**Write program to do the following:**

1. **Print all the nodes reachable from a given starting node in a digraph using BFS method.**

#include<stdio.h>

#include<conio.h>

void insertq(int q[],int node, int \*f, int \*r)

{

if((\*f==-1) && (\*r==-1))

{

(\*f)++, (\*r)++, q[\*f]=node;

}

else{

(\*r)++, q[\*r]=node;

}

}

int deleteq(int q[],int \*f,int \*r)

{

int temp;

temp=q[\*f];

if(\*f == \*r) \*f=\*r=-1;

else (\*f)++;

return temp;

}

void bfs(int n, int adj[][10],int src, int visited[])

{

int q[20], f=-1,r=-1,v,i;

insertq(q,src,&f,&r);

while((f <=r ) && (f != -1))

{

v=deleteq(q,&f,&r);

if(visited[v]!=1)

{

visited[v]=1;

printf("%d",v);

}

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

if((adj[v][i]==1) && (visited[i] !=1))

insertq(q,i,&f,&r);

}

}

void main()

{

int n,i,j,adj[10][10],src,visited[10];

printf("enter number of vertices\n");

scanf("%d",&n);

printf("Enter adjacency matrix\n");

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

{

visited[i]=0;

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

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

}

printf("enter starting vertex\n");

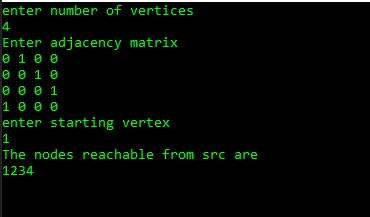
scanf("%d",&src);

printf("The nodes reachable from src are\n");

bfs(n,adj,src,visited);

getch();

}

****

1. **Check whether a given graph is connected or not using DFS method.**

#include<stdio.h>

#include<conio.h>

int s[10],cost[10][10],n;

void dfs(int u)

{

int v;

s[u]=1;

printf(" %d->",u+1);

for(v=0;v<n;v++)

{

if((cost[u][v]==1) && (s[v]==0))

dfs(v);

}

}

int main()

{

int i,j,con,flag;

printf("Enter the number of nodes\n");

scanf("%d", &n);

printf("Enter the adjacency matrix\n");

for(i=0;i<n;i++)

{

for(j=0;j<n;j++)

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

}

con=0;

for(i=0;i<n;i++)

{

for(j=0;j<n;j++)

s[j]=0; //for ends here

printf("Order of dfs:\n");

dfs(i);

flag=0;

for(i=0;i<n;i++)

{

if(s[i]==0)

flag=1;

}

if(flag==0)

con=1;

}

if(con==1){

printf("\n");

printf("Graph is connected\n");

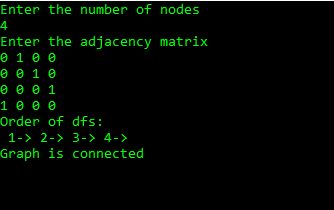
}

else

printf("Graph is not connected\n");

getch();

}

****