

HCI – Assignment n.2

Design and prototyping of an application using a human-centered approach

Final Presentation

Project Title: MoneyWiz

Group: Gonçalo Perna, Pedro Valério, Rodrigo Rosmaninho

Lab Class: P3

Introduction

MoneyWiz

Money management is a common concern to everyone. Our app aims at making that process as easy as possible, by providing an intuitive and easy to use interface, so that all may come a little closer to their financial goals.



Project Objectives

MoneyWiz

- Help the user manage their expenses in a friendly, intuitive and easy to use environment
- Our app aims to provide a multitude of different views to best suit the needs of our target users and to make sure everyone can use it easily
- Provide a way to categorize and sort different expenses and visualize them in charts



Personas

MoneyWiz



Maria Pacheco



Óscar Silva

Scenarios

MoneyWiz



1. Óscar went to the Aveiro é Nosso shop to purchase the general ticket for this year's Enterro and he wants to register the expense in the Leisure category
2. One of Maria's children wishes to buy the latest videogame, and, as such, Maria wants to check if the expense would fit within the monthly budget for that category
3. Óscar wants to show his parents the last month's expense distribution by category, to find out which one he spent most in

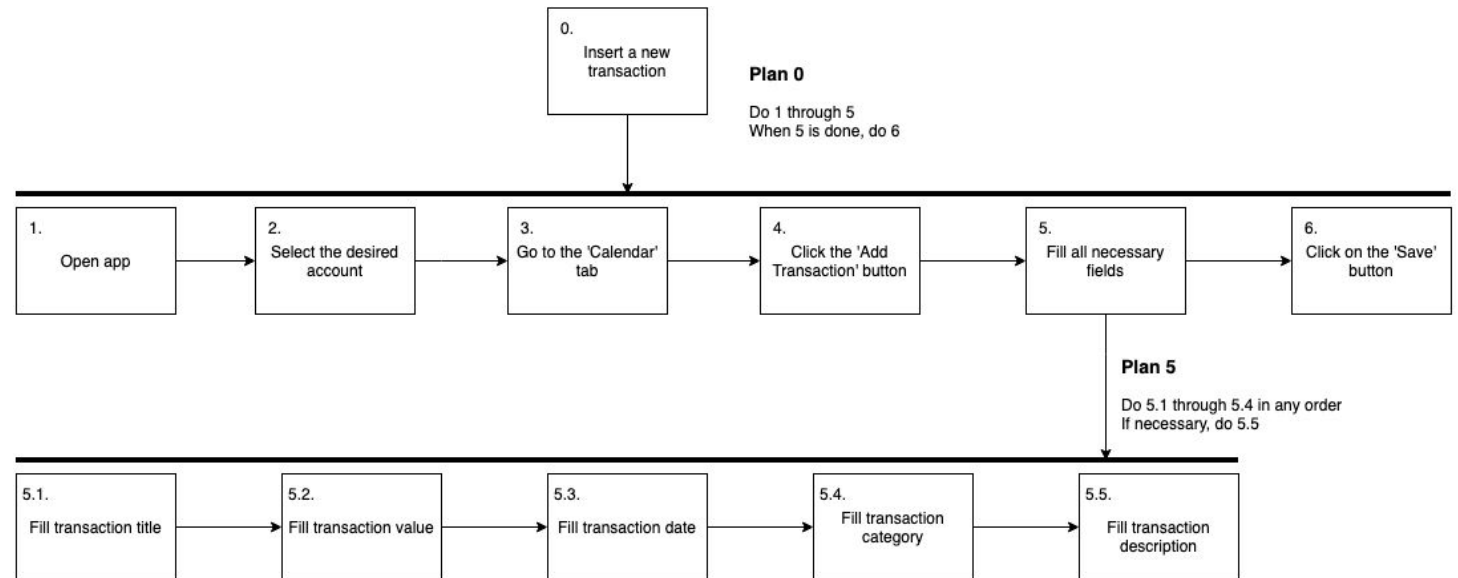


Tasks

MoneyWiz

Scenario 1

- Insert new transactions, as well as their relevant data, such as the category
 - Without this type of application, this would be done on paper or Excel, for example
 - Needs to be quick and easy, so that the user can do it immediately and keep track of it more reliably



Tasks

MoneyWiz

Scenario 2

- Display the total balance of the day/week/month/year for a specific category

Scenario 3

- Display statistics by category for the month

A friendlier interface is provided to quickly display the previously registered data, making it easier to compare and analyse even if the user is not financially-savvy

Requirements

MoneyWiz

Functional

- Add transaction, specifying its details
- Custom Categories
- Keep track of transactions
- Calculate total balance
- Show stats and graphs by category and account
- ...

