LOVRO VRLEC

03/2023

Moon Rover App

Today's Agenda

01 Problem

02 Use Cases

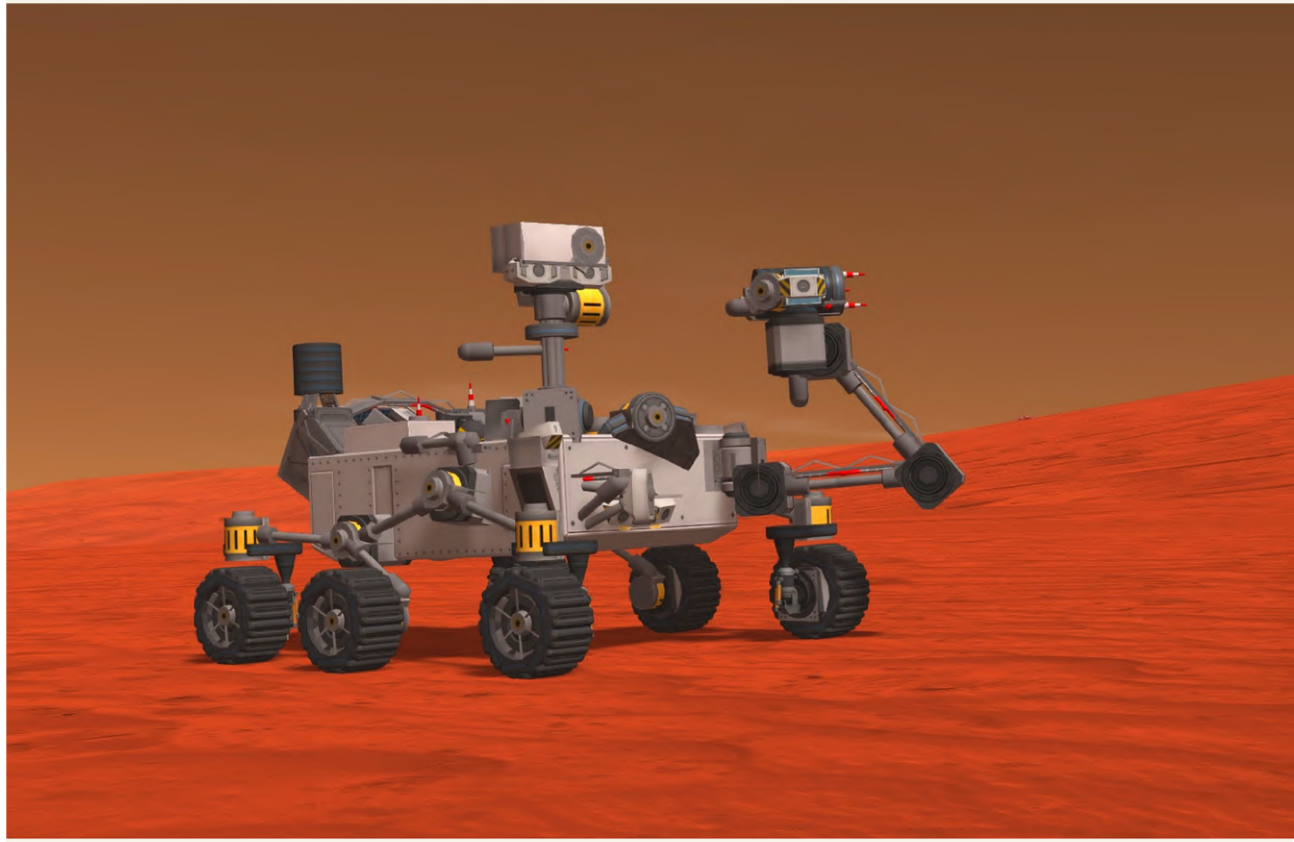
03 Model

04 API

05 Error Handling Design

06 Implementation

07 Q&A



SECTION 01 –

Problem

A simulation of a moon rover moving on a square tabletop (dim. 5x5 units)

