J. Suhoor

time limit per test: 2 seconds
memory limit per test: 256 megabytes

Noor is going to invite his friends to Suhoor in his house.

Initially, Noor has an infinite number of tables with infinite seats.

Several friends can sit at the same table if they know each other.

All of Noor's friends are numbered from 1 to $5 \cdot 10^5$. In this problem, you are going to have n relationships.

For each relationship, there will be x and y where x and y are the numbers that are assigned for two friends.

This relationship means that both of those friends know each other.

There are three rules for distributing friends:

1. If x and y know each other and there are no related tables for both of them, then they sit at a new table.
2. If x and y know each other and there is a related table for x and no related table for y, then x and y join the table that is related to x and y become a friend to all the friends that sit on this table. (and vice versa).
3. If x and y know each other and there is a related table for x and a related table for y, then both of those tables will be merged and Noor's friends on both tables become friends.

Now Noor wants to know the number of tables that contain at least two friends.

Input

The first line contains an integer n - $(1 \le n \le 5 \cdot 10^5)$ - the number of relationships.

For each n line, there will be two space-separated integers x and y - $(1 \le x, y \le 5 \cdot 10^5)$ - where x and y are two friends who know each other.

Note that x can be equal to y.

Output

The number of tables that contain at least two friends.

Examples

input Copy

```
6
1 2
3 4
9 10
1 4
2 5
8 9
```

output Copy

```
2
```

input Copy

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

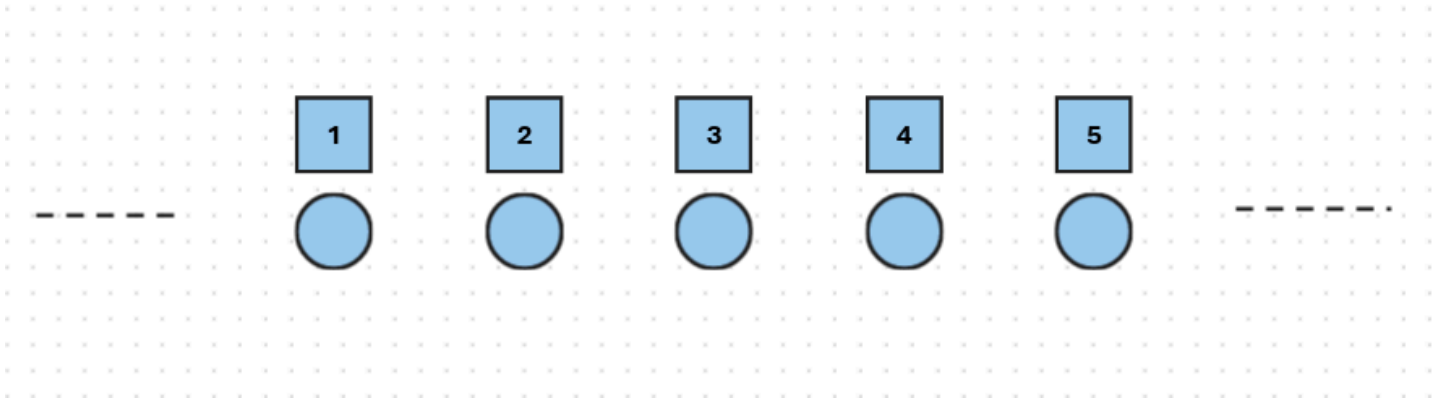
output Copy

```
3
```

Note

In the first test, there are 6 relationships.

Initially, each friend sits at a table alone.



