

## Experiment No-7

input:

```
1 #include<stdio.h>
2 int a[20][20],q[20],visited[20],n,f=-1,r=-1;
3
4 void BFS(int v)
5 {
6     int i;
7     for(i=0;i<n;i++)
8     {
9         if(a[v][i]!=0 && visited[i]==0)
10        {
11            r=r+1;
12            q[r]=i;
13            visited[i]=1;
14            printf("%d",i);
15        }
16    }
17    f=f+1;
18    if(f<=r)
19    {
20        BFS(q[f]);
21    }
22 }
23
24 int main()
25 {
26     int i,v,j;
27     printf("\n Enter the No. of Vertices : ");
28     scanf("%d",&n);
29     for(i=0;i<n;i++)
30     {
31         visited[i]=0;
32     }
33     printf("\n Enter Graph data in matrix form\n");
34     for(i=0;i<n;i++)
35     {
36         for(j=0;j<n;j++)
37         {
38             scanf("%d",&a[i][j]);
39         }
40     }
41     printf("\n Enter the Starting Vertex : ");
42     scanf("%d",&v);
43     f=r=0;
44     q[r]=v;
45     visited[v]=1;
46     printf("%d",v);
47     BFS(v);
48     if(r!=n-1)
49     {
50         printf("\nBFS not Possible");
51         printf("\n");
52         return 0;
53     }
54 }
55
```

Output:

```
student@dl405-HP-ProDesk-400-G7-Microtower-PC:~$ gedit Exp_7_1.c
student@dl405-HP-ProDesk-400-G7-Microtower-PC:~$ gcc Exp_7_1.c
student@dl405-HP-ProDesk-400-G7-Microtower-PC:~$ ./a.out

Enter the No. of Vertices : 5

Enter Graph data in matrix form
0 1 0 0 1
1 0 1 1 1
0 1 0 1 0
0 1 1 0 1
1 1 0 1 0

Enter the Starting Vertex : 3
31240student@dl405-HP-ProDesk-400-G7-Microtower-PC:~$ gedit Exp_7_1.c
```