9b) Write a program to check whether given graph is connected or not using DFS method.

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```
#include<stdio.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);
}
}
void 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");
}
```

Output:

```
 Enter number of vertices:4

 Enter the adjacency matrix:
0 1 1 1
0 0 0 1
0 0 0 0
0 0 1 0

 1->2
 2->4
 4->3

 Graph is connected
Process returned 20 (0x14)   execution time : 51.782 s
Press any key to continue.
```