Demonetisation again

Input file:	**standard input**
Output file:	**standard output**
Time limit:	1 second
Memory limit:	256 megabytes

You are Manager of a Felicity bank.Due to Demonetisation you are expecting a huge crowd. But you want to serve your customer better so you have decided to minimize response time of each customer.

Different kinds of people take different amounts of time at the counter. Also once a customer is at the counter no other can replace him till his transaction is complete. You know its busy day so you don't want the counter to be free for a second. So you always keep transacting.

Lets say you have three customer today and the arrived at time 3,5,9 and completed their transaction at 9,8,11 respectively then mean response time for today is $\frac{(9-3)+(8-5)+(11-9)}{3}$.

your task is minimum mean response time and print the integer part of the minimum mean response time.

Input

The first line contains an integer N, which is the number of customers.
In the next N lines, the ith line contains two space separated numbers Ti and Li. Ti is the time when ith customer arrives, and Li is the time required for his transaction to complete.

$1 \leq N \leq 10^5$
$0 \leq Ti \leq 10^9$
$1 \leq Li \leq 10^9$

Output

Display the integer part of the minimum mean response time.

Example

standard input	standard output
3 0 3 1 9 2 5	8

Note

Note: You don't know before hand which customer will arrive today but once he arrives you know the time he will take.