

HCI - Steam App UX Redesign

Group 15

Ali Sharifi Kia
Sean (Changhui) Hou
Sarvenaz Vesali
Lily Gholami
Md Nafiz Al Ifat

1 Summary

Our comprehensive report outlines the redesign of the Steam mobile app to address existing usability and HCI challenges. The goal was to streamline user interaction, align the app's mobile and desktop experiences, and amplify engagement and satisfaction among users.

The redesign tackles key issues such as inconsistent design across platforms, lack of immediate feedback, cognitive overload due to cluttered interfaces, confusing navigation, and the use of non-intuitive metaphors. We have improved the system's visibility with clearer status indications, simplified the navigation, and provided tutorials for complex features like Steam Guard.

The redesign targeted three main areas: the Store page, Chat, and Library, intending to significantly improve user experience and usability. The new navigation system was designed to be familiar and intuitive, reducing user confusion.

We introduced various design principles, including Domain of Experience, Visibility, Transfer, Constraint, Affordance, the 80/20 Rule, Chunking, Mapping, Fitt's Law, Hick's Law, Confirmation, Progressive Disclosure, Consistency, Feedback, Knowledge in the World, Metaphor Appropriateness, Multitasking, Causality, Consistent Design Language, and the Flexibility/Usability Tradeoff. Each principle was meticulously applied to revamp crucial app sections—Store, Chat, Library—by refining navigation bars, streamlining the store page, simplifying game details, redesigning the library interface, and enhancing chat functionality.

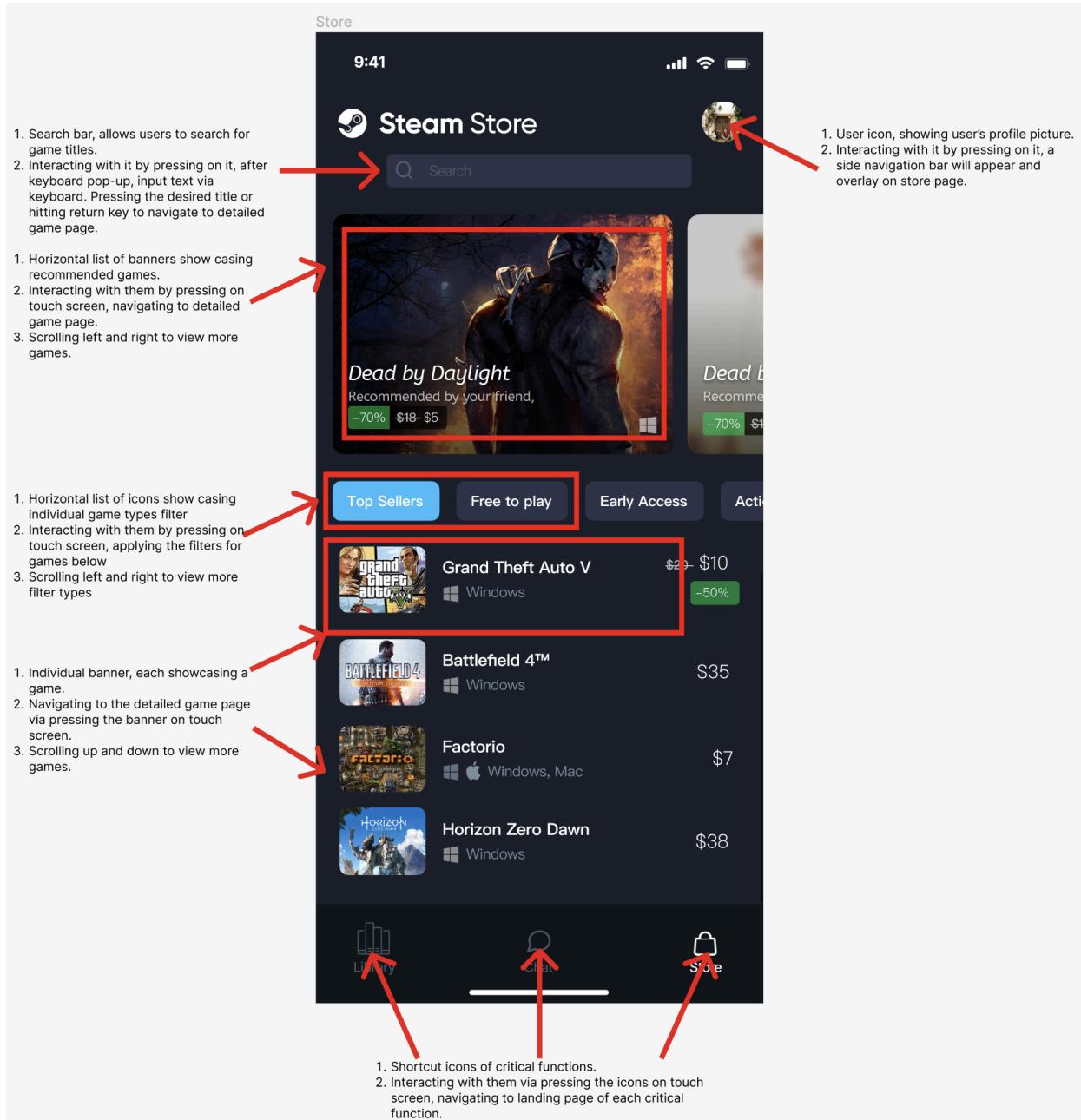
Our heuristic evaluation confirms that the redesign adheres to the 80/20 rule, appropriately utilizes transfer, affords a coherent navigational strategy, effectively advertises affordances, and complies with Fitts' and Hick's laws.

In light of our final evaluation, we recommend further refinements to minimize misclicks, introduce gesture-based navigation for efficiency, and integrate comprehensive accessibility features. Additionally, we suggest that improving the presentation of system requirements with succinct summaries and clearer iconography could further boost user engagement.

By implementing these recommendations, the Steam mobile app can significantly improve its HCI qualities, becoming more user-friendly, and providing a seamless and gratifying experience that resonates with the gaming community's expectations.

