Module	Portfolio	Assessment Type
Human-Computer Interaction (5CS020)	3	Individual Report

[Task 3 - Design and Usability Testing]

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Word Count   : 2270

Abstract

This document presents a comprehensive overview of the design and evaluation process for a mobile bookstore application. The application aims to provide users with a seamless and enjoyable experience for discovering, purchasing, and reading books.

The design process involved meticulous planning and decision-making at each stage, focusing on usability, accessibility, and user engagement. Iterative design improvements were made based on user feedback obtained through usability testing methodologies, including heuristic evaluation and user interviews.

Through rigorous testing and analysis, various user experience challenges were identified and addressed in the prototype. The user testing phase, involving interactions with three users, provided valuable insights into user preferences.

Overall, this document advocates for the integration of usability principles into interface design to create a user-centric mobile bookstore application.

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1. Introduction

1.1 Bookstore Application

Figure 1 Bookstore app

The interface of the mobile bookstore application offers an intuitive design packed with practical features. On the home page, users can easily discover books sorted by genre, audiobooks, and personalized recommendations. The search page simplifies the process of finding books by genre, providing quick access to related categories. In the Discover section, users can explore trending titles, and event notices, and even share their own stories. The library page allows users to organize their favorite, ongoing, and completed books. Additionally, users can connect with fellow book enthusiasts through chat.

Overall, the interface of the bookstore application aims to address the challenge of scattered access to books online. With literature spread across various platforms, readers often struggle to discover new and interesting titles and engage with the literary community. By centralizing these resources into a single platform, the app simplifies book discovery and community engagement. Through intuitive navigation, personalized recommendations, and interactive community features, the interface enhances the overall reading experience and fosters a sense of belonging within the book enthusiast's community.

2. Design Process

2.1 Brainstorming

Goals and Objectives:

1. Provide a seamless and enjoyable reading experience for users.
2. Offer a wide selection of e books and audio books across various genres.
3. Foster a community of readers by integrating social features like add friends and chats.
4. Encourage exploration and discovery of new authors and titles through personalized recommendations.
5. Promote user engagement and retention through premium features and subscription options.
6. Ensure accessibility and inclusivity for all users, including those with disabilities.
7. Drive revenue through premium subscriptions, in-app purchases, and advertising partnerships.
8. Establish the bookstore application as a trusted platform for quality content and user satisfaction.

Figure 2 Brainstorming (1)

The image above illustrates the brainstorming phase of the design process for the bookstore application. During this stage, considerations were made to achieve goals such as providing a seamless reading experience, offering a diverse selection of eBooks and audiobooks, fostering a community of readers through social features, encouraging exploration and discovery, enhancing user engagement and retention, ensuring accessibility, driving revenue, and establishing trustworthiness.

Key Features:

1. Home Page: Central hub for accessing different sections of the app, featured titles, and personalized recommendations.
2. Search Page: Robust search functionality for finding specific books by title, author, genre, or keywords.
3. Discover Page: Curated lists of new releases, bestsellers, and trending titles to facilitate exploration.
4. Library Page: Personalized library where users can save and organize their favorite books for easy access.
5. User Profile: Customizable user profiles with options to set reading preferences, share bookshelves, and connect with friends.
6. Social Features: Add friends, send messages, and join book clubs or discussion groups to interact with fellow readers.
7. Premium Subscription: Access to premium content, exclusive features, and ad-free reading experience for subscribed users.
8. Book Chapters: Preview chapters, listen to audio samples, or watch excerpts before making a purchase.
9. Notifications: Alerts for new releases, recommendations from friends, or updates on book club activities to keep users engaged.

Figure 3 Brainstorming (2)

The image above showcases the interface of the bookstore application, highlighting its key features aimed at enhancing the reading experience. These include a user-friendly Home Page for easy navigation and personalized recommendations, a robust Search Page enabling precise book discovery, and a curated Discover Page for exploring new releases and trending titles. Additionally, the app offers a personalized Library Page for organizing favorite books and social features like friend connections. Lastly, premium subscription options and notifications ensure users have access to exclusive content and stay updated on relevant book-related activities.
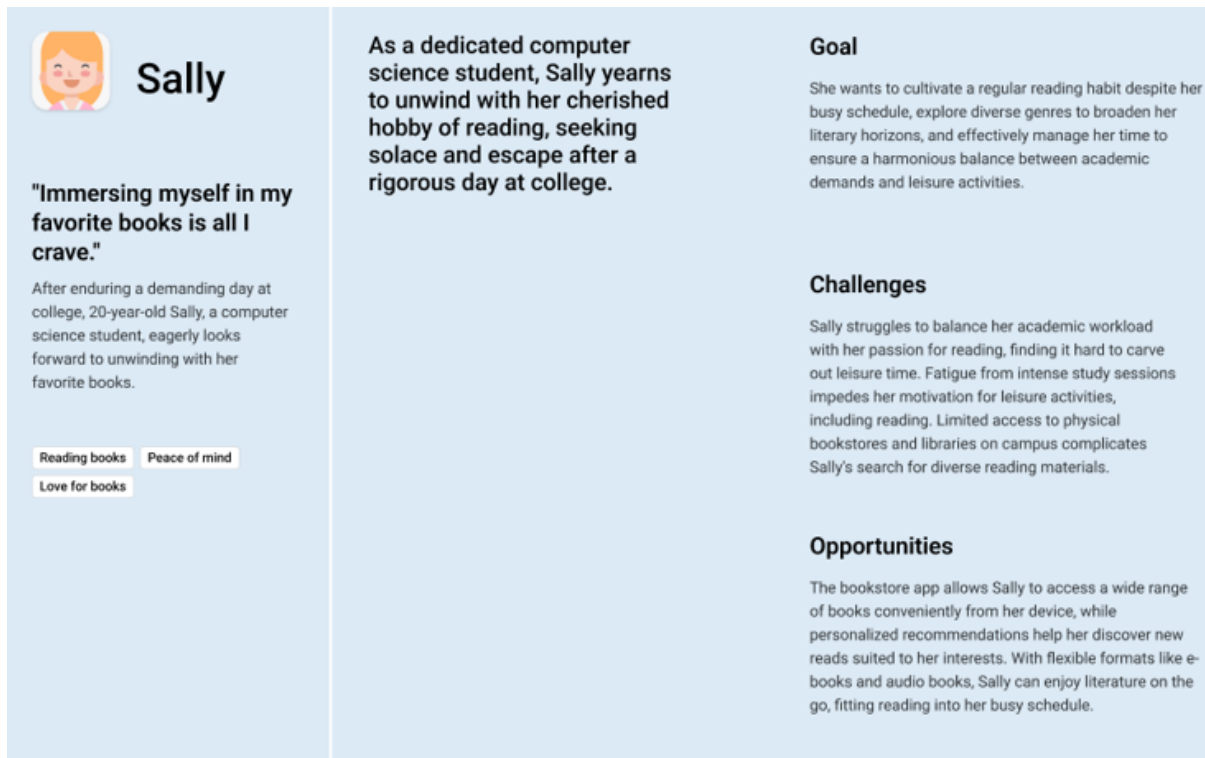
2.2 User Persona

Figure 4 User Persona

The image above portrays the user persona crafted for the bookstore application. Sally, a 20-year-old computer science student, serves as the embodiment of the target audience. Sally's persona encapsulates the challenges, goals, and opportunities that the application endeavors to address. Through Sally's persona, a significant understanding of the specific needs and inclinations of users is gathered, directing the creation and enhancement stages to guarantee maximum user contentment and involvement.

