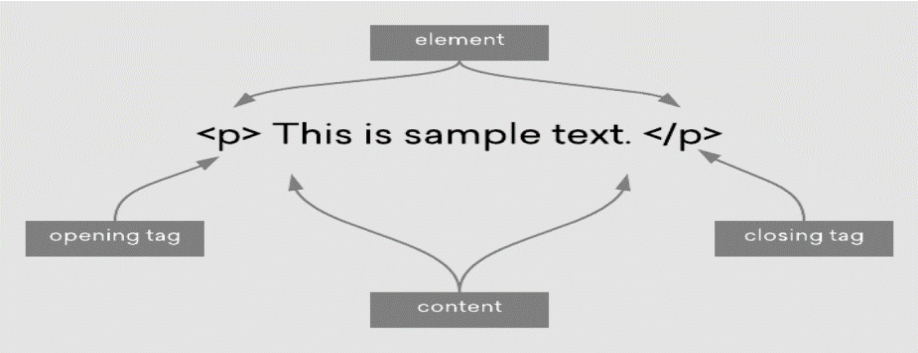
HTML element:

HTML element is defined by a starting tag. If the element contains other content, it ends with a closing tag, where the element name is preceded by a forward slash as shown below with few tags



Start Tag	Content	End Tag
	This is paragraph content.	
<h1>	This is heading content.	</h1>
	This is division content.	

So here .... is an HTML element, <h1>...</h1> is another HTML element. There are some HTML elements which don't need to be closed, such as <img.../>, <hr /> and
 elements.

HTML Attribute:

- HTML attributes are special words which provide additional information about the elements or attributes are the modifier of the HTML element.
- Each element or tag can have attributes, which defines the behavior of that element.
- Attributes should always be applied with start tag.
- The Attribute should always be applied with its name and value pair.
- The Attributes name and values are case sensitive, and it is recommended by W3C that it should be written in Lowercase only.
- You can add multiple attributes in one HTML element, but need to give space between two attributes.

Example of attribute:

```
<img src="raj.jpg" width="199" height="399">
```

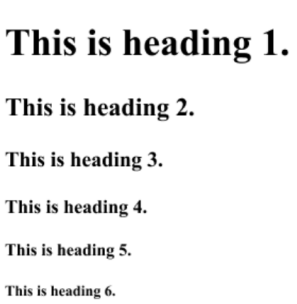
HTML Headings:

The **<h1>** to **<h6>** HTML elements represent six levels of section headings. <h1> is the highest section level and <h6> is the lowest. By default, all heading elements create a block-level box in the layout, starting on a new line and taking up the full width available in their containing block.

Example:

```
<html>
<head>
<title>HTML elements </title>
</head>
<body>
        <h1>This is heading 1.</h1>
        <h2>This is heading 2.</h2>
        <h3>This is heading 3.</h3>
        <h4>This is heading 4.</h4>
        <h5>This is heading 5.</h5>
        <h6>This is heading 6.</h6>
</body>
</html>
```

Output:



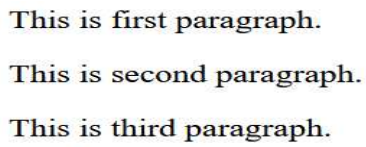
HTML Paragraph:

The paragraph always starts on a new line and is usually a block of text. The html <p> element defines a paragraph. It also adds some white space (margin) before and after a paragraph.

Example:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <p>This is first paragraph.</p>
        <p>This is second paragraph.</p>
        <p>This is third paragraph.</p>
</body>
</html>
```

Output:



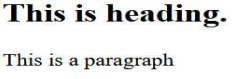
HTML Division:

The tag defines a division or a section in an HTML document. The tag is used as a container for HTML elements which is then styled with CSS or manipulated with JavaScript. The tag is easily styled by using the **class or id** attribute. Any sort of content can be put inside the tag like html headings, html paragraphs, html forms, and html tables etc.

Example:

