

A Complete Guide to Coding Interviews

Preparation Resources for Coding Interviews

Preparation Resources

- Important DSA topics -
Array, Binary Search, Sliding Window, Matrix, Two Pointer, Intervals, Hash Map, String, Recursion, DP, Trees, Graph, Linked List, Stack, Queue & Heap
- Solve LeetCode Medium level problems (at least more than 300+ covering different topics)

Preparation Resources

- I have created an xlsx on top/important 500 LeetCode questions and a video on How to Crack The Coding Interview?
- AlgoExpert's 170 handpicked questions (In case you want to prepare fast and only good questions)

Preparation Resources

- Watch my DSA playlist to revise concepts.
- Grokking the Coding Interview: Patterns for Coding Questions - The course is excellent and has covered various coding problems segregated based on coding patterns.

Things *To Do* in a Coding Interviews

Do's

- **Keep a smiling face, and look confident/positive attitude person.**
- **Ask good clarifying questions about the coding problem e.g. size/range of the input, whether there are any duplicates, does input contain negative values, etc**
- **Listen carefully to what your interviewer wants and respond accordingly.**

Do's

- **Make the interview process a team effort. The more collaboration you do with your interviewer the more idea they get about how good a team player you are.**
- **Think out loud. Always try to explain what you are thinking about the current state of the problem.**

Do's

- Always be open to saying that you don't know how certain things work.
- Always start thinking about the simpler version of the problem. Try to come up with a naive solution at first and later go for optimizing it.
- Prepare a list of good questions related to the company, technology, work culture, etc, and always ask the interviewer at the end.

Things *Not To* Do in a Coding Interviews

Don'ts

- **Never dive into solving a problem as soon as it's thrown toward you. Understand the problem, and resolve ambiguities.**
- **Never assume anything. Always clarify the assumptions you have with your interviewer.**
- **Avoid any technical jargon or famous words you know. If you do be prepared for the follow-up question.**

Don'ts

- Never try to skip any idea or communication on which the interviewer wants to focus more.
- Not be too defensive about the mistakes that the interviewer tells you.

Things to do *when you code* in a Coding Interviews

When you code

- You are expected to write production-level code.
- Check for edge cases.
- Validate input and throw meaningful exceptions.
- Modularize code into different functions.
- Write meaningful variable/method names.
- You are expected to dry-run your code with the example given.

When you code

- You are expected to know the Time and Space complexity of the code you have written.
- Don't worry about the exact syntax of the code. Meaningful text can also convey the point you trying to achieve.
- Try to clean up code - check for any edge cases, refactor, remove unwanted comments (in case you comment anything), check for conditions, etc.

Things to do *when you are stuck code in a* Coding Interviews

When you are stuck

- If you are stuck and unaware of any logic, just make/call a helper function (explain it will do XYZ)
- If you are stuck in logic try to apply some coding patterns - like can two pointer help, can sort help, can binary search be applied, etc.

When you are stuck

- If you are stuck anywhere, your interviewer is the best person to help you out. Ask them for any hints or any question that clarifies your doubt. Remember the interviewer is not there to make you fail, they want you to succeed.

100 Days to GAMAM Coding Interview Roadmap (LeetCode)

DAY 1

- Two Sum
- Best Time to Buy and Sell Stock
- Majority Element
- Move Zeroes
- Squares of a Sorted Array
- Merge Sorted Array

DAY 2

- **Remove Duplicates from Sorted Array**
- **Remove Duplicates from Sorted Array II**
- **Find All Numbers Disappeared in an Array**
- **Intersection of Two Arrays**
- **Intersection of Two Arrays II**
- **Maximum Population Year**
- **Find Pivot Index**

DAY 3

- **Running Sum of 1d Array**
- **Remove Element**
- **Find Winner on a Tic Tac Toe Game**
- **Build Array from Permutation**
- **Third Maximum Number**
- **Valid Mountain Array**

DAY 4

- Find Common Characters
- Sum of All Odd Length Subarrays
- Range Sum Query - Immutable
- Shuffle the Array
- Max Consecutive Ones
- Sort Array By Parity

DAY 5

- **Reverse Linked List**
- **Remove Linked List Elements**
- **Remove Duplicates from Sorted List**
- **Merge Two Sorted Lists**
- **Middle of the Linked List**
- **Palindrome Linked List**

