Problem V
Correcting Keats
Time limit: 1 second



Charles complains, “Keats makes so many spelling errors; it’s impossible to fix them all!”

Ada responds, “We have to get the manuscript into the Engine. Maybe we can program the Engine to check each word against a list of English words, and if it’s not found in that list, see what sort of small errors might have been made.”

Charles asks, “But what is a small error?”

With some discussion they agree on the following list of small errors:

- Adding a letter anywhere in the string.
- Removing a letter from anywhere in the string.
- Changing any letter in the string to any other letter.

Given a specific alphabet and a particular string, find all other strings in that alphabet that can be created by making one of the mistakes in the above list, and list them in alphabetical order.

Note that the input string must not be in the list, and the list must not contain duplicates.

Input

The first line of the input is a sequence of lowercase alphabetic characters, in alphabetical order, with no spaces between them. This is the alphabet to use. The second line contains the input string, which will consist only of letters from the given alphabet, and have length at least 2 and at most 100.

Output

List, in alphabetical order, all strings that can result from making one error in the given word.

Examples

Sample Input 1	Sample Output 1
eg egg	eeg eegg eg ege egeg egge eggg gegg gg ggg