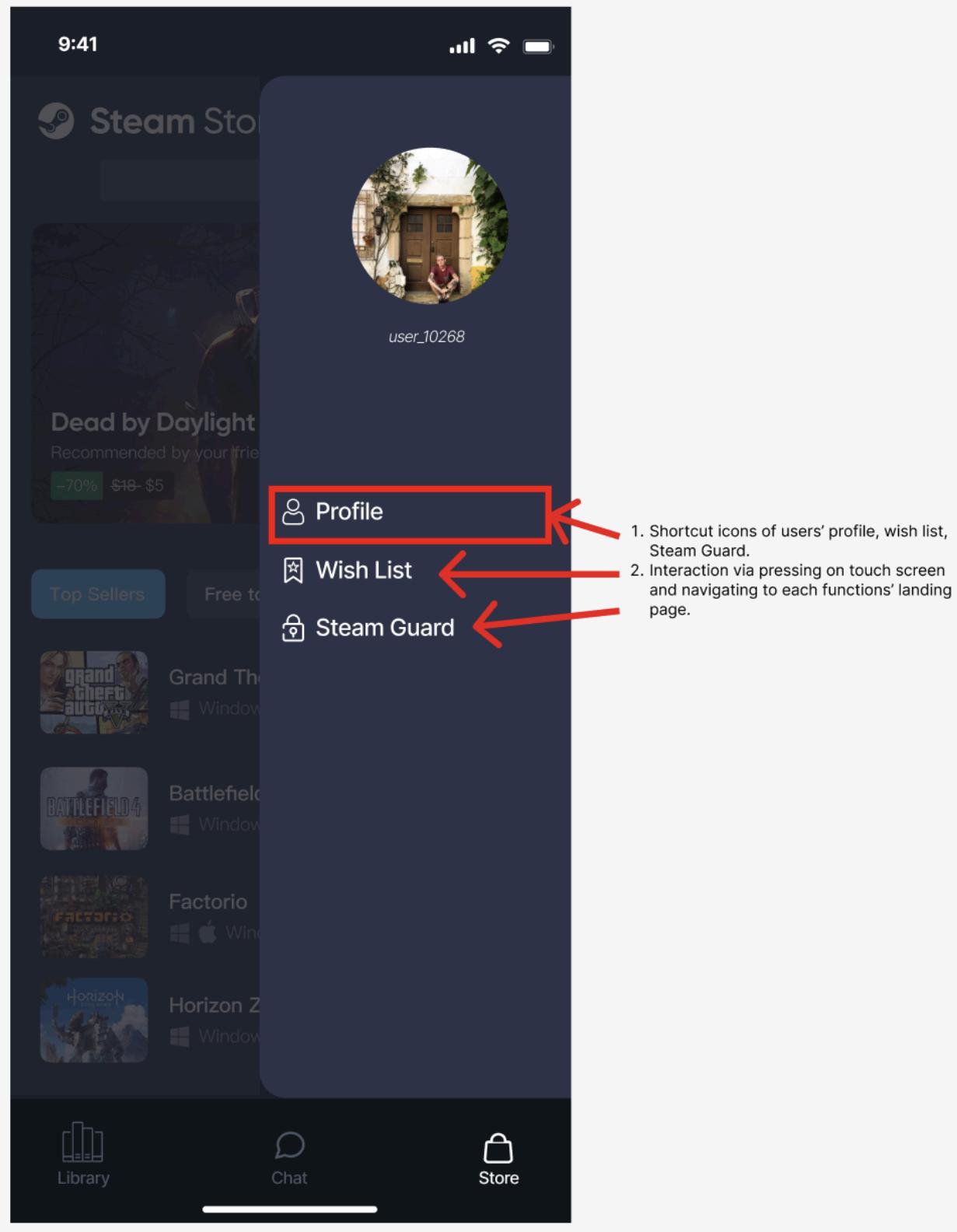
2 System Overview

Store page Storyboard

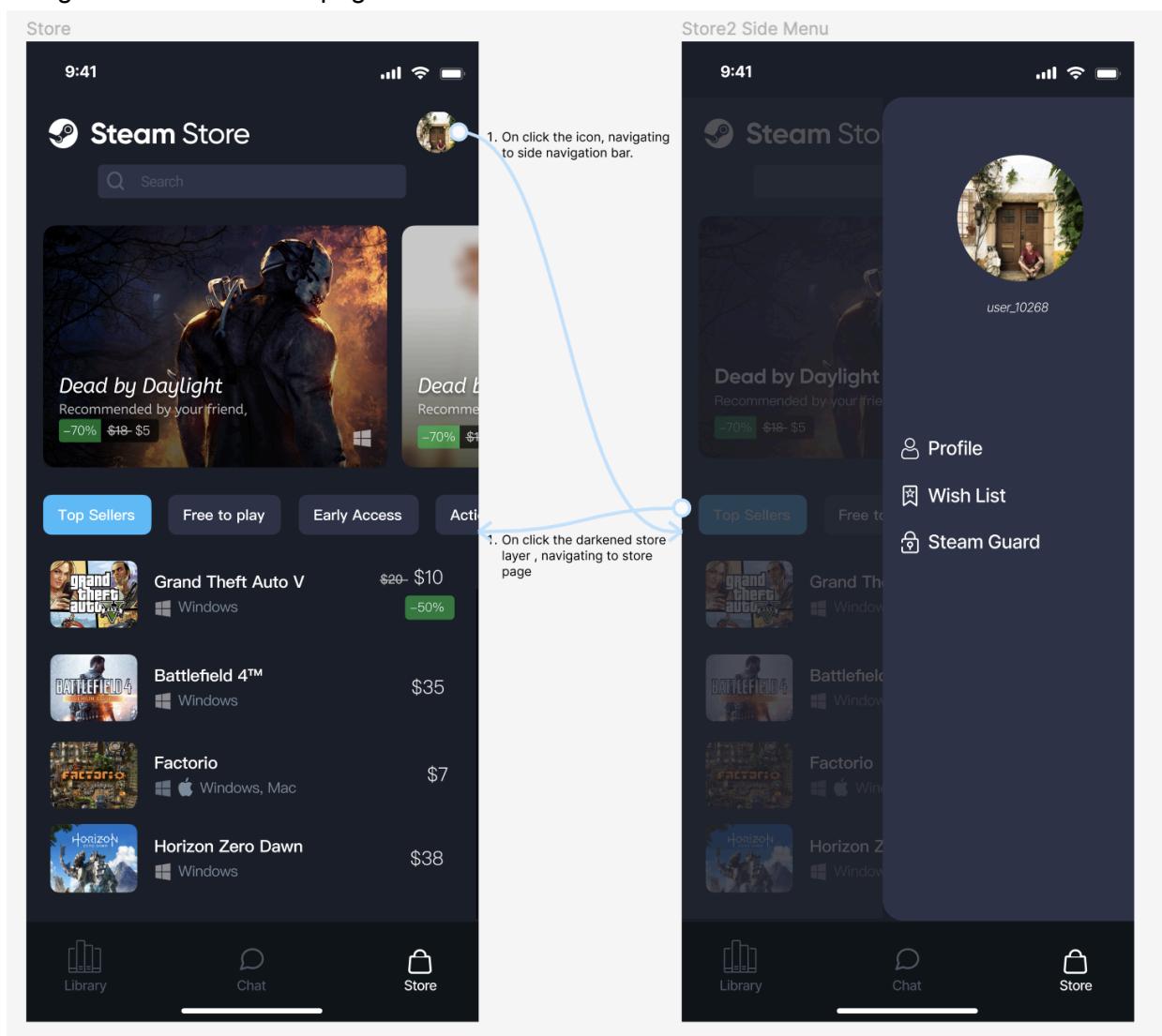


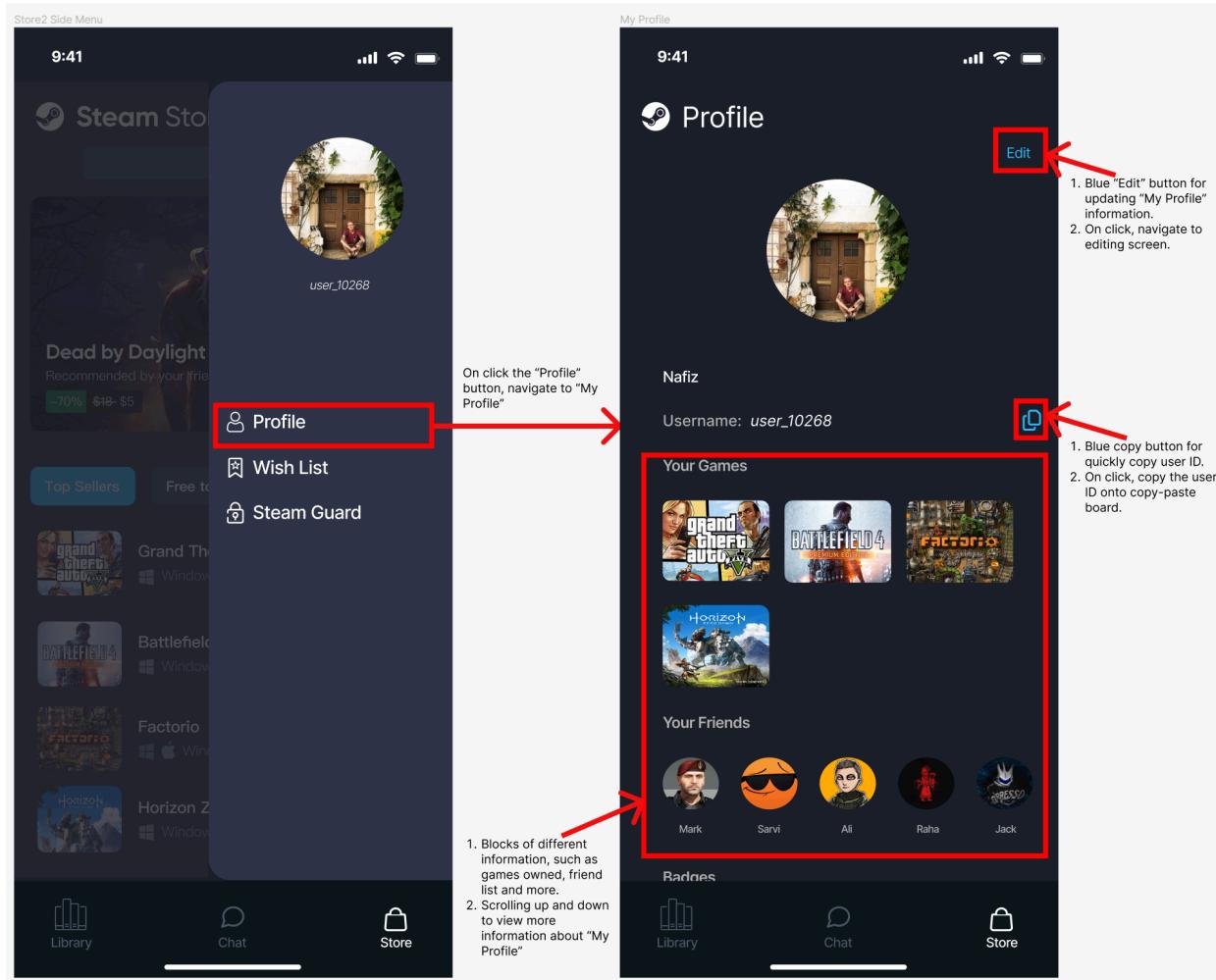
Store side menu storyboard

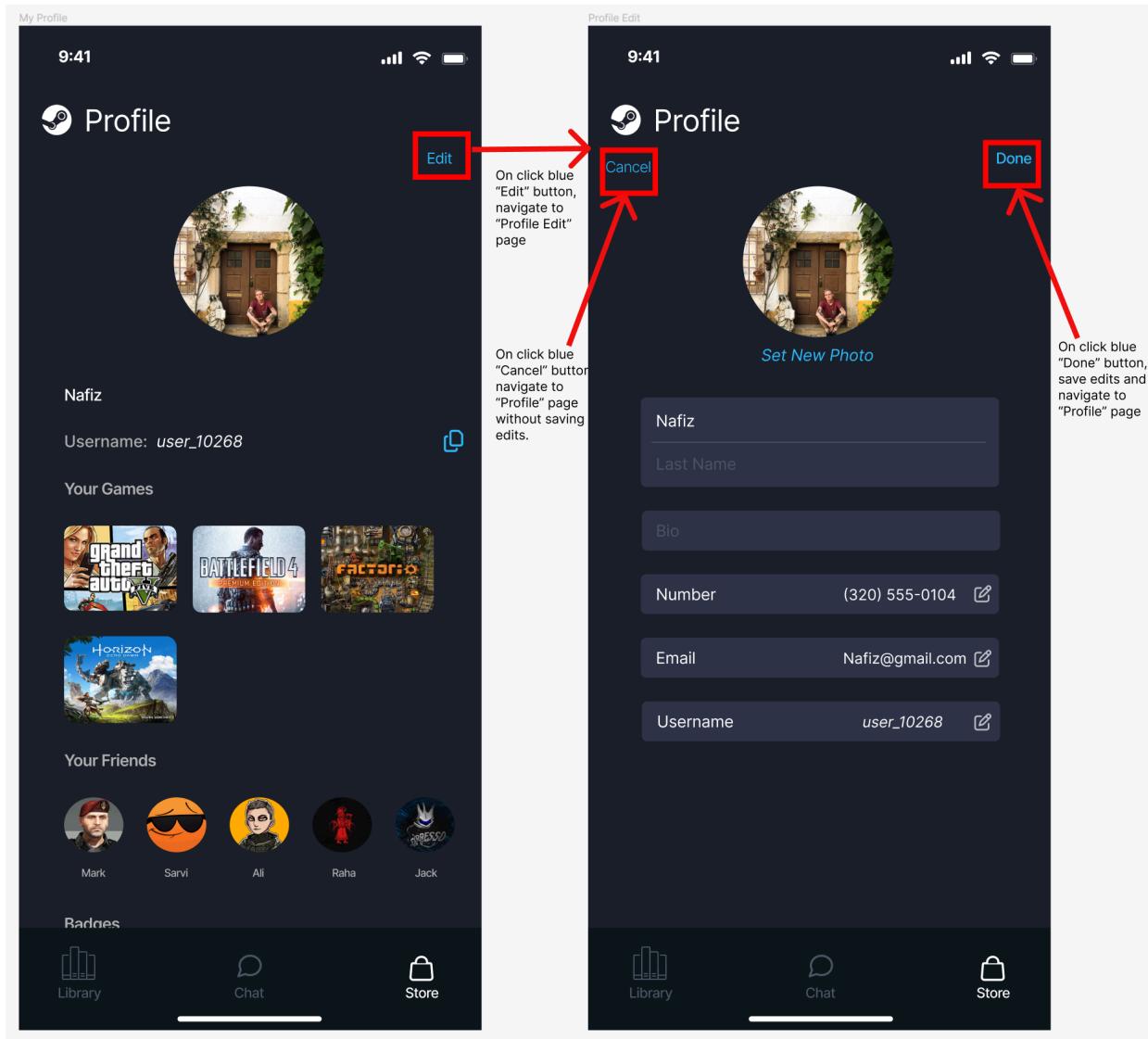
Store2 Side Menu



Navigation between store page and store side menu







Store2 Side Menu

9:41

Steam Store

user_10268

Dead by Daylight
Recommended by your friends
-70% \$10 - \$5

Profile

Wish List

Top Sellers

Free to Play

Steam Guard

Library Chat Store

9:41

Wish List

Q

Edit Sort By Recently Added

Grand Theft Auto V
Windows \$20 - \$10 -50%

Battlefield 4™
Windows \$35

Factorio
Windows, Mac \$7

Dead by Daylight
Windows \$38

Library Chat Store

On click the "Wish List" button, navigate to "Wish List" page.

Individual game banner in the list, with information such as OS, price and discount.

1. Blue "Edit" button
2. On click, navigate to Editing page of Wish List

1. Sorting drop down menu.
2. On click, drop down a list of sorting filter for selection.

Wish List

Done Sort By Recently Added

Grand Theft Auto V \$20-\$10 -50%
Windows

Battlefield 4™ \$35
Windows

Factorio \$7
Windows, Mac

Dead by Daylight \$38
Windows

Library Chat Store

Wish List In Edit

1. Blue "Done" button
2. On click, exit Editing page and navigate to Wish List page.

Done

Grand Theft Auto V \$20-\$10 -50%
Windows

Battlefield 4™ \$35
Windows

Factorio \$7
Windows, Mac

Dead by Daylight \$38
Windows

Add To Cart Remove

Library Chat Store

Cart

9:41

Shopping Cart

Grand Theft Auto V
Windows -50% \$20

Battlefield 4™
Windows \$34.57

Remove

Estimated Total : \$44.57

Sales tax will be calculated during checkout where applicable

Continue Shopping Continue to Payment

Library Chat Store

Wish List In Edit

9:41

Wish List

Done Sort By Recently Added

	Game	Platform	Price
●	Grand Theft Auto V	Windows	\$10 -50%
○	Battlefield 4™	Windows	\$35
○	Factorio	Windows, Mac	\$7
○	Dead by Daylight	Windows	\$38