2.3 User Story

Figure 5 User story

The image above depicts a user story focused on seamless navigation to the home page. This narrative reflects the user's priority in accessing key features and functionalities swiftly, facilitating quick discovery of desired content within the system.
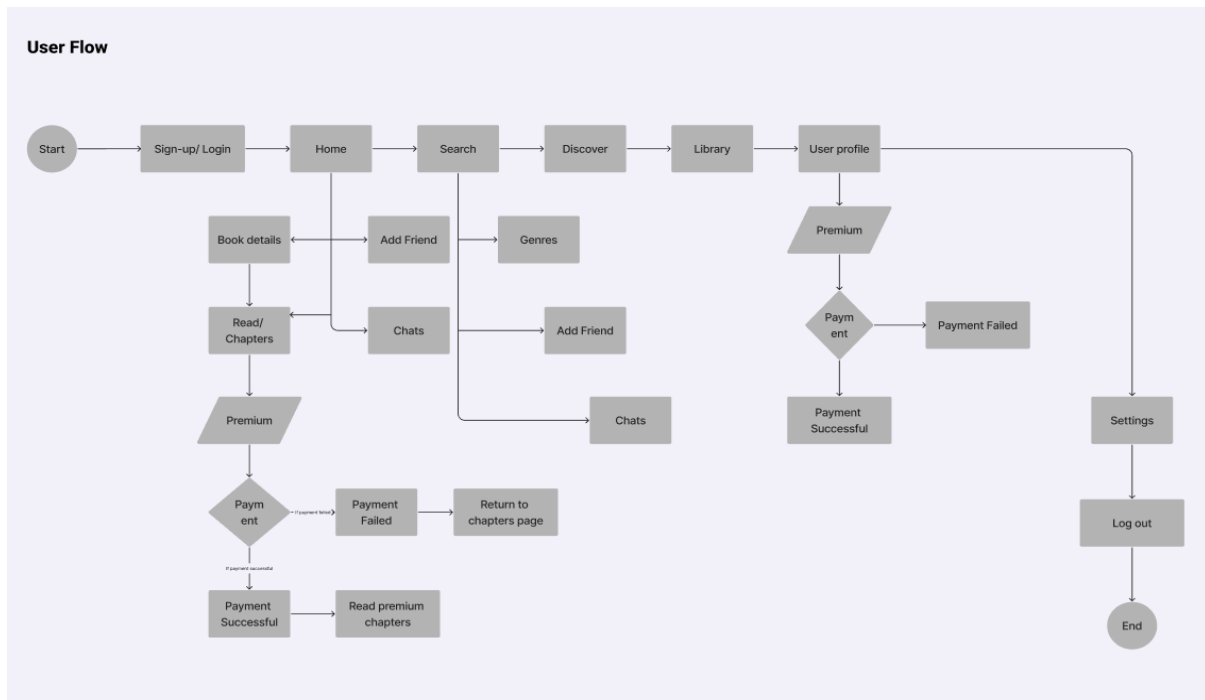
2.4 User Flow/ Task Flow
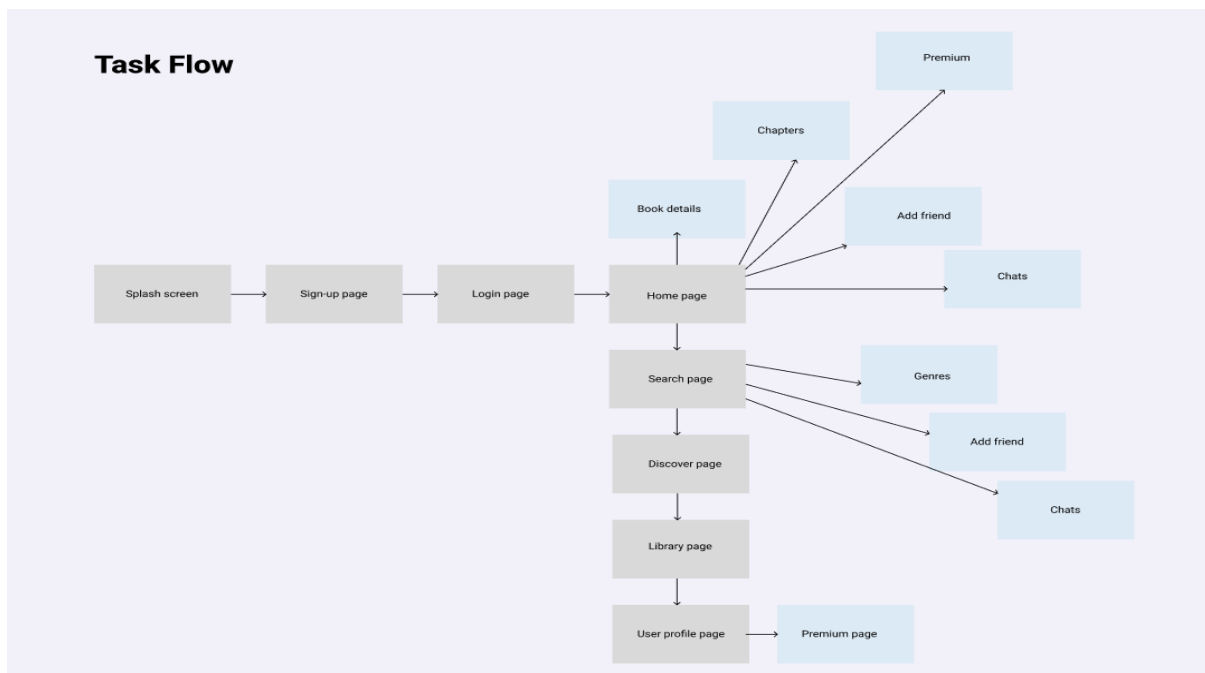

Figure 6 User flow

Figure 7 Task flow

The image above illustrates a graphic depiction of the user's journey and interactions within the bookstore application, depicting both the user flow and task flow. It offers insight into how users move around the app and accomplish different tasks helping in grasping the system's capabilities and user friendliness more effectively.
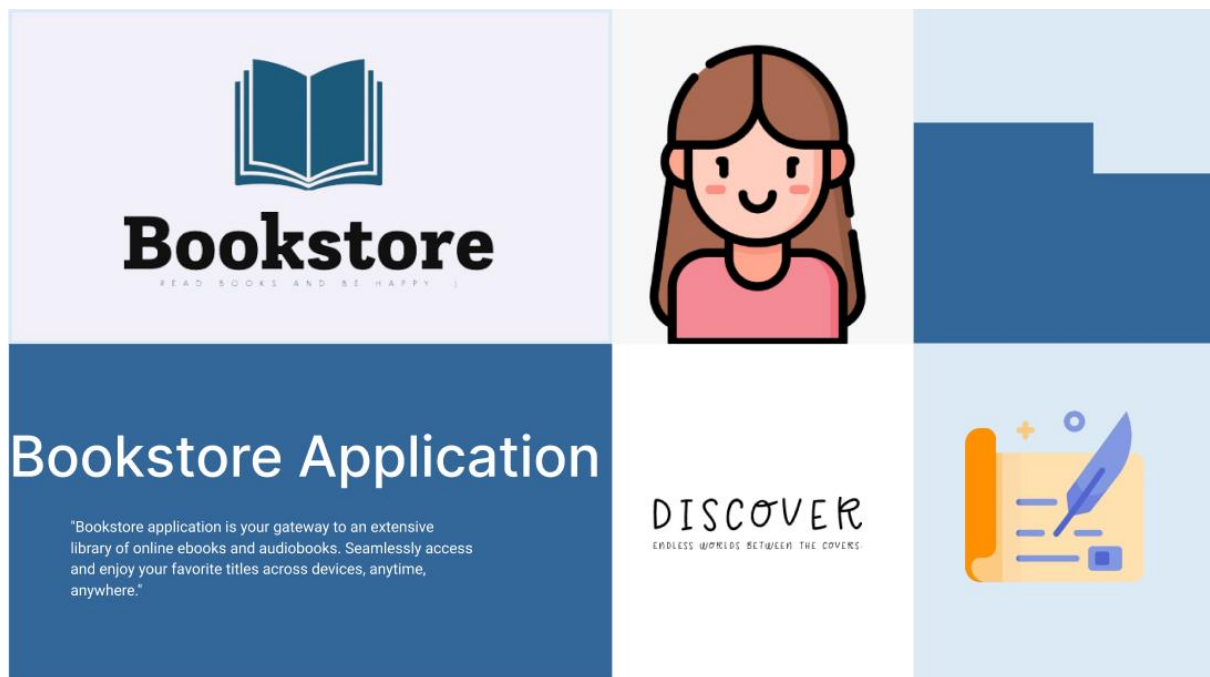
2.5 Mood Board

