SAC '22 Code Challenge 3 P3 - Bob Sort

Time limit: 1.0s **Memory limit:** 256M
Java: 1.5s
Python: 2.0s

To celebrate the upcoming CCC (Canadian Computing Contest), Max decided to define a new sorting algorithm called *Bob Sort*.

Bob Sort involves $\lfloor \log_{10}(\max(A_i)) + 1 \rfloor$ rounds of sorting.

For the r^{th} round, Bob Sort looks at the r rightmost digits, d_i:

If there are fewer than r digits in element i, the left-aligned missing digits are set to 0.

Then, Bob Sort sorts the elements by their corresponding value (d_i) in non-decreasing order.

Can you Bob Sort the array into increasing order?

Constraints

$1 \leq N \leq 100\,000$

$1 \leq A_i \leq 10^9$

All A_i are distinct.

Input Specification

The first line will contain N, the number of elements in the array.

The next line will contain N space-separated integers, the elements of the array.

Output Specification

Output $\lfloor \log_{10}(\max(A_i)) + 1 \rfloor$ lines, the array after each round of sorting.

Note: Within a round, ties do not need to be broken between elements with the same value, d_i.

Sample Input 1

```
6
2 105 12 1 15 65
```

Sample Output 1

```
1 2 12 105 15 65
1 2 105 12 15 65
1 2 12 15 65 105
```

Sample Input 2

```
1
100
```

Sample Output 2

```
100
100
100
```