Drone Test App

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Contents

Coding Task Solution by El Hadji Momar Fall

<u>Commit history:</u>

- Step 1:

Creation of the project: Project name and Initialization.

- Step 2:

<u>Implementation: Coding</u>

Creation of the model DTO, creation of the services, implementation of the services, creation of the repositories and creation of the controllers.

Creation of static variables.

<u>Configuration</u>

I have chosen H2 database, in-memory variant which is volatile, and the data is lost on application restart. The database is up and running on application start. Postman must be enough for the interaction with Rest API and H2. Still H2 Console is available at http://localhost:8080/h2-console/. Employ 'sa' as user name and 'fall' as password to log into.

Specifications:

Only the drones with IDLE or LOADING status may be available

Drone weight is actually the weight of loaded medications

The check for the drones available for loading takes the following requirements into account:

the drone must be prevented from being in LOADING state if the battery level (capacity) is below 25%

loading each new medication increases the drone weight so keep an eye on the overload. - loading process results in the status change for LOADING if only the overall weight of loaded medications does not exceed the weight limit of 500 g - when the weight limit is reached, the message 'medication overall weight exceeds allowed limit' is issued Adding a new drone is possible only if drone fleet size limit (10) is not exceeded - the message 'no more drones can be registered' is shown.

2023-07-27 12:40:28.121 INFO 9124 --- [task-47] c.m.d.service.DroneServiceImpl   : serial number - DRONE1, capacity - 20
2023-07-27 12:40:28.121 INFO 9124 --- [task-47] c.m.d.service.DroneServiceImpl   : serial number - DRONE2, capacity - 60
2023-07-27 12:40:28.122 INFO 9124 --- [task-47] c.m.d.service.DroneServiceImpl   : serial number - DRONE3, capacity - 42
2023-07-27 12:40:28.122 INFO 9124 --- [task-47] c.m.d.service.DroneServiceImpl   : serial number - DRONE4, capacity - 42
2023-07-27 12:41:28.108 INFO 9124 --- [task-48] c.m.d.service.DroneServiceImpl   : Drone capacity check at 2023/07/27 12:41
2023-07-27 12:41:28.111 INFO 9124 --- [task-48] c.m.d.service.DroneServiceImpl   : serial number - DRONE1, capacity - 20
2023-07-27 12:41:28.111 INFO 9124 --- [task-48] c.m.d.service.DroneServiceImpl   : serial number - DRONE2, capacity - 60
2023-07-27 12:41:28.111 INFO 9124 --- [task-48] c.m.d.service.DroneServiceImpl   : serial number - DRONE3, capacity - 42
2023-07-27 12:41:28.111 INFO 9124 --- [task-48] c.m.d.service.DroneServiceImpl   : serial number - DRONE4, capacity - 42
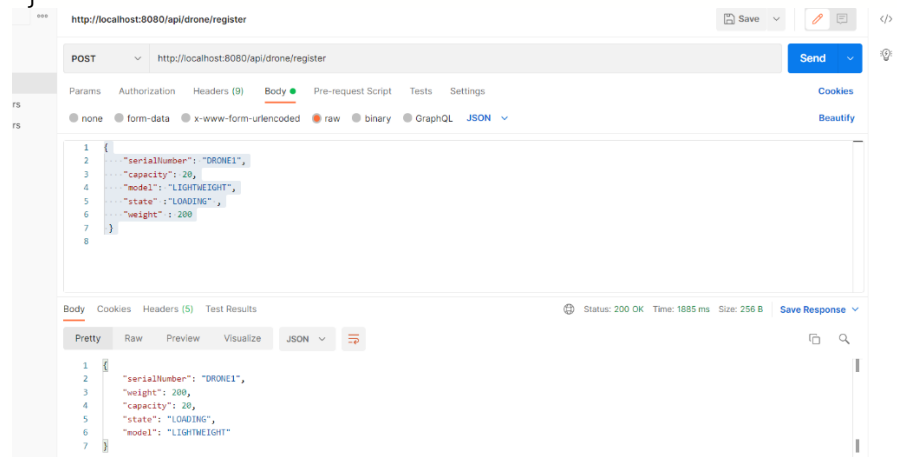
Testing with Postman

