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1 - /*****
2
3         Online C Compiler.
4         Code, Compile, Run and Debug C program online
5 Write your code in this editor and press "Run" button to compile and run your code
6
7 *****/
8 #include<stdio.h>
9 #include<conio.h>
10 int a[20][20],reach[20],n;
11 void dfs(int v){
12     int i;
13     reach[v]=1;
14     for(i=1;i<=n;i++){
15         if(a[v][i] && !reach[i]){
16             printf("\n %d->%d",v,i);
17             dfs(i);
18         }
19     }
20 int main(){
21     int i,j,count=0;
22     printf("\n Enter number of vertices:");
23     scanf("%d",&n);
24     for(i=1;i<=n;i++){
25         reach[i]=0;
26         for(j=1;j<=n;j++){
27             a[i][j]=0;
28         }
29     printf("\n Enter the adjacency matrix:\n");
30     for(i=1;i<=n;i++){
31         for(j=1;j<=n;j++){
32             scanf("%d",&a[i][j]);
33         }
34         dfs(i);
35         printf("\n");
36         for(i=1;i<=n;i++){
37             if(reach[i])
38                 count++;
39         }
40     }
41     printf("\n Total number of vertices reached: %d",count);
42     getch();
43 }

```



```

#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();
        return 0;
    }
}

```


Enter number of vertices:4

Enter the adjacency matrix:

1	1	1	0
0	1	1	1
1	0	1	1
1	1	1	1

1->2

2->3

3->4

Graph is connected

...Program finished with exit code 0
Press ENTER to exit console.