

## JavaScript Full Roadmap (Theory + Practical + Timeline)


 Duration: 4 Weeks (Beginner to Intermediate)

 Daily Practice: 2–3 hours


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### Week 1: JavaScript Basics (Syntax + Core Concepts)


#### Day 1: Introduction to JavaScript

- What is JavaScript, Setup environment, Console
-  Practical: Hello World in console, basic logging


#### Day 2: Variables

- var, let, const, block & global scope
-  Practical: Declare variables, check scope differences


#### Day 3: Data Types

- Primitive (Number, String, Boolean, etc.) and Reference types
-  Practical: Use typeof, type conversion examples


#### Day 4: Operators

- Arithmetic, Assignment, Comparison, Logical, Ternary
-  Practical: Simple calculator program


#### Day 5: Conditional Statements

- if, else if, else, switch
-  Practical: Grade calculator using if-else

#### Day 6: Loops

- for, while, do-while, break, continue
-  Practical: Print stars, sum of even numbers

#### Day 7: Functions

- Declaration, Parameters, Return, Scope
  -  Practical: Function to check prime number or factorial
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### Week 2: Intermediate JS (DOM + Events + Arrays)

#### Day 8: Arrays

- Create, push, pop, shift, splice, concat, map

- ♦ Practical: Store and display student list

#### **Day 9: Objects**

- Object literal, nested objects, access values
- ♦ Practical: Create a product object with details

#### **Day 10: DOM Basics**

- getElementById, querySelector, innerHTML, styles
- ♦ Practical: Highlight clicked paragraph

#### **Day 11: DOM Events**

- onclick, addEventListener, event object
- ♦ Practical: Click counter or change text color

#### **Day 12: Forms + Validation**

- Access form values, prevent default, regex
- ♦ Practical: Email/phone number validation form

#### **Day 13: Array Methods**

- map, filter, reduce, find, includes
- ♦ Practical: Search/filter names from list

#### **Day 14: Mini Project - To-Do List**

- Add item, remove item, update DOM
- ♦ Practical: Interactive to-do list (no backend)

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### **✅ Week 3: Advanced JS (ES6+, OOP, Storage)**

#### **Day 15: ES6+ Features**

- let/const, Arrow functions, Template literals, Destructuring
- ♦ Practical: Rewrite functions using ES6

#### **Day 16: Spread & Rest Operators**

- Spread (...), Rest, default parameters
- ♦ Practical: Merge arrays, clone objects

#### **Day 17: Object-Oriented Programming**

- Classes, constructors, this, methods
- ♦ Practical: Create a User class with methods

### Day 18: Inheritance in JS

- extends, super(), subclasses
- ♦ Practical: Admin extends User class

### Day 19: Web Storage

- localStorage, sessionStorage
- ♦ Practical: Save theme (light/dark) using storage

### Day 20: JSON & Fetch API

- JSON.parse(), JSON.stringify(), fetch GET requests
- ♦ Practical: Fetch and display data from public API

### Day 21: Mini Project - Weather App

- API + DOM + styling
- ♦ Practical: Show weather based on city input

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## ✅ Week 4: Real-world JS + Debugging + Final Project

### Day 22: Error Handling

- try-catch, throw custom errors
- ♦ Practical: Form validation with error handling

### Day 23: Debugging Techniques

- DevTools, breakpoints, console debugging
- ♦ Practical: Debug a broken form

### Day 24: Callbacks and Promises

- setTimeout, async flow, callback hell
- ♦ Practical: Simulate async steps (login → fetch data)

### Day 25: Async/Await

- Cleaner way to handle promises
- ♦ Practical: Fetch data and show with loading state

### Day 26: JavaScript Modules

- export, import, modular coding
- ♦ Practical: Break logic into separate JS files




### Day 27: Recap + Interview Prep

- Scope, Hoisting, Closures, this, ES6, Hoisting
- ♦ Practical: Solve top 10 JS interview problems

#### **Day 28: Final Project - Portfolio Website**

- Personal portfolio with JS functionality (interactive sections, theme toggle)
  - ♦ Deliverable: Deployed portfolio using only HTML + CSS + JS
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#### **Final Deliverables:**

-  3 Mini Projects: To-Do List, Weather App, Portfolio Website
-  Mastered ES6+, OOP, DOM, Fetch API, Async/Await
-  Ready for React.js, Angular, or backend integration with Django