Longest Increasing Subsequence

Time Limit: 1 Second
Memory Limit: 256 MB

Given an array $a_1, \ldots, a_n$ of n elements, find out the longest increasing subsequence of the array. A subsequence of an array is obtained by deleting zero or more elements from the array. An increasing subsequence is a subsequence such that each element is strictly greater than the previous element in the sequence.

Input

The first line of input contains a single integer n ($1 \leq n \leq 2 \times 10^5$) - number of elements in the array.

The second line contains n integers $a_1, \ldots, a_n$ ($0 \leq a_i \leq 10^5$) - elements of the array.

Output

In the first line, output a single integer denoting the length of the longest increasing subsequence of the array.

In the second line, output the longest increasing subsequence. If there is more than one answer, you can output any of them.

Sample Inputs

```
5
3 2 1 4 5
```

Sample Outputs

```
3
1 4 5
```