

### Problem Three: Mars Rovers

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.

#### INPUT AND OUTPUT

Test Input:

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

Expected Output:

```
1 3 N
5 1 E
=====
```

### Problem Analysis

- The plateau (landing surface) is rectangular.
- The plateau is divided into a grid.
- The plateau has upper-right coordinates that must be initialized.
- The plateau has lower-left coordinates that are assumed to be 0,0
- The plateau is navigated by a rover.
  
- A rover is deployed to a landing surface (plateau)
- A rover has a position that is represented by X and Y co-ordinates.
- A rover faces a compass cardinal direction that is represented by N, E, S, or W.
- A rover can spin 90 degrees left or right without changing its position.
- A rover can move forward one grid point.
- A rover has two lines of input.
- A rover's first line of input gives the rover's position and is made up of two integers and a letter separated by spaces representing the X and Y co-ordinates and the rover's orientation (direction).
- A rover's second line of input is a series of instructions that tell the rover how to explore the plateau. Possible commands are 'L' to rotate left, 'R' to rotate right, and 'M' to move forward one grid point.
- A rover reports back its position and direction after it has finished with commands it was given.

### Acceptance Criteria

- Initialize Plateau and set size.
- Deploy rovers with provided position, direction and movement commands.
- Display each rover's final co-ordinates and heading.
- Given the input defined in the problem statement, produce the output defined in the problem statement.