DAY 6

- **Intersection of Two Linked Lists**
- **Linked List Cycle**
- **Valid Parentheses**
- **Implement Queue using Stacks**
- **Backspace String Compare**
- **Next Greater Element I**

DAY 7

- **Binary Tree Preorder Traversal**
- **Binary Tree Inorder Traversal**
- **Binary Tree Postorder Traversal**
- **Maximum Depth of Binary Tree**
- **Invert Binary Tree**
- **Symmetric Tree**

DAY 8

- **Subtree of Another Tree**
- **Diameter of Binary Tree**
- **Balanced Binary Tree**
- **Merge Two Binary Trees**
- **Same Tree**

DAY 9

- **Path Sum**
- **Binary Tree Paths**
- **Cousins in Binary Tree**
- **Convert Sorted Array to Binary Search Tree**
- **Range Sum of BST**

DAY 10

- **Valid Palindrome**
- **Valid Palindrome II**
- **Longest Palindrome**
- **Longest Common Prefix**
- **Valid Anagram**
- **First Unique Character in a String**

DAY 11

- Is Subsequence
- Reverse String
- Reverse String II
- Reverse Words in a String III
- Isomorphic Strings
- Remove All Adjacent Duplicates In String

DAY 12

- Defanging an IP Address
- Reverse Only Letters
- Reverse Vowels of a String
- Length of Last Word
- Add Strings
- Fizz Buzz

DAY 13

- Roman to Integer
- Palindrome Number
- Happy Number
- Power of Two
- Sqrt(x)
- Plus One

DAY 14

- Count Odd Numbers in an Interval Range
- Rectangle Overlap
- Add Digits
- Maximum Product of Three Numbers
- Excel Sheet Column Number

DAY 15

- **Add Binary**
- **Counting Bits**
- **Number of 1 Bits**
- **Single Number**
- **Missing Number**
- **Reverse Bits**
- **Hamming Distance**

DAY 16

- **Binary Search**
- **Search Insert Position**
- **First Bad Version**
- **Valid Perfect Square**
- **Kth Missing Positive Number**
- **Kth Largest Element in a Stream**

DAY 17

- Design HashMap
- Ransom Note
- Contains Duplicate
- Contains Duplicate II
- Jewels and Stones
- Unique Number of Occurrences

DAY 18

- **Word Pattern**
- **Number of Good Pairs**
- **Flood Fill**
- **Island Perimeter**
- **Find if Path Exists in Graph**

DAY 19

- Fibonacci Number
- Min Cost Climbing Stairs
- Climbing Stairs
- Pascal's Triangle
- Can Place Flowers
- Maximum Units on a Truck

DAY 20

- 3Sum
- 3Sum Closest
- Non-decreasing Array
- Product of Array Except Self

DAY 21

- Merge Intervals
- Insert Interval
- Non-overlapping Intervals
- Interval List Intersections

DAY 22

- **Container With Most Water**
- **Sort Colors**
- **Rotate Array**
- **Contiguous Array**

DAY 23

- Subarray Sum Equals K
- Shortest Unsorted Continuous Subarray
- Maximum Points You Can Obtain from Cards
- Max Consecutive Ones III

DAY 24

- **Permutation in String**
- **Wiggle Sort II**
- **Max Chunks To Make Sorted**
- **H-Index**

DAY 25

- Remove Nth Node From End of List
- Delete Node in a Linked List
- Remove Duplicates from Sorted List II
- Next Greater Node In Linked List

DAY 26

- **Add Two Numbers**
- **Add Two Numbers II**
- **Copy List with Random Pointer**
- **Reverse Linked List II**

DAY 27

- **Swap Nodes in Pairs**
- **Odd Even Linked List**
- **Partition List**

DAY 28

- **Sort List**
- **Reorder List**
- **Rotate List**

DAY 29

- Evaluate Reverse Polish Notation
- Min Stack
- Daily Temperatures
- Decode String

DAY 30

- Next Greater Element II
- Next Greater Element III
- Minimum Remove to Make Valid Parentheses
- 132 Pattern

DAY 31

- Asteroid Collision
- Basic Calculator II
- Remove K Digits
- Remove Duplicate Letters

DAY 32

- Remove All Adjacent Duplicates in String II
- Flatten Nested List Iterator
- Simplify Path
- Longest Absolute File Path

