# 51-Day Web Development Roadmap

This roadmap is structured for someone who dedicates 4 hours daily to learning. It covers both frontend and backend development, ensuring you acquire full-stack skills by the end.

## Week 1: Introduction to Web Development

Day 1: HTML Basics (4 hrs)  
- Learn about HTML structure and basic tags: <html>, <head>, <body>, <div>, <p>, <h1> to <h6>.  
- Create a simple webpage with a title and basic content.

Day 2: HTML Forms & Semantic Tags (4 hrs)  
- Study forms: <form>, <input>, <button>, <label>.  
- Learn semantic tags: <header>, <footer>, <article>, <section>.  
- Build a form with text fields, checkboxes, and radio buttons.

Day 3: CSS Basics (4 hrs)  
- Learn CSS syntax, selectors, and properties (color, background, font, margin, padding).  
- Style the HTML pages from Day 1 and Day 2.

Day 4: CSS Flexbox (4 hrs)  
- Understand flexbox concepts: containers, items, alignment, and justification.  
- Build a responsive navigation bar.

Day 5: CSS Grid (4 hrs)  
- Learn grid properties: grid-template-rows, grid-template-columns, gap.  
- Create a basic layout using CSS Grid.

Day 6: Responsive Design with Media Queries (4 hrs)  
- Learn media queries for mobile-first design.  
- Practice by making your previous designs responsive.

Day 7: Project - Build a Responsive Portfolio Page (4 hrs)  
- Combine all HTML and CSS concepts to build a personal portfolio.

## Week 2: JavaScript Basics

Day 8: JavaScript Basics (4 hrs)  
- Learn about variables (let, const, var), data types, and operators.  
- Write a script to manipulate DOM elements.

Day 9: JavaScript Functions and Events (4 hrs)  
- Study functions, event listeners, and basic debugging.  
- Add interactivity (e.g., button clicks) to your portfolio.

Day 10: Arrays and Loops (4 hrs)  
- Learn array methods (push, pop, map, filter).  
- Practice loops (for, while, forEach).

Day 11: Objects in JavaScript (4 hrs)  
- Study objects, object methods, and how to access object properties.

Day 12: DOM Manipulation (4 hrs)  
- Use JavaScript to dynamically update HTML and CSS.  
- Create a simple to-do list.

Day 13: Asynchronous JavaScript (4 hrs)  
- Learn about promises, async/await, and fetch API.  
- Fetch data from a public API (e.g., JSONPlaceholder).

Day 14: Mini Project - Dynamic Webpage (4 hrs)  
- Build a weather app using the OpenWeather API.

## Week 3: Advanced JavaScript and Frameworks

Day 15: ES6+ Features (4 hrs)  
- Study destructuring, template literals, arrow functions, and modules (import/export).

Day 16: Version Control with Git (4 hrs)  
- Learn Git basics: init, add, commit, push, pull.  
- Create a GitHub repository and upload your portfolio.

Day 17: Introduction to Bootstrap (4 hrs)  
- Learn Bootstrap components and utilities.  
- Use Bootstrap to redesign your portfolio.

Day 18: JavaScript Frameworks - React Basics (4 hrs)  
- Set up a React app using create-react-app.  
- Understand components, props, and JSX.

Day 19: React State and Events (4 hrs)  
- Learn about useState and handling user events in React.

Day 20: React Router (4 hrs)  
- Learn routing in React using react-router-dom.  
- Build a multi-page application.

Day 21: Project - React App (4 hrs)  
- Build a basic React app (e.g., a movie search app using a public API).

## Week 4: Backend Development with Node.js

Day 22: Introduction to Node.js (4 hrs)  
- Learn what Node.js is and how it works.  
- Create a simple server with http.

Day 23: npm and Modules (4 hrs)  
- Learn about npm and how to use third-party libraries.

Day 24: Express.js Basics (4 hrs)  
- Set up an Express server.  
- Learn about routes and middleware.

Day 25: Building REST APIs (4 hrs)  
- Learn about RESTful principles.  
- Build a simple CRUD API using Express.

Day 26: MongoDB Basics (4 hrs)  
- Learn MongoDB CRUD operations.  
- Integrate MongoDB with your Express app.

Day 27: Authentication (4 hrs)  
- Learn about JWT for user authentication.  
- Implement user login and signup APIs.

Day 28: Project - REST API (4 hrs)  
- Build a REST API for a blog application.

## Week 5: Full-Stack Development

Day 29: Connecting Frontend and Backend (4 hrs)  
- Fetch data from your API in the React app.

Day 30: Advanced React (4 hrs)  
- Learn useEffect and Context API.

Day 31: Deployment (4 hrs)  
- Deploy your frontend on Vercel/Netlify and backend on Render/Heroku.

Day 32: Full-Stack Project - Blog Application (4 hrs)  
- Start building a blog application with React and Express.

Day 33: Full-Stack Project (4 hrs)  
- Continue building the blog application.

Day 34: Full-Stack Project (4 hrs)  
- Add authentication to the blog application.

Day 35: Full-Stack Project - Final Touches (4 hrs)  
- Test and deploy your blog application.

## Week 6: Advanced Topics

Day 36: Advanced Backend - Websockets (4 hrs)  
- Learn about real-time communication using Websockets.

Day 37: Advanced Backend - GraphQL (4 hrs)  
- Learn the basics of GraphQL and its implementation with Express.

Day 38: React Redux (4 hrs)  
- Learn state management with Redux.

Day 39: Testing (4 hrs)  
- Learn about testing tools like Jest and Postman.

Day 40: Full-Stack Project - Chat App (4 hrs)  
- Start building a real-time chat application.

Day 41: Full-Stack Project (4 hrs)  
- Continue building the chat app.

Day 42: Full-Stack Project (4 hrs)  
- Complete and deploy the chat application.

## Week 7: Final Week - Advanced Skills & Projects

Days 43-48: Capstone Project (4 hrs/day)  
- Build a major project (e.g., e-commerce platform, job portal).  
- Focus on full-stack integration, advanced features, and UI/UX.

Days 49-51: Review and Portfolio Preparation (4 hrs/day)  
- Polish your portfolio with completed projects.  
- Add README files and documentation for your projects.  
- Practice interview questions and coding challenges.