

150 Days Master Roadmap to MAANG

in Dinesh Varyani

 Dinesh Varyani

Tips for the Roadmap

- Coding questions are from LeetCode and in order (Easy, Medium, Hard)
- Choose days and questions based on your time and availability.
- Every 6 days have coding questions.
- Every 7th day have one system design and one low-level design question.

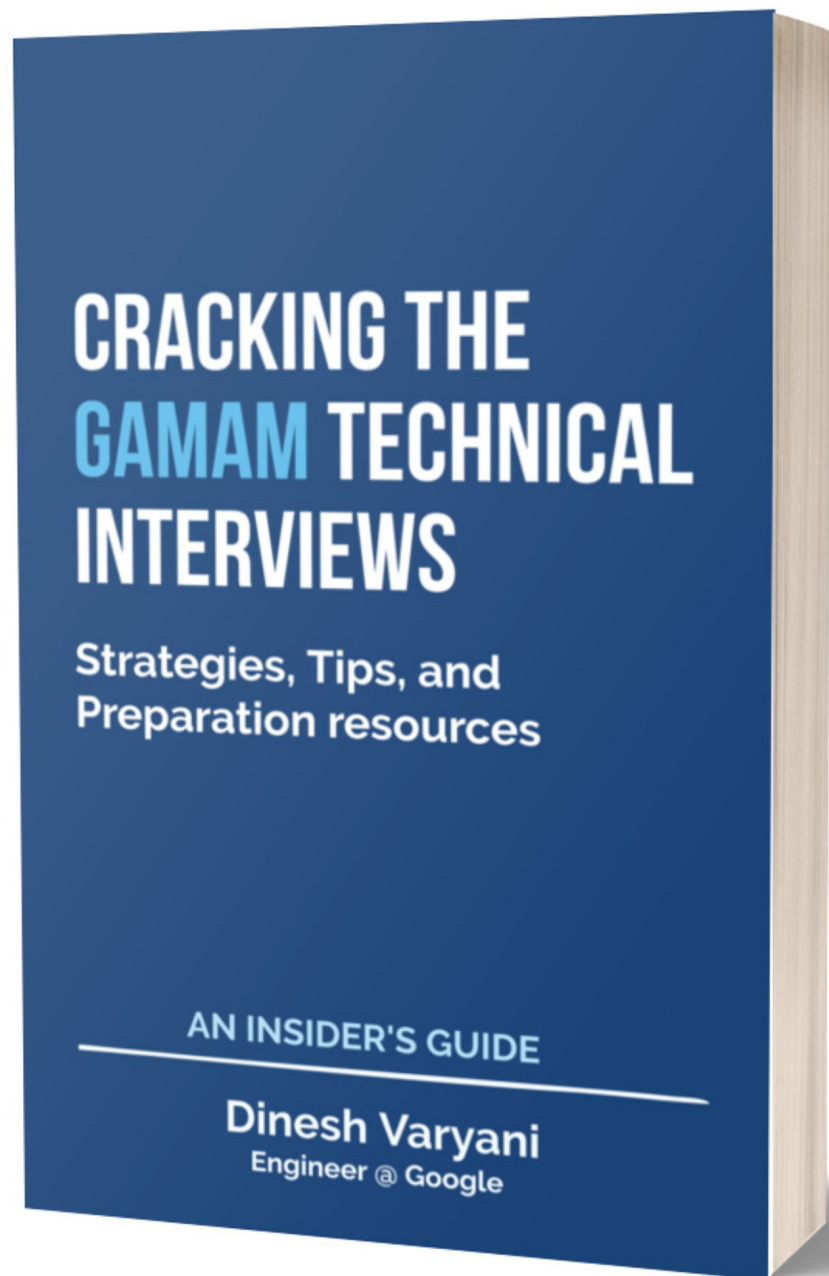
Tips for the Roadmap

- System design and Low-level design questions are taken from the resources - <https://lnkd.in/dXywwra2R> and <https://lnkd.in/d6yRpRvy>.
- Low-level design questions are taken from the resources - <https://lnkd.in/deuAXR-U>
- Every 15th day is a revision day for things practiced in the previous 14 days.

Tips for the Roadmap

- Last section starting the 120th day has behavioral interview questions as well.
- If you miss any question on a particular day, just carry it over to the next day.
- Idea is to be consistent for 150 days and not to solve all questions in hurry.

How did I crack Google and Amazon?



