

Redemption

time limit per test: 1 second (3 seconds for Python)
memory limit per test: 250 megabytes
input: standard input
output: standard output
points: 100 · problem code: redemption

The MAPS team has been working hard to create problems for the MAPS Beginner Competition.

Currently, there are n team members working on problem creation. In the final team meeting before the competition, which starts at time 1 and ends at time m , each member i is assigned a time interval $[l_i, r_i]$, during which they present their problems to Indra (a.k.a. the big boss). Here, l_i and r_i are natural numbers.

Unfortunately, Parsa has forgotten the exact time slot in which he was supposed to present his problems. However, he noticed an important rule in the meeting handbook: for every pair of team members, there must be at least one point during the meeting where both are presenting simultaneously.

Now, Parsa wonders how many possible time intervals $[l, r]$ he could have had for his presentation while still satisfying this rule - meaning that for every other team member, there exists at least one time point t within $[l, r]$ where they are also presenting.

Note that:

1. Intervals can be 0-length ($[1, 1]$ is a valid interval).
2. Two intervals overlap, even if their intersection is a singular point in time ($[1, 2]$ and $[2, 3]$ overlap).

Input

The first line of input contains n and m : the number of team members including Parsa and how long the meeting lasted. The next $n - 1$ lines each contain two integers l_i, r_i which are the intervals the i th person is presenting.

Output

Print the number of ways Parsa can choose an interval which holds the rule.

Constraints

- $2 \leq n \leq 200000$
- $1 \leq m \leq 200000$
- $1 \leq l_i \leq r_i \leq m$

Example 1

Input

```
2 4
3 4
```

Output

```
7
```

Explanation

The other member presents on $[3, 4]$. There are 10 intervals inside $[1, 4]$, and the three that miss $[3, 4]$ are $[1, 1]$, $[1, 2]$, and $[2, 2]$. The remaining 7 all overlap $[3, 4]$.

Example 2

Input

```
2 2
1 1
```

Output

```
2
```

Explanation

Parsa must overlap $[1, 1]$. The valid choices are $[1, 1]$ and $[1, 2]$. The interval $[2, 2]$ does not overlap $[1, 1]$.