EXPERIMENT 7

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Roll no. - 9

```
#include<stdio.h>
int source,V,E,time,visited[20],G[20][20];
void DFS(int i)
{
int j;
visited[i]=1;
printf("%d->",i+1);
for(j=0;j<V;j++)
{
if(G[i][j]==1&&visited[j]==0){
DFS(j);
}
}
}
int main()
{
int i,j,v1,v2;
printf("\t\t\tGRAPHS\n");
printf("Enter number of edges:");
scanf("%d",&E);
printf("Enter number of vertices:");
scanf("%d",&V);
for(i=0;i<V;i++)
{
for(j=0;j<V;j++)
G[i][j]=0;
}
for(i=0;i<E;i++)
{
printf("Enter the edges(v1 v2): ");
scanf("%d%d",&v1,&v2);
G[v1-1][v2-1]=1;
}
for(i=0;i<V;i++)
{
for(j=0;j<V;j++)
printf(" %d ",G[i][j]);
printf("\n");
}
printf("enter the source:");
scanf("%d",&source);
DFS(source-1);
return 0;
}
```

```
0->user123@itadmin:~/Desktop/temp$ ./a.out
                        GRAPHS
Enter number of edges:^[[A
Enter number of vertices:enter the source:0->user123@itadmin:~/Desktop/temp$ ./a.out
                        GRAPHS
Enter number of edges:^[[A
Enter number of vertices:enter the source:0->user123@itadmin:~/Desktop/temp$ ./a.out
                        GRAPHS
Enter number of edges:4
Enter number of vertices:4
Enter the edges(v1 v2): 3 4
Enter the edges(v1 v2): 3 4
Enter the edges(v1 v2): 6 6
Enter the edges(v1 v2): 6 4
 0  0  0  0
 0  0  0  0
 0  0  0  1
 0  0  0  0
enter the source:
```

```
#include<stdio.h>
int a[20]
[20],q[20],visited[20],n,f=-1,r=-1;
void bfs(int v) {
int i;
for(i=0;i<n;i++) {
if(a[v][i] !=0 && visited[i]==0) {
r=r+1;
q[r]=i;
visited[i]=1;
printf("%d",i); }}
f=f+1;
if(f<=r)
bfs(q[f]); }
int main() {
int v,i,j;
printf("\nEnter number of vertices");
scanf("%d",&n);
for(i=0;i<n;i++){
visited[i]=0;}
printf("\nEnter graph data in matric from\n");
for(i=0;i<n;i++)
for(j=0;j<n;j++)
scanf("%d",&a[i][j]);
printf("\nEnter the starting vertex");
scanf("%d",&v);
f=r=0;
q[r]=v;

visited[v]=1;
printf("%d",v);
bfs(v);
if(r!=n-1)
printf("\nBFS not possible");
printf("\n");
return 0;
}
```

```
user123@itadmin:~/Desktop/temp$ gcc expt7.c
user123@itadmin:~/Desktop/temp$ ./a.out

Enter number of vertices4

Enter graph data in matric from
0 0 0 0
1 0 1 0
0 1 0 1
1 1 1 1

Enter the starting vertex1
1023
user123@itadmin:~/Desktop/temp$
```