Online Activity No. 8 and 9: Applying the User-Centred System Design Process

Chapter I. Introduction

Background

Pawnshops have been a staple in the financial landscape, providing short-term loans secured by personal items. However, the industry faces numerous challenges, particularly with the increasing demand for efficient, user-friendly systems to handle the complexities of daily operations. Traditional pawnshop management systems often fall short of addressing the dynamic needs of both customers and employees, leading to inefficiencies and suboptimal user experiences.

PawnQuest aims to revolutionize the pawnshop industry by implementing a user-centered design (UCD) approach. Recognizing the shortcomings of existing systems, PawnQuest seeks to create an intuitive, efficient, and accessible platform tailored specifically to the unique requirements of pawnshop operations. This application will streamline processes such as customer transactions, inventory management, and regulatory compliance, ensuring that both customers and employees can navigate the system with ease.

The development of PawnQuest is driven by the need to address specific issues prevalent in current systems. These include inconsistent user interfaces, cumbersome document management, and inadequate customer engagement features. By leveraging UCD principles, PawnQuest will focus on enhancing the overall user experience, ensuring that the system is not only functional but also easy to use and aligned with the needs of its users.

Through this innovative approach, PawnQuest aims to set a new standard in pawnshop management systems, delivering a solution that not only meets but exceeds the expectations of its users. The ultimate goal is to create a seamless, efficient, and user-friendly platform that enhances operational efficiency and customer satisfaction, thereby contributing to the overall success of pawnshops in a competitive market.

Procedure

A. Identify a Scope or Agenda

The scope of PawnQuest involves developing a comprehensive user interface (UI) for a pawnshop management system. The agenda includes identifying key issues in existing systems and designing solutions that enhance usability and operational efficiency.

B. Statement of the problem

The current pawnshop management systems face several critical issues:

1. **Inconsistent User Interface**: The navigation and layout of existing systems are often inconsistent, leading to user confusion and inefficiency.
2. **Time Delays in Transactions**: There are significant delays in processing transactions due to outdated software and manual data entry.
3. **Cumbersome Inventory Management**: Managing inventory, including tracking and retrieving pledged items, is inefficient and prone to errors.
4. **Inadequate Customer Engagement**: Existing systems lack robust features to engage customers, resulting in a subpar customer experience.

Assumption of the study

The proposed PawnQuest system will address these problems through:

1. **Consistent User Interface**: A streamlined and intuitive interface that enhances navigation and usability.
2. **Efficient Transaction Processing**: Automated and optimized processes to reduce time delays in transactions.
3. **Enhanced Inventory Management**: Robust features for tracking and managing inventory efficiently.
4. **Improved Customer Engagement**: Tools and features designed to enhance customer interaction and satisfaction.

These features will validate the proposed design, ensuring it meets the needs of the users and resolves the issues identified in the current systems.

Significance of the study

The study will benefit various stakeholders, ranked by their relevance to the system's success:

1. **Pawnshop Owners and Managers**: They will experience enhanced operational efficiency, reducing overhead costs and improving profitability.
2. **Employees**: The streamlined processes will make daily tasks easier and less error-prone, improving job satisfaction and productivity.
3. **Customers**: A more intuitive and engaging system will enhance their overall experience, fostering loyalty and repeat business.
4. **Regulatory Bodies**: Improved compliance features will ensure that pawnshops adhere to legal and regulatory requirements more effectively.
5. **Developers and IT Teams**: The clear and consistent design will facilitate easier maintenance and future upgrades.

By addressing the needs and challenges faced by these stakeholders, PawnQuest aims to create a superior pawnshop management system that sets a new standard in the industry.

Chapter II. Research Design

The group should be able to identify where the steps of the design process model used and its corresponding description from the reference book. Aside from this, the researchers should also relate their own experiences and add them to the description of every stage of the design process model.

User-Centered System Design Process

This section discusses the design process model used by the group wherein it is composed of the following stages:

A. **Task Analysis**

Provide the hierarchical task analysis of the proposed design based on the chosen scope both textual and figure.

