UNIT-1

1.1 HTML Introduction

HTML is the standard markup language for creating Web pages.

- HTML stands for Hyper Text Markup Language
- HTML describes the structure of a Web page
- HTML consists of a series of elements
- HTML elements tell the browser how to display the content
- HTML elements are represented by tags

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

Tags Explanation

- The <!DOCTYPE html> declaration defines this document to be HTML5
- The <html> element is the root element of an HTML page
- The <head> element contains meta information about the document
- The <title> element specifies a title for the document
- The <body> element contains the visible page content
- The <h1> element defines a large heading
- The <p> element defines a paragraph

1.2 Lists

The list can be displayed in two types

1.2.1 Unordered List

An unordered list starts with the <ul> tag. Each list item starts with the <li> tag.

The list items will be marked with bullets (small black circles) by default:

Example	**Output on web page**

<!DOCTYPE html> <html> <body> An unordered HTML list - Coffee - Tea - Milk </body> </html>	**An unordered HTML list** • Coffee • Tea • Milk

The list items will be marked with bullets list-style-type

The CSS list-style-type property is used to define the style of the list item marker:

1. <ul style="list-style-type:disc;"> default
2. <ul style="list-style-type:circle;">
3. <ul style="list-style-type:square;">
4. <ul style="list-style-type:none;">

1.2.2 Ordered List

An ordered list starts with the <ol> tag. Each list item starts with the <li> tag.

The list items will be marked with numbers by default:

Example	**Output on web page**
<!DOCTYPE html>	**An ordered HTML list**

<html> <body> An ordered HTML list - Coffee - Tea - Milk </body> </html>	1. Coffee 2. Tea 3. Milk

The CSS type property is used to define the style of the list item marker:

1. <ol type="1"> The list items will be numbered with numbers (default)
2. <ol type="A"> The list items will be numbered with uppercase letters
3. <ol type="a"> The list items will be numbered with lowercase letters
4. <ol type="I"> uppercase roman numbers
5. <ol type="i"> lowercase roman numbers

1.3 HTML TABLES

Defining an HTML Table

- An HTML table is defined with the <table> tag.
- Each table row is defined with the <tr> tag.
- A table header is defined with the <th> tag.
- A table data/cell is defined with <td> tag
- By default,table headings are bold and centered

Example:

```
 <table style="width:100%">
 <tr>
   <th>Firstname</th>
   <th>Lastname</th>
    <th>Age</th>
</tr>
<tr>
   <td>Jill</td>
   <td>Smith</td>
   <td>50</td>
 </tr>
 <tr>
   <td>Eve</td>
   <td>Jackson</td>
   <td>94</td>
 </tr>
</table>
```

1.3.1 HTML Table Tags

Tag	Description
<table>	Defines a table
<th>	Defines a header cell in a table
<tr>	Defines a row in a table

<td>	Defines a cell in a table
<caption>	Defines a table caption
<colgroup>	Specifies a group of one or more columns in a table for formatting
<col>	Specifies column properties for each column within a <colgroup> element
<thead>	Groups the header content in a table
<tbody>	Groups the body content in a table
<tfoot>	Groups the footer content in a table

1.3.2 HTML <table> border Attribute

Syntax:

<table border="1|0">

Value	Description
0	No borders around the table cells
1	Add borders around the table cells

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.

Syntax:

r<tableborder="1"cellpadding="5"cellspacing="5">

1.3.3 Colspan and Rowspan Attributes

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

Example:Colspan

```
<table>
  <tr>
    <th>Month</th>
    <th>Savings</th>
  </tr>
  <tr>
    <td>January</td>
   <td>$100</td>
  </tr>
  <tr>
    <td>February</td>
    <td>$80</td>
  </tr>
  <tr>
    <td colspan="2">Sum: $180</td>
  </tr>
</table>
```

Example:Rowspan

```
<table>
  <tr>
    <th>Month</th>
    <th>Savings</th>
    <th>Savings for holiday!</th>
  </tr>
  <tr>
    <td>January</td>
    <td>$100</td>
    <td rowspan="2">$50</td>
  </tr>
  <tr>
    <td>February</td>
    <td>$80</td>
  </tr>
</table>
```

1.4 Images

In HTML, images are defined with the <img tag.

The <img>tag is empty, it contains attributes only, and does not have a closing tag.

