

Table of Contents

1. Introduction	2
2. Group Work – Prototype	2
2.1. <i>Implementation Process and Link to Figma Prototype.....</i>	2
2.2. <i>High-Fidelity Prototype Screens</i>	3
2.3. <i>One Design Guideline Implemented Per Screen.....</i>	12
2.4. <i>Three Accessibility Guidelines Implemented Throughout the Prototype.....</i>	17
2.5. <i>Changes Made from the Low-Fidelity to the High-Fidelity Prototype</i>	18
3. Individual Work – Heuristic Evaluation.....	22
3.1. <i>Vincent’s Heuristic Evaluation.....</i>	22
3.1.1. <i>Introduction</i>	22
3.1.2. <i>Table of Compliances</i>	22
3.1.3. <i>Table of Violations</i>	26
3.1.4. <i>Violation and Severity Ratings.....</i>	28
3.1.5. <i>Conclusion</i>	31
3.2. <i>Wei’s Heuristic Evaluation.....</i>	31
3.2.1. <i>Introduction</i>	31
3.2.2. <i>Table of Compliances</i>	31
3.2.3. <i>Table of Violations</i>	34
3.2.4. <i>Violation and Severity Ratings.....</i>	36
3.2.5. <i>Conclusion</i>	37
3.3. <i>Yazhi’s Heuristic Evaluation.....</i>	37
3.3.1. <i>Introduction</i>	37
3.3.2. <i>Table of Compliances</i>	37
3.3.3. <i>Table of Violations</i>	41
3.3.4. <i>Violation and Severity Ratings.....</i>	43
3.3.5. <i>Conclusion</i>	44
3.4. <i>Lawrence’s Heuristic Evaluation.....</i>	44
3.4.1. <i>Introduction</i>	44
3.4.2. <i>Table of Compliances</i>	45
3.4.3. <i>Table of Violations</i>	48
3.4.4. <i>Violation and Severity Ratings.....</i>	52
3.4.5. <i>Conclusion</i>	54
4. Group Work – Evaluation Summary	54
4.1. <i>Similarities and Differences among Members’ Evaluations.....</i>	54
4.2. <i>3 Most Severe Violations and Recommendations for Improvements.....</i>	56
5. Future Development Ideas	57
6. Conclusion	58
7. Bibliography	58
7. Appendixes	60
Appendix A	60

Appendix B	61
Appendix C	62

1. Introduction

In Submission 2, the low-fidelity prototype that comply with 4 Norman's principles and 3 different WCAGs (accessibility guidelines) has been developed. The purpose of this report is, therefore, to design a high-fidelity interactive prototype using Figma based on the low-fidelity prototype and eventually perform a Heuristic evaluation following Nielsen's 10 heuristics model by each member. Subsequently, the report will include a summary comparing the similarities and differences in each member's Heuristic evaluation, along with a discussion of the three most critical violations with their respective recommendations on how to fix them and future development ideas. In addition, the report will also address improvements or modifications on the Submission 2 prototype.

2. Group Work – Prototype

2.1. Implementation Process and Link to Figma Prototype

Our high-fidelity prototype design was initially based on the sketches of our low-fidelity prototype. As a team, we delved deeply into the previous sketches through thorough discussions and dialogues. Through comprehensive communication and the integration of collective opinions, we formulated a final design sketch that satisfies **the following core requirements:**

1. Allow users to search for volunteer positions based on their skills.
2. Allow users to apply for open volunteer positions they find through the app.
3. Allow users to recommend volunteer positions to friends they think might be suited.
4. Allow users to receive notifications about the latest volunteer information based on their search history and preferences.
5. Allow users to share their volunteer experiences in a forum (blog) and all users can view it.

Upon clarifying these requirements, we engaged in profound thinking and discussions about the screen divisions. Aiming to offer users an intuitive and smooth experience, we decided that **our high-fidelity prototype should include the following screens:** Home, Search, Selected Volunteer Position, Application, Inbox, Chat, Community Blog, My Blog, Selected Blog, and Settings.

Throughout each design phase, our team consistently adopted a task allocation approach, leveraging the collaborative features of Figma for the design of the high-fidelity prototype. We held regular meetings to share individual design progress, challenges, and suggestions provided to other team members, delving into in-depth discussions on these suggestions. Such a collaborative approach not only heightened our work efficiency but also ensured the quality and consistency of our design.

In the process of finalizing screen designs, we closely incorporated various design principles and philosophies learned throughout the course, such as Norman's principles and Schneiderman's eight golden rules. To ensure that our design caters to a diverse user base, we specifically added some auxiliary feature elements to meet the needs of a broader user group and ensured that our design adheres to three different WCAG guidelines.

The prototype we ultimately completed is rich in interactivity for each screen and aligns perfectly with the aforementioned requirements. Users can easily navigate and operate between different screens.

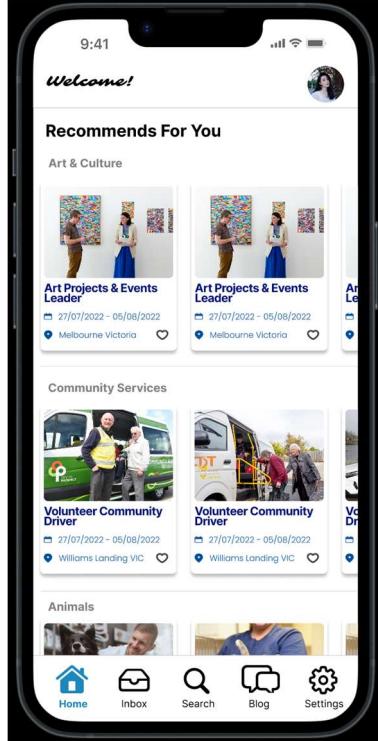
Link to our Figma prototype:

<https://www.figma.com/file/9MdIDKqdK0BiK02ZH940iZ/TeamA-Assignment-3-High-fidelity-prototype?type=design&node-id=0-1&mode=design&t=AeaMoDBE5On5e9TI-0>

