Problem G. Compound Words

Time limit	1000 ms
Mem limit	1048576 kB
OS	Linux

Write a program that reads a list of words from standard input and prints out a sorted list of all unique compound words that can be made by concatenating two different words from the input list. If the same compound word can be formed more than one way, it should only be listed once in the output.

Input

Input is a list of 1 to 100 words separated by whitespace (spaces and / or newlines). There may be more than one word on each input line. Each word is a sequence of at most 10 lowercase English letters (a–z). Input ends at end of file.

Output

Your program should print out all unique compound words, one per line. They should be printed in sorted (dictionary) order.

Sample 1

Input	Output
a bb ab b	aab ab aba abb abbb ba bab bba bbab bbb