Roadmap for Professional Front-End Developer

HTML, CSS, CSS Frameworks

Timeline: September 2024 – November 2024

Daily Time Commitment: 2 Hours

Phase 1: HTML Fundamentals (September 1 - September 10, 2024)

September 1 - 2: Introduction to HTML

- Overview of HTML and its role in web development.
- Basic structure of an HTML document (doctype, head, body, etc.).
- Essential tags: `<html>`, `<head>`, `<body>`, `<h1>`-`<h6>`, `<p>`, `<a>`, `<img>`, etc.
- Creating your first HTML webpage.

September 3 - 4: Text Formatting and Links

- Text formatting tags: `<strong>`, `<em>`, `<u>`, `<br>`, etc.
- Lists: `<ul>`, `<ol>`, `<li>`.
- Links: Absolute and relative URLs, internal linking.
- Best practices for semantic HTML.

September 5 - 7: Images, Multimedia, and Tables

- Image attributes (`src`, `alt`, etc.).
- Responsive images and image optimization.
- Embedding multimedia (audio and video).
- Creating tables: `<table>`, `<tr>`, `<td>`, `<thead>`, `<tbody>`, `<tfoot>`.

September 8 - 9: Forms and Input Elements

- Creating forms: `<form>`, `<input>`, `<textarea>`, `<select>`, `<option>`, etc.
- Form attributes (`action`, `method`, `name`, `id`, `placeholder`, etc.).
- Form validation (basic).
- Best practices for accessibility.

September 10: HTML5 Semantic Elements

- Introduction to semantic HTML5 elements: `<header>`, `<footer>`, `<section>`, `<article>`, `<aside>`, `<nav>`.
- Importance of accessibility in web development.
- Structuring content with semantic HTML.

Phase 2: CSS Fundamentals (September 11 - September 21, 2024)

September 11 - 12: Introduction to CSS

- What is CSS and how does it work with HTML?
- CSS syntax: selectors, properties, values.
- Inline vs internal vs external CSS.
- Best practices for separating content (HTML) from design (CSS).

September 13 - 14: CSS Selectors and Properties

- Types of selectors: element, class, ID, attribute, pseudo-classes, and pseudo-elements.
- Basic properties: `color`, `background`, `font`, `margin`, `padding`, `border`, etc.
- Inheritance and the cascade in CSS.

September 15 - 17: Box Model, Display, and Positioning

- Understanding the box model: `content`, `padding`, `border`, `margin`.
- CSS `display` property: `block`, `inline`, `inline-block`, `none`.
- Positioning elements: static, relative, absolute, fixed, sticky.
- Z-index and stacking context.

September 18 - 19: Flexbox Layout

- Introduction to Flexbox and its advantages.
- Flex container and flex item properties.
- Key properties: `justify-content`, `align-items`, `flex-direction`, `flex-wrap`, `align-self`.
- Creating responsive layouts with Flexbox.

September 20 - 21: CSS Grid Layout

- Introduction to CSS Grid and its benefits.
- Grid container properties: `grid-template-columns`, `grid-template-rows`, `grid-gap`, `grid-area`.
- Creating complex, responsive layouts using Grid.

Phase 3: CSS Advanced Topics (September 22 - September 30, 2024)

September 22 - 23: Responsive Design and Media Queries

- Introduction to responsive web design.
- Media queries for different screen sizes.
- Using rem/em units for responsive typography.
- Responsive images and containers.

September 24 - 25: CSS Variables and Custom Properties

- Introduction to CSS variables (`--variable-name`).
- How to define, reuse, and override CSS custom properties.
- Practical use cases for CSS variables (theme switching, DRY CSS).

September 26 - 28: Transitions, Animations, and Transforms

- Introduction to CSS transitions (`transition`, `transition-duration`, `transition-timing-function`).
- CSS animations: keyframes, `animation-name`, `animation-duration`, etc.
- Using `transform` for scaling, rotating, translating, and skewing elements.
- Practical use cases for animations in UI design.

