**Invasion of Iron Islands**

Yara Greyjoy, the ruler of Iron Islands after Balon Greyjoy has adopted marvelous strategies to protect the Islands from invaders. She has barricaded the Islands using great walls. Anyone who tries to invade the islands cannot enter. However, she has a mechanism that allows her and the people of iron island to leave. They are given t strings of lower case alphabets. The gates only open if they give all the anagrams of each string in alphabetical order. For a wrong answer, the guards kill the person who is trying to open the gate.

A spy in Iron Islands delivers this news to Stannis Baratheon and now he is planning to attack the Iron Islands. He gives the t strings he receives from the spy to Sir Davos. However, Sir Davos needs your help as he is still learning how to read and write. Help him get all the anagrams of the strings given to him.

**Note:** All characters in the string are unique.

**Input Format**

The first line of input contains t test cases. This is followed by t lines containing a string of lower case characters in each line.

**Output Format**

The output contains all the anagrams of each test case in separate lines.

**Constraints**

1. 1<=t<=2000
2. 2<=len<=7, where len is the length of the string

**Sample Input**

2

abc

dog

**Sample Output**

abc acb bac bca cab cba

dgo dog gdo god odg ogd

**Explanation**

For the first test case, abc can have 6 anagrams all of which are given above in the alphabetical order. Similarly, for the second test case, there are 6 anagrams which are given above. 

**Environment**

Read from STDIN and write to STDOUT.

See the sample program below which print the sum of two numbers received as input

* Scala https://goo.gl/PZvMJ3

The dashboard provides two modes.

**Test** runs your code against public/sample test cases. **Submit** runs against private/hidden ones.

Only public/sample test cases and their elaborate “test” results are made available. A line by line comparison with expected output is shown. There is no score for passing the public test cases. It’s only for testing and debugging.

For the private/hidden test cases, the judging system only shows the exit code, passed status, time consumption, memory consumption and score. We expect users to take cues from these values. Only making a “submit” will yield a score. Total score is a normalized weighted score over all test cases. Here all test cases carry equal weightage.

Instructions

* The dashboard provides two modes.  
  + Test runs your code against public/sample test cases.
  + Submit runs against private/hidden ones.
* Only public/sample test cases and their elaborate "test" results are made available. A line by line comparison with expected output is shown. There is no score for passing the public test cases. It's only for testing and debugging.
* For the private/hidden test cases, the judging system only shows the exit code, passed status, time consumption, memory consumption and score. We expect users to take cues from these values. Only making a "submit" will yield a score. Total score is a normalized weighted score over all test cases.

SAMPLE STDIN 1

[](https://skillenza-uploads.s3.amazonaws.com/files/6dd5ce01-c07c-472b-9aa4-754241b7af6a/in.txt)

2

abc

dog

SAMPLE STDOUT 1

[](https://skillenza-uploads.s3.amazonaws.com/files/7de64bc4-5142-43fc-bb5f-533494070f4f/out.txt)

abc acb bac bca cab cba

dgo dog gdo god odg ogd