JavaScript Mastery Plan (100 Days)

Phase 1: JavaScript Basics (Days 1-30)

Week 1: Getting Started
- Day 1: Introduction, Setup (VS Code, Node.js, Browser DevTools) - Project: Simple Calculator
- Day 2: Variables (var, let, const), Data Types
- Day 3: Operators (Arithmetic, Logical, Comparison)
- Day 4: Conditional Statements (if, else, switch)
- Day 5: Loops (for, while, do-while)
- Day 6: Functions (Declaration, Expression, Arrow Functions)
- Day 7: Review & Practice Problems

Week 2: Data Structures
- Day 8: Arrays & Methods (map, filter, reduce)
- Day 9: Objects & Methods
- Day 10: Strings & Methods
- Day 11: Date & Math Objects
- Day 12: Sets & Maps
- Day 13: JSON & LocalStorage
- Day 14: Project: To-Do List

Week 3: Functions & Scope
- Day 15: Scope (Global, Local, Block)
- Day 16: Closures & Lexical Scope
- Day 17: Callback Functions
- Day 18: Higher-Order Functions
- Day 19: Recursion
- Day 20: Function Currying & Memoization
- Day 21: Review & Challenges

Week 4: Asynchronous JavaScript
- Day 22: Sync vs Async JavaScript
- Day 23: Callbacks & Callback Hell
- Day 24: Promises & .then()/.catch()
- Day 25: async/await & Error Handling

- Day 26: Event Loop & Microtask Queue
- Day 27: Fetch API & API Calls
- Day 28-30: Project: Weather App

Phase 2: Intermediate JavaScript (Days 31-60)

Week 5: Object-Oriented Programming (OOP)
- Day 31: Introduction to OOP
- Day 32: Prototypes & Prototype Chain
- Day 33: Constructor Functions
- Day 34: ES6 Classes & extends
- Day 35: this in Different Contexts
- Day 36: OOP Principles (Encapsulation, Inheritance, etc.)
- Day 37: Project: OOP-based Expense Tracker

Week 6: Debugging & Optimization
- Day 38: Error Handling (try, catch, finally)
- Day 39: Debugging Techniques (Breakpoints, Console Methods)
- Day 40: Memory Management
- Day 41: Performance Optimization
- Day 42: Event Loop Deep Dive
- Day 43: Debouncing & Throttling
- Day 44: Review & Practice

Week 7: Data Structures & Algorithms
- Day 45: Searching Algorithms (Linear & Binary Search)
- Day 46: Sorting Algorithms (Bubble, Merge, Quick Sort)
- Day 47: Stack & Queue
- Day 48: Linked List & Hash Tables
- Day 49: Trees & Graphs Basics
- Day 50: Recursion & Backtracking
- Day 51: Project: Algorithm-based Quiz App

Week 8: Functional Programming
- Day 52: Functional Programming Paradigm
- Day 53: Pure Functions & Immutability
- Day 54: Composition & Chaining
- Day 55: Lazy Evaluation & Memoization

- Day 56: Functional vs OOP
- Day 57-60: Project: Functional Utility Library

Phase 3: Web APIs & Advanced Topics (Days 61-90)

Week 9: DOM Manipulation & Events
- Day 61: Introduction to DOM & Selectors
- Day 62: Creating & Modifying Elements
- Day 63: Event Listeners & Delegation
- Day 64: Form Handling & Validation
- Day 65: Prevent Default & Stop Propagation
- Day 66: Project: Interactive To-Do App
- Day 67: Review

Week 10-12: APIs, Storage & Advanced Topics
- Day 68-70: Web Storage & Cookies
- Day 71-73: Fetch API & Authentication
- Day 74-76: WebSockets & Real-time Communication
- Day 77-79: Multithreading (Web Workers)
- Day 80-82: JavaScript Security (XSS, CSRF, CORS)
- Day 83-90: Project: API-based Web App

Phase 4: JavaScript Projects & Interview Preparation (Days 91-100)

Week 13-14: Real-World Projects & Interview Prep
- Day 91-92: Project: Chat Application
- Day 93-95: JavaScript Problem Solving (LeetCode, CodeSignal)
- Day 96-97: Mock Interviews & Debugging Challenges

Week 15-16: Final Capstone Project
- Day 98-100: Project: Full-Fledged JavaScript Application & Deployment

Follow this structured 100-day plan to master JavaScript step by step. Adjust as needed for your learning pace!