Career With Rishab

3 Months DSA Roadmap for 15 Lakhs Companies

This DSA roadmap is for those preparing for Software Engineer roles in big Product Based MNCs.

Here's a monthly breakdown of How I would prepare for a 15 LPA Job in Software Engineer role with 3 months in hand.

✅ Month 1️⃣:

First, I'll create a list of most important data structures and algorithms I have to study (You'll find the list at the end of this Roadmap)

For each topic,

📌 I'll start by reading the concepts, understanding what it is and how to implement basic operations.

📌 Then, I'll start with solving easy questions on LeetCode sorted by "Acceptance" percentage in descending order.
I'll only solve 10 easy problems on each topic to get basic familiarity.

And if I am stuck at any problem, then I'll check how others have solved the problem from the LeetCode Discuss Section.

If I finish early then I'll revise the theoretical concepts and basic implementations again.

✅ Month 2️⃣:

I'll focus on solving mostly medium problems, I'll cover each topic one by one, revise the concepts and solve 5-6 medium level problems and 2-3 hard problems from that topic and move on to the next topic.

✅ Month 3️⃣:

I'll follow this "**LeetCode 75 List**" and solve all the problems one by one.
There will be some very basic questions from hard topics like Trie, I'll cover those.

Once I'm done with the list, I'll start the "**LeetCode Top Interview 150**" problems list.

If I have done any problem from this list before then I won't code that again, I'll just try to solve that on paper and go to the next problem.

Last 2-3 days, I'll invest in studying basic theoretical concepts of DMBS and Object Oriented Programming.

📌 Note: This roadmap is specifically designed for those who're already familiar with basic DSA and starting their preparation for a 15 Lakhs package in a Product based company.

List of Important DSA Topics:

Here's a list of DSA topics for the roadmap:

1. Arrays and Strings:
    - Array
    - 2D Array
    - String
    - Sliding Window Technique

2. Linked Lists:
    - Singly linked lists
    - Doubly linked lists

3. Stacks and Queues:
    - Stack
    - Queue
    - Double Ended Queue
    - Priority Queue / Heap

4. Trees and Graphs:
    - Binary trees
    - Binary search trees (BST)
    - Graph (adjacency matrix, adjacency list)
    - Djikstra's Algorithm

5. Hashing:
    - Hash Map
    - Hash set

6. Sorting and Searching:
    - Sorting Algorithms
    - Binary search algorithm
    - Ternary Search Algorithm

7. Dynamic Programming:

- 1D DP
- 2D DP

8. Greedy Algorithms

9. Coding Patterns:
    - Two Pointers
    - Fast and Slow Pointers
    - Two Heaps
    - Topological Sort
    - Prefix Sum
    - Backtracking
    - Bit Manipulation

All the best :)