

DSA Syllabus

- Introduction
- Recursion
- Big O Notation
- Arrays (One Dimensional, Two Dimensional)
- Linked List (Singly Linked List, Circular Singly Linked List, Doubly Linked List, Circular Doubly Linked List)
- Stack
- Queue
- Tree / Binary Tree (Preorder, Inorder, Postorder, Level Order Traversal)
- Binary Search Tree
- AVL Tree (LL, LR, RR, RL Rotations)
- Binary Heap
- Trie
- Hashing
- Sorting Algorithms (Bubble Sort, Selection Sort, Insertion Sort, Bucket Sort, Merge Sort, Quick Sort, Heap Sort)
- Searching Algorithms (Linear Search, Binary Search)
- Graph Algorithms (BFS, DFS, Topological Sort, Dijkstra's Algorithm)
- Greedy Algorithms (Activity Selection Problem, Coin Change Problem, Bellman-Ford Algorithm)
- Divide and Conquer Algorithms (Number Factor Problem, Convert One String to Another, 0/1 Knapsack Problem, Floyd-Warshall Algorithm)

AI Tools

Coding/Debugging by Using

- Copilot
- ChatGPT
- Claude
- Cursor

Deployment Tools

- Git & GitHub/GitLab
- Eclipse & VS Code
- Spring Tool Suite
- IntelliJ
- Postman for API Testing
- AWS Cloud deployment
- CI/CD Pipeline