Programming assignment 6

DFS

Implement depth-first search that prints out the type of every edge in the directed graph G. During the DFS procedure, visit the vertex with smaller vertex number first.

Input (Standard input)

In the first line, the number of vertices N ($1 \leq N \leq 1{,}000$) 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)

Print the edges in the adjacency list of G with their edge types. The edge type representation is as follows:

1: Tree edge

2: Back edge

3. Forward edge

4. Cross edge

In each line, three integers x, y, z should be printed, which means the edge from vertex x to vertex y has the edge type z.

[Example]

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

Description

1. File name must be DFS.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.