```
<div class="div1">
        <h2>This is heading.</h2>
        <p>This is a paragraph</p>
</div>
```

Output:



Comments in HTML:

HTML comments are not displayed in the browser, but they can help document your HTML source code.

Example:

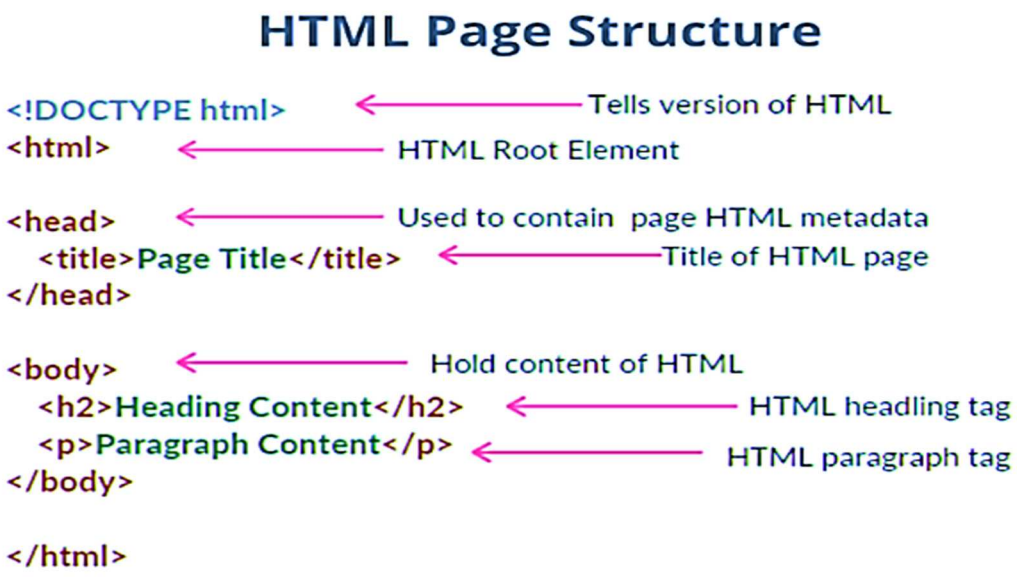
```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <!-- This is a comment -->

        <p>This is a paragraph.</p>

        <!-- Remember to add more information here -->

</body>
</html>
```

Output:

This is a paragraph.

HTML Structure:

HTML (HyperText Markup Language) files are, basically, just simple text files that you could create in any text editor. But to be displayed correctly on the World Wide Web, an HTML document must be structured correctly. Any variation from this structure will cause many web browsers to show the content incorrectly or not at all. Also, all HTML documents must have a suffix of "html" for the HTML code to be viewed correctly by a web browser.



Formatting:

We can make our content more attractive. We use HTML formatting tags to tell the browser how our content should be displayed. HTML formatting allows us to style our text in various ways. Text formatting tags in HTML give us the freedom to italicize, underline or make our text bold just like in MS word.

Element name	Description
<b>	This is a physical tag, which is used to bold the text written between it.
	This is a logical tag, which tells the browser that the text is important.
<i>	This is a physical tag which is used to make text italic.
	This is a logical tag which is used to display content in italic.
<mark>	This tag is used to highlight text.
<u>	This tag is used to underline text written between it.
<tt>	This tag is used to appear a text in teletype. (not supported in HTML5)
<strike>	This tag is used to draw a strikethrough on a section of text. (Not supported in HTML5)
<sup>	It displays the content slightly above the normal line.
<sub>	It displays the content slightly below the normal line.
<del>	This tag is used to display the deleted content.
<ins>	This tag displays the content which is added
<big>	This tag is used to increase the font size by one conventional unit.
<small>	This tag is used to decrease the font size by one unit from base font size.

Example:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <b> This is Bold Text. </b><br>
        <strong> This Text is Strong </strong><br>
        <i> This is italic Text </i><br>
        <u> This is Underlined Text </u><br>
        <small> small </small><br>
        <big> BIG </big><br>
        <mark> Marked. </mark><br>
        <em> Emphasized. </em><br>
        <del> Deleted. </del><br>
        <ins> inserted. </ins><br>
        This text is <sup> Subscripted. </sup>

</body>
</html>
```

Output:

This is Bold Text.
This Text is Strong
This is italic Text
This is Underlined Text
small
BIG
Marked.
Emphasized.
~~Deleted.~~
inserted.
This text is Subscripted.

Image element:

HTML provides several image attributes that can be used with the <img> tag to control how images are displayed on a webpage.

