

WEBDEV Resources

Phase 1: Foundations (Weeks 1-4)

Week	Focus Area	Key Concepts	Recommended Resources (Free/Low-Cost)	Project / Practice Goal
1	HTML & CSS Basics	Semantic HTML5, CSS Selectors, Box Model, Flexbox fundamentals, Responsive Design basics.	freeCodeCamp (Responsive Web Design), MDN Web Docs (HTML/CSS), Flexbox Froggy .	Build a responsive, multi-page personal portfolio site (HTML/CSS only).
2	JavaScript Fundamentals	Variables, Data Types, Control Flow, Functions, OOP basics, DOM Manipulation.	The Odin Project (Foundations), JavaScript.info , W3Schools JS Tutorial .	Build a small interactive game (e.g., Tic-Tac-Toe) using pure JS and DOM.
3	Git & Core Data	Git commands (commit, branch, merge, pull), GitHub workflow, Introduction to JSON structure and data handling.	GitHub Learning Lab , Atlassian Git Tutorial , freeCodeCamp (Git course).	Create a new GitHub repository, push your portfolio project, and practice branching.

4	Node.js & NPM	Node.js Runtime environment, Event Loop (conceptual), NPM (package manager) essentials, basic module system (require/exports).	NodeSchool (tutorials), Node.js Documentation , freeCodeCamp (Back-End Development).	Write a Node script that reads data from a local JSON file and processes it.
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Phase 2: Back-End Mastery (Weeks 5-8)

Week	Focus Area	Key Concepts	Recommended Resources (Free/Low-Cost)	Project / Practice Goal
5	Databases (MongoDB)	Introduction to NoSQL, MongoDB structure (Documents, Collections), Basic CRUD operations.	MongoDB University (Introduction to MongoDB), Mongoose documentation (for Node integration).	Set up a local MongoDB instance and practice all CRUD operations via the shell.
6	Express.js Framework	Express setup, Routing, Middleware, Templating (EJS/Handlebars), Introduction to REST principles.	Express.js Documentation , The Odin Project (Node.js/Express section).	Create a multi-route web server that uses templating to display basic data.

7	API Development (REST)	Designing RESTful APIs, Status Codes, Request/Response handling, Connecting Express to MongoDB (Mongoose).	Tutorials on building REST APIs with Express and Mongoose (Search "MERN Stack API Tutorial").	Build a simple Book Library REST API with fully functional CRUD endpoints.
8	Security & Authentication	Hashing passwords (bcrypt), JWT (JSON Web Tokens) for stateless authentication, Authentication Middleware, Basic data validation.	Auth0 guides, Tutorials on Express/JWT/Bcrypt implementation.	Implement user registration and login functionality with secure password hashing for your API.

Phase 3: Front-End Mastery (Weeks 9-12)

Week	Focus Area	Key Concepts	Recommended Resources (Free/Low-Cost)	Project / Practice Goal
9	React Fundamentals	JSX, Components (Functional), Props, Component lifecycle (conceptual), Basic state management (useState).	React Official Documentation , freeCodeCamp (React track).	Set up a new React app (Vite/Create React App) and build several static, reusable components.

10	React Hooks & Routing	Advanced Hooks (useEffect, useContext), React Router (defining routes, navigation), Conditional rendering.	Fireship (YouTube React content), React Router Docs .	Refactor a component using <code>useEffect</code> for data fetching; implement site navigation.
11	State Management (Advanced)	Managing complex global state, Introduction to Redux Toolkit or Zustand (or alternative state management library).	Official documentation for Redux or chosen state library, Redux Tutorials .	Rebuild a complex component using the chosen state management solution.
12	Front-End Deployment	API integration (using <code>fetch</code> or <code>Axios</code>), Error handling, Deployment best practices (e.g., Netlify/Vercel).	Tutorials on fetching data from a REST API in React, Netlify/Vercel Documentation .	Successfully fetch and display data from your local Book Library API in your React app.

Phase 4: Final Project & Deployment (Weeks 13-16)

Week	Focus Area	Key Concepts	Recommended Resources (Free/Low-Cost)	Project / Practice Goal

13	Full-Stack Integration	Connecting React to the Express API (handling CORS), State management of API data, Input form handling.	MERN stack integration tutorials, Debugging tools (Browser DevTools, Postman).	Migrate all front-end code to consume data via your authenticated MERN back-end.
14	Testing & Debugging	Unit testing basics (Jest/Mocha), End-to-End testing (Cypress/Puppeteer), Browser debugging techniques.	Official documentation for Jest/Cypress, Tutorials on testing Express routes/React components.	Write unit tests for 3-5 critical back-end routes and front-end components.
15	Advanced Deployment	Production environments, Environment variables, Serverless deployment (e.g., using AWS Lambda or Google Cloud Functions).	Tutorials on deploying MERN stack to Render/Heroku or a Serverless platform .	Deploy your completed full-stack application to a live server.
16	Capstone Project & Portfolio	Final polish, creating a strong README, deploying a second complementary project, documenting key architectural decisions.	UpStride Cohort 8 Materials (Resume/Branding), Mentor feedback sessions.	Present and document your finished Capstone Project on GitHub and portfolio.

What's Next? Your Path After 16 Weeks

Career Action	Specific Goal / Outcome	Tools & Resources
Deepen Portfolio	Build 3-5 Differentiated Projects to showcase specialization (e.g., focus on performance, security, or a niche front-end library).	Kaggle (for complex datasets to use in apps), Dev.to/Medium (for inspiration), Learn a second database (e.g., SQL).
Advanced Specialization	Master a specialization: Cloud/DevOps (AWS/Docker/Kubernetes) or a second language/framework (e.g., Python/Django or TypeScript).	AWS/GCP Free Tier tutorials, Docker Hub , UpStride Cloud & DevOps Cohort .
Launch Job Search	Refine the technical narrative of your Capstone Project for interviews and focus intensely on securing roles.	UpStride Job Search & Branding Architect Cohort (Resume/LinkedIn), LeetCode/HackerRank (DSA practice), Mock Interviews .