

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);
        }
}

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.
|

```