DAY 33

- Open the Lock
- Shortest Bridge
- LRU Cache

DAY 34

- Longest Substring Without Repeating Characters
- String to Integer (atoi)
- Find All Anagrams in a String
- Group Anagrams
- Pancake Sorting

DAY 35

- Longest Repeating Character Replacement
- Largest Number
- Number of Matching Subsequences
- Find the Index of the First Occurrence in a String

DAY 36

- Longest Substring with At Least K Repeating Characters
- Zigzag Conversion
- Reverse Words in a String
- String Compression
- Count and Say

DAY 37

- **Binary Tree Level Order Traversal**
- **Binary Tree Zigzag Level Order Traversal**
- **Construct Binary Tree from Preorder and Inorder Traversal**
- **Lowest Common Ancestor of a Binary Tree**

DAY 38

- **Binary Tree Right Side View**
- **Populating Next Right Pointers in Each Node**
- **Populating Next Right Pointers in Each Node II**
- **Maximum Width of Binary Tree**

DAY 39

- **Path Sum II**
- **Path Sum III**
- **All Nodes Distance K in Binary Tree**
- **Flatten Binary Tree to Linked List**

DAY 40

- **Count Complete Tree Nodes**
- **Sum Root to Leaf Numbers**
- **Find Bottom Left Tree Value**
- **Distribute Coins in Binary Tree**

DAY 41

- Delete Node in a BST
- Validate Binary Search Tree
- Kth Smallest Element in a BST
- Lowest Common Ancestor of a Binary Search Tree

DAY 42

- **Convert Sorted List to Binary Search Tree**
- **Construct Binary Search Tree from Preorder Traversal**
- **Binary Search Tree Iterator**
- **Recover Binary Search Tree**

DAY 43

- **Binary Tree Maximum Path Sum**
- **Step-By-Step Directions From a Binary Tree Node to Another**
- **Maximum Level Sum of a Binary Tree**

DAY 44

- **Trim a Binary Search Tree**
- **Balance a Binary Search Tree**
- **Serialize and Deserialize Binary Tree**

DAY 45

- Search in Rotated Sorted Array
- Search in Rotated Sorted Array II
- Time Based Key-Value Store
- Find Minimum in Rotated Sorted Array

DAY 46

- Find First and Last Position of Element in Sorted Array
- Find the Duplicate Number
- Minimum Size Subarray Sum
- Single Element in a Sorted Array

DAY 47

- Find Peak Element
- Capacity To Ship Packages Within D Days
- Koko Eating Bananas
- Peak Index in a Mountain Array

DAY 48

- Search a 2D Matrix
- Search a 2D Matrix II
- Spiral Matrix
- Spiral Matrix II

DAY 49

- Valid Sudoku
- Rotate Image
- Set Matrix Zeroes
- Game of Life

DAY 50

- **Diagonal Traverse**
- **Matrix Block Sum**
- **Battleships in a Board**
- **Snapshot Array**

DAY 51

- **Number of Islands**
- **01 Matrix**
- **Clone Graph**
- **Rotting Oranges**

DAY 52

- **Course Schedule**
- **Course Schedule II**
- **Accounts Merge**
- **Word Search**

DAY 53

- **Minimum Height Trees**
- **Pacific Atlantic Water Flow**
- **Cheapest Flights Within K Stops**
- **Max Area of Island**

DAY 54

- Evaluate Division
- Number of Provinces
- Surrounded Regions
- Network Delay Time

DAY 55

- All Paths From Source to Target
- Redundant Connection
- Shortest Path in Binary Matrix
- Number of Operations to Make Network Connected

DAY 56

- Majority Element II
- Longest Consecutive Sequence
- Insert Delete
GetRandom $O(1)$
- Find All Duplicates in an Array

DAY 57

- Continuous Subarray Sum
- Find and Replace Pattern
- K-diff Pairs in an Array
- Custom Sort String

DAY 58

- Fraction to Recurring Decimal
- Fruit Into Baskets
- Encode and Decode TinyURL
- Minimum Area Rectangle

DAY 59

- **Maximum Subarray**
- **Maximum Product Subarray**
- **Coin Change**
- **Coin Change II**

DAY 60

- **Jump Game**
- **Jump Game II**
- **Jump Game III**
- **Partition Equal Subset Sum**

