Part 3.1 System Prototype

Comon, Rashid

Cordero, Kiah Nhame

Villadores, Janrev Lance

Human Computer Interaction

CS152

CHERRY LISONDRA

I. Project Description

Pawnquest is an application that aims to resonate with the hearts of a serviceable obtainable Filipinos of around 1.9M in our first year by providing a service such as appraisal of jewelries and electronics, a fake detection mechanism to determine the authenticity of an object by 3D capturing the item and if device upload its software details in the cloud to be determined by our model. It also aims to provide pawnshop locator near you that makes an offer to an item, subsequently being able to message with them and exchange other type of media.

II. Requirements Summary

		iOS	Android
Minimum Requirements	Processor Cores	Dual-core (2 cores)	Quad-core (4 cores)
	OS	iOS 12 or later	Android 8.0 (Oreo) or later
	RAM	2 GB	3 GB
Recommended Requirements	Processor Cores	Quad-core (4 cores)	Octa-core (8 cores)
	OS	iOS 14 or later	Android 10.0 (Q) or later
	RAM	4 GB	6 GB
Other Requirements	Item Appraisal	Camera Access	Camera Access
	Pawnshop Navigation	GPS Access	GPS Access
	Messaging and Video Calls	Internet connectivity, Microphone & storage	Internet connectivity, Microphone & storage

Table 1: System Requirements

To ensure seamless navigation for users, as seen in Table 1 PawnQuest for iOS requires at least a dual-core processor, iOS 12 or later, and 2 GB of RAM, with better performance on a quad-core processor, iOS 14 or later, and 4 GB of RAM. On Android, the minimum requirements are a quad-core processor, Android 8.0 (Oreo) or later, and 3 GB of RAM, with the recommended setup being an octa-core processor, Android 10.0 (Q) or later, and 6 GB of RAM. The app uses the device's camera for item appraisal, GPS for finding nearby pawnshops, internet, microphone, and storage for messaging and video calls. These capabilities enable features like 3D capture for accurate item pricing, cloud-based detection of counterfeit items, and seamless communication with pawnshops.

