UCF "Practice" Local Contest — Aug 29, 2015

Broken Space Bar
Filename: `space`
(*Difficulty Level:* `Medium`)

When people type very fast, they sometimes don't hit the space key hard enough and miss the blank, e.g., instead of typing "sample word list", they get "samplewordlist". You are to write a program to first check whether a word appears in a dictionary. If it doesn't, then you check to see if it appears as a concatenation of two or more words in the dictionary.

The Input:

There will be multiple data sets. The first input line for a data set will be an integer n ($1 \leq n \leq 50$), indicating the number of words in a dictionary. Each of the following n input lines contains a word. Assume that each word contains only lower-case letters, is at least two letters and at most 20 letters, and starts in column 1. The next input line for the data set will be an integer m ($m \geq 1$), indicating the number of words to be spell-checked. Each of the following m input lines contains a word. Assume that each word contains only lower-case letters, is at least two letters and at most 50 letters, and starts in column 1. End of data is indicated by a data set with a value of zero for n, i.e., a data set with a dictionary size of zero.

The Output:

Print a heading for each data set. Then, print each word to be spell-checked and whether it is in the dictionary. If it is not in the dictionary, print whether it is a concatenation of two or more words in the dictionary and, if it is, print those words. If there is more than one combination of the words in the dictionary that will generate the word to be spell-checked, you only need to print one such combination and not all of them. If the word is not a combination of dictionary words either, print an error message. Leave a blank line after the output for each data set. Follow the format illustrated in Sample Output. Be sure to line up the output with spaces (not tabs) exactly as given in Sample Output.

Sample Input:

```
4
coaches
are
really
nice
5
are
```

```
reallyare
wrong
reallynicecoaches
wrongword
6
how
about
ali
is
nice
isnice
5
funfunfun
aboutali
ali
aliali
isnice
0
```

Sample Output:

```
Data set #1:
    are --- the word is in dictionary
    reallyare --- the word is concatenation of
        really
        are
    wrong --- misspelled word
    reallynicecoaches --- the word is concatenation of
        really
        nice
        coaches
    wrongword --- misspelled word

Data set #2:
    funfunfun --- misspelled word
    aboutali --- the word is concatenation of
        about
        ali
    ali --- the word is in dictionary
    aliali --- the word is concatenation of
        ali
        ali
    isnice --- the word is in dictionary
```