

Problem I. Two Subsequences

Time limit 2000 ms

Mem limit 262144 kB

You are given a string s . You need to find two non-empty strings a and b such that the following conditions are satisfied:

1. Strings a and b are both **subsequences** of s .
2. For each index i , character s_i of string s must belong to **exactly one** of strings a or b .
3. String a is *lexicographically* minimum possible; string b may be any possible string.

Given string s , print any valid a and b .

Reminder:

A string a (b) is a *subsequence* of a string s if a (b) can be obtained from s by deletion of several (possibly, zero) elements. For example, "dores", "cf", and "for" are subsequences of "codeforces", while "decor" and "fork" are not.

A string x is *lexicographically smaller* than a string y if and only if one of the following holds:

- x is a prefix of y , but $x \neq y$;
- in the first position where x and y differ, the string x has a letter that appears earlier in the alphabet than the corresponding letter in y .

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \leq t \leq 1000$). Description of the test cases follows.

The first and only line of each test case contains one string s ($2 \leq |s| \leq 100$ where $|s|$ means the length of s). String s consists of lowercase Latin letters.

Output

For each test case, print the strings a and b that satisfy the given conditions. If there are multiple answers, print any.

Sample 1

Input	Output
3 fc aaaa thebrightboiler	c f a aaa b therightboiler

Note

In the first test case, there are only two choices: either $a = \text{f}$ and $b = \text{c}$ or $a = \text{c}$ and $b = \text{f}$. And $a = \text{c}$ is lexicographically smaller than $a = \text{f}$.

In the second test case, a is the only character in the string.

In the third test case, it can be proven that b is the lexicographically smallest subsequence of s . The second string can be of two variants; one of them is given here.