

Reader's Guide portfolio Jorn Kersten

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Introduction

This document serves as the readers guide for my semester 3 portfolio. The portfolio contains the developed products from this semester, using these products I will show proof I have gained enough knowledge to fulfil the requirements of the learning outcomes. In this guide you will find a short summary of each product per learning outcome. Thereafter there are a few links to the files where a longer worked out version of the product can be found.

In this document you will find a few sections. The learning outcomes section contains all the learning outcomes and a description of what knowledge is required to show the understanding of the learning outcome. The research section...

Learning outcomes

1.1 You design and build **user friendly, full-stack** web applications.

Clarification:

User friendly:	You apply basic User experience testing and development techniques.
Full-stack:	You design and build a full stack application using commonly accepted front end (JavaScript-based framework) and back end techniques (e.g. Object Relational Mapping) choosing and implementing relevant communication protocols and addressing asynchronous communication issues.

Proof:

In the following places I will show I have gained enough knowledge of the learning outcome:

“You design and build **user friendly, full-stack** web applications.”

Link 1 (ex. UX design)

1.2 You use software **tooling and methodology** that continuously monitors and improve the software quality during software development.

Clarification:

Tooling and methodology:	Carry out, monitor and report on unit integration, regression and system tests, with attention for security and performance aspects, as well as applying static code analysis and code reviews.
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Proof:

In the following places I will show I have gained enough knowledge of the learning outcome:

“You use software **tooling and methodology** that continuously monitors and improve the software quality during software development.”

Link 1 (ex. UX design)

1.3 You **choose** and implement the most suitable agile software development method for your software project.

Clarification:

Choose:	You are aware of the most popular agile methods and their underlying agile principles. Your choice of a method is motivated and based on well-defined selection criteria and context analyses.
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Proof:

In the following places I will show I have gained enough knowledge of the learning outcome:

“You **choose** and implement the most suitable agile software development method for your software project.”

[Link 1 \(see SCRUM board\)](#)

1.4 You **design and implement** a (semi)automated software release process that matches the needs of the project context.

Clarification:

Design and implement:	You design a release process and implement a continuous integration and deployment solution (using e.g. Gitlab CI and Docker).
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Proof:

In the following places I will show I have gained enough knowledge of the learning outcome:

“You **design and implement** a (semi)automated software release process that matches the needs of the project context.”

Link 1 (ex. UX design)

1.5 You **recognize and take into account** cultural differences between project stakeholders and ethical aspects in software development.

Clarification:

Recognize:	Recognition is based on theoretically substantiated awareness of cultural differences and ethical aspects in software engineering.
Take into account:	Adapt your communication, working, and behaviour styles to reflect project stakeholders from different cultures; Address one of the standard Programming Ethical Guidelines (e.g., ACM Code of Ethics and Professional Conduct) in your work.

Proof:

In the following places I will show I have gained enough knowledge of the learning outcome:

“You **recognize and take into account** cultural differences between project stakeholders and ethical aspects in software development.”

Link 1 (ex. UX design)

1.6 You analyse (non-functional) requirements, elaborate (architectural) designs and validate them using **multiple types of test techniques**.

Clarification:

Multiple types of test techniques:	You apply user acceptance testing and stakeholder feedback to validate the quality of the requirements. You evaluate the quality of the design (e.g., by testing or prototyping) taking into account the formulated quality properties like security and performance.
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Proof:

In the following places I will show I have gained enough knowledge of the learning outcome:

“You analyse (non-functional) requirements, elaborate (architectural) designs and validate them using **multiple types of test techniques**.”

Link 1 (ex. UX design)

1.7 You analyse and describe **simple** business processes that are **related** to your project.

Clarification:

Simple:	Involving stakeholders, predominantly sequential processes with one or two alternative paths.
Related:	Business processes during which the software that you are developing will be used (business processes that the software must support by fully or partially automating them). or Business processes needed for the success of your software development project (e.g., product release, market release, financial assurance).

Proof:

In the following places I will show I have gained enough knowledge of the learning outcome:

“You analyse and describe **simple** business processes that are **related** to your project.”

Link 1 (ex. UX design)

1.8 You act in a **professional manner** during software development and learning.

Clarification:

Professional manner:	You actively ask and apply feedback from stakeholders and advise them on the most optimal technical and design (architectural) solutions. You choose and substantiate solutions for a given problem.
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Proof:

In the following places I will show I have gained enough knowledge of the learning outcome:

“You act in a **professional manner** during software development and learning.”

Link 1 (ex. UX design)

Individual project

2.1 Description

My individual project that I have created is a website on which prices of equal products from multiple different supermarkets are compared. A user is able to conveniently see the price of an product and clearly sees if the prices is the cheapest from all supermarkets. They'll also be able to see where the price at a specific supermarket has risen, stayed the same or decreased in comparison to the week before.

If the user wants to, they can login to the website and create a personal list of items they would like to see. They then to can filter by supermarkets within their own list. Outside of just comparing a list, they can also create a shopping list here the cheapest overall suggestion to order the selected products is shown to the user.

I have used the SCRUM framework for keeping track of my tasks, and I'm using git as a tool to keep a SCRUM board in which I can easily keep track of progress and a sprint planning. I have a total of 5 sprints of 3 weeks each. [Link to my SCRUM board](#).

2.2 Frameworks

For creating the front- and back-end I have researched a few frameworks and looked over the internet to find what framework would work best me. Afterwards I weighed out each advantage and disadvantage against one another and made a choice based on what I thought best fits my application.

The front-end framework that I've chosen is Angular, I chose this framework instead of Vue.js or react. I went for Angular as I already have some knowledge with React. Outside of this both React and Vue.js have the full stack of a page in one file. Therefore with programming in React and Vue.js it's not possible to follow the SOLID principles, which I would like to do.

If you would like to read on my choice of the front-end framework I choose, you can find it on page 3 of my [research document](#).

If you would like to read on my choice of the back-end framework I choose, you can find it on page 5 of my [research document](#).

2.3 Database

SQL-based vs NoSQL-based

When researching the what database I'd like to use, I found out there are two different ways of saving data in a database. An SQL-based database and an NoSQL-based database. Both have their advantages and disadvantages but based on the research I did on both of them, I found a NoSQL-based database wouldn't be an option in my implementation.

If you would like to read on my choice of using an SQL-based database, you can find it on page 7 of my [research document](#).

What database did I choose

After finding out what type of database I should use in my project, I searched for what database options I had with using an SQL-based database. I compared MySQL, PostgreSQL, and MariaDB. The reason for it was that I had experience with MySQL and PostgreSQL and MariaDB both are kind of similar to MySQL.

After the research I had done I choose to go with MariaDB, as MariaDB doesn't add many more features but it is faster in processing SQL query's. The reason I didn't choose PostgreSQL is that it adds a few more features like the possibility to add arrays as a column definition, which I didn't need within my project.

If you would like to read on my choice of using MariaDB as my database, you can find it on page 9 of my [research document](#).