

# HW1: Mid-term assignment report

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## 1 Introduction

### 1.1 Overview of the work

This report presents the midterm individual project required for TQS, covering both the software product features and the adopted quality assurance strategy.

Rest API and website for:

- Search for bus connections (trips) between two cities.
- Book a Reservation for a passenger.

In terms of quality assurance, it as test for:

- A) Unit tests
- B) Service level tests, with dependency isolation using mocks (mockito)
- C) Integration tests on your own API with rest assured
- D) Functional testing (on the web interface). BDD with Selenium WebDriver

### 1.2 Current limitations

Some tests are incomplete, and I would like to have done more integration tests. Not very good analysis of sonarqube result. No logger.

## 2 Product specification

### 2.1 Functional scope and supported interactions

A minimalist web app which allows users to select the origin, destination, and date to search for possible trips. Then the user should pick one and provide passenger details and make a reservation.

### 2.2 System architecture

Frontend using thymeleaf , backend springboot , database postgres 15.9.

### 2.3 API for developers

GET	/connections	Retrieve all connections	  
GET	/connections/{id}	Retrieve a connection by ID	
POST	/buy	Buy reservation	
POST	/pay	Pay reservation	
GET	/reservations	Retrieve all reservations	
GET	/reservations/{id}	Retrieve a reservation by ID	

## 3 Quality assurance

### 3.1 Overall strategy for testing

Planned to do TDD but do time I didn't. I used cucumber, rest assured, test containers , assertj , junit, flyway , Mockito , selenium.

### 3.2 Unit and integration testing

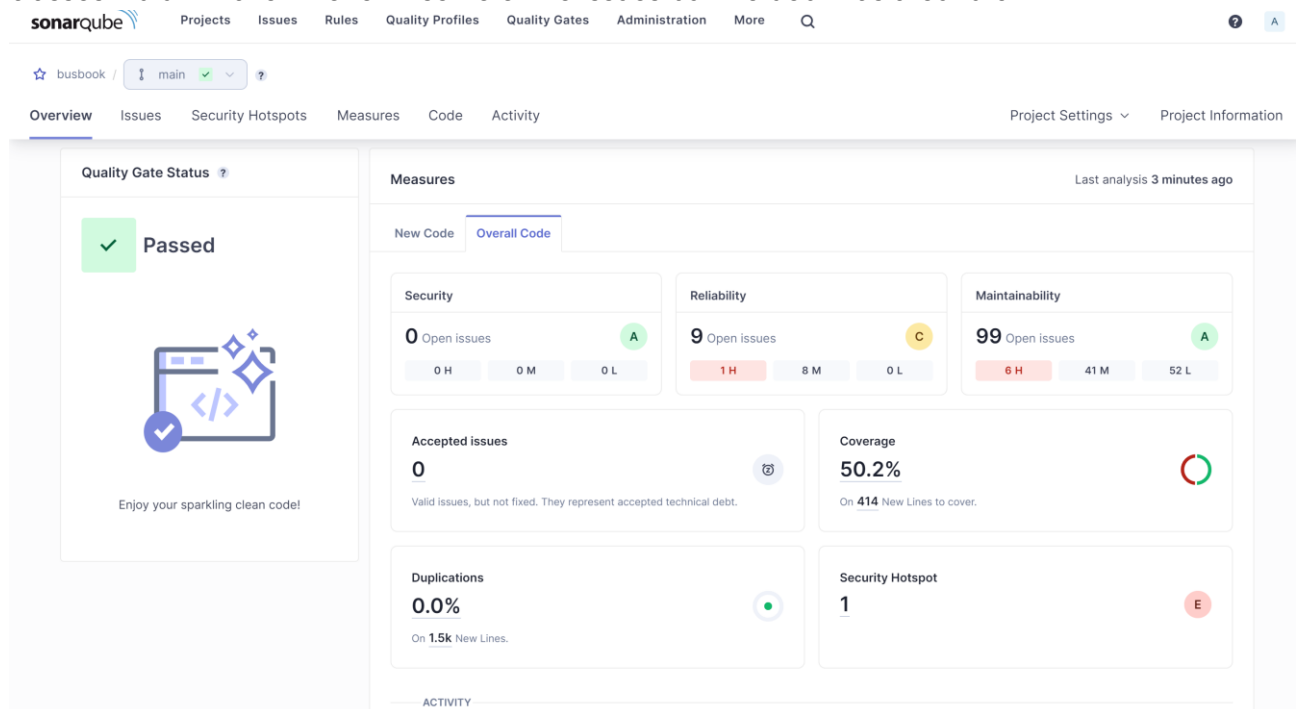
Test for cache, services and repositories using Mockito , junit , rest assured and spring bootfunctionalities.

### 3.3 Functional testing

Cucumber with selenium I created a scenario in gherkin that then runs selenium with webdrivermanager from bonigarcia.

### 3.4 Code quality analysis

I used sonarqube running locally. The coverage is a bit lower than expected due to the cucumber test not registering and also because I included all getters and setters in model classes. I didn't have time to fix some of the issues but the debt was around 6h.



## 4 References & resources

### Project resources

Resource:	URL/location:
Git repository	<a href="https://github.com/DiogoMMarto/TQS_1082998">https://github.com/DiogoMMarto/TQS_1082998</a>
Video demo	<a href="https://youtu.be/fZFUxkWj_-g">https://youtu.be/fZFUxkWj_-g</a>