

PROBLEMS

SUBMIT

STATUS

STANDINGS

CUSTOM TEST

## F. Leaf Sets

time limit per test: 3 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

You are given an undirected tree, consisting of  $n$  vertices.

The vertex is called a leaf if it has exactly one vertex adjacent to it.

The distance between some pair of vertices is the number of edges in the shortest path between them.

Let's call some set of leaves *beautiful* if the maximum distance between any pair of leaves in it is less or equal to  $k$ .

You want to split **all** leaves into **non-intersecting** beautiful sets. What is the minimal number of sets in such a split?

**Input**

The first line contains two integers  $n$  and  $k$  ( $3 \leq n \leq 10^6$ ,  $1 \leq k \leq 10^6$ ) — the number of vertices in the tree and the maximum distance between any pair of leaves in each beautiful set.

Each of the next  $n - 1$  lines contains two integers  $v_i$  and  $u_i$  ( $1 \leq v_i, u_i \leq n$ ) — the description of the  $i$ -th edge.

It is guaranteed that the given edges form a tree.

**Output**

Print a single integer — the minimal number of beautiful sets the split can have.

### Examples

input

Copy

9 3  
1 2  
1 3  
2 4  
2 5  
3 6  
6 7  
6 8  
3 9

output

Copy

2

input

Copy

5 3  
1 2  
2 3  
3 4  
4 5

output

Copy

2

input

Copy

6 1  
1 2  
1 3  
1 4  
1 5  
1 6

output

Copy

5

Codeforces Round #510 (Div. 2)

Finished

Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++11 5.1.0

Choose file: 选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

→ Problem tags

data structures

dfs and similar

dsu

graphs

greedy

sortings

trees

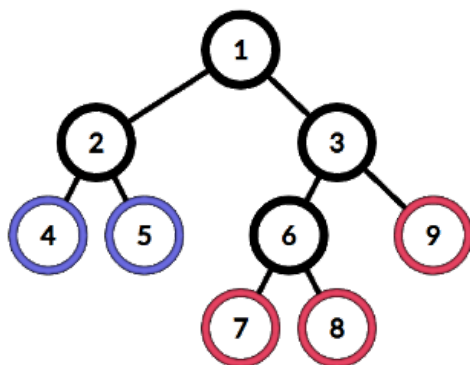
No tag edit access

→ Contest materials

Tutorial

**Note**

Here is the graph for the first example:



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