

HTML & CSS Basics

1. What is HTML & CSS?

HTML (HyperText Markup Language):

HTML is the standard language for creating and describing web pages. It uses elements and tags to instruct browsers on how to display content like text, images, and links. Developed by Tim Berners-Lee in 1991, HTML has evolved through multiple versions; we now use HTML5; it uses the .html extension.

CSS (Cascading Style Sheets):

CSS controls the appearance and layout of HTML elements. It allows designers to apply styles consistently across multiple pages. CSS files use the .css extension and provide powerful control over visual design, including fonts, colors, and spacing.

Role of HTML & CSS in Web Development

Web development has **two main layers**:

1. Front-end (User-side)

- Deals with everything the user interacts with: web pages, forms, buttons, etc.
- Uses HTML and CSS to create a user-friendly interface.
- Front-end developers focus on making content accessible and easy to use.

2. Back-end (Server-side)

- Handles databases, server logic, and connections behind the scenes.
- Uses languages like Python, C++, PHP, etc.
- Back-end developers ensure that the website functions properly and securely.

Getting Started with HTML

1. HTML Framework

A framework is a set of rules or structures used to build websites efficiently. HTML provides a standard structure to save time and maintain consistency. CSS frameworks (like Bootstrap, Angular, jQuery) help create grids, layouts, and reusable components.

2. Doctype

Every HTML file starts with a doctype to tell the browser which HTML version is used. HTML5 doctype is simple: `<!DOCTYPE html>`

3. Writing Your First HTML Program

```
<!DOCTYPE html>
<html>
  <head>
    <title>My First HTML Program</title>
  </head>
  <body>
    Hello World
  </body>
</html>
```

- `<html>`: Root element of the page.
- `<head>`: Contains metadata, including the page title.
- `<body>`: Contains the visible content.

HTML Elements & Tags

- **Tags** define the structure and content of a web page.
- Each element usually has an **opening tag** `<tag>` and a **closing tag** `</tag>`.
- Example from the "Hello World" program:
 - Opening tags: `<html>`, `<head>`, `<title>`, `<body>`
 - Closing tags: `</html>`, `</head>`, `</title>`, `</body>`

Page Title

- Defined inside `<title>` in the `<head>` section.
- Displays in the browser tab. Example: "My First HTML Program"

Basic HTML Structure

After the doctype, a simple HTML5 page structure looks like this:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width,
initial-scale=1.0">
  </head>
  <body>
    <!-- Page content goes here -->
  </body>
</html>
```

- <meta charset="UTF-8"> ensures proper display of special characters.
- <meta name="viewport"> helps with responsive design by adjusting page width for different devices.

Common HTML Elements

Element	Purpose	Example
<h1>-<h6>	Headings	<h1>Main Heading</h1>
<p>	Paragraph	<p>This is a paragraph.</p>
<a>	Link	Visit Example
	Image	
 / 	Lists	Item 1
<div>	Division/Container	<div class="container"></div>
	Inline container	Text
<form>	Input forms	<form><input type="text"></form>

HTML Attributes

- Attributes provide additional information about an element.
- Common attributes:
 - id → unique identifier
 - class → group multiple elements for styling
 - src → source for images or scripts
 - href → hyperlink reference
 - alt → alternative text for images

Ex: ``

Introduction to CSS

CSS is used to style HTML elements. You can add CSS in three ways:

1. **Inline CSS** – directly in an element
2. **Internal CSS** – in the `<head>` using `<style>` tag
3. **External CSS** – using a separate `.css` file

Basic CSS Selectors

Selector	Description	Example
element	Selects all elements of that type	p { color: red; }
#id	Selects element with specific id	#logo { width: 100px; }
.class	Selects elements with a specific class	.highlight { background-color: yellow; }
element.class	Selects specific element with class	p.highlight { font-weight: bold; }

Combining HTML & CSS

```
<!DOCTYPE html>
<html>
<head>
  <title>Styled Page</title>
  <style>
    body { font-family: Arial; background-color: #eef; }
    h1 { color: #0077cc; }
    p { color: #555; }
  </style>
</head>
<body>
  <h1>Welcome to Web Development</h1>
  <p>This is a paragraph styled with CSS.</p>
</body>
</html>
```

- HTML provides structure.
- CSS provides style.
- Together, they form the foundation of web pages.