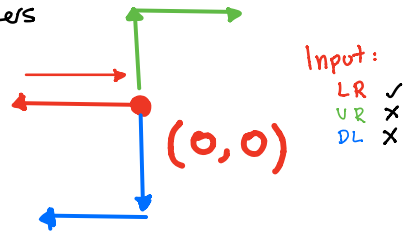


Initially, there's a robot in $(0,0)$.

In that initial position, the 'judge' receives one of 4 possible characters

$U \uparrow$ $D \downarrow$ $L \leftarrow$ $R \rightarrow$



Possible cases:

When having 2 characters, it is possible to return to the same place. But it also happens with an even number of characters.

If it is an odd number of characters, it is impossible to return because there are no diagonal lines.

Algorithm I

$x, y = 0$

L and R moves the robot in x -axis so,

For every character in the string:

case 1 $L \rightarrow x--$

case 2 $R \rightarrow x++$

case 3 $U \rightarrow y++$

case 4 $D \rightarrow y--$

Complexity

$O(n)$ where n is the length of input string.

Algorithm is true if x and $y = 0$.