

SPOJ Problem Set (main)

1435. Vertex Cover

Problem code: PT07X

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 at 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 ($0 < N \leq 100000$). 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 ($1 \leq u, v \leq N$).

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}

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