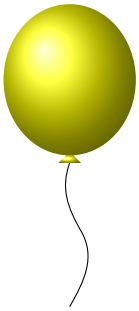
XAPC Algorithmic Programming Contest > badas

L Tree Game



Time limit: 5.0s
Memory limit: 256MB

Alice and Bob play a game on an undirected tree. The players start at two different nodes of the tree. The players take turns and Alice plays first. At their turn, the player must move to an empty adjacent node and can optionally decide to destroy the node they just left.

Destroyed nodes can no longer be used by the players. Note also that the tree can become a forest when nodes are destroyed.

If the two players end up in two different connected components, the game immediately ends and the player that is in the biggest component wins (if the two components are of the same size, this is considered a draw). If a player cannot move, he or she loses. Assuming both players play optimally, given the tree and the starting nodes of each player, who will win?

Input

The first three lines contain the following integers:

- N ($4 \leq N \leq 10^6$) , the number of tree nodes, numbered from 1 to N.
- A ($1 \leq A \leq N$), Alice's start node.
- B ($1 \leq B \leq N$ and $B \neq A$), Bob's start node.

The next $N - 1$ lines contain the edges of the tree. Each edge is represented by the two nodes it connects.

Output

A single line with either:

- ALICE WINS
- BOB WINS
- DRAW

Samples

Sample input 1	Sample output 1
4 1 4 1 2 2 3 3 4	BOB WINS

Sample input 2	Sample output 2
6 1 6 1 4 2 4 2 3 4 5 5 6	DRAW