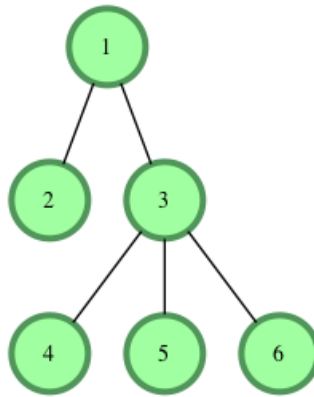A pair of nodes, (a, b), is a *similar pair* if the following conditions are true:

1. node a is the ancestor of node b

2. $abs(a - b) \le k$

Given a tree where each node is labeled from 1 to n, find the number of similar pairs in the tree.

For example, given the following tree:

We have the following pairs of ancestors and dependents:

```
Pair    abs(a-b)       Pair    abs(a-b)
1,2     1              3,4     1
1,3     2              3,5     2
1,4     3              3,6     3
1,5     4
1,6     5
```

If $k = 3$ for example, we have 6 pairs that are *similar*, where $abs(a - b) \le k$.

Input Format

The first line contains two space-separated integers n and k, the number of nodes and the similarity threshold.
Each of the next $n - 1$ lines contains two space-separated integers defining an edge connecting nodes $p[i]$ and $c[i]$, where node $p[i]$ is the parent to node $c[i]$.

Constraints

- $1 \le n \le 10^5$

- $0 \le k \le n$

- $1 \le p[i], c[i] \le n$

Output Format

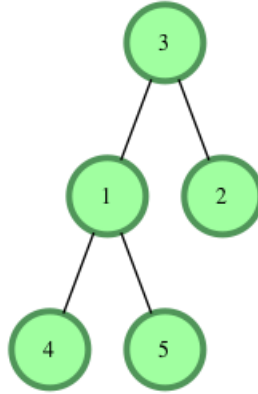Print a single integer denoting the number of similar pairs in the tree.

Sample Input

```
5 2
3 2
3 1
1 4
1 5
```

Sample Output

```
4
```

Explanation

The similar pairs are $(3, 2)$, $(3, 1)$, $(3, 4)$, and $(3, 5)$, so we print 4 as our answer.

Observe that $(1, 4)$ and $(1, 5)$ are *not* similar pairs because they do not satisfy $abs(a - b) \le k$.