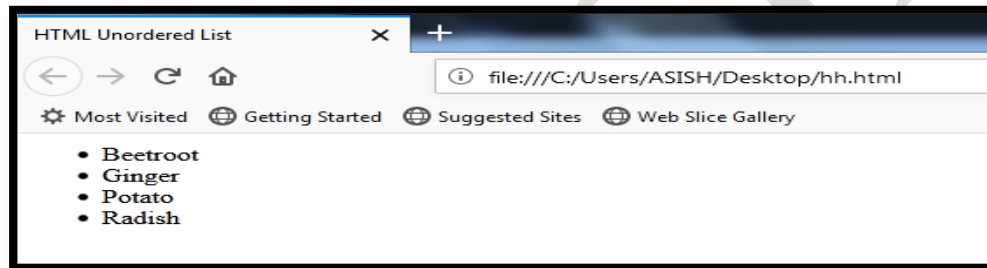**Example:** Following is an example where we used **<ul type = "square">**

```
<html>
<head>
<title>HTML Unordered List</title>
</head>
<body>
<ul type = "square">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ul>
</body>
</html>
```

Output:-

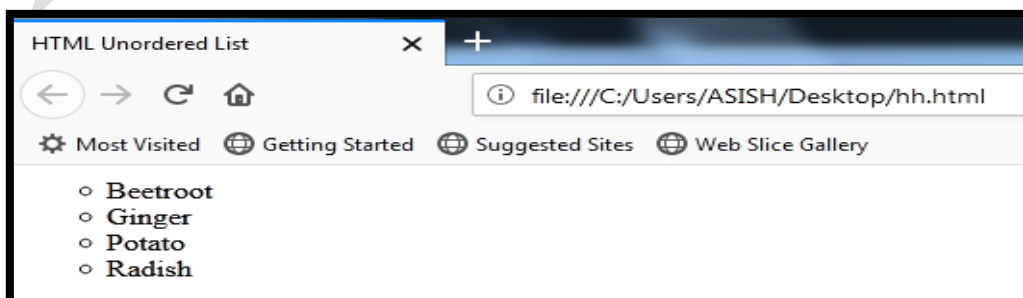**Example :** Following is an example where we used **<ul type = "disc">**

```
<html>
<head>
<title>HTML Unordered List</title>
</head>
<body>
<ul type = "disc">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ul>
</body>
</html>
```

Output:-

Example : Following is an example where we used **<ul type = "circle">**

```
<html>
<head>
<title>HTML Unordered List</title>
</head>
<body>
<ul type = "circle">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ul>
</body>
</html>
```

Output:-

2. HTML Ordered Lists :

❖ If you are required to put your items in a numbered list instead of bulleted, then HTML ordered list will be used.

❖ This list is created by using <ol> tag.

❖ The numbering starts at one and is incremented by one for each successive ordered list element tagged with <li>.

❖ By default it is a number.

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Ordered List</title>
</head>
<body>
<ol>
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>
</html>
```

Output:-
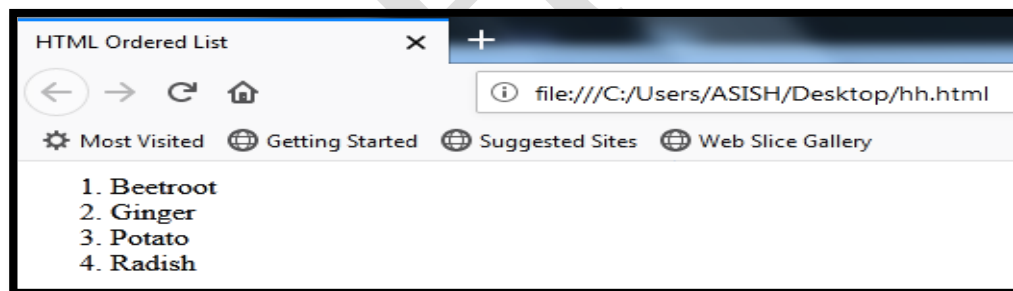
The type Attribute :

You can use type attribute for <ol> tag to specify the type of numbering you like. By default, it is a number. Following are the possible options −

<ol type = "1"> - Default-Case Numerals.

<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 : Following is an example where we used **<ol type = "I">**

```
<html>
<head>
<title>HTML Ordered List</title>
</head>
<body>
```

```
<ol type = "I">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>
</html>
```

Output:-

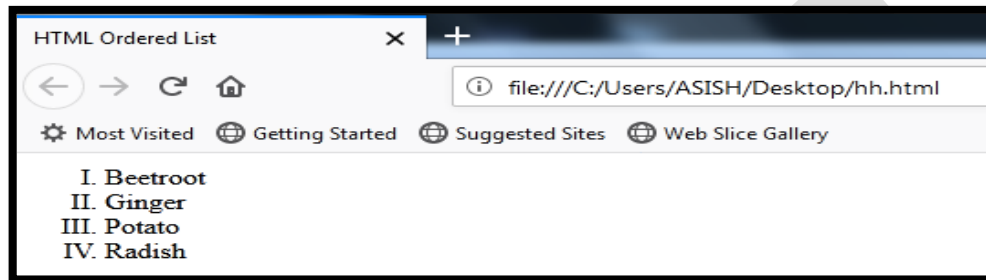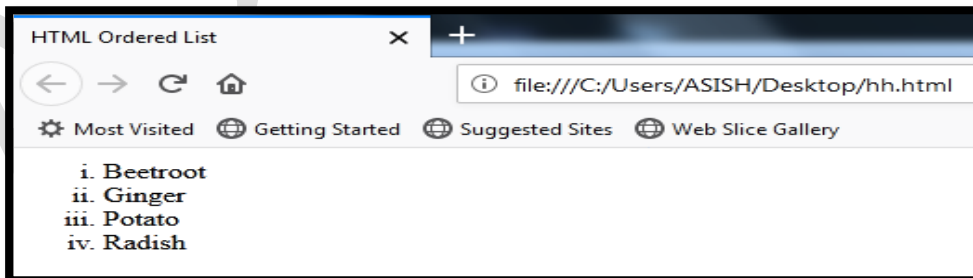**Example :** Following is an example where we used **<ol type = "i">**

