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Practice Problem PA

Suspicious Event

Before you graduate from your beloved university, you managed to secure an internship at a security company. Your first task is to analyze a login/logout sequence.

You are given a sequence of integers A that represents a record for users login/logout events in chronological order. Each user is represented by a unique integer. A positive integer x indicates a login event while a negative integer $-x$ indicates a logout event by user $|x|$. You are guaranteed that there are no two events that are the same in A.

Once in a while, you might find from the record, a user who logs out even though that user has never been logged in previously. This can be due to a bug in the system or a hacking attempt. Nevertheless, it's suspicious!

For example, let $A_{1..8} = (8, 3, -8, -6, 7, -3, -1, 6)$. There are 8 events from 5 distinct users (the users are $1, 3, 6, 7,$ and 8). The events are as follows.

- $A_1 = 8 \rightarrow$ user 8 log in.

- $A_2 = 3 \rightarrow$ user 3 log in.

- $A_3 = -8 \rightarrow$ user 8 log out.

- $A_4 = -6 \rightarrow$ user 6 log out – suspicious event! (user 6 has not logged in)

- $A_5 = 7 \rightarrow$ user 7 log in.

- $A_6 = -3 \rightarrow$ user 3 log out.

- $A_7 = -1 \rightarrow$ user 1 log out – suspicious event! (user 1 has not logged in)

- $A_8 = 6 \rightarrow$ user 6 log in.

In total, there are 2 suspicious logout events, i.e. $A_4 = -6$ and $A_7 = -1$. Note that although user 6 logs in at A_8, he has not logged in when he logs out at A_4.

Your task in this problem is to count how many logout suspicious events are there given the login/logout record.

Input

Input begins with a line containing an integer N ($1 \le N \le 1000$) representing the number of events in the given record. The next line contains N integers A_i ($-1000 \le A_i \le 1000$; $A_i \ne 0$) each representing an event in chronological order. It is guaranteed that all integers in A are distinct.

Output

Output contains an integer in a line representing the number of suspicious logout events.

Sample Input #1

```
8
8 3 -8 -6 7 -3 -1 6
```

Sample Output #1

```
2
```

Explanation for the sample input/output #1

This is the example from the problem description.

Sample Input #2

```
4
17 -17 12 -12
```

Sample Output #2

```
0
```

Sample Input #3

```
4
-317 -1 -20 -300
```

Sample Output #3

```
4
```

Sample Input #4

```
4
27 108 36 9
```

Sample Output #4

```
0
```

Sample Input #5

```
4
-100 -200 200 100
```

Sample Output #5

```
2
```