11. Develop a Program in C for the following operations on Graph (G) of cities

    a. Create a Graph of N cities using adjacency matrix

    b. Print all the nodes reachable from given staring node in diagrams using DFS, BFS methods

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```c
#include<stdio.h>
#include<stdlib.h>

int a[50][50],visited[50],q[20],s[20],i,j,n,cur,front=-1,rear=-1,top=-1,count=0;

void bfs(int v){
        visited[v]=1;
        q[++rear]=v;
        while(front!=rear){
                cur=q[++front];
                for(i=1;i<=n;i++)
                        if((a[cur][i]==1)&&(visited[i]==0)){
                                q[++rear]=i;
                                visited[i]=1;
                                printf("%d ",i);
                        }
        }
}

void dfs(int v){
        visited[v]=1;
        s[++top]=v;
        for(i=1;i<=n;i++)
                if(a[v][i]==1&&visited[i]==0){
                        printf("%d ",i);
                        dfs(i);
                }
        printf("\n");
}

int main(){
        int ch,start;
        printf("\nEnter the number of vertices in graph : ");
        scanf("%d",&n);
        printf("\nEnter the adjacency matrix :\n");
        for(i=1;i<=n;i++){
                for(j=1;j<=n;j++)
                        scanf("%d",&a[i][j]);
                visited[i]=0;
        }

        printf("\nEnter the starting vertex: ");
        scanf("%d",&start);
        printf( \
                "\n1. BFS : Print all nodes reachable from a given starting node \
                 \n2. DFS : Print all nodes reachable from a given starting node \
                 \n3. Exit \
                 \n> "
        );
        scanf("%d",&ch);

        switch(ch){
                case 1:
                        printf("\nNodes reachable from starting vertex %d are :\n",start);
                        bfs(start);
                        for(i=1;i<=n;i++)
                                if(visited[i]==0)
                                        printf("\nThe vertex that is not reachable is %d\n",i);
                        break;
                case 2:
                        printf("\nNodes reachable from starting vertex %d are :\n",start);
                        dfs(start);
                        break;
                case 3:
                        exit(0);
                default:
                        printf("Please enter valid choice !\n");
        }
}
```