

Connected Components 3

Given an undirected graph with n vertices and m edges. Vertices are numbered from 0 to $n-1$. Write a program to calculate the number of vertices and edges of each component.

Input

The first line contains the number of vertices n ($1 \leq n \leq 10^5$), the number of edges m ($1 \leq m \leq 2 \times 10^5$).

Each of the next m lines contains 2 integers u, v representing an edge between u and v ($0 \leq u, v \leq n$).

Output

For each component, print out the smallest vertex, the number of vertices and edges in the component.

Sample

Input	Output
3 1	0 1 0
1 2	1 2 1