

Problem F- Text Twist

I used to play the game Text Twist online all the time. It's a pretty fun game: given six letters, you have to come up with anagrams (re-arrangements) of subsets of those six letters to form English words. For example, I just played a game where I was given the letters IMLNGA. NAIL, MAIL, GIN, AIL, and MALIGN were all examples of words that I could form. The game even tells you how many words there are of each length; IMLNGA only lets you form one six-letter word, but two five-letter words, etc. The game is set up such that there's always at least one six-letter word: if you get that one, you can go on to the next round!



(S P E A K S)

But really, anybody can try a bunch of substrings of a six-letter word. So I decided to make this a little more challenging for myself. Instead of actually *reading* the six letters I have to work with, I only look at how many words I can make of each length. I've also got a big ol' dictionary and, just because I don't want to make things *too* hard on myself, I must admit that I like to take a peek at the first letter that I'm given... just to speed things up a bit.

Input Specification:

You will be given an integer $N < 30000$, followed by N lines, each containing a single dictionary word between 3 and 6 lowercase characters. (You can test with whatever you like, but when I'm playing I'll be using a real dictionary of English words.) After that, you'll be given up to 10 testcases, each of the form " $c\ n_3\ n_4\ n_5\ n_6$ " where c is a character in the six-letter word, n_3 is the number of three-letter words as above, n_4 is the number of 4-letter-words, etc.

Output Specification:

A single line containing the lexicographically first dictionary word that has c in it and had exactly n_3 3-letter words that can be formed of anagrams of its substrings, n_4 4-letter words, etc.

Sample Input:

13
meager
malign
annoys
annoy
angel
glib
abling
big
lab
ear
nail
mail
sane
g 2 2 0 1
g 1 0 0 1

Sample Output:

abling
meager