2.2. High-Fidelity Prototype Screens

Home Screen [Yazhi]

Figure 1. Home Screen (1) – Vertical and Horizontal Scroll Enabled



Search Screen [Wei]

Figure 2. Search Screen (2.1)

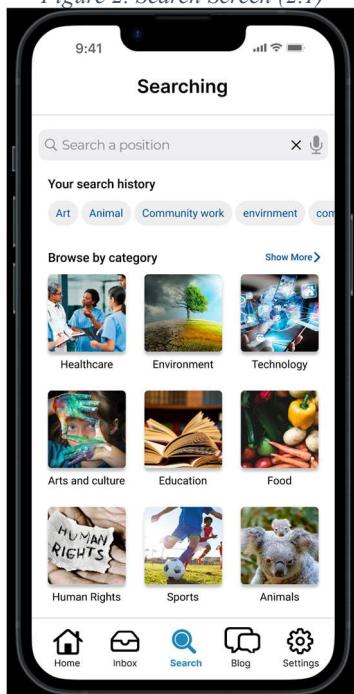


Figure 3. Search Result Screen (2.2) – Vertical Scroll Enabled

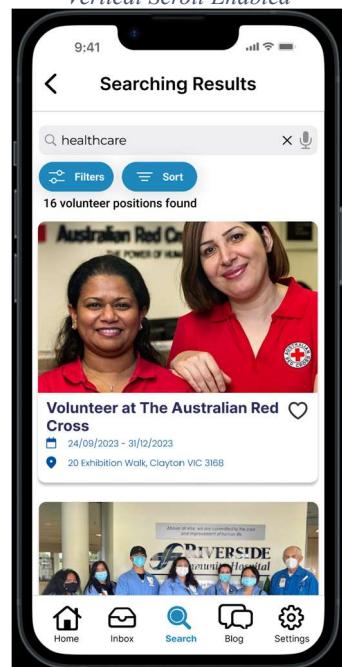


Figure 4. Filter Popup (2.2.1)

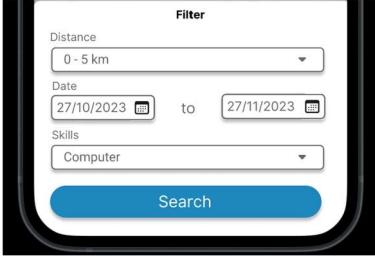
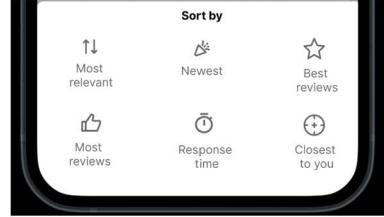


Figure 5. Sort Popup (2.2.2)



Selected Volunteer/Position Screen [Lawrence]

Figure 6. Selected Position Screen (3.1) – Vertical Scroll Enabled



Figure 7. Selected Position Screen (3.1.1) - With Chinese Translation



Figure 8. Selected Position Screen (3.1.2) - With Liked Enabled



Figure 9. Selected Position Screen (3.1) – “Apply Now” Button

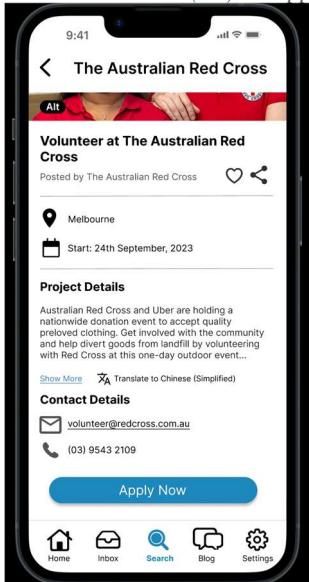


Figure 10. Share Popup (3.1.3) – Horizontal Scroll Enabled [Developed by Vincent]



Application Screen [Lawrence]

- After clicking on the “Apply Now” button from the Selected Volunteer/Position Screen above [Vertical scroll enabled]