1. Login/Make Account
    a. Has Account
        i. Input username
        ii. Input password
    b. No Account
        i. Input Personal Information (Full Name, Address, Birthdate, Gender, Civil Status, Contact Number, Email Address)
        ii. Input Account Details (Username & Password)
        iii. Account Verification
            1. Using Email
            2. Using a Mobile Number
2. Fake Detection
    a. Take a picture of the item you want to pawn
    b. The system will analyze the data
    c. It will show the authenticity percentage and estimated value
3. Picking the pawnshop
    a. There will be a list of all available pawnshops where you can pawn with the estimated price of each
    b. The user can filter based on their needs
    c. The user can pick a pawnshop
4. Messaging
    a. After Picking a pawnshop the user can message the pawnshop to make the final negotiation
    b. Verify that the transaction is pawned
5. Transaction History
    a. History of all the successful transactions

    b. You can see the detailed information of that certain transaction
6. Premium
    a. There is a limit to using the application thus there is a subscription in this mobile application
    b. The user will pick a plan and pay it in cash
7. List of Pawnshop
    a. There is also a list of all partnered pawnshop of pawnsquest with its information
    b. It shows the number of transactions made
    c. It shows the rate in a range of 5-0stars
    d. When clicking the certain pawnshop it will give more detailed information
8. About us
    a. Here it shows the information of what pawnquest is for new users who don't know the application
    b. There is also “why you should use pawn-quest”
9. Editing Account
    a. The user can also edit the profile picture
    b. The user can also change the

B. **Requirements Gathering**

		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.

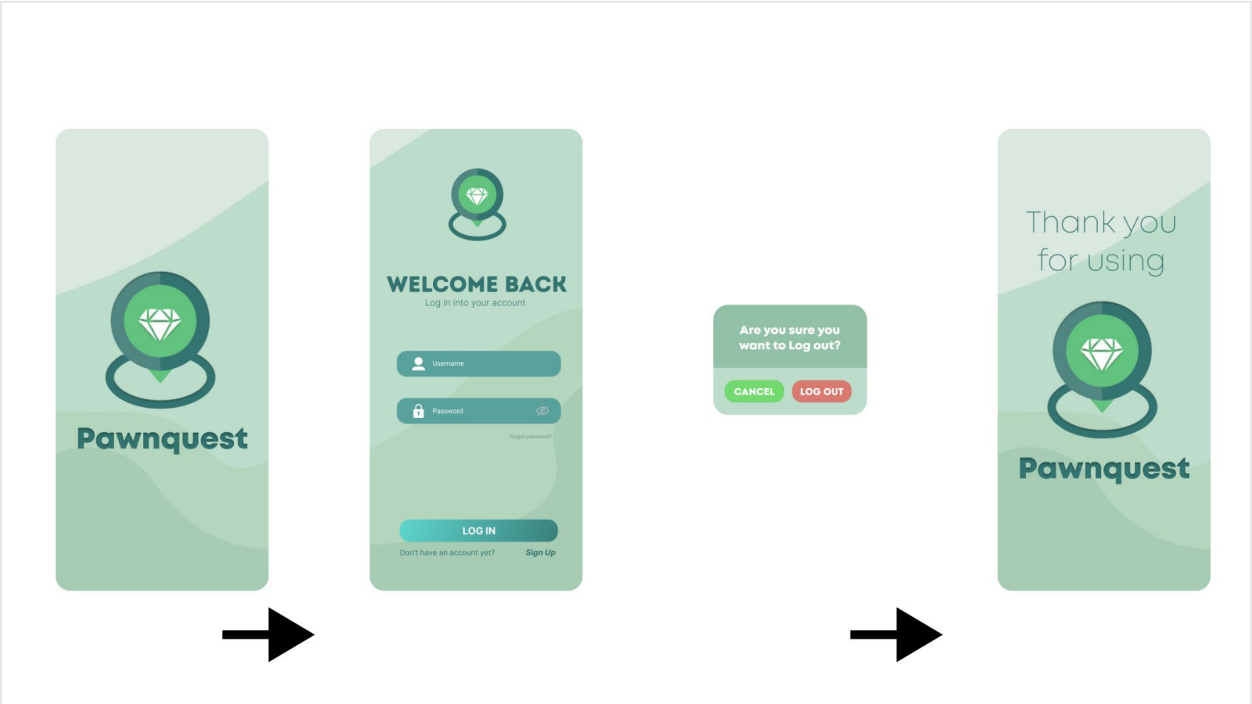
C. **Storyboarding and Prototyping**

Storyboard:

