Lab 6

Problem Description:

Write a program that receives a graph as input and determines the connectivity of the graph and the number of the connected components in it (the graph is undirected).

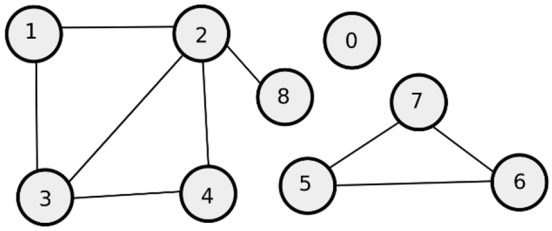

Figure 1 A disconnected graph with three components

A graph is connected when there is a path between every pair of vertices. A graph G is said to be disconnected if there exist at least two nodes in G such that no path in G has those nodes as endpoints. A connected component (or just component) of a graph is a sub graph in which any two vertices are connected to each other by paths, and which is connected to no additional vertices in the super graph.

Input:

The first two lines of input determines number of vertices n and number of edges m, respectively in the graph. The following m lines determine the connections in the graph.

Output:

Output will be in one line containing 2 integers separated by a space in between. The first integer is 0 or 1 (if the graph is disconnected then 0 otherwise 1). The second integer is the number of disconnected components in the graph.

SR	Input	Output
1	9 9 1 2 2 3 3 4 2 4 1 3 2 8 5 7 6 7 5 6	0 3