Problem E: Compound Words

You are to find all the two-word compound words in a dictionary. A two-word compound word is a word in the dictionary that is the concatenation of exactly two other words in the dictionary.

Input

Standard input consists of a number of lowercase words, one per line, in alphabetical order. There will be no more than 120,000 words.

Output

Your output should contain all the compound words, one per line, in alphabetical order.

Sample Input

```
a
alien
born
less
lien
never
nevertheless
new
newborn
the
zebra
```

Sample Output

```
alien
newborn
```