

156 Anagrams

Most crossword puzzle fans are used to *anagrams* — groups of words with the same letters in different orders — for example OPTS, SPOT, STOP, POTS and POST. Some words however do not have this attribute, no matter how you rearrange their letters, you cannot form another word. Such words are called *ananagrams*, an example is QUIZ.

Obviously such definitions depend on the domain within which we are working; you might think that ATHENE is an anagram, whereas any chemist would quickly produce ETHANE. One possible domain would be the entire English language, but this could lead to some problems. One could restrict the domain to, say, Music, in which case SCALE becomes a *relative anagram* (LACES is not in the same domain) but NOTE is not since it can produce TONE.

Write a program that will read in the dictionary of a restricted domain and determine the relative anagrams. Note that single letter words are, ipso facto, relative anagrams since they cannot be “rearranged” at all. The dictionary will contain no more than 1000 words.

Input

Input will consist of a series of lines. No line will be more than 80 characters long, but may contain any number of words. Words consist of up to 20 upper and/or lower case letters, and will not be broken across lines. Spaces may appear freely around words, and at least one space separates multiple words on the same line. Note that words that contain the same letters but of differing case are considered to be anagrams of each other, thus ‘tIeD’ and ‘EdiT’ are anagrams. The file will be terminated by a line consisting of a single ‘#’.

Output

Output will consist of a series of lines. Each line will consist of a single word that is a relative anagram in the input dictionary. Words must be output in lexicographic (case-sensitive) order. There will always be at least one relative anagram.

Sample Input

```
ladder came tape soon leader acme RIDE lone Dreis peat
  ScAlE orb eye Rides dealer NotE derail LaCeS drIed
noel dire Disk mace Rob dries
#
```

Sample Output

```
Disk
NotE
derail
drIed
eye
ladder
soon
```