```
<html>
<head>
<title>HTML Ordered List</title>
</head>
<body>
<ol type = "i">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>
</html>
```

Output:-

Example : Following is an example where we used **<ol type = "A" >**

```
<html>
<head>
<title>HTML Ordered List</title>
</head>
<body>
```

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```
<ol type = "A">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>
</html>
```

Output:-

Example : Following is an example where we used **<ol type = "a">**

```
<html>
<head>
<title>HTML Ordered List</title>
</head>
<body>
<ol type = "a">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>
</html>
```
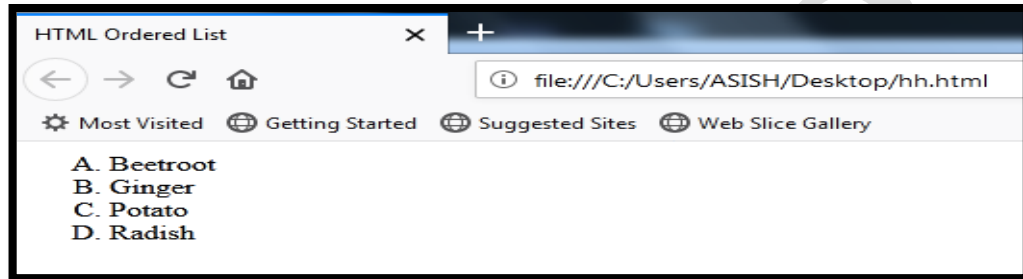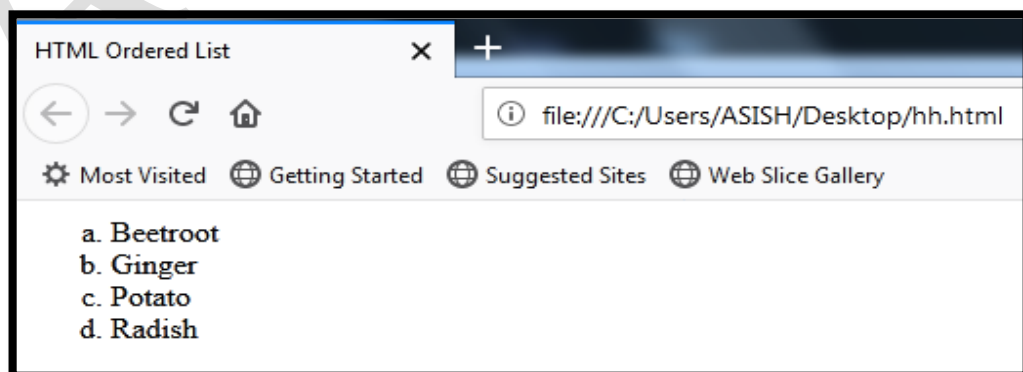
Output:-

The start Attribute :

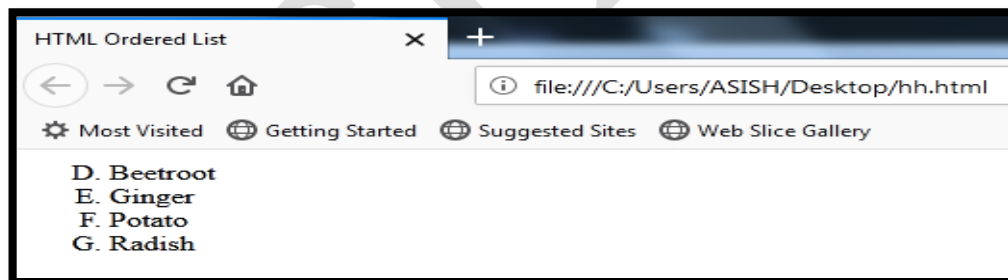You can use start attribute for <ol> tag to specify the starting point of numbering you need.
Following are the possible options −

<ol type = "1" start = "4">   - Numerals starts with 4.
<ol type = "I" start = "4">   - Numerals starts with IV.
<ol type = "i" start = "4">   - Numerals starts with iv.
<ol type = "a" start = "4">   - Letters starts with d.
<ol type = "A" start = "4">   - Letters starts with D.

Example : Following is an example where we used <ol type = "A" start = "4" >

```
<html>
<head>
<title>HTML Ordered List</title>
</head>
<body>
<ol type = "A" start = "4">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>
</html>
```

Output:-

3. HTMLDefinition Lists : -

❖ HTML and XHTML supports a list style which is called definition lists where entries are listed like in a dictionary or encyclopedia.

❖ The definition list is the ideal way to present a glossary, list of terms, or other name/value list.

❖ Definition List makes use of following three tags.

