**Program 9: Design, Develop and Implement a Program in C for the operations on Graph (G) of Cities**

**a. Create a Graph of N cities using Adjacency Matrix.**

**b. Print all nodes reachable from a given source node in a graph using DFS method**

**#include<stdio.h>**

**#include<conio.h>**

**void main()**

**{**

**int n,a[10][10],i,j,source,s[10];**

**clrscr();**

**printf("Enter the Number of Nodes \n");**

**scanf("%d",&n);**

**printf("Enter the Adjacency Matrix \n");**

**for(i=1;i<=n;i++)**

**for(j=1;j<=n;j++)**

**scanf("%d",&a[i][j]);**

**printf("Enter the Source Node \n");**

**scanf("%d",&source);**

**for(i=1;i<=n;i++)**

**s[i]=0;**

**/\* OutPut**

**Enter the Number of Nodes**

**5**

**Enter the Adjacency Matrix**

**0 0 0 1 0**

**1 0 1 0 0**

**1 0 0 1 1**

**0 1 0 0 0**

**0 0 0 0 0**

**Enter the Source Node**

**1**

**The DFS order is**

**1 4 2 3 5**

**\*/**

**printf("The DFS order is \n");**

**Dfs(n,a,source,s);**

**}**

**//---------------------------------------------------------------**

**Dfs(int n, int a[10][10], int source, int s[10])**

**{**

**int i;**

**printf("%d\t", source);**

**s[source]=1;**

**for(i=1;i<=n;i++)**

**if( s[i] == 0 && a[source][i] == 1)**

**Dfs(n,a,i,s);**

**}**