Continued Fraction

Time Limit: 1.0 Seconds   Memory Limit: 65536K

Dumbear loves numbers very much.

One day Dumbear found that each number can be expressed as a continued fraction. See below.

Formally, we say a number k can be expressed as a continued faction if

where a0, a1, …, an are positive integers except that a0 maybe be 0 and an cannot be 1.

Dumbear also found a sequence which looks like the Farey sequence. Initially the sequence , and if we insert an element between all the two adjacent element , in Di, then we get a sequence Di+1. So you can see and . Assume initially you are on the element in D0, and if now you are on the element k in Di, then if you go left(‘L’)(or right(‘R’)) you will be on the left(or right) element of k in Di+1. So a sequence composed of ‘L’ and ‘R’ denotes a number. Such as ‘RL’ denotes the number .

Now give you a sequence composed of ‘L’ and ‘R’, you should print the continued fraction form of the number. You should use ‘-‘ to show the vinculum(the horizontal line), you should print one space both in front and back of ‘+’, and all parts up or down the vinculum should be right aligned. You should not print unnecessary space, ‘-‘ or other character. See details in sample.

**Input**

There are several test cases in the input.

For each test case, there is a single line contains only a sequence composed of ‘L’ and ‘R’. The length of the sequence will not exceed 10000.

The input terminates by end of file marker.

**Output**

For each test case, output the continued fraction form of the number which the input sequence denotes. The total amount of output will not exceed 4MB.

**Sample Input**

LR

RL

**Sample Output**

1

0 + -----

1

1 + -

2

1

1 + -

2

**Author**

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