

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.

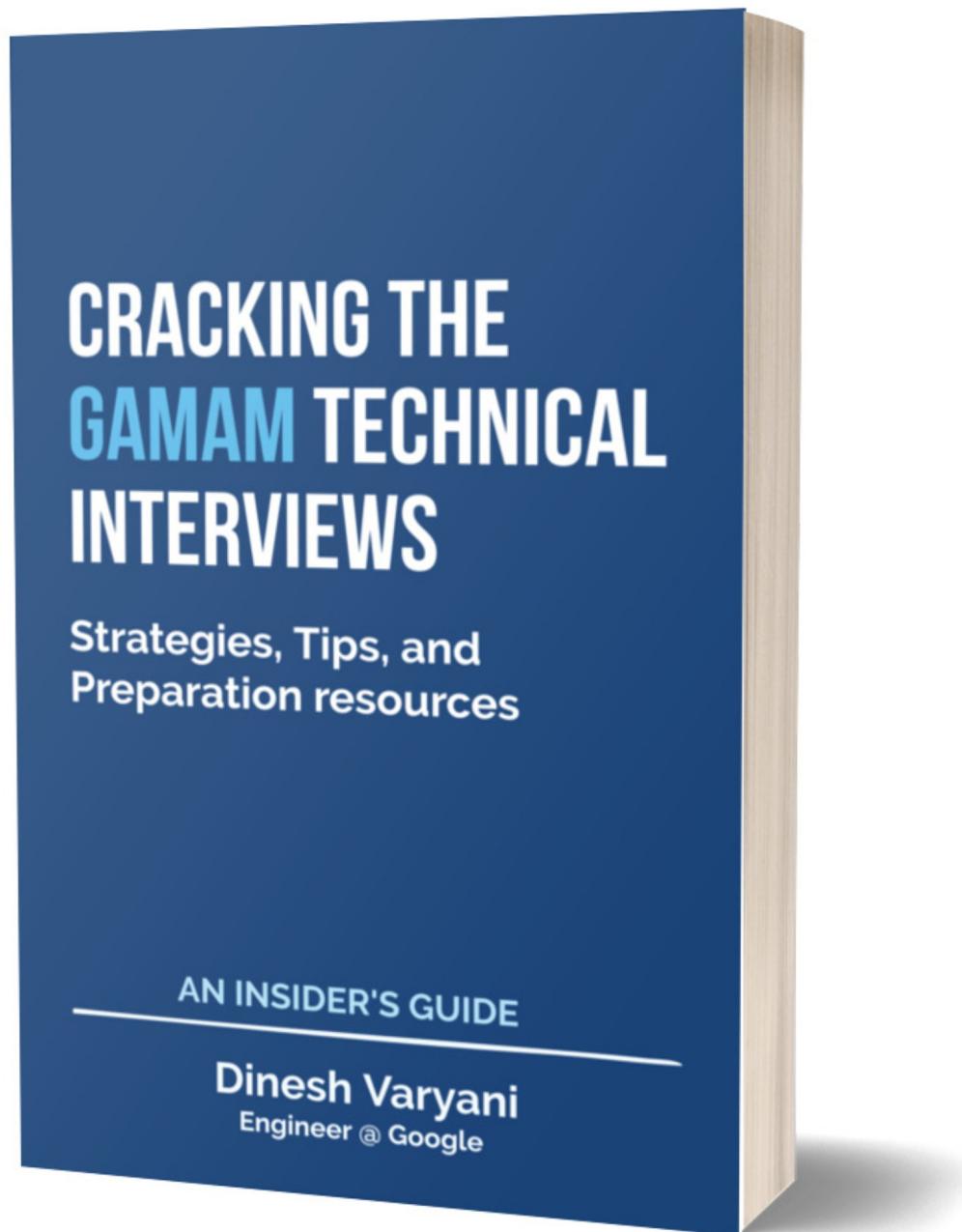
Tips for the Roadmap

- System design and Low-level design questions are taken from the resources -
<https://lnkd.in/dXywra2R>
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)

