Day 1 (24 hours)

Hour 1-2: Introduction to DSA

* Overview of data structures and algorithms
* Importance of DSA in programming
* Real-world applications of DSA

Hour 2-4: Basic Data Structures

* Arrays: Operations, Implementation
* Linked Lists: Operations, Implementation
* Stacks: Operations, Implementation
* Queues: Operations, Implementation

Hour 4-6: Recursion

* Basics of recursion
* Recursive algorithms: Factorial, Fibonacci sequence
* Recursion vs. iteration

Hour 6-8: Sorting Algorithms

* Bubble sort: Concept, Implementation
* Selection sort: Concept, Implementation
* Insertion sort: Concept, Implementation

Hour 8-10: Lunch Break

Hour 10-12: Searching Algorithms

* Linear search: Concept, Implementation
* Binary search: Concept, Implementation

Hour 12-14: Hashing

* Hash functions
* Collision resolution techniques
* Practical applications of hashing

Hour 14-16: Trees

* Binary trees: Operations, Implementation
* Binary search trees: Operations, Implementation
* AVL trees: Operations, Implementation

Hour 16-18: Graph Algorithms

* Graph representation: Adjacency list, Adjacency matrix
* Breadth-first search: Concept, Implementation
* Depth-first search: Concept, Implementation

Hour 18-20: Dynamic Programming

* Principles of dynamic programming
* Dynamic programming algorithms: Fibonacci sequence, Longest common subsequence

Hour 20-22: Practice and Review

* Problem-solving exercises
* Review of concepts covered
* Q&A session

Hour 22-24: Project

* Apply DSA concepts to build a small project (e.g., a sorting program, a graph visualization tool)