

```
1  #include <iostream>
2  #include <stdlib.h>
3  using namespace std;
4
5  int cost[10][10], i, j, k, n, qu[10], front, rear, v, visit[10], visited[10];
6  int stk[10], top, visit1[10], visited1[10];
7
8  int main()
9  {
10     int m;
11     cout << "Enter number of vertices : ";
12     cin >> n;
13     cout << "Enter number of edges : ";
14     cin >> m;
15
16     cout << "\nEDGES :\n";
17     for (k = 1; k ≤ m; k++)
18     {
19         cin >> i >> j;
20         cost[i][j] = 1;
21         cost[j][i] = 1;
22     }
23
24     //display function
25     cout << "The adjacency matrix of the graph is : " << endl;
26     for (i = 0; i < n; i++)
27     {
28         for (j = 0; j < n; j++)
29         {
30             cout << " " << cost[i][j];
31         }
32         cout << endl;
33     }
34
35     cout << "Enter initial vertex : ";
36     cin >> v;
37     cout << "The BFS of the Graph is\n";
38     cout << v<<endl;
39     visited[v] = 1;
40     k = 1;
41     while (k < n)
42     {
43         for (j = 1; j ≤ n; j++)
44             if (cost[v][j] ≠ 0 && visited[j] ≠ 1 && visit[j] ≠ 1)
45             {
46                 visit[j] = 1;
47                 qu[rear++] = j;
48             }
49         v = qu[front++];
50         cout << v << " ";
51         k++;
52         visit[v] = 0;
53         visited[v] = 1;
```

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54     }
55
56     cout <<endl<<"Enter initial vertex : ";
57     cin >> v;
58     cout << "The DFS of the Graph is\n";
59     cout << v<<endl;
60     visited[v] = 1;
61     k = 1;
62     while (k < n)
63     {
64         for (j = n; j ≥ 1; j--)
65             if (cost[v][j] ≠ 0 && visited1[j] ≠ 1 && visit1[j] ≠ 1)
66             {
67                 visit1[j] = 1;
68                 stk[top] = j;
69                 top++;
70             }
71         v = stk[--top];
72         cout << v << " ";
73         k++;
74         visit1[v] = 0;
75         visited1[v] = 1;
76     }
77
78     return 0;
79 }
80
```