ACPC DU - Ramadan Challenges
Private
Participant

→ Group Contests
- Ramadan Marathon

Ramadan Marathon
Finished
Practice

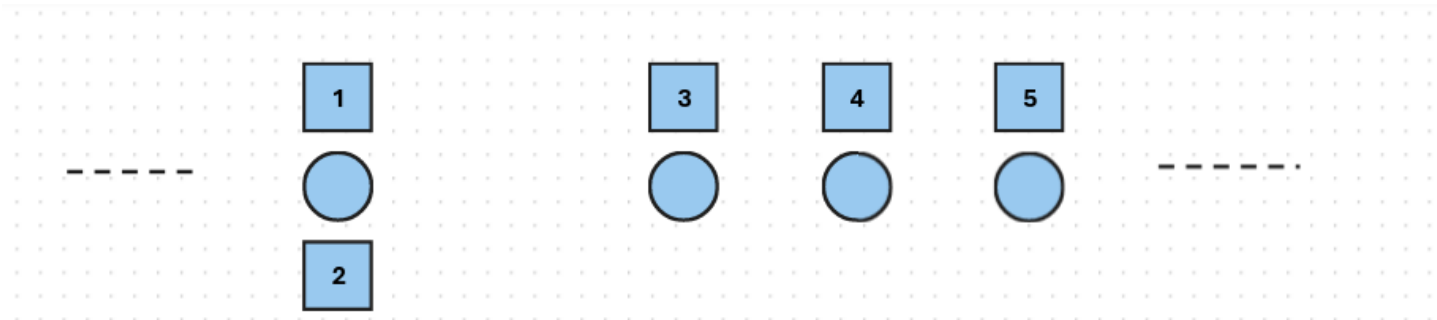
→ Virtual participation
Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to 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

→ Submit?
Language: GNU G++20 13.2 (64 bit, win
Choose file: Choose File No file chosen
Submit

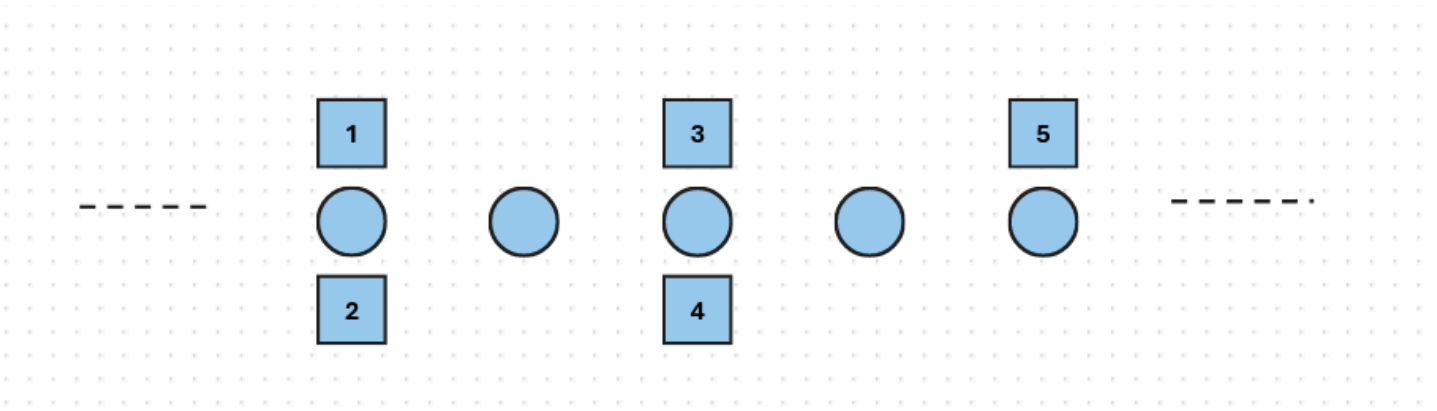
→ Last submissions

Submission	Time	Verdict
303994909	Feb/02/2025 04:05	Accepted

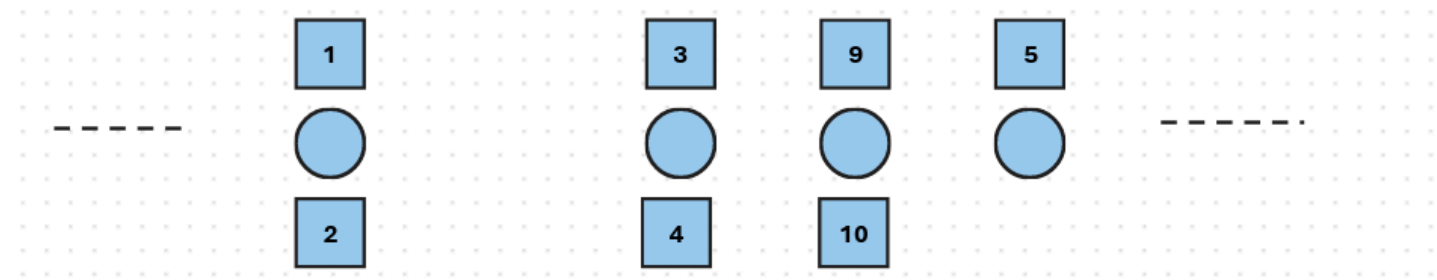
in the first relationship, 1 knows 2 then the following happens according to rule 1