    <dl> − Defines the start of the list

    <dt> − A term

    <dd> − Term definition

    </dl> − Defines the end of the list

Example: Type the following HTML code in your Notepad:

```
<html>
<head>
<title>HTML Definition List</title></head>
```
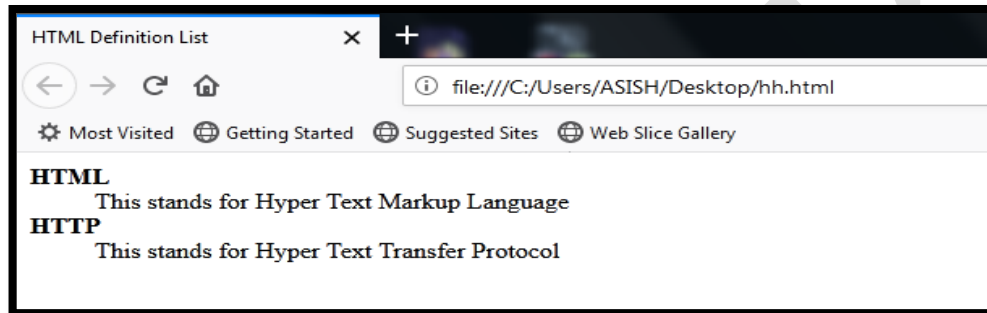
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```
<body>
<dl>
<dt><b>HTML</b></dt>
<dd>This stands for Hyper Text Markup Language</dd>
<dt><b>HTTP</b></dt>
<dd>This stands for Hyper Text Transfer Protocol</dd>
</dl>
</body>
</html>
```

Output:-

HTML FORM : -

- ❖ HTML Forms are required, when you want to collect some data from the site visitor.
- ❖ For example, during user registration you would like to collect information such as name, email address, credit card, etc.
- ❖ A form will take input from the site visitor and then will post it to a back-end application such as CGI (Common Gateway Interface), ASP (Active Server Page) Script or PHP (Hypertext Pre Processor) script etc.
- ❖ There are various form elements available like text fields, text area fields, drop-down menus, radio buttons, checkboxes, etc.

HTML Form Controls :-

There are different types of form controls that you can use to collect data using HTML form

- ➢ Text Input Controls
- ➢ Checkboxes Controls
- ➢ Radio Box Controls
- ➢ Select Box Controls
- ➢ File Select boxes
- ➢ Hidden Controls
- ➢ Clickable Buttons
- ➢ Submit and Reset Button

1. Text Input Controls : -

There are three types of text input used on forms –

a) **Single-line text input controls** − This control is used for items that require only one line of user input, such as search boxes or names. They are created using HTML <input> tag.

b) **Password input controls** − This is also a single-line text input but it masks the character as soon as a user enters it. They are also created using HTMl<input> tag.

c) **Multi-line text input controls** − This is used when the user is required to give details that may be longer than a single sentence. Multi-line input controls are created using HTML <textarea> tag.
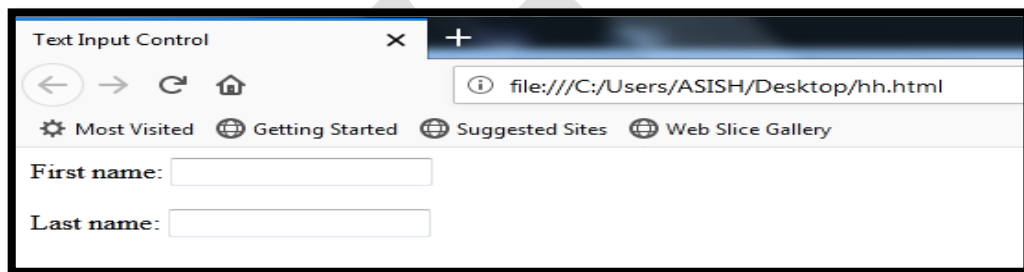
(a) Single-line text input controls :-

This control is used for items that require only one line of user input, such as search boxes or names. They are created using HTML <input> tag.

Example: Here is a basic example of a single-line text input used to take first name and last name –

```
<html>
<head>
<title>Text Input Control</title>
</head>
<body>
<form>
      First name: <input type="text"name="first_name"/>
<br><br>
      Last name: <input type="text"name="last_name"/>
</form>
</body>
</html>
```

Output:-

Attributes :-

Following is the list of attributes for <input> tag for creating text field.

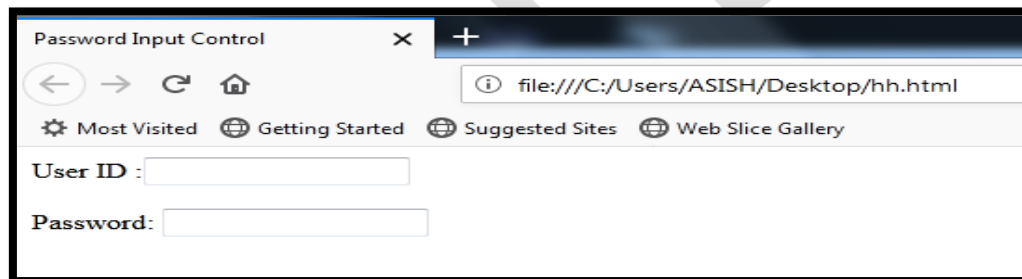| Sl.No	Attribute	Description
1	**type**	Indicates the type of input control and for text input control it will be set to **text**.
2	**name**	Used to give a name to the control which is sent to the server to be recognized and get the value.
3	**value**	This can be used to provide an initial value inside the control.
4	**size**	Allows to specify the width of the text-input control in terms of characters.
5	**maxlength**	Allows to specify the maximum number of characters a user can enter into the text box.

(b) Password input controls : -

This is also a single-line text input but it masks the character as soon as a user enters it. They are also created using HTML <input>tag but type attribute is set to **password**.

Example : Here is a basic example of a single-line password input used to take user

password −