The src attribute specifies the URL (web address) of the image:

Syntax:

<imgsrc="*url*">

The alt Attribute:

The alt attribute provides an alternate text for an image, if the user for some reason cannot view it (because of slow connection, an error in the src attribute, or if the user uses a screen reader).

The value of the alt attribute should describe the image:

Example:

<img src="img_chania.jpg" alt="Flowers in Chania">

If a browser cannot find an image, it will display the value of the alt attribute

Images in another folder:

If not specified, the browser expects to find the image in the same folder as the web page.

However, it is common to store images in a sub-folder. You must then include the folder name in the src attribute:

Example:

<img src="/images/html5.gif" alt="HTML5 Icon" style="width:128px;height:128px;">

Images in another server:

Some web sites store their images on image servers.

Actually, you can access images from any web address in the world

Example:

<img src="https://www.w3schools.com/images/w3schools_green.jpg" al
t="W3Schools.com">

Images as links:

To use an image as a link, put the <img> tag inside the <a> tag:

Example:

```
<a href="default.asp">
  <img src="smiley.gif" alt="HTML tutorial" style="width:42px;height:42px;border:0;">
</a>
```

Image Floating:

Use the CSS float property to let the image float to the right or to the left of a text

Example:

<img src="smiley.gif" alt="Smiley face" style="float:right;width:42px;height:42px;">
The image will float to the right of the text.

Key Points:

- Use the HTML <img> element to define an image
- Use the HTML src attribute to define the URL of the image
- Use the HTML alt attribute to define an alternate text for an image, if it cannot be displayed
- Use the HTML width and height attributes to define the size of the image
- Use the CSS width and height properties to define the size of the image (alternatively)
  •Use the CSS float property to let the image float

1.5 Forms

HTML Form is a document which stores information of a user on a web server using interactive controls. An HTML form contains different kind of information such as username, password, contact number, email id etc.
The elements used in an HTML form are check box, input box, radio buttons, submit buttons etc. Using these elements the information of an user is submitted on a web server.

The **form** tag is used to create an HTML form.

Input Element in HTML Forms :

Input Elements are the most common elements which are used in HTML Forms. Various user input fields can be created such as textfield, check box, password field, radio button, submit button etc. The most common input elements are listed below:

1.5.1 Text Field in HTML Forms :

The text field is a one line input field allowing the user to input text. Text Field input controls are created using the "input" element with a type attribute having value as "text".

Example:

```
<!DOCTYPE html>

<html>
<h3>Example Of Text Field</h3>
<body>
   <form>
      <labelfor="EMAIL ID">Email Id:</label><br>
      <inputtype="text"name="Email id"id="Email id">
   </form>
</body>
</html>
```

1.5.2 Password Field in HTML Forms :

Password fields are a type of text field in which the text entered is masked using asterisk or dots for prevention of user identity from another person who is looking onto the screen. Password Field input controls are created using the "input" element with a type attribute having value as "password".

Example:

```
<!DOCTYPE html>

<html>
<h3>Example of Password Field</h3>
<body>
   <form>
      <labelfor="user-password">Password:
      </label><br>
      <inputtype="password"name="user-pwd"
                     id="user-password">
   </form>
</body>
</html
```

1.5.3 Radio Buttons in HTML Form :

Radio Buttons are used to let the user select exactly one option from a list of predefined options. Radio Button input controls are created using the "input" element with a type attribute having value as "radio".

Example:

```
<!DOCTYPE html>

<html>
<h3>Example of Radio Buttons</h3>
<body>
   <form>
      SELECT GENDER
      <br>
      <inputtype="radio"name="gender"id="male">
      <labelfor="male">Male</label><br>
      <inputtype="radio"name="gender"id="female">
      <labelfor="female">Female</label>
   </form>
</body>
</html>
```

1.5.4 Checkboxes in HTML Form :

Checkboxes are used to let the user select one or more options from a pre-defined

set of options. Checkbox input controls are created using the "input" element with a type attribute having value as "checkbox".

Example:

```
<!DOCTYPE html>

<html>
<h3>Example of HTML Checkboxes</h3>
<body>
   <form>
      <b>SELECT SUBJECTS</b>
      <br>
      <inputtype="checkbox"name="subject"id="maths">
      <labelfor="maths">Maths</label>
      <inputtype="checkbox"name="subject"id="science">
      <labelfor="sceince">Science</label>
      <inputtype="checkbox"name="subject"id="english">
      <labelfor="english">English</label>
   </form>
</body>
</html>
```

1.5.5 Text area in an HTML Form :

Text Area is a multiple line text input control which allows user to provide a description or text in multiple lines. A Text Area input control is created using the "textarea" element.