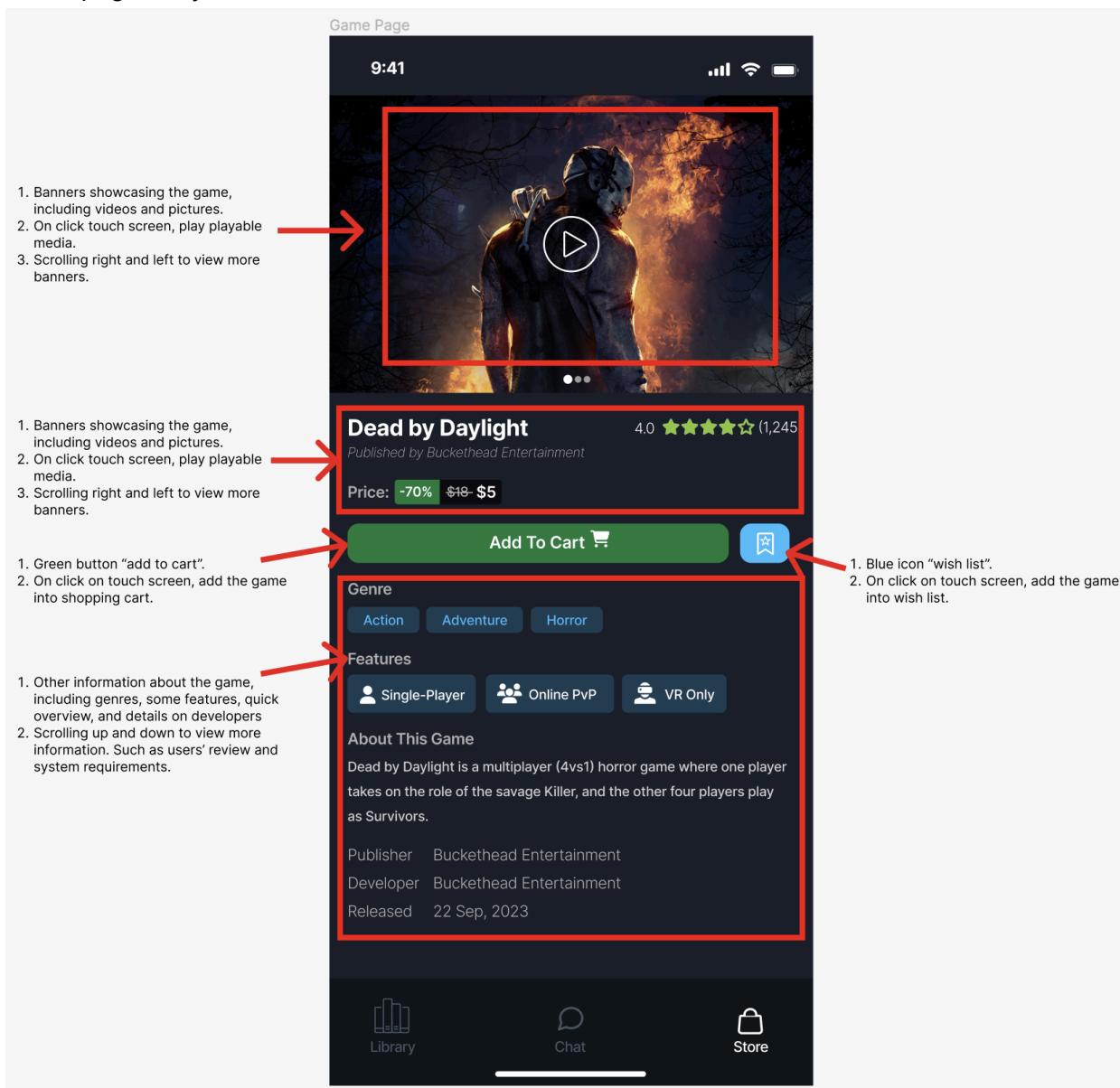
Add To Cart Remove

Library Chat Store

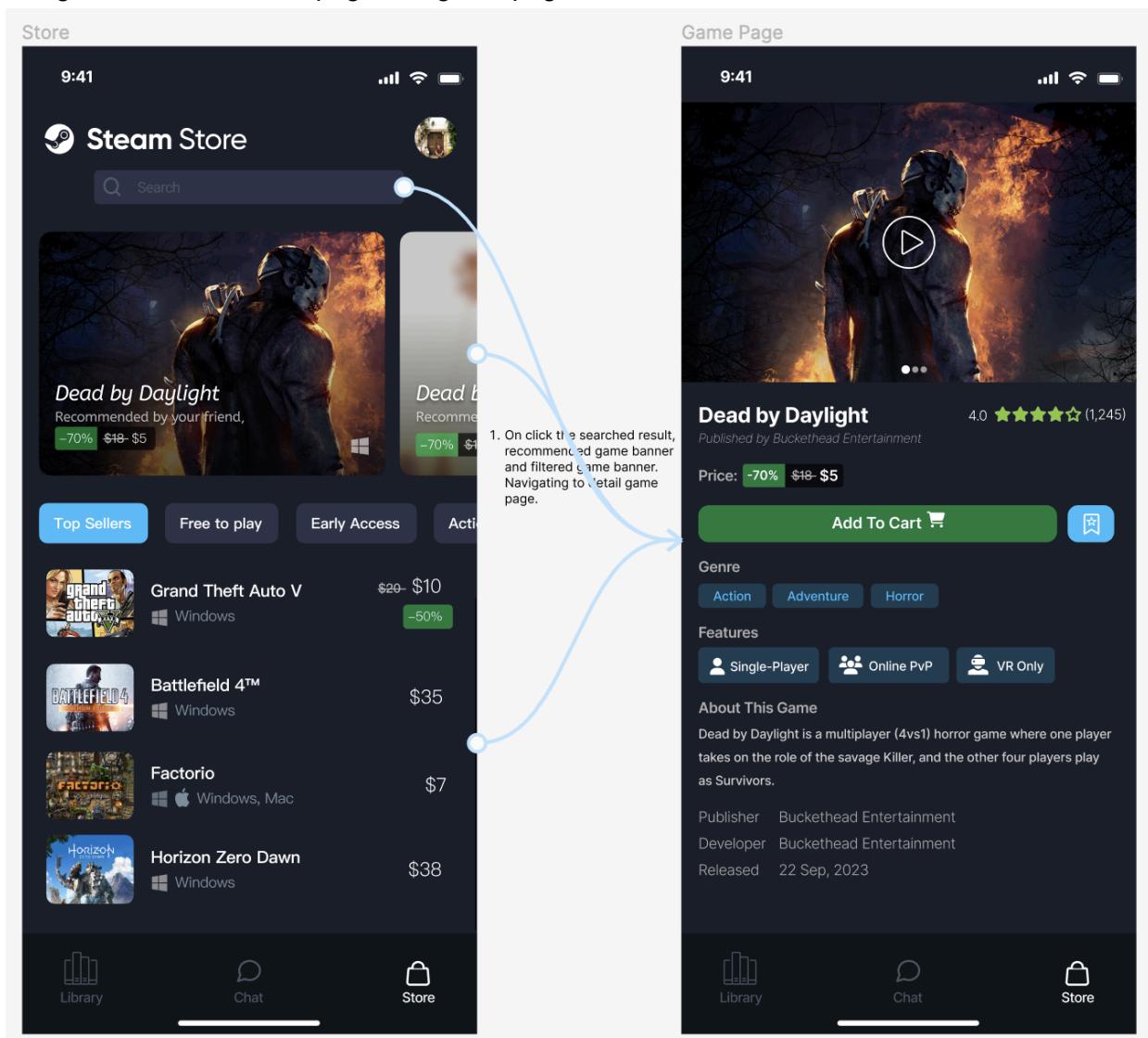
Individual game banner in shopping cart.
also show information like OS, price and discount
On click red "remove" button, remove from shopping cart.

