

Reading guide

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# Introduction

My name is Yordan and this is my 6th semester at Fontys. I am a passion-driven developer who puts extra effort into software quality. The one piece that is missing though, is my ability to develop enterprise software. During my internship in the last semester I learned a lot about working with a real team and a project that is actively used. However, that project did not have a large user base and was nowhere close to enterprise.

So in short, in this semester I am hoping to learn the details of how enterprise software is structured and how I can make a small example of one myself.

# Projects this semester

## Individual project: HouseHunters

The individual project I worked on this semester is called HouseHunters. It’s a project related to real estate, where both owners and real estate agencies can list properties they want to sell. After the listing goes live, people can bid on the property. Once the bidding period is over, the highest bidder has the right to buy the property.

Keep in mind that the project resembles a social media and bidding is strictly symbolic. There are no actual bank transactions happening, as it was out of scope for the project.

The project utilized Node and Typescript and had a React frontend, combined with a backend of Express microservices and NoSQL databases.

## Group project: CY2 Chat bot insights

The group project involved a company called CY2. They near-greenfield application that was about providing chatbots to educational institutes. The project had only been worked on by 1 group before, and in its initial state, it acted as a wrapper around ChatGPT and Sharepoint. The idea was that a user could use their app to combine the LLM of ChatGPT and a source of knowledge like Sharepoint in a “pipeline”. Afterwards, the pipeline could be integrated into a 3rd party system, for example a university website, to aid students looking for information.

The project was built on Node and Typescript again, using React for the frontend, NestJS for the backend, a relational Postgres database and a vector Pinecone database for indexing documents from Sharepoint.

Our group’s task was to provide insights regarding the usage of the pipelines

* What is that pipeline’s traffic
* What are the most asked questions
* What are the most referenced documents

Just to name a few.

Moreover, we also needed to implement system monitoring in the form of administrator logs. Users with the highest clearance could keep track of the system’s health trough different types of logs and be aware of any issues.

# Self-assessment (so far)

## Prof. standard

This learning outcome is related to taking responsibility when solving ICT issues. Research must be applied using relevant selected methodologies and provide advice to your stakeholders in complex and uncertain contexts. Future oriented choices are validated through use of law, ethical, intercultural, and sustainable arguments.

I would say that as of now I stand at a beginning level here. I definitely have past experience with professional standard due to having completed an internship and being for 5 semesters in Fontys. However, in the context of this semester, I have not considered aspects such as law and sustainability in my future-oriented choices.

## Personal leadership

This learning outcome links goals and actions that demonstrate leadership in my own long-term development as an ICT professional. I must show that I have a professional attitude and can carry out these actions and achieve my goals, adjusting them as necessary.

Here I would say that I’m on a beginning level again. I have shown some personal leadership with my project and research plans. However, I have still not proven that I can carry out these actions since the semester is still in its early stages.

## Scalability

This outcome is linked to developing architecture of an enterprise software based on explicitly stated software quality requirements. Focus is put on quality requirements most and non-functional requirements. Quality requirements dictated by law (eg.GDPR) and ethics (eg. security) must always be addressed. I must design my system with future adaptation in mind, and assess the extent in which the quality requirements are met by the implementation.

Beginning here once again. I have definitely though long-term about scalability by splitting up my architecture and applying microservices. However, I have still not yet applied any scalability through Kubernetes.

## DevOps

This learning outcome shows that I can set up environments, tools and processes which support my continuous software development process. My deployment environment must support this by being able to deploy an integrated software system and monitor the running parts of your application for quality attributes.

Orienting would be the correct self-assessment here. I have a basic CI setup with some tests, however there are a lot of things missing like end-to-end, security tests, performance tests and deployment.

## Security by Design

This outcome is related to investigating how to minimize security risks for my application, and incorporating best practices in your whole software development process.

I’d say that I stand at an orienting level here too. I have thought a little bit about security flows with how my microservices are setup up. However, I have not yet started to apply security-by-design in the stages of SDLC.

## Distributed Data

Here, best practices are applied for handling and storing large amount of various data types in a software solution. I must use the non-functional requirements, especially legal and ethical considerations, to guide my design choices in protecting and distributing data in my software without compromising other software qualities.

I’d describe my level with beginning. I have theoretically designed my software with distributed data in mind where relevant data is organized in its respective databases.