III. Prototype Description

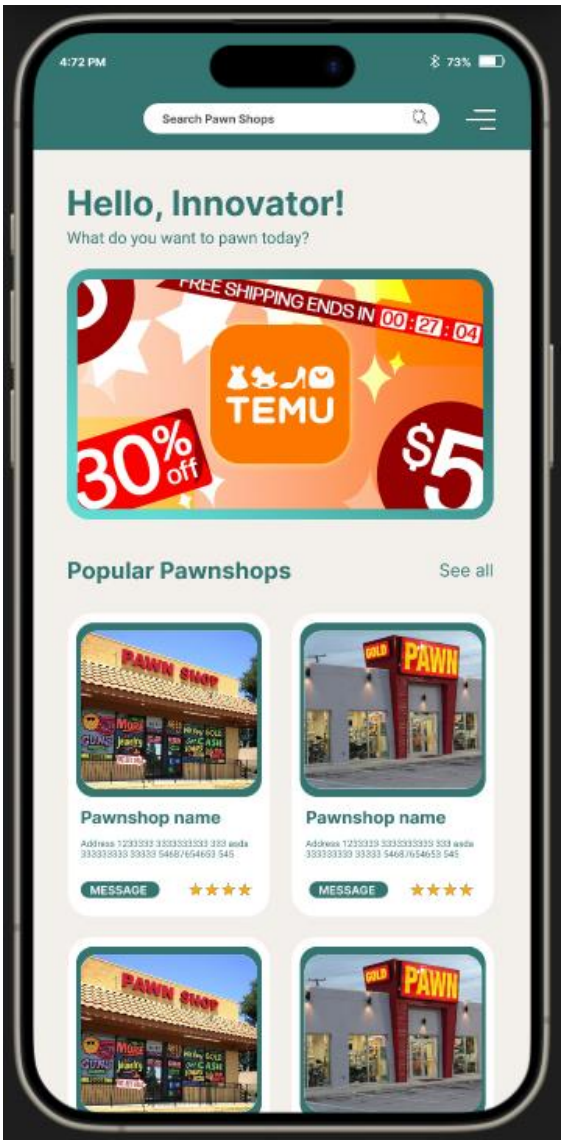

Figure 1. Dashboard

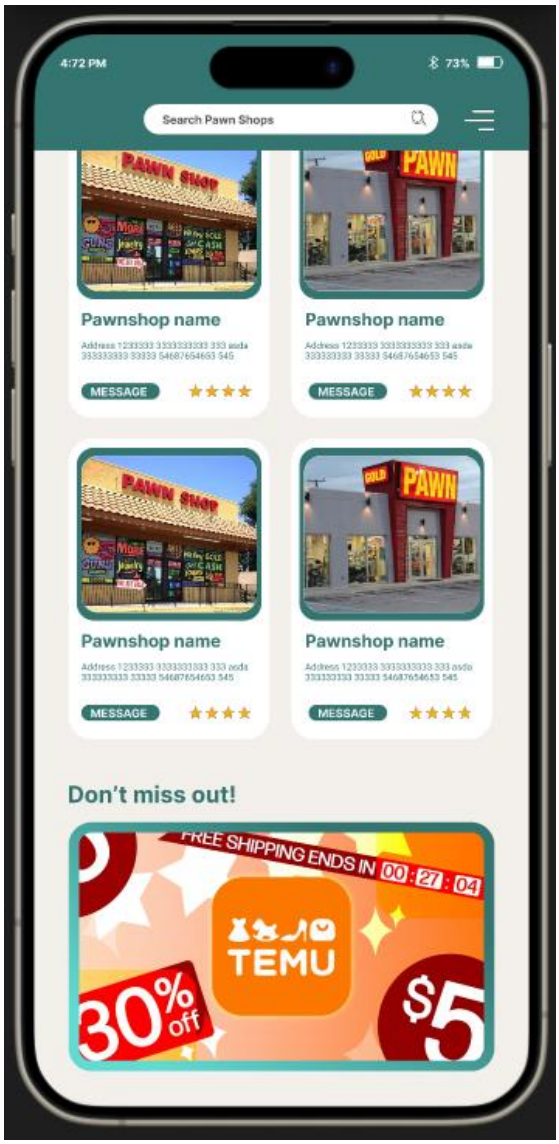

Figure 2. Dashboard

The Dashboard is the main screen that users see when they open the app. It features various icons and menu options, including notifications and a search bar.