Drones:

```
{

"serialNumber": "DRONE1",
"capacity": 20,
"model": "LIGHTWEIGHT",
"state" :"LOADING" ,
"weight" : 200

}
```
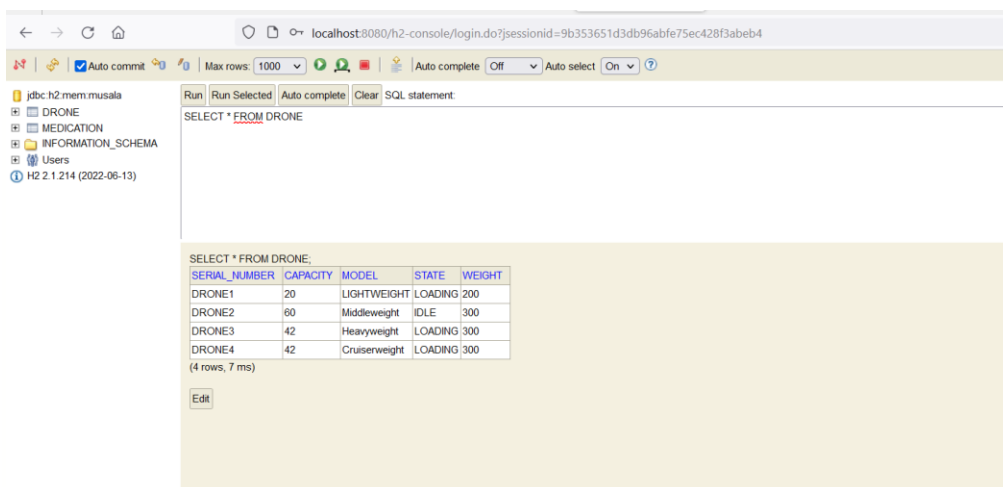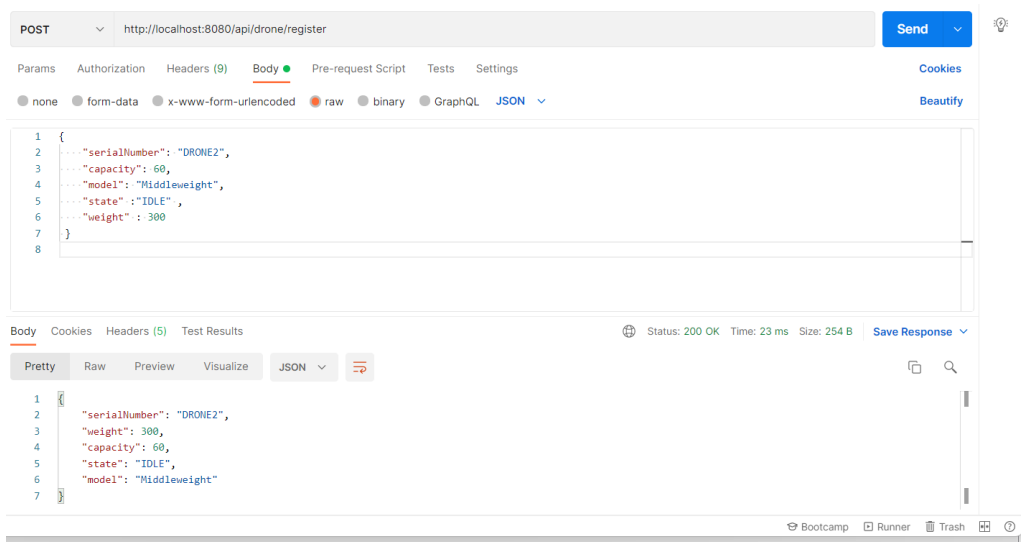


```
{

"serialNumber": "DRONE2",
"capacity": 60,
"model": "Middleweight",
"state" :"IDLE" ,
"weight" : 300

}
```

POST ⌄ http://localhost:8080/api/drone/register   Send ⌄

Params Authorization Headers (9) Body ● Pre-request Script Tests Settings   Cookies

○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON ⌄   Beautify

```
1  {
2      "serialNumber": "DRONE2",
3      "capacity": 60,
4      "model": "Middleweight",
5      "state" :"IDLE" ,
6      "weight" : 300
7  }
8
```

Body Cookies Headers (5) Test Results   Status: 200 OK Time: 23 ms Size: 254 B   Save Response ⌄

Pretty Raw Preview Visualize   JSON ⌄

```
1  {
2      "serialNumber": "DRONE2",
3      "weight": 300,
4      "capacity": 60,
5      "state": "IDLE",
6      "model": "Middleweight"
7  }
```

Bootcamp Runner Trash

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localhost:8080/h2-console/login.do?jsessionid=9b353651d3db96abfe75ec428f3abeb4

Auto commit Max rows: 1000 Run Auto complete Off Auto select On

Run Run Selected Auto complete Clear SQL statement:

