POLITÉCNICO DE LEIRIA
ESCOLA SUPERIOR DE TECNOLOGIA E GESTÃO

Departamento de Engenharia Informática
Morro do Lena - Alto do Vieiro
2411 - 901 Leiria - Portugal

ENGENHARIA INFORMÁTICA

Tópicos Avançados de Engenharia de Software

3º ano - 1º semestre

2023/2024

Project Assignment

vCard mobile

The virtual cards market is expected to reach a revenue of $USD 60.06 Billions by 2030[1]. This growth was triggered by the recent pandemic situation of COVID-19, with the increasing adoption of online payments, and the growing power of digital platforms. The number of virtual cards' applications currently available in the market is growing and they are becoming a *de facto* standard[2]. Revolut[3] and MbWay[4] are two of most widely known.

The project assignment is to develop a **vCard mobile** application that will provide a virtual card environment to its end users, similarly to the previously referred applications. Users will be able to send money to other users throughout a virtual environment.

The application should interact with a centralised support system that will hold details about the users and transactions. For development purposes, the Firebase[5] platform or any other platform that provides an effective response to the application's functional needs can be used (mandatory to read Appendix A - DAD Project Assignment).

The **vCard mobile** user, when starting the application, will have access to a dashboard where she can check the balance of the virtual card and have access to all of the major features of the app. If the user does not have a card yet, she can create it using her phone number.

The user will be able to send money to any other app user. The user should be able to select an existing contact from her phone's contact list (existing phone number) or add a new phone number entry. Upon the process of selection of existing contacts, the application should provide information regarding which of them are already **vCard mobile** users.

[1] https://www.grandviewresearch.com/industry-analysis/virtual-cards-market-report

[2] https://howmonk.com/best-virtual-debit-credit-cards/

[3] https://www.revolut.com/

[4] https://www.mbway.pt/

[5] https://firebase.google.com/

Whenever a user successfully completes a transaction, she should be able to see it in the list of transactions. The last transaction (more recent) should be shown on the dashboard, but a more detailed view should also be available for further search and analysis.

The **vCard mobile** should allow notifications so that users get notified when receiving deposits to their card (eg, “Happy BDay! Xpto has just sent you 200€”) or any other notification deemed convenient.

The **vCard mobile** app should also provide the Piggy Bank Vault feature. This allows the user to create a specific savings vault where she can lay aside some of the money of her card. The amount used to fund the piggy bank will still be considered into the balance of the card. However, if the user wants to send that money, she first has to withdraw it from the vault.

The **vCard mobile** should be simple and easy to use.

Please note that:

- *any issue or question regarding the context presented should be clarified with the professors;*
- *any extra features that your team believes will increase the value of the app should be proposed and agreed upon with the professors. Only after the successful deployment of the above mentioned features will any extra features be considered;*
- *it is absolutely mandatory an accurate reading of the appendix - other project assignment even if you are not engaged in the other course.*

Work Completion and Delivery

The work must be: developed following the software development process defined and addressed in laboratory classes; developed as a native mobile application OR web application (designed with a “mobile-first design” approach). The technological selection is defined by each team and must include all the features requested regardless of the technological solution adopted (100% working software).

This course is based on the execution of a software engineering process, so the work described here will be assessed according to two main perspectives: (1) the development process and (2) the final product.

One of the major elements in the software development process that will be used involves teamwork and therefore the project will be carried out by a team of 4 students, thus allowing that the practice of pair-programming is ensured throughout the process.

The choice of features to deliver in each sprint is the entire responsibility of the team. At the beginning of each development cycle, the team will plan and commit to what they think they will be able to demonstrate to the customer in the demo.

At the deadline for the delivery of the project, the team will have the final opportunity, if it has not already done it, to see the functionalities accepted, or not, by the customer.

It will also be on the delivery date that the software development process and the adequacy of the team's work to it, will be assessed.

Assessment

Final Grade = (70%*Process + 30%*Product) * Public Presentation Session

[70%] Process

- [35%] Process planning and execution (commitment of features to be delivered versus features delivered and accepted)
- [35%] Adequate project control (adaptation to the development process covered in lab classes - including, among others, the proper use of the: version control and management system: Git, the planning support system: JIRA, and the negotiation of pairs)

[30%] Product

- [30%] Implemented features and corresponding automated tests