

Perfect 🙌 thanks for clarifying. Yes — **2 hours daily for 3 months** is absolutely enough to reach **basic-to-medium DSA interview level** (especially as a fresher). You don't need to master hard-level problems for most entry-level jobs — **clarity in basics + ability to solve medium problems** is what interviewers test.

Here's a **90-day (3-month) DSA roadmap** for you, assuming **2 hrs/day**:

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## **Month 1: Foundations (Basics + Easy Problems)**

**Goal:** Get comfortable with syntax, patterns, and problem-solving in Python.

- Week 1:
  - Time & Space Complexity basics
  - Arrays (traversal, min/max, reverse, rotation, prefix sum)
  - 15–20 problems
- Week 2:
  - Strings (palindrome, anagram, substring search, frequency count)
  - Hashing basics (dict, set in Python)
  - 15–20 problems
- Week 3:
  - Recursion basics (factorial, Fibonacci, sum of array, subsets)
  - Sorting (Bubble, Selection, Insertion, Merge, Quick)
  - 15–20 problems
- Week 4:
  - Searching (binary search, first/last occurrence, sqrt, peak element)
  - Practice mixed problems from arrays & strings
  - 20+ problems

✅ By end of Month 1 → You'll be strong in **arrays, strings, recursion, sorting, searching**.

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## **Month 2: Data Structures**

**Goal:** Start applying DSA to more structured problems.

- Week 5:
  - Linked List (SLL, DLL, reverse, middle, cycle detection)
  - 10–15 problems
- Week 6:
  - Stacks (using list/collections.deque)
  - Queues (circular queue, deque, priority queue)
  - 15 problems
- Week 7:
  - Trees (binary tree basics: traversal, height, diameter, leaf nodes)
  - Binary Search Tree (insertion, search, inorder traversal)
  - 15 problems
- Week 8:
  - Hashing (map, set, frequency, 2-sum, subarray sum problems)
  - Mix practice (linked list + stack + queue)
  - 15–20 problems

✅ By end of Month 2 → You'll know **linked list, stack, queue, trees, hashing**.

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### **Month 3: Intermediate & Interview Prep**

**Goal:** Medium-level problem-solving + confidence for interviews.

- Week 9:
  - Recursion + Backtracking (n-queen, rat in maze, permutations, subsets)
  - 10–12 problems
- Week 10:
  - Graph basics (BFS, DFS, adjacency list, shortest path BFS)
  - 10–12 problems
- Week 11:
  - Dynamic Programming (Fibonacci, knapsack, coin change, LIS basics)
  - 10–12 problems

- Week 12:
  - Mock interview sets (arrays, strings, linked lists, trees, recursion)
  - Revise formulas + practice 30–40 mixed problems

✅ By end of Month 3 → You'll be **interview ready** for fresher roles.

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### Problem Count (3 months target)

- Easy: ~150 problems
  - Medium: ~80 problems
  - ➡ Total: ~230–250 problems (that's more than enough for fresher-level interviews).
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### ⚡ Tips for Success

- Use **LeetCode + GeeksforGeeks + Striver's A2Z DSA sheet** for problem sets.
  - Track your progress (e.g., 2 problems/day minimum).
  - Focus on **patterns** → most interview problems are variations of common patterns.
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👉 So yes, **2 hrs/day × 3 months = enough to crack DSA-based interviews** as a fresher.

Do you want me to make this into a **daily study timetable** (like Day 1: arrays intro + 3 problems, Day 2: reverse array + 2 problems, etc.) so it feels like a structured course?

🔥 That's the spirit! You'll build confidence much faster if you solve **topic-wise problems** in the same order as the roadmap. I'll give you a **curated problem set for each week** — not too overwhelming, but enough to cover all interview patterns.

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### 3-Month DSA Roadmap with Problems

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#### Month 1 – Foundations

### ✓ Week 1: Arrays (Basics)

- Find minimum and maximum in an array
  - Reverse an array
  - Rotate array by k steps (left/right)
  - Check if array is sorted
  - Move all zeros to the end
  - Find the missing number in 1–N
  - Kadane's Algorithm (Maximum subarray sum)
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### ✓ Week 2: Strings

- Reverse a string
  - Check if a string is palindrome
  - Count vowels and consonants
  - Check if two strings are anagrams
  - Remove duplicates from string
  - First non-repeating character
  - Longest common prefix
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### ✓ Week 3: Recursion + Sorting

- Factorial of n
  - Fibonacci series (recursive)
  - Print all subsets of an array
  - Generate all permutations of a string
  - Tower of Hanoi
  - Merge Sort implementation
  - Quick Sort implementation
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### ✓ Week 4: Searching

- Linear Search
  - Binary Search (basic)
  - First and Last occurrence of element in sorted array
  - Search in rotated sorted array
  - Square root of a number (binary search method)
  - Peak element in array
  - Floor and Ceil in sorted array
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## Month 2 – Data Structures

### ✓ Week 5: Linked List

- Implement singly linked list (insert, delete, traverse)
  - Reverse a linked list (iterative + recursive)
  - Find middle of linked list
  - Detect cycle in linked list (Floyd's cycle detection)
  - Merge two sorted linked lists
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### ✓ Week 6: Stacks & Queues

- Implement stack using array
  - Implement stack using 2 queues
  - Next Greater Element
  - Valid Parentheses (balanced brackets)
  - Implement queue using array
  - Implement circular queue
  - Sliding window maximum
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### ✓ Week 7: Trees

- Inorder, Preorder, Postorder traversals (recursive + iterative)
- Height of binary tree

- Count leaf nodes
  - Diameter of binary tree
  - Check if two trees are identical
  - Lowest common ancestor in BST
  - Level order traversal (BFS in tree)
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#### ✓ Week 8: Hashing

- Find first repeating element in array
  - Count frequency of elements in array
  - Two Sum problem
  - Subarray with given sum (hashing approach)
  - Longest subarray with zero sum
  - Intersection of two arrays
  - Longest substring without repeating characters
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### Month 3 – Intermediate & Interview Prep

#### ✓ Week 9: Recursion + Backtracking

- Generate all subsets of a string
  - Rat in a Maze problem
  - N-Queens problem
  - Word Search (matrix backtracking)
  - Sudoku Solver
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#### ✓ Week 10: Graphs

- BFS traversal of graph
- DFS traversal of graph
- Detect cycle in graph (DFS/BFS)
- Shortest path in unweighted graph (BFS)


- Number of islands (grid graph)
  - Topological Sort
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### ✅ Week 11: Dynamic Programming

- Fibonacci using DP (memoization + tabulation)
  - Climbing Stairs problem
  - Coin Change problem
  - 0/1 Knapsack problem
  - Longest Increasing Subsequence (LIS)
  - Edit Distance
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### ✅ Week 12: Final Interview Prep (Mixed)

- Majority element in array
  - Stock Buy and Sell (max profit)
  - Rotate Linked List
  - Validate Binary Search Tree
  - Minimum Spanning Tree (Kruskal/Prim basic)
  - Maximum Subarray Product
  - Word Break problem
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 If you complete this **curated set (~150–180 problems)** in 3 months, you'll be at **basic-to-medium DSA mastery level**, good enough for most **fresher interviews**.

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👉 Do you want me to also **map these problems day-by-day** (like Day 1: Array min/max + reverse, Day 2: Rotate array + check sorted, etc.), so you can directly follow a daily plan without thinking what to pick?