SDET Master Tracker for Nilesh Singh

✅Phase 1: DSA Core (55 Problems)

♒Arrays (8 Problems)

1. Two Sum
2. Best Time to Buy and Sell Stock
3. Maximum Subarray (Kadane)
4. Merge Intervals
5. Product of Array Except Self
6. Set Matrix Zeroes
7. 3Sum
8. Longest Consecutive Sequence

⚪Binary Search (6 Problems)

1. First and Last Occurrence
2. Search in Rotated Sorted Array
3. Koko Eating Bananas
4. Peak Element
5. Find Minimum in Rotated Array
6. Median of Two Sorted Arrays (skip for now if hard)

🔤Strings (5 Problems)

1. Longest Substring Without Repeating Characters
2. Valid Anagram
3. Group Anagrams
4. Longest Palindromic Substring
5. Roman to Integer

🔁Linked List (6 Problems)

1. Reverse a Linked List
2. Detect Cycle in Linked List
3. Merge Two Sorted Linked Lists
4. Remove Nth Node from End
5. Intersection Point of Two Linked Lists
6. Add Two Numbers (LL Format)

🚮Trees (6 Problems)

1. Inorder Traversal (Iterative)
2. Preorder Traversal (Iterative)
3. Level Order Traversal
4. Maximum Depth of Binary Tree
5. Lowest Common Ancestor (LCA)
6. Validate Binary Search Tree

⬜ Recursion / Backtracking (5 Problems)

1. Subsets
2. Permutations
3. Combination Sum
4. Sudoku Solver (skip if hard for now)
5. N-Queens (easy version)

🔄Stack & Queue (5 Problems)

1. Valid Parentheses
2. Min Stack
3. Daily Temperatures
4. Next Greater Element
5. Implement Queue using Stack

⚠️Sliding Window / Prefix Sum (5 Problems)

1. Maximum Sum Subarray of Size K
2. Longest Substring with K Distinct Characters
3. Binary Subarray with Sum
4. Prefix Sum based range queries
5. Subarray Sum Equals K

♠️Heap / Priority Queue (3 Problems)

1. Top K Frequent Elements
2. Kth Largest Element
3. Merge K Sorted Lists

HashMap / Greedy / Misc (6 Problems)

1. LFU/LRU Cache (basic logic)
2. Gas Station
3. Jump Game
4. Clone Graph
5. Course Schedule
6. Find Duplicate Number

🆕Phase 2: Real-World QA Coding Tasks (10 Total)

1. Parse Log File and Return Top 3 Errors
2. Custom CSV Parser
3. Detect Duplicate Files in Folder
4. Regex HTML Tag Counter
5. API Response Validator (JSON keys)
6. Access Log Parser for Slow APIs
7. Multithreaded Downloader
8. File Version Tracker using Hashing
9. Memory Leak Simulator in Java
10. Retry-Logic for Flaky API

⭕Phase 3: Mini System Design (SDET-Specific)

1. Design a Test Automation Framework (Modular, Reusable)
2. Design Test Strategy for Flipkart Cart
3. Log Alerting System Design (SDET Version)
4. Design API Testing System with Mocks
5. Jenkins-Based CI/CD for Automation Suite

🔯Phase 4: QA + Automation Basics (Revise Before Interviews)

- Test Types (unit, integration, e2e)
- API Testing (status codes, Postman, auth, retries)
- BDD, POM, Modular Framework
- Jenkins pipelines & Git basics
- Parallel/Retry Testing, Test Flakiness Handling

🔝Phase 5: Behavioral Prep

- STAR Format for Past Projects
- Resume Achievements (impact numbers)
- Tell Me About Yourself (1 min)
- 2–3 Project Deep Dive Stories

7️⃣Weekly Plan Example (Flexible)

Mon–Fri: - 1 DSA Problem (brute + better) - 30 min: Review notes, revise yesterday's problem

Sat–Sun: - 1 Real World Task or System Design - Behavioral + Resume Practice (1 round/week)

Let's start with **Linked List - Reverse a Linked List (Brute + Dry Run)** today. Then alternate days: 1 new DSA + 1 revision of Arrays.