UX/UI design case study

WHO PAID WHAT

EXPENSE-SPLITTING NATIVE APP
for iOS and Android

Designer: Orsolya Horvath

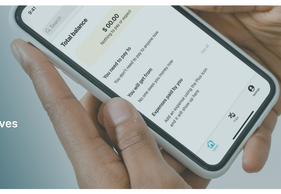
Product Design | UX/UI Design | Logo Design

WHO PAID WHAT

WhoPaidWhat is an **expense-splitting app** designed to simplify managing group expenses during holiday. Its key features include **biometric login** for secure and quick access, direct payments by **integrating PayPal, Google Pay or Apple Pay**, and easy expense monitoring. Users can invite friends to join their trips and **share access to the app** to split costs, and easily track who owes whom.

OBJECTIVE

To design the iOS and Android version of a mobile app that solves a specific user problem.



APPROACH

User Centric Design

I approached this project focusing on the User-Centered Design framework.
I started by defining who would use the product and what task they'd need to accomplish.

Discovery → Concepting → Prototyping & user testing

DISCOVERY

What - for whom - why

During this project, I had the freedom to design any app of my choice. Although this may seem easier than working with a strict project brief, it was actually challenging to decide on the type of app to work on. I invested considerable time in research and, despite the time pressure to start designing already, I chose to thoroughly think it through and select an app that addresses a genuine user problem.

This was the first and most challenging step of the project.

Using Chat GPT I narrowed down my options to 3 type of apps:

- Finance
- eLearning
- Event Management

I observed and researched several apps of each category and, after a consultation with my mentor who has an excellent perspective on the design industry and the market, I decided to build a finance app.

The rationale behind my decision

Designing a finance app requires a diverse skill set to ensure both functionality and user satisfaction. I considered this as an opportunity to demonstrate my skills in seeing through complex processes, thinking about details like system feedback and security and my understanding of design principles from both Material Design and Apple's Human Interface Guidelines.

The addressed user problem

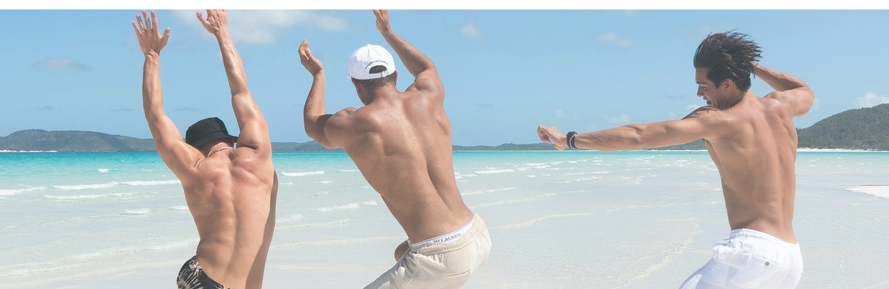
I researched different kind of financial technology apps and I decided to address a user problem, that I know some people (including me) experience time to time.

> When groups of people travel together and take turns to pay bills, it is difficult to keep track of spendings and it becomes challenging to split the expenses later.

Audience

Anyone who travels with a group of friends or want to share expenses in any other context.

The design must consider that the target audience is on holiday and having fun. Although it is a finance app, it should be enjoyable and visually appealing. It also needs to be as intuitive and simple as possible.



CONCEPTING

MVP Objective

Groups traveling together face complications when it comes to splitting costs, especially when the bills were paid by different group members each time.

The app offers an easy way to register expenses and split them among members of the group. It is also directly connected to payment apps like Paypal to execute the payments within the app with 1 click.

Context

There are a few apps in the Play Store and Apple Store that offer solution to similar problems but at first sight, their interface seems outdated and not intuitive to me. Considering the advantages native apps offer over web apps, my app would integrate Paypal or similar services for easier payments, and would provide a simple and user-friendly interface.

Key Features

- Create a profile with secure log in
- Connect the account to existing payment services
- Create groups and invite members
- Upload expenses, split expenses
- See balances, pay within the app

Competitor analysis

I researched similar apps that address the same user problems and compared their solution and design.
It gave me an insight on how they solved certain problems and gave me ideas on how I want to solve those problems. I also compared their UI design solutions and decided what I could do differently.

First sketches

I made the first quick sketches in Figma

Low Fidelity Wireframes

I turned the sketches into a full set of low fidelity wireframes for both Android and iOS, considering the differences between Apple's Human Interface and Material Design guidelines.

iOS

Android

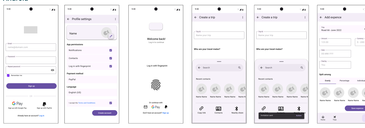
SIDENOTE:
Figma offers 2 sizes of Android wireframes. Initially, I used one of them, but in the next phase, I switched to a custom frame size. Aligning my design with the latest iPhone edition inspired me to do the same for Android. I used the latest Galaxy phone, the S24, as my reference model.

Design patterns

I compared and applied existing mobile design patterns to evoke familiarity and intuitiveness, and implemented them on my Mid Fidelity Wireframes.

iOS

Android



Haptic feedback, sounds, mobile gestures

Taking in consideration that my app is a finance app, I decided to keep haptic and sound feedback on the minimum level and only apply them when errors or mistakes happen.

