DSA WEEK 3

Practical Questions Organized by Topic

Binary Tree

- Implement Binary Tree (Not BST) (3)
- Implement a Tree Structure with Multiple Children per Node (2)
- Implement Preorder Traversal (1)
- Implement Level Order Traversal (8, LeetCode 102)
- Find the LCA (Lowest Common Ancestor) (2)
- Check if Given Tree is Identical (1)
- Printing All Leaf Nodes in a Tree (1)
- Write a Function to Check if Tree is Balanced or Not (5)
- Implement a Balanced Binary Tree (Not BST) (1)
- Find Combination of Numbers Which Will Give Sum as 2 (1)

Binary Search Tree (BST)

- Implement BST (4)
- Validate BST (3)
- Allow Duplicate Elements in BST (1)
- Find Height of BST (2)
- BST Deletion + Special Case (1)
- Find Min in BST Using Recursion (1)
- Find Second Largest in BST (8)
- Find Third Largest in BST (3)
- Find Element Closest to a Target Element in BST (4)
- Kth Smallest Element from BST (Use Inorder) (6, LeetCode 230)
- Count Single Child Nodes in a BST (2)

Trie

- Implement Trie (5)
- Auto Completion Using Trie (18)
- Word Suggestion Using Trie (2)
- Search Word in Trie (1)
- Insert New Word to Trie (1)
- Prefix Search in Trie (2)
- Find Longest Prefix in a Trie (3)
- Trie Serialization and Deserialization (1)
- Deletion in Trie (1)

Heap

- Implement Heap (2)

- Implement Min Heap (1)
- Max Heap Sort Implementation (7)
- Implement Heap Sort (14)
- Heapify (7)
- Heapify Up and Down (2)
- Conversion Min Heap to Max Heap (2)
- Delete Node from Heap (2)
- Delete Node from Min Heap (1)
- Kth Largest in Array (Heap) (3)
- Top K Frequent Elements (Use Heap) (1)
- Find the Right Child of a Heap (1)
- Implementation of Priority Queue (1)

Graph

- Implement Graph (1)
- BFS Implementation in Graph (2)
- DFS Implementation in Graph (3)
- Clone Graph (7, LeetCode 133)
- Number of Islands (2, LeetCode 200)
- Shortest Path in Graph (7)
- Shortest Path in Unweighted Graph (BFS) (1)
- Dijkstra's Shortest Path Algorithm for Weighted Graphs (2)
- Find Shortest Distance Between Two Vertices (2)
- Check Cycles in a Graph (4)
- How to Count Cycles in a Graph (2)
- Backtracking in DFS (2)
- Prim's Algorithm, Kruskal's Algorithm (2)

General

- Find Unique Characters from Given String (1)
- Find the Longest Non-repeating Substring in a String (2)
- Implementation Using Hash Table (2)
- Sum of Elements in Array Using Recursion (1)
- Practice Problems from Blind 75 LeetCode, Learn Optimal Solutions from YouTube (7)

LeetCode Questions

- **LeetCode 102: Binary Tree Level Order Traversal** (3)
- **LeetCode 133: Clone Graph** (4)
- **LeetCode 200: Number of Islands** (2)
- **LeetCode 215: Kth Largest Element in an Array** (1)
- **LeetCode 230: Kth Smallest Element in a BST** (3)