DAY 61

- Longest Increasing Subsequence
- Unique Paths
- Unique Paths II
- Maximal Square

DAY 62

- House Robber
- House Robber II
- House Robber III
- Decode Ways

DAY 63

- **Best Time to Buy and Sell Stock II**
- **Minimum Path Sum**
- **Longest Common Subsequence**
- **Palindrome Partitioning**

DAY 64

- **Unique Binary Search Trees**
- **Unique Binary Search Trees II**
- **Target Sum**
- **Triangle**

DAY 65

- Longest Palindromic Subsequence
- Partition to K Equal Sum Subsets
- Delete and Earn
- Palindromic Substrings

DAY 66

- Longest String Chain
- Minimum Cost For Tickets
- Delete Operation for Two Strings
- Perfect Squares

DAY 67

- **Different Ways to Add Parentheses**
- **Longest Palindromic Substring**
- **Largest Divisible Subset**
- **Integer Break**

DAY 68

- Matchsticks to Square
- Knight Dialer
- Minesweeper

DAY 69

- Random Pick with Weight
- Pow(x, n)
- Reverse Integer
- Multiply Strings

DAY 70

- **Count Primes**
- **Integer to Roman**
- **Robot Bounded In Circle**
- **Angle Between Hands of a Clock**

DAY 71

- **K Closest Points to Origin**
- **Task Scheduler**
- **Top K Frequent Elements**
- **Find K Closest Elements**

DAY 72

- **Kth Largest Element in an Array**
- **Kth Smallest Element in a Sorted Matrix**
- **Top K Frequent Words**
- **Reorganize String**

DAY 73

- **Sort Characters By Frequency**
- **Car Pooling**
- **Find K Pairs with Smallest Sums**
- **Maximum Number of Events That Can Be Attended**

DAY 74

- **Implement Trie (Prefix Tree)**
- **Word Break**
- **Design Add and Search Words Data Structure**
- **Search Suggestions System**
- **Remove Sub-Folders from the Filesystem**

DAY 75

- Permutations
- Permutations II
- Subsets
- Subsets II

DAY 76

- Next Permutation
- Combinations
- Letter Combinations of a Phone Number
- Generate Parentheses

DAY 77

- **Combination Sum**
- **Combination Sum III**
- **Combination Sum IV**
- **Restore IP Addresses**

DAY 78

- Gas Station
- Partition Labels
- Valid Parenthesis String
- Minimum Number of Arrows to Burst Balloons

DAY 79

- **Single Number II**
- **Single Number III**
- **Maximum XOR of Two Numbers in an Array**
- **Divide Two Integers**

DAY 80

- **Sum of Two Integers**
- **Bitwise AND of Numbers Range**
- **Gray Code**

DAY 81

- Sliding Window Maximum
- Trapping Rain Water
- Count of Smaller Numbers After Self

DAY 82

- Candy
- Reverse Pairs
- Subarrays with K Different Integers
- Number of Submatrices That Sum to Target

DAY 83

- **Shortest Subarray with Sum at Least K**
- **Maximum Gap**
- **First Missing Positive**

DAY 84

- **Shuffle an Array**
- **Reverse Nodes in k-Group**
- **LFU Cache**

DAY 85

- **Basic Calculator**
- **Largest Rectangle in Histogram**
- **Longest Valid Parentheses**

DAY 86

- **Maximum Frequency Stack**
- **The Skyline Problem**
- **Minimum Window Substring**

DAY 87

- **Palindrome Pairs**
- **Shortest Palindrome**
- **Text Justification**

DAY 88

- Nth Digit
- Integer to English Words
- Max Points on a Line

DAY 89

- **Maximum Profit in Job Scheduling**
- **Median of Two Sorted Arrays**
- **Find Minimum in Rotated Sorted Array II**

DAY 90

- Word Ladder
- Word Ladder II
- Longest Increasing Path in a Matrix

DAY 91

- **Word Search II**
- **Bus Routes**
- **Critical Connections in a Network**

DAY 92

- Shortest Path in a Grid with Obstacles Elimination
- Reconstruct Itinerary
- Making A Large Island

DAY 93

- Merge k Sorted Lists
- Find Median from Data Stream
- Smallest Range Covering Elements from K Lists

DAY 94

- **Minimum Number of Refueling Stops**
- **Swim in Rising Water**
- **Longest Duplicate Substring**