On click "Add To Cart" button, navigate to "shopping cart" page

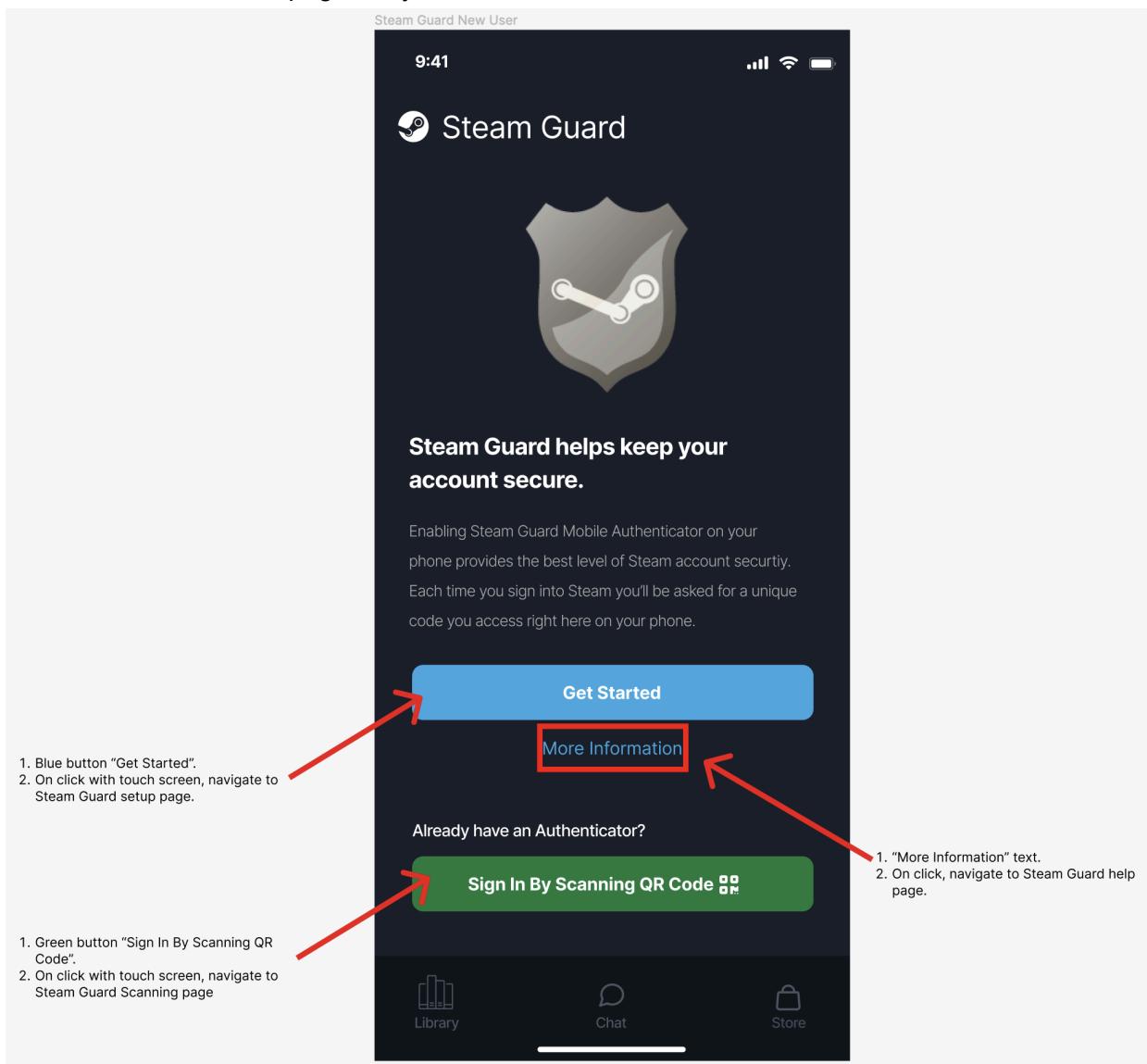
Game page storyboard



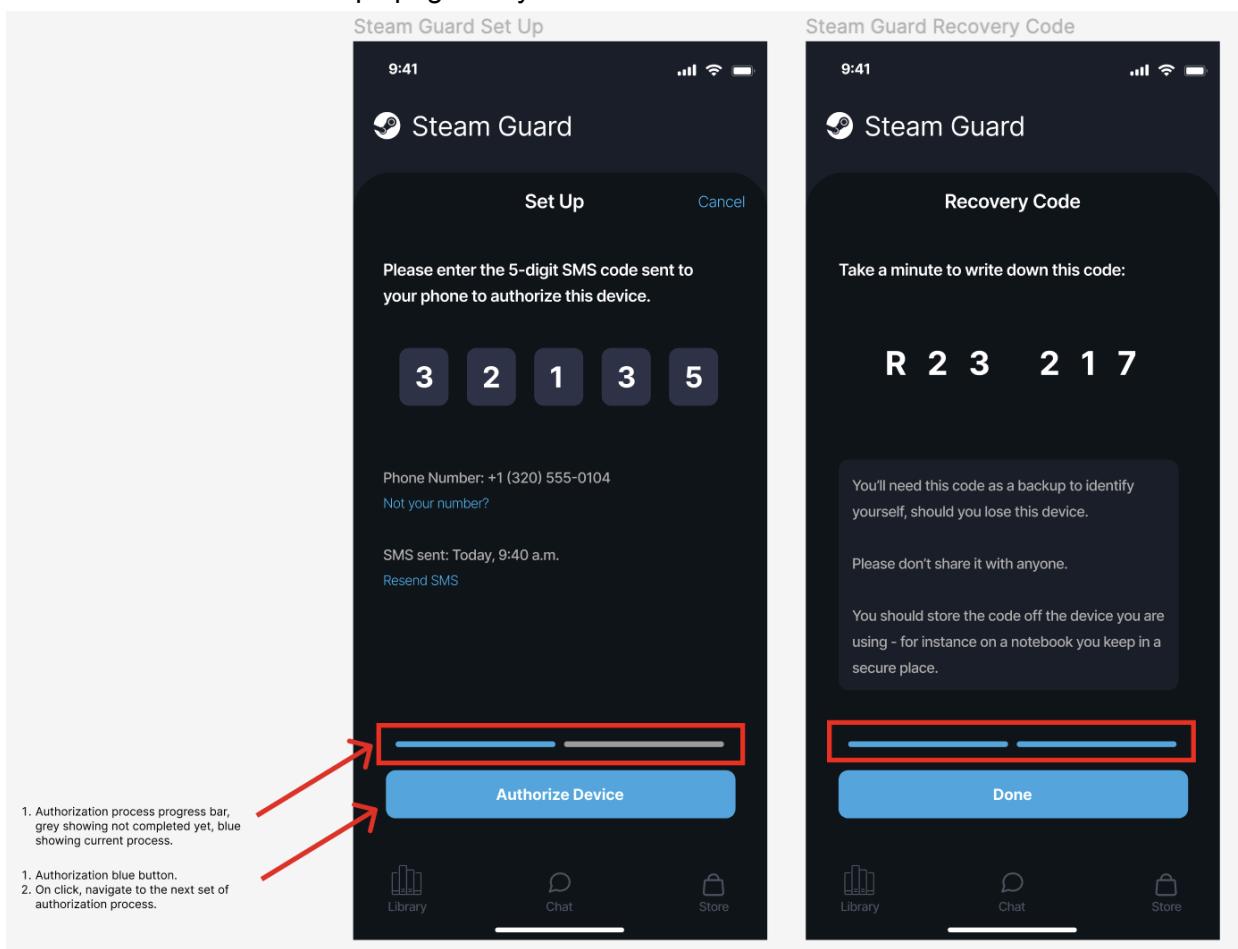
Navigation between store page and game page



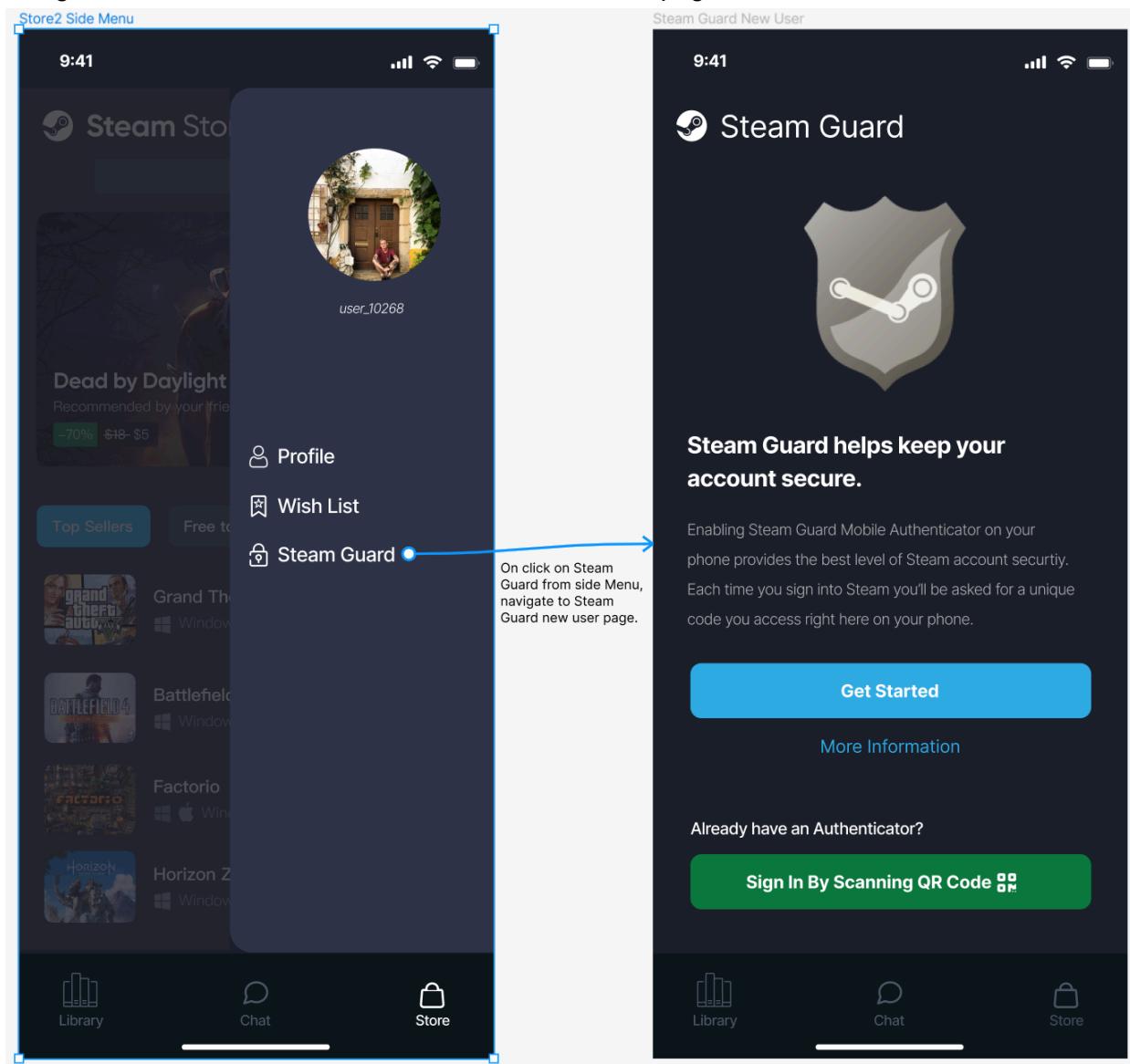
Steam Guard new user page storyboard



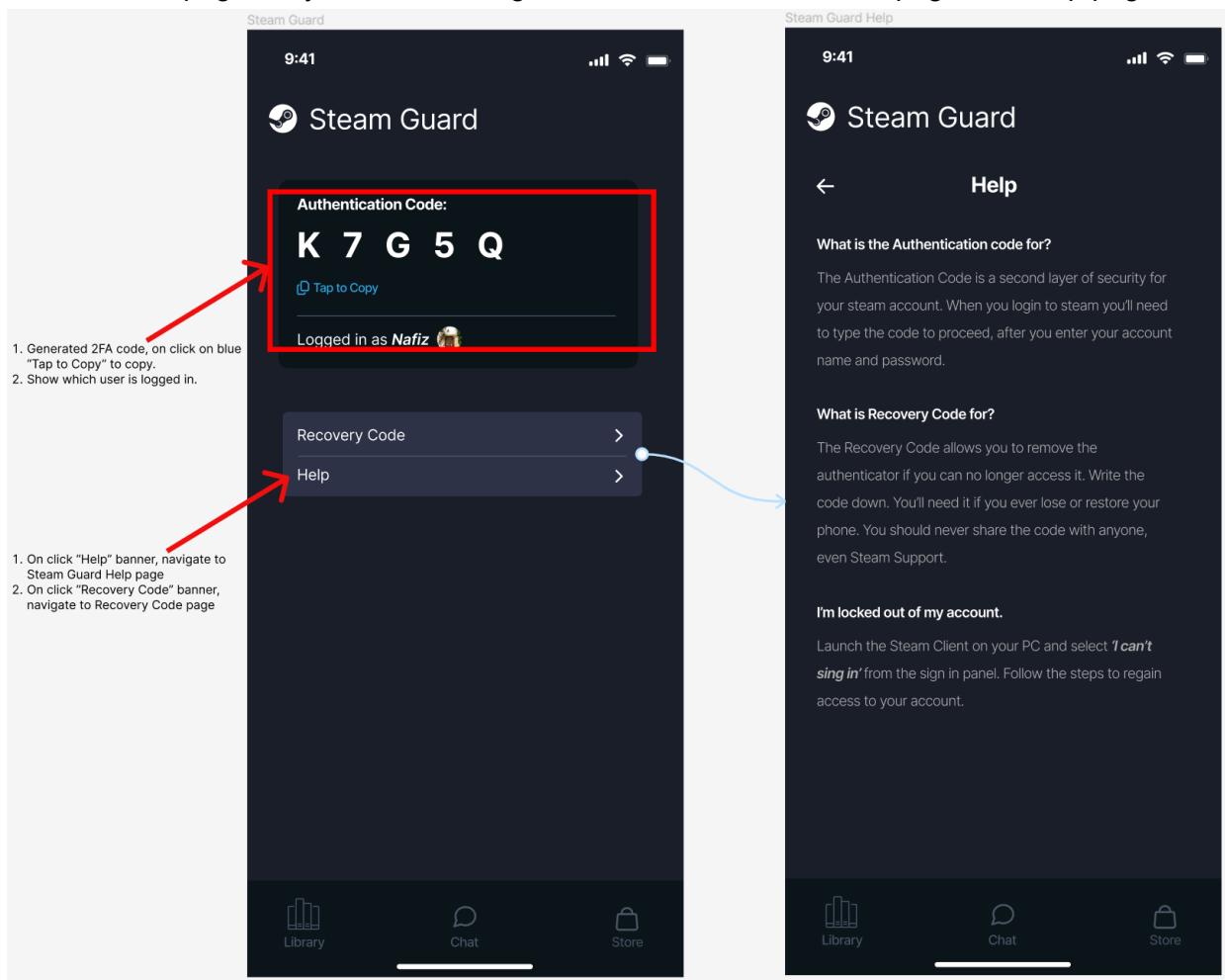
Steam Guard activation steps page storyboard



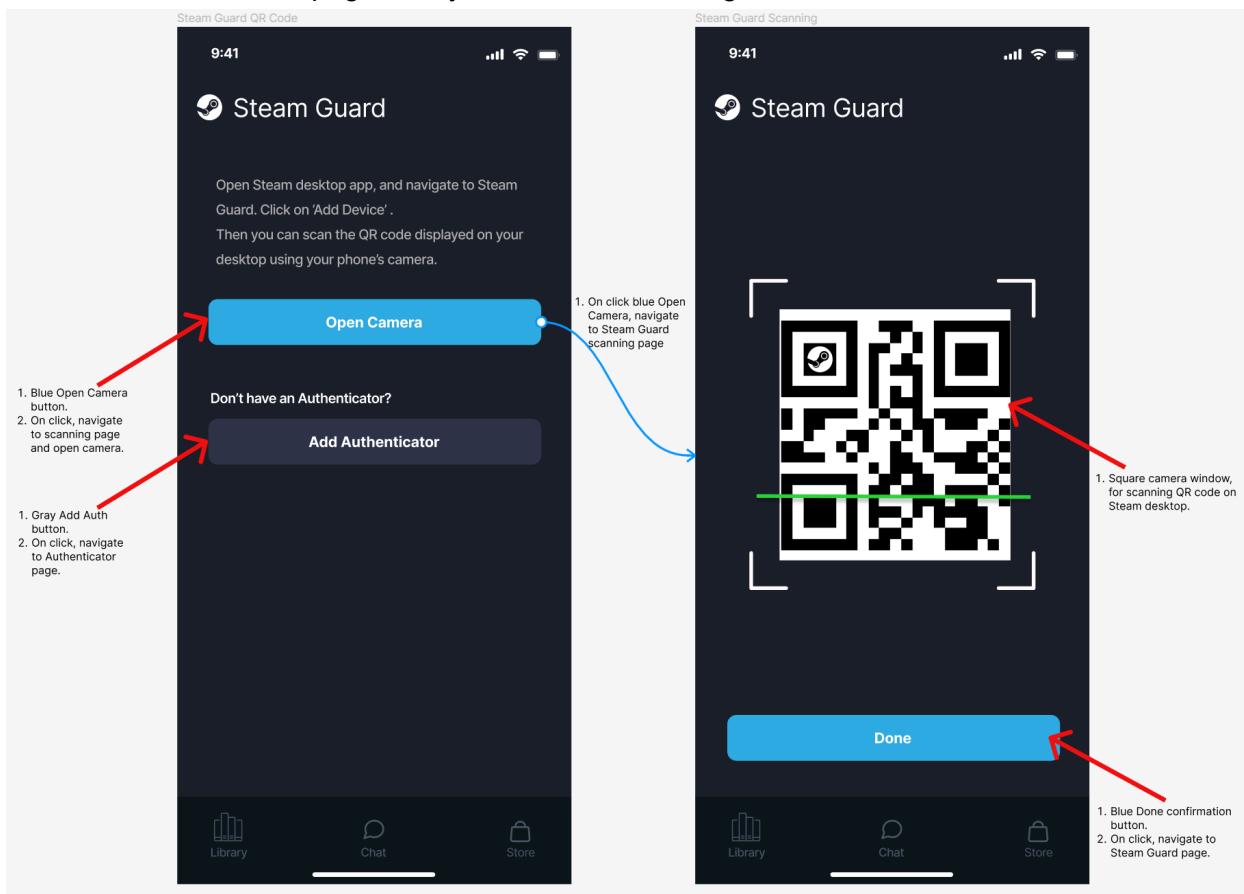
Navigation between store side menu and Steam Guard page

