

CSS Roadmap – Updated (15 Sessions)

Includes missing advanced topics and best practices

Bug to Brilliance – By Shaheer Ali

Session 1: Introduction to CSS

Topics:

- What is CSS? How it works (inline, internal, external)
- CSS history and versions (CSS1, CSS2, CSS3)
- Who maintains CSS? (W3C)
- CSS syntax and linking CSS to HTML
- Basic selectors (element, class, ID)
- CSS comments (`/* comment */`)
- Colors (named colors, HEX, RGB, HSL)

Practice:

- Style your old HTML pages with basic colors and fonts.

Session 2: CSS Selectors & Units

Topics:

- Universal selector, group selector, descendant selectors
- Combinators (descendant, child `>`, adjacent sibling `+`, general sibling `~`)
- Attribute selectors, pseudo-classes (`:hover`, `:active`, `:first-child`)
- Anchor states (`a:link`, `a:visited`, `a:hover`, `a:active`)
- List styling (`list-style-type`, `list-style-position`, `list-style-image`)
- CSS units (px, %, em, rem, vh, vw)
- Selector specificity and `!important`

Practice:

- Create a styled list with hover effects and anchor states using selectors.

Session 3: Typography & Box Model

Topics:

- Box Model: content, padding, border, margin
- Typography: font-family, font-size, line-height, text-align, text-decoration
- Overflow property

Practice:

- Build a card with text and image using box model properties.

Session 4: Display & Positioning

Topics:

- Display types: inline, block, inline-block, none
- Positioning: static, relative, absolute, fixed, sticky
- Z-index and stacking context
- Centering techniques (using positioning and transform)

Practice:

- Build a sticky navbar with positioned elements.

Session 5: Flexbox Basics

Topics:

- Flex container: display: flex, justify-content, align-items
- Flex items: flex-grow, flex-shrink, flex-basis
- flex-wrap, align-content

Practice:

- Create a product card layout using Flexbox.

Session 6: CSS Grid & Columns

Topics:

- Grid container: display: grid, grid-template-rows, grid-template-columns
- grid-gap, grid-area
- Positioning grid items
- Multi-column layout (column-count, column-gap, column-rule)

Practice:

- Build a 3x3 grid gallery and a multi-column text layout.

Session 7: Backgrounds & Borders

Topics:

- Background color, images, gradients
- background-size, background-position, background-repeat, background-attachment
- Borders, border-radius, outline

Practice:

- Create a banner with background image and gradient overlay.

Session 8: Shadows, Filters & Transitions

Topics:

- box-shadow, text-shadow, drop-shadow()
- CSS filters (blur, brightness, contrast, grayscale, opacity, invert)
- CSS transitions: duration, timing, delay
- Hover effects with transitions

Practice:

- Animate buttons and cards with shadows, filters and smooth transitions.

Session 9: Transform & Animations

Topics:

- transform: translate, rotate, scale, skew
- keyframes and animation properties (name, duration, iteration)
- CSS perspective and 3D transforms

Practice:

- Animate an image slider or bouncing ball with keyframes.

Session 10: Advanced Selectors & Pseudo Elements

Topics:

- nth-child, last-child, first-of-type
- ::before and ::after pseudo-elements

- Advanced attribute selectors
- Specificity deep dive and inline styles vs external CSS

Practice:

- Build a styled navigation bar with pseudo-elements and nth-child effects.

Session 11: Media Queries & Responsive Design

Topics:

- Mobile-first design
- Breakpoints for mobile, tablet, desktop
- Fluid units (% , vw, vh, min(), max())
- Container queries

Practice:

- Make your Flexbox/Grid layouts fully responsive.

Session 12: CSS Variables & Dark Mode

Topics:

- Declaring and using CSS variables
- Updating variables dynamically (dark/light mode)

Practice:

- Build a webpage with a dark mode toggle button.

Session 13: CSS Organization & Best Practices

Topics:

- File structure, modular CSS
- BEM naming convention and SMACSS
- Reset vs Normalize CSS
- Vendor prefixes & browser compatibility
- CSS performance & optimization (Critical CSS, minification, render blocking)

Practice:

- Refactor an old project using BEM and ensure browser compatibility.

Session 14: Modern CSS Features & Creative Tools

Topics:

- New features: clamp(), min(), max(), nesting
- CSS layers and container queries (advanced)
- Clip-path and shape dividers
- Scroll snap, aspect ratio, accent-color

Practice:

- Apply clamp() for responsive font sizes and use clip-path in a creative design.

Session 15: Final Project & SEO/Hosting

Topics:

- Combine all learned concepts
- SEO basics with CSS (heading structure, image optimization)
- Testing with Lighthouse/PageSpeed/GTMetrix
- Website hosting (Netlify, Hostinger basics)

Practice:

- Build a fully responsive multi-section landing page using only HTML & CSS and deploy it live.