**Week 2**

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**Q.Check whether the graph is connected or not using DFS method.**

#include<stdio.h>

#include<stdlib.h>

int a[10][10], reach[10], 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("Enter the 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("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("\nGraph is connected\n");

else

printf("\nGraph is not connected\n");

}

**OUTPUT**

