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Big Sorting

by  [_mfv_](#)

Problem

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Consider an array of numeric strings, *unsorted*, where each string is a positive number with anywhere from **1** to **10⁶** digits. Sort the array's elements in *non-decreasing* (i.e., ascending) order of their real-world integer values and print each element of the sorted array on a new line.

Input Format

The first line contains an integer, *n*, denoting the number of strings in *unsorted*.
Each of the *n* subsequent lines contains a string of integers describing an element of the array.

Constraints

- $1 \leq n \leq 2 \times 10^5$
- Each string is guaranteed to represent a positive integer without leading zeros.
- The total number of digits across all strings in *unsorted* is between **1** and **10⁶** (inclusive).

Output Format

Print each element of the sorted array on a new line.

Sample Input 0

```
6
31415926535897932384626433832795
1
3
10
3
5
```

Sample Output 0

```
1
3
3
5
10
31415926535897932384626433832795
```

Explanation 0

The initial array of strings is *unsorted* = [31415926535897932384626433832795, 1, 3, 10, 3, 5]. When we order each string by the real-world integer value it represents, we get:

$$1 \leq 3 \leq 3 \leq 5 \leq 10 \leq 31415926535897932384626433832795$$

We then print each value on a new line, from smallest to largest.

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Max Score: 20


Difficulty: Easy



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☆☆☆☆☆

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Current Buffer (saved locally, editable)  

C++ 

```
1 #include <bits/stdc++.h>
2
3 using namespace std;
4
5 bool sort_string(string a, string b) {
6     if (a.length() < b.length()) {
7         return true;
8     } else if (a.length() > b.length()) {
9         return false;
10    }
11    for (int i = 0; i < a.length(); i++) {
12        if (a[i] < b[i]) {
13            return true;
14        } else if (a[i] > b[i]) {
15            return false;
16        }
17    }
18    return false;
19 }
20
21 int main(){
22     int n;
23     cin >> n;
24     vector<string> unsorted(n);
25     for(int unsorted_i = 0; unsorted_i < n; unsorted_i++){
26         cin >> unsorted[unsorted_i];
27     }
28     sort(unsorted.begin(), unsorted.end(), sort_string);
29     for(int unsorted_i = 0; unsorted_i < n; unsorted_i++){
30         cout << unsorted[unsorted_i] << "\n";
31     }
32     // your code goes here
33     return 0;
34 }
35
```

Line: 1 Col: 1

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