Figure 3. Menu Bar

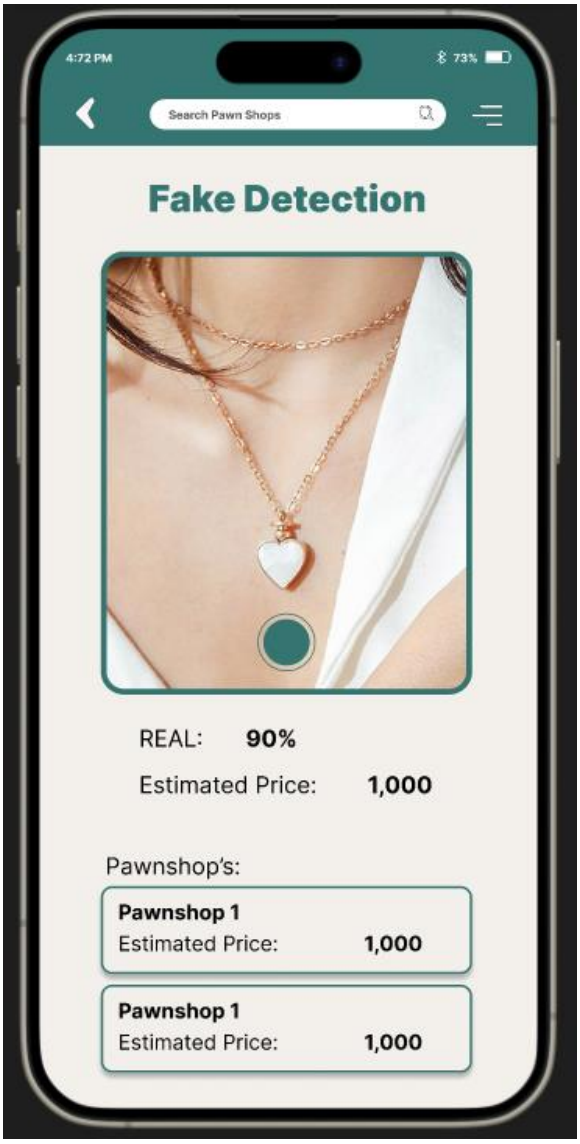

Figure 4. Fake Detection

The Menu Bar is a navigation tool that includes icons for home, transactions, messages, and profiles. For Fake Detection, this feature allows users to upload an image to verify the authenticity of items. Here the percentage of how real the item is shown and its estimated price. Then there is also a list of pawnshops with their estimated price below.

