```cpp
#include <iostream>
#include <stdlib.h>

using namespace std;

int cost[10][10], i, j, k, n, qu[10], front, rear, v, visit[10], visited[10];
int stk[10], top, visit1[10], visited1[10];

int main()
{
    int m;

    cout << "Enter number of vertices : ";
    cin >> n;

    cout << "Enter number of edges : ";
    cin >> m;

    cout << "\nEDGES :\n";

    for (k = 1; k <= m; k++)
    {
        cin >> i >> j;
        cost[i][j] = 1;
        cost[j][i] = 1;
    }

    // Display function
    cout << "The adjacency matrix of the graph is : " << endl;

    for (i = 0; i < n; i++)
    {
        for (j = 0; j < n; j++)
        {
            cout << " " << cost[i][j];
        }
        cout << endl;
    }

    cout << "Enter initial vertex : ";
    cin >> v;

    cout << "The BFS of the Graph is\n";
    cout << v << endl;
    visited[v] = 1;
    k = 1;

    while (k < n)
    {
        for (j = 1; j <= n; j++)
            if (cost[v][j] != 0 && visited[j] != 1 && visit[j] != 1)
            {
                visit[j] = 1;
                qu[rear++] = j;
            }
```

```
56
57          v = qu[front++];
58          cout << v << " ";
59          k++;
60          visit[v] = 0;
61          visited[v] = 1;
62      }
63
64      cout << endl << "Enter initial vertex : ";
65      cin >> v;
66
67      cout << "The DFS of the Graph is\n";
68      cout << v << endl;
69      visited[v] = 1;
70      k = 1;
71
72      while (k < n)
73      {
74          for (j = n; j >= 1; j--)
75              if (cost[v][j] != 0 && visited1[j] != 1 && visit1[j] != 1)
76              {
77                  visit1[j] = 1;
78                  stk[top] = j;
79                  top++;
80              }
81
82          v = stk[--top];
83          cout << v << " ";
84          k++;
85          visit1[v] = 0;
86          visited1[v] = 1;
87      }
88
89      return 0;
90  }
91
```

Output :