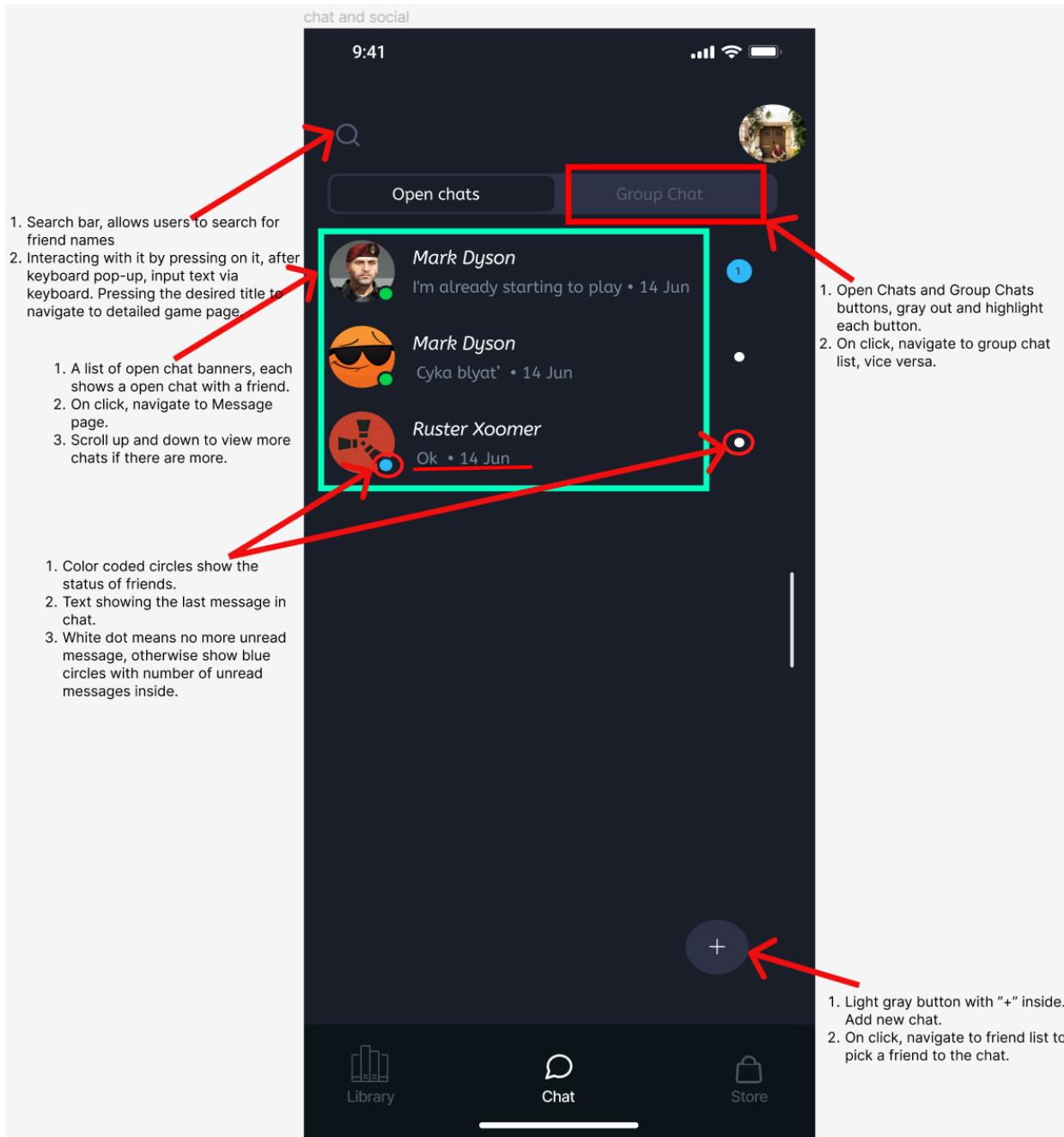


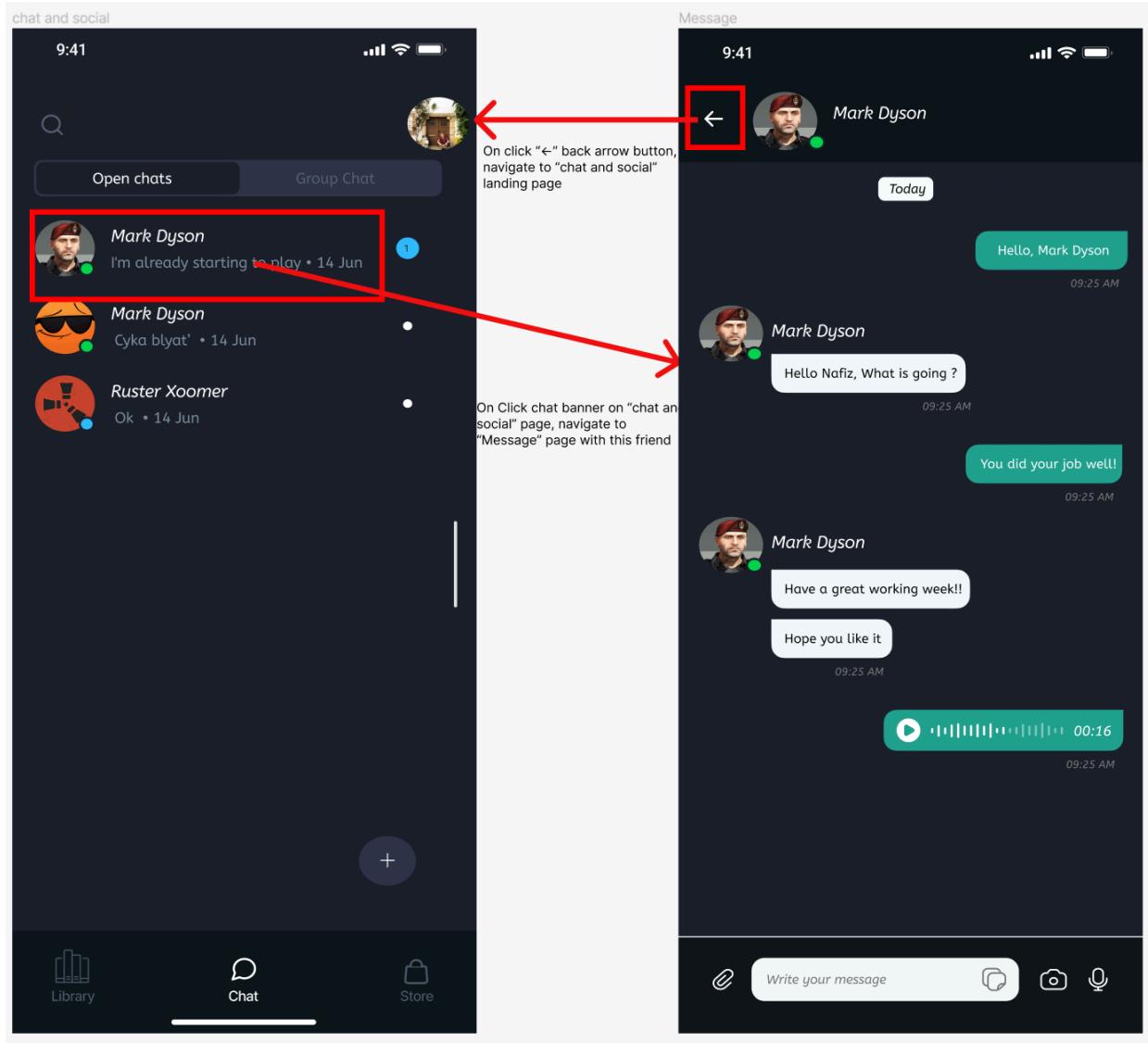
Steam Guard page storyboard and navigation between Steam Guard page and Help page

