

## Problem G. Gate 21

Input file: *standard input*  
 Output file: *standard output*  
 Time limit: 2 seconds  
 Memory limit: 512 mebibytes

You are participating in a ski race. It's rumored that an autograph of Serj Tankian is the grand prize.

Every racer must pass through  $n$  gates numbered from 1 to  $n$ . The  $i$ -th gate consists of several equivalent checkpoints, which can be considered as points on a plane having coordinates  $(i, j)$  for all integers  $j$  between  $l_i$  and  $r_i$ , inclusive. It's required to pass through exactly one checkpoint at every gate in increasing order of gate numbers.

Unfortunately, you are very bad at turning on skis. Thus, you would like to prepare a route for yourself which is a straight line passing through a single checkpoint at every gate. How many route options do you have?

### Input

The first line of the input contains a single integer  $n$  ( $2 \leq n \leq 2 \cdot 10^5$ ).

Each of the next  $n$  lines contains two integers  $l_i$  and  $r_i$  ( $1 \leq l_i \leq r_i \leq 10^9$ ).

### Output

Output a single integer — the number of valid straight routes you can take.

### Example

standard input	standard output
3 1 3 2 3 1 5	6

### Note

In the example test case, all possible routes are:

- $(1, 1) \rightarrow (2, 2) \rightarrow (3, 3)$ ;
- $(1, 2) \rightarrow (2, 2) \rightarrow (3, 2)$ ;
- $(1, 3) \rightarrow (2, 3) \rightarrow (3, 3)$ ;
- $(1, 2) \rightarrow (2, 3) \rightarrow (3, 4)$ ;
- $(1, 3) \rightarrow (2, 2) \rightarrow (3, 1)$ ;
- $(1, 1) \rightarrow (2, 3) \rightarrow (3, 5)$ .