

# HTML(Hyper Text Markup Language)

## ABOUT HTML

- Is the standard language used to create and design web pages.
- Provides the structure and layout for content on the World Wide Web.
- HTML documents consist a series of tags that define the structure and content of a web page.
- Each tags serves a specific purpose, such as headings, paragraphs, lists, links, images, tables, forms, and more.
- HTML is typically used in conjunction with CSS (Cascading Style Sheets) for styling and JavaScript for interactivity.
- By Using HTML, web developers can create web pages with text, images, multimedia, and interactive tags, ensuring compatibility across different web browsers and devices.
- Allows developers to define the layout and organization of content, making it accessible to users and easy to navigate.

## Used in various scenarios ,like:

- **Creating static web pages:** HTML is commonly used to create static web pages with fixed content that doesn't change frequently.
- **Building dynamic web applications:** HTML is used in combination with server-side scripting languages (such as PHP, Python, or Ruby) and client-side scripting languages (such as JavaScript) to build dynamic web applications that can interact with users and retrieve data from servers.
- **Designing responsive websites:** HTML, along with CSS and JavaScript, is used to create responsive websites that adapt to different screen sizes and devices, providing a consistent user experience across desktops, tablets, and smartphones.

## **VARIOUS TYPES OF TAGS IN HTML**

1. `<!DOCTYPE>` - Defines the document type.
2. `<html>` - Defines an HTML document.
3. `<head>` - Contains metadata/information for the document.
4. `<title>` - Defines a title for the document.
5. `<body>` - Defines document's body.
6. `<h1>` to `<h6>` - Defines HTML heading.
7. `<p>` - Defines a paragraph.
8. `<br>` - Inserts a single line break.
9. `<b>` - Defines bold text.

- |            |                                  |
|------------|----------------------------------|
| 10.<tr>    | - Defines a row in a table.      |
| 11.<td>    | - Defines a row in a table       |
| 12.<th>    | - Defines header cell in a table |
| 13.<table> | - Defines a table.               |

## CSS(CASCADING STYLE SHEET)

- CSS is a styling language used to describe the presentation of a document written in HTML.
- Controls how HTML elements are displayed on a web page, including their layout, color, font, size, and spacing.
- CSS separates the content of a webpage from its visual design, allowing for greater flexibility and easier maintenance.

### Key aspects of CSS:

- **Selectors:** CSS selectors target specific HTML elements to apply styling rules. They can be based on element types, classes, IDs, attributes, or their relationships within the document structure.
- **Properties and Values:** CSS properties define the visual characteristics of selected elements, such as color, font size, margin, padding, and border. Each property is assigned a value that determines how it should be applied.
- **Style Rules:** CSS style rules consist of a selector and a declaration block containing one or more property-value pairs. These rules specify how selected elements should appear on the webpage.
- **Cascade and Specificity:** CSS follows a cascading model, where multiple style rules can apply to the same element. The specificity of selectors determines which styles take precedence when conflicts arise.
- **Box Model:** CSS treats each HTML element as a rectangular box with content, padding, borders, and margins. Developers can control the dimensions and spacing of these boxes using CSS properties like width, height, padding, and margin.

- **Layout Techniques:** CSS offers various layout techniques for arranging elements on a webpage, including floats, positioning, flexbox, and grid layouts. These tools enable developers to create responsive and visually appealing designs.
- **Media Queries:** CSS media queries allow developers to apply different styles based on characteristics such as screen size, device orientation, and resolution. This enables the creation of responsive designs that adapt to various viewing environments.

## CSS COMMAND LIST

- color: color: red;
- background-color: background-color: hashtag#fff;
- font-family: font-family: Arial, sans-serif;
- font-size: font-size: 16px;
- text-align: text-align: center;
- line-height: line-height: 1.5;
- margin: margin: 10px;
- padding: padding: 5px;
- border: border: 1px solid #000;
- display: display: block;
- width: width: 100%;
- height: height: 50px;
- background-image: background-image: url("image.jpg");
- float: sets the position of an element relative to other elements;  
e.g. float: left;
- text-decoration: sets the appearance of text;  
e.g. text-decoration: underline;

# JAVASCRIPT

## ABOUT JAVASCRIPT

- JavaScript is a high-level, interpreted programming language
- Used for creating dynamic and interactive content on websites
- JavaScript is a versatile programming language
- Enables developers to add interactivity, behavior, and dynamic elements to web pages.
- Developed by Brendan Eich in 1995 and has since become one of the most popular programming languages worldwide.

### Using In Various Development Field Like:

- **Client-Side Scripting:** JavaScript is predominantly used for client-side scripting, allowing developers to manipulate HTML elements, handle user interactions, and create dynamic content within web browsers.
- **Server-Side Scripting:** With platforms like Node.js, JavaScript can also be used for server-side scripting, enabling developers to build entire web applications using a unified language stack.
- **Web Application Development:** JavaScript is widely used in developing web applications, ranging from simple scripts to complex, interactive web interfaces, and single-page applications (SPAs).
- **Mobile App Development:** Frameworks like React Native and Ionic utilize JavaScript to build cross-platform mobile applications.
- **Game Development:** JavaScript, along with HTML5 canvas and WebGL, is used in developing browser-based games and interactive experiences.
- **Desktop Application Development:** Through frameworks like Electron, developers can use JavaScript to build desktop applications for various operating systems.

### TYPES OF JAVASCRIPT USERS

JavaScript is utilized by a wide range of developers, including:

- Web developers building websites and web applications.
- Full-stack developers working on both client and server-side development.
- Mobile app developers creating cross-platform mobile applications.
- Game developers designing browser-based games.
- Desktop application developers using Electron or similar frameworks.

## Benefits of Using JavaScript

- **Versatility**: JavaScript can be used for various development purposes, including client-side scripting, server-side scripting, and even mobile and desktop application development.
- **Interactivity**: JavaScript enables developers to create highly interactive and dynamic user interfaces, enhancing user engagement and experience.
- **Speed**: As JavaScript runs on the client-side, it reduces the need for server requests, resulting in faster response times and improved performance.
- **Compatibility**: JavaScript is supported by all modern web browsers, making it a widely accessible programming language for web development.
- **Large Ecosystem**: JavaScript has a vast ecosystem of libraries, frameworks, and tools that streamline development tasks and accelerate the development process.
- **Community Support**: JavaScript boasts a large and active developer community, providing ample resources, documentation, and support for developers at all skill levels.