Problem 189: Robot Petsitter

Difficulty: Easy

Author: Anthony Vardaro, Dallas, Texas, United States

Originally Published: Code Quest Community College Outreach 2022

Problem Background

Suppose you wanted to automate your chores around the house, and you decided to build a robot that would walk your dog around your neighborhood. It's critical that the robot returns to your house, otherwise your dog might get lost. Prior to its journey, the robot downloads a sequence of moves that describes its path during the adventure. You must design an algorithm that analyzes the robots move sequences and determines whether the robot's path will guide it back home properly.

Problem Description

The robot moves as though on a grid, where your house, and the robot's starting point, are at the origin point (0,0). It is only capable of moving one block at a time along the grid's axes; up, down, left, and right. Given a set of directions, you need to confirm that after following those directions, the robot has returned to your house.

Sample Input

The first line of your program's input, received from the standard input channel, will contain a positive integer representing the number of test cases. Each test case will include a single line of text containing at least one uppercase letter; any of D, L, R, and/or U (representing the directions down, left, right, and up, respectively).

```
4
LLRR
ULDR
RRDRULDDL
U
```

Sample Output

For each test case, your program must print a single line containing the word "TRUE" if the given directions return the robot to its starting point, or "FALSE" if they do not.

```
TRUE
TRUE
FALSE
FALSE
```