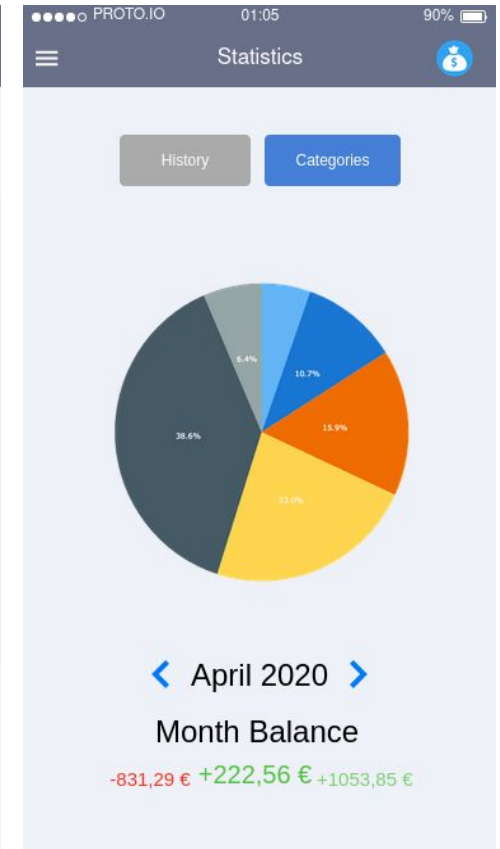
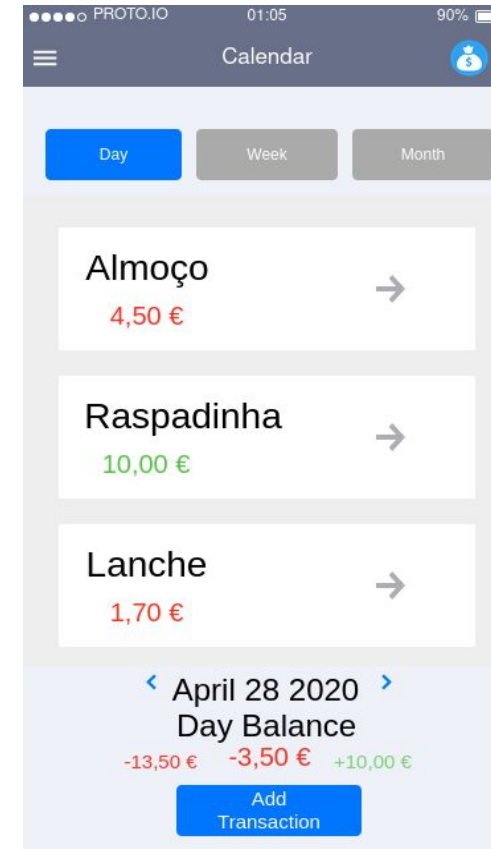
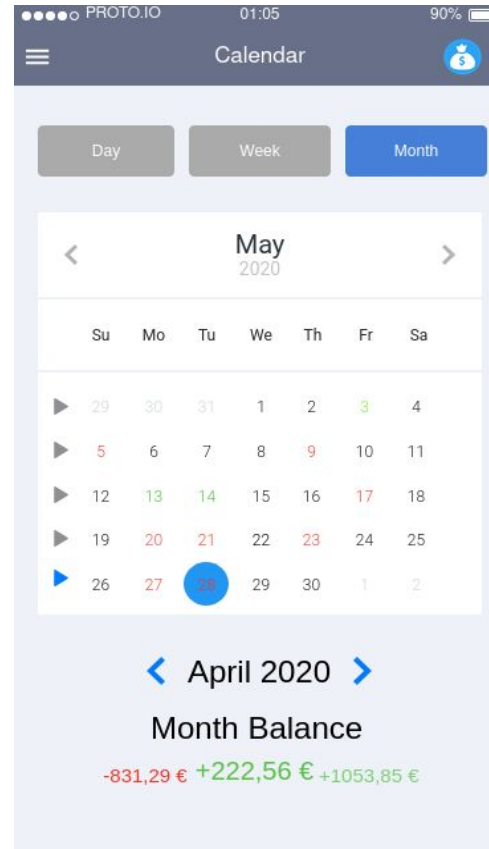
Non-Functional

- Database persistence
- Intuitive and easy to use interface for registering transaction
- Easily accessible menu for new transaction
- Easy to switch between different views (day, week, month)
- ...

