

C. Ciel and Robot

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Fox Ciel has a robot on a 2D plane. Initially it is located in $(0, 0)$. Fox Ciel code a command to it. The command was represented by string s . Each character of s is one move operation. There are four move operations at all:

- 'U': go up, $(x, y) \rightarrow (x, y+1)$;
- 'D': go down, $(x, y) \rightarrow (x, y-1)$;
- 'L': go left, $(x, y) \rightarrow (x-1, y)$;
- 'R': go right, $(x, y) \rightarrow (x+1, y)$.

The robot will do the operations in s from left to right, and repeat it infinite times. Help Fox Ciel to determine if after some steps the robot will located in (a, b) .

Input

The first line contains two integers a and b , $(-10^9 \leq a, b \leq 10^9)$. The second line contains a string s ($1 \leq |s| \leq 100$, s only contains characters 'U', 'D', 'L', 'R') — the command.

Output

Print "Yes" if the robot will be located at (a, b) , and "No" otherwise.

Examples

input
2 2 RU
output
Yes

input
1 2 RU
output
No

input
-1 1000000000 LRRLU
output
Yes

input
0 0 D
output
Yes

Note

In the first and second test case, command string is "RU", so the robot will go right, then go up, then right, and then up and so on.

The locations of its moves are $(0, 0) \rightarrow (1, 0) \rightarrow (1, 1) \rightarrow (2, 1) \rightarrow (2, 2) \rightarrow \dots$

So it can reach $(2, 2)$ but not $(1, 2)$.