Figure 11. Application Screen Step 1 (4.1) – Vertical Scroll Enabled

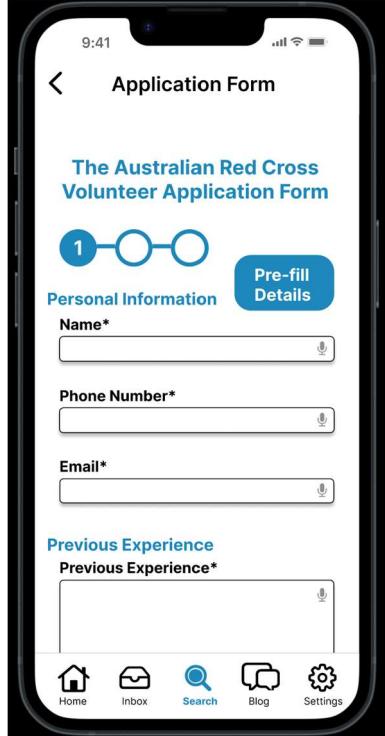


Figure 12. Application Screen Step 1 (4.1.1) - "Pre-fill Details" Enabled

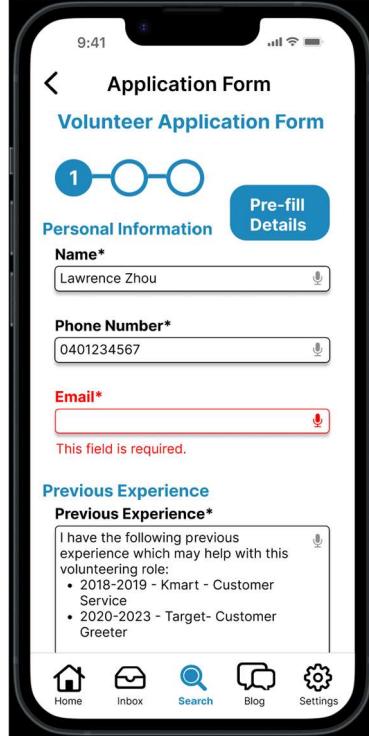


Figure 13. Application Screen Step 1 (4.1) - "Next Page" Button

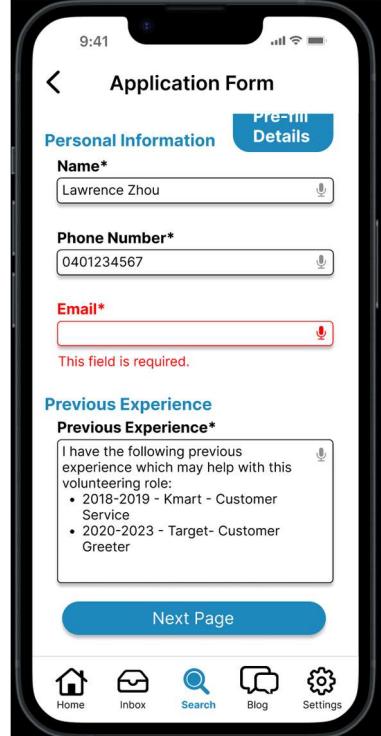


Figure 14. Application Screen Step 2 (4.2)

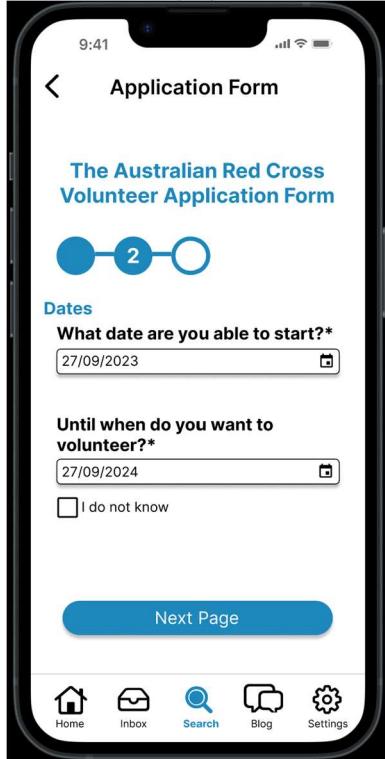


Figure 15. Application Screen Step 2 (4.2.1) – “I do not know” Enabled

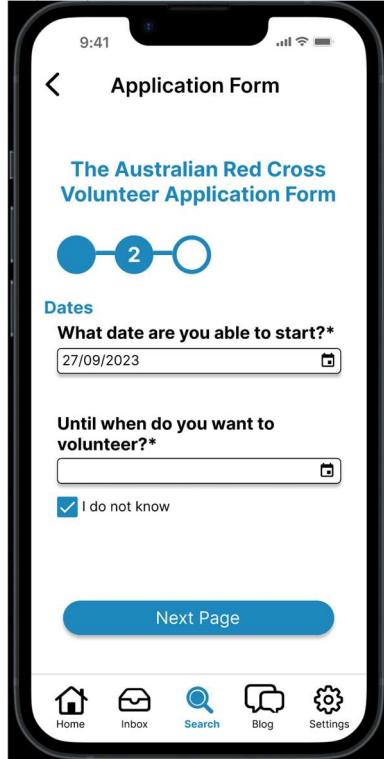


Figure 16. Date Picker Popup (4.2.2)

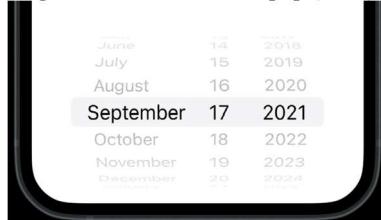


Figure 17. Application Screen Step 3 (4.3)

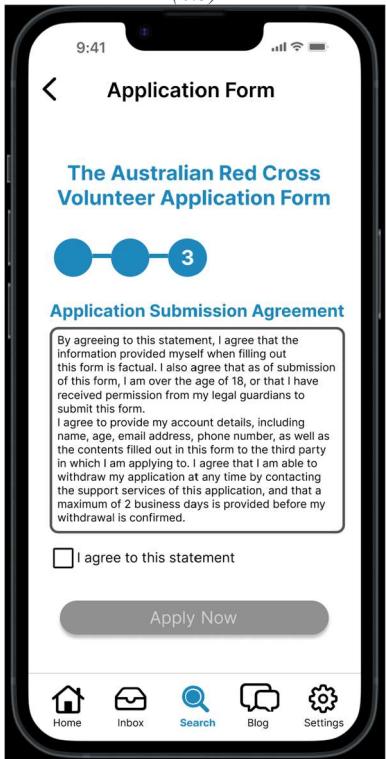


Figure 18. Application Screen Step 3 (4.3.1) - "I agree to this statement" Enabled

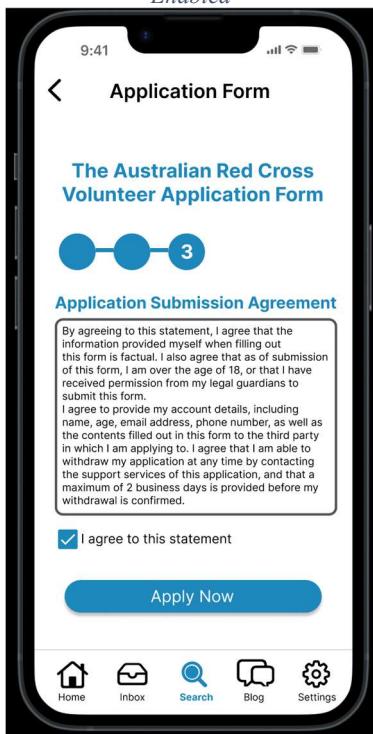
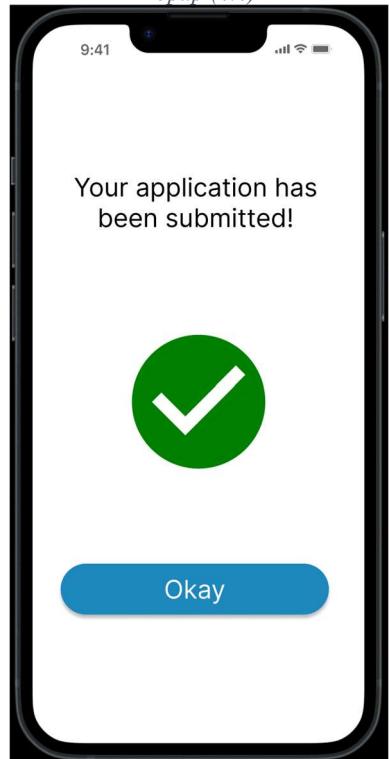