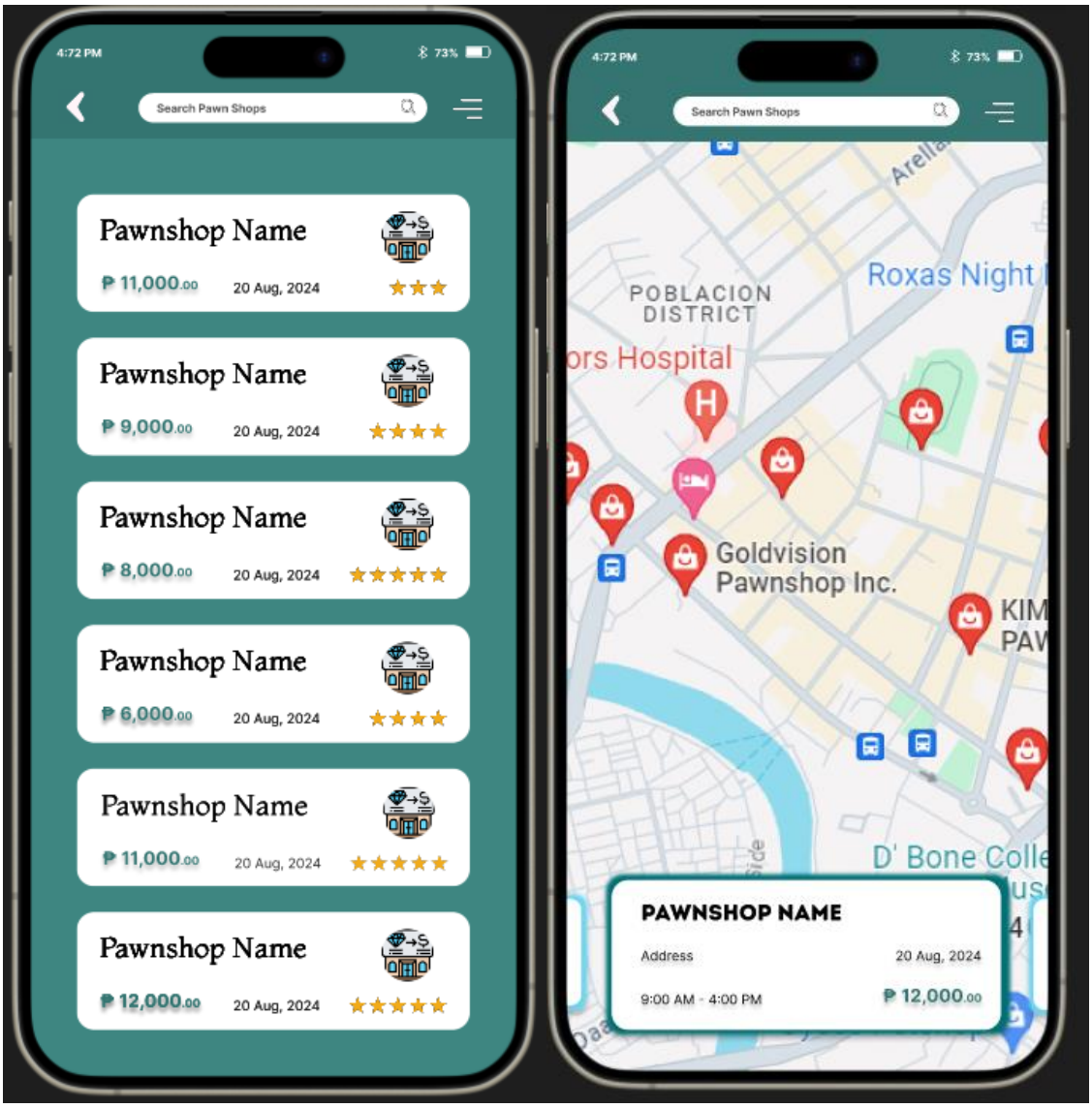

Figure 5. List of Pawnshop

Figure 6. Map

List of Pawnshops displays the full list of pawnshops in a list format with ratings and distances. The Map feature provides a map view showing the location of the pawnshop with its details. You can also slide this to view the other pawnshops.