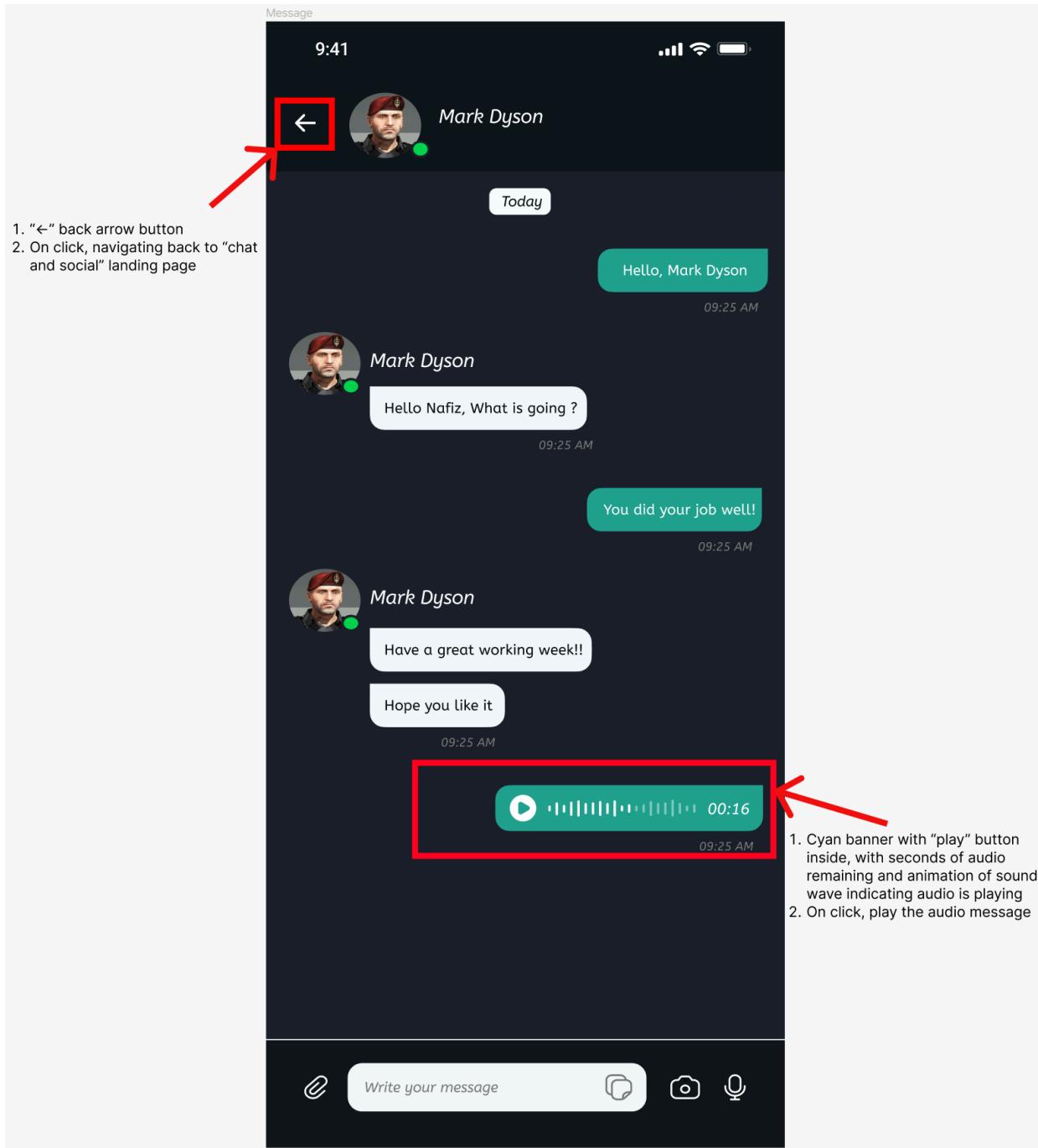


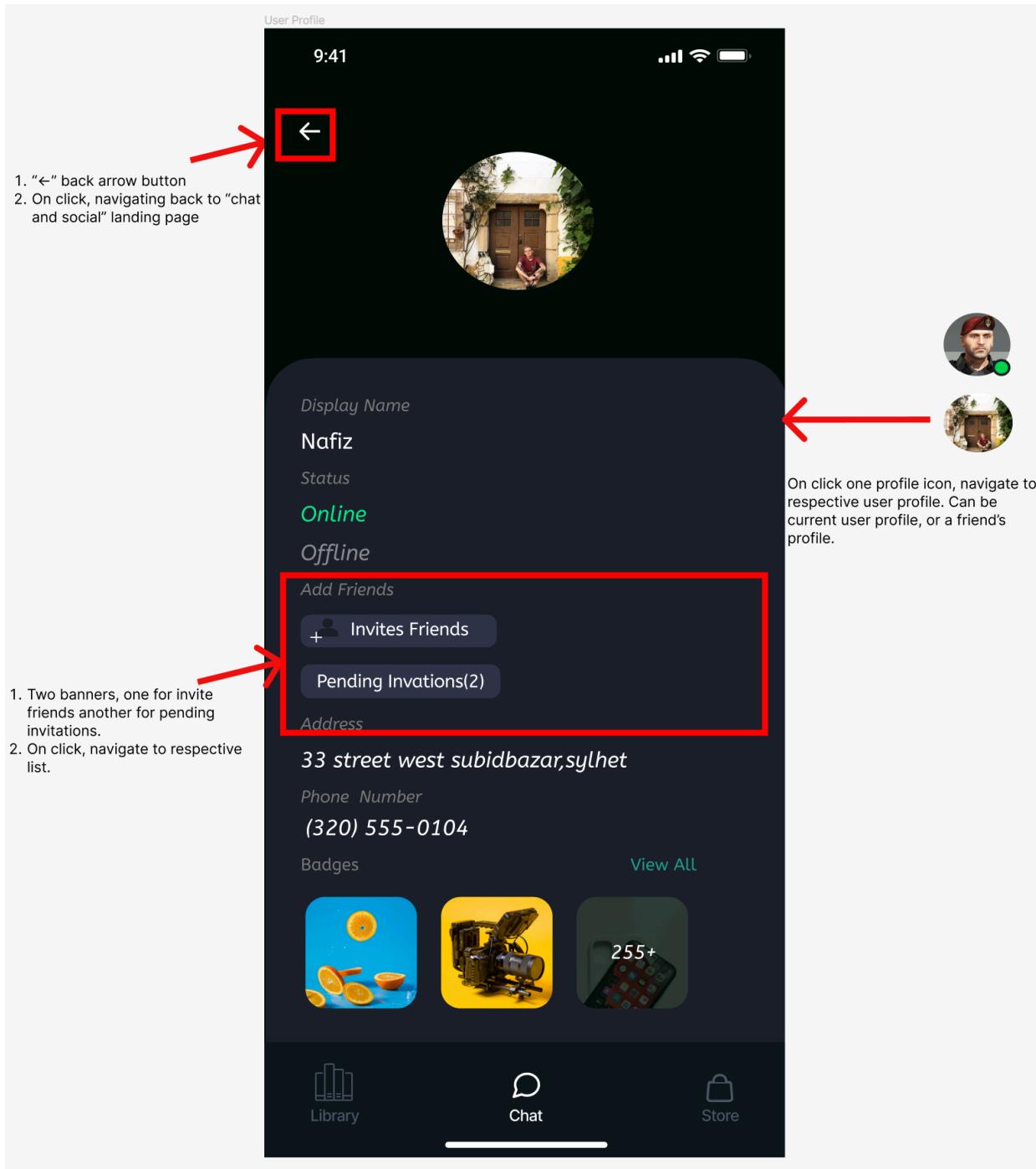
Steam Guard Scan QR pages storyboard and their navigation

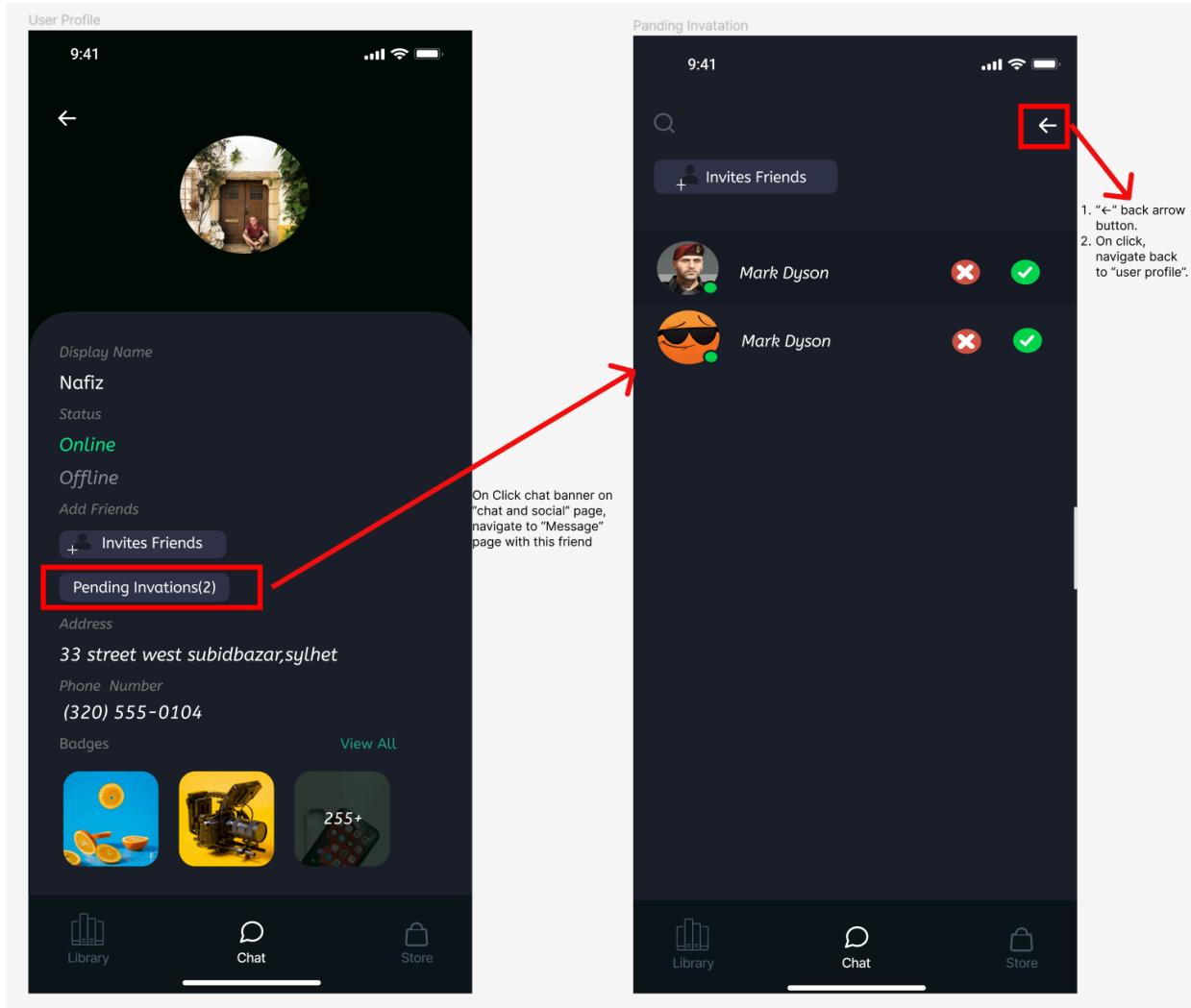












User Profile

9:41

Display Name
Nafiz

Status
Online

Offline

Add Friends

+ Invites Friends

Pending Invitations(2)