Figure 19. Application Submitted Popup (4.4)



Inbox Screen [Yazhi]

Figure 20. Inbox Screen (5.1) – Notification Part

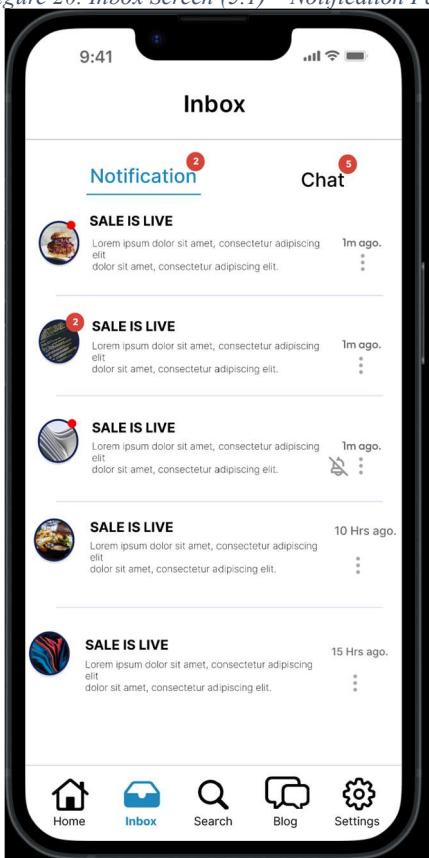


Figure 21. Inbox Screen (5.1.1) - "Vertical Ellipsis" Icon Popup

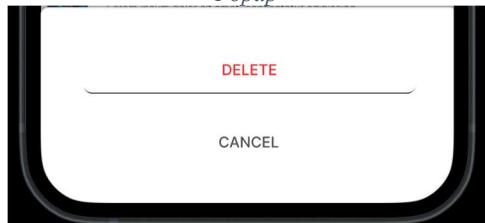
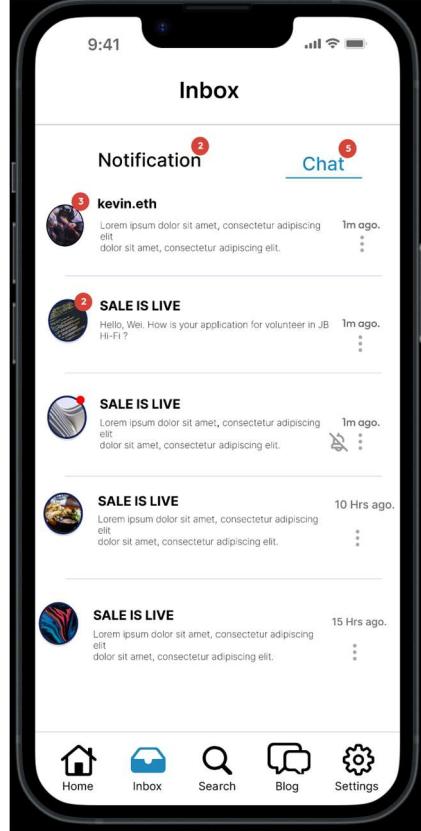


Figure 22. Inbox Screen (5.2) – Chat Part



Chat Screen [Yazhi]

Figure 23. Selected Chat Screen (6) – Vertical Scroll Enabled



Community Blog Screen [Vincent]

Figure 24. Community Blog Screen (7.1) - Vertical and Horizontal Scroll Enabled

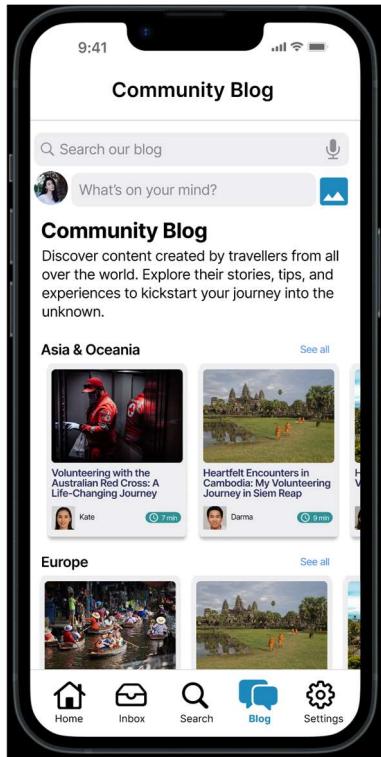


Figure 25. Create Blog Popup (7.1.1) - Upon Clicking "What's on your mind?" Input Box

