

Problem C. Even Forest

Input file: *standard input*
Output file: *standard output*
Time limit: 3 seconds
Memory limit: 512 mebibytes

An undirected tree is called *even* if there is no simple path of odd length connecting two of its leaves. In particular, a tree with just one vertex is considered even.

You are given an undirected tree G with vertices numbered from 1 to n . A graph obtained by removing some (possibly none) of the edges of G is called a *forest*: it consists of one or more disjoint trees. Determine the minimum possible number k such that we can remove k edges of G in such a way that the resulting forest consists only of even trees.

Input

The first line contains one integer n ($1 \leq n \leq 10^6$).

Each of the next $n - 1$ lines contains two integers u_i and v_i ($1 \leq u_i, v_i \leq n$) denoting an edge connecting vertex u_i and vertex v_i .

The graph is guaranteed to be a tree.

Output

Output the minimum number of edges k such that we can remove k edges of G in such a way that each tree in the resulting forest is even.

Examples

<i>standard input</i>	<i>standard output</i>
4 1 2 2 3 3 4	1
4 1 2 1 3 1 4	0