

ATM Project

Group 2 (Juha Jernialainen, Laura Similä, Arttu Jämsä, Valtteri Tenhunen) TTV25KMO
Degree Programme in Information Technology

Introduction

The ATM application simulates common banking operations and user interface of an ATM machine (figure 1) This project consists of two main components: The backend and frontend user interface.



FIGURE 1. Login window

Objectives

The main objective was to create a functioning ATM application with all essential features a real ATM would normally provide. Secondary objectives included:

- Adding user picture
- Making separate admin interface
- Swagger UI
- CI/CD pipeline

Methods

The system is implemented using a modern technology stack, with both the frontend and backend working together to provide a complete ATM experience.(figure 2)

Software Development Application Project

ECTS credits: 15

Date of publication:: 2026 Spring

Instructors: Pekka Alaluukas, Teemu Korpela

The backend is built using Node.js and Express, providing a robust API for handling various banking operations.

Key features include:

- Controllers: Responsible for handling the core banking logic.
- Routes: Defines the API endpoints for the application, ensuring a clear and maintainable structure for incoming requests
- Database: the backbone of our project. MySQL database that uses SQL scripts to maintain all the data that is needed



FIGURE 2. Core technologies powering our project

The Frontend utilizes Qt widget creation and C++ to make a working ATM that has a bonus feature for admin users

Results

The ATM program works as intended(figure 3). All core features have been successfully implemented and tested. Data migration is handled securely, and system safety is ensured through the use of JWT tokens and hashed passwords. The backend API properly handles all account operations, while the Qt client provides a complete user interface for both customer and administrative operations.

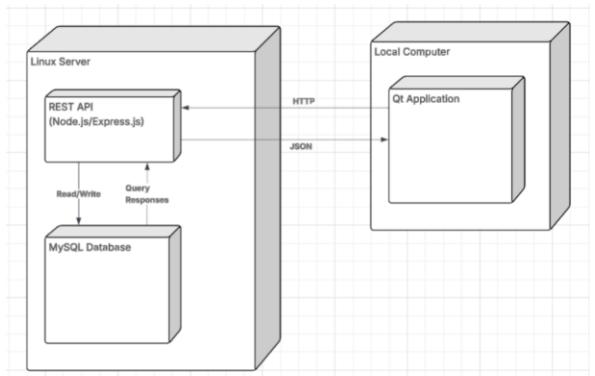


FIGURE 3. Program diagram

Conclusions

Our project has given us many opportunities to grow in our field. It has taught us the importance of version control and project management in Kaban. The problem-solving skills of our group have also improved significantly.

References

Learning material :
<https://peatutor.com/>