Reading Guide

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# Introduction

During my education in Fontys I have participated in a lot of different projects. I have worked on group projects for Canon, Crossyn and Sioux Technologies. As part of my Cyber Security specialization I had the opportunity to pen test a company based in Eindhoven “TinyTronics”. Together with my team we managed to execute the testing and suggest or work on improvements in the security of the infrastructure of the company. For my internship in the previous semester I worked on a solo R&D project for the company CP Tech, a daughter company of Nedschroef BV. The project was focused on improving one of their already existing products – SetupWizzard. For this I had developed a Progressive Web Application that proved that with the technologies I used it is possible to replace their current application.

This semester I am looking forward into learning how to develop scalable and secure applications. I am quite unfamiliar with the concept of microservices and this seams a very exciting semester to participate in.

For my personal project I have decided to create a collaborative movie watching application, which will be developed based on all of the required learning outcomes for this semester.

# Project Description

Movimingle is a project that aims to make the movie watching experience of groups easier. The idea is to develop an application that people use on a daily basis to track their favorite movies in a watchlist of some sorts, but what sets it apart from the rest is the feature to connect to your friends and be able to create watch parties. Once in a watch party, the application will chose one movie from the roster of favored movies by the friend group. The application will be developed to support a huge user base of more than 100 million users.

# Learning Outcomes and Professional Products

This part will be used to mark down the documents and evidence that is included in the evidence part of the portfolio. As well as that, it will contain the contribution, or how each document demonstrates my understanding and application of the learning outcomes in the development of the software.

## Learning Outcome 1 – Professional Standard

* **Documents:** Research plan, Design Document, Backend Technology Rationale.
* **Contribution:** The Research Plan shows the full process I went through to determine the scope and needs of a scalable application. The Design Document adheres to industry standards by showing user stories and prioritizing functional and non-functional requirements. In the Backend Technology Rationale document, I have shown the thoughts behind my choice to use Spring Boot framework for the backend development. This decision is based on performance, rapid development, security and familiarity, all of which are crucial to professional standards.

## Learning Outcome 2 – Personal Leadership

* **Documents:** Project Plan
* **Contribution:** The Project plan is put in this learning outcome, because it is a testament to my ability to independently formulate goals, actions, and to adjust plans as necessary. The plan includes my approach to every part of the application, from initial research, to the final deployment. These are the things that reflect my personal leadership in the project lifecycle.

## Learning Outcome 3 – Scalable Architectures

* **Documents:** Research Plan, Project Plan, Design Document, Backend Technology Rationale.
* **Contribution:** The role of microservices is highlighted in the Research Plan and Design document. There I am putting in focus the scalability of the application. The Backend Technology Rationale document is further aligning with this outcome by justifying Spring Boot’s capabilities in handling extensive load and user demands. These are essential aspects of a scalable architecture.

## Learning Outcome 4 – Development and Operations

* **Documents:** Project Plan, Backend Technology Rationale.
* **Contribution:** My strategy to employ CI/CD pipelines and containerization is clearly defined in the Project plan and this demonstrates my understanding and application of DevOps practices. Further more the compatibility of Spring Boot with these practices is highlighted in the Backend Technology Rationale document.

## Learning Outcome 5 – Cloud Native

* **Documents:** Project Plan
* **Contribution:** Although the Project Plan does not finalize the choice of cloud services, it sets the direction for utilizing a cloud provider. This indicates a cloud-native development approach. This plan underscores the foresight in my choice of technologies that align with current trends in cloud computing.

## Learning Outcome 6 – Security by Design

* **Documents**: Research Plan, Project Plan, Design Document, Backend Technology Rationale.
* **Contribution:** The Research Plan includes security as a key consideration, the Project Plan discusses the incorporation of OAuth2 with JWT for authentication, and the Design Document ensures that security measures are integral to the application’s design. My Backend Technology Rationale document further reinforces this outcome by selecting a framework known for its robust security features.

## Learning Outcome 7 – Distributed Data

* **Documents:** Project Plan, Design Document
* **Contribution:** My Project Plan and Design Document reflect strategies for managing distributed data efficiently and ensuring compliance with data protection regulations. The decision to use Spring Boot, is explained in the Backend Technology Rationale, contributes to this outcome by using the development of services that can efficiently handle and store large amounts of data.