Figure 8 Mood Board

The image above introduces the mood board of the bookstore application, offering a comprehensive visual collage that encapsulates the intended look, feel, and atmosphere of the app. Through carefully curated images, color palettes, typography samples, and design elements, the mood board provides a holistic glimpse into the envisioned user experience, guiding the app's design direction and evoking the desired emotional response from users.
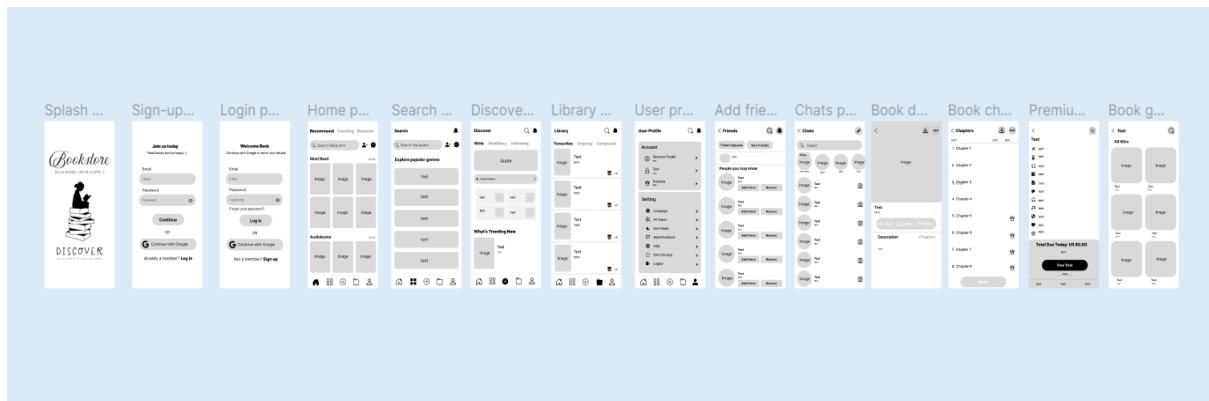
2.6 Wireframe/ Wire Flow

Figure 9 Wireframe
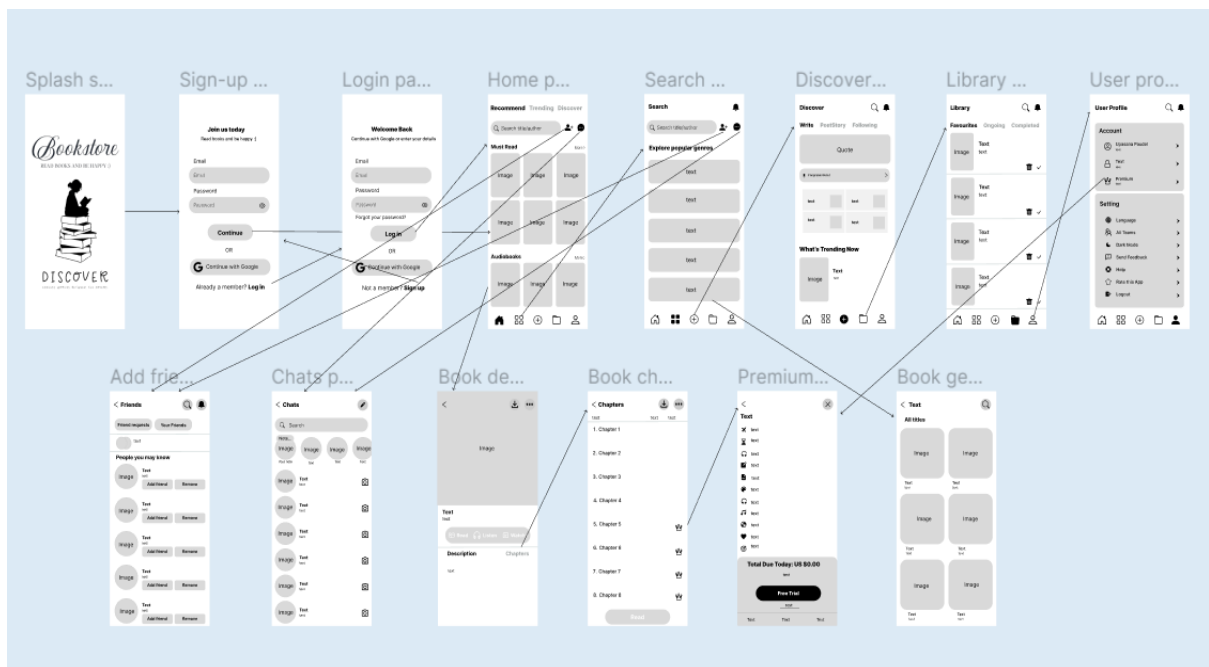
Figure 10 Wire Flow

The image above presents a complete overview of the wireframe and wire flow for the entire Bookstore application. It offers an in-depth visualization of the system structure, navigation pathways, and screen layouts, providing essential guidance for the design and development process. This comprehensive depiction serves as a valuable reference tool for ensuring consistency and coherence in the user experience across all aspects of the application.

2.7 UI of Bookstore Application

Figure 11 UI of Bookstore app

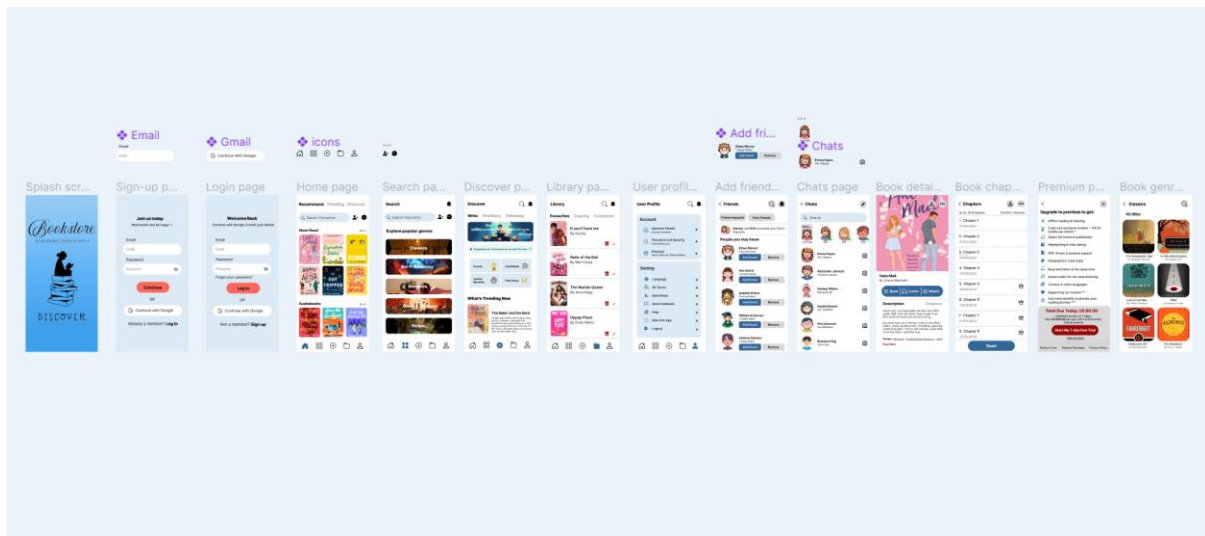The image above provides a detailed showcase of the complete UI design of the bookstore application, presenting essential screens like home, search, discover, and user profile pages. With intuitive navigation and visually appealing layouts, each screen is carefully designed to guarantee a seamless user experience. From browsing new titles to engaging with social features, every aspect caters to the needs of book enthusiasts, serving as a blueprint for development.

In summary, the design process for the bookstore application prioritized user experience, resulting in intuitive navigation and functionality. Through meticulous brainstorming, user persona development, and story creation, user needs were comprehensively understood. This guided the creation of user flows, wireframes, and wire flows, leading to a visually captivating UI design tailored to book enthusiasts. Ultimately, this iterative approach ensured the delivery of an effortless and engaging reading journey for the user.

