

# **WINTER ARC – Data Structures & Algorithms (DSA) Roadmap (30 Days)**

## **Challenge Overview**

The DSA track is designed to build strong problem-solving skills and algorithmic thinking. Participants will progress from fundamentals to solving structured problems commonly asked in interviews and competitive programming.

## **30-Day Learning Roadmap**

- Days 1–3: DSA overview, time & space complexity, arrays basics
- Days 4–6: Array and string problem-solving practice
- Days 7–9: Recursion and basic searching algorithms
- Days 10–12: Sorting algorithms and complexity analysis
- Days 13–15: Hashing techniques and related problems
- Days 16–18: Stack and queue data structures
- Days 19–21: Linked lists and pointer-based logic
- Days 22–23: Trees and tree traversals
- Days 24–25: Binary Search Trees and applications
- Days 26–27: Graph basics, BFS and DFS
- Days 28–29: Greedy algorithms and dynamic programming introduction
- Day 30: Revision, mock practice, and reflection

## **Posting & Submission Rules (IMPORTANT)**

- For all TECH challenges (DSA included), daily task completion MUST be posted on LinkedIn or X (Twitter).
- Tag the official Winter Arc / Matrix handle and use the official hashtags.
- Problem links, solution explanations, code snippets, or screenshots are acceptable.
- Submissions without social proof will not be eligible for XP.

## **What to Post Daily**

- Problems solved today and their approach
- Time and space complexity analysis
- Key learnings or mistakes
- One insight to improve problem-solving speed

## **Strategies to Win the DSA Track**

- Focus on approach and logic before coding.
- Analyze time and space complexity for every solution.
- Revisit unsolved or incorrect problems weekly.

- Practice consistency over solving many problems at once.
- Maintain calm and clarity while solving problems.

## **Fair Play & Discipline**

- All solutions must be original and self-explained.
- Blind copy-paste of solutions is prohibited.
- AI assistance must be disclosed clearly.
- Matrix reserves the right to revoke XP, ranks, or rewards.