Objectives:

In this lab, students will practice:

1. Implementation of Graph data structure and implying the BFS and DFS search strategies in it

A class structure is defined as:

```
// This class represents a directed graph using
// adjacency list representation
class GraphSearch
{
    int V;    // No. of vertices

    // Pointer to an array containing adjacency
    // lists
    list<int> *adj;
public:
    GraphSearch(int V);  // Constructor

    // function to add an edge to graph
    void addEdgeToGraph(int v, int w);

    // prints BFS traversal from a given source s
    void BFSearch(int s);

  // prints DFS traversal from a given source s
    void DFSearch(int s);
};
```

Question 1:

Write the code to implement the graph data structure first. The graph structure contains following functions

a) **Constructor,** to initialize the graph with the intended number of vertices and initial adjacency lists
b) **addEdgeToGraph(int v, int w),** insert w to v's list

Question 2:

BFSearch(int s): Implement the BFS traversal algorithm function to GraphSearch implementation.

Question 3:

DFSearch(int s): Implement the DFS traversal algorithm function to GraphSearch implementation and write the driver code to test the class.