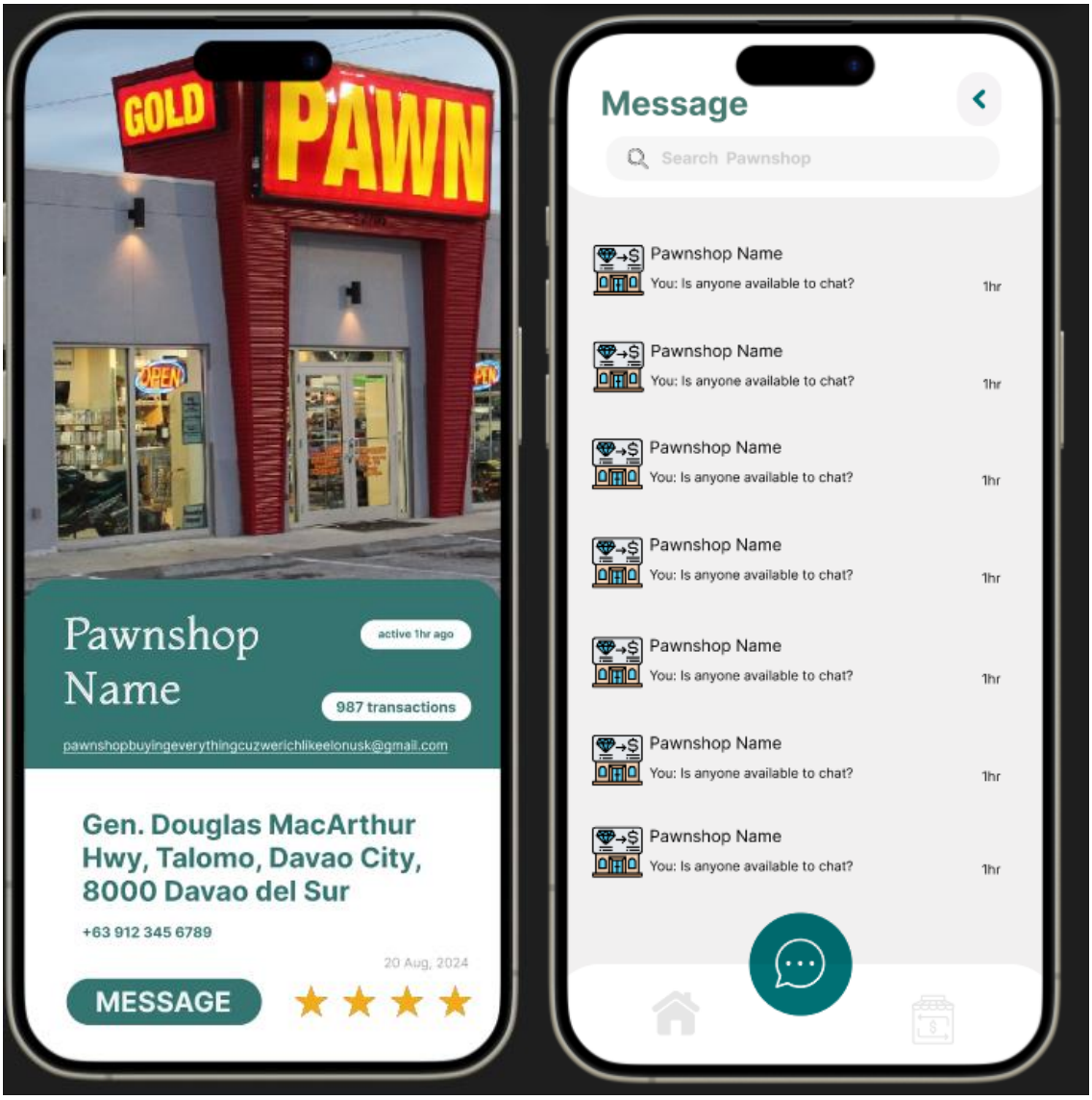

Figure 7. Pawnshop Details

Figure 8. Messages

The Pawnshop Details screen provides detailed information about a selected pawnshop including services offered and user reviews. The Messages is an inbox layout for user messages with the pawnshop within the app.

