

## Persian Party (mehmoonicon)


William is a regular participant at Iranian parties. In Persian, a party is called **mehmoonicon** and is quite different from normal parties: it is usually thrown in a private house, where the host (the owner of the house) will invite  $N$  guests and try to stuff them with *tahdig* and *kabab*. It's no wonder some people say that "a mehmoonicon is the fastest way to end up in a hospital or gain 10 kg".



Figure 1: A typical Mehmoonicon.

What makes a mehmoonicon different than other parties, though, is a custom that is typical of the (overly polite?) Iranian culture: every time some new guest arrives at the party, he or she will go to shake hands and say *salam* ("hello") to the host and to **every other guest who is present at that time**, one by one. The same goes for when a guest leaves the party: they will again go shake hands and say *khodahafez* ("goodbye") to the host and to every guest present at that time. Note that the guests who are present at those two different moments could be different.

Even though William is not Iranian, he respects the tradition and always obeys the hand shaking rule. However, he is wondering just **how many handshakes** will be exchanged in a mehmoonicon, assuming to be able to know exactly when each guest will *arrive* to the party and when they will *leave* it.

 Among the attachments of this task you may find a template file `mehmoonicon.*` with a sample incomplete implementation.

## Input

The first line contains an integer  $N$ , the number of guests invited to the mehmoonicon. The next  $N$  lines contain two integers each:  $A_i$  and  $D_i$ , respectively the *arrival* and *departure* time of the  $i$ -th guest. The time is measured in seconds elapsed since the start of the mehmoonicon.

## Output





You need to write a single line with an integer: the total number of handshakes that will happen.

## Constraints

- $1 \leq N \leq 200\,000$ .
- $1 \leq A_i < D_i \leq 10^9$  for each  $i = 0 \dots N - 1$ .
- No two guests will arrive or leave at the same exact moment: the door is not large enough!
- For the same reason, if some guest is arriving at time  $t$  then no guest can leave exactly at time  $t$ .

## Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

- **Subtask 1** (0 points)      Examples.  

- **Subtask 2** (30 points)       $N \leq 100$ .  

- **Subtask 3** (50 points)       $N \leq 1000$ .  

- **Subtask 4** (20 points)      No additional limitations.  


## Examples

| input                         | output |
|-------------------------------|--------|
| 4<br>6 8<br>2 4<br>1 5<br>3 7 | 16     |
| 4<br>7 8<br>3 4<br>5 6<br>1 2 | 8      |

## Explanation

In the **first sample case** we can take the first guest as an example: the guest is one of the last people to arrive ( $t = 6$ ) and at that time some of the other guests already left so there are just 2 people to shake hands with: one guest and the host of the party. That guest is also the last person to leave: at that time there is just the host to shake hands with.

In the **second sample case** the mehmooni is especially boring: there is always at most 1 guest in the house at any moment, thus they only shake hands with the host (twice, while arriving and while departing).