

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;
```

```
i[i]) {
```

```
ind edges
```

```
C:\Users\BMSCECSE-L4\Docu X + v
Enter number of vertices and edges: 4 3
Enter edges (u v):
1 2
1 3
2 4
Enter start vertex: 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:

```
1 11
```

```
    i++) {  
sited[i] {
```

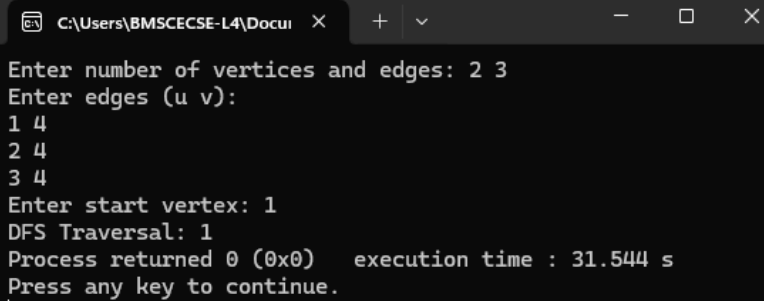
```
;
```

```
f vertices and  
ges);
```

```
    v):\n");  
ges; i++) {  
    &v);
```

```
rtex: ");
```

```
    ");
```



A screenshot of a Windows command prompt window. The title bar shows the file path "C:\Users\BMSCECSE-L4\Docu..." and standard window controls. The window contains the following text: "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", and "Press any key to continue." followed by a cursor on a new line.