```
<html>
<head>
<title>Password Input Control</title>
</head>
<body>
<form>
     User ID :<input type="text"  name="user_id"/>
<br><br>
      Password: <input type="password" name="password"/>
</form>
</body>
</html>
```

Output:-

Attributes

Following is the list of attributes for <input> tag for creating password field.

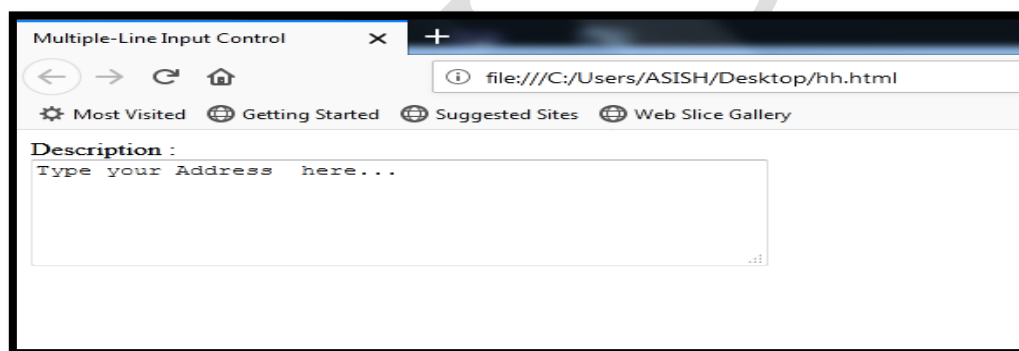| Sl.No	Attribute	Description
1	**type**	Indicates the type of input control and for password input control it will be set to **password**.
2	**name**	Used to give a name to the control which is sent to the server to be recognized and get the value.
3	**value**	This can be used to provide an initial value inside the control.
4	**size**	Allows to specify the width of the text-input control in terms of characters.
5	**maxlength**	Allows to specify the maximum number of characters a user can enter into the text box.

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(c) Multiple-Line Text Input Controls :-

This is used when the user is required to give details that may be longer than a single sentence. Multi-line input controls are created using HTML <textarea> tag.

Example : Here is a basic example of a multi-line text input used to take item description –

```
<html>
<head>
<title>Multiple-Line Input Control</title>
</head>
<body>
<form>
Description :<br/><br>
<textarea rows="5"cols="50" name="description">
        Type your Address  here...
</textarea>
</form>
</body>
</html>
```

Output:-

Attributes:-

Following is the list of attributes for **<textarea>** tag.

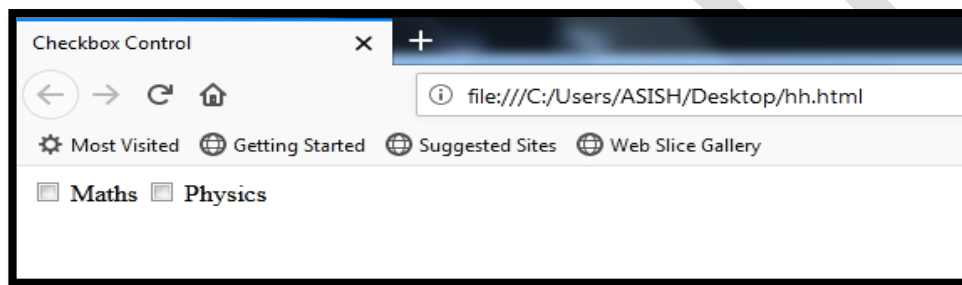| Sl.No	Attribute	Description
1	**name**	Used to give a name to the control which is sent to the server to be recognized and get the value.
2	**rows**	Indicates the number of rows of text area box.
3	**cols**	Indicates the number of columns of text area box

2. Checkbox Control :-

Checkboxes are used when more than one option is required to be selected. They are also created using HTML <input> tag but type attribute is set to **checkbox.**

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Example: - Here is an example HTML code for a form with two checkboxes −

```
<html>
<head>
<title>Checkbox Control</title>
</head>
<body>
<form>
<input type="checkbox" name="maths" value="on"> Maths
<input type="checkbox" name="physics" value="on"> Physics
</form>
</body>
</html>
```

Output:-

Attributes

Following is the list of attributes for **<checkbox>** tag.

Sl.No	Attribute	Description
1	**type**	Indicates the type of input control and for checkbox input control it will be set to **checkbox.**.
2	**name**	Used to give a name to the control which is sent to the server to be recognized and get the value.
3	**value**	The value that will be used if the checkbox is selected.
4	**checked**	Set to *checked* if you want to select it by default.

3. Radio Button Control :-

Radio buttons are used when out of many options; just one option is required to be selected. They are also created using HTML <input> tag but type attribute is set to **radio**.

Example : Here is example HTML code for a form with two radio buttons −

```
<html>
<head>
<title>Radio Box Control</title>
</head>
<body>
<form>
```
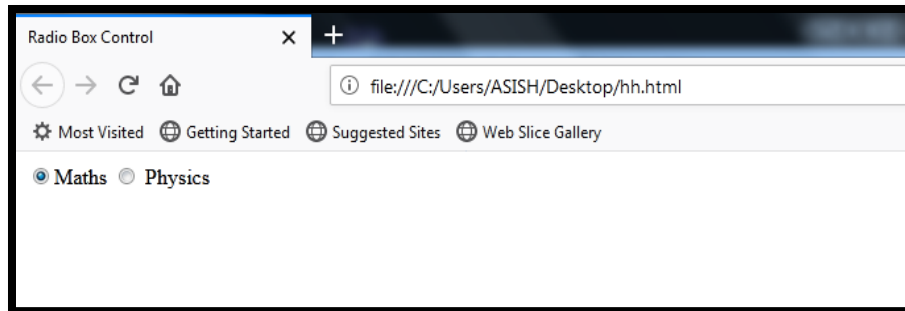
```
<input type="radio" name="subject" value="maths">Maths
<input type="radio" name="subject" value="physics"> Physics
</form>
</body >
</html>
```

Output:-

Attributes :

Following is the list of attributes for radio button.

Sl.No	Attribute	Description
1	**type**	Indicates the type of input control and for checkbox input control it will be set to radio.
2	**name**	Used to give a name to the control which is sent to the server to be recognized and get the value.
3	**value**	The value that will be used if the radio box is selected.
4	**checked**	Set to *checked* if you want to select it by default.

4. Select Box Control :-

A select box, also called drop down box which 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: Here is example HTML code for a form with one drop down box