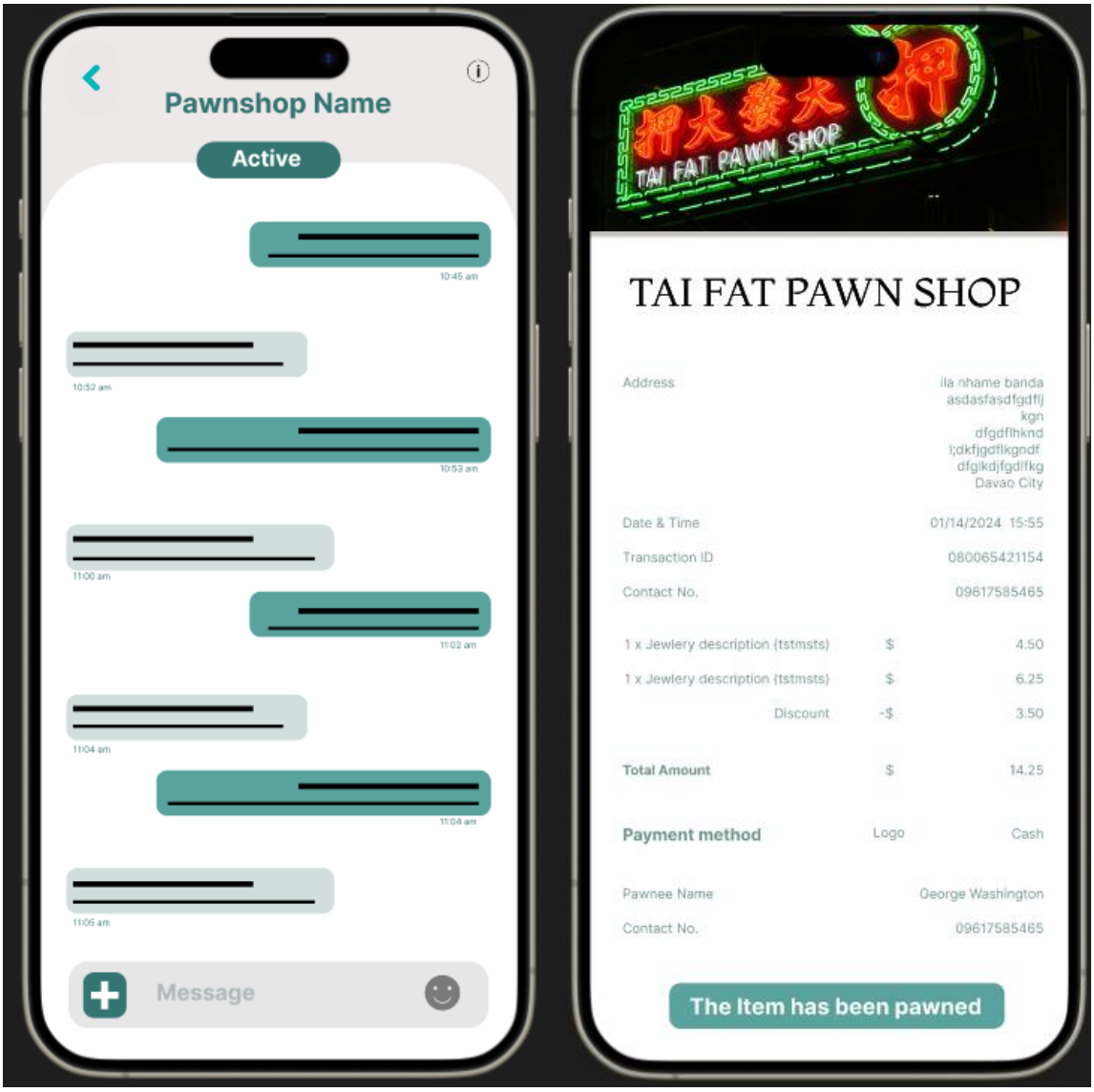

Figure 9. Message Conversation

Figure 10. Verify Transaction

The Message Conversation screen shows the users perspective when messaging the pawnshop. The Verify Transaction Screen provides a detailed information of the item being pawned.

