

# 150 Days Master Roadmap to MAANG

in Dinesh Varyani

 Dinesh Varyani

# Tips for the Roadmap

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- 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

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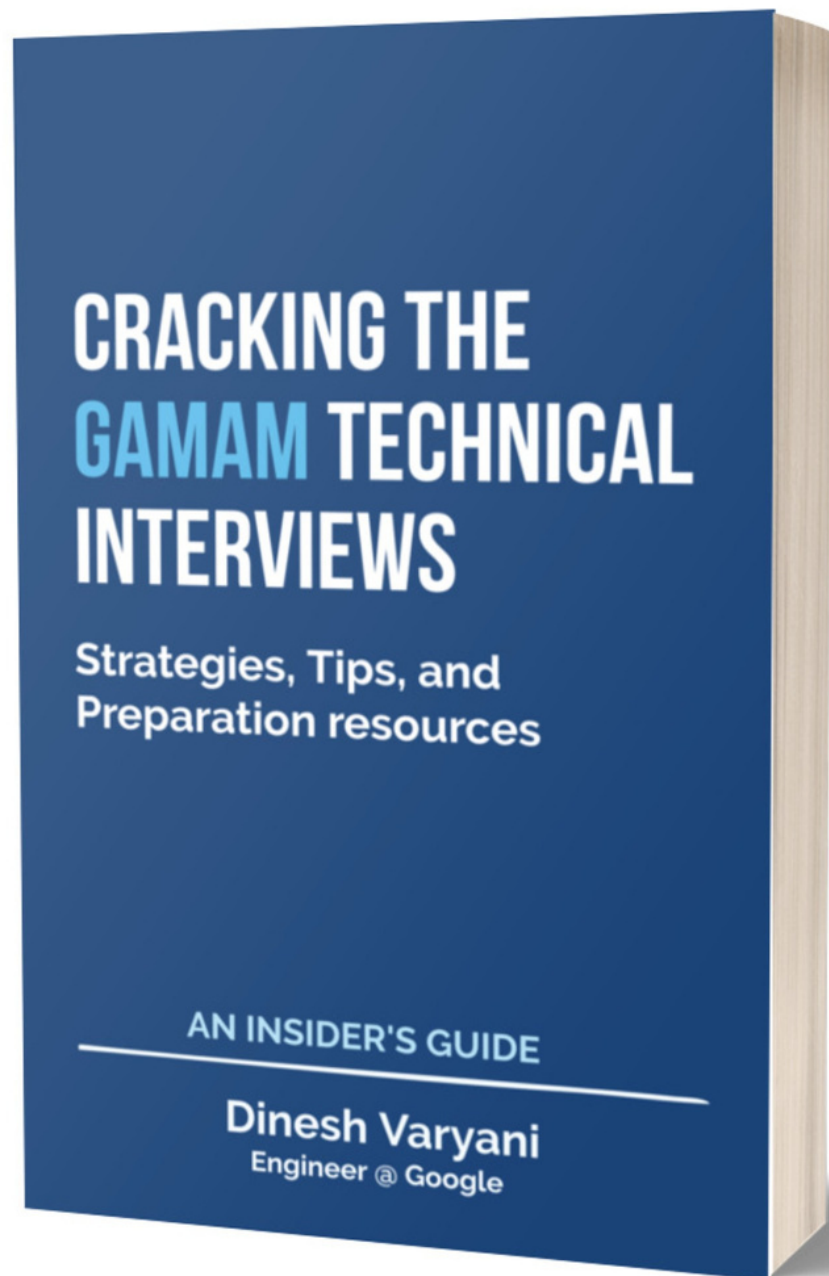
- System design and Low-level design questions are taken from the resources - <https://lnkd.in/dXywra2R> and <https://lnkd.in/d6yRpRvy>.
- Low-level design questions are taken from the resources - <https://lnkd.in/deuAXR-U>
- Every 15th day is a revision day for things practiced in the previous 14 days.

# Tips for the Roadmap

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- 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

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

# DAY 2

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- 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

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- **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

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- 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

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- **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

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

# DAY 7

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

# DAY 8

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

# DAY 9

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

# DAY 10

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

# DAY 11

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



# DAY 12

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

# DAY 13

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

# DAY 14

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

# DAY 15

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

# DAY 16

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

# DAY 17

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

# DAY 18

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

# DAY 19

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



# DAY 20

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

# DAY 21

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

# DAY 22

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

# DAY 23

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

# DAY 24

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

# DAY 25

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

# DAY 26

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

# DAY 27

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



# DAY 28

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

# DAY 29

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

# DAY 30

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

# DAY 31

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- 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

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

# DAY 33

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

# DAY 34

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

# DAY 35

---

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



# DAY 36

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

# DAY 37

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

# DAY 38

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

# DAY 39

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

# DAY 40

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- Open the Lock
- Shortest Bridge
- LRU Cache

# DAY 41

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

# DAY 42

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- 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

