ATM Application

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Introduction

The goal of this project was to make an application, that simulates ATM functions. It was to communicate with a database through a local server, read a card number through an RFID interface, and use a PIN code interface to authenticate the user.

Objectives

The first objective of this project was to plan and implement a database. A REST API with CRUD operations was then designed to

communicate with the database and the ATM application. The next objective was to start programming the ATM application with Qt Creator. ATM main view is shown in figure 1 below. The simulated

ATM functions included depositing and withdrawing from both debit and credit accounts and viewing your account transactions and balance.

FIGURE 1. ATM main view

Methods

The Postman application was used to test the API/CRUD endpoints on the application server.

The ATM application was made with Qt Creator. The ATM application was able to create web requests to the local server which executed the requests against the database.

The PIN interface was implemented as a QWidget DLL.

The RFID reader used in the project was the OLIMEX MOD-RFID 125. (See figure 2 below.) The RFID reader forwards the bankcard id number to the ATM application.

FIGURE 2. RFID reader

Results

The ATM application worked as planned. The application was able to perform all required functions. The withdraw and deposit functions worked as expected and even new transactions were written to the database after performing either a deposit or a withdrawal operation. As shown in figure 3 REST API DLL works like a charm. (See figure 3 below.)

The RFID DLL was successful and managed to transfer the card number to the application.

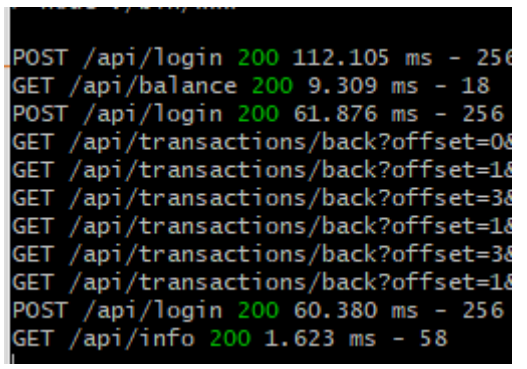

FIGURE 3. REST API testing

Conclusions

At the time of writing this poster, the REST API turned out to be a more difficult task than first anticipated.

All problems that appeared were solved eventually.

References

1. Professor's example project: https://github.com/ohjelmistokehitys-2022/group_example

2. Theory examples: https://peatutor.com/

Software Application Project

ECTS Credits: 15

Date of Publication: 2022 Spring

Instructors: Kari Jyrkkä, Teemu Leppänen, Jukka Jauhiainen, Pekka Alaluukas, Kaija Posio