

6-Week Coding Challenges Bootcamp for SDETs

Perquisites:

- Basic programming knowledge
- Good laptop with below s/w installed
 - Teams
 - NodeJS latest LTS
 - Visual Studio Code
 - Git (Optional)

Week 1 – JavaScript Basics & Simple Problems

- **Saturday**
 - JS essentials for SDETs
 - Arrays & Strings
 - Example Problems:
 - Reverse a string
 - Count vowels in a string
 - Find max/min in an array
- **Sunday**
 - Problem-solving mindset (breaking problems into steps)
 - Simple patterns: Two-pointer intro
 - Example Problems:
 - Find pair with target sum (small array)
 - Check if string is palindrome
 - Merge 2 arrays (no sort needed)
- **Assignment (Thu):** 3–4 beginner problems (strings + arrays)

Week 2 – Arrays & Hashing

- **Saturday**
 - Intro to Objects, Maps & Sets
 - Example Problems:
 - Find duplicates in an array
 - Count word frequency in a sentence
 - First non-repeating character
- **Sunday**
 - Sorting basics
 - Example Problems:
 - Sort array of numbers

- Find intersection of two arrays
 - Group students by grade (using object/map)
- **Assignment (Thu):** 3–4 problems using arrays + hashing

Week 3 – Functions, Recursion

- **Saturday**
 - Functions refresher (default params, higher-order functions)
 - Recursion intro (concept, when to use)
 - Example Problems:
 - Factorial (iterative + recursive)
 - Fibonacci (iterative + recursive)
 - Sum of numbers in array (recursive)
- **Sunday**
 - Simple backtracking demo
 - Example Problems:
 - Generate subsets of [1,2,3]
 - Find all permutations of 3 letters
- **Assignment (Thu):** 2–3 recursion problems

Week 4 – Data Structures

- **Saturday**
 - Linked List (concept, use cases in testing, not deep coding)
 - Example Problems:
 - Reverse array vs reverse linked list (compare)
 - Merge 2 sorted arrays (instead of linked lists for simplicity)
 - Stacks & Queues (using arrays)
 - Example Problems:
 - Valid parentheses check
 - Undo/Redo simulation with stack
- **Sunday**
 - Queue problems (real-world: printer jobs, task queue)
 - Example Problems:
 - Implement queue with array
 - Circular queue (basic demo only)
- **Assignment (Thu):** 3–4 stack/queue problems

Week 5 – Trees

- **Saturday**
 - Tree basics (nodes, children, leaf)
 - Binary Tree vs BST (concept only)
 - Example Problems:
 - Print tree in level order (array-based)
 - Count leaf nodes
- **Sunday**
 - Traversals (BFS, DFS basics with arrays/objects)
 - Example Problems:
 - Find max depth of tree
 - Search for a value in a simple tree
- **Assignment (Thu):** 2–3 very basic tree problems

Week 6 – Revision + Career Pathway

- **Saturday**
 - Mixed practice problems (arrays + strings + maps)
 - Mock interview coding round
- **Sunday**
 - **Career Pathway for SDETs**
 - How coding challenges map to test automation (data parsing, validations, log analysis)
 - Future: AI in testing (intelligent test case generation, generate test automation framework with AI)
 - Q & A