September 29 - 30: Browser DevTools and Debugging CSS

- Introduction to browser DevTools (Chrome, Firefox).
- Inspecting and debugging CSS.
- Tools for checking responsiveness and accessibility.

Phase 4: CSS Frameworks - Bootstrap (October 1 - October 15, 2024)

October 1 - 2: Introduction to Bootstrap

- What is Bootstrap, and why use it?
- Setting up Bootstrap (CDN vs local files).
- Understanding the Bootstrap grid system and containers.

October 3 - 5: Bootstrap Components I

- Working with Bootstrap typography.
- Bootstrap buttons, button groups, and button styling.
- Forms: inputs, selects, checkboxes, and radio buttons.

October 6 - 8: Bootstrap Components II

- Bootstrap navigation bars and menus.
- Bootstrap cards, alerts, and modals.
- Bootstrap media objects, images, and icons.

October 9 - 11: Bootstrap Utilities and Layouts

- Utility classes for spacing, text alignment, and colors.
- Bootstrap Flexbox and Grid system for advanced layouts.
- Creating responsive layouts using Bootstrap's grid system.

October 12 - 15: Bootstrap Project

- Build a simple website using Bootstrap.
- Incorporate various Bootstrap components: navbar, forms, cards, etc.
- Ensure the website is fully responsive.

Phase 5: CSS Frameworks - Tailwind CSS (October 16 - October 31, 2024)

October 16 - 17: Introduction to Tailwind CSS

- What is Tailwind CSS, and why use it?
- Setting up Tailwind in your project (via CDN or npm).
- Understanding the utility-first approach of Tailwind.

October 18 - 20: Tailwind Basics

- Basic styling: typography, spacing, and colors.
- Responsive design with Tailwind's mobile-first approach.
- Using Tailwind's Flexbox and Grid utilities for layout.

October 21 - 23: Advanced Tailwind Utilities

- Customizing Tailwind using the `tailwind.config.js` file.
- State variants (hover, focus, active, etc.).
- Dark mode implementation with Tailwind.

October 24 - 26: Tailwind Plugins and Customization

- Introduction to Tailwind plugins.
- Extending Tailwind with custom utilities and components.
- Optimizing Tailwind for production using PurgeCSS.

October 27 - 31: Tailwind CSS Project

- Build a fully responsive web page using Tailwind CSS.
- Utilize advanced utilities and custom components.
- Ensure high performance by optimizing the CSS file.

Phase 6: Putting It All Together (November 1 - November 30, 2024)

November 1 - 5: Responsive Web Design Project

- Create a fully responsive website using HTML, CSS, Bootstrap, and Tailwind.
- Focus on accessibility, responsiveness, and performance.
- Include a responsive navigation menu, forms, and media (images, videos).

November 6 - 10: Advanced CSS Project

- Implement animations, transitions, and interactive elements.
- Focus on visual design, interactivity, and user experience.
- Ensure the project follows the best practices for web performance.

November 11 - 15: Build a Portfolio Website

- Create a personal portfolio website.
- Showcase all the projects completed during this roadmap.
- Implement advanced layout techniques, animations, and CSS frameworks.

November 16 - 30: Final Capstone Project

- Build a professional-level front-end project (e.g., e-commerce, blog, or landing page).
- Use a combination of HTML, CSS, Bootstrap, and Tailwind.
- Ensure the project meets industry standards for responsiveness, design, and accessibility.

Professional Project Ideas:

1. **Portfolio Website**: Showcase your skills with projects and blog posts.
2. **Responsive E-Commerce Website**: A fully responsive online store with product listings and a shopping cart.
3. **Landing Page**: Build a modern and interactive landing page for a business or product.
4. **Personal Blog**: A responsive blog with categories, tags, and comments.
5. **Event Website**: Create a website for a fictional event, featuring schedules, registration forms, and speaker details.