Programming 1 — Homework assignment 5

Deadline: Sunday, December 9, 2018, at 23:55

Visibility

Task description

There are n persons standing in a straight row. The distance between the adjacent persons is 1. Let D_i (for $i = 1, \ldots, n$) be the distance from the i-th person (counted from left to right) to the first strictly taller person on his/her left; if there is no such person, then let $D_i = i$. Write a program that reads the number n and the heights of the individual persons and prints the value of the sum $\sum_{i=1}^{n} D_i$.

Input

The first line contains the integer $n \in [1, 10^6]$. The second line contains n integers from the interval $[1, 10^9]$, which represent the heights of the individual persons.

Following are the properties of the individual test cases:

- J1–J4, S1–S20: $n \in [1, 1000]$; for each $i \in \{1, \ldots, n\}$, we have $D_i \leqslant 2$.

- J5–J8, S21–S40: $n \in [1, 1000]$.

Output

Print the result of the expression $D_1 + D_2 + \ldots + D_n$.

Test case J5

Input:

```
10
7 5 3 10 6 4 8 5 8 3
```

Output:

```
19
```

Here, we have $D_1 = 1$, $D_2 = 1$, $D_3 = 1$, $D_4 = 4$, $D_5 = 1$, $D_6 = 1$, $D_7 = 3$, $D_8 = 1$, $D_9 = 5$, and $D_{10} = 1$.

Reaching $> 80\%$

Suppose that the person under consideration is at least as tall as his/her left neighbor. Can we afford to "forget" about the left neighbor and stop keeping the data about him/her? Under what circumstances can we forget about *his/her* left neighbor as well? When should the chain of forgetting stop?

Submission

Submit your program as a single file named `DN05_vvvvvvvv.java`, where *vvvvvvvv* represents your student ID number.