DAY 95

- N-Queens
- Permutation Sequence
- Sudoku Solver
- Palindrome Partitioning II

DAY 96

- **K-th Symbol in Grammar**
- **Remove Invalid Parentheses**
- **Unique Paths III**

DAY 97

- **Edit Distance**
- **Regular Expression Matching**
- **Maximal Rectangle**

DAY 98

- **Split Array Largest Sum**
- **Burst Balloons**
- **Wildcard Matching**

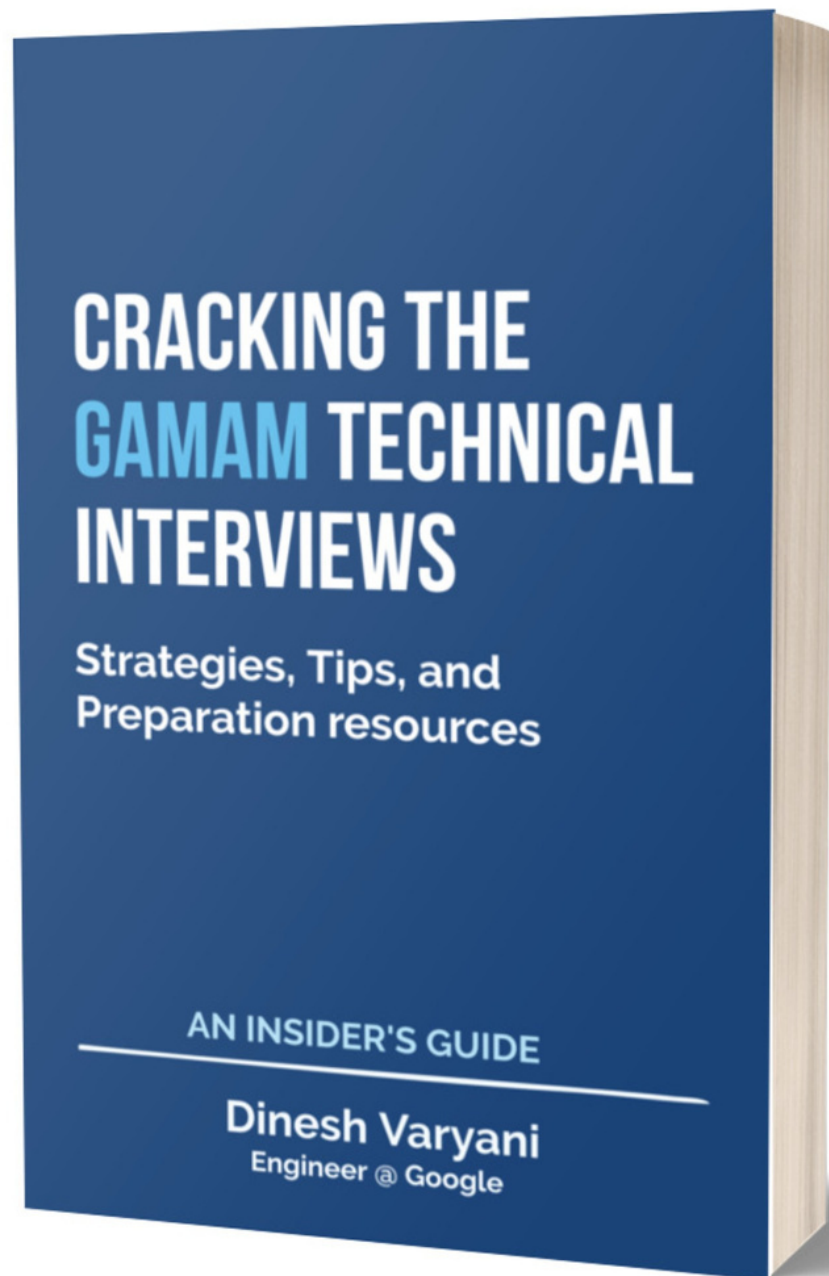
DAY 99

- **Best Time to Buy and Sell Stock IV**
- **Word Break II**
- **Russian Doll Envelopes**
- **Validate Stack Sequences**

DAY 100

- **Minimum Insertion Steps to Make a String Palindrome**
- **Minimum Cost to Cut a Stick**
- **Minimum Number of Taps to Open to Water a Garden**
- **Binary Tree Cameras**

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THANK YOU !!!

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