HW1: Mid-term assignment report

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1 Introduction

1.1 Overview of the work

This assignment's main goals are to test the students knowledge about Unit and Mock Testing as well as ….
The goal was to developed a multi-layer web application, using Spring-Boot. It provides information about the air quality of certain areas of different European countries making this application useful for people who live in these specific locations because they can check the information and be updated about the details of this matter.

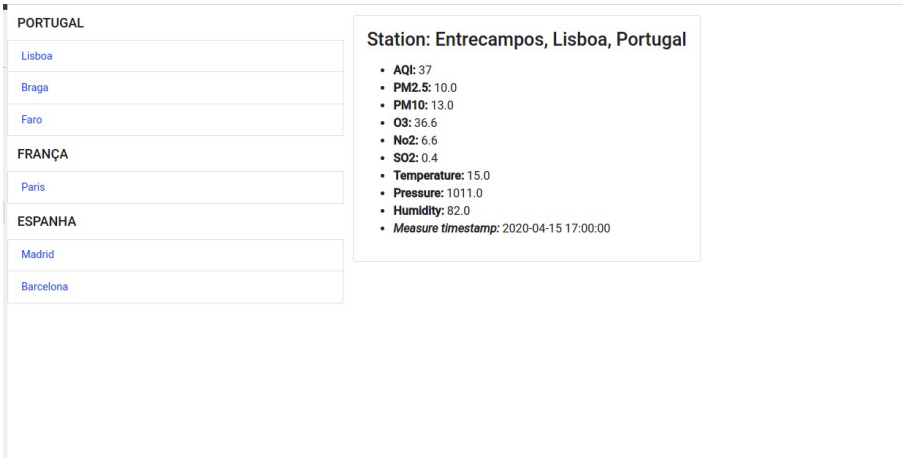
1.2 Limitations

It was planned to developed a local (in-memory) cache but it wasn't possible.

2 Product specification

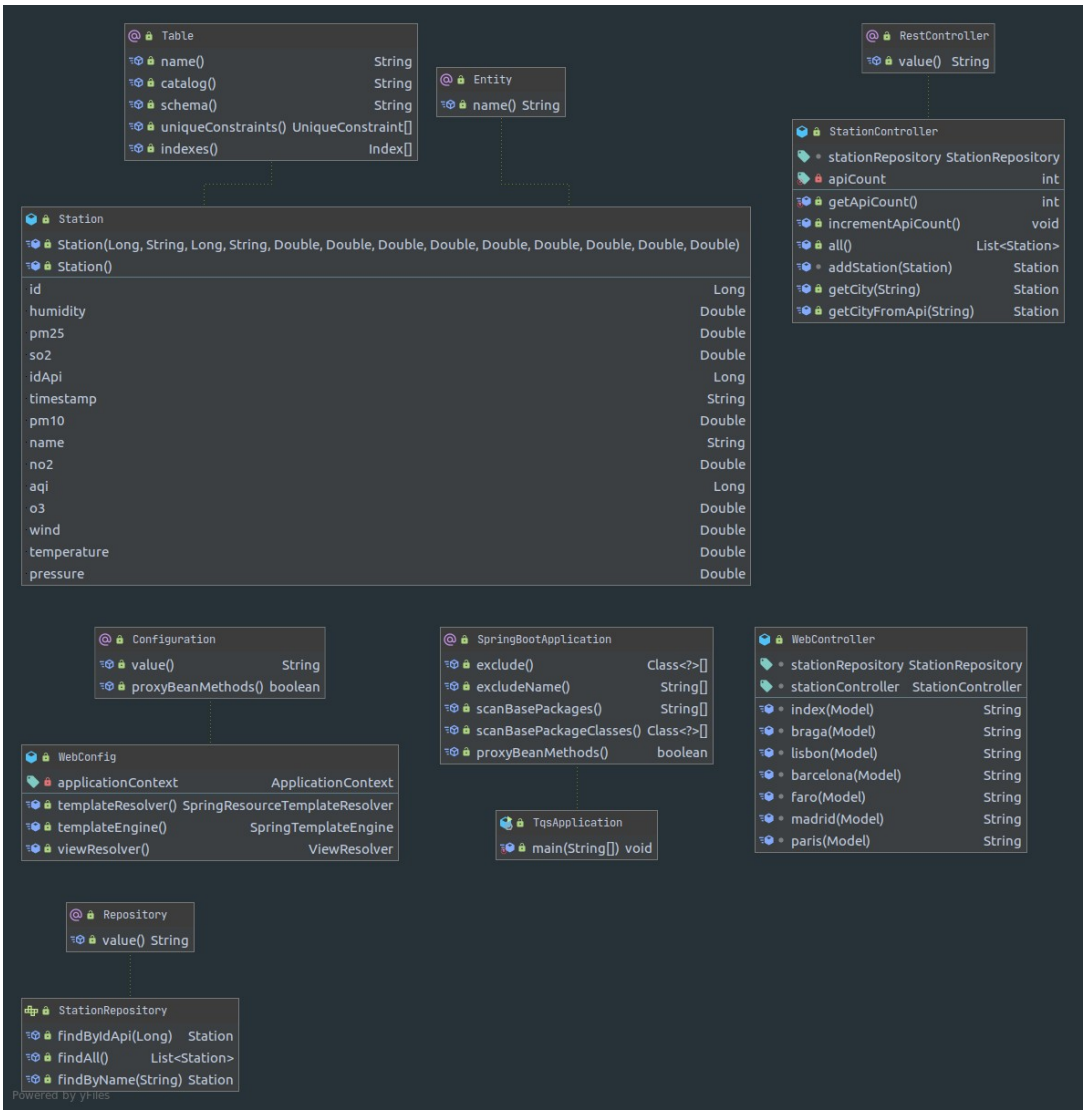
2.1 Functional scope and supported interactions

As it was mentioned before, it offers a view of different locations' air quality details.



2.2 System architecture

As it was requested, this project was built using Spring-Boot. The connection with the interface was implemented with Thymeleaf. Using a docker container, it was built a database using PostgresSQL. To connect the database with the Spring-Boot it is used a JPA Repository.



2.3 API for developers

GET | External API CALL
localhost:8080/external_api/{station}
`https://api.waqi.info/feed/{station}/?token={token}`
(token provided)
GET | Get station by name
localhost:8080/station/{name}
GET | Get all stations
localhost:8080/stations
GET | Get station by name
localhost:8080/{station}

3 Quality assurance

3.1 Overall strategy for testing

Implemented Unit Testing, Selenium web testing and Mockito Testing. No failures were detected.

3.2 Unit and integration testing

Developed tests for StationController and for Station(Model):
StationController:
- testFindAll()
- shouldReturnStation()

Station:
- testStationDetails()

3.3 Functional testing

Used the Selenium IDE to select all the stations that were provided in the webpage.

4 References & resources

Project resources

- Git repository: https://github.com/flaviagfigueiredo/AirQuality.git
- Video demo [in the Git repository]

Reference materials

https://howtodoinjava.com/spring-boot2/testing/rest-controller-unit-test-example/
https://waqi.info/
https://spring.io/guides/gs/spring-boot/