



USACO 2014 DECEMBER CONTEST, BRONZE PROBLEM 3. COW JOG

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Contest has ended.

Analysis mode

English (en) ▼

Problem 3: Cow Jog [Mark Gordon, 2014]

The cows are out exercising their hooves again! There are N cows jogging on an infinitely-long single-lane track ($1 \leq N \leq 100,000$). Each cow starts at a distinct position on the track, and some cows jog at different speeds.

With only one lane in the track, cows cannot pass each other. When a faster cow catches up to another cow, she has to slow down to avoid running into the other cow, becoming part of the same running group.

Eventually, no more cows will run into each other. Farmer John wonders how many groups will be left when this happens. Please help him compute this number.

INPUT: (file cowjog.in)

The first line of input contains the integer N .

The following N lines each contain the initial position and speed of a single cow. Position is a nonnegative integer and speed is a positive integer; both numbers are at most 1 billion. All cows start at distinct positions, and these will be given in increasing order in the input.

SAMPLE INPUT:

```
5
0 1
1 2
2 3
3 2
6 1
```

OUTPUT: (file cowjog.out)

A single integer indicating how many groups remain.

SAMPLE OUTPUT:

```
2
```

Language:

C ▼

Source File:

 No file chosen

Note: Many issues (e.g., uninitialized variables, out-of-bounds memory access) can cause a program to produce different output when run multiple times; if your program behaves in a manner inconsistent with the official contest results, you should probably look for one of these issues. Timing can also differ slightly from run to run, so it is possible for a program timing out in the official results to occasionally run just under the time limit in analysis mode, and vice versa. Note also that we have recently changed grading servers, and since our new servers run at different speeds from the servers used during older contests, timing results for older contest problems may be slightly off until we manage to re-calibrate everything properly.

