

Counting duplicate items in two lists applies to many practical uses, such as identifying common factors in medical patients or measuring similarity of two documents (or programs, or DNA strands). A word is a duplicate if it appears in both lists. Write a program to count the number of duplicate words in two lists of words. The program must ignore letter case when comparing words.

Input

The first line of input contains two integers, which are the numbers of words listed on the two following lines. All punctuation has been removed (commas, periods, apostrophes, etc.) for ease of comparison. The next line after the word lists is another pair of integers. If non-zero, the integers signify another pair of word lists. The input ends if both integers are zero.

```
4 5
the frog must win
the fly and the frog
14 16
Two roads diverged in a wood and I took the one less traveled by
I carved two rods of yellow wood and hid the one less pleasing to my eye
17 15
The free bird leaps on the back of the wind and floats downstream till the current ends
The caged bird sings with fearful trill of the things unknown but longed for still
16 16
Success is counted sweetest By those who never succeed To comprehend a nectar Requires sorest
need
Success is not final failure is not fatal it is the courage to continue that counts
13 15
My love is like a red red rose thats newly sprung in June
At dawn my love awoke and searching found a scarlet rose wet with morning dew
0 0
```

Output

For each list pair, the program should print three lines of output. First it should print the two lists on two separate lines. On the third line it should print the number of duplicates and the list of duplicates. The CaSe and order of the duplicates is not important.

```
the frog must win
the fly and the frog
2 frog the
Two roads diverged in a wood and I took the one less traveled by
I carved two rods of yellow wood and hid the one less pleasing to my eye
7 I Two and less one the wood
The free bird leaps on the back of the wind and floats downstream till the current ends
The caged bird sings with fearful trill of the things unknown but longed for still
3 The bird of
Success is counted sweetest By those who never succeed To comprehend a nectar Requires sorest
need
Success is not final failure is not fatal it is the courage to continue that counts
3 Success To is
My love is like a red red rose thats newly sprung in June
At dawn my love awoke and searching found a scarlet rose wet with morning dew
4 My a love rose
```