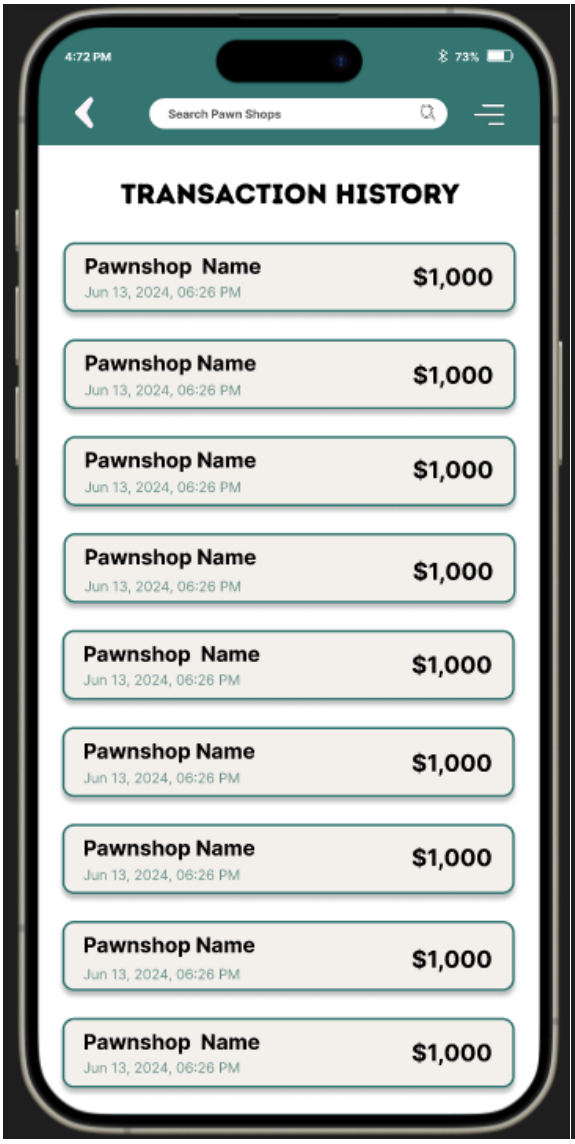

Figure 11. Transaction History

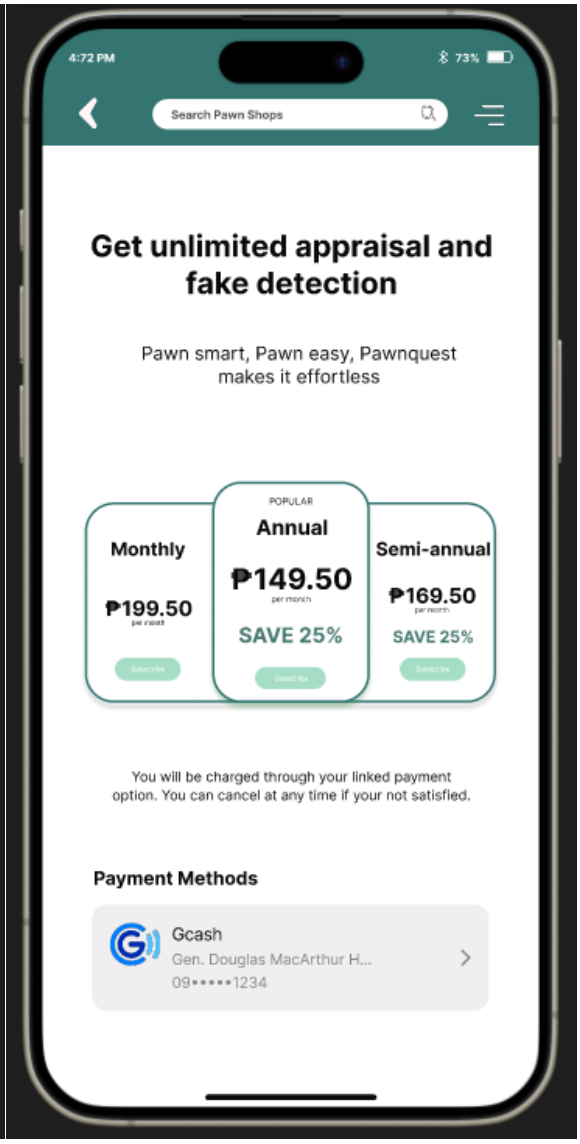

Figure 12. Subscription

Figure 11 shows the transaction history with the list of the pawnshop with the date and price of the item pawned. The Subscription screen shows the subscription plan for the application and its payment methods.

