
Bag of words

P84415_en

Cinquè Concurs de Programació de la FME (2008-04-29)

You have an initially empty bag, where you can store words, and from where you can delete words. Words can be repeated. Deleting a word means removing one of its appearances. Deleting a nonexistent word does not have any effect. At any moment you can be asked for the (lexicographically) greatest word of the bag, and how many times it is repeated. You can also be asked for the same about the smallest word.

Input

Input consists of several lines. Each line contains either “store *w*”, where *w* is a word, or “delete *w*”, where *w* is a word, or “maximum?”, or “minimum?”. Every word is made up of only one or more lowercase letters.

Output

For each query, print the greatest word (or the smallest) contained in the bag at that moment. If, at the moment of answering any query, the bag is empty, tell so. Follow the format of the example.

Sample input

```
minimum?  
store hi  
minimum?  
delete bye  
store hi  
maximum?  
minimum?  
store bye  
minimum?  
delete bye  
delete hi  
delete hi  
maximum?  
delete hi  
maximum?
```

Sample output

```
indefinite minimum  
minimum: hi, 1 time(s)  
maximum: hi, 2 time(s)  
minimum: hi, 2 time(s)  
minimum: bye, 1 time(s)  
indefinite maximum  
indefinite maximum
```

Problem information

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