SELECT * FROM DRONE

- jdbc:h2:mem:musala
  - DRONE
  - MEDICATION
  - INFORMATION_SCHEMA
  - Users
  - H2 2.1.214 (2022-06-13)

SELECT * FROM DRONE;

SERIAL_NUMBER	CAPACITY	MODEL	STATE	WEIGHT
DRONE1	20	LIGHTWEIGHT	LOADING	200
DRONE2	60	Middleweight	IDLE	300
DRONE3	42	Heavyweight	LOADING	300
DRONE4	42	Cruiserweight	LOADING	300

(4 rows, 7 ms)

Edit

GET ∨ http://localhost:8080/api/drone/getavailable **Send** ∨

Params Authorization Headers (9) Body ● Pre-request Script Tests Settings Cookies

Query Params

KEY	VALUE	DESCRIPTION	ooo Bulk Edit
Key	Value	Description	

Body Cookies Headers (5) Test Results ⊕ Status: 200 OK Time: 421 ms Size: 444 B Save Response ∨

Pretty Raw Preview Visualize JSON ∨

```
 2   {
 3       "serialNumber": "DRONE2",
 4       "weight": 300,
 5       "capacity": 60,
 6       "state": "IDLE",
 7       "model": "Middleweight"
 8   },
 9   {
10       "serialNumber": "DRONE3",
11       "weight": 300,
12       "capacity": 42,
13       "state": "LOADING",
14       "model": "Heavyweight"
15   },
16   {
17       "serialNumber": "DRONE4",
```

⊕ Bootcamp ▷ Runner 🗑 Trash

GET ∨ http://localhost:8080/api/drone/getcapacitybyserial/DRONE1 **Send** ∨

Params Authorization Headers (9) Body ● Pre-request Script Tests Settings Cookies

Query Params

KEY	VALUE	DESCRIPTION	ooo Bulk Edit
Key	Value	Description	

Body Cookies Headers (5) Test Results ⊕ Status: 200 OK Time: 193 ms Size: 166 B Save Response ∨

Pretty Raw Preview Visualize JSON ∨

```
 1   20
```

POST http://localhost:8080/api/drone/register

Params | Authorization | Headers (9) | Body ● | Pre-request Script | Tests | Settings

● none ● form-data ● x-www-form-urlencoded ● raw ● binary ● GraphQL JSON ∨

```
1  {
2    "serialNumber": "DRONE4",
3    "capacity": 45,
4    "model": "YGHVUU8UEB",
5    "state" :"FGHU" ,
6    "weight" : 600
7  }
```

Body | Cookies | Headers (5) | Test Results   Status: 406 Not Acceptable Time: 20 ms Size: 600 B Save Response ∨

Pretty | Raw | Preview | Visualize | JSON ∨

```
1  {
2    "message": "Cannot deserialize value of type `com.musala.dronedispatchcontroller.domain.enums.Model` from String \"YGHVUU8UEB\":
        not one of the values accepted for Enum class: [CRUISERWEIGHT, LIGHTWEIGHT, HEAVYWEIGHT, MIDDLEWEIGHT]\n at [Source: (org.
        springframework.util.StreamUtils$NonClosingInputStream); line: 4, column: 14] (through reference chain: com.musala.
        dronedispatchcontroller.service.dto.DroneDto[\"model\"])"
3  }
```

Medications:

```
{
  "code": "MEDICATION1",
  "name": "Activan",
  "picture": "image",
  "weight" :80 ,
  "drone" : null
}
```

POST http://localhost:8080/api/medication/register

Params | Authorization | Headers (9) | Body ● | Pre-request Script | Tests | Settings

