INTRODUCTION TO WEB AND HTML

WEB SERVER

A web server is software that ensures the communication between the server and the client is secure. The software works as a link between two machines.

The role of web servers is to store, process, and deliver requested information to the user.

Leading web servers to include Apache, Microsoft's Internet Information Services, and Nginx.

NGINX: Nginx is an open-source, high-performance web server, often used as a software load balancer. It is an ideal solution for managing high-traffic websites.

APACHE HTTP SERVER: The Apache web server, officially known as Apache HTTP Server. Apache is a free, open-source web server, it is one of the most popular web servers around the world. It is a stable solution and one of the most reliable web servers.

MICROSOFT-IIS: Microsoft Internet Information Services is a web server that was developed to be used with Windows NT. It also includes multiple built-in security features and authentication mechanisms. Microsoft-IIS is often used to host ASP.NET web applications.

HTML

- HTML stands for Hyper Text Markup Language.
- It is basically used for designing web pages.
- It is a markup language with a set of tags.
- An HTML file is always saved with a .htm or .html extension.
- HTML program starts and ends with an HTML tag i.e., <html> </html>.

STRUCTURE OF HTML

```
<html>
    <head> <title>          </title>    </head>
      <body>
            ----------
      </body>
</html>
```

Tags:

Title tag: Gives the title for a web page.

Head tag: Defines the head part of the document.

Body tag: Defines the document of the body. It has 2 elements heading and a paragraph tag.

- **Heading:** These are the subtitles represented by <h></h>. Headings are defined with <h1> to <h6> tags. <h1> is the important heading and <h6> is the least important heading.
- **Paragraph:** Defines or briefs the information of the heading. tag followed by the content you want to display in your paragraph and a .

INPUT ELEMENTS

Text: Defines a one-line text input field.

Password: Defines a one-line password input field.

Submit: Defines a submit button to submit the form to the server.

Radio: Defines a radio button that allows selecting one option.

Button: Defines a simple push button, which can be programmed to perform a task on the event.

Image: Defines a graphical submit button.

Color: Defines to choose a color.

Date: Defines to choose a date.

Email: Defines to accept email address.

Checkbox: Must be ticked to activate it.

AUDIO and VIDEO Tags

- The <audio> tag is used to embed sound in the document. Such as Music and some other sounds.
- The audio formats supported are MP3, WAV, and OGG.
- The <video> tag is used to embed video in the document. Such as Movie clips and other videos.
- The Video formats supported are MP4, WebM, and OGG.

FLEX BOXES

Flexbox is a one-dimensional layout method for arranging items in rows or columns. Items flex (expand) to fill additional space or shrink to fit into smaller spaces.

Flex and Flex Box - Flexbox is a purely CSS layout, which means the entire layout is managed and controlled at the CSS level, no need to play with the markups. The flex model can adjust its item's height/width to best fill in the available container space.

POSITIONING

The position CSS property sets how an element is positioned in a document. The top, right, bottom, and left properties determine the final location of positioned elements.

Types ;

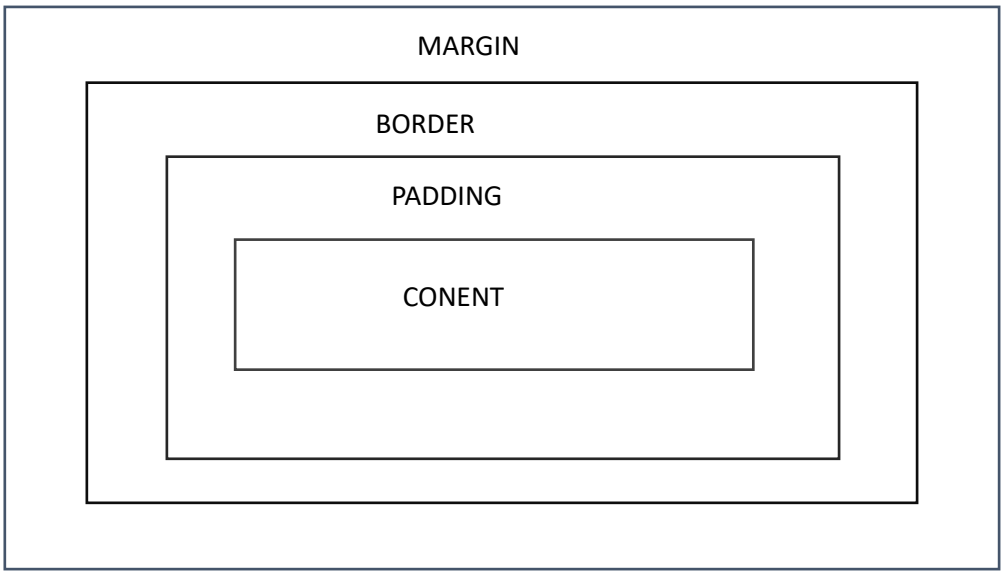
1. Static: The element is positioned according to the document's normal flow. The top, right, bottom, left, and z-index properties have no effect. This is the default value.
2. Relative: The element is positioned according to the normal flow of the document, and then offset relative to itself based on the values of top, right, bottom, and left.
3. Absolute: The element is removed from the normal document flow, and no space is created for the element in the page layout. Its final position is determined by the top, right, bottom, and left values.
4. Sticky: The element is positioned according to the document's normal flow, and then offset relative to its nearest scrolling ancestor and containing block. The offset does not affect the position of any other elements.

CSS BOX MODE

T he CSS box model is essentially a box that wraps around every HTML element. It consists of: margins, borders, padding, and the actual content. The image below illustrates the box model:

- **Content** - The content of the box, where text and images appear
- **Padding** - Clears an area around the content. The padding is transparent
- **Border** - A border that goes around the padding and content

- **Margin** - Clears an area outside the border. The margin is transparent.



MEDIA QUERY

Media queries in CSS3 extended the CSS2 media types idea: Instead of looking for a type of device, they look at the capability of the device.

Media queries can be used to check many things, such as:

- width and height of the viewport
- width and height of the device
- orientation
- resolution

Using media queries is a popular technique for delivering a tailored style sheet to desktops, laptops, tablets, and mobile phones.

CSS GRID

The CSS Grid offers a grid-based layout system, with rows and columns, making it easier to design web pages without having to use floats and positioning.

A grid layout consists of a parent element, with one or more child elements.