Problem C. Cherry and Chocolate

Input file: standard input
Output file: standard output

Cherry and Chocolate play a game on a tree. First, Cherry picks a node and paints it pink. Then, Chocolate picks another node and paints it brown. Afterwards, Cherry picks yet another node and paints it pink. The game ends here. Chocolate doesn't get the second move.

For each node v, if there is no path from v to the brown node without passing through a pink node, Cherry gets a point.

Cherry wants to maximize her score, and Chocolate wants to minimize it. If both players play optimally, what will Cherry's score be?

Input

The first line contains an integer, n ($3 \leq n \leq 10^5$), the number of nodes on the tree.

Each of the next $n-1$ lines contains two integers a_i and b_i, ($1 \leq a_i, b_i \leq n$), meaning there is an edge between node a_i and node b_i.

Output

A single integer, Cherry's score if both players play optimally.

Example

standard input	standard output
4 1 2 2 3 2 4	3