Dominoes

Time limit: 0.6s **Memory limit:** 64M

Farmer John's son, Johnny is playing with some dominoes one afternoon.
His dominoes come in a variety of heights and colors.

Just like any other child, he likes to put them in a row and knock them over.
He wants to know something: how many pushes does it take to knock down all the dominoes?
Johnny is lazy, so he wants to minimize the number of pushes he takes.
A domino, once knocked over, will knock over any domino that it touches on the way down.

For the sake of simplicity, imagine the floor as a one-dimensional line, where 1 is the leftmost point. Dominoes will not slip along the floor once toppled. Also, dominoes do have some width: a domino of length 1 at position 1 can knock over a domino at position 2.

For the mathematically minded:
A domino at position x with height h, once pushed to the right, will knock all dominoes at positions $x+1, x+2, \ldots, x+h$ rightward as well.
Conversely, the same domino pushed to the left will knock all dominoes at positions $x-1, x-2, \ldots, x-h$ leftward.

Input Specification

The input starts with a single integer $N \leq 100\,000$, the number of dominoes, followed by N pairs of integers.
Each pair of integers represents the location and height of a domino.
$(1 \leq \text{location} \leq 1\,000\,000\,000, 1 \leq \text{height} \leq 1\,000\,000\,000)$
No two dominoes will be in the same location.

NOTE: 60% of test data has $N \leq 5\,000$.

Output Specification

One line, with the number of pushes required.

Sample Input

```
6
1 1
2 2
3 1
5 1
6 1
8 3
```

Sample Output

```
2
```

Push the domino at location 1 rightward, the domino at location 8 leftward.

Diagram

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

Pushing 1 causes 2 and 3 to fall, while pushing 8 causes 6 to fall and gently makes 5 tip over as well.