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

```
#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);
      }
}
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");
    return 0;
}
```

OUTPUT:

Enter number of vertices:8

Enter the adjacency matrix:

0 1 0 0 0 0 0 1 0

1 0 1 0 0 0 0 1 0

0 1 0 1 0 1 0 0 1

0 0 0 1 0 1 0 0 0

0 0 1 0 1 0 1 0 0

0 0 0 1 0 1 0 1 1

1 1 0 0 0 0 1 0 1

0 0 1 0 0 0 1 1 0

1->2

2->4

4->3

3->6

3->8

8->5

5->7

Graph is connected.