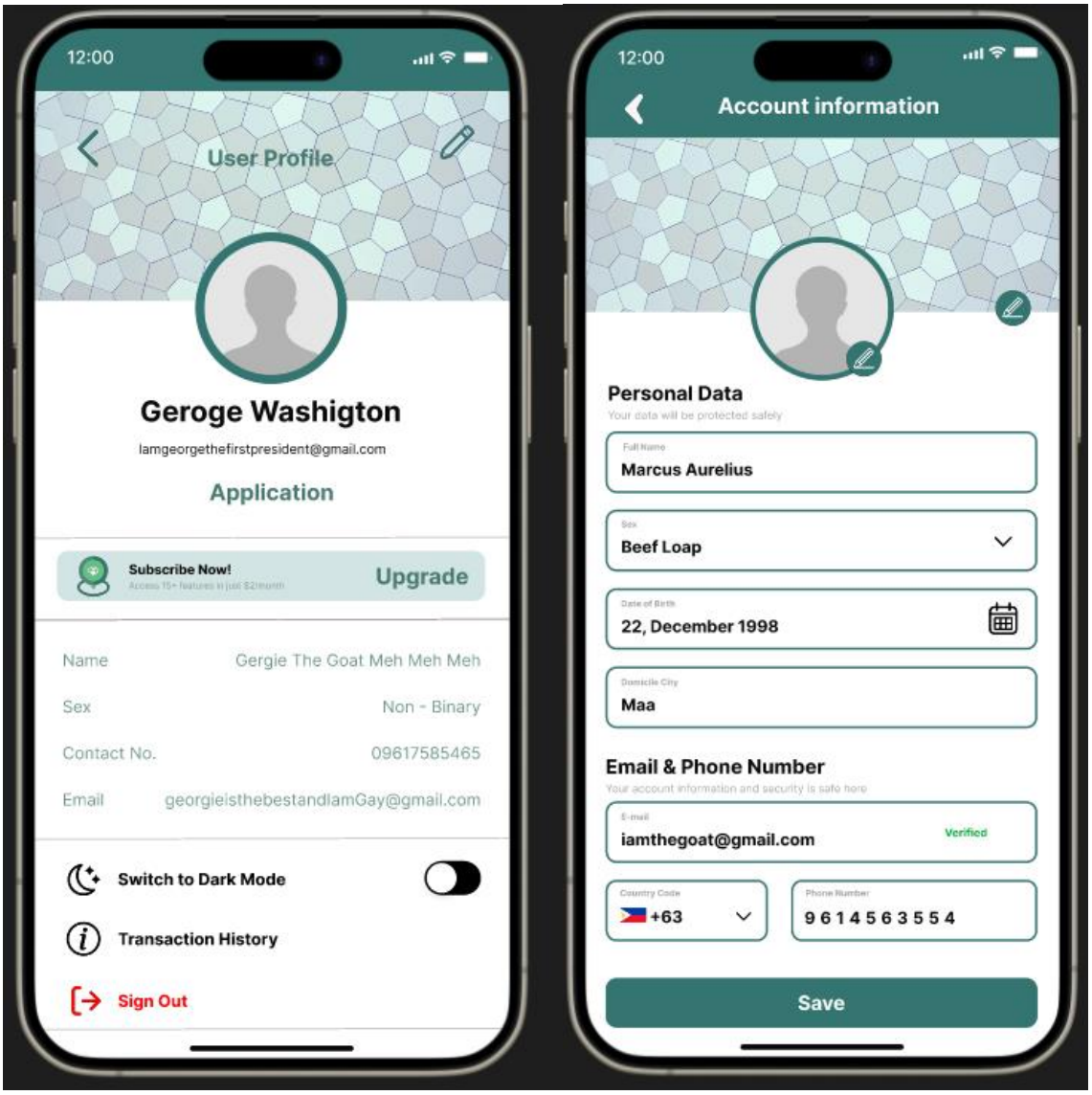

Figure 13. Account Profile

Figure 14. Edit Account

Figure 13 shows the users profile with its personal information and account settings. When the user wants to edit an information it would look like Figure 14.

Scenario from a User's Perspective:

A user wants to pawn an item. They first use the Fake Detection feature to verify the authenticity of their item. Once verified, they use the List of Pawnshops and Map features to find nearby pawnshops with good ratings. They select a pawnshop and view its details, including services offered and user reviews. They initiate a transaction and communicate

with the pawnshop using the Messages feature. They can track their transaction using the Verify Transaction History feature.

Rationale

This prototype was chosen because it addresses key needs of users in the pawning process. The advantages include security (fake detection), convenience (map and list views), communication (messages), and transparency (transaction history). However, the disadvantage might be the complexity of the app due to the number of features, which could potentially overwhelm some users.

Changes to your requirements

Regarding changes to the initial requirements or usability criteria during the development of the prototype, there were no alterations made. The development team adhered strictly to the initial requirements and usability criteria set forth at the beginning of the project's design phase.

IV. Initial Evaluation Plan

The prototype that has been developed addresses several key usability criteria and requirements, which are integral to the user experience. These include user-friendliness, accuracy, efficiency, accessibility, and security. Here's how I plan to address and measure them:

1. **User-Friendliness**: Comprehensive usability tests will be conducted with a diverse group of users, including those with varying levels of tech skills. The success rate of task completion without assistance and qualitative feedback about their experience will be used to measure the user-friendliness of the interface.
2. **Accuracy**: Rigorous testing will be carried out with a wide variety of items, both real and counterfeit, to ensure the reliability of the fake detection and price estimation features.
3. **Efficiency**: The user journey from login to obtaining pawnshop offers will be tracked and compared with traditional methods. This will help quantify the time savings and identify areas for further optimization.
4. **Accessibility**: Extensive accessibility testing will be conducted under various conditions and demographics to ensure the app is usable by everyone. This includes

testing under different lighting conditions and ensuring the app is usable for people with disabilities.

5. **Security**: Regular security audits will be conducted and user trust levels will be measured through surveys to ensure user data protection and secure transactions.

To measure the effectiveness of the interface, we plan to use a combination of techniques:

1. **Usability Testing**: Observing users as they interact with the interface can provide valuable insights into its user-friendliness, efficiency, and accessibility.
2. **Heuristic Evaluation**: Experts will evaluate the interface against established usability principles to help identify potential issues and areas for improvement.
3. **Analytics**: User behavior data will be tracked and analyzed to provide insights into how users are using the app, which features they use the most, and where they encounter difficulties.