Chemical X

A chemical is represented by a character between 'a' to 'z'. Professor Utonium has a series of chemicals in n buckets. He wants to perform an experiment with the following steps.

Step 1: Choose any two random positions i and j such that 0<=i<=n-1 and 0<=j<=n-1

Step 2: Swap the buckets i and j.

Step 3 (Optional): Go to step1 (This is an optional step. The professor can skip this step)

Step 4: All consecutive buckets containing the same chemical are merged into a single bucket.

Let m be the number of buckets remain after the experiment.

The result of the experiment is a string obtained by writing down the chemicals in each bucket in order from 0 to m-1 inclusive.

The professor is interested in obtaining the smallest string after the experiment. If there are many such strings, find the lexicographically smallest among them.

Input:

The first line consists of an integer t, the number of test cases. For each test case, the first line consists of a string C representing the chemicals in n buckets. ith bucket contains the chemical C[i].

Output:

For each test case, find the string that the professor obtains after the experiment.

Input constraints:

1 <= t <= 100

2 <= n <= 100

'a' <= C[i] <= 'z'

Sample Input:

3

egce

zbzbaba

ba

Sample Output:

ceg

abz

ab

Explanation of Case #1:

There are 4 buckets. The buckets initially contain the chemicals in the order e,g,c,e

One of the possible solutions is

- The professor chooses i=0 and j=2.
- The professor swaps C[0] and C[2] --> c,g,e,e
- The professor prefers to go back to step 1
- The professor chooses i=1 and j=3
- The professor swaps C[1] and C[3] --> c,e,e,g
- The professor chooses to skip step 3
- The professor merges all the consecutive buckets with same chemicals. --> c,e,g

No lexicographically smallest string can be formed other than "ceg"