```
<html>
<head>
<title>Select Box Control</title>
</head>
<body>
<form>
<select name="dropdown">
<option value="Maths" selected>Maths</option>
<option value="Physics">Physics</option>
</select>
</form>
</body>
</html>
```
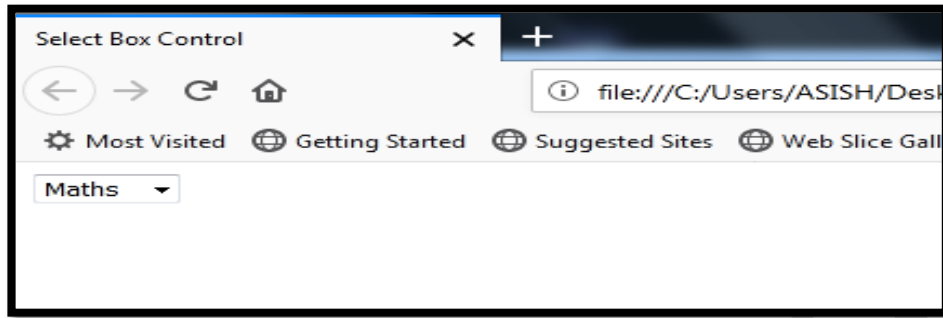
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Output:-

Attributes:

Following is the list of important attributes of <**select**> tag −

Sl.No	Attribute	Description
1	**name**	Used to give a name to the control which is sent to the server to be recognized and get the value.
2	**size**	This can be used to present a scrolling list box.
3	**multiple**	If set to "multiple" then allows a user to select multiple items from the menu.

Following is the list of important attributes of <**option**> tag −

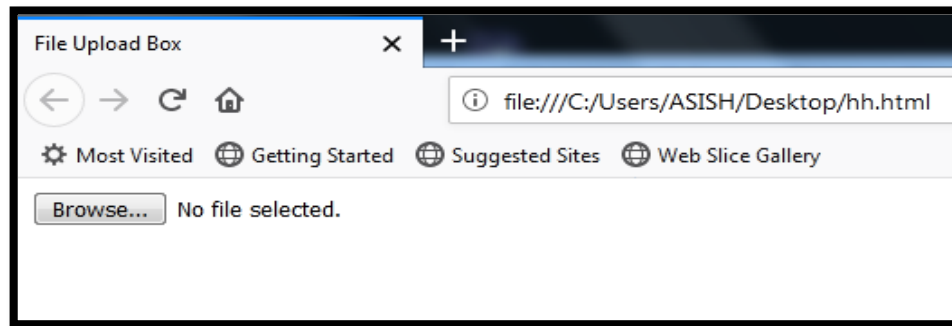| Sl.No	Attribute	Description
1	**value**	The value that will be used if an option in the select box is selected.
2	**selected**	Specifies that this option should be the initially selected value when the page loads.
3	**label**	An alternative way of labeling options

5. File Upload Box :-

If you want to allow a user to upload a file to your web site, you will need to use a file upload box, also known as a file select box. This is also created using the <input> element but type attribute is set to **file**.

Example:

```
<html>
<head>
<title>File Upload Box</title>
</head>
<body>
<form>
<input type="file" name="fileupload" accept="image/*"/>
</form>
```

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

Output:-

Attributes:

Following is the list of important attributes of file upload box −

Sl.No	Attribute	Description
1	**name**	Used to give a name to the control which is sent to the server to be recognized and get the value.
2	**accept**	Specifies the types of files that the server accepts.

6. Button Controls:-

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 –

Sl.No	Type	Description
1	**submit**	This creates a button that automatically submits a form.
2	**reset**	This creates a button that automatically resets form controls to their initial values.
3	**button**	This creates a button that is used to trigger a client-side script when the user clicks that button.
4	**image**	This creates a clickable button but we can use an image as background of the button.

Example: Here is example HTML code for a form with three types of buttons −

```
<html>
<head>
<title>File Upload Box</title>
</head>
<body>
<form>
<input type="submit" name="submit"value="Submit"/>
<input type="reset" name="reset"value="Reset"/>
<input type="button" name="ok"value="OK"/>
<input type="image" name="imagebutton" src="/html/images/logo.png"/>
</form>
</body>
</html>
```

Output:-

Notes: (Not in Syllabus, but for know more about HTML)

Some Extra things to know more about HTML tags:-

1. HTML - Text Links:-

A webpage can contain various links that take you directly to other pages and even specific parts of a given page. These links are known as **hyperlinks**.

Hyperlinks allow visitors to navigate between Web sites by clicking on words, phrases, and images. Thus you can create hyperlinks using text or images available on a webpage.

2. Linking Documents :-

A link is specified using HTML tag <a>. This tag is called **anchor tag** and anything between the opening <a> tag and the closing tag becomes part of the link and a user can click that part to reach to the linked document.

Following is the simple syntax to use <a> tag.

Example: Let's try following example which links http://www.tutorialspoint.com at your page −

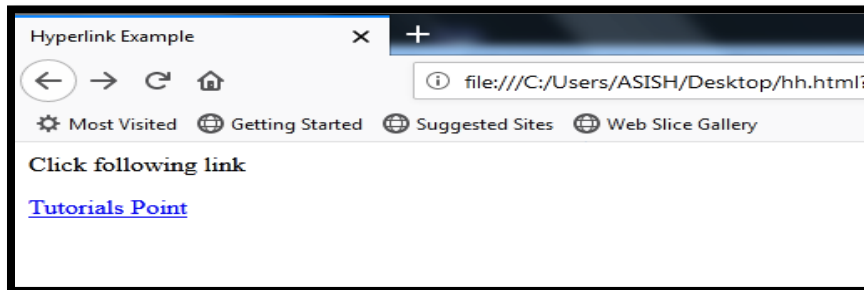```
<html>
<head>
<title>Hyperlink Example</title>
</head>
```

```
<body>
<p>Click following link</p>
<a href="https://www.tutorialspoint.com"target="_self">Tutorials Point</a>
</body>
</html>
```

Output:-

3. The target Attribute :

We have used **target** attribute in our previous example. This attribute is used to specify the location where linked document is opened. Following are the possible options −

Sl.No	Option	Description
1	**_blank**	Opens the linked document in a new window or tab.
2	**_self**	Opens the linked document in the same frame.
3	**_parent**	Opens the linked document in the parent frame.
4	**_top**	Opens the linked document in the full body of the window.
5	**targetframe**	Opens the linked document in a named *targetframe*.

