

## Problem A

# 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  $N$  ( $1 \leq N \leq 1000$ ) representing the number of events in the given record. The next line contains  $N$  integers  $A_i$  ( $-1000 \leq A_i \leq 1000$ ;  $A_i \neq 0$ ) 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
```