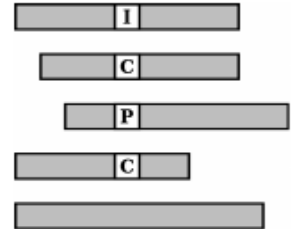


7124 Verti-Words

Given a target phrase and a paragraph of text, reposition the lines of the paragraph by adding blank characters to the left of each line so that the target phrase appears vertically, reading down, in some column of the rearranged text.

- The original lines of the paragraph may not be split into two or more lines, nor may the characters already within a line be rearranged.
- The characters in the target word must appear on consecutive lines with no blanks or other characters between them. Upper/lower case is significant.



If there are multiple ways to reposition the lines to reveal the target phrase, the tie breakers are, in decreasing order of precedence,

- Minimize the total width of the rearranged paragraph.
- Minimize the total number of inserted blanks.
- Start the target phrase as close to the top of the paragraph as possible.
- Start the target phrase as close to the left as possible.

Input

Input will consist of one or more test cases.

Each test case will begin with a line containing the target phrase, left-justified. A target of 'END' signals the end of input.

This is followed by 1 ...20 lines of text, each up to 80 characters in width, that comprise the paragraph. The end of the paragraph is signaled by an empty line (no characters other than the line termination).

Output

For each test case, print the paragraph with appropriate indentation supplied as blank spaces, denoting the desired solution.

If no solution is possible, print the paragraph unchanged.

Explanation: The target phrases can be seen clearly below.

Given a target word and a paragraph of text,
rearrange the paragraph by adding blank characters to
the left of each line so that the target word appears
vertically in some column,
top-to-bottom in some column of the rearranged text.

If there are multiple ways to make this happen, tie breakers are,
in decreasing order of precedence,

- * Minimize the total width of the rearranged paragraph.
 - * Minimize the total number of inserted blank
- * Start the target phrase as close to the top of the paragraph as possible.
- * Start the target phrase as close to the left as possible.

Sample Input

acm

Given a target word and a paragraph of text,
rearrange the paragraph by adding blank characters to
the left of each line so that the target word appears
vertically in some column,
top-to-bottom in some column of the rearranged text.

Moo

If there are multiple ways to make this happen, tie breakers are,
in decreasing order of precedence,
* Minimize the total width of the rearranged paragraph.
* Minimize the total number of inserted blanks.
* Start the target phrase as close to the top of the paragraph as possible.
* Start the target phrase as close to the left as possible.

END

Sample Output

Given a target word and a paragraph of text,
rearrange the paragraph by adding blank characters to
the left of each line so that the target word appears
vertically in some column,
top-to-bottom in some column of the rearranged text.
If there are multiple ways to make this happen, tie breakers are,
in decreasing order of precedence,
* Minimize the total width of the rearranged paragraph.
* Minimize the total number of inserted blanks.
* Start the target phrase as close to the top of the paragraph as possible.
* Start the target phrase as close to the left as possible.