Syntax:

```
<img src="" alt="" width="" height="">
```

Following are some of the most commonly used image attributes.

src attribute: It is used to specify the path to the image.

```
<img src="logo.jpg">
```

alt attribute: The "alt" attribute provides a text description of the image for accessibility purposes.

```
<img src="logo.jpg" alt="Example Logo">
```

in this code, used the "alt" attribute to provide a text description of the image "Logo Image".

width and height attributes: The "width" and "height" attributes are used to specify the dimensions of the image in pixels.

```
<img src="logo.jpg" alt="Example Logo" width="500" height="300">
```

In this code, used the "width" and "height" attributes to specify the dimensions of the image to be 500 pixels wide and 300 pixels high.

title attribute: The "title" attribute provides additional information about the image when the user hovers over it.

```
<img src="logo.jpg" alt="Example Logo" title="This is an example of image">
```

In this code, used the "title" attribute to provide additional information about the image when the user hovers over it.

align attribute: The "align" attribute is used to align the image horizontally and vertically within the container. This attribute is deprecated in HTML5, and it is recommended to use CSS to style the alignment of images.

```
<img src="logo.jpg" alt="Example Logo" align="right">
```

In this code, used the "align" attribute to align the image to the right of the container.

style attribute: The "style" attribute is used to apply inline CSS styles to the image. For example:

```
<img src="logo.jpg" alt="Example Logo" style="border: 1px solid black;">
```

In this code, used the "style" attribute to apply a black border of 1 pixel thickness around the image.

Example of all image attribute:

```
<img src="logo.png" alt="Example Logo" width="500" height="300"
        title="This is an example of image" style="border: 5px solid black;"
        align="middle"/>
```

Anchors:

Hyperlinks are utilized by a web browser to move from one page to another. When we click on particular links on web pages, they open other web pages. A link does not have to be text. it can be an image or any other HTML element. It is an integral part of HTML and it is used everywhere.

Example of hyperlink:

hyperlinkPage.html

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <a href="hyperlinkPage1.html">To Visit Next Page</a>
</body>
</html>
```

hyperlinkPage1.html

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <h1>WelCome to Next Page</h1>
</body>
</html>
```

HTML Lists:

HTML Lists are used to specify lists of information. All lists may contain one or more list elements. There are three different types of HTML lists.

1. - **Unordered Lists**. This will list items using plain bullets.
2. - **Ordered List.** This will use different schemes of numbers to list your items.
3. <dl> - **Definition List.** This arranges your items in the same way as they are arranged in a dictionary.

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.

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <ul>
                <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
        </ul>
</body>
</html>
```

Output:

- Sita
- Rita
- Abhiraj
- Ananya

Type Attributes:

<ul type = "square">

<ul type = "disc">

<ul type = "circle">

Anothers example of unordered list:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <ul type="square">
                <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
        </ul>
        <ul type="disc">
                <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
        </ul>
        <ul type="circle">
                <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
        </ul>
</body>
</html>
```

Output:

- Sita
- Rita
- Abhiraj
- Ananya

- Sita
- Rita
- Abhiraj
- Ananya

- Sita
- Rita
- Abhiraj
- Ananya

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>.

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <ol>
                <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
        </ol>
</body>
</html>
```

Output:

1. Sita
2. Rita
3. Abhiraj
4. Ananya

Type Attributes:

<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.

Another examples of ordered list:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <ol type = "1">
      <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
    </ol>
    <ol type = "I">
      <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
    </ol>
    <ol type = "i">
      <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
    </ol>
    <ol type = "A">
      <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
    </ol>
     <ol type = "a">
      <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
    </ol>
     <ol type = "i" start = "4">
      <li>Sita</li>
                <li>Rita</li>
                <li>Abhiraj</li>
                <li>Ananya</li>
    </ol>
</body></html>
```

Output:

1. Sita
2. Rita
3. Abhiraj
4. Ananya

I. Sita
II. Rita
III. Abhiraj
IV. Ananya

i. Sita
ii. Rita
iii. Abhiraj
iv. Ananya

A. Sita
B. Rita
C. Abhiraj
D. Ananya

a. Sita
b. Rita
c. Abhiraj
d. Ananya

iv. Sita
v. Rita
vi. Abhiraj
vii. Ananya

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.

