Emma Broudic **Abstract** Juin 2024

Nooky is an application dedicated to fashion exchanges. The goal is to give a second chance to clothes, shoes, and accessories that still reside in our wardrobes but are no longer in use.

Designing and implementing this app has been an enlightening journey in my growth as a software developer. I undertook several key steps, which I'll describe below.

Firstly, I focused on defining the requirements. To comprehend what users would need and enjoy in this future app, I employed the personas marketing technique. This approach facilitated the creation of a comprehensive list of user stories, encapsulating all the functionalities of Nooky.

To maintain project oversight and organizational efficiency, I utilized Trello and adopted the Kanban method, one of the Agile frameworks.

Subsequently, I proceeded to design the application. Graphically, this entailed creating zoning plans, wireframes, and mock-ups. Additionally, I formulated the data model using the Merise method. I delineated the processes for handling this data and defined the architecture while selecting the technology stack: PostgreSQL for the database, the Spring framework for the backend, and the SvelteKit framework for the frontend.

With these foundations in place, I commenced implementation of the functionalities. For the database layer, I initially crafted an SQL script, which I later denormalized for performance optimization. This script was instrumental in database creation. Subsequently, I developed two additional scripts: one for the referential data of the app and another to facilitate testing functionalities (such as fictive users and products).

For the business layer, I structured codes into six packages to distribute responsibilities and ensure code maintainability and security. These packages were ‘config’, ‘controllers’, ‘dto’, ‘entities’, ‘repositories’, and ‘services’. As for the client layer, I organized code into four folders: ‘assets’ for CSS, images, and fonts; ‘components’ for reusable graphical elements; ‘lib’ for client-layer functions; and ‘routes’ for application pages.

I also paid meticulous attention to security aspects during the implementation of functionalities. For the registration and authentication segments of the application, I utilized JWT and bcrypt. When a user registers with Nooky, the password is securely hashed with bcrypt and stored in the database. Upon user login, a JWT is transmitted from the backend to the frontend and stored in the local storage. Furthermore, to secure the application's endpoints, I integrated Spring Security. In my quest for deeper understanding, I researched SQL injections and implemented precautions to mitigate them.

Last but not least, I rigorously tested all functionalities. For the backend, I conducted integration tests using Postman, while for the frontend, I performed tests with Playwright. Additionally, upon completion of each functionality, I conducted non-regression tests and User Acceptance Testing (UAT).

This project served as an immensely valuable training ground, enabling me to gain insights and skills in designing and implementing an informatics project. While there are aspects I would have approached differently given more time, I'm largely satisfied with the wealth of knowledge I've acquired throughout this process.