Example:

```
<!DOCTYPE html>

<html>
<h3>Example of a Text Area Box</h3>
<body>
   <form>
      <labelfor="Description">Description:</label>
      <textarearows="5"cols="50"name="Description"
                  id="Description"></textarea>
   </form>
</body>
</html>
```

1.5.6 Reset And Submit Buttons :

The Submit Button allows the user to send the form data to the web server. The Reset Button is used to reset the form data and use the default values.

Example:

```
<!DOCTYPE html>
<html>
<h3>Example of a Submit And Reset Button</h3>
<body>
   <formaction="test.php"method="post"id="users">
      <labelfor="username">Username:</label>
      <inputtype="text"name="username"id="Username">
      <inputtype="submit"value="Submit">
      <inputtype="reset"value="Reset">
   </form>
</body>
</html>
```

1.6 Introduction to frames

HTML frames are used to divide your browser window into multiple sections where each section can load a separate HTML document. A collection of frames in the browser window is known as a frameset. The window is divided into frames in a similar way the tables are organized: into rows and columns.

Creating frames

To use frames on a page we use tag instead of tag. The tag defines how to divide the window into frames. The rows attribute of tag defines horizontal frames and cols attribute defines vertical frames. Each frame is indicated by tag and it defines which HTML document shall open into the frame.

Following is the example to create three horizontal frames:

```
<!DOCTYPE html>
<html>
<head>
<title>HTML Frames</title>
</head>
<frameset rows="10%,80%,10%>
      <frame name="top" src="/html/top_frame.htm"/>
      <frame name="main" src="/html/main_frame.htm"/>
      <frame name="bottom" src="/html/bottom_frame.htm"/>
<noframes>
<body>
     Your browser does not support frames.
</body>
</no frames>
</html>
```

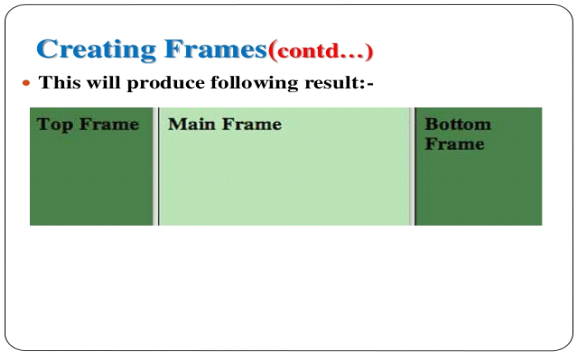
Output:

Let's put above example as follows, here we replaced rows attribute by cols and changed their width. This will create all the three frames vertically:

```
<!DOCTYPE html>
<html>
```

```
<head>
<title>HTML Frames</title>
</head>
<frameset cols="25%,50%,25%>
        <frame name="left" src="/html/top_frame.htm"/>
        <frame name="center" src="/html/main_frame.htm"/>
        <frame name="right" src="/html/bottom_frame.htm"/>
<noframes>
<body>
      Your browser does not support frames.
</body>
</no frames>
</html>
```

Output:



1.6.1 The <frameset> Tag Attributes

Following are important attributes of the <frameset> tag:

Cols:-

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

- Absolute values in pixels. For example to create three vertical frames, use cols="100, 500,100".

- A percentage of the browser window. For example to create three vertical frames, use cols="10%, 80%,10%".

- As relative widths of the browser window. For example to create three vertical frames, use cols="3*,2*,1*". This is an alternative to percentages. You can use relative widths of the browser window. Here the window is divided into sixths: the first column takes up half of the window, the second takes one third, and the third takes one sixth.

Rows:-

- This attribute works just like the cols attribute and takes the same values, but it is used to specify the rows in the frameset. For example to create two horizontal frames, use rows="10%, 90%". You can specify the height of each row in the same way as explained above for columns.

Border

- This attribute specifies the width of the border of each frame in pixels. For example border="5". A value of zero means no border.

Frameborder

- This attribute specifies whether a three-dimensional border should be displayed between frames. This attrubute takes value either 1 yes or 0 no. For example frameborder="0" specifies no border.

