

DHRUV HARSORA  
SYIT - 70

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 no of edges: ");
    scanf("%d", &E);
    printf("Enter the no 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 (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);
```

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        DFS (source-1);
    return 0;
}

```

OUTPUT :-

```

#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("\n Enter number of vertices");
    scanf("%d",&n);
    for(i=0;i<n;i++)
    {
        visited[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("\n Enter 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;
}

```

Output :-

```

Graphs
Enter the no of edges: 5
Enter the no of vertices:4
Enter the edges (format: v1 v2) : 23 34
Enter the edges (format: v1 v2) : 11 24
Enter the edges (format: v1 v2) : 45 65
Enter the edges (format: v1 v2) : 98 38
Enter the edges (format: v1 v2) : 85 73
0 0 0 0
0 0 0 0
0 0 0 0
0 0 0 0
Enter the source: 11
11->
Enter number of vertices1
Enter graph data in matrix form
12 33
Enter the starting vertex23
PS C:\Users\Ohruv_Harsora\OneDrive\Desktop\DSA>

```