

Toy Robot Simulator challenge

- The application is a simulation of a toy robot moving on a square table-top, of dimensions 5 units x 5 units.
- There are no other obstructions on the table surface.
- The robot is free to roam around the surface of the table, but must be prevented from falling to destruction. Any movement that would result in the robot falling from the table must be prevented, however further valid movement commands must still be allowed.

Instructions

Create an application that can read in commands of the following form -

```
PLACE X,Y,F  
MOVE  
LEFT  
RIGHT  
REPORT
```

PLACE will put the toy robot on the table in position (X, Y) and facing NORTH, SOUTH, EAST or WEST.

The origin (0,0) should be considered to be the SOUTH WEST most corner.

The first valid command to the robot is a *PLACE* command, after that, any sequence of commands may be issued, in any order, including another *PLACE* command. The application should discard all commands in the sequence until a valid *PLACE* command has been executed.

MOVE will move the toy robot one unit forward in the direction it is currently facing.

LEFT and *RIGHT* will rotate the robot 90 degrees in the specified direction without changing the position of the robot.

REPORT will announce the X, Y and F of the robot. This can be in any form, but standard output is sufficient.

A robot that is not on the table can choose to ignore the *MOVE*, *LEFT*, *RIGHT* and *REPORT* commands.

Input can be from a file, or from standard input, as the developer chooses.

Provide test data to exercise the application.

Constraints

The toy robot must not fall off the table during movement. This also includes the initial placement of the toy robot. Any move that would cause the robot to fall must be ignored.

Example Input and Output

Example	Input	Output
a	PLACE 0,0,NORTH MOVE REPORT	0,1,NORTH
b	PLACE 0,0,NORTH LEFT REPORT	0,0,WEST
c	PLACE 1,2,EAST MOVE MOVE LEFT MOVE REPORT	3,3,NORTH

Deliverables

The Ruby source files, the test data and any test code. It is not required to provide any graphical output showing the movement of the toy robot.