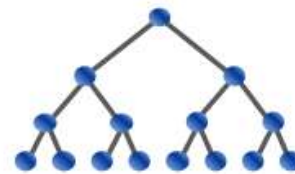# USA Computing Olympiad

OVERVIEW   TRAINING   CONTESTS   HISTORY   STAFF   RESOURCES

USACO 2017 FEBRUARY CONTEST, BRONZE
PROBLEM 3. WHY DID THE COW CROSS THE ROAD III

Return to Problem List

Contest has ended.

Submitted; Results below show the outcome for each judge test case

	*		*		*		*		*		*		*		*		*		*
1	31.8mb 403ms	2	32.5mb 386ms	3	32.4mb 425ms	4	33.0mb 407ms	5	33.1mb 407ms	6	35.5mb 417ms	7	31.9mb 402ms	8	33.7mb 407ms	9	31.6mb 422ms	10	31.6mb 416ms

English (en)

Farmer John, in his old age, has unfortunately become increasingly grumpy and paranoid. Forgetting the extent to which bovine diversity helped his farm truly flourish over the years, he has recently decided to build a huge fence around the farm, discouraging cows from neighboring farms from visiting, and completely prohibiting entry from a handful of neighboring farms. The cows are quite upset by this state of affairs, not only since they can no longer visit with their friends, but since it has caused them to cancel participation in the International Milking Olympiad, an event to which they look forward all year.

Neighboring cows that still have the ability to enter Farmer John's property find the process has become more arduous, as they can enter only through a single gate where each cow is subject to intense questioning, often causing the cows to queue up in a long line.

For each of the N cows visiting the farm, you are told the time she arrives at the gate and the duration of time required for her to answer her entry questions. Only one cow can be undergoing questioning at any given time, so if many cows arrive near the same time, they will likely need to wait in line to be processed one by one. For example, if a cow arrives at time 5 and answers questions for 7 units of time, another cow arriving at time 8 would need to wait until time 12 to start answering questions herself.

Please determine the earliest possible time by which all cows are able to enter the farm.

INPUT FORMAT (file cowqueue.in):

The first line of input contains N, a positive integer at most 100. Each of the next N lines describes one cow, giving the time it arrives and the time it requires for questioning; each of these numbers are positive integers at most 1,000,000.

OUTPUT FORMAT (file cowqueue.out):

Please determine the minimum possible time at which all the cows could have completed processing.

SAMPLE INPUT:

```
3
2 1
8 3
5 7
```

SAMPLE OUTPUT:

```
15
```

Here, first cow arrives at time 2 and is quickly processed. The gate remains briefly idle until the third cow arrives at time 5, and begins processing. The second cow then arrives at time 8 and waits until time 5+7=12 to start answering questions, finishing at time 12+3 = 15.

Problem credits: Brian Dean

Language: C

Source File: Choose File No file chosen

Submit Solution

Note: Many issues (e.g. uninitialized variables, out-of-bounds memory access) can cause a program to product different output when

Note: Many issues (e.g., uninitialized variables, out of bounds memory access) can cause a program to product 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.