

Dictionary Ordering

Filename: dictionary

Back when the first dictionary was being written, Dr. Dinkledorf suggested that words should be ordered by the *count* of their letters in alphabetical order. For example, if a word i has more occurrences of the letter ‘a’ than the word j , then i should come before j . If they had the same quantity, then if it has more occurrences of the letter ‘b’, ‘c’, ‘d’... and so on.

“But what if the words are anagrams¹?” asked his assistant, Mr. Binkley. “No worries,” Dinkledorf responded, “we will just sort them in lexicographical order² in this case.”

Of course, this was the worst idea ever, which is why you’ve never heard of it. Since you would like to demonstrate how bad this idea is to your friends, you plan to write a program that will sort words in Dr. Dinkledorf’s ordering scheme.

The Problem:

Sort a list of unique words using Dr. Dinkledorf’s ordering scheme.

The Input:

The first line contains a single, positive integer, t , representing the number of dictionaries. For each dictionary, multiple lines follow. The first line contains a single integer, n ($1 \leq n \leq 10^5$), representing the number of words. Then, n lines follow, each consisting of a string of only lowercase letters of positive length up to 20. It is guaranteed that each word is unique.

The Output:

For each dictionary, output $n+1$ lines. The first line to be printed is “Dictionary # i :” where i is the number of the dictionary in the order of the input (starting with 1). The next n lines should each contain a word given in the input, presented in sorted order. Output a blank line after each dictionary.

(Sample Input and Sample Output follow on next page)

¹ Anagram – a word formed by rearranging the letters of another, such as *earth* formed from *heart*.

² Lexicographical order – also known as alphabetical order. This is the way words are ordered in modern dictionaries.

Sample Input:

```
3
3
david
lionel
natasha
4
cabbbbb
baaaaaaaaa
sarahsara
bbbbbbcccc
1
heyguys
```

Sample Output:

```
Dictionary #1:
natasha
david
lionel
```

```
Dictionary #2:
baaaaaaaaa
sarahsara
cabbbbb
bbbbbbcccc
```

```
Dictionary #3:
heyguys
```