/*

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ASSIGNMENT 6

Problem Statement: Represent a given graph using adjacency matrix/list to perform DFS and usingadjacency list perform BFS. Use the map of the area around the college as the graph. Identify the prominentlandmarks as nodes and perform DFS and BFS on that.

*/

```
#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;
}
v = qu[front++];
cout << v << " ";
k++; visit[v] = 0;
visited[v] = 1;

}
cout << endl
<< "Enter initial vertex : "; cin >> v;
cout << "The DFS of the Graph is\n";
cout << v << endl; visited[v] = 1; k =
1; while (k < n)
```

```
{ for (j = n; j >= 1; j--) if (cost[v][j] != 0 && visited1[j]
!= 1 && visit1[j] != 1)
{ visit1[j] =
1; stk[top]
= j; top++;
}
v = stk[--top];
cout << v << " ";
k++; visit1[v] =
0; visited1[v] =
1;
}
return 0;
}
```

OUTPUT

```
Enter number of vertices : 5
Enter number of edges : 5
EDGES :
2345677643
The adjacency matrix of the graph is :
0 0 0 0 0
0 0 0 0 0
0 0 0 1 0
0 0 1 0 1
0 0 0 1 0
Enter initial vertex : 2
The BFS of the Graph is
```

23

4 5 0

Enter initial vertex : 5

The DFS of the Graph is

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3 2 5