No other obstructions on the surface

Placement on the tabletop + coordinates + showing location and directions

The moon rover can turn on the spot and its facing changes accordingly

Freedom to roam around + prevention from falling to destruction

SECTION 02 –

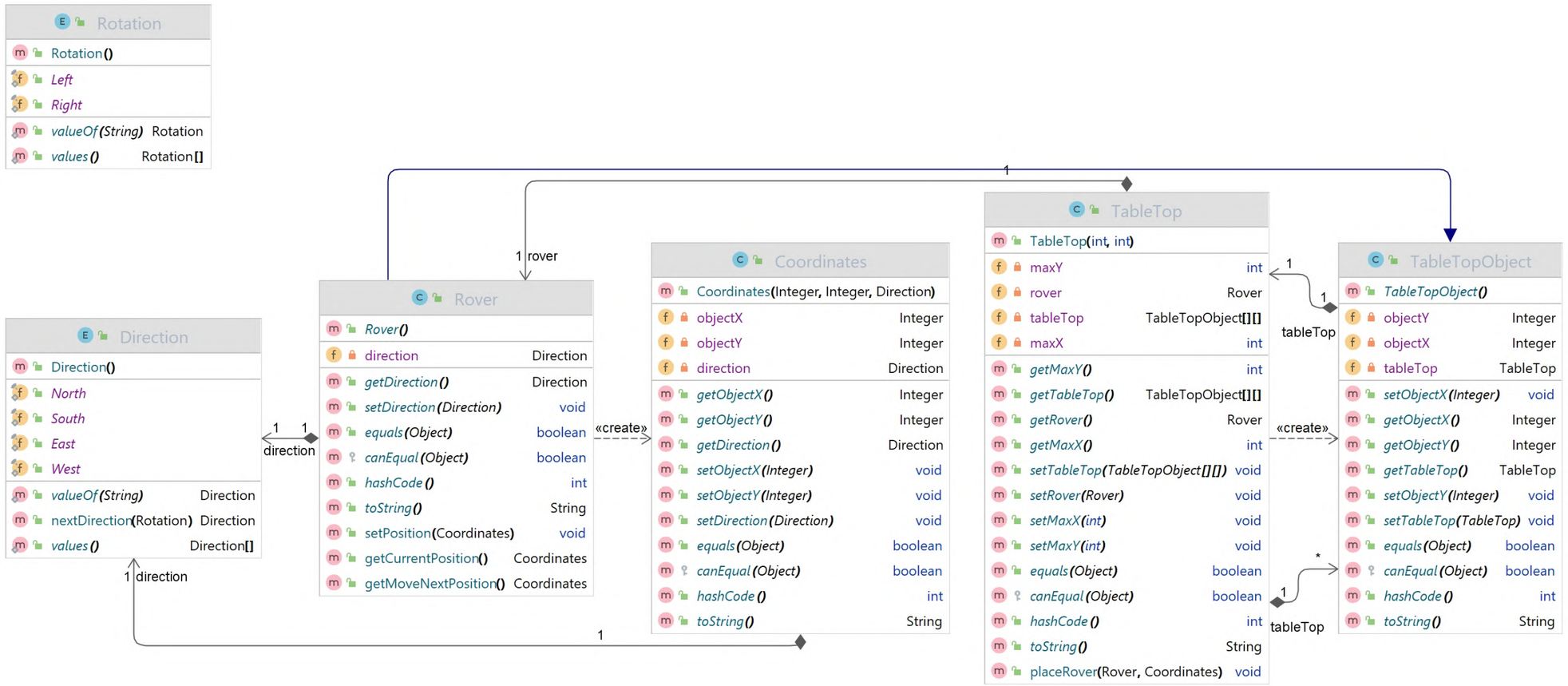
Use Cases

- The rover is placed on the surface to the specific coordinates and facing
- It is possible to send a move command to the rover
- The rover moves one unit in the facing direction
- It is possible to send a turn command to the rover (left / right) + its facing changes accordingly
- It is possible to request a report from the rover about its position and its facing
- Commanding the rover should be realised via a REST API

