Problem G. Increasing Subsequence

Time Limit 1000 ms
Mem Limit 524288 kB

You are given an array containing n integers. Your task is to determine the longest increasing subsequence in the array, i.e., the longest subsequence where every element is larger than the previous one.

A subsequence is a sequence that can be derived from the array by deleting some elements without changing the order of the remaining elements.

Input

The first line contains an integer n: the size of the array.

After this there are n integers $x_1, x_2, \ldots, x_n$: the contents of the array.

Output

Print the length of the longest increasing subsequence.

Constraints

- $1 \leq n \leq 2 \cdot 10^5$
- $1 \leq x_i \leq 10^9$

Example

Input	Output
8 7 3 5 3 6 2 9 8	4