Delivery Time (delivery)

Marco has decided that time has come to buy a new laptop. As in 2020 nobody is able to go to a physical store to make the purchase, the manufacturer's website is the only alternative. As everyone knows, though, when you buy something online you can never be certain about *when* it will be delivered: delivery times vary in rapid and unpredictable ways.

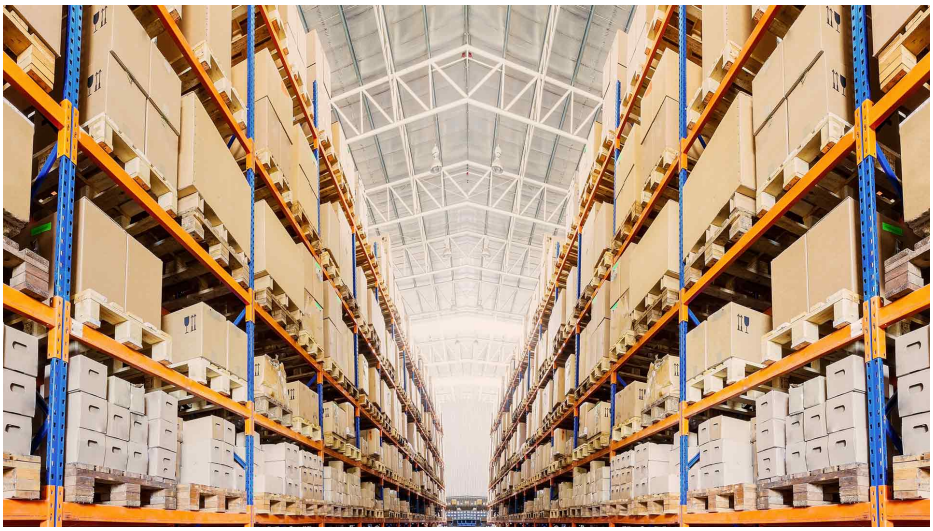

Figure 1: The warehouse containing lots of packages: unsurprisingly, deliveries from here take time.

After buying the laptop at day 0 with an expected delivery time of $T[0]$ days from that moment, Marco monitored the website for the next $N-1$ days (counted from 1 to $N-1$), writing down the delivery time $T[i]$ for laptops bought on that day (the i-th).

When looking at all this data, Marco thought that he could have (ab)used the free cancellation policy of the website to cancel an order and buy the laptop again, if the delivery time was more favorable on a certain day. If Marco could travel back in time and every morning cancel and reissue the purchase if the delivery time was more favorable (i.e., the delivery would happen at least one day earlier), how many times would have he reissued the purchase and when would the delivery occur (measured in days since the first purchase on day 0)?

☞ Among the attachments of this task you may find a template file `delivery.*` with a sample incomplete implementation.

Input

The first line contains the only integer N. The second line contains N integers T_i.

Output

You need to write a single line with two integers: respectively, the day of the delivery (measured since day 0) and how many re-orders Marco would have done (excluding the initial order).

Constraints

- $1 \leq N \leq 10\,000$.
- $1 \leq T_i \leq 100\,000$ for each $i = 0 \ldots N-1$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points) Examples.

– **Subtask 2** (10 points) $N = 2$.

– **Subtask 3** (40 points) $N \leq 100$.

– **Subtask 4** (50 points) No additional limitations.

Examples

input	output
2 7 4	5 1
5 20 19 17 15 25	18 2

Explanation

In the **first sample case** Marco buys the laptop and expects the delivery in 7 days (as $T[0] = 7$). The following day he cancels his order and reissues it to receive the laptop 4 days after (or equivalently, 5 days since the initial purchase). Overall, he cancelled and reissued the order only once.

In the **second sample case** Marco buys the laptop and expects the delivery in 20 days (as $T[0] = 20$). Two days after, he cancels his order and reissues it to receive the laptop 17 days after that moment (or equivalently, 19 days since the initial purchase). The next day, he cancels again his order and reissues it to receive the laptop 15 days after that moment (or equivalently, 18 days since the initial purchase). Overall, he cancelled and reissued the order twice.