SECTION 03 –

Model

Model Design



SECTION 04 –

API

API Summary

rover-controller

POST	`/api/rover/turn`	Turns rover direction on tabletop
POST	`/api/rover/place`	Places rover on tabletop
POST	`/api/rover/move`	Moves rover on tabletop in rover direction
GET	`/api/rover/report`	Rover reports its current location on tabletop

Place API

POST `/api/rover/place` Places rover on tabletop

Parameters | Try it out

No parameters

Request body required | application/json

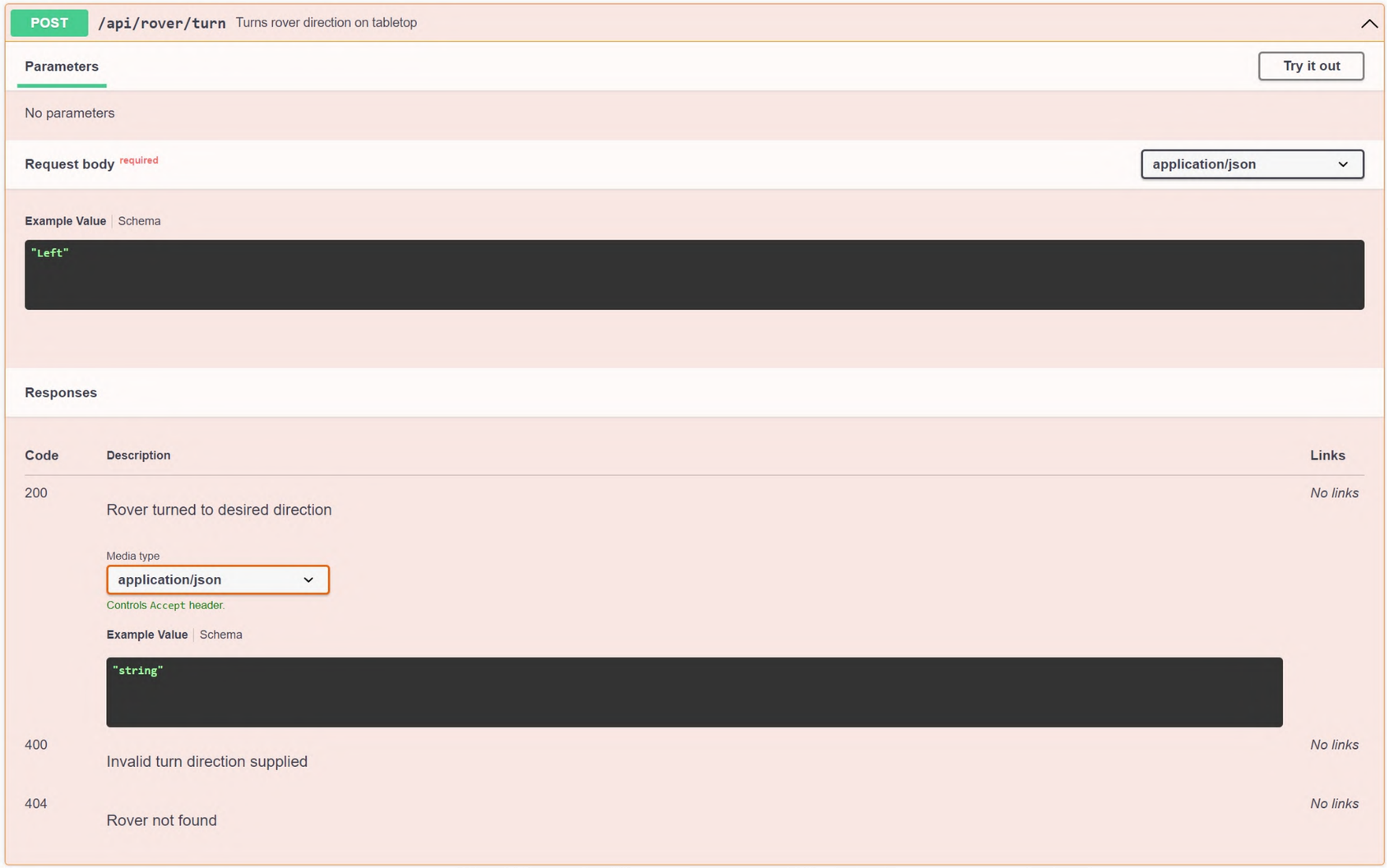
Example Value | Schema

```
{
  "objectX": 0,
  "objectY": 0,
  "direction": "North"
}
```