Storyboard 1

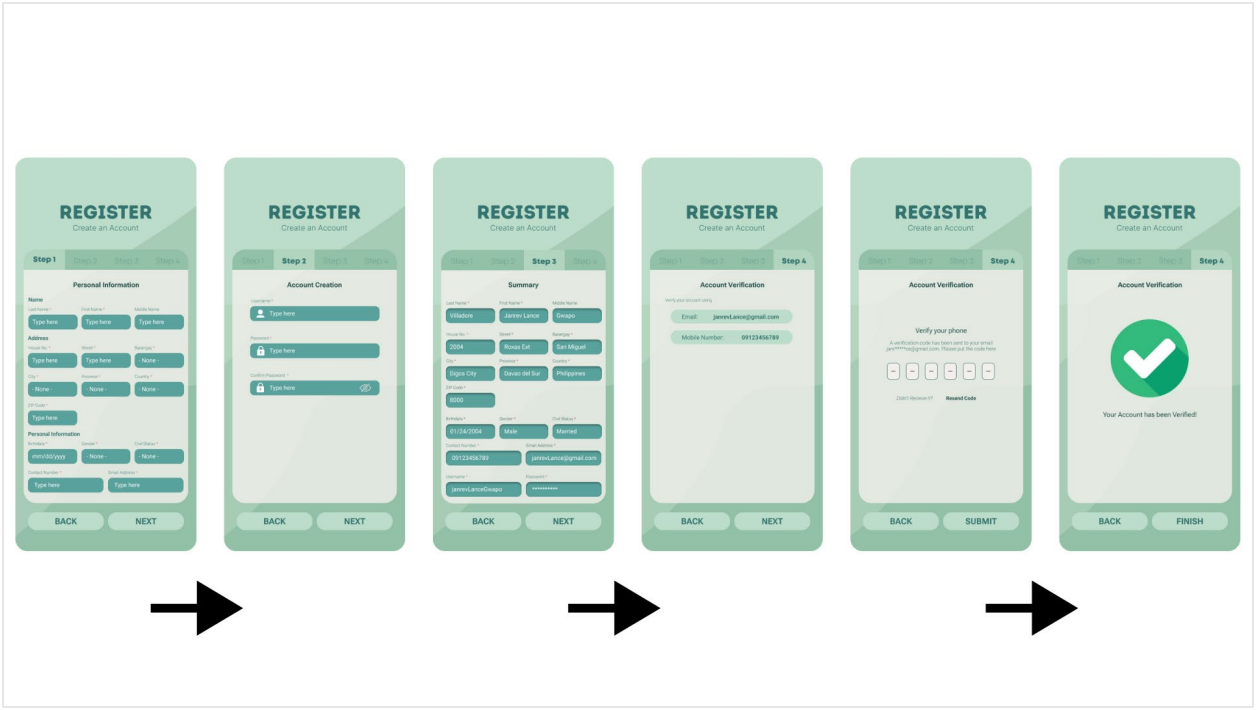
Storyboard 2

Prototype



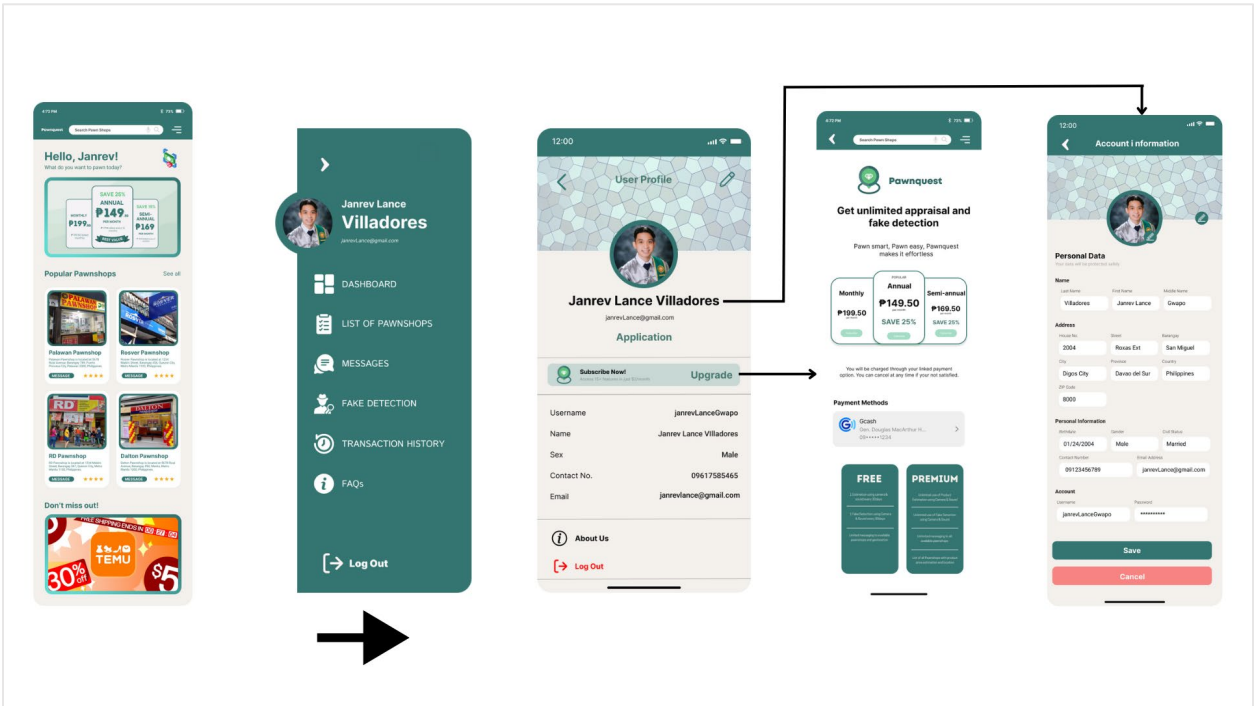
Prototype 1: Login & Logout

Prototype 1 shows the flow for a user who is about to log in and log out which also has a prompt message for logout.