Buy Now

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

- **Design a Rate Limiter (System Design)**
- **Design a Library Management System (OOD Design)**

DAY 8

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

DAY 9

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

DAY 10

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

DAY 11

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

DAY 12

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

DAY 13

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

DAY 14

- **Design Consistent Hashing (System Design)**
- **Design a Parking Lot (OOD Design)**

DAY 15

- **Revise the questions solved from day 1 to 14.**

DAY 16

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

DAY 17

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

DAY 18

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

DAY 19

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

DAY 20

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

DAY 21

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

DAY 22

- **Design A Key-value Store (System Design)**
- **Design Amazon - Online Shopping System (OOD Design)**

DAY 23

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

DAY 24

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

DAY 25

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

DAY 26

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

DAY 27

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

DAY 28

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

DAY 29

- **Design A Distributed Unique ID Generator (System Design)**
- **Design Stack Overflow (OOD Design)**

DAY 30

- **Revise the questions solved from day 15 to 29.**

DAY 31

- 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 32

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

DAY 33

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

DAY 34

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

DAY 35

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

DAY 36

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

DAY 37

- **Design A URL Shortener (System Design)**
- **Design a Movie Ticket Booking System (OOD Design)**

DAY 38

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

DAY 39

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

DAY 40

- Open the Lock
- Shortest Bridge
- LRU Cache

DAY 41

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

DAY 42

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

DAY 43

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

DAY 44

- Design Pastebin (System Design)
- Design an ATM (OOD Design)

DAY 45

- **Revise the questions solved from day 30 to 44.**

DAY 46

- **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 47

- **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 48

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

DAY 49

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

DAY 50

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

DAY 51

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

DAY 52

- Design Instagram
(System Design)
- Design an Airline
Management System
(OOD Design)

DAY 53

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

DAY 54

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

DAY 55

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

DAY 56

- 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 57

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

DAY 58

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

DAY 59

- **Design A Web Crawler (System Design)**
- **Design Blackjack and a Deck of Cards (OOD Design)**

DAY 60

- **Revise the questions solved from day 46 to 59.**

DAY 61

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

DAY 62

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

DAY 63

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

DAY 64

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

DAY 65

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

DAY 66

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

DAY 67

- Design A Notification System (System Design)
- Design a Hotel Management System (OOD Design)

DAY 68

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

DAY 69

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

DAY 70

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

DAY 71

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

DAY 72

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

DAY 73

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

DAY 74

- Design A News Feed System (System Design)
- Design a Restaurant Management system (OOD Design)

DAY 75

- **Revise the questions solved from day 61 to 74.**

DAY 76

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

DAY 77

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

DAY 78

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

DAY 79

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

DAY 80

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

DAY 81

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

DAY 82

- **Design A Chat System (System Design)**
- **Design Chess (OOD Design)**

DAY 83

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

DAY 84

- Matchsticks to Square
- Knight Dialer
- Minesweeper

DAY 85

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

DAY 86

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

DAY 87

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

DAY 88

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

DAY 89

- **Design A Search Autocomplete System (System Design)**
- **Design an Online Stock Brokerage System (OOD Design)**

DAY 90

- **Revise the questions solved from day 76 to 89.**

DAY 91

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

DAY 92

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

DAY 93

- Permutations
- Permutations II
- Subsets
- Subsets II

DAY 94

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

DAY 95

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

DAY 96

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

DAY 97

- Design YouTube (System Design)
- Design a Car Rental System (OOD Design)

DAY 98

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

DAY 99

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

DAY 100

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

DAY 101

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

DAY 102

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

DAY 103

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

DAY 104

- Design Google Drive (System Design)
- Design LinkedIn (OOD Design)

DAY 105

- **Revise the questions solved from day 91 to 104.**

DAY 106

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

DAY 107

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

DAY 108

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

DAY 109

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

DAY 110

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

DAY 111

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

DAY 112

- Design Twitter (System Design)
- Design Facebook - a social network (System Design, OOD Design)

DAY 113

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

DAY 114

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

DAY 115

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

DAY 116

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

DAY 117

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

DAY 118

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

DAY 119

- Proximity Service (System Design)
- Design Cricinfo (OOD Design)

DAY 120

- **Revise the questions solved from day 106 to 119.**

DAY 121

- What are your strengths and weaknesses?
- Tell me about your most challenging customer. How did you resolve their issues and make them satisfied?
- Describe a time when you had to make a decision without having all the data or information you needed.

DAY 121

- Which {company's} leadership principle resonates with you most?
- Tell me about a time when you were working on a project, and you realized that you needed to make changes to what you were doing. How did you feel about the work you had already completed?

DAY 122

- **Nearby Friends (System Design)**
- **Google Maps (System Design)**

DAY 123

- Edit Distance
- Regular Expression Matching
- Maximal Rectangle

DAY 124

- Can you give me an example of a time when you exceeded expectations?
- Can you describe a time when you took the lead on a project?
- Think about a time you received negative feedback. How did you deal with that?

DAY 124

- Tell me about a time when you had to deal with ambiguity. How did you overcome the ambiguity to reach a positive outcome?
- Have you been stressed over a certain project delivery in the past? Did it affect your work-life balance? How did you deal with it?

DAY 125

- **Distributed Message Queue (System Design)**
- **Distributed Email Service (System Design)**

DAY 126

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

DAY 127

- Tell me about a time you have disagreed with your manager and how you handled it.
- How do you motivate others?
Can you give me an example of a time you have motivated someone?
- Tell me about a time when you took a risk and failed.
What did you learn from that experience?