Responses

Code	Description	Links
200	Rover placed on tabletop Media type: application/json Controls `Accept` header. **Example Value** | Schema `{ "objectX": 0, "objectY": 0, "direction": "North" }`	*No links*
400	Invalid tabletop position supplied	*No links*

Turn API


POST
/api/rover/turn
Turns rover direction on tabletop
Parameters
Try it out
No parameters
Request body
required
application/json
Example Value
Schema
"Left"
Responses
Code
Description
Links
200
Rover turned to desired direction
No links
Media type
application/json
Controls Accept header.
Example Value
Schema
"string"
400
Invalid turn direction supplied
No links
404
Rover not found
No links

Move API

POST `/api/rover/move` Moves rover on tabletop in rover direction

Parameters | Try it out

No parameters

Responses

Code	Description	Links
200	Rover moved forward one step on tabletop Media type: application/json Controls `Accept` header. **Example Value** | Schema `"string"`	*No links*
404	Rover not found	*No links*

Report API

GET `/api/rover/report` Rover reports its current location on tabletop

Parameters | Try it out

No parameters

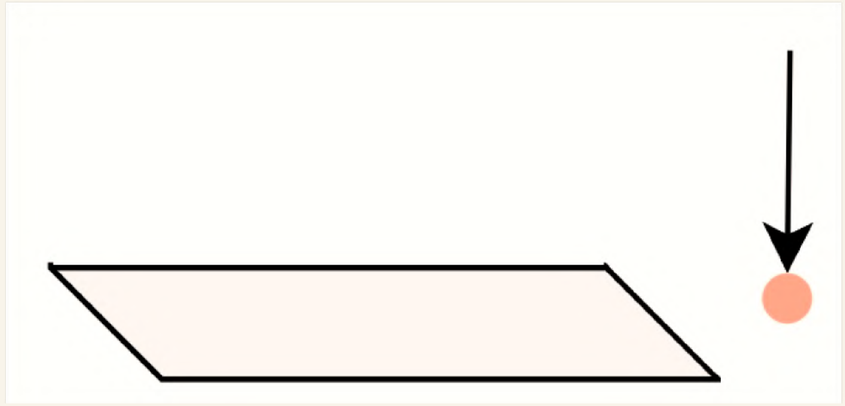
Responses

Code	Description	Links
200	Rover placed on tabletop Media type: application/json Controls `Accept` header. **Example Value** | Schema `{ "objectX": 0, "objectY": 0, "direction": "North" }`	*No links*
400	Invalid tabletop position supplied	*No links*
404	Rover not found	*No links*

