**Titan Rover Project**

NASA have landed a rover on the moon Titan and wish to be able to command its movements using a simple 10x10 grid. The rover will be initially sitting in the top left corner of the grid facing south (x = 1, y = 1).

To control the rover, you need to send a string of letters to control its movement, these are:

* S – Face South
* N – Face North
* W – Face West
* E – Face East
* M – Move 1 square in the direction you are facing

For example, the command sequence could be:

MEMMMSMMWMNM

And the Rover would respond with its current position and orientation, for the above example it would return 3, 3, N (x, y, orientation).

You must validate the input contains only valid commands and that your navigation does not take you outside of the grid.

Design your software so that we can expand its grid size or command functionality in the future, for example we might want to navigate in a NE, SW, etc direction, or we may want to move more than 1 square at a time. Please explain how you would easily add in this extra functionality at no cost to the current functionality.

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