

# Longest Ordered Subsequence

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Source: <http://acm.tju.edu.cn/toj/showp1765.html>

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A numeric sequence of  $a_i$  is ordered if  $a_1 < a_2 < \dots < a_N$ . Let the subsequence of the given numeric sequence  $(a_1, a_2, \dots, a_N)$  be any sequence  $(a_{i_1}, a_{i_2}, \dots, a_{i_K})$ , where  $1 \leq i_1 < i_2 < \dots < i_K \leq N$ . For example, sequence (1, 7, 3, 5, 9, 4, 8) has ordered subsequences, e. g., (1, 7), (3, 4, 8) and many others. All longest ordered subsequences are of length 4, e. g., (1, 3, 5, 8).

Your program, when given the numeric sequence, must find the length of its longest ordered subsequence.

## Input

The first line of input file contains the number of test cases. For each test case, the first line gives the length  $N$  of the sequence. The second line contains the elements of the sequence -  $N$  integers in the range from 0 to 1000000 each, separated by spaces.  $1 \leq N \leq 100000$

## Output

The Output file must contain a single integer per line - the length of the longest ordered subsequence of the given sequence.

## Sample Input

```
1
7
1 7 3 5 9 4 8
```

## Sample Output

```
4
```