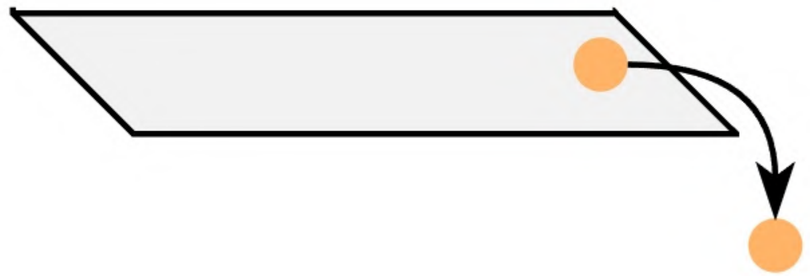
SECTION 05 –

Error Handling Design

Placing of the rover outside the bounds of the tabletop

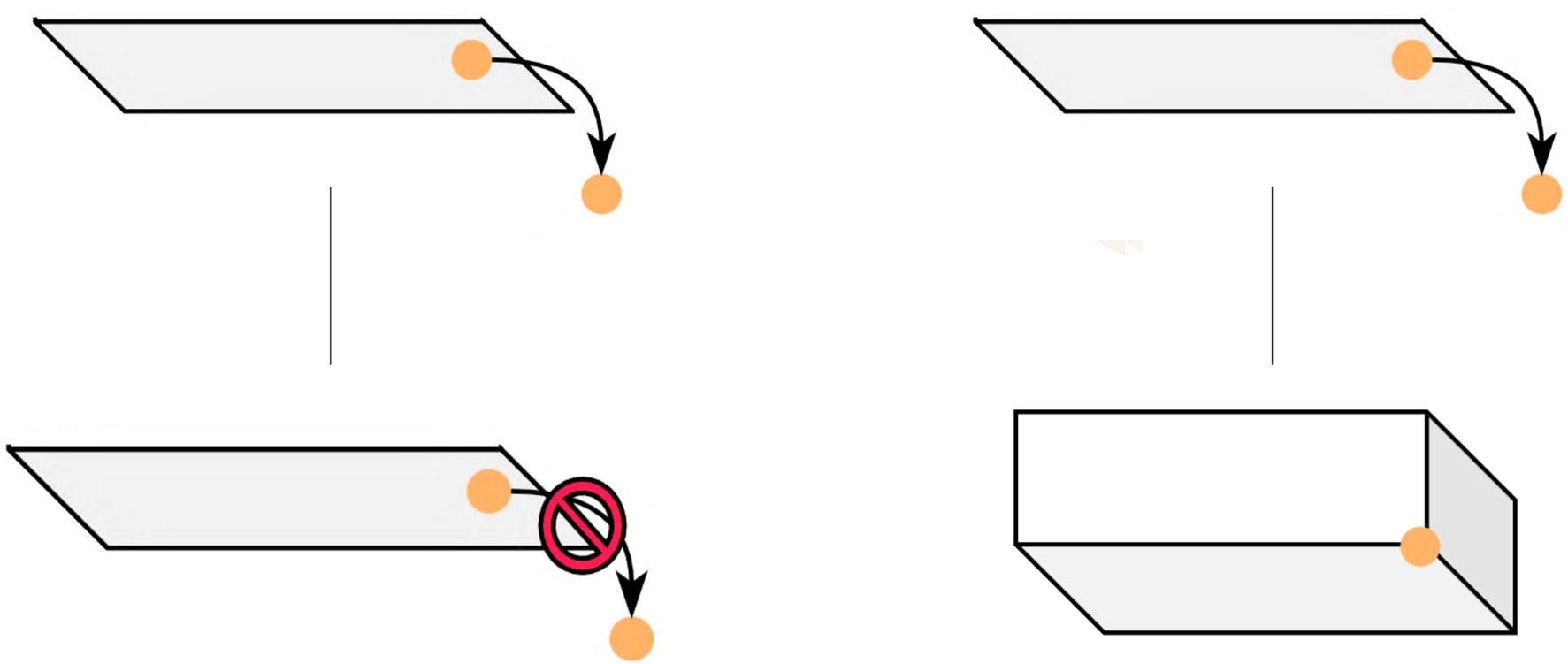


Moving with the rover off the tabletop



Moving with the rover off the tabletop

CHOICES



