Test Rover

Description

We are assessing a number of things, including the design aspect of your solution, code hygiene, readability and code structure (how easy it is for another programmer to grasp what your code does), reliability and robustness (are errors properly handled?), but mostly we are looking for good coding practices and your object oriented programming skills. We'll also look for automated tests.

You may not use any external libraries to solve this problem, but you may use external libraries or tools for building or testing purposes. Specifically, you may use unit testing libraries or build tools available for your chosen language (for example, JUnit). Please also include a brief explanation of your design and assumptions along with your code and commit your changes in a way that will help us understand your design and coding decisions, as well as how you came up with the final solution.

There must be a way to supply the application with the input data via text file. The application must run. You should provide sufficient evidence that your solution is complete by, as a minimum, indicating that it works correctly against the supplied test data. Please note that you will be assessed on your judgment as well as your execution.

Problem

A squad of robotic rovers are to be landed by NASA on a plateau on Mars. This plateau, which is curiously rectangular, must be navigated by the rovers so that their on-board cameras can get a complete view of the surrounding terrain to send back to Earth.

A rover's position and location is represented by a combination of x and y co-ordinates and a letter representing one of the four cardinal compass points. The plateau is divided up into a grid to simplify navigation. An example position might be 0, 0, N, which means the rover is in the bottom left corner and facing North.

In order to control a rover, NASA sends a simple string of letters. The possible letters are 'L', 'R' and 'M'. 'L' and 'R' makes the rover spin 90 degrees left or right respectively, without moving from

its current spot. 'M' means move forward one grid point, and maintain the same heading.

Assume that the square directly North from (x, y) is (x, y+1).

Input
The first line of input is the upper-right coordinates of the plateau, the lower-left coordinates are assumed to be 0,0.

The rest of the input is information pertaining to the rovers that have been deployed. Each rover has two lines of input. The first line gives the rover's position, and the second line is a series of instructions telling the rover how to explore the plateau.

The position is made up of two integers and a letter separated by spaces, corresponding to the x and y co-ordinates and the rover's orientation.

Each rover will be finished sequentially, which means that the second rover won't start to move until the first one has finished moving.

Output
The output for each rover should be its final co-ordinates and heading.

Test Input
```
5 5
1 2 N
LMLMLMLMM
3 3 E
MMRMMRMRRM
```

Expected Output
```
1 3 N
5 1 E
```