

Automatic Teller Machine

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Information Technology, Option of Software Design

Introduction

The goal of the project was to create the software implementation of an ATM machine, and a functioning database for said machine.

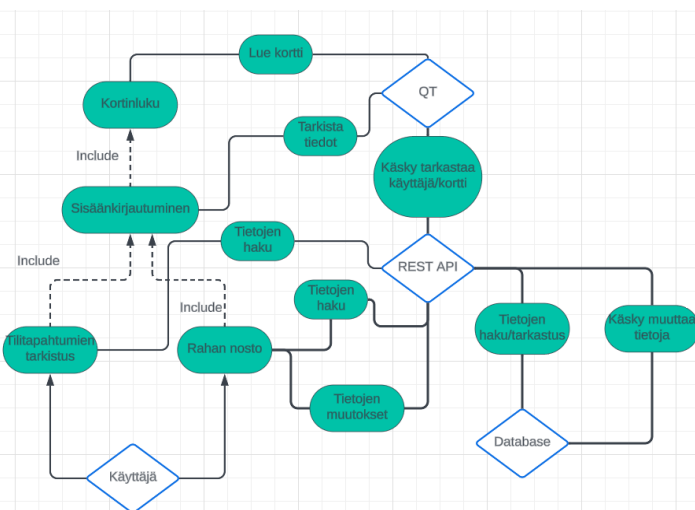


FIGURE 1. Use Case Diagram

Objectives

The aim of the project was to have the software perform atleast these four funtions. Login with the use of an RFID tag and pin code, the ability to view transactions, the users credit information, and to "withdraw" money from their debit account.

(See figure 1 above.)

All of these functions needed to be accessible through an user friendly UI. And all of this would be connected to a database that housed all customer information.

Methods

The main EXE file and its libraries which incorporated all the functionality of the ATM itself were constructed using QT Creator. An RFID reader in USB form and two RFID tags would function as the user's card.

The user's information was located on a MYSQL server hosted via Javascript. (See figure 2 below.)

From there the information could be retrieved, edited and updated with the use of REST API.

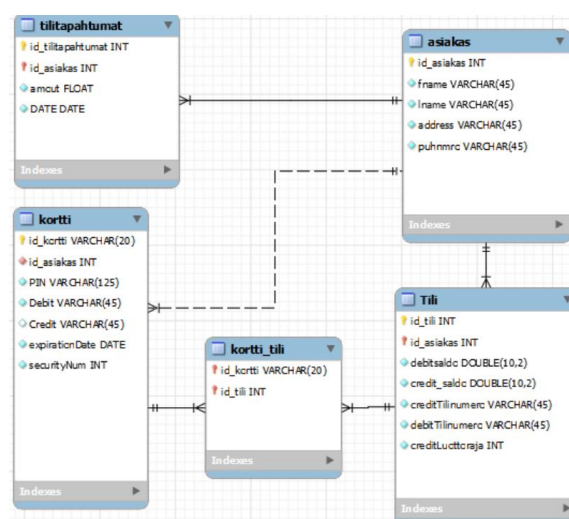


FIGURE 2. Database Schema

Results

The program functioned as planned, as the user could log into the system by using the RFID tag and their PIN, after which the system would verify the user using the database.

The user could then choose wether they wanted to see their transactions, credit, or debit account and withdraw funds.

(See figure 3 below.)

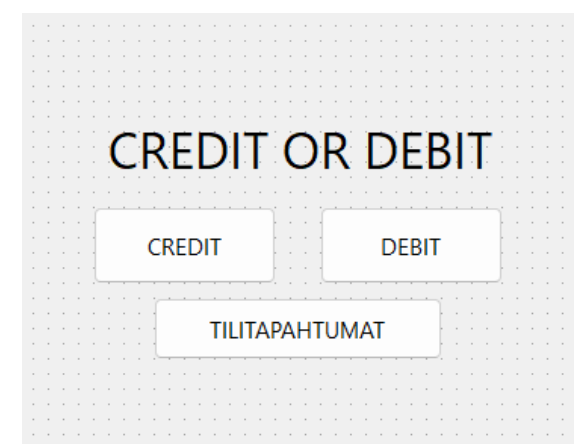


FIGURE 3. UI

Conclusions

The completion of the project required the usage of all subjects taught this spring, and learning on the fly as well. There were some additional optional objectives that were set, but not met due to time lost on solving technical problems with Qt creator.

References

1. Educational material:

<https://peatutor.com/>

2. Educational material:

<https://doc.qt.io/qt-6/qjsonobject.html>