Project Description:

SwapSphere is an innovative virtual trading platform designed to help users exchange goods and services more efficiently and securely. Created by Team GWAPO, the app addresses the common challenges of traditional bartering systems, such as the "double coincidence of wants," unbalanced pricing, and trust issues between users. SwapSphere introduces a credit-based system, allowing participants to trade without needing a direct match of items. The platform also ensures fair pricing through a standardized yet flexible system and fosters a trustworthy community by integrating user ratings and reviews. SwapSphere provides a simple, intuitive interface that makes swapping easier and more convenient, offering features like customizable trade preferences, instant notifications, and secure transactions. It empowers users to engage in equitable exchanges while promoting a more sustainable, community-driven approach to acquiring goods and services.

MINIMUM REQUIREMENTS		ANDROID
	Processor Cores	Dual Core
	OS	Android 8.0 (Oreo) or higher
	RAM	2 GB
		IOS
	Device	iPhone 6s or newer
	OS	iOS 12
	RAM	2 GB
RECOMMENDED REQUIREMENTS		ANDROID
	Processor Cores	Octa Core
	OS	Android 11 (R) or higher
	RAM	4 GB or more
		IOS
	Device	iPhone 8 or newer
	OS	iOS 14 or higher
	RAM	3 GB or higher
OTHER REQUIREMENTS	Internet	Wi-Fi or Mobile Data

Table 1. System Requirements

SwapSphere is lightweight, accessible, and compatible with a wide range of devices, ensuring seamless operation on both Android and iOS. The app maintains performance, stability, and security by adhering to the minimum specifications that are updated while still being compatible with most mid- to low-range smartphones.

SwapSphere supports Android and iOS platforms, working on devices running Android 8.0 (Oreo) and above or iOS 12 and above. These baseline versions ensure compatibility with the latest APIs, user interface components, and data security protocols.

OVERVIEW

Some members were busy with work and school, so they were not available for in-person testing. On the contrary, the evaluation would be performed remotely via Messenger, enabling the developers to witness The participants interacted with the SwapSphere prototype during the evaluation. SwapSphere prototype. To ensure fair feedback, it is important to accommodate the schedules of all team members. fair way to ensure that feedback is provided is to suit the times of all team members

Technique	Description
Usability Specifications	SwapSphere's prototype's usability and effectiveness were assessed using Usability Specifications. The team watched as participants completed predetermined tasks, noting how long each task took and how smoothly they completed them. Activities centered on the platform's main functions, including managing profiles, making offers, and perusing listings. These exercises enabled us to evaluate the prototype's usability and assisted the team in pinpointing areas where users encountered difficulties.
Heuristics Evaluation	Heuristics Evaluation will use accepted usability principles to evaluate the SwapSphere prototype's UX design. This method was selected to ensure a smooth and user-friendly experience by offering a rapid and effective means of identifying possible problems with the user interface and design. Heuristics are an appropriate approach for early-stage evaluations because they assist in identifying design improvement areas without requiring a lot of resources.

The Home Page Tasks, Item Listing Tasks, and Trade Interaction Tasks are the three (3) distinct sections into which the tasks for this prototype are divided. To demonstrate the functionality of the prototype, the chosen participants will be required to complete the following tasks for each section:

Home Page Tasks

- Launch and exit the prototype

- Navigate between pages (e.g., Home, Browser, Profile)

Item Listing Tasks

- Create a new product listing (including title, description, and images)
- Edit or delete a specific listing

Trade Interaction Tasks

- Make an offer on a product
- Save a listing to the profile
- Browse and filter items based on category or condition

Reasons these tasks were selected for the participants:

- Easy Navigation: Ensures that users can move smoothly between pages and sections.
- Allow Users to Perform CRUD Operations (Create, Read, Update, Delete): Ensures the platform supports core actions such as listing items, editing, saving, and deleting listings.
- User Interaction: Allows users to engage in key actions, such as making offers and browsing through available listings.

Data Analysis

Usability Specifications

The SwapSphere prototype was well-received by the majority of participants during the online testing, according to Team GWAPO. Listing items, browsing, and making offers were among the tasks that almost all of them could accomplish with little to no difficulty. Participants were able to easily navigate the platform after quickly grasping its features and layout. Nonetheless, it took a little longer for some users to adjust to the platform's general flow, especially during the trade interaction process. Occasional unresponsiveness of a few buttons and actions could have been caused by overlooked limitations or small design flaws in the prototype. We were able to pinpoint areas for improvement thanks to these observations, especially in terms of optimizing user flow and making sure all interactions run smoothly.

Task	Mean	Interpretation	Classification
Main Menu Task	0.35 seconds	Highly Acceptable	Successful
Item Listing Task	30 seconds	Highly Acceptable	Successful
Trade Interaction Task	45 seconds	Highly Acceptable	Successful
Profile & Settings Task	55 seconds	Highly Acceptable	Successful

Table 3. Task time

The outcomes of the tasks evaluated during the SwapSphere design testing are shown in Table 3. According to the data, participants successfully navigated through each section of the design in the given time. The findings suggest that users found the design to be user-friendly and intuitive, as they could easily interact with the key features. The design is deemed successful in all four (4) sections based on these findings.

Heuristic Evaluation

Visibility of System Status
The prototype will keep participants informed about what is happening at all times, such as showing loading indicators and providing feedback on their actions, ensuring users know the status of their tasks.

Match Between System and the Real World
The prototype uses familiar terms, icons, and concepts that users are comfortable with, avoiding system-specific jargon. The language used matches how users would think and speak in real-world scenarios.

