PROSOLVE

Mock Contest

PROGRAMMING CONTEST PROBLEM SET

This mock problem set contains 4 problems (A-D)

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Hosted by
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A. Mapper

Time Limit: *1 second*

As a Big Data Engineer, you have been tasked by your superior to build your own mapper to calculate word occurrences from the information in the database. Information that you are going to deal with is the feedback of the customer regarding their satisfaction using your company's product. As a result, your mapper will be tested in a Hadoop environment to see how well your mapper is!

The way how mapper works is by output the key and value, in this context, the key is the words, the value is the number of occurrences (in this specific case '1'). You need to display the results in this format:

<key:any word><tab>1

The gap between word and number of occurrences is a *tab*. But this is too easy; your superior wants the key output to be printed in **alphabetical order** and **lower case** precedences.

Input

The first line of the input contains the number of test cases. Followed by string, ***S***, representing a sentence, where $\boldsymbol{S_n}$ ***(1 ≤ n ≤ 1000).***

Output

For each test case, the output is the key and value for each word.

Sample Input	**Sample Output**
4 Nama saya Ariff Yasri. Saya suka makan nasi dan sambal ayam. Everyday I eat apple. The reason I eat apple because I love it so much.	ariff 1 nama 1 saya 1 yasri 1 ayam 1 dan 1 makan 1 nasi 1 sambal 1 saya 1 suka 1 apple 1 eat 1 everyday 1 i 1 apple 1 because 1 eat 1 i 1 i 1 it 1 love 1 much 1 reason 1 so 1 the 1

B. Reducer

Time Limit: *1 second*

This is a continuation of `Mapper` problem.

Somehow you managed to do the mapper task, or your boss done it for you. Now it's time for you to finish your job as a Big Data Engineer by building a reducer to group the same words by summing their number of occurrences.

Input

The first line of the input contains the number of test cases, ***N***. Followed by number of words, ***X***. For the next ***X*** lines, it will contain **<word>tab <occurrence>**.

Output

For each test case, the output is the key (word) and number of occurrences for each word.

Sample Input	**Sample Output**
3 4 ariff 1 nama 1 saya 1 yasri 1 7 ayam 1 dan 1 makan 1 nasi 1 sambal 1 saya 1 suka 1 15 apple 1 apple 1 because 1 eat 1 eat 1 everyday 1 i 1 i 1 i 1 it 1 love 1 much 1 reason 1 so 1 the 1	1 ariff 1 nama 1 saya 1 yasri 1 ayam 1 dan 1 makan 1 nasi 1 sambal 1 saya 1 suka 2 apple 1 because 2 eat 1 everyday 3 i 1 it 1 love 1 much 1 reason 1 so 1 the

C. Save the Alphabet!

Time Limit: 1 second

A sentence can contain a mix of different type of characters. In this problem, you need to rescue only alphabet(s) from a string containing wild and weird characters!

Input

The first line contains a single string S, where length of S_n *(1 ≤ n ≤ 1000)*. Inside S there shall be no whitespace, and will have at least one alphabet.

Output

Print only alphabet(s) out of mix of wild characters.

Sample Input	**Sample Output**
h32!e932ll&*2+o	hello
F@#!a43%@h6m$@i**j2e3r	Fahmijer

D. Microsoft Word Editor

Time Limit: 1 second

Microsoft Word allows its users to edit the sentence in 5 forms; lowercase, uppercase, sentence case, toggle case and capitalize each word. Write a program to edit the sentence input by the user in all five forms.

Input

The first line of the input contains an integer ***T (T ≤ 100)***, the number of test cases.

Each of the following ***T*** lines will contain the string ***S***, where length of S_n ***(1 ≤ n ≤ 1000)***. Inside ***S***, it should contain more than 3 words.

Output

Output the answer with each form separated by a newline in the order of lowercase, uppercase, sentence case, toggle case and capitalize each word. Separate each test case with a single blank line except the last test case.

Sample Input	**Sample Output**
2 prosolve is the BEST competition i really love ice-cream	prosolve is the best competition PROSOLVE IS THE BEST COMPETITION Prosolve is the BEST competition PROSOLVE IS THE best COMPETITION Prosolve Is The BEST Competition i really love ice-cream I REALLY LOVE ICE-CREAM I really love ice-cream I REALLY LOVE ICE-CREAM I Really Love Ice-cream