

Web Application Development - 1 Month Course

Course Title: Web Application Development

Duration: 1 Month (4 Weeks)

Prerequisites: Basic computer skills, familiarity with web browsers, and basic programming knowledge (optional).

Week 1: Introduction to Web Development

- Day 1: Introduction to Web Applications and Tools

Overview of web development, tools, and technologies (HTML, CSS, JavaScript).

- Day 2: Setting Up the Development Environment

Installing VS Code, browser developer tools, and setting up a basic project.

- Day 3: HTML Basics

Understanding the structure of a webpage using HTML.

- Day 4: CSS Basics

Styling webpages with CSS and exploring basic layouts.

- Day 5: Introduction to JavaScript

Adding interactivity to webpages with JavaScript.

- Day 6: DOM Manipulation

Using JavaScript to dynamically modify HTML and CSS.

- Day 7: Project: A Simple Portfolio Page

Create a personal portfolio webpage using HTML, CSS, and JavaScript.

Week 2: Building Dynamic Websites

- Day 8: Introduction to Responsive Design

Using CSS Flexbox and Grid for responsive layouts.

- Day 9: Forms and Form Validation

Creating forms and adding client-side validation.

- Day 10: Introduction to Bootstrap

Simplifying styling with the Bootstrap framework.

- Day 11: Introduction to APIs

Fetching data from APIs using JavaScript (e.g., JSONPlaceholder).

- Day 12: Working with External Libraries

Using libraries like jQuery or Chart.js.

- Day 13: Introduction to Version Control with Git

Setting up Git and pushing projects to GitHub.

- Day 14: Project: Blog Website with API Integration

Build a basic blog with posts fetched from an API.

Week 3: Backend Development

- Day 15: Introduction to Backend and Node.js

Basics of server-side development and Node.js setup.

- Day 16: Working with Express.js

Setting up a web server using Express.js.

- Day 17: Introduction to Databases

Basics of relational (MySQL) and NoSQL (MongoDB) databases.

- Day 18: RESTful APIs

Creating and testing RESTful APIs using Postman.

- Day 19: Authentication Basics

Adding user authentication using JWT or session cookies.

- Day 20: File Upload and Management

Handling file uploads in a web application.

- Day 21: Project: Task Manager Application

Build a task manager app with Express.js and MongoDB.

Week 4: Full-Stack Web Application Development

- Day 22: Introduction to Full-Stack Development

Combining frontend and backend technologies.

- Day 23: Integration of Frontend and Backend

Connecting the frontend (React or vanilla JS) with the backend (Express.js).

- Day 24: Deployment Basics

Hosting a web application on platforms like Vercel, Netlify, or Heroku.

- Day 25: Optimizing Web Applications

Performance optimization and debugging tips.

- Day 26: Testing Your Application

Writing unit tests and using tools like Jest or Mocha.

- Day 27: Final Project Workday

Build a custom full-stack application integrating all learned skills.

- Day 28: Final Project Showcase and Feedback

Present the final web application and gather feedback.

Outcome: By the end of this course, participants will be able to build, deploy, and manage full-stack web applications. They will have hands-on experience with modern tools and frameworks used in web development.