Week 2

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

Code :

```
#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 :

```
Enter the number of vertices: 4
Enter the adjacency matrix:
0 1 1 1
1 0 0 1
1 0 0 1
1 1 1 0

1  2
2  4
4  3

Graph is connected
```

Leet code :