Coding Questions

1) **Array Manipulation**

- Given an array of integers, write a function to move all zeros to the end without changing the order of non-zero elements.

2) **Stack Implementation using Queues**

- Implement a stack using queues. The stack should support the following operations: push, pop, top, and empty.

3) **Valid Parentheses**

- Given a string containing just the characters '(', ')', '{', '}', '[' and ']', determine if the input string is valid.

4) **Merge Two Sorted Lists**

- Merge two sorted linked lists and return it as a new sorted list. The new list should be made by splicing together the nodes of the first two lists.

5) **Linked List Cycle Detection**

- Determine whether a linked list has a cycle in it.

6) **Binary Tree Level Order Traversal**

- Given a binary tree, return the level order traversal of its nodes' values. (i.e., from left to right, level by level).

7) **Maximum Depth of Binary Tree**

- Given a binary tree, find its maximum depth. The maximum depth is the number of nodes along the longest path from the root node down to the farthest leaf node.

8) **Breadth-First Search (BFS)**

- Given a graph represented as an adjacency list and a starting vertex, implement BFS to traverse the graph.

9) Depth-First Search (DFS)

- Implement DFS to traverse a graph given its adjacency list and a starting vertex.

10) **Validate BST**

- Given the root of a binary tree, determine if it is a valid binary search tree (BST).