Assignment 2
(Data Structures and Algorithms)

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Part 2

In the folder ***Graph-Code***, an implementation of a *Graph* data structure and associated search algorithms are provided. Go through the code and answer the questions in this section.

2.1 List the data structures used in the code provided to you.

Sol^n: The data structures used are:

① linked list
② stacks
③ queues
④ Graph

2.2 List all the Graph algorithms that you can find from the code.

Sol^n: Graph algorithms used are:

① Main node insertion
② Adjacent list node insertion
③ Printing of list of nodes
④ Doing Breadth First Search (BFS)
⑤ Doing Depth First Search (DFS) using recursion.
⑥ Doing DFS using iteration.
⑦ Getting main node value.
⑧ Setting paramaters of all adjacent list.
⑨ Visiting DFS.

2.3 Explain the functionality of the member function *Graph::BFS*

Sol^n: First all the nodes are set to "white" (unvisited).
Then, the nodes are marked "Gray" (visited) one by one, storing their adjacent neighbour in a queue.
Then, the nodes are dequeued from the queue, and the visited nodes are printed in a file using "ofstream", indicating the distance from the starting node.