/*1) Program to print all the nodes reachable from a given starting node in a given directed graph using the DFS method.

2) Program to check whether a given graph is connected or not using the DFS method (If all the nodes visited from a given input node, then print graph is connected else print graph is not connected).
*/

```
#include<stdio.h>
#include<conio.h>
#include<process.h>
#include<stdlib.h>
int a[11][11],vis[11],n;

void dfs(int v)
{
	vis[v]=1;
	printf("%d --> ",v);
	for(int i=1;i<=n;i++)
	{
		if((a[v][i]==1)&&(vis[i]==0))
			dfs(i);
	}
}

void main()
{
	int src;
	printf("enter no of vertices \n");
	scanf("%d",&n);
	printf("enter adjacency matrix :\n");
	for(int i=1;i<=n;i++)
	{
		for(int j=1;j<=n;j++)
			scanf("%d",&a[i][j]);
	}

	for(int i=1;i<=n;i++)
		vis[i]=0;

	printf("enter source vertex \n");
	scanf("%d",&src);
	printf("nodes reachable from source node %d are :\n",src);
```

```
        dfs(src);
        getch();
        printf("\n");
        int f=0;
        for(int i=1;i<=n;i++)
        {
                if(vis[i]==0)
                {
                        f=1;
                        break;
                }
        }
        if(f==0)
                printf("given graph is connected \n");
        else
                printf("given graph is not connected \n");
}
```

```
C:\Users\Prashanth\Documents\ADA LAB>obj
enter no of vertices
8
enter adjacency matrix :
0 1 1 0 0 0 0 0
1 0 0 1 1 0 0 0
1 0 0 0 0 1 1 0
0 1 0 0 0 0 0 1
0 1 0 0 0 0 0 1
0 0 1 0 0 0 0 1
0 0 1 0 0 0 0 1
0 0 0 1 1 1 1 0
enter source vertex
1
nodes reachable from source node 1 are :
1 --> 2 --> 4 --> 8 --> 5 --> 6 --> 3 --> 7 -->
given graph is connected
```

```
C:\Users\Prashanth\Documents\ADA LAB>obj
enter no of vertices
5
enter adjacency matrix :
0 1 1 0 0
0 0 0 1 0
0 0 0 0 0
0 0 0 0 0
0 0 0 1 0
enter source vertex
1
nodes reachable from source node 1 are :
1 --> 2 --> 4 --> 3 -->
given graph is not connected

C:\Users\Prashanth\Documents\ADA LAB>
```