3. Evaluation and Testing

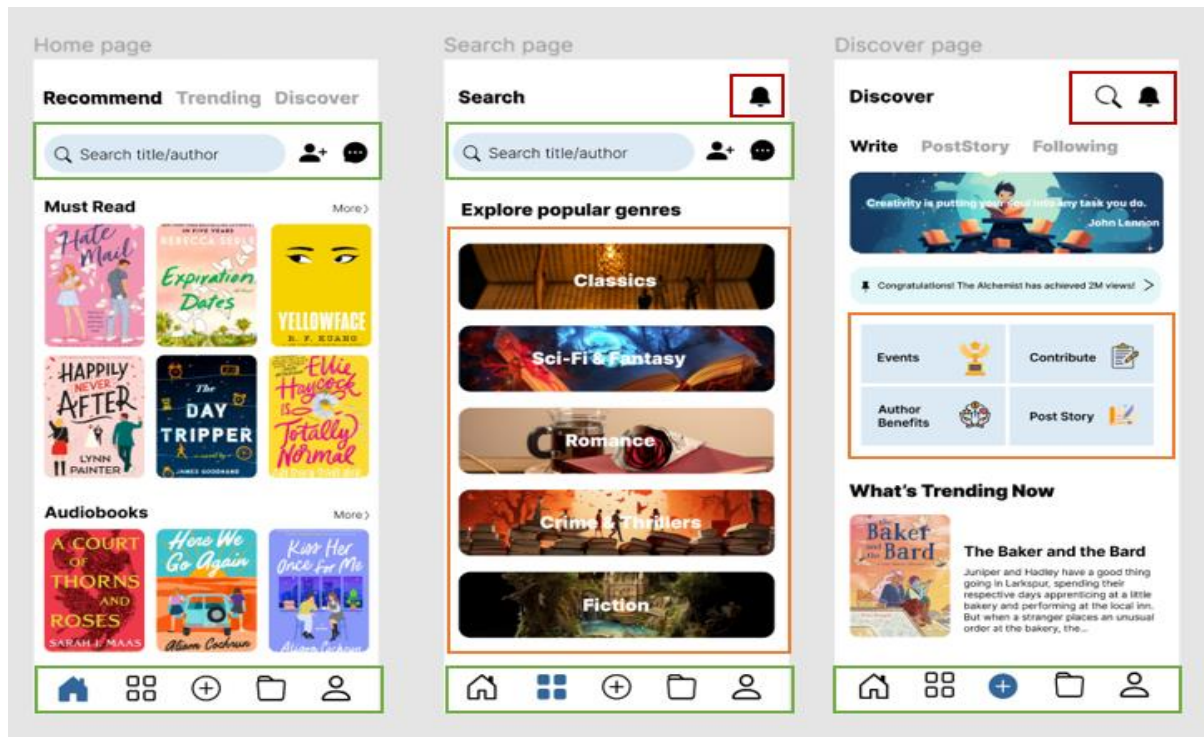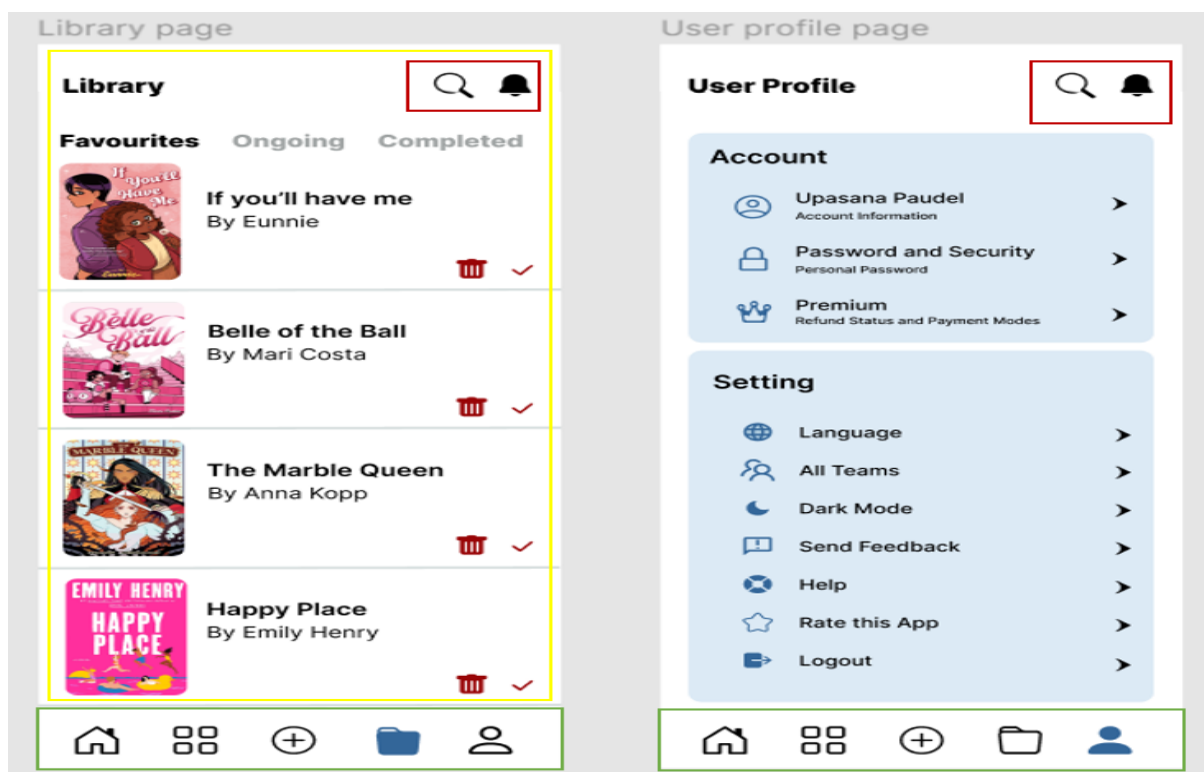## 3.1 Peer Review for Heuristics Evaluation (Neilson's)

Figure 12 Peer review (1)

Figure 13 Peer review (2)

Approaches	Incorporated
Nielsen's 10 Usability Heuristics	**Consistency and Standards**
	Recognition rather than recall
	Aesthetic and minimalist design
	Match between system and real-world
	User control and freedom
	Flexibility and efficiency of use

Table 1 Nielson's Usability Heuristics Review

Upon reviewing the design of the bookstore application, it's evident that Nielsen's usability heuristics were effectively incorporated. Uniformity and Standards were diligently maintained throughout the application, ensuring a uniform experience. Recognition rather than recall was prioritized, minimizing the cognitive load on users. Stylish and streamlined design principles resulted in a clean interface, improving the comprehensive user experience. The alignment among the app and the actual environment made navigation intuitive. User authority and liberty provided clear options for users. Furthermore, Adaptability and effectiveness of use catered to diverse user needs. While these principles were well incorporated, further integration of Error Prevention and Help and Documentation could enhance usability and satisfaction even more.

Overall, the meticulous integration of Nielsen's principles into the design of the bookstore application contributed significantly to its usability and user satisfaction, ensuring a smooth and delightful reading experience for all users.

3.2 Questionnaire preparation for user testing

1. How easy was it for you to navigate through the different sections of the application?

2. Did you encounter any difficulties in accessing specific features or functionalities within the application?

3. Were the font sizes, colors, and overall design of the application conducive to easy reading and navigation?

4. Did you find any features or elements of the application confusing or difficult to understand?

5. How would you rate the overall accessibility of the application for users with visual impairments or other accessibility needs?

6. Were there any instances where you experienced frustration while using the application? If yes, can you describe them?

7. How intuitive was the home page layout for accessing different sections and features of the application?

8. Were the genres displayed on the genre page comprehensive and easy to explore?

9. Did you encounter any difficulties in navigating the Discover section to explore events and contribute as a writer?

10. How seamless was the process of accessing ongoing and completed books within the library section?

11. Did you find the chats page and add friends feature beneficial for connecting with other users?

12. Were the book details pages informative and easy to navigate, providing all necessary information about the book, and how intuitive was it to access and navigate through chapters within a book?

Figure 14 Questions (1)

13. Did you find the process of adding books to favorites or accessing premium features straightforward?

14. Regarding the free and premium chapters, do you find the balance between free and paid content reasonable?

15. Were the premium features easily accessible and understandable within the settings section?

16. Were there any instances where you felt the application could be more responsive or perform better?

17. Were there any specific accessibility features or enhancements you would like to see implemented in the application?

18. What additional features do you think would enhance your reading experience with the application?

19. What improvements or enhancements would you suggest to make the application more user-friendly and accessible?

20. Can you identify any specific features that you believe set this application apart from other bookstore applications?

21. Based on your experience with the application's usability and accessibility, how likely are you to recommend it to others with similar needs?

22. Is there any additional feedback or suggestions you would like to provide to improve the usability and accessibility of the application further?

Figure 15 Questions (2)

The image above showcases a detailed questionnaire meticulously crafted for user testing, covering various aspects of the application's usability and accessibility.

3.3 User Testing Analysis

Figure 16 User Testing (1)

Figure 17 User Testing (2)

Figure 18 User Testing (3)

The user testing responses from users provide valuable perspectives on the user-friendliness and ease of access of the bookstore application prototype. Overall, the feedback indicates a positive user experience with some areas for improvement. Below are the key insights provided by users through their responses:

1. **Ease of Navigation**: Users generally found it straightforward to traverse across different sections of the application. The main menu and navigation were intuitive for most users, although one mentioned having to navigate through multiple layers of menus as a slight challenge.