Low Fidelity Prototype

MoneyWiz

- Constructed digitally using the **Proto.io** platform
- Core functionalities represented:
 - Creation of a new transaction on the system
 - Analysis of the transaction history by day, week, or month
 - Checking monthly balance and expense statistics by category



LFP User Evaluation

MoneyWiz

On our first prototype we wanted to find out usability errors on our solution, and at the same time evaluate whether the page structure and navigation was natural and not confusing.

Our Prototype addressed scenarios 1 and 3.

Main tasks that we choose:

- Add a new transaction
- See the older transactions
- See some statistics about money spent (each day/category)



LFP User Evaluation

MoneyWiz

Three users were selected in order to test the app, two of them taking the role of an average student and one the role of an employed adult

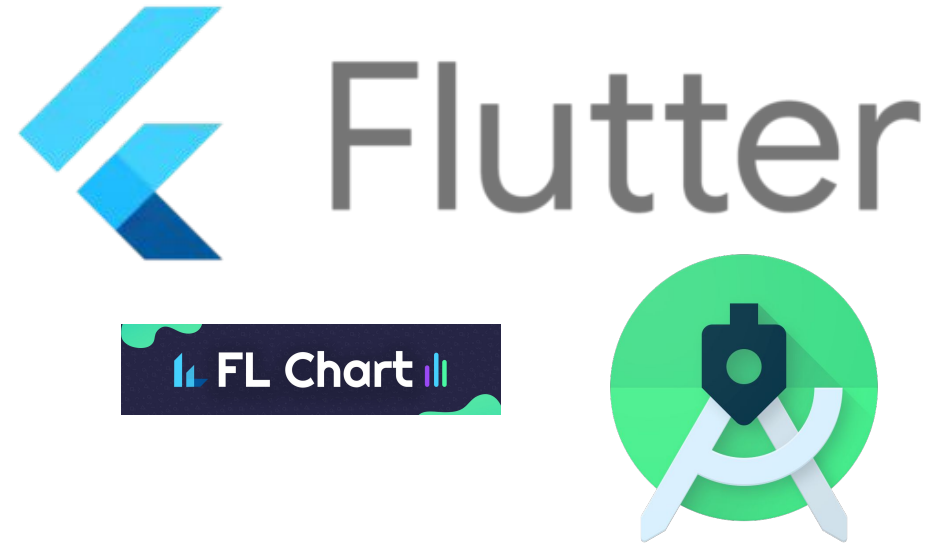
- Main results:
 - The presentation of the income and expense values present in the calendar views proved to be unclear for one participant and was, therefore, redesigned
 - As with the issue above, the income and expense presentation was unclear in the statistics views, however, in this case, they were removed altogether and, instead, the information is solely displayed on the charts



Platform Used for the Functional Prototype

MoneyWiz

- Due to the nature of the proposed system, the functional prototype was developed as a mobile application using the **Flutter** framework for Android & iOS.
- Additionally, development was aided by the following open-source libraries:
 - percent_indicator
 - flutter_calendar_carousel
 - flutter_colorpicker
 - flutter_iconpicker
 - fl_chart
- It was tested using phones and emulators running the Android operating system.



User Evaluation – Procedure

MoneyWiz

User evaluation was conducted in the form of a usability test with volunteer participants.

Upon signing the Informed Consent Form, users were given at least 5 minutes to get acquainted with the application and were then directed by the observer to complete the following tasks:

1. Add a new budget for the account 'Poupanças CGD' and a category of your choice
2. Change the name and description of account 'Cartão CGD' from CGD to Santander
3. Add a new income category to the system
4. Check how much was earned in February 2020 in the category 'Salary'
5. Add a new 'Restaurants' expense transaction for the 28th of January at 20:25
6. Check the balance for the week of April 20-26
7. Remove the expenses category 'Taxes' from the system

Both the observer and the participant filled out questionnaires in order to obtain results. More details [here](#).

