HW1: Mid-term assignment report

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<All remarks like this should be removed from the final document!

This a template for the expected **content/structure**. You may use any editing tool to prepare the report (LaTeX included).

Feel free to write in Portuguese or English, but do not mix languages between headings and body…>

# Introduction

## 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.

<briefly introduce your application: name the product, if applicable; what is its purpose?>

## Current limitations

 <explain the known limitations 🡪 unimplemented or faulty (but expected) features>

# Product specification

## Functional scope and supported interactions

<functional description of the application: who (actors) will use the application and for what? Briefly explain the main **usage scenario.** >

This application is targeted towards people who use public transport to travel between cities and want a fast and affordable experience.

For this homework, I chose to create two actors: John and Lily.

Lily is a university student who studies away from her home city. Every week, she goes home to be with her parents and hangout with her friends. Because of that, she needs an affordable way to maintain that lifestyle.

John is a businessman that travels a lot, and between different countries. Sometimes, he travels to countries outside of the European Union, and ends up using different currencies. He also isn’t that high up in the chain of command and does not have the company resources he should have regarding his traveling expenses. Because of that, he needs an affordable travel service that accepts different currencies.

## System architecture

<briefly present the software architecture. Include one or more diagrams.>

<detail the specific technologies/frameworks that were used>

I am using SpringBoot along with Thymeleaf, for template generation, and Bootstrap (with HTML, CSS and JS) for the frontend.

For testing, I used Cucumber.

## API for developers

<what services/resources can a developer obtain from your project? document your API endpoints>

<note: for the homework, you are expected to expose two “groups” of endpoints:

* Problem domain: get the environmental data data by region/city, etc.
* Cache usage statistics: how many hits/misses,… >.



# Quality assurance

## Overall strategy for testing

[what was the overall test development strategy? E.g.: did you do TDD? Did you choose to use Cucumber and BDD? Did you mix different testing tools, like REST-Assured and Cucumber?...]

I chose to start my work by using Cucumber and BDD to describe the user stories I wanted to develop. When I developed the frontend, I used Cucumber, along with Selenium, to statically test the frontend, while also creating the basis of what was my final frontend testing scene.

## Unit and integration testing

[where did you use unit and integration test? for what? which was the implementation strategy?]

[may add some screenshots/code snippets for clarification]

## Functional testing

[which user-facing test cases did you considered? How were they implemented?]

[may add some screenshots/code snippets]

## Code quality analysis

[which tools/workflow did you use to for static code analysis? Show and interpret the results.]

[you may add some interesting lessons learned, e.g., some code smell reported by the tool that was difficult to spot and otherwise you wouldn’t address it]

In my initial setup of the homework project, I setup SonarCloud in order to have static code analysis right from the start. Everytime I push to the repository, there is a GitHub Action that runs and evaluates the new code, checking if it passes the quality gate.

…

## Continuous integration pipeline [optional]

[did you implement a CI pipeline? What was the setup? Illustrate with screenshots, if applicable]

My CI pipeline consists of a set of GitHub Actions that run everytime I push new code.

Initially, I had Sonarcloud for static code analysis, Java CI for Maven and CodeQL for security.

# References & resources

Project resources

|  |  |
| --- | --- |
| **Resource:** | **URL/location:** |
| Git repository | <link to your TQs repo> |
| Video demo | < short video demonstration of your solution; consider including in the Git repository> |
| QA dashboard (online) | https://sonarcloud.io/summary/new\_code?id=Sytuz\_TQS\_108122 |
| CI/CD pipeline | [**optional**; if you have th CI pipeline definition in a server, place the URL here] |
| Deployment ready to use | [**optional**; if you have the solution deployed and running in a server, place the URL here] |

Reference materials

<document the key components (e.g.: libraries, API) or key references (e.g.: blog post) that were helpful and certainly **would help other students pursuing a similar work**>

<https://github.blog/2022-02-02-build-ci-cd-pipeline-github-actions-four-steps/>