

Southeastern European Regional Programming Contest
Bucharest, Romania – Vinnytsya, Ukraine
October 21, 2017

Problem K
Escape Room

Input File: K.in
Output File: standard output
Time Limit: *1* second (C/C++)
Memory Limit: *64* megabytes

As you know, escape rooms became very popular since they allow you to play the role of a video game hero. One such room has the following quiz. You know that the locker password is a permutation of **N** numbers. A permutation of length **N** is a sequence of distinct positive integers, whose values are at most **N**. You got the following hint regarding the password - the length of the longest increasing subsequence starting at position **i** equals $\mathbf{A_i}$. Therefore you want to find the password using these values. As there can be several possible permutations you want to find the lexicographically smallest one. Permutation **P** is lexicographically smaller than permutation **Q** if there is an index **i** such that **Pi** < **Qi** and $\mathbf{P_j} = \mathbf{Q_j}$ for all **j < i**. It is guaranteed that there is at least one possible permutation satisfying the above constraints.
Can you open the door?

Input
The first line of the input contains one integer **N** ($1 \le \mathbf{N} \le 10^5$).
The next line contains **N** space-separated integer $\mathbf{A_i}$ ($1 \le \mathbf{A_i} \le$ N).
It's guaranteed that at least one possible permutation exists.

Output
Print in one line the lexicographically smallest permutation that satisfies all the conditions.

Sample input	Sample output
4 1 2 2 1	4 2 1 3
1 1	1