HW1: Mid-term assignment report

Vasco Miguel Fernandes Faria [107323], v2024-04-09

1Introduction

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.
The application BusPeak is crafted to streamline the process of purchasing tickets for trips between major cities on the Iberian Peninsula. Its primary purpose is to facilitate customers in conveniently acquiring tickets for their travel needs.

1.2 Current limitations

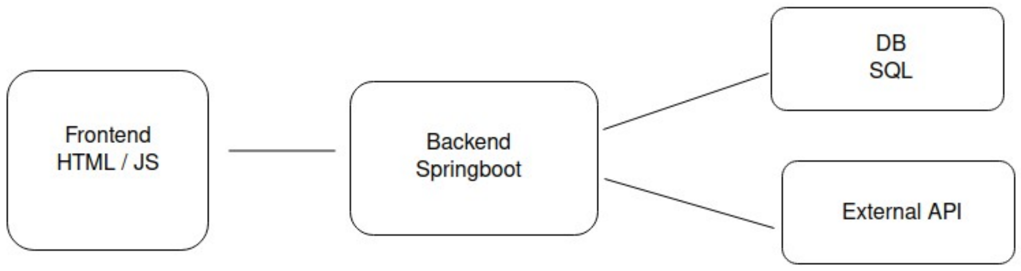
The application relies solely on one API as a data source for currency exchange rates, which poses a risk in case of failure of the API. Although these values are cached, the exchange rate values have a limited duration of validity.

2Product specification

2.1 Functional scope and supported interactions

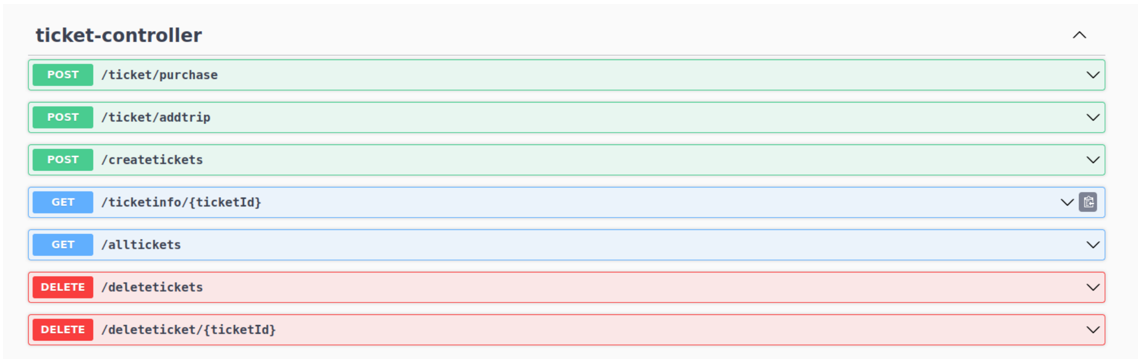
Users can purchase tickets to travel between 2 cities by bus, needing to choose the cities and date, the most comfortable bus for the trip, and finally provide the information to make the ticket purchase.

2.2 System architecture



2.3 API for developers

Problem Domain



ticket-controller

POST /ticket/purchase

POST /ticket/addtrip

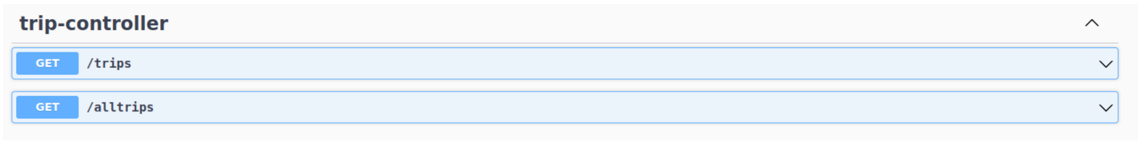
POST /createtickets

GET /ticketinfo/{ticketId}

GET /alltickets

DELETE /deletetickets

DELETE /deleteticket/{ticketId}

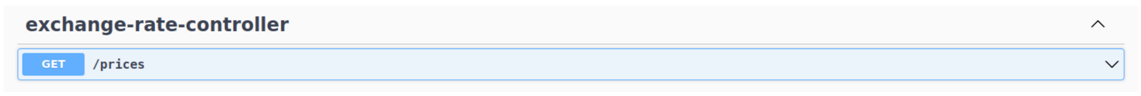


trip-controller

GET /trips

GET /alltrips

Exchange Rate Values (Cache):