Address
33 street west subidbazar,sylhet

Phone Number
(320) 555-0104

Badges

View All

Library Chat Store

Panding Invatation

9:41

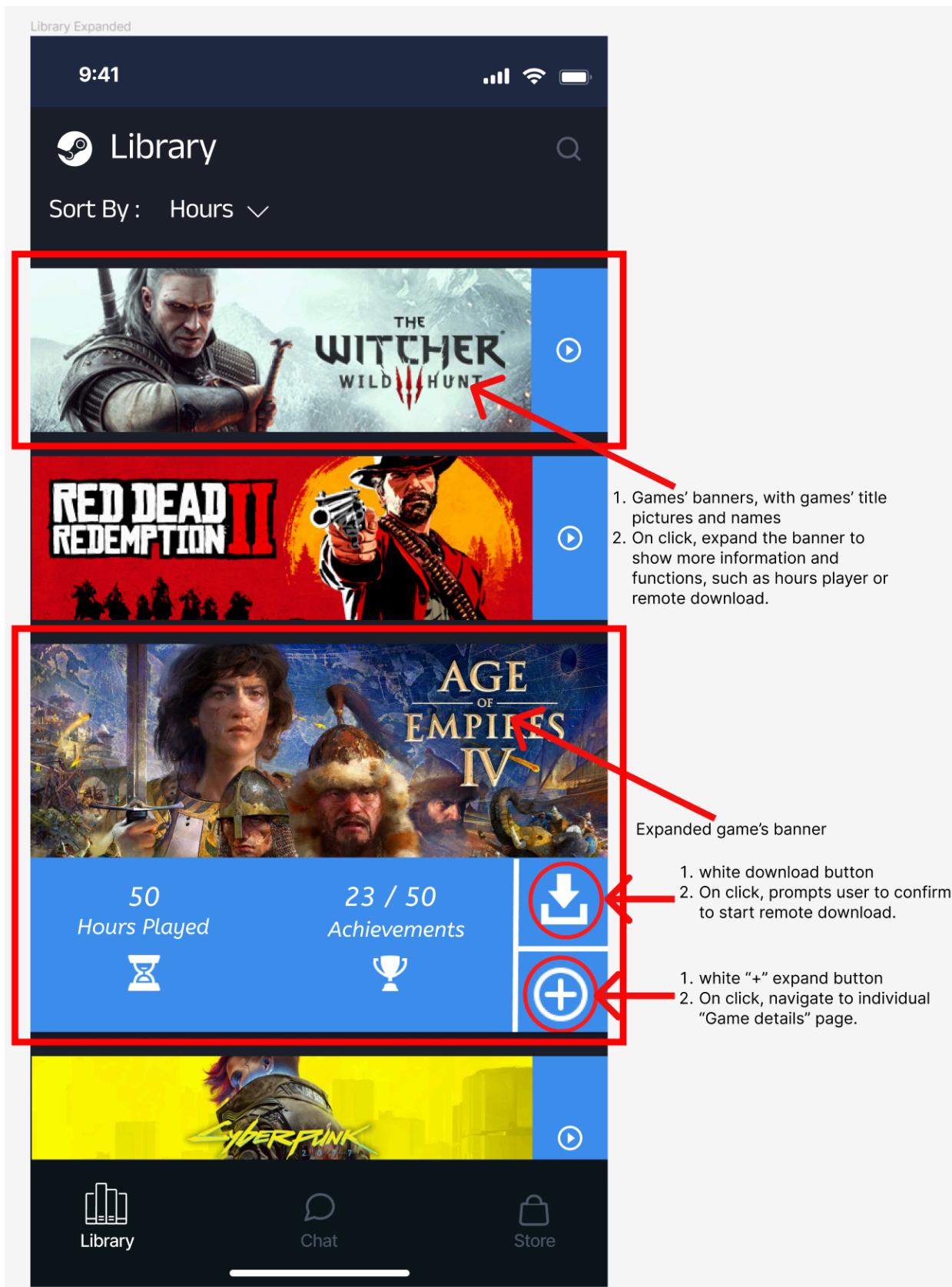
Invites Friends

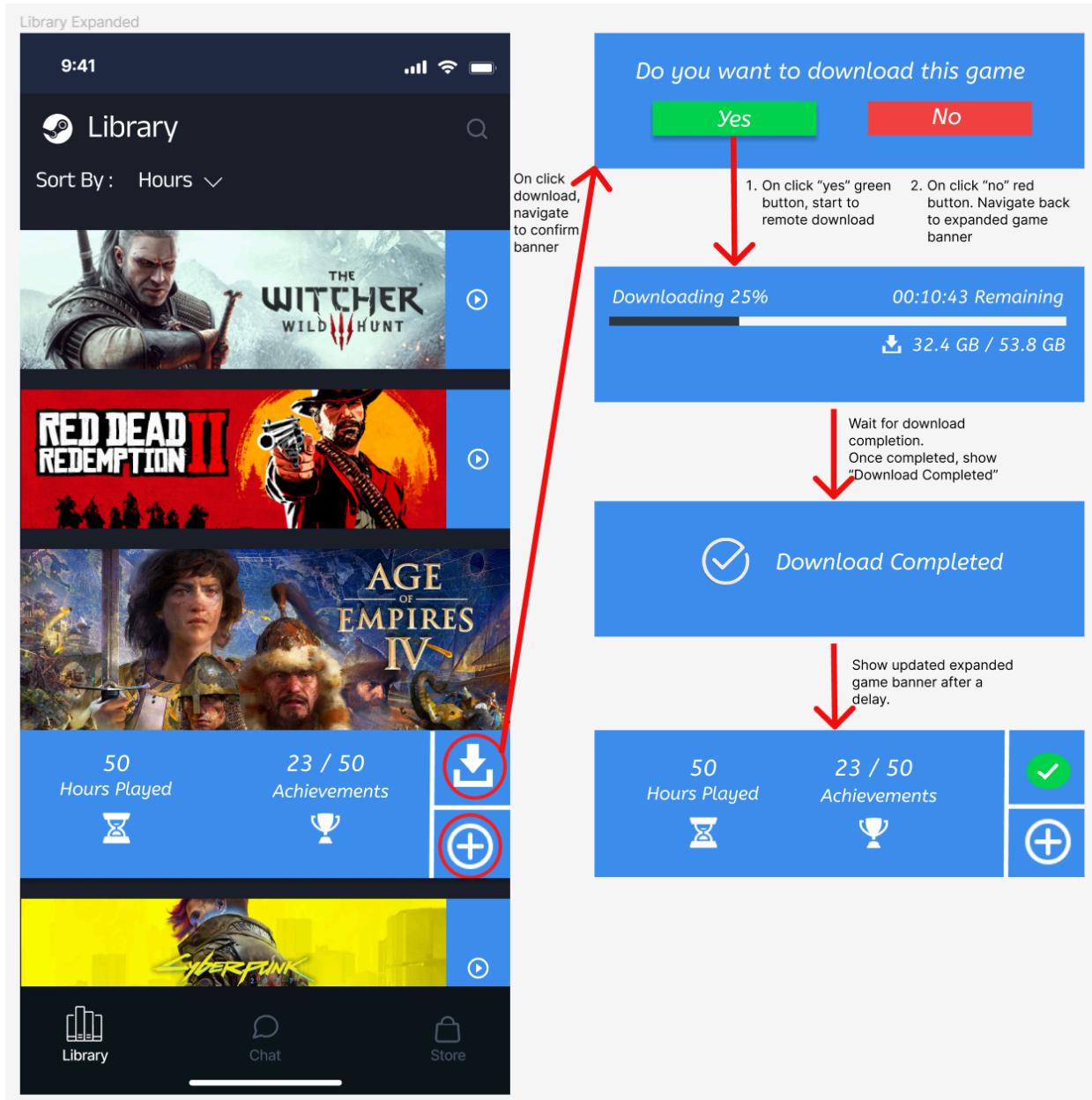
Mark Dyson

Mark Dyson

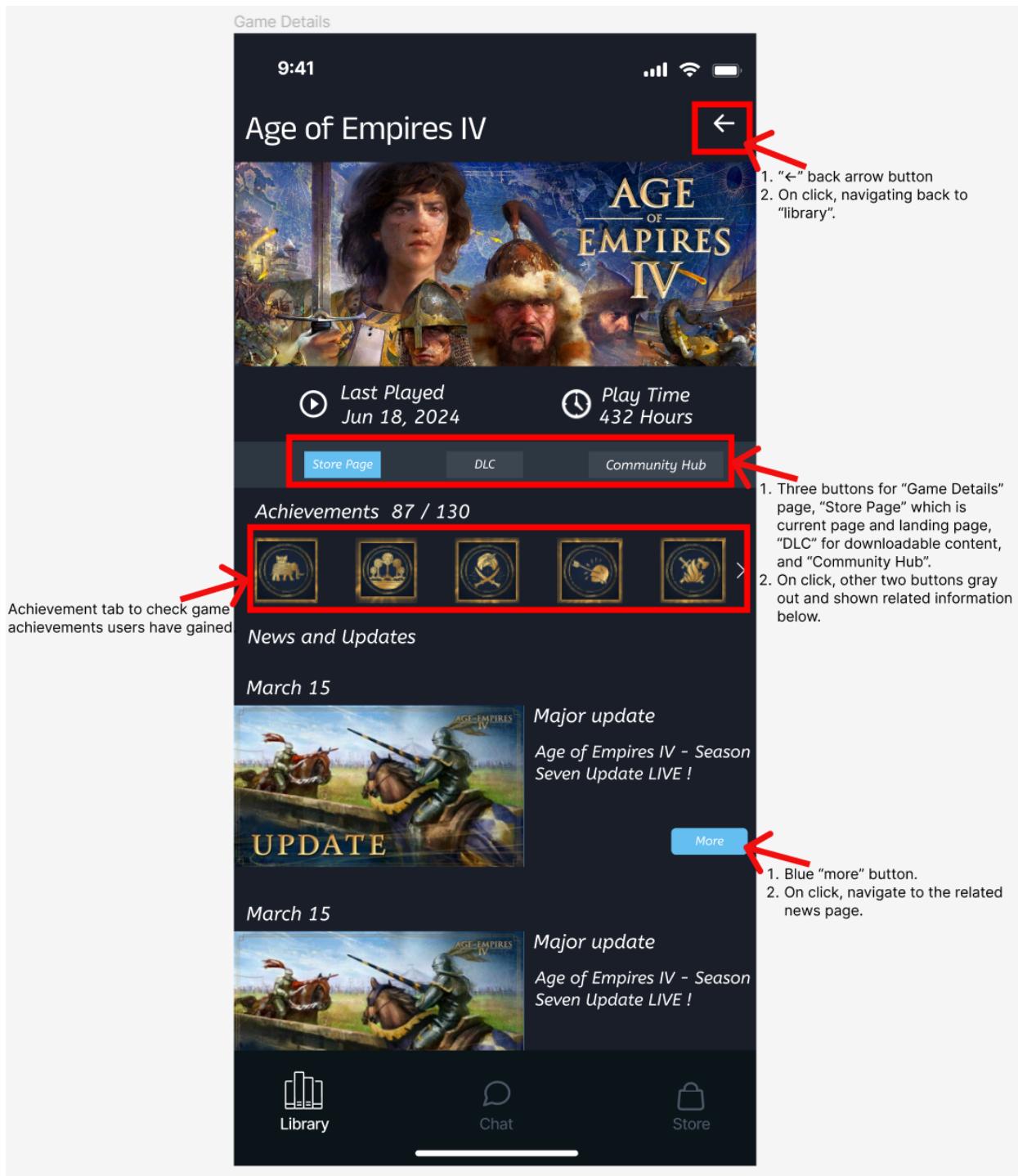
1. "<- back arrow button.
2. On click, navigate back to "user profile"."

Library Chat Store





Library:



Age of Empires IV

Last Played Jun 18, 2024

Play Time 432 Hours

Store Page DLC Community Hub

Released on 14 Nov, 2023 CDN\$ 19.99

"Lead powerful forces in defense of your homeland in The Sultans Ascend – the exciting new expansion to Age of Empires IV. Experience a brand-new campaign set in the Middle East, or command new armies with the Japanese and Byzantines."

More

Game DLC page age

9:41

Dawn of Dukes DLC

Published by Buckethead Entertainment

Price: -70% \$10-\$3

Add To Cart

Genre Action Adventure Horror

Features Single-Player Online PvP VR Only

About This Game

Downloadable Content

This content requires the base game Dead by Daylight on Steam in order to play.

Publisher Buckethead Entertainment

Developer Buckethead Entertainment

Released 8 Jan, 2024

Library Chat Store

Community Hub

Age of Empires IV

Last Played Jun 18, 2024 | Play Time 432 Hours

Store Page | DLC | Community Hub

All | Discussions | Screen Shots | Art

Hardest Achievements Done fast

Tips & Tricks to help you get those pesky achievements. I just unlocked all achievements & wanted to share some advice on how to unlock the most difficult ones with strategies I did with the really tough achievements or achievements I personally had trouble ...

More

How to group and ungroup units

You might been browsing the internet by searching how to ungroup your units. Or you just started playing and you're new to the game. Here some tips that might help:

More

Library | Chat | Store

Community hub Item Details

9:41 | Hardest Achievements Done fast | 9:41

By dirtywig | 5 ratings | 61 ratings

Tips & Tricks to help you get those pesky achievements. I just unlocked all achievements & wanted to share some advice on how to unlock the most difficult ones with strategies I did with the really tough achievements or achievements I personally had trouble with. I also included my thought process to some of the strategies in hopes of helping you recreate a similar outcome.

Most Achievements

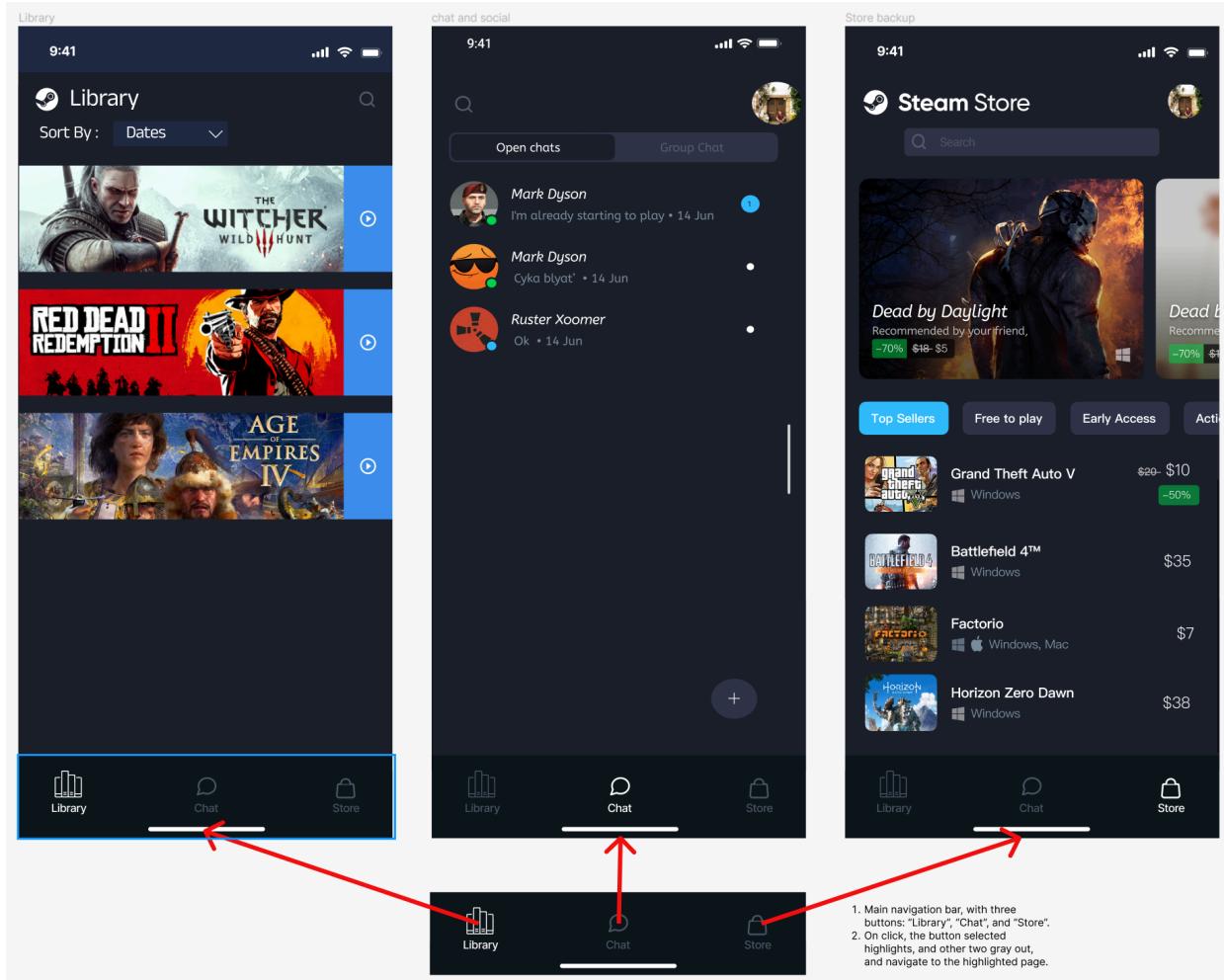
IV

Library | Chat | Store

Individual community hub post

on click blue "more", navigate to "Community hub item Details"