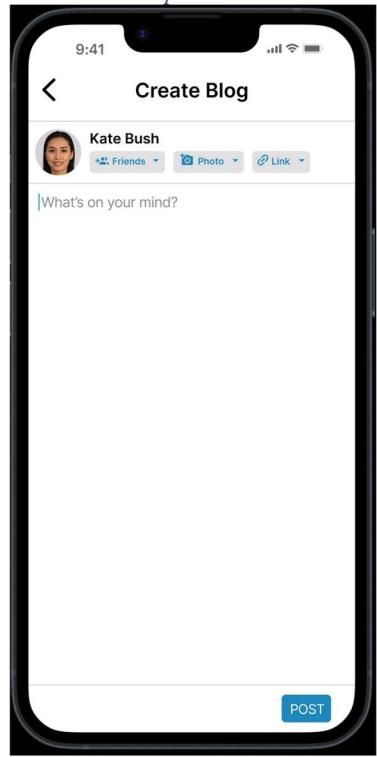


Figure 26. Choose Picture Popup (7.1.1.1) - Upon Clicking "Photo" Button



Figure 27. Choose Picture Popup (7.1.1.2) - Picture Selected

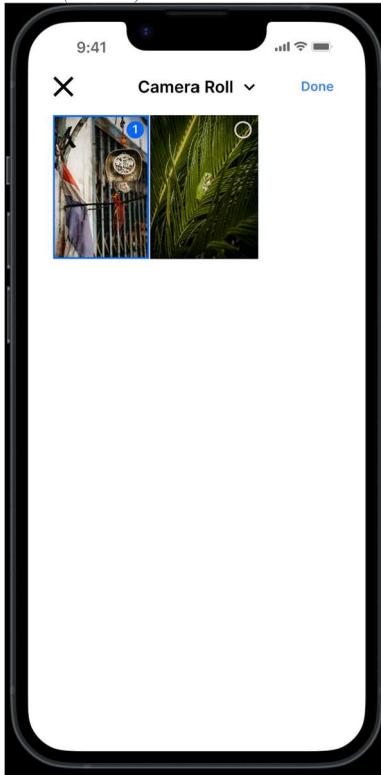


Figure 28. Create Blog Popup (7.1.2) – With Selected Picture



Figure 29. Blog Published Popup (7.2)

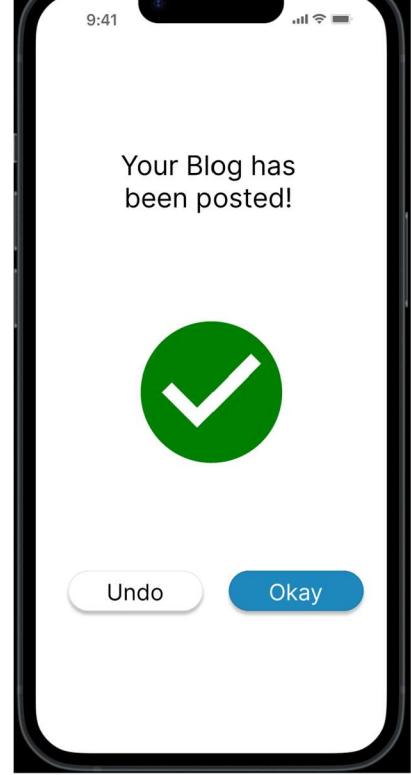
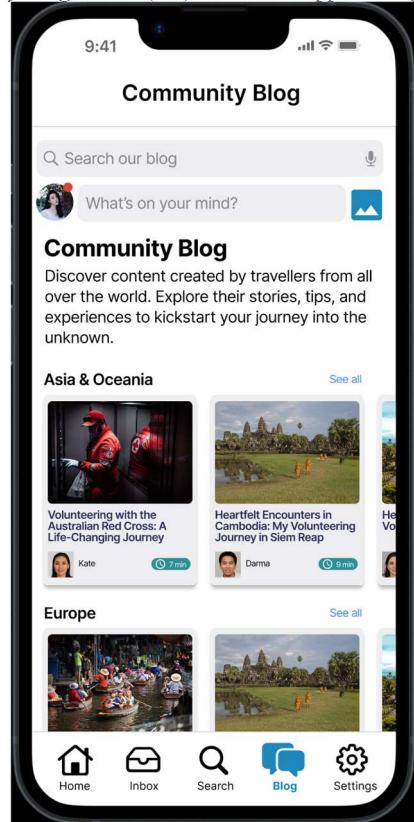
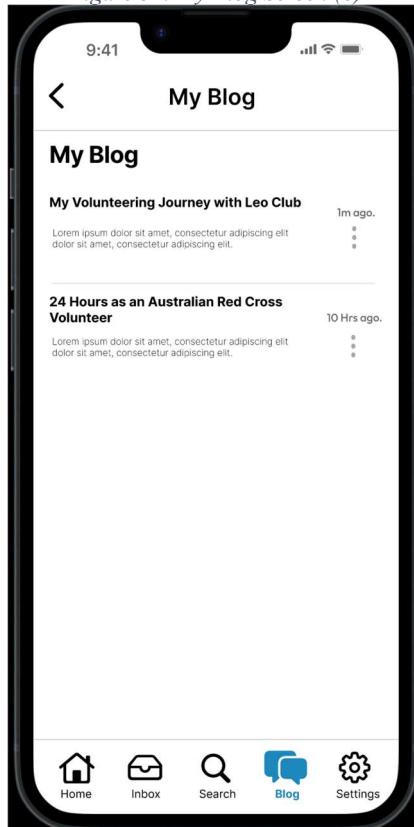


Figure 30. Community Blog Screen (7.3) – Red Dot Appeared After Publishing a Blog



My Blog Screen [Vincent]

Figure 31. My Blog Screen (8)



Selected Blog Screen [Vincent]

Figure 32. Selected Blog Screen (9.1) - Vertical Scroll Enabled

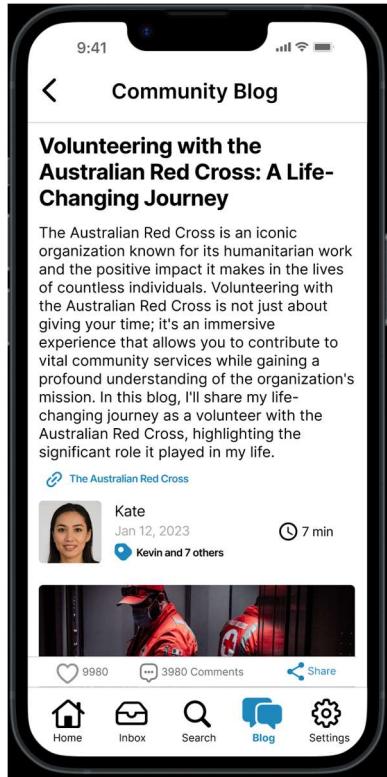


Figure 33. Selected Blog Screen (9.1.1) - With Liked Enabled

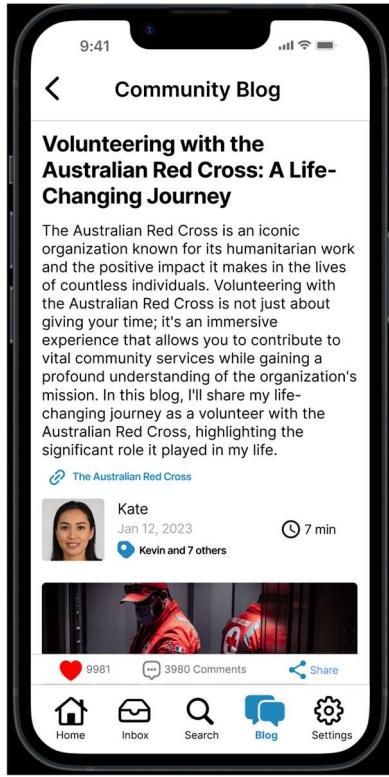


Figure 34. Share Popup (9.1.2) - Horizontal Scroll Enabled



Settings Screen [Wei]