SECTION 06 –

Implementation

Live show of code

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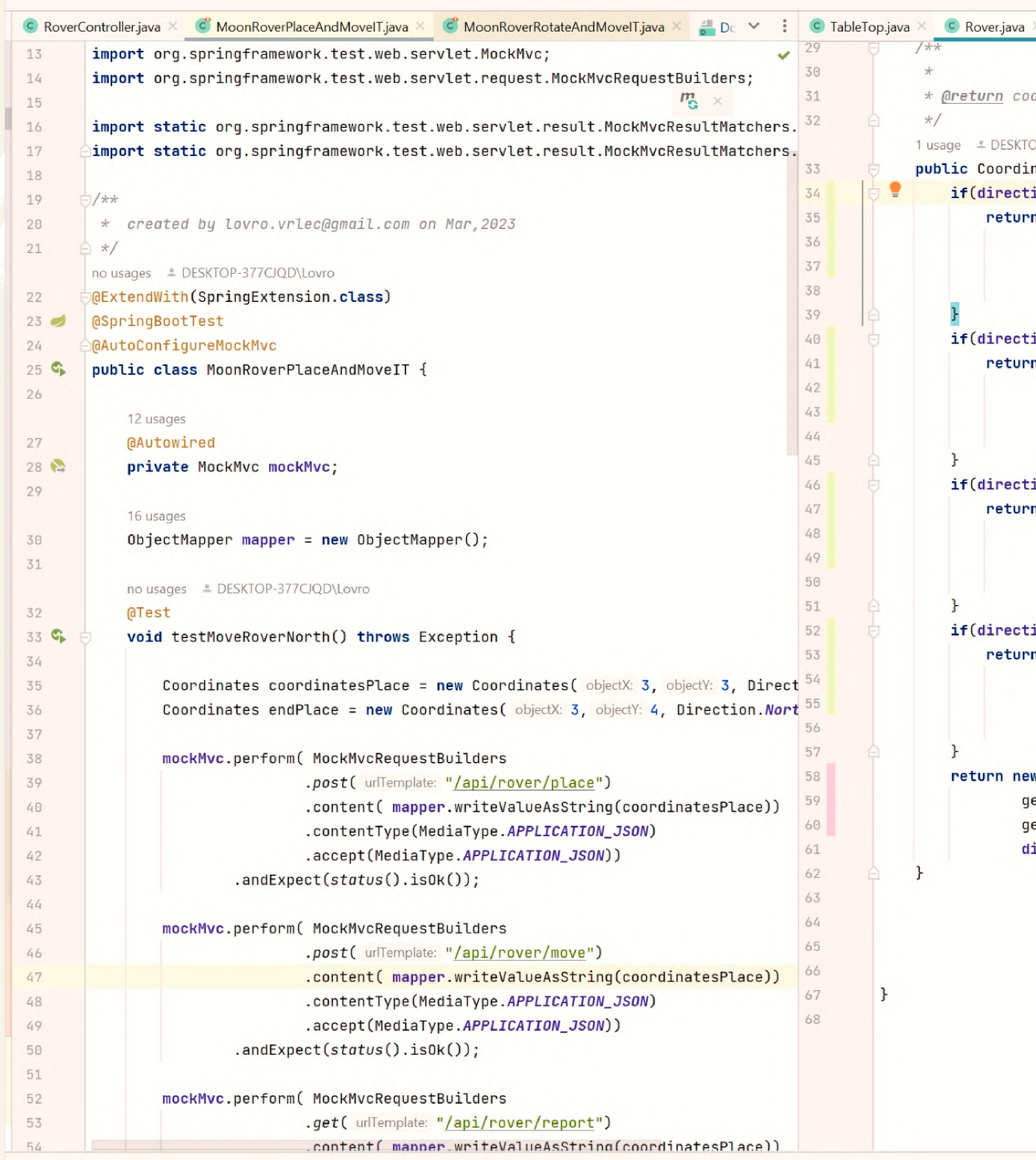

SECTION 07 –

Questions & Answers

Thank you

Let’s work together.

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