2. **Feature Accessibility**: The majority of users didn't face issues accessing features. However, some noted problems with certain functionalities like dark mode and language settings not functioning correctly.

3. **Design and Readability**: Feedback on font sizes, colors, and overall design varied. While some users found them satisfactory, others mentioned the design being too plain or lacking attractiveness. However, readability and navigation were generally deemed acceptable.

4. **Feature Understanding**: Users found features and elements of the application easy to comprehend and well-labeled, contributing to a smooth user experience.

5. **Accessibility for Visually Impaired Users**: The application was generally rated as accessible for users with visual impairments or other accessibility needs, particularly due to features like color contrast.

6. **Frustration Points**: Some users experienced frustration, such as navigating through multiple menus or encountering non-functional features. However, these instances were not widespread.

7. **Home Page Layout and Genre Exploration**: Users found the home page layout intuitive for accessing different sections and features. Additionally, genre displayed on the genre page were comprehensive and easy to explore.

8. **Discover Section Navigation**: While most users navigated the Discover section without difficulty, a few mentioned minor issues.

9. **Library Section**: Accessing ongoing and completed books within the library section was reported as seamless by most users.

10. **Social Features**: Users found features like the chats page and add friends beneficial for connecting with other users, enhancing the social aspect of the application.

11. **Book Details and Premium Features**: The book details pages were considered informative and easy to navigate, and accessing premium features was generally straightforward.

12. **Balance between Free and Paid Content**: Opinions on the balance between free and paid content varied, with some users finding it reasonable and others expressing dissatisfaction.

13. **Suggestions for Improvement**: Users provided various suggestions for improving the application, including enhancing content discovery, implementing dark mode and language features, and adding notification functionality.

14. **Unique Features**: The add friend feature and chats page were highlighted as distinguishing features that set the application apart from others.

15. **Likelihood of Recommendation**: Users expressed a high likelihood of recommending the application to others with similar needs, indicating overall satisfaction with its usability and accessibility.

16. **Additional Feedback**: Some users provided additional feedback, such as the desire for a share button and personalized genre recommendations.

Overall, the user testing feedback provides valuable insights for refining and enhancing the application prototype to better meet user needs and expectations.

4. Conclusion

In conclusion, the meticulous adherence to a user-centric design process significantly influenced the development of the bookstore app's interface. From the initial brainstorming sessions to the final touches on UI design, every step remained firmly grounded in prioritizing user needs. Utilizing brainstorming, user personas, stories, user flows, task flows, wireframes, and wire flows played a significant role in shaping and completing the UI design of the application.

During the testing phase, several usability issues were revealed, including navigation cues that were not clear and interactions that lacked streamlining. To refine the design further, implementing enhancements such as clearer navigation cues and more intuitive user interactions is imperative. While the color contrast was addressed, improving contrast for readability across all aspects of the interface remains essential for a truly seamless user experience.

In summary, while the design process has laid a solid foundation, ongoing refinement, and attentiveness to user feedback are vital for crafting an interface that exceeds expectations. Through continued dedication to user needs and iterative improvement, the interface of the bookstore application is poised to evolve and thrive in meeting the dynamic demands of its users.
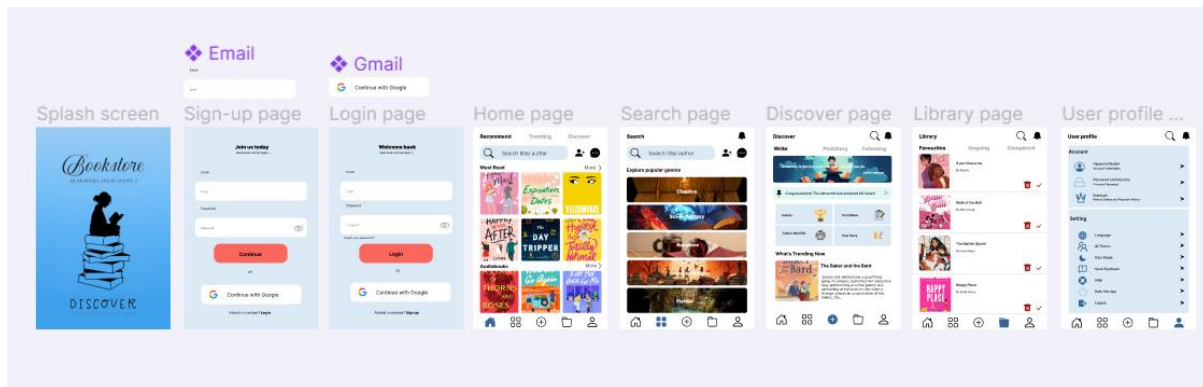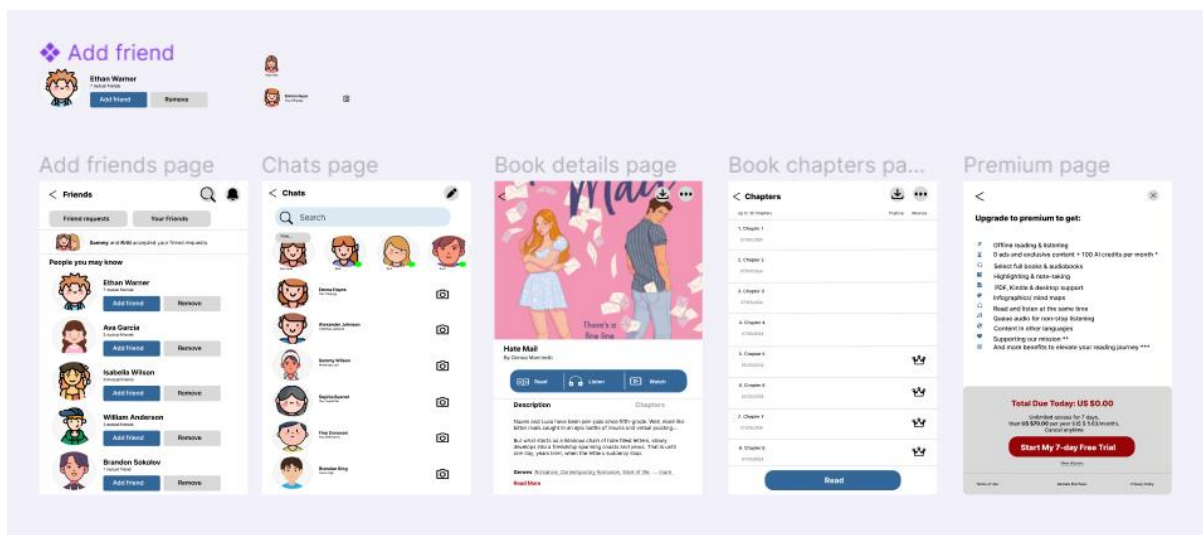
5. Appendix

