

Text Editor

Problem Description

You are asked to implement a simple text editor that maintains a cursor and supports four operations on a mutable string.

The cursor sits between characters. Initially, it is at the end of the initial string (i.e. after the last character).

The text editor supports the following four operations:

- **L** — Move the cursor one position to the left (ignored if the cursor is already at the beginning).
- **R** — Move the cursor one position to the right (ignored if the cursor is already at the end).
- **I c** — Insert the single printable character **c** at the cursor position. After insertion, the cursor is positioned immediately after the inserted character.
- **D** — Delete the character immediately to the left of the cursor (ignored if there is no character to the left).

After processing all M operations, output the final string.

Input Format

The first line contains the initial string.

The second line contains an integer M — the number of operations.

The next M lines each contain one of the four operations described in the previous section.

Output Format

A single line — the final string after all operations are applied.

Constraints

- All characters in the initial string and all inserted characters are printable ASCII

characters (ASCII codes 33 to 126).

- $1 \leq M \leq 9 \times 10^6$ °
- Number of insertion operations(**I c**) $\leq 2.2 \times 10^6$.
- Length of the initial string ≤ 255 °

Example Test Case

Sample Input 1

abc
7
L
L
I X
R
D
I Y
R

Sample Output 1

aXYc

Explanation of Sample 1

$abc| \rightarrow ab|c \rightarrow a|bc \rightarrow aX|bc \rightarrow aXb|c \rightarrow aX|c \rightarrow aXY|c \rightarrow aXYc|$

Sample Input 2

abc
5
R
R
R
I D
L

Sample Output 2

abcD

Explanation of Sample 2

$abc| \rightarrow abc| \rightarrow abc| \rightarrow abc| \rightarrow abcD| \rightarrow abc|D$

Sample Input 3

abc
5
L
L
L
L
D

Sample Output 3

abc

Explanation of Sample 3

$\text{abc}| \rightarrow \text{ab}|c \rightarrow \text{a}|bc \rightarrow |\text{abc} \rightarrow |\text{abc} \rightarrow |\text{abc}$

Since the cursor is already at the beginning, the last delete operation has no effect.