

Longest Increasing Subsequence

time limit per test: 2 seconds (5 seconds for Python)

memory limit per test: 976.6 megabytes

input: standard input

output: standard output

points: 100 · problem code: longestsubsequence · author: inj

Given an array of integer numbers $x_1, x_2, \dots, x_n$, what is the length of the longest (strictly) increasing subsequence? [Subsequence](#).

(Yes i'm lazy i wrote this problem statement 11.46 last night.)

Input

The first line contains an integer n . The second line contains n integers, the values of the array.

Output

The length of the longest strictly increasing subsequence.

(If you've solved this problem before, try with a Segment Tree. I think its pretty intuitive :)

Constraints

- $1 \leq n \leq 10^5$
- $-10^9 \leq x_i \leq 10^9$

Example 1

Input

```
5
-2 0 10 -10 -7
```

Output

```
3
```

Example 2

Input

```
10
-3 3 -2 0 3 4 9 3 -2 7
```

Output

```
6
```