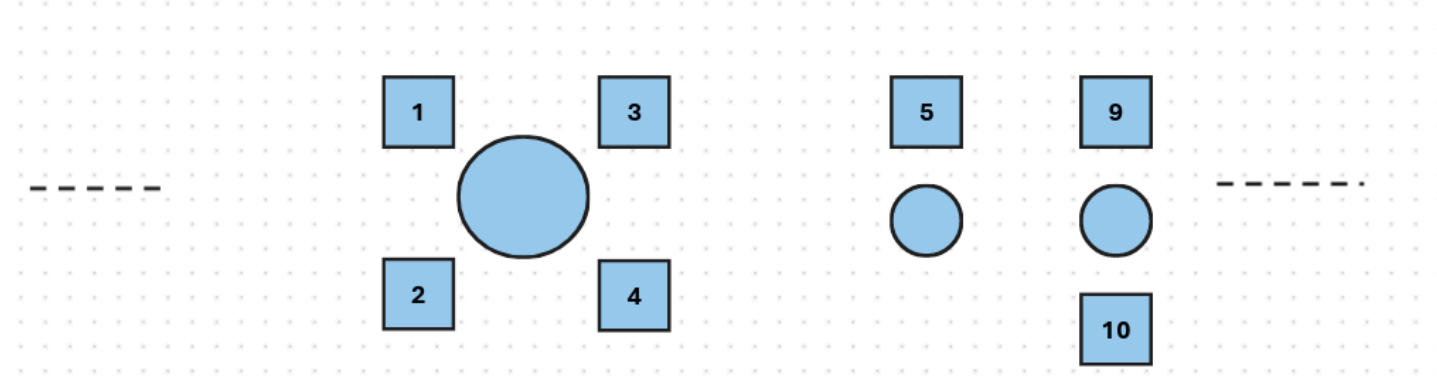
in the second relationship, 3 knows 4 then the following happens according to rule 1



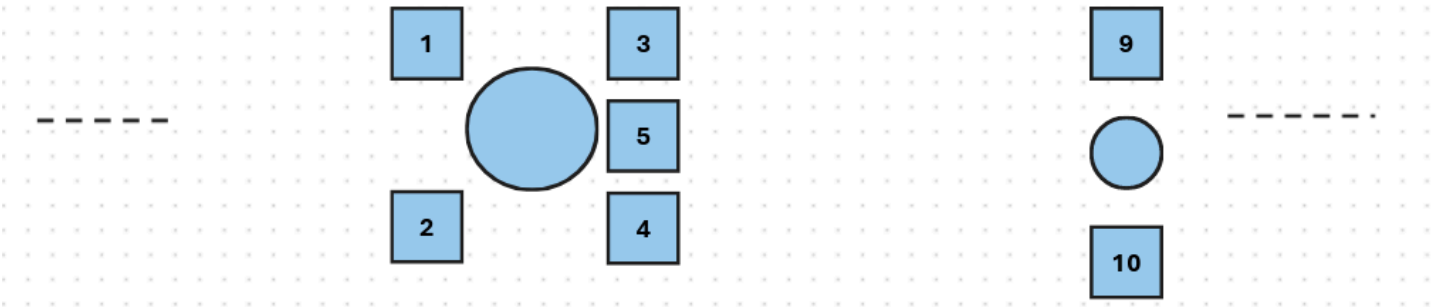
in the third relationship, 9 knows 10 then the following happens according to rule 1



in the fourth relationship, 1 knows 4 then the following happens according to rule 3



in the fifth relationship, 2 knows 5 then the following happens according to rule 2



in the sixth relationship, 8 knows 9 then the following happens according to rule 2