Problem B
Beautiful Beach
Time limit: 1 second
Memory limit: 2048 megabytes

Problem Description

Emily enjoys leisure activities at the beach because it's filled with various beautiful seashells. One day, Emily arrived at a beach where there are n seashells lined up in a straight line, with their beauty levels from left to right being a_1, a_2, ..., a_n.

Emily wants to walk from the left to the right of the beach without turning back. Whenever she encounters a seashell, she can decide whether or not to pick it up, but once picked up, she cannot put it back. She aims to pick up the maximum number of seashells, ensuring that each one she picks up is more beautiful than the previous one. Emily is curious about the beauty levels of the seashells she picks up.

Input Format

The first line contains a number n, indicating the number of seashells. Following that are n numbers, representing the beauty levels of each seashell.

Output Format

The first line contains an integer representing the maximum number of seashells Emily will take. Following that, output the beauty levels of the seashells Emily picks up. If there are multiple possible answers, output the one with the largest lexicographical order.

Given two sequences A and B with length n, A is lexicographically larger than B if either:

- $A[0]$ is larger than $B[0]$, or

- $A[0]$ is equal to $B[0]$ and the sequence $A[1 \ldots n-1]$ is lexicographically larger than the sequence $B[1 \ldots n-1]$.

Technical Specification

- $1 \le n \le 10^5$

- $1 \le a_i \le 10^9, \forall i \in [1, n]$

Sample Input 1

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9
6 3 5 2 7 4 3 6 4
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Sample Output 1

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3
3 5 7
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Note

For the sample testcase 1, Emily can pick up at most 3 seashells. Possible combinations include $\{3, 5, 7\}$, $\{2, 4, 6\}$, $\{2, 3, 6\}$, or $\{2, 3, 4\}$ among others. However, the lexicographically largest combination is $\{3, 5, 7\}$.