Top Graph problems

Breadth-First Search (BFS): Implement BFS traversal on a graph, starting from a given source vertex and visiting all its neighboring vertices.

Depth-First Search (DFS): Implement DFS traversal on a graph, starting from a given source vertex and exploring as far as possible along each branch before backtracking.

Graph Valid Tree: Given an undirected graph, determine if it is a valid tree.

Course Schedule: Given the total number of courses and a list of prerequisite pairs, determine if it is possible to finish all courses.

Clone Graph: Given a reference of a node in a connected undirected graph, clone the graph.

Word Ladder: Given two words (beginWord and endWord) and a dictionary of words, find the length of the shortest transformation sequence from beginWord to endWord.

Number of Islands: Given a 2D grid map of '1's (land) and '0's (water), count the number of islands.

Graph Connectivity: Determine the number of connected components in an undirected graph.

Alien Dictionary: Given a list of words in an alien language sorted lexicographically, determine the order of the characters in the alien language.

Network Delay Time: There are N network nodes, labeled from 1 to N. Given times, a list of travel times as directed edges, and K, a starting node, calculate the time it takes for all nodes to receive the signal from the starting node.