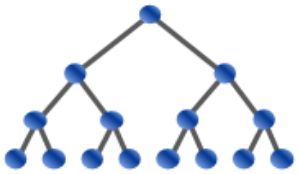
USA Computing Olympiad



USACO 2016 January Contest, Bronze
Problem 1. Promotion Counting

Return to Problem List

Contest has ended.

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

1	2	3	4	5	6	7	8	9	10
*	*	*	*	*	*	*	*	*	*
32.4mb 162ms	32.1mb 178ms	32.3mb 165ms	32.1mb 178ms	32.1mb 165ms	32.1mb 171ms	32.1mb 175ms	32.1mb 160ms	32.1mb 184ms	32.2mb 176ms

English (en)

Bessie the cow is helping Farmer John run the USA Cow Olympiad (USACO), an on-line contest where participants answer challenging questions to demonstrate their mastery of bovine trivia.

In response to a wider range of participant backgrounds, Farmer John recently expanded the contest to include four divisions of difficulty: bronze, silver, gold, and platinum. All new participants start in the bronze division, and any time they score perfectly on a contest they are promoted to the next-higher division. It is even possible for a participant to be promoted several times within the same contest. Farmer John keeps track of a list of all contest participants and their current divisions, so that he can start everyone out at the right level any time he holds a contest.

When publishing the results from his most recent contest, Farmer John wants to include information on the number of participants who were promoted from bronze to silver, from silver to gold, and from gold to platinum. However, he neglected to count promotions as they occurred during the contest. Bessie, being the clever bovine she is, realizes however that Farmer John can deduce the number of promotions that occurred solely from the number of participants at each level before and after the contest. Please help her perform this computation!

INPUT FORMAT (file promote.in):

Input consists of four lines, each containing two integers in the range 0..1,000,000. The first line specifies the number of bronze participants registered before and after the contest. The second line specifies the number of silver participants before and after the contest. The third line specifies the number of gold participants before and after the contest. The last line specifies the number of platinum participants before and after the contest.

OUTPUT FORMAT (file promote.out):

Please output three lines, each containing a single integer. The first line should contain the number of participants who were promoted from bronze to silver. The second line should contain the number of participants who were promoted from silver to gold. The last line should contain the number of participants who were promoted from gold to platinum.

SAMPLE INPUT:

```
1 2
1 1
1 1
1 2
```

SAMPLE OUTPUT:

```
1
1
1
```

In this example, 1 participant was registered in each division prior to the contest. At the end of the contest, 2 participants were registered in bronze and platinum. One way this could have happened is that 2 new participants joined during the contest; one was promoted all the way to platinum, and the other stayed in bronze.

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 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.