Figure 35. Settings Screen (10.1) - Vertical Scroll Enabled

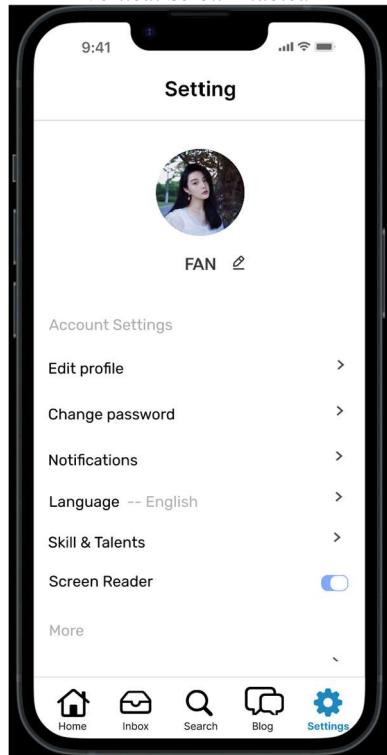


Figure 36. Settings Screen (10.2) - After Scrolling

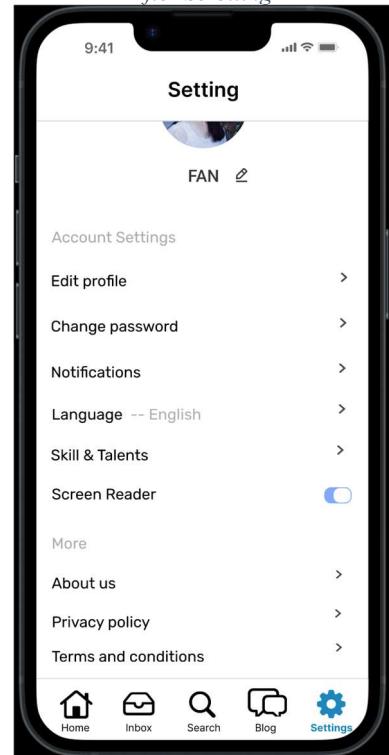
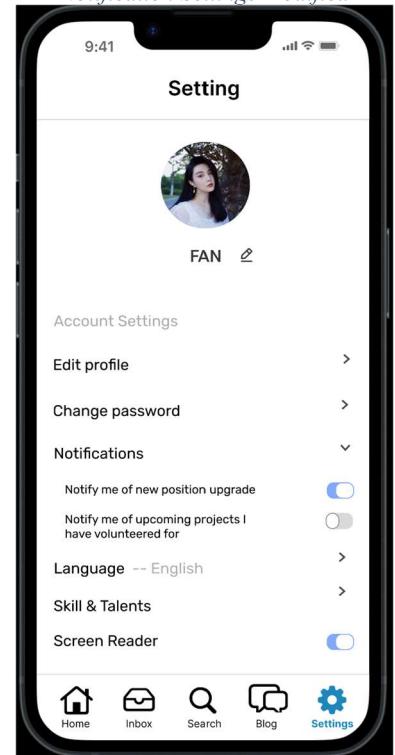
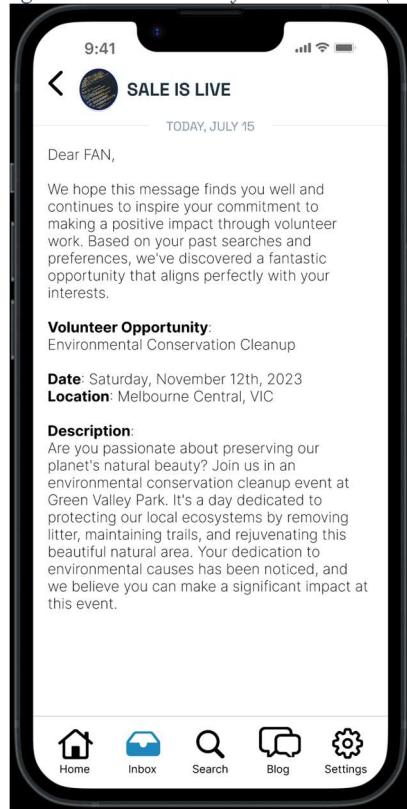


Figure 37. Settings Screen (10.3) - Notification Settings Modified



Selected Notification Screen [Vincent]

Figure 38. Selected Notification Screen (11)



Layers/Screens Deep Summary:

