**Project Plan**

***Comfyshop***

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# Project assignment

## Context

*For the third semester of the English Stream ICT & Software Engineering, it is required to create an individual task. This task will be done to show corresponding learning outcomes of this semester are fulfilled.*

*The project aims to build a full-stack web application that serves as an e-commerce platform. The application will provide a user-friendly interface to customers to browse, search, and purchase products online.*

## Goal of the project

*The goal of this project is to develop a full-stack web application “ComfyShop” that will enable customers to browse, search, and purchase products from different categories online. Customers will be able to add products to their cart, view their order history, and make payments securely.*

*Additionally, the application will provide the company with access to manage product listings, update prices and descriptions, and fulfil orders.*

## Scope and Technologies

* Scope:

*The scope of the project includes the development of the front-end and back-end of the web application, as well as the implementation of security measures and performance optimization.*

* Technologies:

*1. Front-end: React.js*

*2. Back-end: Java, Spring Boot, MySQL*

*3. ORM tool to interact with the database*

*4. Security: password hashing, input validation.*

## Strategy

*The strategy for the project is Agile approach, specifically the Scrum framework.*

## Research questions and methodology

*<<*

*Describe the research questions that are most relevant to your project. For each research question, describe the approach and/or methodology. Use the Dot Framework to specify strategies and methods - see* [*http://www.ictresearchmethods.nl*](http://www.ictresearchmethods.nl) *for details.*

*Note that research is not only part of the initial phases (like analysis) of the project, but runs throughout the whole project. E.g., in the realization phases, you will probably do research in the Workshop and Lab context.*

*Realize that during the project your research questions may change, and that new ones will come up. That normal for any project, and is not a problem as long as you involve the right stakeholders, and keep your deliverables updated.*

*>>*

## End products

*<< A Product Breakdown Structure (PBS) lists the end products that you realize, including a description of each product. In software engineering, the products are more than just the project plan and the application itself. E.g., requirements documents, architecture documents, research reports and test reports are all end products. These are all important products that are required for effective handover. They are also necessary for further maintenance and follow up-projects. The PBS can change during the course of the project.>>*



# Project organisation

## Stakeholders and team members

Clients :

*Coenen, Frank F.W.J. : f.coenen@fontys.nl*

*Paixão Dantas, Márcio M. : m.paixaodantas@fontys.nl*

*Snoeren, Jacco J.P.H. : j.snoeren@fontys.nl*

## Communication

*Regular meetings will be held to discuss progress and address any issues in Fontys building.*

# Activities and time plan

## Phases of the project

*The project is split into 6 sprints. In each sprint, different deliverables will be delivered, having a close contact with the stakeholders and weekly updates will be sent for feedback.*

* Sprint 1
* *Project Plan.*
* *Initial product backlog and user stories.*
* *Start of RESTful API. (Layering, dependency injection using Spring boot.*
* *Continuous integration with git should be prepared.*
* Sprint 2
* *The 1st version of the design document and prototype should be finished.*
* *The design document must be including high level architecture, C4 architecture diagrams, design decisions and UML class diagram.*
* *With the prototype, a front-end & back-end connectivity should be added.*

# Testing strategy

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## Testing strategy

*<<Which testing strategy do you envision? E.g., on which levels will testing take place? Consider that you could choose unit, component, integration, system, or acceptance testing.*

*Justify your strategy, and also set goals where relevant. E.g., percentage code coverage for the relevant unit tests. For each of the planned tests, indicate what will be automated and what not.*

*Also think of quality testing setups like, e.g., Sonarqube.*

*>>*

## Test environment and required resources

*<< Describe the test environment. E.g., do you envision a DTAP (Development, Testing, Acceptance, Production) environment. Can you make use of a CI/CD environment or will you develop your own?*

*It often helps to use a picture to visualize the test environment.*

*If you already know, describe which resources are required for realization and testing. Think of hardware, cloud environments and specific tooling required for development and testing.*

*>>*

## Configuration management

*<< Describe the project approach with respect to version management (e.g. your GIT repository). This might include things like tooling, branching strategy, promotion-, release- and baseline strategy.*

*Also, when relevant, think of a mechanism to deal with change requests and problem reports.>>*

# Finances and risk

## Risk and mitigation

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| **Risk** | **Prevention activities** | **Mitigation activities** |
| 1. Technology stack: the use of new and unfamiliar technologies may result in technical difficulties and delayed delivery. | Conducting thorough research on the chosen technology stack before starting development. This include reading documentation, tutorials and doing all the assignments in Canvas. | Seeking help from teachers, classmates |
| 1. Inadequate testing leading to bugs in the application | Create a comprehensive test plan that covers all aspects of the ComfyShop web application. |  |
| 1. Insufficient security measures leading to vulnerabilities in the application | Input validation  Secure password storage  Authentication and authorization |  |