Figure 19 UI of Tab (1)
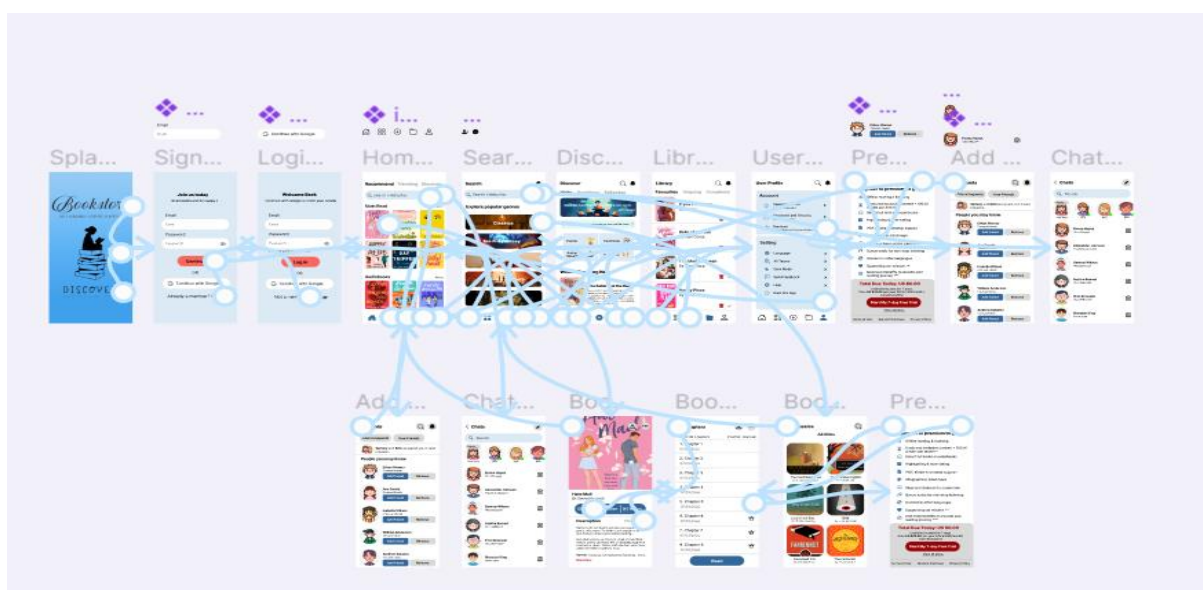

Figure 20 UI of Tab (2)
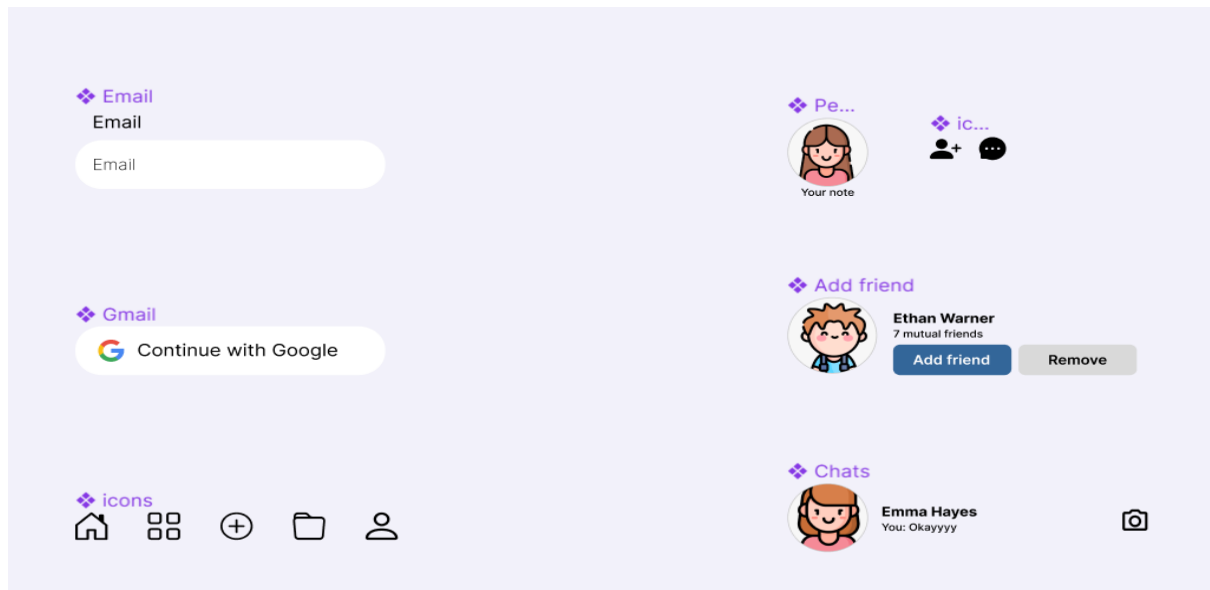

Figure 21 Prototype

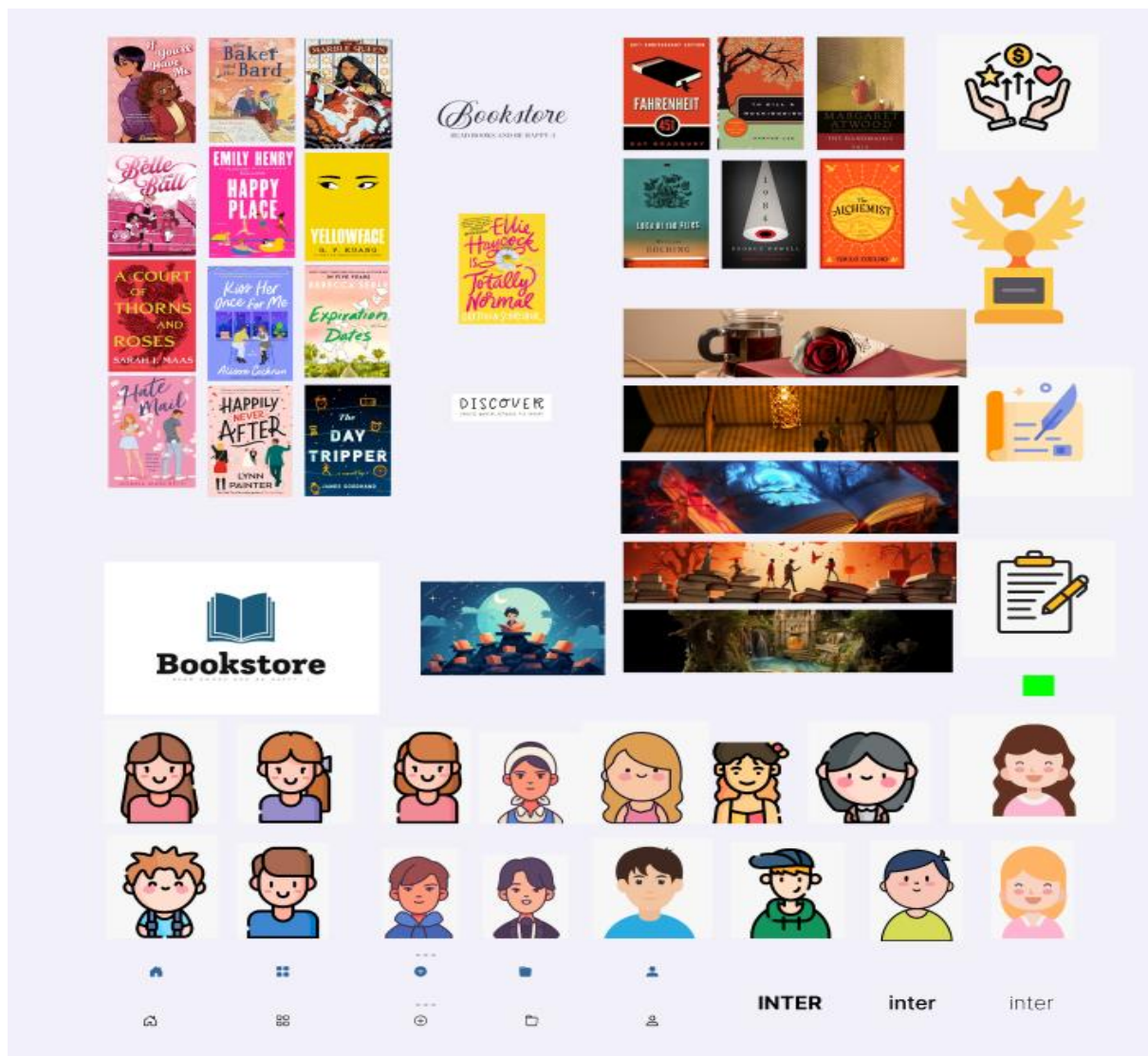*Figure 22 Components*

Figure 23 Assets

Questions   Responses **5**   Settings

upasanpaudel@gmail.com

sunitarai8901@gmail.com

np03cs4s230048@heraldcollege.edu.np

np03cs4s230124@heraldcollege.edu.np

np03cs4s230071@heraldcollege.edu.np

s.a.n.r.chamling07@gmail.com

Name
2 responses

Shreeju Thapa

Arya Shrestha

How easy was it for you to navigate through the different sections of the application?
5 responses

It was alot easier for me to navigate through the different section of the application.

It was very easy, smooth, responsive and going to different section was fast and fantastic

Easy

It was quite easy

It was easy

Figure 24 Response (1)

Did you encounter any difficulties in accessing specific features or functionalities within the application?

5 responses

No i didnot encounter any difficulties because i have been through many applications that has the same features and functionalities.

No, I didn't encounter any difficulties in accessing specific features or functionalities within the application

There weren't major difficulties but certain features such as the dark mode, and language were just there but did not work.

I used few features and they were easily accessible

The app was easy to navigate.

Were the font sizes, colors, and overall design of the application conducive to easy reading and navigation?

5 responses

font sizes and colors were okayy but design was little plain.