● none ● form-data ● x-www-form-urlencoded ● raw ● binary ● GraphQL JSON ∨
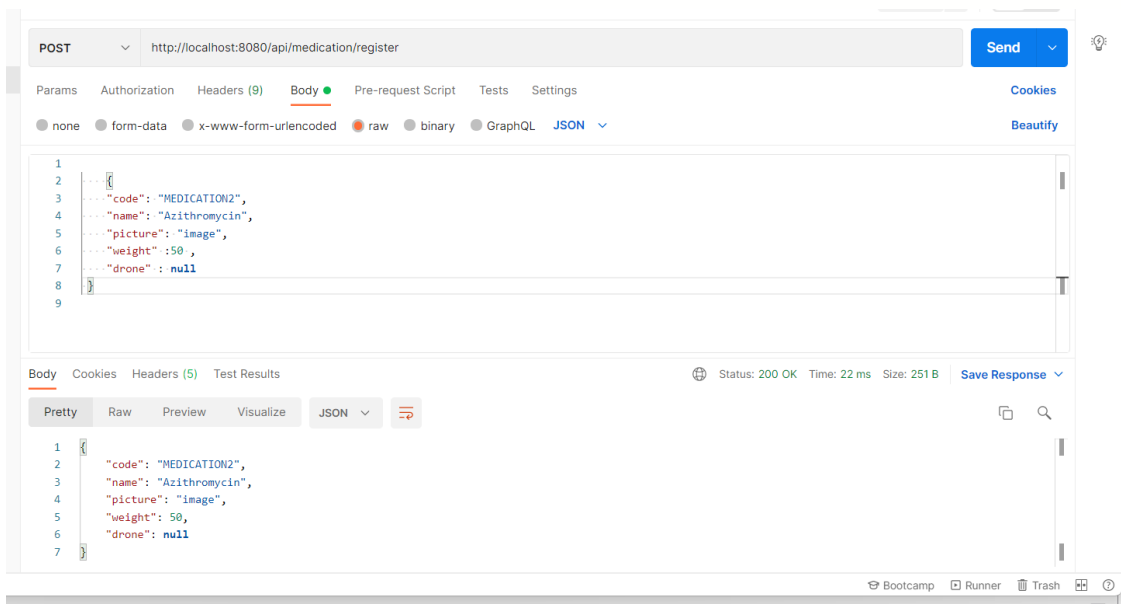
```
1
2  {
3    "code": "MEDICATION1",
4    "name": "Activan",
5    "picture": "image",
6    "weight" :80 ,
7    "drone" : null
8  }
9
```

Body | Cookies | Headers (5) | Test Results   Status: 200 OK Time: 154 ms Size: 246 B Save Response ∨

Pretty | Raw | Preview | Visualize | JSON ∨

```
1  {
2    "code": "MEDICATION1",
3    "name": "Activan",
4    "picture": "image",
5    "weight": 80,
6    "drone": null
7  }
```

```json
{
    "code": "MEDICATION2",
    "name": "Azithromycin",
    "picture": "image",
    "weight" :50 ,
    "drone" : null
}
```

Auto commit | Max rows: 1000 | Auto complete Off | Auto select On

🗄 jdbc:h2:mem:musala
⊞ DRONE
⊞ MEDICATION
INFORMATION_SCHEMA
Users
ⓘ H2 2.1.214 (2022-06-13)

Run | Run Selected | Auto complete | Clear | SQL statement:

SELECT * FROM MEDICATION

SELECT * FROM MEDICATION;

CODE	NAME	PICTURE	WEIGHT	FK_DRONE
MEDICATION1	Activan	image	80	null
MEDICATION2	Azithromycin	image	50	null
MEDICATION3	Actifen	image	110	null

(3 rows, 1 ms)

Edit

PUT | http://localhost:8080/api/drone/loaddrone?droneSerial=DRONE1&medicationCodes=MEDICATION1,MEDICATION2,MEDICATION3 | **Send**

Params ● | Authorization | Headers (9) | Body ● | Pre-request Script | Tests | Settings | Cookies

☑	droneSerial		DRONE1	
☑	medicationCodes		MEDICATION1,MEDICATION2,MEDICATION3	
	Key		Value	Description

Body | Cookies | Headers (5) | Test Results | Status: 200 OK | Time: 440 ms | Size: 209 B | Save Response ⌄

Pretty | Raw | Preview | Visualize | Text ⌄

1 drone is successfully loaded with medications

GET | http://localhost:8080/api/drone/getmedications/:serial | **Send**

Params ● | Authorization | Headers (9) | Body ● | Pre-request Script | Tests | Settings | Cookies

Path Variables

| | KEY | VALUE | DESCRIPTION | ooo | Bulk Edit |
| | serial | DRONE1 | Description | | |

Body | Cookies | Headers (5) | Test Results | Status: 200 OK | Time: 33 ms | Size: 684 B | Save Response ⌄

Pretty | Raw | Preview | Visualize | JSON ⌄

```
1   [
2       {
3           "code": "MEDICATION1",
4           "name": "Activan",
5           "picture": "image",
6           "weight": 80,
7           "drone": {
8               "serialNumber": "DRONE1",
9               "weight": 440,
10              "capacity": 20,
11              "state": "LOADING",
12              "model": "LIGHTWEIGHT"
13          }
14      },
15      {
16          "code": "MEDICATION2",
17          "name": "Azithromycin",
```

Build and Run

Maven install or mvn install(cmd)