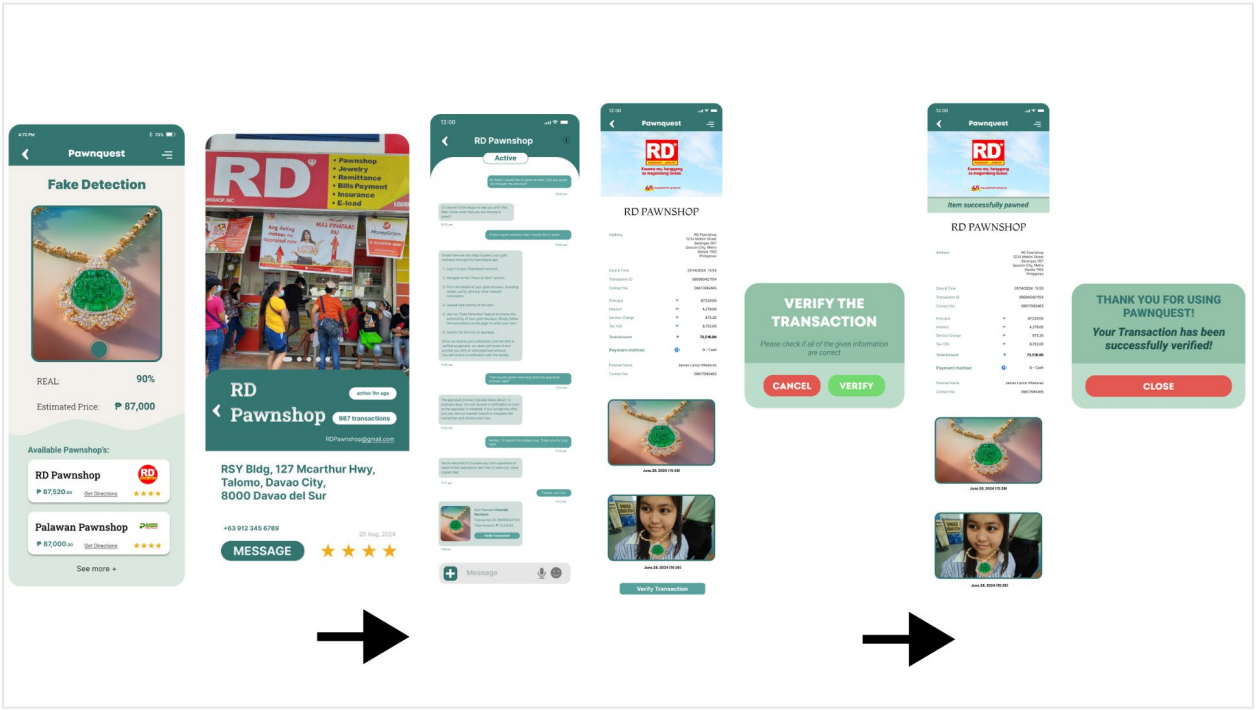
Prototype 2: Account Registration

Prototype 2 shows the flow for user registration, from verification, there have been options, however, there is only 1 change from “verify your phone” to “verify your email”, thus, we only included one design.