1. <dt> - A term
2. <dd> - Term definition
3. </dl> - Defines the end of the list

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <dl>
                <dt>HTML</dt>
                <dd>Hyper-Text Markup Language</dd>
                <dt>CSS</dt>
                <dd>Cascading StyleSheets</dd>
                <dt>JS</dt>
                <dd>Javascript</dd>
        </dl>
</body>
</html>
```

Output:

HTML
    Hyper-Text Markup Language
CSS
    Cascading StyleSheets
JS
    Javascript

Tables Introduction:

A table is a representation of data arranged in rows and columns. You can arrange data like images, text, links and so on into rows and columns of cells. There are some common HTML tags that use by HTML table.

HTML Tags	Descriptions
<table>	Define a table
<tr>	<tr> tag is used to define each row in a table.
<td>	<td> tag is used to define a table data or a cell.
<th>	<th> tag is used to define headers of a table.
<caption>	<caption> tag is used to insert captions.
<thead>	<thead> tag is used to define a group of a table header
<tbody>	<tbody> tag is used to define a group of a table body
<tfooter>	<tfooter> tag is used to define a group of a table footer

Creating Tables in HTML:

You can create a table using the <table> element. Inside the <table> element, you can use the <tr> elements to create rows, and to create columns inside a row you can use the <td> elements. You can also define a cell as a header for a group of table cells using the <th> element**.**

Example of table:

```
<html>
<head>
<title>Table tags</title>
</head>
<body>
        <table border="1">
                <caption>Table Information</caption>
                <tr>
                        <th>No.</th>
                        <th>Full Name</th>
                        <th>Position</th>
                        <th>Salary</th>
                </tr>
                <tr>
                        <td>1</td>
                        <td>Abhiraj Prajapati</td>
                        <td>Doctor</td>
                        <td>$15000</td>
                </tr>
                <tr>
                        <td>2</td>
                        <td>Ananya Prajapati</td>
                        <td>Software Engg</td>
                        <td>$1200</td>
                </tr>
                <tr>
                        <td>3</td>
```

Output:

Users Info

No.	Full Name	Position	Salary
1	Abhiraj Prajapati	Doctor	$15000
2	Ananya Prajapati	Software Engg	$1200
3	Yuraj Joshi	Data Entry	$700
4	Roshan Shretha	Account	$800

```
                <td>Yuraj Joshi</td>
                <td>Data Entry</td>
                <td>$700</td>
            </tr>
            <tr>
                <td>4</td>
                <td>Roshan Shretha</td>
                <td>Account</td>
                <td>$800</td>
            </tr>
        </table>
</body>
</html>
```

Table Header, Body, and Footer:

A table can also be divided into three portions. A header, body and footer. The header is for creating a header for the table and the footer is for creating a footer for the table. The body holds the actual content holder of the table.

- **<thead>**: is used to create a separate table header.
- **<tbody>**: is used to indicate the main body of the table.
- **<tfoot>**: is used to create a separate table footer.

Example of Header, Body, and Footer:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <table border = "1">
            <thead>
                <tr>
                    <th colspan="2">January</th>
                    <th colspan="2">February</th>
                </tr>
            </thead>

            <tbody>
                <tr>
                    <td>Sales</td>
                    <td>Profit</td>
                    <td>Sales</td>
                    <td>Profit</td>
                </tr>
                <tr>
                    <td>300,00</td>
                    <td>50,00</td>
                    <td>500,000</td>
                    <td>70,000</td>
                </tr>
```

Output:

January		February	
Sales	Profit	Sales	Profit
300,00	50,00	500,000	70,000
February was more produstive			

```
            </tbody>

            <tfoot>
                <tr>
                    <th colspan="4">February was more produstive</th>
                </tr>
            </tfoot>
        </table>

</body>
</html>
```

Cellpadding and Cellspacing Attributes:

Cellpadding and cellspacing are two attributes are used to adjust the spacing between table cells.

- The cellpadding is used to adjust space between the cells in the table.
- The cell spacing is used to adjust the space between cell border and data inside the cell.

