

# DSA Topic-wise LeetCode Study Guide

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EASY LEVEL – Traversal & Basic Graph/Tree

Binary Tree Inorder Traversal

- LeetCode 94
- Video: “Inorder Traversal (recursion + stack)” by Tushar Roy

Binary Tree Level Order Traversal (BFS)

- LeetCode 102
- Video: “Binary Tree Level Order Traversal – BFS explained” by NeetCode

Symmetric Tree

- LeetCode 101
- Video: “Symmetric Tree (DFS + BFS)” by Kevin Naughton Jr.

Maximum Depth of Binary Tree (DFS)

- LeetCode 104
- Video: “Max Depth of Binary Tree – DFS tutorial” by NeetCode

Same Tree

- LeetCode 100
- Video: “Same Tree – DFS check” by Tushar Roy

Flood Fill

- LeetCode 733
- Video: “Flood Fill – DFS/BFS solution” by NeetCode

### Number of Islands

- LeetCode 200
- Video: “Number of Islands – BFS & DFS” by WilliamFiset

### Convert Sorted Array to BST (DFS)

- LeetCode 108
- Video: “Convert Sorted Array to BST – recursion” by NeetCode

### Path Sum

- LeetCode 112
- Video: “Path Sum – DFS tutorial” by NeetCode

### Find if Path Exists in Graph

- LeetCode 1971
- Video: “Check path in graph using DFS/BFS” by Algorithms Live!

## ● MEDIUM LEVEL

### 🌟 Shortest Path Algorithms

#### Network Delay Time (Dijkstra)

- LeetCode 743
- Video: “Dijkstra Algorithm in C++” by WilliamFiset

#### Cheapest Flights Within K Stops (Bellman–Ford)

- LeetCode 787
- Video: “Bellman-Ford algorithm explanation” by Tushar Roy

### All Pairs Shortest Path (Floyd-Warshall)

- LeetCode 1148 (similar matrix DP)
- Video: "Floyd-Warshall algorithm explained" by WilliamFiset

### Minimum Spanning Tree (MST)

#### Connecting Cities With Minimum Cost (Prim's)

- LeetCode 1135
- Video: "Prim's algorithm in C++" by Abdul Bari

#### Min Cost to Connect All Points (Kruskal's)

- LeetCode 1584
- Video: "Kruskal's algorithm + DSU" by Tushar Roy

### Topological Sort

#### Course Schedule (BFS)

- LeetCode 207
- Video: "Course Schedule - Kahn's Topo Sort" by NeetCode

#### Course Schedule II (DFS)

- LeetCode 210
- Video: "Course Schedule II - DFS Topological Sort" by WilliamFiset

### Tree Traversal Variations

#### Binary Tree Zigzag Level Order Traversal

- LeetCode 103

- Video: "Binary Tree Zigzag Level Order Traversal" by Abdul Bari

### Clone Graph

- LeetCode 133
- Video: "Clone Graph - BFS & DFS" by NeetCode

### Word Ladder (BFS Shortest Path)

- LeetCode 127
- Video: "Word Ladder BFS solution" by NeetCode

## HARD LEVEL

### Network Flow Algorithms

#### Maximum Bipartite Matching (Ford-Fulkerson)

- (No direct LeetCode problem; see implementation reference)
- Video: "Ford-Fulkerson algorithm explained" by WilliamFiset

#### Maximum Flow (Edmonds-Karp)

- LeetCode Dinic's-Ford (external)
- Video: "Edmonds-Karp in C++" by Tushar Roy

### Shortest Path Advanced

#### Path with Minimum Effort (Dijkstra variant)

- LeetCode 1631
- Video: "Minimum Effort Path - BFS vs Dijkstra" by NeetCode

#### Find the City With the Smallest Number of Neighbors (Floyd-Warshall)

- LeetCode 1334
- Video: "Floyd-Warshall for threshold distance" by williamfiset

### Complex MST Applications

Optimize Water Distribution in a Village (Prim's with Virtual Node)

- LeetCode 1168
- Video: "Optimize Water Distribution – MST (Prim + DSU)" by NeetCode

### Topological Sort + DFS

Alien Dictionary

- LeetCode 269
- Video: "Alien Dictionary Topological Sort" by WilliamFiset

Parallel Courses III

- LeetCode 2050
- Video: "Parallel Courses III – Word DAG + DP" by NeetCode

### Advanced Traversal

Word Search II (DFS + Trie)

- LeetCode 212
- Video: "Word Search II – Trie + DFS" by Tushar Roy

Binary Tree Cameras (DFS Greedy)

- LeetCode 968
- Video: "Binary Tree Cameras greedy solution" by NeetCode

## Redundant Connection II (Union-Find + Cycle Detection)

– LeetCode 685

– Video: “Redundant Connection II – DSU & Graph” by WilliamFiset