# Mars Rover kata

Mars Rover kata using UML, TDD, Java

### Design

UML Class Diagram

### Commands to explore Mars

All rovers need a plateau to land on, currently only rectangular shaped plateaus are supported.

#### Create a plateau

Enter the maximum x and y coordinates of the plateau, e.g.

Creates a 10x10 square with 0,0 coordinate at the bottom left-hand corner On successful creation a plateau id will be returned. Multiple plateaus can be created. Maximum size for a Quad Plateau is 9999999,9999999

#### Create a rover

To create a rover on the current plateau specify its x and y coordinates and heading, e.g. 0 0 N

Creates a rover on the current plateau at coordinates 3,5 with a heading of North Direction.

Plateaus can support multiple rovers.

#### Move and Spin commands

Rover move and spin commends are available to enable exploring:

spin left, e.g. if current heading is North, new heading is East

spin right

move one grid position in the direction of the current heading

A single command can contain multiple move and spin instructions, e.g. LLMMMRMMM

#### Other commands

SWITCH PLATEAU

SWITCH ROVER

LIST PLATEAUS

LIST ROVERS

SHOW MAP

HIDE MAP

FINISH

HELP

On exit a report of all rover positions is produced.

### Move logic

Rovers cannot land on or move to the space as another Rover on the same plateau.

On receipt of a move command the rover calculates its new coordinates and validates the move with the plateau.

The plateau check the coordinates are within bounds and the position of any other rovers. Two rovers cannot share the same coordinates

### Running the application

The application can run using manual input from the command line or a file containing instructions can be passed as a parameter.

Example instruction files are available in the test data folder.

### Future enhancements

Different shaped plateaus

Flying Rover

Additional Capcoms