1. Community hub post filter
2. On click different filter button, apply filter and display posts



3 Design Principles and Justifications

1. **Domain of Experience :** We designed the app, in most areas keeping this principle in mind unless it would cause complications. Some examples of using this principle in our design include : designing the navigation bar similar to the desktop app, designing the library details page similar to the desktop app
2. **Principle of Visibility :** The visibility of the original app was flawed in many ideas from not having proper tutorials on how certain parts of the apps work (steam guard) and showing the status of the system, to putting menu items in confusing parts of the app that the user had to either explore or use help to find it. We improved the visibility of the system by providing cues of the status of the system (e.g. highlighting the active navigation tabs or showing in which part of the download a game is in) and providing a comprehensive tutorial on steam guard. In addition we redesigned the whole navigation system of the app to avoid confusion and improve the visibility of the system.
3. **Principle of Transfer :** The original steam mobile app was a lot different than the desktop app which resulted in a negative transfer for the users of this application. In order to address this issue we decided to design the steam app in such a way that would replicate the desktop app. Examples of such redesign decisions include choosing the main navigation tabs similar to the main tabs that are inside the steam desktop app, redesigning pages similar to the desktop app so that functions, and sections are easily identifiable for the user.
4. **Principle of Constraint :** We have applied the principle of constraint by limiting the actions a user can take at any given point, thereby reducing the likelihood of errors. For instance, when the user is in the process of purchasing a game, the app limits input to relevant actions, such as proceeding to checkout or canceling the order, preventing distractions or mistakes.
5. **Principle of Affordance :** In our redesign, we emphasized the principle of affordance, ensuring that the design elements clearly suggest their purpose. For example, buttons look pressable with visual depth cues, and sliders appear draggable. This intuitive design helps users understand possible actions without the need for trial and error.
6. **80/20 Rule :** We implemented the navigation system keeping this principle in mind. By providing the most used features of the steam in the most prominent and accessible part of the app which was the main navigation bar.
7. **Principle of Chunking :** Using this principle, we've organized related information into digestible groups. In the game library, games are categorized not just alphabetically but also by genres, recently played, and other criteria, making it easier for users to process and find the titles they are looking for.
8. **Principle of Mapping :** Our redesign respects the principle of mapping by aligning the controls and actions in the app with user expectations. For example, the directional swipe gestures correspond to navigating through game images which also matches the convention.
9. **Fitt's Law :** The original steam app didn't take into account fitt's law well, which lead to a lot of misclicks and ultimately working with the app harder. In the redesign we brought the most prominent features that the user might have interact with to the bottom of the

screen. Furthermore, we have provided adequate spacing between interactive components, which minimizes the chance of accidental taps on adjacent elements

10. **Hick's Law :** The original design of the steam mobile app, blasted the user with a lot of options and interactive components at the same time. To improve the app we reduced the number of options presented to the user and provided only the most prominent that are related to the user goal. A prime example of this improvement is evident in the library page redesign where the original app presented a lot of information at the same time to the user, while we presented them with the information/functions that had the most importance for the users through reducing the choices and reorganizing the interface.
11. **Principle of Confirmation :** To incorporate the principle of confirmation, we've introduced prompts for actions that have significant consequences, such as uninstalling a game or making a purchase. This helps prevent unintended actions and gives users the chance to reconsider before committing to a choice.
12. **Principle of Progressive Disclosure :** The original steam app presented the user with a vast amount of information in some parts of the app which lead to an increased cognitive load for the user while using the app. To alleviate this issue in the redesign we utilized progressive disclosure to reduce the cognitive load imposed on the user while using this app. The prime example of this utilization is in the library main page where we have used this method to present only the needed information to the user.
13. **Principle of Consistency :** We addressed the principle of consistency by standardizing the UI elements and interactions throughout the app. Icons, typography, and color schemes now follow a uniform style guide, and interactive elements behave predictably across different sections, making the app more user-friendly.
14. **Principle of Feedback :** The original design of the app didn't provide the user with feedback after most of the interactions available throughout the app. Thus it was hard for the user to determine the status of the system/interactions which in turn lead to user confusion and reduced usability. To address this issue we provided feedbacks to the user after completion/ failure of actions to avoid user confusion. For example the original app didn't provide any feedback when the user downloaded a game on their computer, in the redesign of the application we provided a status bar which showed in what level the download is and when the download was complete a clear prompt would appear on the screen.
15. **Knowledge in the World, Knowledge in the Head :** We've optimized the balance between 'knowledge in the world' and 'knowledge in the head' by providing clear labels and instructions for less frequent or complex tasks, while allowing regular tasks to be performed with minimal cues, as experienced users will have internalized these actions. A prime example of such implementation is evident in the steam guard page where a comprehensive tutorial and explanation has been provided since its use cases are minimal, while for actions such as downloading and uninstalling in library page we have allowed it to be performed with minimal cues.
16. **Proper Use of Metaphors :** In the previous design of the app some metaphors that were used were not aligned with their realword counterparts. Consequently, we aimed to change these metaphors to other metaphors that would be more proper and aligned with their real world counter parts. For example the library icon used in the app was not in line

with user's concept of library and would more represent windows rather than libraries which could cause confusion for the users.

17. **Principle of Multitasking** : Recognizing the principle of multitasking, the redesign allows users to easily switch between different tasks without losing progress. For example, users can browse the store while in a chat, with the app saving the state of each section for a seamless return. While the original app had the chat function in a completely separate app that wouldn't allow for this facilitation.
18. **Principle of Causality** : We've ensured the principle of causality is evident, with clear cause-and-effect relationships in the app's interactions. When a user changes a setting or updates a profile, the effects are immediately visible and intuitive.
19. **Consistent Design Language** : In the original app there was visual/functional inconsistencies across different pages of the app. In the redesign of the app we used a consistent design language across the app to improve the overall user experience and visibility of our system. For example the back button provided didn't always necessary take the user to the previous page they visited which in the redesign we fixed this issue and in terms of visual inconsistencies there are deviation from the primary color scheme in certain parts of the app which we avoided this shortcoming in our redesign.
20. **Flexibility/Usability Trade off** : In the redesign we carefully considered the flexibility/usability trade-off. In our redesign, we have chosen to streamline the process of installing games by simplifying the steps involved. The usability is improved for the majority of users, as they can now install a game with a single tap on an "Install" button from the game's detail page. This design decision speeds up the process and reduces complexity, making it highly usable for most users. However, this simplification comes at the cost of flexibility for power users who are accustomed to selecting specific installation options, such as choosing the install directory, managing download bandwidth, and etc.

4 Heuristic Evaluation

Does the system follow the 80/20 rule?

The redesign adheres to the 80/20 rule. The sections where users spend the majority of their time on have been implemented as the main tabs of the navigation system. Additionally, The redesign emphasizes quick access to critical stats (such as playtime and achievements), which are likely to be of high importance to the users and frequently checked.

Does the system use appropriate transfer?

The system has appropriate transfer. For users familiar with the Steam desktop client, the mobile app redesign mirrors some of the desktop client's design language and functionality, which helps in transferring knowledge between platforms which in turn will lead to a positive transfer experience for the users.

Does the system provide a good navigational strategy?

The redesign provides a good navigational strategy by providing a clear and consistent means of navigating through the main tabs. Furthermore, the redesign takes into account the domain of experience of steam users and provides positive transfer in terms of navigation for the users. Moreover, The use of a consistent visual language throughout the app, with recurring elements and styles, helps users quickly learn the navigation patterns, reducing cognitive load and improving overall usability.

While the navigation seems clear, it might not accommodate all types of users equally. Some may find it lacks depth or advanced options that are available in the desktop version, potentially limiting the experience for power users.

Does the system advertise affordances well?

The redesign is advertising affordance well. Interactive elements such as buttons, tabs, and icons are visually distinct, usually employing color contrasts, shading, or outlines to signal to users that they can be interacted with. The active section in the navigation bar is usually highlighted or underlined, indicating which part of the app the user is currently viewing and suggesting that other sections can be accessed by tapping on them.

Arrows or chevrons suggest that sections can be expanded to reveal more information, a common design pattern that users recognize and understand. When an action is taken, such as initiating a game download, the system provides immediate feedback in the form of progress bars and status messages, which affirms the action taken by the user.

Does the system take into account Fitts' law?

The redesign takes into account Fitt's law. The interactive elements such as buttons, icons, and tabs are of a sufficient size to make them easy to tap. There is appropriate spacing between interactive elements, reducing the likelihood of accidental taps and making it easier for users to select the intended target. Elements like the navigation bar are located at the bottom of the screen, close to where users typically hold their phones, making these elements easier to reach and tap. The design utilizes the corners and edges of the screen, which act as natural boundaries that help users target icons and buttons more quickly.

Does the system take into account Hick's law?

The redesign has improved in terms of Hick's law. The bottom navigation bar features a limited number of clearly labeled options, reducing cognitive load and decision time when users need to move between major sections of the app. Game details are presented in a structured way, with the most important information (like last played date, playtime, and achievements) immediately visible. This prioritization helps users quickly locate and focus on the key details without having to sort through less relevant information. The redesign employs progressive disclosure, where options are presented only when they are relevant or when the user has chosen to view more details. This prevents overwhelming users with too many choices at once.

5 Improvement Recommendation

These recommendations are derived from a detailed heuristic evaluation and grounded in the design principles that guided the app's redesign. By addressing these areas, we aim to further refine the app's functionality, making it more intuitive, accessible, and satisfying for all users.

In the pursuit of minimizing misclicks and enhancing user interaction within the Steam app, it becomes evident that a closer alignment with Fitt's and Hick's laws is crucial. By optimizing the user interface design—particularly through the refinement of the size, spacing, and placement of interactive elements—an opportunity arises to significantly improve the overall usability of the app. Furthermore, the incorporation of gestural navigation presents a promising avenue to facilitate quicker, more intuitive user interactions. This approach not only adheres to established usability principles but also enhances the user experience by making navigation within the app more efficient and natural.

Our evaluation underscored significant opportunities to amplify the app's accessibility for a broader spectrum of individuals. To this end, the recommendation is to integrate an array of comprehensive accessibility features. These should include, but not be limited to, screen reader compatibility, adjustable font sizes, and high-contrast color schemes, alongside the introduction of varied and distinct icons for pivotal features. Implementing these enhancements will markedly increase the app's inclusivity, ensuring it caters effectively to a diverse audience by enhancing visibility and interaction capabilities.

Streamlined design presents essential information clearly, increasing satisfaction and reducing frustration. Early metrics indicate fewer compatibility errors due to improved visibility and clarity. For the recommendation of system requirements we can work on the information that lies within this section by summarizing and adding just key points of each element and iconography instead so that they can represent key features we can increase user engagement and readability and visibility for users to create a better experience for them.

Another thing is that we recommend that there should be a live assistant feature that can improve customer support, with an emphasis on reducing response times and offering comprehensive support channels. Initiating community engagement programs, such as contests and user-generated content showcases, will enhance user involvement and loyalty. Establishing

effective feedback loops to gather and act upon user suggestions will demonstrate a commitment to user satisfaction and continuous improvement.