Framespacing

- This attribute specifies the amount of space between frames in a frameset. This can take any integer value. For example framespacing="10" means there should be 10 pixels spacing between each frames.

1.6.2 The <frame> Tag Attributes

Following are important attributes of <frame> tag:

Attribute

src

- This attribute is used to give the file name that should be loaded in the frame. Its value can be any URL. For example, src="/html/top_frame.htm" will load an HTML file available in html directory.

Name

- This attribute allows you to give a name to a frame. It is used to indicate which frame a document should be loaded into. This is especially important when you want to create links in one frame that load pages into an another frame, in which case the second frame needs a name to identify itself as the target of the link.

Frameborder

- This attribute specifies whether or not the borders of that frame are shown; it overrides the value given in the frameborder attribute on the tag if one is given, and this can take values either 1 yes or 0 no.

Marginwidth

- This attribute allows you to specify the width of the space between the left and right of the frame's borders and the frame's content. The value is given in pixels. For example marginwidth="10”.

Marginheight

- This attribute allows you to specify the height of the space between the top and bottom of the frame's borders and its contents. The value is given in pixels. For example marginheight="10".

Noresize

- By default you can resize any frame by clicking and dragging on the borders of a frame. The noresize attribute prevents a user from being able to resize the frame. For example noresize="noresize".

Scrolling

- This attribute controls the appearance of the scrollbars that appear on the frame. This takes values either "yes", "no" or "auto". For example scrolling="no" means it should not have scroll bars.

Longdesc

- This attribute allows you to provide a link to another page containing a long description of the contents of the frame. For example longdesc="framedescription.htm" .

1.6.3 Advantages

- It allows the user to view multiple documents within a single Web page.
- It load pages from different servers in a single frameset.
- The older browsers that do not support frames can be addressed using the tag.

1.6.4 Disadvantages

- Frames can make the production of website complicated
- A user is unable to bookmark any of the Web pages viewed within a frame.
- The browser's back button might not work as the user hopes.
- The use of too many frames can put a high workload on the server.
- Many old web browser doesn't support frames.

1.6.5 Supported Browser

The browser supported by <frame> tag are listed below:

- Google Chrome.
- Internet Explorer.
- Firefox.
- Opera.
- Safari.

1.7 cascading Style Sheet

CSS stands for Cascading Style Sheets.CSS describes how HTML elements are to be displayed on screen, paper, or in other media.CSS saves a lot of work. It can also control the layout of multiple web pages all at once.External stylesheets are stored in CSS files.

There are three types of CSS which are given below:

1.Inline CSS

2.Internal or Embedded CSS

3.External CSS

1.7.1 Inline CSS:

Inline CSS contains the CSS property in the body section attached with element is known as inline CSS. This kind of style is specified within an HTML tag using style attribute.

Example:

```
<!DOCTYPE html>

<html>

<head>

<title>Inline CSS</title>

</head>

<body>

        <p style = "color:red; font-size:50px; font-style:italic; textalign:center;">

        </p>

</body>

</html>
```

1.7.2 Internal or Embedded CSS:

This can be used when a single HTML document must be styled uniquely. The CSS rule set should be within the HTML file in the head section i.e the CSS is embedded within the HTML file.

Example:

```
<!DOCTYPE html>

<html>

<head>
```

```
<title>Internal CSS</title>
<style>
.main {
        text-align:center;
            }
            .GFG {
                color:blue;
                font-size:50px;
                font-weight:bold;
            }
            .geeks {
                font-style:bold;
                font-size:20px;
            }
</style>
</head>
<body>
        <div class = "main">
            <div class ="GFG">
              </div>
          <div class ="geeks">
            HI CSE C
           </div>
</div>
</body>
</html>
```

1.7.3 External CSS:

External CSS contains separate CSS file which contains only style property with the help of tag attributes (For example class, id, heading, … etc). CSS property written in a separate file with .css extension and should be linked to the HTML document using link tag. This means that for each element, style can be set only once and that will be applied across web pages.

Example: The file given below contains CSS property. This file save with .css extension. For Ex: geeks.css

```
body {
    background-color:powderblue;
}
.main {
    text-align:center;
}
.GFG {
    color:yellow;
    font-size:50px;
    font-weight:bold;
}
.geeks {
    font-style:bold;
    font-size:20px;
}
```