

## Task 1

# Go stones



## Task


You place white and black go stones on a table. You place the first stone on the left of the table. Then, you place the second stone in the second place from the left. You repeat it  $n$  times, and, finally, you place  $n$  stones in a line. When you place the  $i$ -th stone, you replace the stones on the table by the following rule:

- When  $i$  is odd: You do not replace the stones on the table. You put the  $i$ -th stone in the  $i$ -th place from the left.
- When  $i$  is even: If the  $i$ -th stone and the rightmost stone on the table have the same color, you do not replace the stones on the table, and put the  $i$ -th stone in the  $i$ -th place from the left. Otherwise, i.e. if the  $i$ -th stone and the rightmost stone on the table have different colors, you remove all consecutive stones of the same color on the right, replace them by stones of the same color as the  $i$ -th stone, and place the  $i$ -th stone in the rightmost place on the table.





For example, suppose the stones on the table are



after placing 7 stones. (Here  denotes a white stone, and  denotes a black stone.)

- If the 8-th stone is white (  ), since its color and the color of the rightmost stone are the same, you put it on the table. Therefore, the stones on the table become as follows:



- If the 8-th stone is black (  ), since its color and the color of the rightmost stone (  ) are different, you remove 3 consecutive white stones (  ) on the right, and replace them by black stones (  ). Then, you put the 8-th stone on the rightmost place on the table. Therefore, the stones on the table become as follows:



Write a program which, when the order of stones you place is given, calculates the number of white stones on the table after you place  $n$  stones.

## Input

The input file is named `input.txt`.

The first line contains a positive integer  $n$  ( $1 \leq n \leq 100000$ ). The  $(i+1)$ -st line ( $1 \leq i \leq n$ ) contains  $c_i$ , which denotes the color of the  $i$ -th stone; if  $c_i$  is equal to 0, the color of the  $i$ -th stone is white; if  $c_i$  is equal to 1, the color of the  $i$ -th stone is black.

Among the data used for evaluation, 50% of the mark is given for test cases satisfying  $n \leq 10000$ .

## Output

The output file is named `output.txt`.

The file should consist of one line, and the line should contain only the number of white stones on the table after you place  $n$  stones.

## Sample inputs and outputs

### Example 1

`input.txt`

```
8
1
0
1
1
0
0
0
0
```

`output.txt`

```
6
```

### Example 2

`input.txt`

```
8
1
0
1
1
0
0
0
0
1
```

`output.txt`

```
2
```