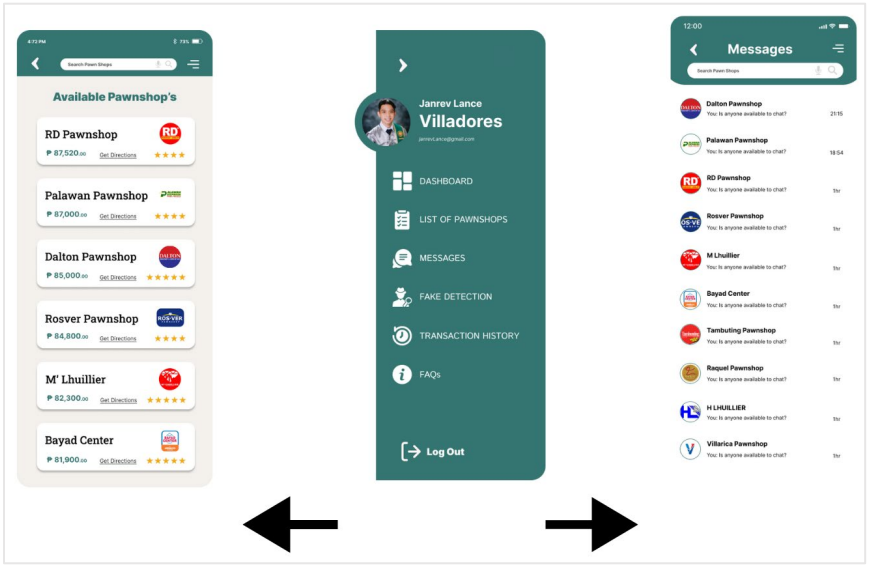
Prototype 3: Account Editing and Subscription

Prototype 3 shows the flow for a user who is about to edit their account details and the subscription options Pawnquest offers.



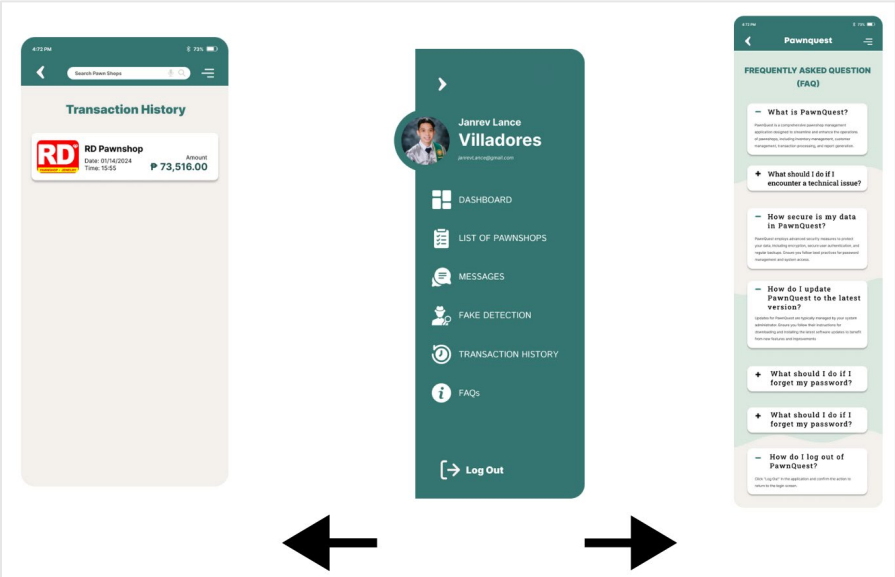
Prototype 4: Item Pawning & Messaging

Prototype 4 shows the flow for a user who selected fake detection from the menu bar in Prototype 3, it lists the pawnshop that has an offer for jewelry, its location, messaging with them, and verifying a transaction for an item.



