# Programming assignment 7

## Connected component

Implement depth-first search that identifies the connected components of undirected graph G.

During the DFS procedure, visit the vertex with smaller vertex number first, and the component number starts from 1.

### **Input (Standard input)**

In the first line, the number of vertices N ( $1 \le N \le 1,000$ ) is given.

From the next line, the adjacency list of graph G is represented as the two integers x, y.

This means the edge from vertex x to vertex y exists..

#### **Output (Standard output)**

In the first line, print the number of connected components.

In the next N lines, print the component number of each vertex.

#### [Example]

Input	Output
6	2
1 2	1
1 4	1
2 5	2
3 6	1
	1
	2

## **Description**

- 1. File name must be Connected component.cpp
- 2. Make the comment of student ID, name and class in the first line of the source code.
  - ex) 2008601028 Honggildong A or 2008601028 홍길동 A
- 3. Please keep the source code that you have submitted for unexpected accident.