

## **1. Introduction to CSS**

- What is CSS?
- CSS Syntax and Selectors
- Inline, Internal, and External CSS
- Colors, Backgrounds, and Borders
- CSS Units (px, em, rem, %, vw, vh, etc.)
- Text Styling (font-family, font-size, font-weight, etc.)
- Box Model (content, padding, border, margin)
- Display Properties (block, inline, inline-block)
- CSS Positioning (static, relative, absolute, fixed, sticky)
- Float and Clear
- CSS Flexbox (basic introduction)

## **Intermediate CSS Topics:**

### **1. CSS Layout Techniques**

- CSS Grid Layout
- Advanced Flexbox Techniques
- Responsive Web Design (Media Queries)
- CSS Positioning (advanced concepts)
- CSS Units (advanced use cases)
- Z-Index and Stacking Context
- CSS Variables (Custom Properties)
- CSS Transitions and Animations
- Pseudo-classes and Pseudo-elements
- Attribute Selectors
- CSS Specificity and Inheritance
- CSS Typography (advanced text styling, web fonts)
- CSS Combinators (descendant, child, adjacent sibling, general sibling)

### **2. CSS Preprocessors**

- Introduction to SASS/SCSS and LESS
- Nesting, Variables, Mixins, and Functions
- Partials and Imports

### **3. CSS Frameworks**

- Introduction to Bootstrap, Tailwind CSS
- Basic usage of framework components
- Customizing framework settings

## **Advanced CSS Topics:**

### **1. Advanced CSS Layouts**

- Advanced CSS Grid Techniques (Auto-placement, Grid Areas)

- Complex Flexbox Layouts
- Responsive Design Strategies (Mobile-first, Fluid Grids)
- CSS Media Queries (complex queries, interaction media types)
- CSS Shapes (creating non-rectangular shapes)

## **2. Advanced Styling Techniques**

- CSS Transitions (advanced timing functions, chaining)
- CSS Animations (keyframes, performance considerations)
- CSS Transforms (2D and 3D transforms)
- Advanced Pseudo-classes (e.g., `:nth-child`, `:nth-of-type`)
- Advanced Pseudo-elements (custom bullets, complex overlays)
- CSS Filters and Blend Modes
- Custom CSS Variables (advanced use cases, dynamic theming)
- CSS Calc() Function (dynamic sizing and positioning)

## **3. Performance Optimization**

- Minimizing Repaints and Reflows
- Critical CSS
- CSS Optimization Techniques (minification, combining)
- Understanding CSSOM (CSS Object Model)
- Debugging and Testing CSS (using DevTools effectively)

## **4. Modern CSS Features**

- CSS Custom Properties (dynamic theming)
- CSS Houdini (Paint API, Layout API)
- CSS Grid Level 2 Features (subgrids)
- Advanced CSS Media Queries (`prefers-color-scheme`, `prefers-reduced-motion`)
- CSS Logical Properties (support for writing modes and languages)

## **5. Advanced CSS Frameworks Customization**

- Deep Customization of Bootstrap, Tailwind CSS
- Building Custom Utility-First Frameworks

## **6. CSS Architecture**

- BEM (Block, Element, Modifier) Methodology
- OOCSS (Object-Oriented CSS)
- SMACSS (Scalable and Modular Architecture for CSS)
- ITCSS (Inverted Triangle CSS)
- CSS-in-JS (Styled-components, Emotion)