Yes, i am satisfy with font sizes, colors, and overall design of the application conductive to easy reading and navigation

Very easy

Quite well

yes

Figure 25 Response (2)

Did you find any features or elements of the application confusing or difficult to understand?

5 responses

No i didnót find any features or elements of the application confusing or difficult to understand since it is properly labeled.

No, i didn't find any features or elements of the application confusing or difficult to understand

No, all the features were easy to understand.

few stuff but app was good overall

No

How would you rate the overall accessibility of the application for users with visual impairments or other accessibility needs?

5 responses

it is fully navigable and works well and has sufficient contrast as well.

I would rate the overall accessibility of the application for users with visual impairments or other accessibility needs was good i find it wonderful since it had option to listen the book they wanted to read and the icons were familiar to understand

I did not find accessibility features.

9

Very nice

Figure 26 Response (3)

Were there any instances where you experienced frustration while using the application? If yes, can you describe them?

5 responses

yes, i have to navigate through multiple layers of menus to find a features.

No, there were not any instances where i experienced frustration while using the application

Many of the features were not working.

yes few parts

No

How intuitive was the home page layout for accessing different sections and features of the application?

5 responses

it was natural since main menu is easily visible and understandable.

The home page layout for accessing different sections and features of the application was soothing and relaxing

It was intuitive.

it was quite intuitive

It was easy

Figure 27 Response (4)

Were the genres displayed on the genre page comprehensive and easy to explore?

5 responses

yes, it was very easy to explore.

Yes, The genres displayed on the genre page comprehensive and easy to explore

yes, it was easy to explore

yes

Yes

Did you encounter any difficulties in navigating the discover section to explore events and contribute as a writer?

5 responses

no, i didnot find any difficulties "Discover" section is easily found from the main menu.

No, I didnt encounter any difficulties in navigating the discover section to explore events and contribute as a writer

Yes, a little

nope

No

Figure 28 Response (5)

How seamless was the process of accessing ongoing and completed books within the library section?

5 responses

Ongoing and completed books are clearly marked so, it was easy.

It was easy to access ongoing and completed books within the library section and i could find which book i read and continue it

It was seamless but could have been better

it was seamless

It was easy and seamless

Did you find the chats page and add friends feature beneficial for connecting with other users?

5 responses

yes,it was beneficial since we can connect to many reader with same hobby.

Yes, I find the chats page and add friends feature beneficial for connecting with other users

Yes

yes

Yes, chat was helpful

Figure 29 Response (6)

Were the book details pages informative and easy to navigate, providing all necessary information about the book, and how intuitive was it to access and navigate through chapters within a book?

5 responses

Yes

it was easy since it has interactive elements .

The book details pages were informative and easy to navigate, providing all necessary information about the book was detailed and understandable, it was easy to access and navigate through chapters within a book

yes

Did you find the process of adding books to favorites or accessing premium features straightforward?

5 responses

yes it was way easier since, Premium features are clearly presented to users.

Yes

Yes

yes

Yes, it was straight forewad.

Figure 30 Response (7)

Regarding the free and premium chapters, do you find the balance between free and paid content reasonable?

5 responses

Yes

yes,there was enough free content available as well as paid content.

No, i didn't find the balance between free and paid content reasonable

yes

Were the premium features easily accessible and understandable within the settings section?

5 responses

Yes

yes it was easy.

Yes it was

yes

Figure 31 Response (8)

Were there any instances where you felt the application could be more responsive or perform better?

5 responses

yes ,there was.

No there were not any instances

Yes, there could have been more pages in library section to see the ongoing and completed books.

quite few

In Explore page
..

Were there any specific accessibility features or enhancements you would like to see implemented in the application?

5 responses

yes, i hope there was more attractive design .

No there weren't any specific features or enhancements

Dark mode, language

there were few i assume

Yes

Figure 32 Response (9)

What additional features do you think would enhance your reading experience with the application?

5 responses

I hope it allow users to easily share their favorite books or chapters on social media platforms.

Voice search feature i would like to enhance my reading experience with the application

Screen reader could have been implemented.

notification should be needed

No

What improvements or enhancements would you suggest to make the application more user-friendly and accessible?

5 responses

Enhance content discovery with personalized recommendations.

The improvements or enhancements i would suggest to make the application more user-friendly and accessible is i would like to put watch history of books of my friends

Dark mode, language should be functional. More pages

i think it's fine

Notification access would make the app better

Figure 33 Response (10)

Can you identify any specific features that you believe set this application apart from other bookstore applications?

5 responses

yes, this applications has add friend feature which was best.

Add friends and chats page feature that i believe set this application apart from other bookstore applications

It has friends and chating functionality which is not available in most bookstore applications.

add friend and chat page

No

Based on your experience with the application's usability and accessibility, how likely are you to recommend it to others with similar needs?

5 responses

if i would have to rate this app form 0-10 range i would rate 8.5

On the scale of 10 i will give it 9.2 and surely recommend it to my friend

High

9

Yes, it was easy to use

Figure 34 Response (11)

Is there any additional feedback or suggestions you would like to provide to improve the usability and accessibility of the application further?

5 responses

if there was share button it would be more effective.

I would like to add features to select the genre that matches my style of reading

Navigation of features could be better.

