

Grovyle String

Trico is trying to impress a girl. But the girl is not showing any sign of interest to him. So his best friend suggested him to gift one **Grovyle** string to her. **Grovlye** string is a *odd length string consisting of only lowercase alphabets arranged in such a way that a number X associated with it is smallest as possible.*

X is calculated as : First take absolute distance of each character's position from the center of the string i.e., $(string\ length/2)$ and then multiply the distance with its ASCII value. Similarly find all the values and add them.

Example : Given string : aaa

Here only one unique permutation is possible : aaa

distances are : for first a, $d1 = 1$, second a, $d2 = 0$, third a, $d3 = 1$;

so $X = 1 \times 97 + 0 \times 97 + 1 \times 97 = 194$;

So given a string of odd length consisting of only lowercase alphabets, find one permutation of the given string such that X is smallest as possible. And if there are many such strings then print the lexicographically smallest one.

Input: First line contains T , the number of test cases that follow. Next T lines, each contains one odd length string consisting of only lowercase alphabets.

Output: For each test case, print the desired result in separate lines.

Constraints: $1 \leq T \leq 1000$ $0 \leq \text{String Length} \leq 1001$

SAMPLE INPUT

```
2
aaa
abc
```

SAMPLE OUTPUT

```
aaa
acb
```