


DSA in Java – 2 Month Roadmap

Overall Structure


- Month 1: Basics + Core DSA (Arrays, Strings, Linked Lists, Stacks, Queues, Recursion)
- Month 2: Advanced DSA + Problem Solving (Trees, Graphs, DP, Tries, Backtracking, Heaps)

Month 1 – Core Foundation (Basic to Intermediate)


Week 1: Java Refresher + Arrays

- Java basics (OOP, Collections, input/output, exception handling)
- 1D and 2D Arrays
- Sorting Algorithms (Bubble, Selection, Insertion, Merge, Quick)
- Binary Search
-  Practice:
- LeetCode Easy Arrays
- Sorting Problems – GeeksForGeeks


Week 2: Strings + Recursion

- String operations (Java methods, immutability, StringBuilder)
- Palindrome, anagram, substring search
- Recursion basics: factorial, power, Fibonacci, backtracking intro
-  Practice:
- String Practice – HackerRank
- LeetCode Recursion tag

Week 3: Linked List + Stack


- Singly and Doubly Linked List
- Reverse LL, detect cycles, merge lists
- Stack (Array and LinkedList implementation)
- Infix to Postfix, Balanced Parentheses
-  Practice:
- Linked List problems – LeetCode
- Stack problems – GeeksForGeeks

Week 4: Queue + Hashing


- Queue, Circular Queue, Deque
- Priority Queue (using PriorityQueue class)
- HashMap and HashSet
- Frequency count, Longest Substring problems
-  Practice:
- Queue Problems – GFG
- HashMap Practice – LeetCode

Month 2 – Advanced DSA + Problem Solving


Week 5: Trees

- Binary Tree, Binary Search Tree
- Traversals (Inorder, Preorder, Postorder)
- Lowest Common Ancestor, Diameter, Height
- Balanced Binary Tree
-  Practice:
- Tree Problems – LeetCode
- Tree Traversal – GFG


Week 6: Graphs

- Graph Representation (Adjacency List/Matrix)
- BFS, DFS
- Detect Cycle (DFS + Union Find)
- Dijkstra's, Topological Sort
-  Practice:
- Graph Problems – LeetCode
- GFG Graph Set

Week 7: DP + Backtracking

- Fibonacci, Climbing Stairs, 0/1 Knapsack
- Longest Common Subsequence, LIS
- Backtracking: N-Queens, Sudoku Solver, Subsets
-  Practice:
- DP Patterns – LeetCode
- Backtracking Problems – GFG

Week 8: Tries + Heaps + Sliding Window

- Trie implementation
- Prefix search
- Heap (Max/Min Heap using PriorityQueue)
- Sliding Window Technique (for Strings and Arrays)
-  Practice:
- Trie Problems – LeetCode
- Heap Practice – GFG
- Sliding Window Pattern – LeetCode/GFG

Weekly Practice Goals

- Solve at least 5–10 problems per DSA topic
- Alternate between theory (notes/videos) and practice
- Use platforms like:
- LeetCode
- GeeksForGeeks

- HackerRank
- Coding Ninjas (Java Track)

Resources

- YouTube: Love Babbar DSA Playlist (in Java)
- Book: "DSA Made Easy" by Narasimha Karumanchi
- Website: GeeksForGeeks Java DSA Track