Longest Increasing Interval (LII)

Description

An interval is an increasing interval if and only if every element (except for the first one) is larger than its previous element.

For example {2, 3, 5, 7 9} is an increasing interval, but {2, 4, 3 5, 8} is not.

Now, you are given a list of nonnegative integers. You are to find an interval of the list such that:

1. The interval is an increasing interval; and
2. The length of the interval is maximum.

Such an interval is called a longest increasing interval (LII) of the list.

Input

The first line contains an integer N (N<=100000), which is the number of elements in the list. The second line contains N integers, which are elements of the list.

Output

Output the length of the LII of the list.

Sample Input

8

2 1 2 4 6 5 3 8

Sample Output

4

Explanation: interval [2, 5] = {1, 2, 4, 6} is the LII.

Note:

1. If your algorithm is $O(N^3)$, you can get maximum 70% marks (N<=100).
2. If your algorithm is $O(N^2)$, you can get maximum 90% marks (N<=3000).
3. If your algorithm is $O(N)$ or $O(NlogN)$, you can get maximum 100% marks.