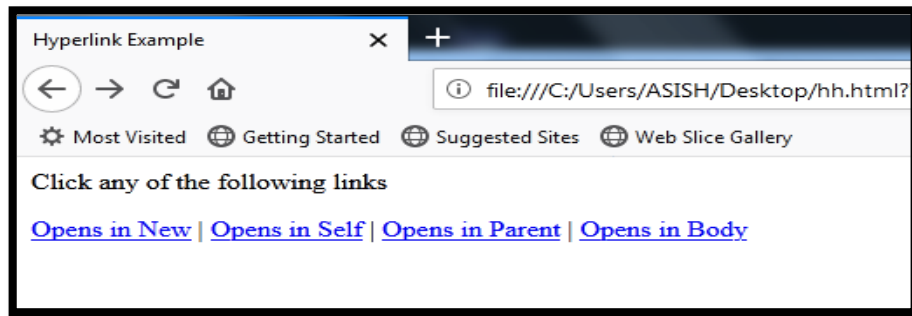**Example: Try following example to understand basic difference in few options given for target attribute.**

```
<html>
<head>
<title>Hyperlink Example</title>
<base href="https://www.tutorialspoint.com/">
</head>
<body>
<p>Click any of the following links</p>
<a href="/html/index.htm" target="_blank">Opens in New</a> |
<a href="/html/index.htm" target="_self">Opens in Self</a> |
<a href="/html/index.htm" target="_parent">Opens in Parent</a> |
<a href="/html/index.htm" target="_top">Opens in Body</a>
</body>
</html>
```

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**Output:-**



**4. The <marquee> Tag Attributes :**

Following is the list of important attributes which can be used with <marquee> tag.

| Sl.No | Attribute | Description |
|-------|-----------|-------------|
| 1 | width | This specifies the width of the marquee. This can be a value like 10 or 20% etc. |
| 2 | height | This specifies the height of the marquee. This can be a value like 10 or 20% etc. |
| 3 | direction | This specifies the direction in which marquee should scroll. This can be a value like *up, down, left* or *right*. |
| 4 | behavior | This specifies the type of scrolling of the marquee. This can have a value like *scroll, slide* and *alternate*. |
| 5 | scrolldelay | This specifies how long to delay between each jump. This will have a value like 10 etc. |
| 6 | scrollamount | This specifies the speed of marquee text. This can have a value like 10 etc. |
| 7 | loop | This specifies how many times to loop. The default value is INFINITE, which means that the marquee loops endlessly. |
| 8 | bgcolor | This specifies background color in terms of color name or color hex value. |
| 9 | hspace | This specifies horizontal space around the marquee. This can be a value like 10 or 20% etc. |
| 10 | vspace | This specifies vertical space around the marquee. This can be a value like 10 or 20% etc. |

**Below are few examples to demonstrate the usage of marquee tag.**

**Examples – 1 :**

```
<html>
<head>
<title>HTML marquee Tag</title>
</head>
<body>
<marquee>This is basic example of marquee</marquee>
</body>
</html>
```
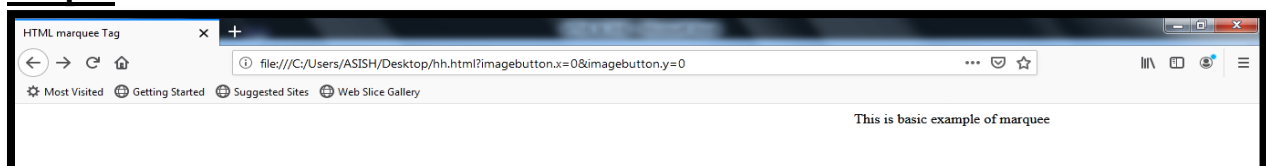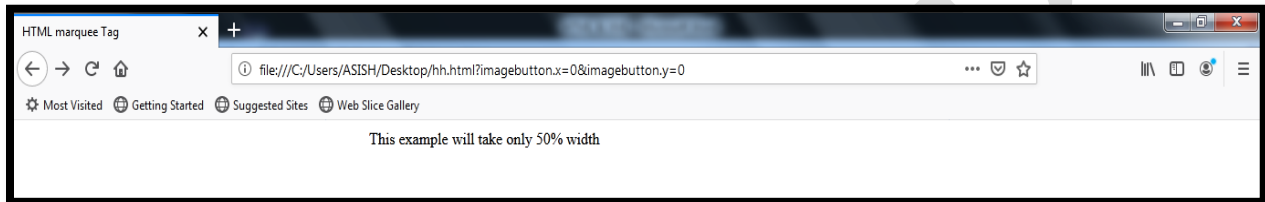
**Output:-**

## Examples - 2

```
<html>
<head>
<title>HTML marquee Tag</title>
</head>
<body>
<marquee width="50%">This example will take only 50% width</marquee>
</body>
</html>
```

