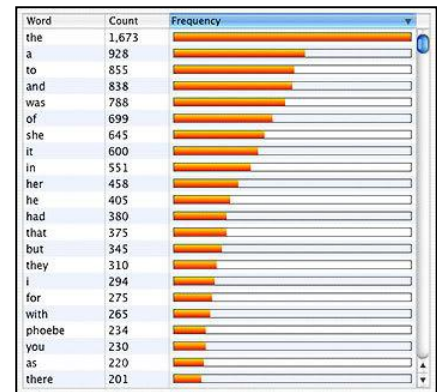


## Word Stats (prob3)

We all know how to crunch statistics with numbers. But, let's crunch some statistics with words! That's your job with this program. You want to input all the words from a text file, convert them to lowercase, sort them, then calculate the median of your word distribution, and the mode (the word with the largest frequency).

The median is defined as the word in the middle of your sorted distribution. If you have an odd number of words, there is only one median. But, if you have an even number of words, you will have two words that define your median.



The mode is the word that occurs more often than any others. In the event of a tie (multiple words with the same largest frequency), you will print all words with the largest frequency.

### Input

Your program will take one or more words as input. The number of words will be  $\leq 200$ . A word is defined as one or more contiguous characters followed by white space (space, tab, or newline). The length of each word is  $\leq 100$ . All words should be converted to lowercase upon input, and any non-alphabetic characters that start, end, or are contained within the word should be removed.

### Output

Your median should be output first on a single line with a prompt as shown below. If you have an odd number of words in your input, a single median word will be output. If you have an even number of words, you will output two words with a single comma between them, and brackets surrounding them. For example, "My median=[easter,egg]".

Your mode should be output on a single line following the median with a prompt as shown below. Include the number of occurrences of the mode in parentheses following. Enclose your answer with brackets like you did for median. In the event of a tie, use a single comma to separate your words & their occurrences. For example, "My mode=[an(23),the(23)]".

With ties, all words should be listed in alphabetical order for both the median and mode.

### Sample Input

```
When April with his sweet showers has
pierced the drought of March to the root,
and bathed every vein in such moisture
as has power to bring forth the flower
```

### Sample Output

```
My median=[moisture,of]
My mode=[the(3)]
```