User Evaluation of the Functional Prototype

MoneyWiz

Tasks 1-6 were completed without any observed or reported difficulties

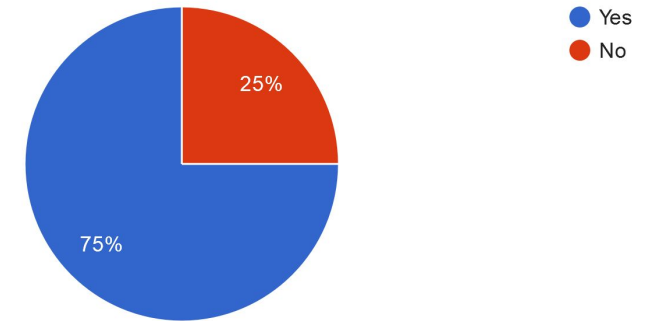
Task 7

Remove the expenses category 'Taxes' from the system

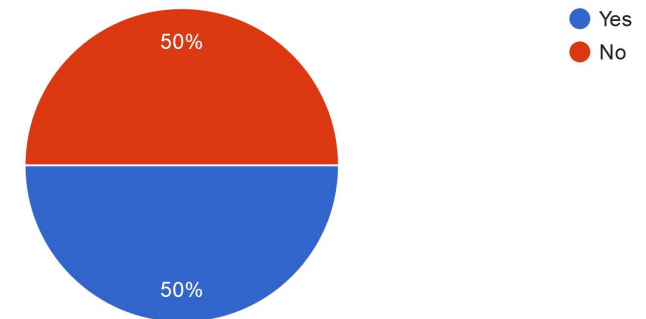
All 4 users had problems.

Main Difficulty: User tried other actions before the correct one

Task 7 - Was the participant lost?
4 respostas



Task 7 - Did the participant ask for help?
4 respostas



Demo


MoneyWiz


MoneyWiz


Account: **Cartão CGD** ▾


Description:
Cartão Multibanco CGD


Balance:
8562.42 €

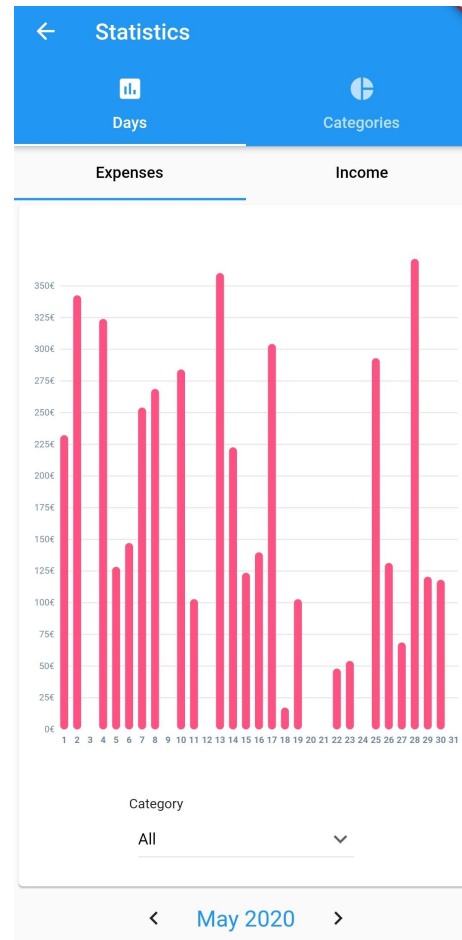
 **Calendar**
Check all your transactions or add new ones

 **Statistics**
Analyze your transaction data

 **Budget Goals**
Set monthly limits for each category

 **Categories**
Manage categories to organize your data

 **Account Settings**
Edit or delete the current account



Budget Goals

Category: **Clothes**
Budget: **639.00€**
Available: **175.29€**

Category: **Debts**
Budget: **816.00€**
Available: **37.40€**

Category: **Gift**
Budget: **900.00€**
Available: **461.65€**

Category: **Leisure**
Budget: **161.00€**
Available: **-73.77€**

Category: **Movies & Music**
Budget: **664.00€**
Available: **168.85€**

Category: **Restaurants**
Budget: **607.00€**
Available: **217.79€**

Category: **Snacks**
Budget: **742.00€**

< Jan 2020 > +

2020 Jun 12, Friday

View Month View Week

+338.18€
-204.43€

Total Balance
+133.75€

< Jun 12 >

Bónus
⌚ 14:07 | 💰 Salary **+338.18€**

Pepsi Max
⌚ 15:43 | 🗑 Beverages **-43.83€**

Empréstimo do carro
⌚ 16:04 | 🏠 Debts **-34.05€**

Playstation Plus
⌚ 17:22 | 🔄 Subscriptions **-55.51€**

Pagamento IMI
⌚ 18:51 | 📄 Taxes **-71.04€**

+

Future Work

MoneyWiz

An eventual continuation of this project could focus on, for example:

- Allowing for the use of multiple currencies and exchange between them (which would be useful while on vacation)
- Introducing a receipt capturing feature using the phone's camera
- Implementing a robust backend to guarantee full functionality
- Adapting some UI elements to improve accessibility for the colorblind

Acknowledgments

Special thanks to:

- All usability test participants who contributed their time and gave valuable feedback
- Maintainers of the open source frameworks and libraries that were used
- HCI teachers for answering any questions and also giving some suggestions

Effort of each group member

All group members contributed equivalent time and effort to the development of this project.