DAY 127

- What obstacles have you encountered in your career? How did you overcome them?
- Tell me about a project you are proud of. How did you ensure high standards were met in delivering that project?

DAY 128

- **S3-like Object Storage (System Design)**
- **Real-time Gaming Leaderboard (System Design)**

DAY 129

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

DAY 130

- **Why do you want to work for {company}?**
- **Tell me about a time when you have had to work to earn someone's trust.**
- **Describe a time when you were given a project to work on, but your responsibilities were unclear. What did you do?**

DAY 130

- Tell me about a time you showed initiative.
- You see a co-worker struggling with a task. What do you do?

DAY 131

- **Payment System (System Design)**
- **Digital Wallet (System Design)**

DAY 132

- **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**

DAY 133

- Describe for me a time when you had to choose short-term sacrifices to achieve long-term gains.
- How do you deal with having to provide feedback to someone?
- Tell me about a time you failed to meet a deadline. How did you cope with that?

DAY 133

- Has there been a time when your contribution was overlooked and somebody else from your team took credit for it? How did you deal with it?
- Tell me about a project you are proud of. How did you ensure high standards were met in delivering that project?

DAY 133

- **Have you been in a conflict with a fellow coworker? How did you deal with it and what was the end result?**

DAY 134

- Design Uber backend (System Design)
- Design Ticketmaster (System Design, OOD Design)

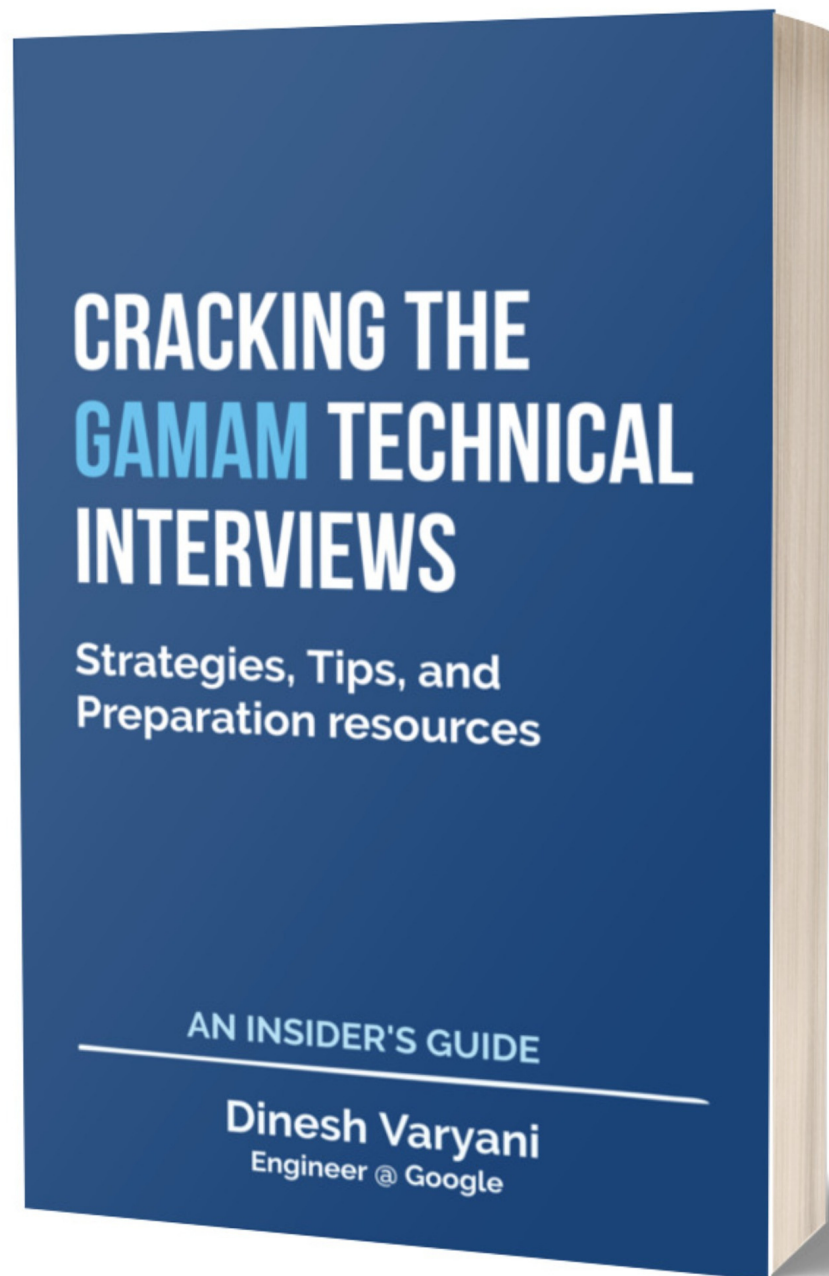
DAY 135

- **Revise the questions solved from day 121 to 134.**

DAY 136 - 150

- **Revise the questions solved from day 1 to 134.**

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THANK YOU !!!

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