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Code :

```
#include <stdio.h>
#include <stdlib.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 the number of edges:");
    scanf("%d",&e);
    printf("Enter the 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 in format:(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;
}
```

Output ScreenShort

I_1

```

1 #include <stdio.h>
2 #include <stdlib.h>
3
4 int source,v,e,time,visited[20],g[20][20];
5 void DFS (int t)
6 {
7     int j;
8     visited[t]=1;
9     printf("%d ->",t+1);
10    for(j=0;j<v;j++)
11    {
12        if(g[t][j]==1 && visited[j]==0)
13            DFS(j);
14    }
15 }
16 int main()
17 {
18     int i,j,v1,v2;
19     printf("\t\t\t\tGraphs\n");
20     printf("Enter the number of edges:");
21     scanf("%d",&e);
22     printf("Enter the number of vertices:");
23     scanf("%d",&v);
24     for(i=0;i<v;i++)
25     {
26         for(j=0;j<v;j++)
27             g[i][j]=0;
28     }
29     for(i=0;i<e;i++)
30     {
31         printf("Enter the edges in format:(v1,v2)=");
32         scanf("%d%d",&v1,&v2);
33         g[v1-1][v2-1]=1;
34     }
35     for(i=0;i<v;i++)
36     {
37         for(j=0;j<v;j++)
38             printf("%d",g[i][j]);
39         printf("\n");
40     }
41     printf("Enter the source:");
42     scanf("%d",&source);
43     DFS(source-1);
44     return 0;
45 }

```

```
#include<stdio.h>
#include<stdlib.h>
int a[20][20],q[20],visit[20],n,f=-1,r=-1;
```

```
void bfs(int v)
{
    int i;
    for(i=0;i<n;i++)
    {
        if(a[v][i] !=0 && visit[i]==0)
        {
            r=r+1;
            q[r]=i;
            visit[i]=1;
            printf("%d",i);
        }
    }
    f=f+1;
    bfs(q[f]);
}
```

```
int main()
{
    int v,i,j;
    printf("\n Enter no. of vertices: ");
    scanf("%d",&n);
```

```

for(i=0;i<n;i++)
{
    visit[i]=0;
}
printf("\nEnter graph data in matrix form:\n");
for(i=0;i<n;i++)
    for(j=0;j<n;j++)
        scanf("%d",&a[i][j]);
printf("\nEnter the startung vertex: ");
scanf("%d",&v);
bfs(v);
if(r!=n-1)
printf("\nBFS not possible");
printf("\n");
return 0;
}

```

```

Source.c:39:16: error: expected ';' before '}' token
    return 0;
               ^
39
40
d10415@itadmin:~/practical$ gcc exp7.c
gcc: error: exp7.c: No such file or directory
gcc: fatal error: no input files
compilation terminated.
d10415@itadmin:~/practical$ gcc Source.c
d10415@itadmin:~/practical$ ./a.out
Graphs
Enter the number of edges: 5
Enter the number of vertices: 6
Enter the edges in format:(v1,v2)=9,4
Segmentation fault (core dumped)
d10415@itadmin:~/practical$ gcc Source.c
d10415@itadmin:~/practical$ ./a.out
Graphs
Enter the number of edges: 5
Enter the number of vertices: 5
Enter the edges in format:(v1,v2)=(6,7)
Segmentation fault (core dumped)
d10415@itadmin:~/practical$ gcc Source.c
d10415@itadmin:~/practical$ ./a.out
Graphs
Enter the number of edges: 7
Enter the number of vertices: 6
Enter the edges in format:(v1,v2)= 5 4
Enter the edges in format:(v1,v2)= 3 2
Enter the edges in format:(v1,v2)= 1 6
Enter the edges in format:(v1,v2)= 3 2
Enter the edges in format:(v1,v2)= 5 8
Enter the edges in format:(v1,v2)= 9 7
Enter the edges in format:(v1,v2)= 4 3
000001
000000
010000
001000
000100
000000
Enter the source: 5
5 -> 4 -> 3 -> 2 -> 1
d10415@itadmin:~/practical$

```

I_2_output