

## 3870 Pronounceable Words

You want to produce flash cards having pronounceable (but perhaps meaningless) words for children to practice their phonetics. Here we define a pronounceable word as one having interleaved consonants and vowels. However, there are also 2-letter compound consonants (e.g., “ch”, “th”, “st”), and 2-letter compound vowels (having a vowel sounds such as “ea”, and “ou”).

### Input

The input file contains one or more data sets, each containing two lines. The first line contains an integer  $v$  ( $0 < v \leq 6$ ), followed by a space-delimited list of  $v$  (single or compound) vowels, taken from the set {'a', 'e', 'i', 'o', 'u'}. The second line contains an integer  $c$  ( $0 < c \leq 6$ ), followed by a space-delimited list of  $c$  (single or compound) consonants, where (single or compound) consonants are letters other than vowels. All single and compound vowels and consonants are made up of lowercase letters. The data set is guaranteed not to produce more than 10000 distinct pronounceable words.

The end of input will be indicated by a line containing a single 0.

### Output

For each data set, produce two lines looking like

Data set  $n$ :  
 $m$  words.

where  $n$  is a sequential number starting at 1, and  $m$  is the total number of words generated. This should be followed by a sorted list of pronounceable words, each using every (compound) consonant exactly once. There is no requirement as to how many times each vowel may/must be used. If there are more than 100 words in the output, write just the first 100 words. Words should be written 10 per line for all lines of output (except possibly the last).

Leave a blank line between output for each data set.

### Sample Input

```
3 a ee i
2 s st
2 a e
2 s t
0
```

### Sample Output

```
Data set 1:
96 words.
asast asasta asastee asasti aseest aseesta aseestee aseesti asist asista
asistee asisti astas astasa astasee astasi astees asteesa asteesee asteesi
astis astisa astisee astisi eesast eesasta eesastee eesasti eeseest eeseesta
eeseestee eeseesti eesist eesista eesistee eesisti eestas eestasa eestasee eestasi
eesteese eesteese eesteese eesteese eestis eestisa eestisee eestisi isast isasta
isastee isasti iseest iseesta iseestee iseesti isist isista isistee isisti
```

istas istasa istasee istasi isteess isteessa isteessiee isteessi istis istisa  
istisee istisi sast sasta saste sasti seest seesta seestee seesti  
sist sista sistee sisti stas stasa stasee stasi stees steesa  
steessiee steessi stis stisa stisee stisi

Data set 2:

36 words.

asat asata asate aset aeta aete atas atasa atase ates  
atesa atese esat esata esate eset eseta esete etas etasa  
etase etes etesa etese sat sata sate set seta sete  
tas tasa tase tes tesa tese