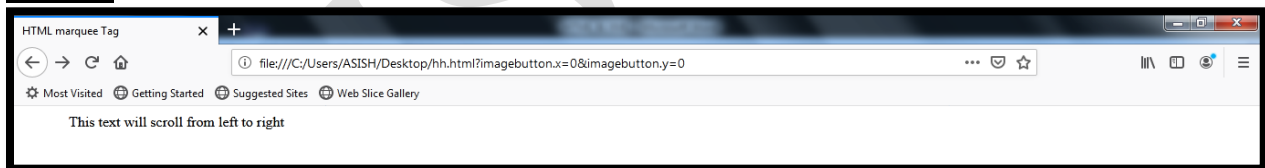## Output:-

Examples - 3

```
<html>
<head>
<title>HTML marquee Tag</title>
</head>
<body>
<marquee direction="right">This text will scroll from left to right</marquee>
</body>
</html>
```

Output:-

Examples - 4

```
<html>
<head>
<title>HTML marquee Tag</title>
</head>
<body>
<marquee direction="up">This text will scroll from bottom to up</marquee>
</body>
</html>
```
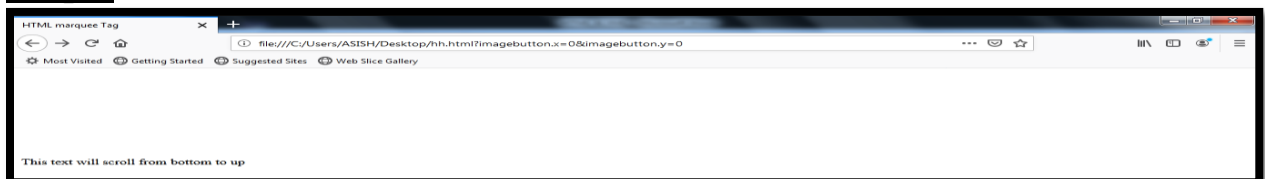
Output:-

UPTO THIS PART (NOT IN YOUR SYLLABUS) FOR EXTRA KNOWLEDGE IN HTML

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HTML 5 Input Types

HTML5 added several new input types:

    i. color
    ii. date
    iii. datetime
    iv. datetime-local
    v. email
    vi. month
    vii. number
    viii. range
    ix. search
    x. tel
    xi. time
    xii. url
    xiii. week

i. Input Type colour :

color: Gives the user a color picker to choose a color.
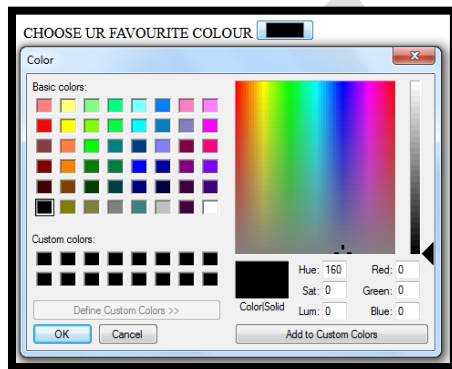
Example:

\<form\>

CHOOSE UR FAVOURITE COLOUR \<input type= "color" value="#b97a59" \>

\</form\>

Output:

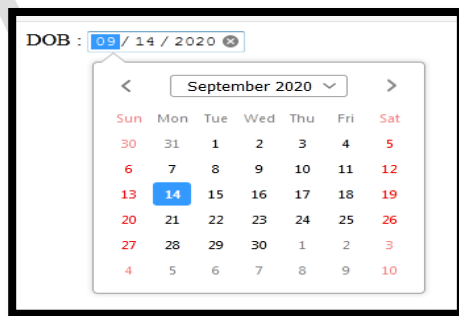### ii. Input Type DATE :

date : Offers a date picker to the user.

Example:

DOB : \<form\>\<input type = "date" value="2020-09-14"\>\</form\>

Output:

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iii. **Input Type DATETIME :**

datetime: An element to choose both date and time.

Example:

Current Time : <form><input type="datetime" value="2020-09-14T15:51:34"></form>

The output depends upon browser supports.

iv. **Input Type DATETIME-LOCAL :**

An element to choose both date and time, with local settings support.

Example:

LOCAL TIME : <form><input type="datetime-local" value="2020-09-14T15:52"></form>

The output depends upon browser supports.

v. **Input Type EMAIL :**

A field for entering E-mail address (es).

Example:

Enter ur Email Id : <input type="email" value="asishkumars9@gmail.com">

The output depends upon browser supports.

vi. **Input Type Month :**

The <input type="month"> allows the user to select a month and year.

Depending on browser support, a date picker can show up in the input field.

Example:

<form> Birthday(Month and Year)

<input type="month" value="1986-15">

</form>

The output depends upon browser supports.

vii. **Input Type Number :**

The <input type="number"> defines a numeric input field. You can also set restrictions on what numbers are accepted.

Example:

<form>
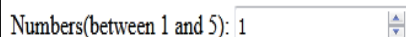
Numbers(between 1 and 5):

<input type="number" name="quantity" min="1" max="5">

</form>

Output:

viii. **Input Type Range :**

The <input type="range"> is used for input fields that should contain a value within a range. Depending on browser support, the input fields can be displayed as a slide control.
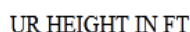
Example:

<form>

UR HEIGHT IN FT <input type="range" name="points" min="0" max="10"></form>

Output:

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ix. **Input Type Search :**
The <input type="search"> is used for search fields (a search field behaves like a regular text field).
Example:
<input type="search" value="[Any search text]">
<form>
Search Google:
<input type="search" value="googlesearch">
</form>
The output depends upon browser supports.

x. **Input Type Tel :**
The <input type="tel"> is used for input fields that should contain a telephone number.
The tel type is currently supported only in Safari 8.
Example:
<form>
CONTACT NO:
<input type="tel" name="usrtel">
</form>

xi. **Input Type Time :**
The <input type="time"> allows the user to select a time (no time zone).
Depending on browser support, a time picker can show up in the input field.
Example:
<form>
Select a time :
<input type="time" name="usr_time">
</form>
Output:

Select a time : -- : -- --

xii. **Input Type URL :**
The <input type="url"> is used for input fields that should contain a URL address.
Depending on browser support, the url field can be automatically validated when submitted.
Example:
<form>
Add your homepage:
<input type="url" name="home page">
</form>
The output depends upon browser supports.

xiii. **Input Type Week :**
The <input type="week"> allows the user to select a week and year.
Depending on browser support, a date picker can show up in the input field.
Example:
<form>
Select a week :<input type="week" name="week_year"> </form>
The output depends upon browser supports.

