# Coding Area



ONLINE EDITOR (F)

## Best Sequence

### Problem Description

Some of the keys of Ajith's Laptop's keyboard are damaged and he is not able to type those keys. He has to complete his assignment and submit it the next day and since it is midnight he will not be able to give his laptop for repair. So he decides to make a character sequence of **all** the damaged keys in a sequence that he can copy and paste and make a word out of them.

Ajith needs to type a paragraph with all the characters in lower case. Help Ajith to find out the best permutation of the sequence of the characters (corresponding to the damaged keys) per word, that can be used while typing the paragraph, i.e. the sequence that will require least insertion and deletion while typing a word. Consider paste operation to be of one keystroke. Ignore the copy operation.

Recursively apply the same procedure for all the words in the paragraph. This way you will get the best combination that should be selected for that word. Finally, find out how many different words exist per character sequence combination. The combination that is the best for maximum words should be printed as output. If there are more than one candidates for best character sequence print the lexicographically smallest character sequence as output.

Refer the examples section for better understanding.

### Constraints

0 < Number of words in paragraph < 50

0 < Number of damaged keys <= 6

### Input

First line contains the paragraph P that is to be written

Second line contains the characters that represent the damaged keys delimited by white space

### Output

One line containing the best character sequence which can be used to copy paste and construct the words.

### Time Limit

1

### Examples

Example 1

Input

supreme court is the highest judicial court

s u

Output

su

Explanation

There are two possible combinations of the damaged keys i.e. either *su* or *us*.

For word **supreme**, *su* is suitable as it requires only paste operation

For **court**, *us* is suitable as it requires one keystroke for deletion

Similarly, for **is**, *su* is suitable because it requires one keystroke for deletion

Finally, we get *su* suitable for words {*supreme, is, highest*} and *us* suitable for words {*court, judicial, court*}. We get *su* and *us* suitable for 3 words each.

Since *su* is lexicographically smaller than *us*, the output will be *su*.

Example 2

Input

ginnestinggin gniinginging

n i g

Output

gin

Explanation

There are six possible combinations of the damaged keys viz. {*nig, ngi, ing, ign, gni, gin*}.

For the first word, *nig* requires 36 keystrokes, *ngi* requires 26 keystrokes, *ing* requires 21 keystrokes, *ign* requires 26 keystrokes, *gni* requires 32 keystrokes and *gin* requires 15 keystrokes to type the word. Hence, *gin* sequence is suitable for the first word.

Similarly, for the second word, *nig* requires 28 keystrokes, *ngi* requires 17 keystrokes, *ing* requires 16 keystrokes, *ign* requires 29 keystrokes, *gni* requires 28 keystrokes and *gin* requires 17 keystrokes to type the word. Hence, *ing* sequence is suitable for second word.

Since, both *ing* and *gin* sequence are suitable for 1 word each and *gin* is lexicographically smaller than *ing*. Hence the output is *gin*.

## Upload Solution [ Question : F ]

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