exchange-rate-controller

GET /prices

3Quality assurance

3.1 Overall strategy for testing

Although the code development preceded the tests, the goal was always to use TDD (Test-Driven Development).

3.2 Unit and integration testing

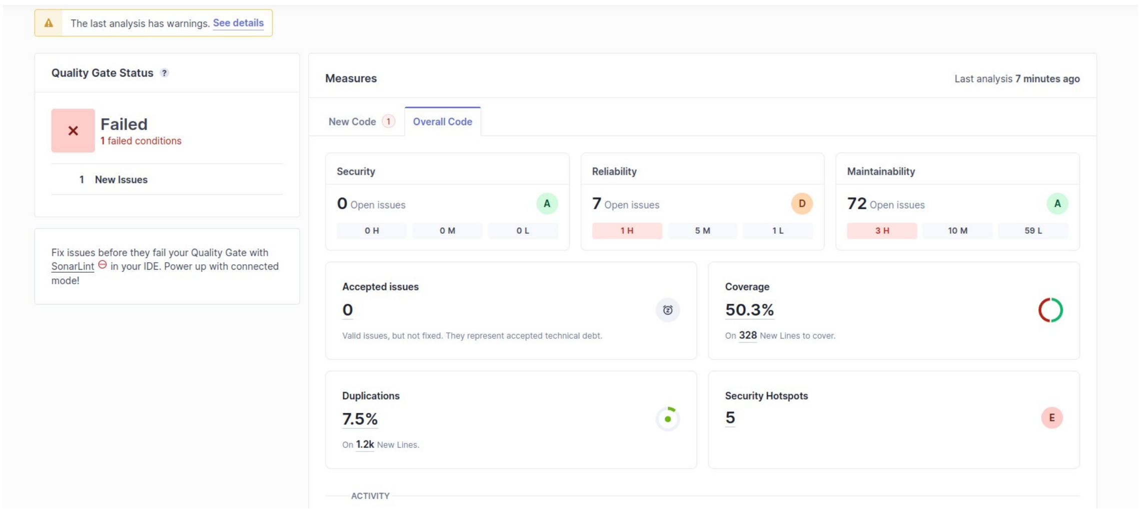
For unit and integration testing, we used JUnit 5, Mockito, and Spring Boot MockMVC.

3.3 Functional testing

Selenium tests were used, using the Selenium WebDriver, with the Chrome Driver.

3.4 Code quality analysis

SonarCube for code evaluation.


The last analysis has warnings. See details

Quality Gate Status ?

Failed
1 failed conditions

1 New Issues

Fix issues before they fail your Quality Gate with SonarLint in your IDE. Power up with connected mode!

Measures — Last analysis 7 minutes ago

New Code 1 | Overall Code

Security	Reliability	Maintainability
0 Open issues — A	7 Open issues — D	72 Open issues — A
0 H · 0 M · 0 L	1 H · 5 M · 1 L	3 H · 10 M · 59 L

Accepted issues
0
Valid issues, but not fixed. They represent accepted technical debt.

Coverage
50.3%
On 328 New Lines to cover.

Duplications
7.5%
On 1.2k New Lines.

Security Hotspots
5 — E

ACTIVITY

4References & resources

Project resources

Resource:	URL/location:
Git repository	https://github.com/Vasco-Faria/TQS_107323
Video demo	https://github.com/Vasco-Faria/TQS_107323/blob/main/HW1/Video.webm

Reference materials

https://www.exchangerate-api.com/