

PREFMAX

Given an array A

, find the number of indices i such that A_i is greater than all the numbers before it (i.e. $A_i > A_j$ for all $i > j$)

)

Note: Always include $i=0$

in the count, i.e. A_0

is considered to be greater than all numbers occurring before it.

Chef wanted to solve the above problem, and wrote the following [code](#).

However the above code took too long to execute. Explain why by computing the worst case run time complexity of the above code. It can be shown that the worst case run time complexity is $\Theta(na)$

where a is an integer. Find a

.

Also write a more efficient program whose worst case time complexity is $\Theta(n)$

.

Input

First line contains a single integer n

, the number of elements in the array A

The next n

lines contain a single integer each, denoting the elements of the array A

.

Output

Print two lines, In the first line print an integer a

where the worst case time complexity of the code written by Chef is $\Theta(na)$

In the second line print a single integer, the number of indices i

such that A_i

is greater than all the numbers occurring before it.

Constraints

$1 \leq n \leq 10^5$

$1 \leq A_i \leq 10^9$

Sample Input

3
2
3
1

Sample Output

*
2

Explanation

The output in the first line is not correct. In order to not give away the answer '*' is printed to show the output format, this is just a placeholder, you should output an integer, denoting the answer in it's place.

The given array is {2, 3, 1}. The valid indices are $i=0,1$

since $3>2$ and as mentioned in the question $i=0$

is always included.

So the answer is 2 and is printed in the second line.