Table 1. Layers/Screens Deep Summary

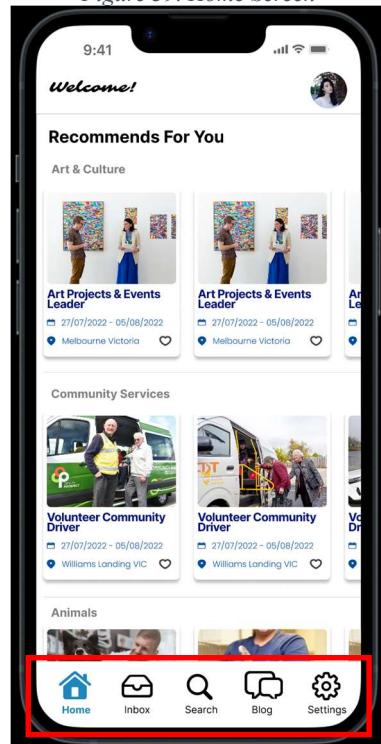
Requirement	Number of Layers Deep	Path
Allow users to search for volunteer positions based on their skills.	2	Home Screen – Search Screen & Search Results Screen – Selected Volunteer Screen
Allow users to apply for open volunteer positions they find through the app.	2 OR 3	Home Screen – Selected Volunteer Screen – Application Screen OR Home Screen – Search Screen & Search Results Screen – Selected Volunteer Screen – Application Screen
Allow users to recommend volunteer positions to friends they think might be suited.	2 OR 3	Home Screen – Selected Volunteer Screen (Click on Share Button) – Chat Screen OR Home Screen – Search Screen & Search Results Screen – Selected Volunteer Screen (Click on Share Button) – Chat Screen
Allow users to receive notifications about the latest volunteer information based on their search history and preferences.	2	Home Screen – Inbox Screen – Selected Notification Screen
Allow users to share their volunteer experiences in a forum (blog) and all users can view it.	3	Home Screen – Blog Screen – Selected Blog Screen (Click on Share Button) – Chat Screen

2.3. One Design Guideline Implemented Per Screen

1. Home Screen - Mapping in Norman's principles

The bottom navigation bar adheres to mapping by displaying a clear and intuitive arrangement of navigation options that correspond to users' mental models. By organizing the navigation elements in a logical sequence and familiar conventions, the app's navigation bar facilitates effortless and instinctive exploration, minimizing cognitive load. In addition, when a user clicks one option, the icon and label will change the colour to stand out, which signs the user where they are.

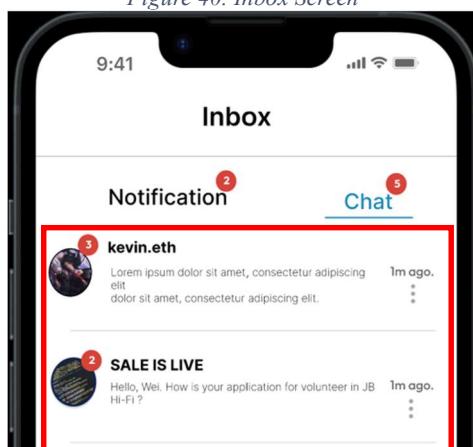
Figure 39. Home Screen



2. Inbox Screen - Similarity in Grouping and Gestalt laws

All the messages listed are the same design, which means they have the same structure, same colour, same text size and weight for title and contents. They can be perceived as a group.

Figure 40. Inbox Screen



3. Chat Screen - Contrast in visual design principles

The contrast of colours between my message (blue) and friend's message (grey) is clear in chatting page. This comparison can help user distinguish and group the messages.

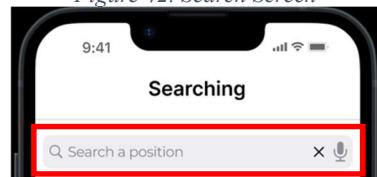
Figure 41. Chat Screen



4. Search Screen - Affordance in Norman's principles

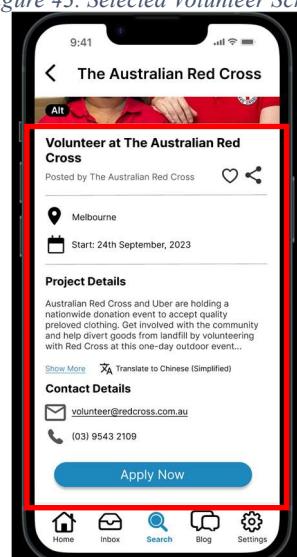
The search bar is used for utility navigation. It communicates clickable input field and clear button means deleting the text in search bar just by clicking it.

Figure 42. Search Screen



5. Selected Volunteer/Position Screen - Fitts's law

Figure 43. Selected Volunteer Screen



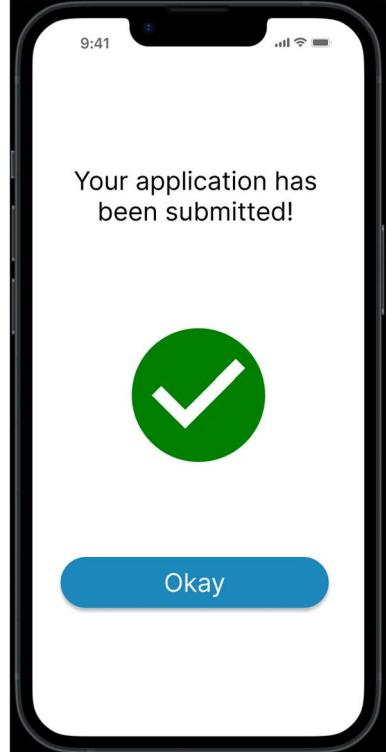
Many items are close together with a reasonably large interactive element such as “Apply now” button. The user does not have to move much between content and clickables, resulting

in quicker and more precise interactions, in line with Fitts's Law, which underscores the relationship between target size and distance, and their impact on the efficiency of user interactions.

6. Application Screen - Offer informative feedback in Schneiderman 8 Golden Rules

After a user successfully submits the application form, there will be a popup window showing up, which gives the user positive feedback.

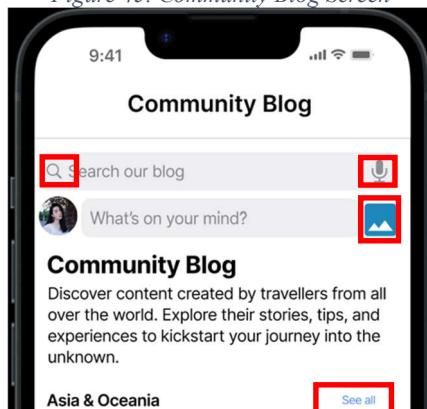
Figure 44. Application Submitted Popup



7. Community Blog Screen - Signifiers in Norman's principles

There are many icons and signs to communicate what actions we can do. For example, the magnifying glass means it is a search input. Microphone means it allows voice input. Picture icon will go to select images for creating a blog. “See all” also signifies we can click it to see more blogs.

