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Group 9

Software Engineering Project 1 Plan

Metropolia University of Applied Sciences
Information and communication technologies
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Software Engineering Project 1
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1. Project Overview

- Project Title: Student Timetable Management System
- Problem Summary: Students often struggle with managing their class schedules efficiently. They face issues such as missed classes, scheduling conflicts, and difficulty keeping track of upcoming assignments and deadlines.
- Intended Audience/Users: High school and university students, who need a centralized, intuitive and customizable management solution for organizing their schedule
- Main Features/Components:
 - Calendar and time table to see classes and assignments.
 - User registration and login to allow students to see their specific schedules.
 - Customization options for improved user experience.
 - Alerts for upcoming classes and assignments.

2. Project Objectives

- Increase user adoption rates by 50% within a four month timeframe.
- Improve user satisfaction scores to 70% or above within a four month timeframe.
- Establish partnerships with 3 educational institutions in two years.

3. Scope and Deliverables

- The scope of this project involves the following items:
 - User authentication, profiles and account management.
 - The ability to create, view, edit and delete schedules.
 - Notification alerts of upcoming classes and/or assignments.
 - Integration of a relational database (MariaDB).
 - An accessible and user friendly UI/UX.
 - Comprehensive testing of the application.

- The deliverables of this project include the following items:
 - Application: The code for the final Java-based application with all core features implemented.
 - Documentation: A detailed Javadoc document consisting of all the features and a basic user manual for easy accessibility.
 - Database schema: A structured design of the database tables, alongside the ER model used to create them.

4. Project Timeline

Phases of the project and their estimated duration:

- Requirement gathering: from 15/01/2025 to 22/01/2025 (~1 week).
- Design: from 22/01/2025 to 31/01/2025 (~1.5 weeks).
- Development: from 31/01/2025 to 06/03/2025 (~4 weeks) (excluding break).
- Testing: from 06/03/2025 to 12/03/2025 (~1 week).
- Deployment: from 12/03/2025 to 14/03/2025 (~0.5 week).

Key milestones:

- Implementation of the project after the design period.
- After the development period, the project should be ready for testing.
- The project should be ready to be deployed by the second week of Sprint 4.

5. Resource Allocation

- The team members and their respective roles are:
 - Ricardo de Sousa - Full stack developer.
 - Saku Heinonen - Backend developer.
 - Viswak Ramesh Balakrishnan - Frontend developer.
 - Vicheata Chea - Frontend developer.

- Software, Hardware, and Tools: Any desktop or laptop running Windows, Linux or MacOS. A code editor or IDE with support for Java is required. The dependencies used are JavaFX, Hibernate and JUnit, installed with the dependency manager Maven. Additional tools used are: Kubernetes, Docker and Jenkins. The database used is MariaDB, which uses the SQL language.

6. Risk Management

- Risk: Installing dependencies
 - Description: The team members use different OS so it might be hard to install some of the technologies efficiently
 - Likelihood: High
 - Impact: Medium
 - Migration strategies: Research before choosing the technologies to see if it's not platform dependent.
- Risk: Delays in development due to unforeseen technical issues
 - Likelihood: Medium
 - Impact: High
 - Mitigation Strategies: Regular progress reviews, early identification of technical challenges, and buffer time in the timeline.
- Risk: Unexpected leave of absence
 - Description: A team member getting sick or having to temporarily leave the project for some personal reason.
 - Likelihood: Medium
 - Impact: Medium
 - Mitigation Strategies: The other team members divide the tasks of the member who got sick among themselves.

7. Testing and Quality Assurance

- The criteria for success are:
 - All of the unit tests pass.
 - The students are satisfied.
 - The application is functional with minimal or zero issues.
 - The project was completed on time and within allocated resources.
- Testing the project:
 - Using unit testing as a type of test to ensure that the individual components and functions of the project work as expected, focusing on the critical parts such as the backend and state management logic.
- Tools or frameworks used for testing:
 - JUnit - a test automation framework for the Java programming language, often used in unit testing.
 - Jenkins - a Java-based open-source automation platform with plugins designed for continuous integration.

8. Documentation and Reporting

- For this project we intend to produce a user manual, Javadoc, architecture model, model documentation, version control (Git) and a presentation.
- This project follows Scrum, which is an implementation of Agile. The project's progress is managed and documented using:
 - A product backlog in Trello where the user stories for the project are stored and assigned to team members
 - Daily Scrum meetings to keep track of everyone's progress.
 - Sprint retrospectives and reviews where the project's progress and time spent on tasks are evaluated.
 - In the project presentation, we intend to cover all of the sprints.