DHTML: -
   - ❖ DHTML stands for Dynamic Hyper Text Markup Language.
   - ❖ DHTML is not a language.
   - ❖ DHTML is a term describing the art of making dynamic and interactive web pages.
   - ❖ DHTML combines HTML, JavaScript, DOM (Document Object Model) and CSS (Cascading Style Sheets).

Java Script: - DHTML is about using java script to control access and manipulate HTML elements.

HTML DOM: - The HTML DOM defines a standard set of objects for HTML and a standard way to access and manipulate them.

DHTML is about using the DOM to access and manipulate HTML elements.

HTML Events: - It defines a standard way to handle HTML events.

DHTML is about creating web pages that reacts to (user) events.

CSS: - CSS allows web developers to control the style and layout of web pages.

DHTML is about using Java Script and DOM to change the style and positioning of HTML elements.

Difference between HTML and DHTML:

HTML	DHTML
(i) HTML stands for Hyper Text Markup Language.	(i) DHTML stands for Dynamic Hyper Text Markup Language.
(ii) HTML is a markup language.	(ii) DHTML is a collection of technology.
(iii) HTML creates static web pages.	(iii) DHTML creates dynamic web pages.
(iv) HTML sites will be slow upon client-side technologies.	(iv) DHTML sites will be fast enough upon client-side technologies.
(v) HTML creates a plain page without any styles and Scripts called as HTML.	(v) DHTML creates a page with HTML, CSS, DOM and Scripts called as DHTML.
(vi) HTML cannot have any server side code.	(vi) DHTML may contain server side code.
(vii) In HTML, there is no need for database connectivity.	(vii) DHTML may require connecting to a database as it interacts with user.
(viii) HTML files are stored with .htm or .html extension.	(viii) DHTML files are stored with .dhtm extension.
(ix) HTML does not require any processing from browser	(ix) DHTML requires processing from browser which changes its look and feel.

Difference between Static web page and Dynamic Web page:

BASIS FOR COMPARISON	STATIC WEB PAGES	DYNAMIC WEB PAGES
Basic	Static web pages will remain same for the time until and unless someone changes it manually.	Dynamic web pages are behavioral and have the capacity to produce distinctive content for different visitors.
Complexity	Simple to design.	Complicated to construct.
Application and web languages used to create web pages	HTML, JavaScript, CSS, etc.	CGI, AJAX, ASP, ASP.NET, etc.
Information change	Occurs rarely	Frequently
Page loading time	Less comparatively	More
Use of Database	Doesn't use databases	A database is used.

Introduction To XML

❖ XML stands for eXtensible Markup Language.
❖ XML is also a markup language like HTML.
❖ But XML is different from HTML in the sense that HTML describes how to display and
    format the data, text and images in the browser where as XML is used to describe the data.
❖ XML is a software and hardware independent tool for storing and transporting data.

Difference between HTML and XML:

HTML	XML
(i) HTML stands for Hyper Text Markup Language.	(i) XML stands for eXtensible Markup Language.
(ii) It is used to display data and to focus on formatting of data.	(ii) It is used to describe data and focus on what data is.
(iii) HTML tags are predefined.	(iii) XML tags are not predefined.
(iv) HTML tags are not case sensitive.	(iv) XML tags are case sensitive.

XML Syntax Rules :-

(i) XML Documents must have a root element :

> **\<root\>**
> **\<child\>**
> > **\<subchild\>…………..\</subchild\>**
>
> **\</child\>**
> **\</root\>**

Example:

```
<note>
        <to>Anil</to>
        <from>Asish</from>
        <heading> Reminder</heading>
        <body> Don't forget me this weekend ! </body>
</note>
```

In the above example \<note\> is the root element.

(ii) All XML elements must have a closing tag:-

(iii) It is illegal to omit the closing tag :-
    Example: \<p> This is a paragraph \</p>
(iv) XML tags are case sensitive :- Opening and closing tags must be written with the same case.
    Example:

        \<Message> This is incorrect \</message>
        \<message> This is correct \</message>

(v) XML elements must be properly nested :-
    Example:

        **\\<i> This text is bold and italic \</i>**

(vi) XML attribute values must be quoted:-
    Example:
    Incorrect:

        \<note date = 12/11/2020>
            \<to> Anil\</to>
            \<from> Asish \</to>
        \</note>

    Correct:

        \<note date = "12/11/2020">
            \<to> Anil\</to>
            \<from> Asish \</to>
        \</note>

(vii) Comments in XML: - The syntax for writing comments in XML is similar to that of HTML.

        \<! – This is comment –>

Two dashes in the middle of a comment are not allowed .
  Not allowed:

    \<! – This is a – comment –>

  Strange, but allowed:

    \<! – This is a – – comment –>

Note: To save the file and view of XML file in your browser (Example: **note.xml**)

Features of XML:-

- ❖ XML is extensible. XML allows the user to create its own tags and document structure.
- ❖ XML can be used to store data.
- ❖ XML can be used to exchange data.
- ❖ XML is free.
- ❖ XML is a W3C recommendation.

Benefits of XML:-

- ❖ The main benefit of XML is that it can be used to share data between two entirely different platforms.
- ❖ To store self-describing data, XML allows us to create our own tags.
- ❖ Once an XML file is created with the help of user defined tags, it needs to be transferred into the target platform format.
- ❖ We shall take an example in which data is an XML file is transformed into HTML format. This file is used for this purpose is an XSLT (eXtensible Stylesheet Language Transformations) file.