Such cases are for example:
- During the registration process, the password and re-typed password do not match
- Wrong type of data entered in the text input fields
- Biometric login denied

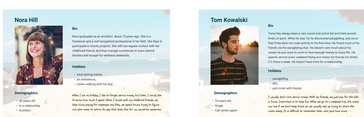
Applied feedback:
Short vibration and brief sound that complies with Apple's Human Interface and Material Design guidelines.

I also considered mobile gesture application screen by screen and came to the conclusion, that simple tapping and scrolling would provide the best user experience in this app.

App icon design

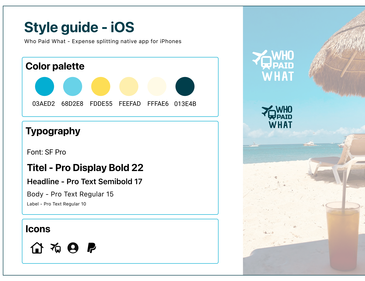
User personas

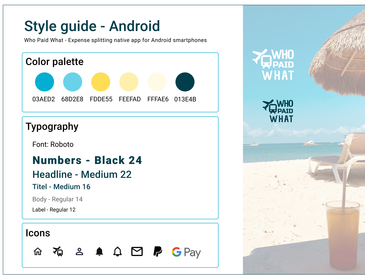
Before transitioning to high-fidelity designs, I created user personas to empathize with the users' perspectives, allowing me to refine the flow and screens.



Style guide

To ensure consistency throughout the design process of the high-fidelity wireframes, I defined the colors and typographic hierarchy for both iOS and Android designs. Since the design is based on the Human Interface Guidelines and the Material Design Guidelines and their well defined icons and patterns, I created a simplified style guide.





PROTOTYPING & USER TESTING

High-fidelity wireframes

Transitioning from mid-fidelity wireframes to high-fidelity wireframes and mockups was the second major challenge of this project.

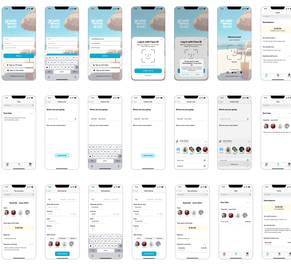
I had my design concept, including the color palette, and was familiar with both Material Design and Apple's Human Interface guidelines. However, balancing these predefined styles with my own design vision was challenging.

To overcome this challenge, I read the guidelines over and over, and analyzed other apps to see how they applied these principles to their designs.

Prototyping

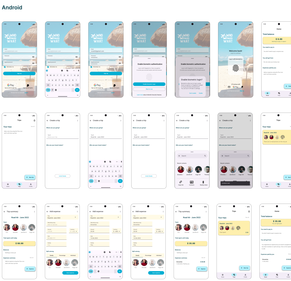
I selected the onboarding process flow to be the base of my prototype. In order to mock a real life process flow, I had to add several extra wireframes to represent diverse stages (empty, typing, typed) and diverse screen states (empty, partial, ideal) of the data input flow. I also paid attention to system feedback and app permissions to make the process flow realistic.

iOS



LINK: iOS prototype

Android



LINK: Android prototype

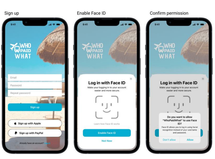
User testing & iteration

I tested the prototypes with possible users, and made iterations based on user feedback.

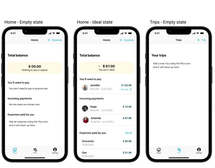
FINAL DESIGN

iOS

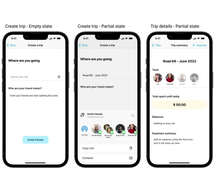
Sign up Enable Face ID Confirm permission Log in



Home - Empty state Home - Ideal state Trips - Empty state Trips - Ideal state

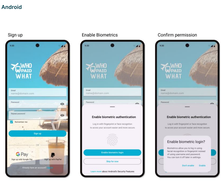


Create trip - Empty state Create trip - Partial state Trip details - Partial state Trip details - Ideal state



Android

Sign up Enable Biometrics Confirm permission Log in



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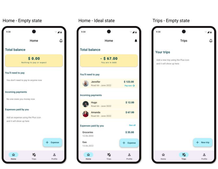

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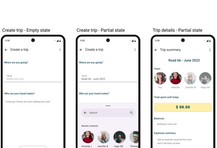


NEXT STEPS - 2ND ITERATION

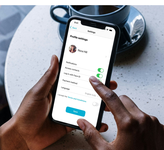
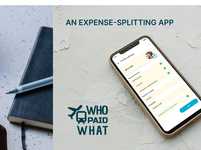
Google Lens (Android) & Live Text (iOS) integration

Re-design the *Add expense* flow by integrating photo to text feature supported by ONE UI 6.1 and iOS 15 (and above). It allows users to take a photo of the bill they want to register and the text input would automatically be transferred into the app

Modular lay-out

Add modular lay-out to the Home page for more exciting appearance and to call users to do actions and start using he app.

TAKEAWAYS

Apple's Human Interface & Material Design guidelines

During this project, I gained a thorough understanding of both Material Design and Apple's Human Interface guidelines, including patterns and trends.