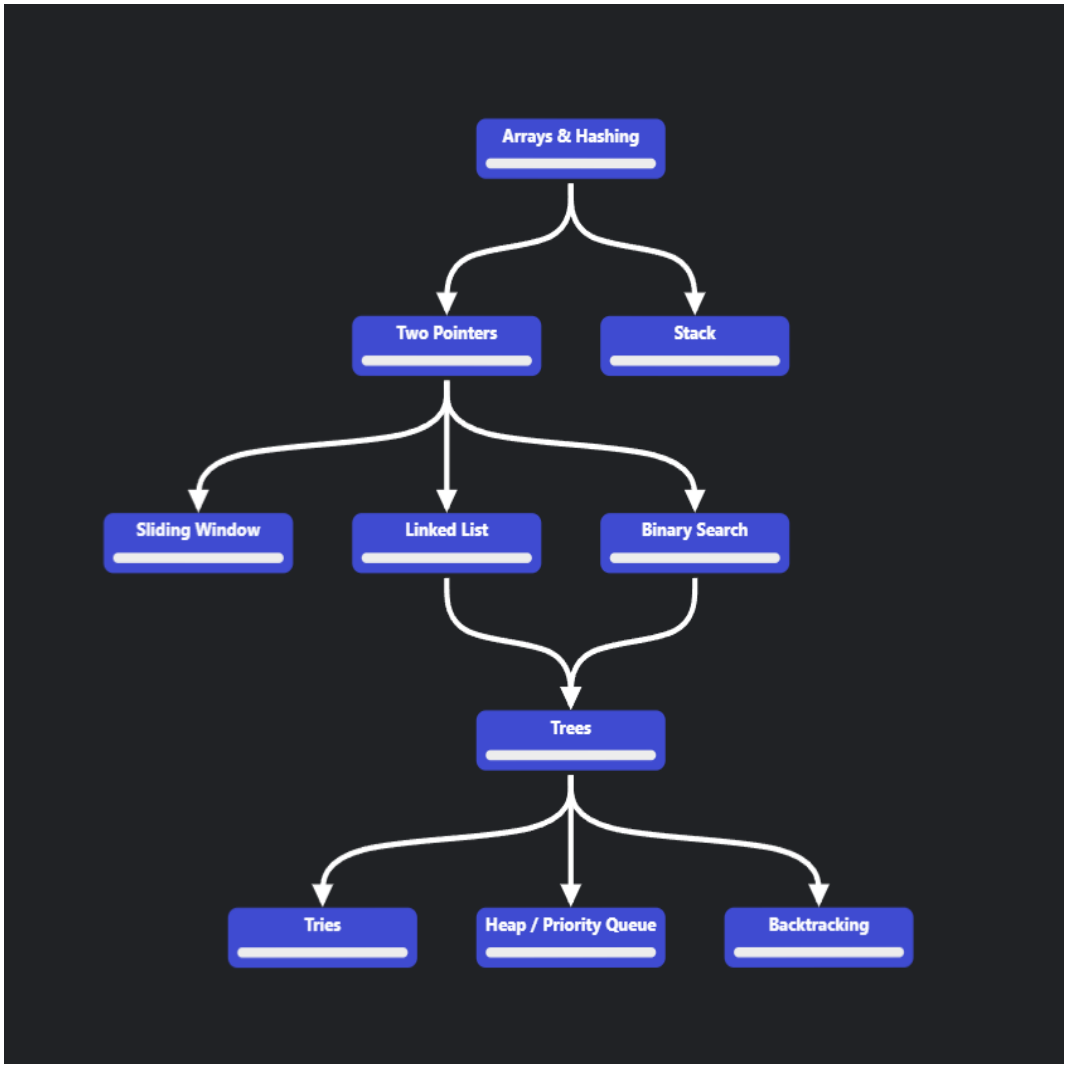
DSA Preparation Roadmap



Two-Month DSA Preparation Roadmap

Week 1-2: Arrays, Hashing, and Two Pointers

- Focus on understanding how arrays work and the basics of hashing.

- Practice array problems on sorting, searching, and manipulation.

- Learn two-pointer technique for problems like pair sum, triplet sum, and subarray handling.

Week 3: Stacks and Queues

- Understand the implementation and usage of stacks and queues.

- Solve problems like balancing parentheses, evaluating expressions, and nearest greater element.

Week 4: Linked Lists and Sliding Window

- Master operations on linked lists (insertion, deletion, reversal).
- Learn the sliding window technique for subarray problems.

Week 5: Binary Search and Divide & Conquer

- Study binary search on sorted arrays.
- Learn how to apply divide-and-conquer in sorting algorithms (merge sort, quicksort).

Week 6: Trees and Binary Trees

- Explore tree traversal techniques (inorder, preorder, postorder).
- Understand binary search trees and solve problems on lowest common ancestor, depth, and height of trees.

Week 7: Advanced Trees (Tries, Heaps, Priority Queue)

- Dive into advanced data structures like heaps and tries.
- Solve problems involving priority queues (e.g., Dijkstra's shortest path algorithm).

Week 8: Backtracking and Dynamic Programming

- Focus on backtracking for constraint satisfaction problems (e.g., N-Queens, Sudoku).
- Start with basic dynamic programming concepts and solve simple problems like Fibonacci series, coin change problem.