

## LAB 9(BFS)

```
1 #include <stdio.h>
2
3     int G[20][20], visited[20], q[20], n, f = 0, r = -1;
4
5     void bfs(int v) {
6         q[++r] = v;
7         visited[v] = 1;
8
9         while (f <= r) {
10             int curr = q[f++];
11             printf("%d ", curr);
12
13             for (int i = 0; i < n; i++) {
14                 if (G[curr][i] && !visited[i]) {
15                     q[++r] = i;
16                     visited[i] = 1;
17                 }
18             }
19         }
20     }
21
22     int main() {
23         int edges, u, v, start;
24
25         printf("Enter number of vertices and edges: ");
26         scanf("%d %d", &n, &edges);
27
28         printf("Enter edges (u v):\n");
29         for (int i = 0; i < edges; i++) {
30             scanf("%d %d", &u, &v);
31             G[u][v] = 1;
32             G[v][u] = 1;
33         }
34
35         printf("Enter start vertex: ");
36         scanf("%d", &start);
37
38         printf("BFS Traversal: ");
39         bfs(start);
40
41         return 0;
42     }
43 }
```

## OUTPUT:

```
f = 0, r = -1;
C:\Users\BMSCECSE-L4\Docu X + ▾
Enter number of vertices and edges: 4 3
Enter edges (u v):
1 2
1 3
2 4
Enter start vertex: 1
i[1] {
BFS Traversal: 1 2 3
Process returned 0 (0x0) execution time : 27.245 s
Press any key to continue.
|
```

## DFS-9(DFS):

```
1 #include <stdio.h>
2
3 int G[20][20], visited[20], n;
4
5 void dfs(int v) {
6     printf("%d ", v);
7     visited[v] = 1;
8
9     for (int i = 0; i < n; i++) {
10        if (G[v][i] && !visited[i]) {
11            dfs(i);
12        }
13    }
14}
15
16 int main() {
17     int edges, u, v, start;
18
19     printf("Enter number of vertices and edges: ");
20     scanf("%d %d", &n, &edges);
21
22     printf("Enter edges (u v):\n");
23     for (int i = 0; i < edges; i++) {
24         scanf("%d %d", &u, &v);
25         G[u][v] = 1;
26         G[v][u] = 1;
27     }
28
29     printf("Enter start vertex: ");
30     scanf("%d", &start);
31
32     printf("DFS Traversal: ");
33     dfs(start);
34
35     return 0;
36 }
37
```

## Output:

File

```
i++) {  
    sited[i] = 0;  
}  
  
Enter number of vertices and edges: 2 3  
Enter edges (u v):  
1 4  
2 4  
3 4  
Enter start vertex: 1  
DFS Traversal: 1  
Process returned 0 (0x0)   execution time : 31.544 s  
Press any key to continue.  
  
f vertices and  
ges);  
  
    v) :\n");  
ges; i++) {  
    &v);  
  
    rtex: ");  
  
    ");
```