Lab program 9b:-

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

```
#include <stdio.h>

int graph[20][20], visited[20];
int n;

/* DFS Function */
void dfs(int v)
{
   int i;
   visited[v] = 1;

   for (i = 0; i < n; i++)
   {
      if (graph[v][i] == 1 && visited[i] == 0)
      {
         dfs(i);
      }
   }
}

/* Main Function */
int main()
{
   int i, j, start;
   int connected = 1;

   printf("Enter number of vertices: ");
   scanf("%d", &n);
```

```
printf("Enter adjacency matrix:\n");
for (i = 0; i < n; i++)
{
   for (j = 0; j < n; j++)
   {
      scanf("%d", &graph[i][j]);
   }
   visited[i] = 0;
}

printf("Enter starting vertex: ");
scanf("%d", &start);

dfs(start);

/* Check if all vertices are visited */
for (i = 0; i < n; i++)
{
   if (visited[i] == 0)
   {
      connected = 0;
      break;
   }
}

if (connected)
   printf("The given graph is CONNECTED.");
else
   printf("The given graph is NOT CONNECTED.");
```

```
    return 0;

}
```

```
Enter number of vertices: 3
Enter adjacency matrix:
1
2
3
4
5
6
7
8
9
Enter starting vertex: 3
The given graph is NOT CONNECTED.
Process returned 0 (0x0)   execution time : 10.986 s
Press any key to continue.
```