

JavaScript

Level: foundation, intermediate

Length: 3 - 5 days (24 - 40 hours), depending on hands on volume

Course Goal: Equip participants with a solid understanding of JavaScript and its practical applications in web development.


Objectives

- Understand the basics of JavaScript syntax and programming concepts.
- Learn to manipulate the DOM and handle events.
- Master asynchronous programming with Promises and async/await.
- Gain knowledge of modern JavaScript features (ES6+).
- Develop skills to build interactive web applications.

Target Audience: web developers, front-end developers, or anyone interested in learning JavaScript.

Contents

1. Introduction to JavaScript
 - Overview of JavaScript and its role in web development
 - Setting up the development environment
 - JavaScript syntax and basic constructs (variables, data types, operators)
2. Control Structures and Functions
 - Conditional statements (if, else, switch)
 - Loops (for, while, do-while)
 - Functions: declaration, expressions, arrow functions
 - Scope and closures
3. Objects and Arrays
 - Object literals and properties
 - Methods and the `this` keyword
 - Arrays and array methods
 - Iterating over objects and arrays

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4. The Document Object Model (DOM)
 - Introduction to the DOM
 - Selecting and manipulating DOM elements
 - Event handling and listeners
 - Creating and modifying HTML elements dynamically
 5. Asynchronous JavaScript
 - Understanding asynchronous programming
 - Callbacks and callback hell
 - Promises: creating, chaining, and error handling
 - Async/await syntax
 6. Modern JavaScript (ES6+)
 - Block-scoped variables (let, const)
 - Template literals
 - Destructuring assignments
 - Rest and spread operators
 - Modules: import and export
 - Classes and inheritance
 7. Error Handling and Debugging
 - Try-catch-finally
 - Error objects and custom errors
 - Debugging techniques and tools
 8. Best Practices and Code Quality
 - Writing clean and maintainable code
 - Code organization and modularity
 - Linting and formatting tools (e.g., ESLint, Prettier)
 9. Final project (optional)