Example of Cellpadding and Cellspacing:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <table border="1" cellpadding="10" cellspacing="5">
            <tr>
                <th>RollNo</th>
                <th>Subject</th>
                <th>Mark</th>
            </tr>
            <tr>
                <td>101</td>
                <td>English</td>
                <td>80</td>
            </tr>
        </table>
</body>
</html>
```

Output:

RollNo	Subject	Mark
101	English	80

Colspan and Rowspan Attributes:

The colspan and rowsan attributes are used to create cells which span more than one column or rows means the cells take up space of more than one row or column.

- The colspan attribute is used to make cells span more than one columns.
- The rowspan attribute is used to make cells that span more than one row.

Example of Colspan:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>

	<table border="1">
		<caption>Invoice</caption>
		<tr>
			<th>Item / Desc.</th>
			<th>Qty.</th>
			<th>Rate</th>
			<th>Price</th>
		</tr>
		<tr>
			<td>Black Pipe</td>
			<td>100</td>
			<td>100</td>
			<td>10,000.00</td>
		</tr>
		<tr>
			<td>Cement</td>
			<td>100</td>
			<td>700.00</td>
			<td>70,000.00</td>
		</tr>
		<tr>
			<td>TMT</td>
			<td>50</td>
			<td>200.00</td>
			<td>10,000.00</td>
		</tr>
		<tr>
			<th colspan="3">Subtotal</th>
			<td>90,000.00</td>
		</tr>
		<tr>
			<th colspan="2">Tax</th>
			<td>7%</td>
			<td>6,300.00</td>
		</tr>
		<tr>
			<th colspan="3">Total</th>
			<td>96,300.00</td>
		</tr>
	</table>
</body>
</html>
```

Output:

Invoice

Item / Desc.	Qty.	Rate	Price
Black Pipe	100	100	10,000.00
Cement	100	700.00	70,000.00
TMT	50	200.00	10,000.00
Subtotal			90,000.00
Tax		7%	6,300.00
Total			96,300.00

Example of Rowspan:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
<table border="1">
<tr>
        <td rowspan="3">Merged cell 3 rows</td>
        <td>Java</td>
</tr>
<tr>
        <td>C++</td>
</tr>
<tr>
        <td>C</td>
</tr>
</table>
</body>
</html>
```

Output:

Merged cell 3 rows	Java
	C++
	C

Table Align Attribute:

The align attribute can be set to one of three values: left, center, or right. When set to left or right, the table will be aligned to the respective edge of the page, with any remaining space on the opposite side. When set to center, the table will be horizontally centered on the page.

Example of align attribute:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
<table align="center" border="1">
<caption>Aling Attribute</caption>
                <tr>
                        <th>RollNo</th>
                        <th>Subject</th>
                        <th>Mark</th>
                </tr>
                <tr>
                        <td>101</td>
                        <td>English</td>
                        <td>80</td>
                </tr>
        </table>
</body>
</html>
```

Output:

Aling Attribute

RollNo	Subject	Mark
101	English	80

Table background:

You can set a background for your table using bgcolor attribute or background attribute. The bordercolor attribute is used to set the colour of the table border.

Example for table background:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>

        <table border = "1" bordercolor = "red" bgcolor = "pink" background="imgbackground.jpg">
                <tr>
                        <th>RollNo</th>
                        <th>Subject</th>
                        <th>Mark</th>
                </tr>
                <tr>
                        <td>101</td>
                        <td>English</td>
                        <td>80</td>
                </tr>
        </table>
</body>
</html>
```

Output:

RollNo	Subject	Mark
101	English	80

Table Height and Width:

The width and height attribute are used to set a width and height for the table or cells. It can be specified in terms of pixels or in terms of percentage

Example for table height and width:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <table border="1" width="100%" height="250">
                <tr>
                        <th>RollNo</th>
                        <th>Subject</th>
                        <th>Mark</th>
                </tr>
                <tr>
                        <td>101</td>
                        <td>English</td>
                        <td>80</td>
                </tr>
        </table>
</body></html>
```

Output:

RollNo	Subject	Mark
101	English	80

Nested Tables:

Nested tables means a table inside another table is called nested tables.

Example of Nested tables:

```
<html>
<head>
<title>Insert title here</title>
</head>
<body>
        <table border="1" width="100%">
                <tr>
                        <td>
                                <table border="1" width="70%">
                                        <tr>
                                                <th>RollNo</th>
                                                <th>Subject</th>
                                                <th>Mark</th>
                                        </tr>
                                        <tr>
                                                <td>101</td>
                                                <td>English</td>
                                                <td>80</td>
                                        </tr>
                                        <tr>
                                                <td>102</td>
                                                <td>Java</td>
                                                <td>90</td>
                                        </tr>
                                </table></td>
                        <td>Table 1, Row 1, Column 2</td>
                </tr>
        </table>
</body>
</html>
```

Output:

RollNo	Subject	Mark
101	English	80
102	Java	90

Table 1, Row 1, Column 2