

// 22. Write a C program to Graph traversal using Depth First Search

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#include<stdio.h>
#include<conio.h>
int a[20][20],reach[20],n;
void dfs(int v) {
    int i;
    reach[v]=1;
    for (i=1;i<=n;i++)
        if(a[v][i] && !reach[i]) {
            printf("\n %d->%d",v,i);
            dfs(i);
        }
}
int main()
{
    int i,j,count=0;
    printf("\n Enter number of vertices:");
    scanf("%d",&n);
    for (i=1;i<=n;i++) {
        reach[i]=0;
        for (j=1;j<=n;j++)
            a[i][j]=0;
    }
    printf("\n Enter the adjacency matrix:\n");
    for (i=1;i<=n;i++)
        for (j=1;j<=n;j++)
            scanf("%d",&a[i][j]);
    dfs(1);
    printf("\n");
    for (i=1;i<=n;i++) {
        if(reach[i])
            count++;
    }
    if(count==n)
        printf("\n Graph is connected"); else
        printf("\n Graph is not connected");
    getch();
}
```

