

# Problem D: Frequency List

## Advanced Algorithms for Programming Contests

### Restrictions

Time: 2 seconds

Memory: 512 MB

### Problem description

You are to create a frequency list for a given text, i.e. you are to calculate the frequencies of all words in the text and display each of the words together with its frequency.

### Input

The input consists of

- one line containing  $N$  ( $1 \leq N \leq 10^5$ ) – the number of words in the text
- one or more lines containing a text consisting of exactly  $N$  words each of length not exceeding 20.

### Output

Output the occurring words in lexicographical order, each in a separate line and followed by its frequency. While words in the text may contain capital letters, you are to transform all of them (even names) into lowercase (thereby identifying words consisting of the same letters in different capitalization). Also, you will need to cut off commas and periods as well as exclamation and question marks from the ends of some of the words.

### Sample input and output

Input	Output
3 Chocolate, chocolate, chocolate!	chocolate 3
4 Adam eats many zebras.	adam 1 eats 1 many 1 zebras 1