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- 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

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- **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

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- 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

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- 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

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



# DAY 52

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- 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

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- 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

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

# DAY 62

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

# DAY 63

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

# DAY 64

---

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

# DAY 65

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- 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

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

# DAY 69

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- 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

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

# DAY 77

---

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

# DAY 78

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

# DAY 79

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- 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

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- 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

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- Matchsticks to Square
- Knight Dialer
- Minesweeper

# DAY 85

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- 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

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

# DAY 88

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

# DAY 89

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- **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

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



# DAY 92

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

# DAY 93

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- Permutations
- Permutations II
- Subsets
- Subsets II

# DAY 94

---

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

# DAY 95

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

# DAY 96

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- 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

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- 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

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

# DAY 107

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



# DAY 108

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

# DAY 109

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

# DAY 110

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- **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

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- 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

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

# DAY 117

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

# DAY 118

---

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

# DAY 119

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

# DAY 120

---

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

# DAY 121

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- 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

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- 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

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



# DAY 123

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- Edit Distance
- Regular Expression Matching
- Maximal Rectangle

# DAY 124

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- 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

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- 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

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

# DAY 126

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

# DAY 127

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- 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

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

# DAY 132

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- **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

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- 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

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



# DAY 134

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

# DAY 135

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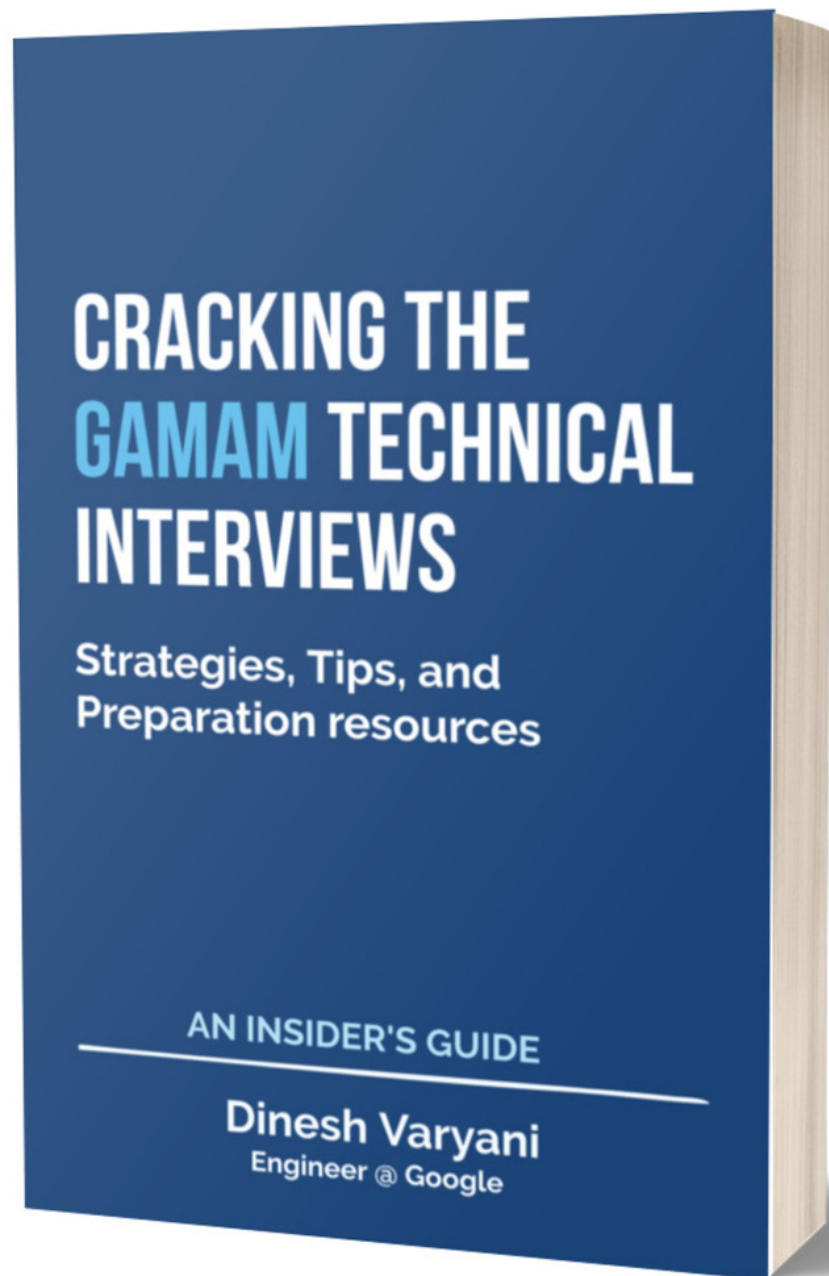
- **Revise the questions solved from day 121 to 134.**

# DAY 136 - 150

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

# How did I crack Google and Amazon?



**Buy Now**

**THANK YOU !!!**

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