Prototype 5: List of Pawnshops and Messages

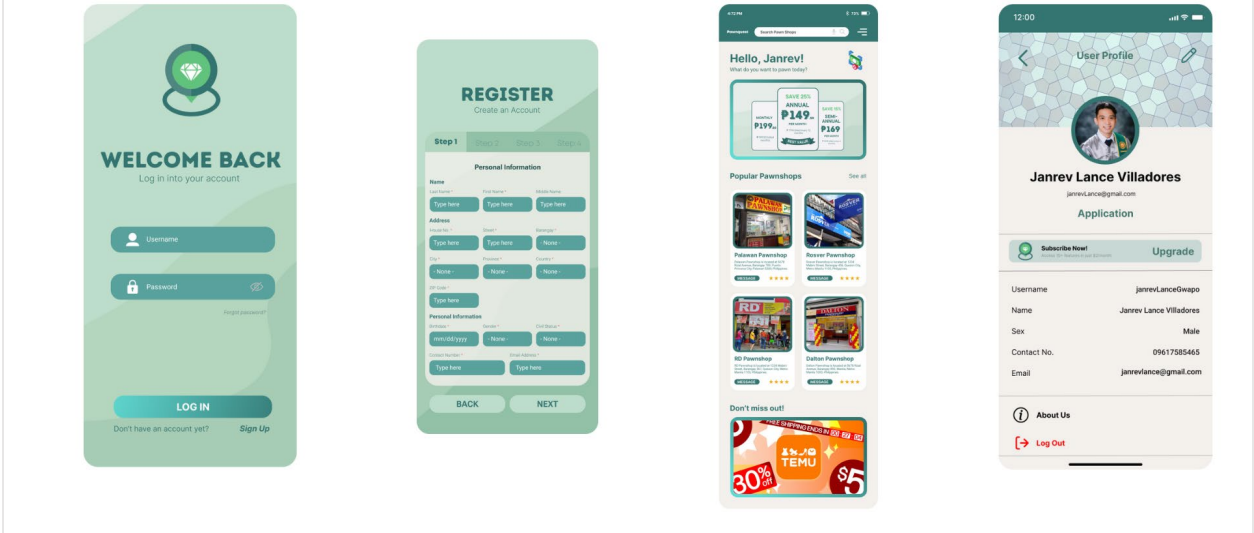
Prototype 5 shows the user design if a user hits “List of Pawnshops” and “Messages” from the menu bar.



Prototype 6: Transaction History and Frequently Asked Questions

Prototype 6 shows the user design if a user hits “Transaction History” and “Frequently asked Questions” from the menu bar.

D. **Evaluation of prototype**



✓

Evaluation Criteria (Based on the 10 heuristics of design evaluation)

Area of Evaluation	5	4	3	2	1
A. Visibility of System Status - The system design provides appropriate feedback like message prompts in response to user actions.	✓				
- The message prompts are clear, visible, and understandable.	✓				
B. Match between the system and the real world - Used words, phrases, and concepts according to users' language rather than system-oriented words and computer jargon.	✓				
C. User control and freedom - The system design provides ways of allowing users to easily "get in" and "get out" if they find themselves in unfamiliar parts of the system.	✓				
D. Consistency and Standards - The colors, text, labels, buttons, and other elements in the design are uniform from start to finish**.**	✓				
- Text and icons are not too small or too big.		✓			
- Menus and other features of the system are arranged and positioned consistently. (For ex. If your website has navigation buttons on the top under the page title on one page, the users will automatically look there for the same features on other pages.	✓				
E. **Error Prevention** - The system design provides automatic detection of errors and prevents them from occurring in the first place.		✓			
- Idiot proofing mechanisms are applied	✓				
F. Help users recognize, diagnose, and recover from errors **-** Error messages and the terms used are recognizable, familiar, and understandable for the users.	✓				
G. Recognition rather than recall **-** Objects, icons, actions, and options are visible to the user. - Objects are labeled well with text and icons that can immediately be spotted by the user and matched with what they want to do.	✓				
H. Flexibility and efficiency of use - The system design provides easy-to-navigate menus. - the system does not waste wasteful time or system resources.	✓				
I. Aesthetic and minimalist design **-**Graphics and animations used are not difficult to look at and do not clutter (mess) up the screen. - Information provided is relevant and needed for the system design.		✓			

J. Help and Documentation -the system design provides information that can be easily searched and provides help in a set of concrete steps that can easily be followed.	✓				

Chapter III. Conclusion and Recommendation

Pawnquest has significant potential to aid Filipinos in pawning wisely due to its simple and easy-to-use interface. The design addresses the issues cited in Section II of Chapter 1 by incorporating features such as item appraisal through 3D capture, fake detection, pawnshop navigation, messaging and video calls, personalization options, and enhanced security measures. These features ensure a streamlined and secure pawning experience, facilitating seamless transactions and building user trust through transparency and authentication.

Through this project, the researchers gained valuable insights into Human-Computer Interaction (HCI). They learned the importance of intuitive design in ensuring user satisfaction and ease of use, as evidenced by participants' ability to complete tasks without assistance. The iterative design process, which included gathering and responding to user feedback, highlighted the significance of user-centered design in creating effective and engaging interfaces. This project underscored the critical role of HCI principles in developing applications that not only meet user needs but also enhance their overall experience.