TRAC MOBILITY

TracMobility Fullstack Testing

Objective: This testing will test the candidates' ability to develop the backend API and frontend page.

Backend Requirements:

1. Please use Java, Spring Boot and MVC implement a search vehicle API by following parameters.
   Path: /api/vehicle
   Method: GET
   Request parameters:

Attribute	Type	Required	Default value	Comments
page	number	Y	0	Page number
size	number		10	Page size
northWestLat	number	Y		Latitude of Northwest
northWestLng	number	Y		Longitude of Northwest
southEastLat	number	Y		Latitude of Southeast
southEastLng	number	Y		Longitude of Southeast
status	enum			

Note: please search vehicles

- Filter by vehicle's lat between northWestLat and southEastLat.
- Filter by vehicle's lng between northWestLng and southEastLng.
- Filter by status.
- Implement pagination by page and size.

Vehicle model:

Attribute	Type	Required	Comments
id	Long	Y	
created_at	datetime	Y	

vehicle_uuid	string	Y	
qr_code	string	Y	
lat	Float	Y	[-90, 90]
lng	Float	Y	[-180, 180]
status	enum	Y	Valus: ACTIVE, INACTIVE, RUNNING
battery_level	Float		[0,1]

Response JSON:

```
[
   {
     "id": 1,
     "vehicleUuid": "LN-100001"
     "qrCode": "CNQ-000001",
     "lat": 51.507351,
     "lng": -0.127758,
     "status": "RUNNING",
     “batteryLevel”: 0.75
   }
]
```

2. Please integrate the H2 database.
3. Mock data and save them in the H2 database.

id	vehicle_uuid	qr_code	lat	lng	status	battery_level
1	V_UUID_1	QC_001	0.0001	0.0001	RUNNING	0.71
2	V_UUID_2	QC_002	0.0002	0.0002	INACTIVE	0.72
3	V_UUID_3	QC_003	-2.0003	2.0003	RUNNING	0.73
4	V_UUID_4	QC_004	0.0004	2.0004	RUNNING	0.74
5	V_UUID_5	QC_005	2.0005	2.0005	RUNNING	0.75

6	V_UUID_6	QC_006	-2.0006	0.0006	RUNNING	0.76
7	V_UUID_7	QC_007	2.0007	0.0007	RUNNING	0.77
8	V_UUID_8	QC_008	-2.0008	-2.0008	RUNNING	0.78

4. Please add unit test
5. Please add integration testing in spring

Frontend requirements:

1. Finish one page (Vehicle List, Side Menu)
   - Vehicle List: show the vehicle information extracted from your backend API (http://localhost:8080/api/vehicle?page=0&size=10)
   - Search input doesn't need to be implemented.
   - Page size and pagination is optional, but they are the bonus item
   - Side Menu : show multiply features.
2. Please use any framework you like React or Angular
3. You can use any CSS template which you want. e.g. Bootstrap or Material-UI. But please make sure the primary colour should be '#03989E'

Examples:

Just for your reference (Your work does not need to be the same as this sample)