
1. AlphaFun

Program Name: AlphaFun.java

Input File: alphafun.dat

Lester has a list of words that he wants to print, not in the usual alphabetical order but not in random order either. He has decided on a method to sort the words that he calls AlphaFun order.

The AlphaFun method sorts the words using the following procedure:

- first compare the 2nd letter of the words,
- then compare the 4th letter of the words (the 4th letter will be considered to be a space in words containing less than 4 letters),
- then compare the last letter of the words (the last letter will always be the last letter of the word, not a space),
- finally compare the first letter in the words,
- if all of the above are the same characters, then the words used for those letters are sorted alphabetically.

Note these examples:

Word	AlphaFun Characters
EGG	G GE
EGGS	GSSE
BREAD	RADB

Input

The input file contains an unknown number of lines, where each line of input contains a single word consisting of 3 to 10 letters.

Output

You will print the words in AlphaFun order.

Example Input File

```
BREAD
AERIE
BROAD
EGGS
EGG
WALLET
```

Example Output to Screen

```
WALLET
AERIE
EGG
EGGS
BREAD
BROAD
```