Final Documentation for Implementation and Testing: Web-based interface for Production & Basic Quality Management

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I. Introduction

A. Document purpose

This document summarizes the final results of our software project, including the implemented features, individual contributions, unit testing efforts, code documentation, and a project retrospective. As this was a team project, collaboration played a central role throughout the development process, with each member contributing to achieve the shared goal.

II. Achievements of the Project

A. Introduction

This section highlights the key achievements of the project, outlining the technical milestones reached, collaborative efforts made, and the overall progress from initial concept to final implementation.

B. Goal of the Project

The aim of this project was to develop a web-based system that is suitable for production monitoring and quality management for semi-finished and finished products. It describes different production stages, the quality control process ensures that defects are detected early, standards are met, and only checked products move forward. This includes predefined steps, checklists to help the quality management process.

The system includes a database for storing all relevant data.

Furthermore, the support of multiple user roles, each with their own permissions and responsibilities. In addition, security measures, including user authentication, role-based access control is implemented.

C. System Setup and Development Tools

1. Backend: IntelliJ with Java Spring Boot with Java SDK 21, Maven 3.4.5, PostgreSQL, Keycloak (keycloak.org) v. 26.2.5 with Docker
2. Frontend: VSCode with React.js
3. Tools: Github, Swagger, Notion

D. Achievements of Sprint 2

1. Implemented Keycloak for managing users, roles, and role-based access for certain features.
2. Added media storage
3. Implemented routes to see all defect reports, defectsOverTime, defectsByProductType, checklistsCompleted, Batches
4. Option to list checklist by productid
5. Posting defect reports and checklist results
6. Get checklists items
7. Add returned status for Defect Report

E. Implemented User Stories in Sprint 2

1. As a production worker, I want to report defects with pictures, videos or text to provide detailed Information.
2. As an Administrator, I want to create and manage user accounts so that only authorized personnel can access the system.
3. As an Administrator, I want to have a complete overview of all user accounts and the history of all reports.
4. As an Administrator I want to have access to all media uploads.

III. Individual Contributions to the Project

A. Introduction

This section outlines the individual contributions of each team member. While it was a team project this section also highlights specific tasks and areas each member focused on.

B. *Contributions of Meirlan*

1. Entire development of Frontend for Sprint 1 & 2
2. Created Wireframes, Screendesigns and UML-Diagrams for the documentation

C. *Contributions of Christoph*

1. Creating and managing the Database
2. Writing and managing of all Documentations
3. Worked on Backend in Sprint 1 and 2: Team coding, implementation and setup of Keycloak

D. *Contributions of Katarina*

1. Worked on Backend for Sprint 1: Coding of user registration before the implementation of Keycloak
2. Switched to Frontend in Sprint 2: Created productes, batches page, styles and modals
3. Writing of interview guide and some functional requirements for documentation

E. *Contributions of Aslan*

1. Managed and provided data for the Database
2. Worked on the Backend in Sprint 1 and 2: Team Coding, Management of all routes of Batches, Checklists, Products and Defects

IV. Login information

A. *Introduction*

The roles, realm and settings are predefined in the code as a JSON import, user accounts and passwords are also automatically created when launching the project.

B. *Installation guide*

For installation instructions, please refer to the 'INSTALLATION.md' file included in the ZIP archive.

C. *Keycloak administrator panel*

The Keycloak administrator panel is accessed at 'localhost:8081'. The JSON file in the Backend sets up everything necessary and the 'KeycloakUserSeeder' automatically creates users and assigns the correct roles. The backend runs on 'localhost:8080'. The Frontend can be accessed at 'localhost:3000'.

D. *Login information*

User list: "admin", "qualityinspector1", "qualitymanager1", "productionworker1", "productionmanager1"
Password for every user: "admin"

V. Appendix

A. *Information*

The whole project is attached as a zip file. An additional installation guide is attached.