Vertex Cover

You are given an unweighted, undirected tree. Write a program to find a vertex set of minimum size in this tree such that each edge has as least one of its end-points in that set.

Input

The first line of the input file contains one integer N --- number of nodes in the tree ($0 < N <= 100000$). Next N-1 lines contain N-1 edges of that tree --- Each line contains a pair (u, v) means there is an edge between node u and node v ($1 <= u,v <= N$).

Output

Print number of nodes in the satisfied vertex set on one line.

Example 1

Input:
3
1 2
1 3

Output:
1

Explanation:
The set can be {1}

Example 2

Input:
3
1 2
2 3

Output:
1

Explanation:
The set can be {2}