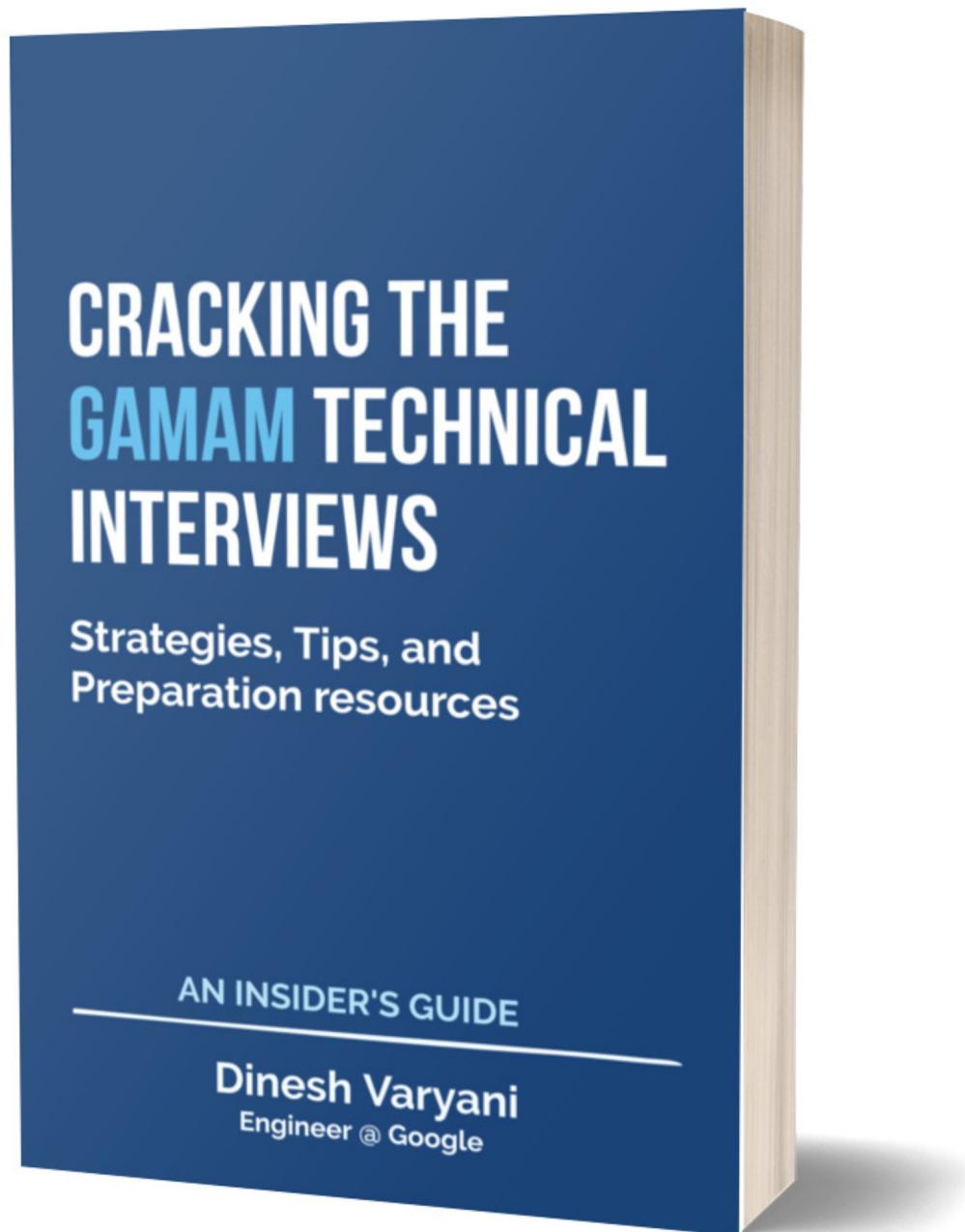
DAY 135

- Revise the questions solved from day 121 to 134.

DAY 136 - 150

- Revise the questions solved from day 1 to 134.

How did I crack Google and Amazon?



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THANK YOU !!!

For more such content

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