**Problem E: Anagram**

Source file: anagram.c / anagram.p  
Input file: anagram.in  
Output file: anagram.out  
  
You are to write a program that has to generate all possible words from a given set of letters.

**Example**

Given the word "abc", your program should - by exploring all different combination of the three letters - output the words "abc", "acb", "bac", "bca", "cab" and "cba".  
  
In the word taken from the input file, some letters may appear more than once. For a given word, your program should not produce the same word more than once, and the words should be output in alphabetically ascending order.

**Input**

The input file consists of several words. The first line contains a number giving the number of words to follow. Each following line contains one word. A word consists of uppercase or lowercase letters from A to Z. Uppercase and lowercase letters are to be considered different.

**Output**

For each word in the input file, the output file should contain all different words that can be generated with the letters of the given word. The words generated from the same input word should be output in alphabetically ascending order.

**Example**

**Input**

2

abc

acba

**Output**

abc

acb

bac

bca

cab

cba

aabc

aacb

abac

abca

acab

acba

baac

baca

bcaa

caab

caba

cbaa

**Hint**

The number of possible combinations raises very quickly with the number of given letters. Make sure you do not use long words for testing your program because the output file could become very big, waste a lot of space on the disk and degrade the performance of the network.