nope the app is fine

No. Overall, the app was perfect.
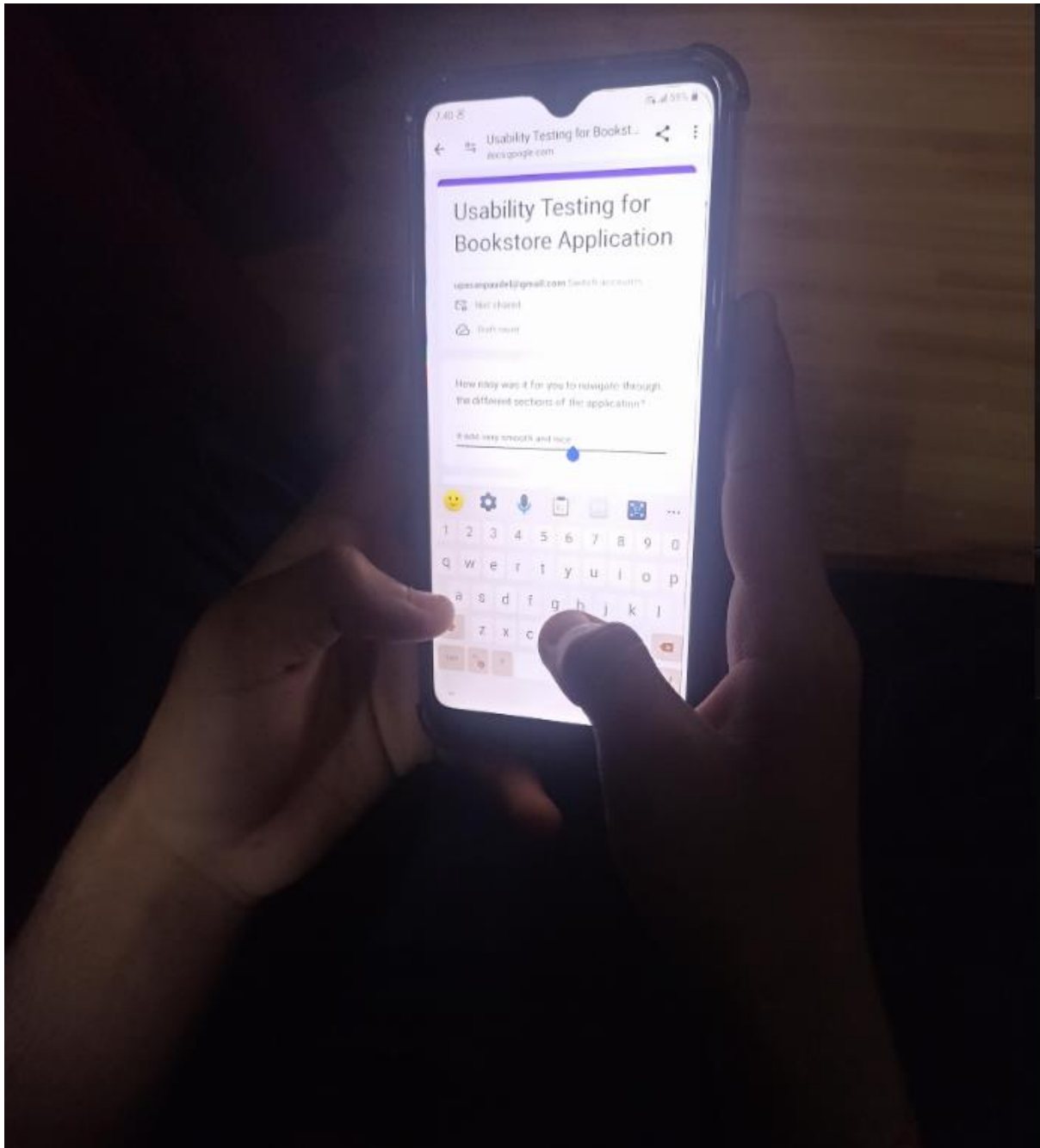
Figure 35 Response (12)
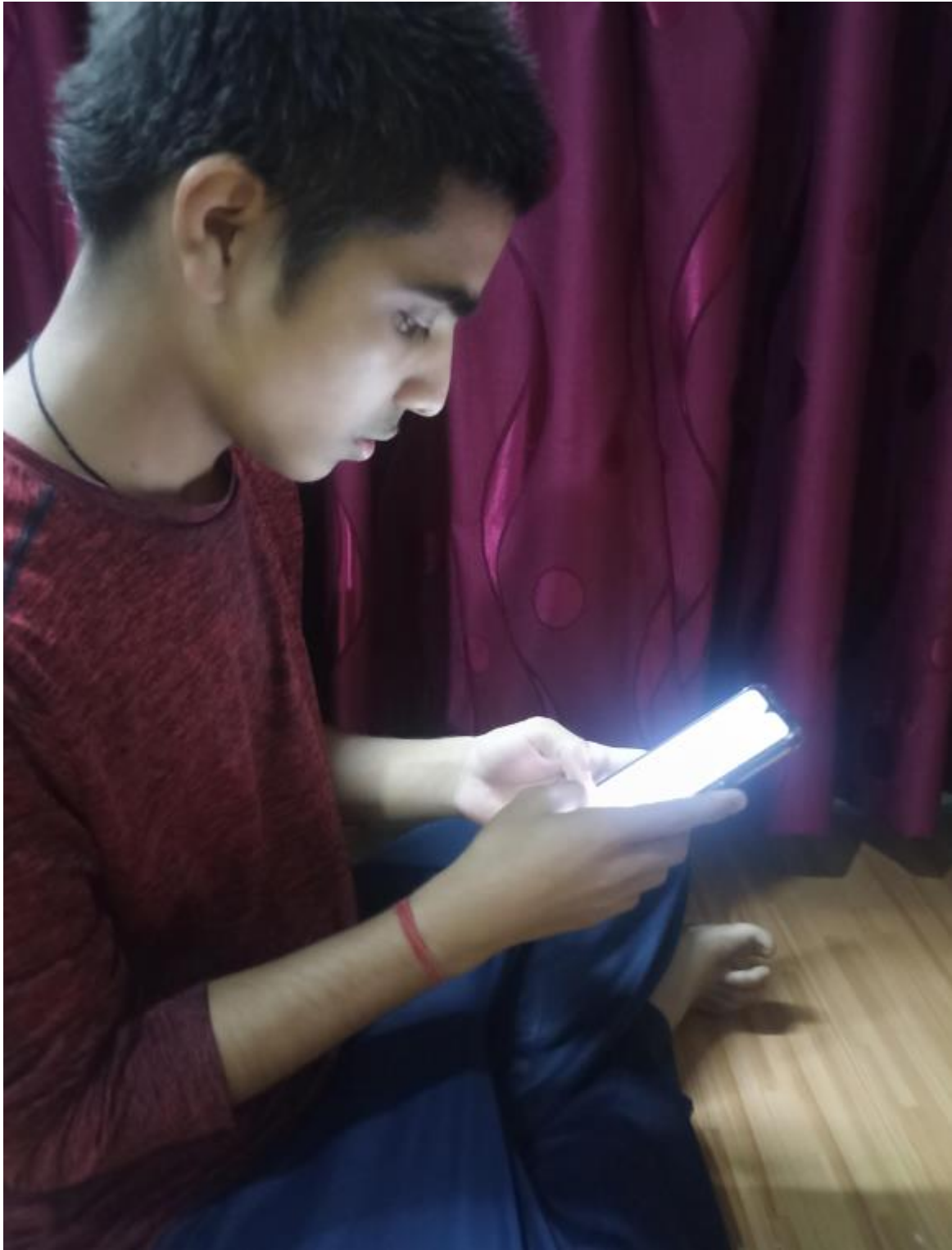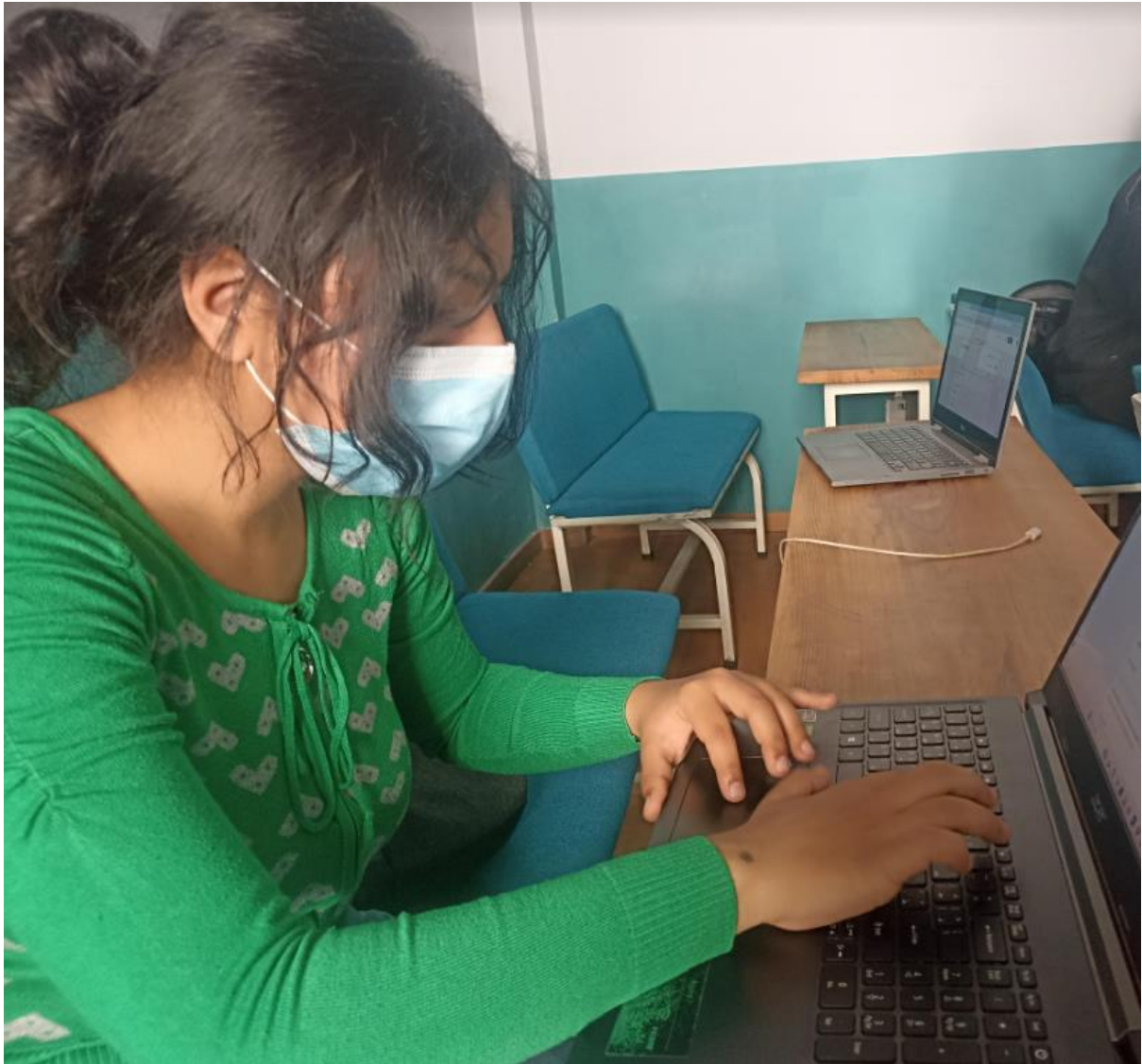
Figure 36 Review proof (1)

Figure 37 Review proof (2)

5CS020

Figure 38 Review proof (3)