User Control and Freedom
SwapSphere allows users to undo or redo actions easily through confirmation prompts for every action, ensuring they have control over their decisions and can recover from any mistakes.

Consistency and Standards
The design ensures that similar actions, words, and symbols are consistent throughout the platform, making it easy for users to understand and predict system behavior without confusion.

Error Prevention
SwapSphere proactively prevents errors by using clear confirmations and warnings before

critical actions, such as submitting a trade offer or deleting an item listing, reducing the chances of mistakes.

Recognition Rather than Recall
All key actions, options, and information are visible and easily accessible within the interface, reducing the need for users to remember previous steps or actions across different sections of the platform.

Flexibility and Efficiency of Use
SwapSphere caters to both novice and experienced users. It offers shortcuts and customizable features for frequent actions, allowing users to tailor their experience based on their preferences and expertise.

Aesthetic and Minimalist Design
The prototype maintains a clean and simple design by eliminating unnecessary elements. Only relevant information is displayed at any given time, ensuring users focus on what matters most without distraction.

Help Users Recognize, Diagnose, and Recover from Errors
Error messages are clear, plain-language explanations of the problem, providing constructive suggestions on how to resolve the issue without confusing technical terms or codes.

Help and Documentation
Users can easily access help and documentation directly within the prototype. The information is simple to search and available whenever users need assistance or guidance.

Feedback

While the majority of the feedback was positive, some participants noted concerns about the clarity of the layout and ease of navigation across different sections of SwapSphere.

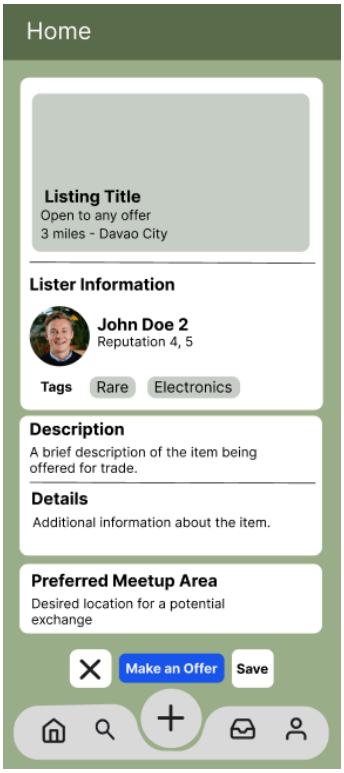
Does the prototype need to be altered based on the feedback?

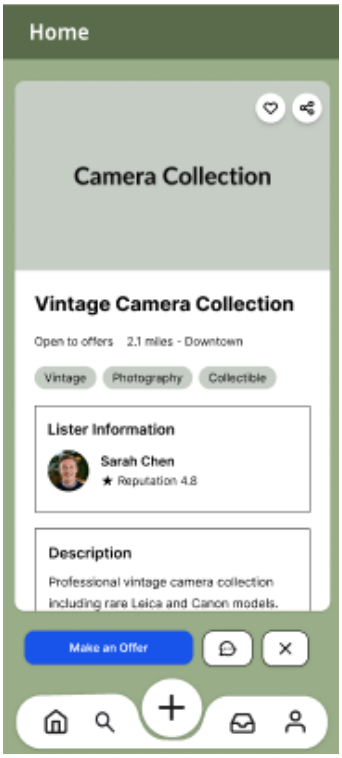
The prototype was overall successful, achieving its main usability goals. However, based on participant feedback, the team decided to implement a few changes to improve user navigation and interface clarity. These adjustments aimed to address minor difficulties some users experienced while interacting with certain features, ensuring a smoother experience overall.

What improvements were made to the design?

A significant change involved refining the Home Page layout to improve visibility and ensure key features were more prominently displayed. Some participants had trouble understanding the flow of navigation, particularly between listing items and managing trade interactions. To resolve this, the navigation buttons were adjusted, and clearer icons were added to help users more

easily locate important tasks. These revisions were made to improve user comprehension and to make the experience more intuitive, especially for first-time users.





Before

After

What were the advantages and disadvantages of your evaluation?

One major advantage of our evaluation was the ability to conduct remote testing, which allowed us to reach a wide range of participants. Using platforms like Messenger, we could easily share the prototype and gather valuable feedback. The flexibility of online testing also enabled participants to engage with the prototype at their own convenience, offering us insights into real-world usage.

However, the remote nature of the testing had its downsides. We couldn’t observe participants' real-time reactions in person, which limited our understanding of their immediate, physical interactions with the app. Additionally, inconsistent internet connections sometimes slowed down the testing process, affecting the overall smoothness of the user experience.

What would you have done differently, knowing what you know now?

If given more time, we would have conducted multiple rounds of testing: one for the initial version and another after incorporating feedback and revisions. This would have allowed us to compare improvements and get a clearer understanding of the app's evolving usability. Additionally, with more resources, we would have expanded the prototype to include some back-end functionality, turning it into a fully operational app with real-time interactions and transactions.

Summary of the Project

SwapSphere’s prototype was designed to help users exchange goods and services easily and securely through a user-friendly platform. During testing, users successfully completed tasks like browsing listings, making offers, and managing their profiles. The interface was well-received for its simplicity and intuitive design, making it easy for users to navigate and complete transactions.

Some users initially struggled with understanding the flow between pages, particularly in the trade interaction section, and some minor usability issues were identified. As the prototype was tested remotely, we were unable to observe users' physical interactions, which may have limited our understanding of certain challenges.

If we had more time, we would have focused on enhancing features like notifications, refining the search functionality, and adding real-time updates. Despite these limitations, the project was overall successful. The prototype proved to be easy to use, met its goals, and provided us with valuable insights into creating a more refined and user-centered design.