Figure 45. Community Blog Screen



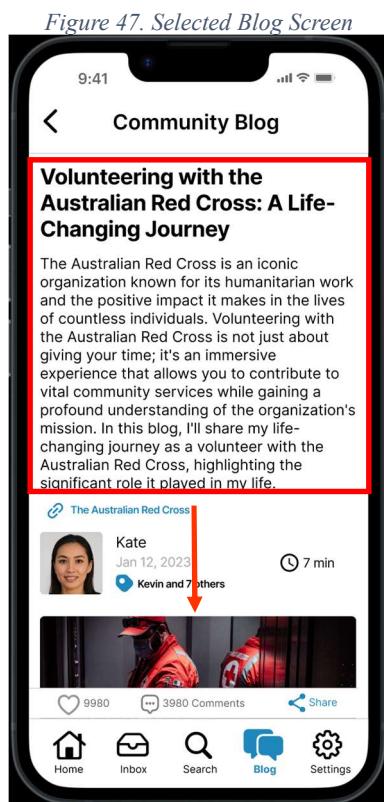
8. My Blog Screen - Permit easy reversal of actions

Back button, indicated as the left arrow icon on the left top of the screen, allows the user to go back to the Blog screen. Clicking this button permits easy reversal of user actions if the user wants to go back to the Blog community page.



9. Selected Blog Screen - Hierarchy in visual design principles

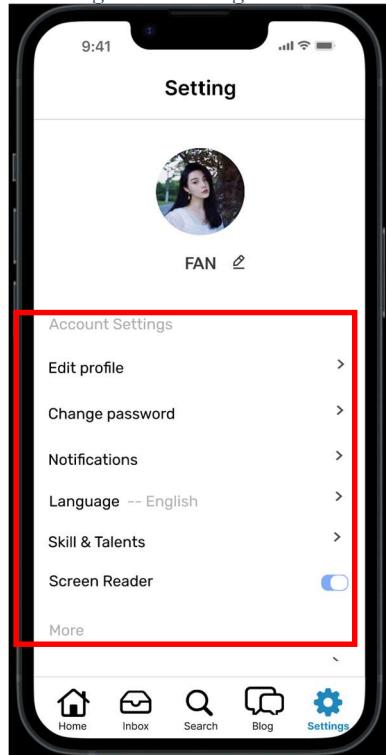
The blog detail page shows the difference in importance between objects. It used different sizes, colours, and positions to differentiate between blog titles and content. The top one is most important and the content one is less important as the screen scrolls down.



10. Settings Screen - Balance in visual design principles

The alignment between setting options creates a visual connection between them, building an organized layout. This organized layout not only enhances aesthetic appeal but also promotes intuitive interaction.

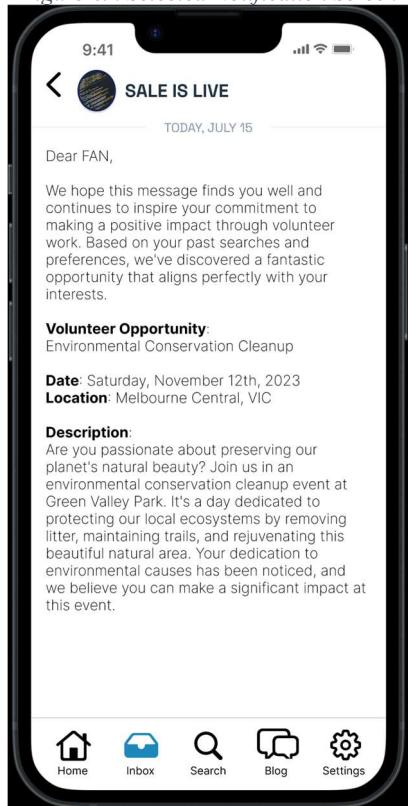
Figure 48. Settings Screen



11. Selected Notification Screen – Proximity in Grouping and Gestalt laws

On the selected notification screen, all associated information (i.e., bolded text and its respective content) is close to each other, which makes them a group.

Figure 49. Selected Notification Screen

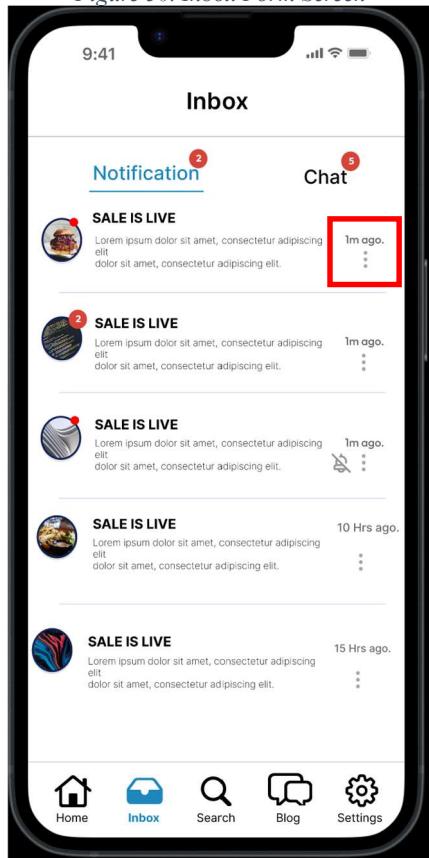


2.4. Three Accessibility Guidelines Implemented Throughout the Prototype

1. Operability

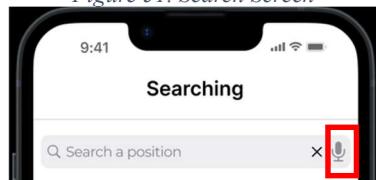
Inbox and Selected Blog page: The larger clickable area of the buttons on the inbox page ensures a smoother interaction, especially for users with dexterity issues, increasing the likelihood of successful action execution and goal achievement. In the Figma, the “vertical ellipsis” icon’s hitbox is designed bigger than the icon itself.

Figure 50. Inbox Form Screen



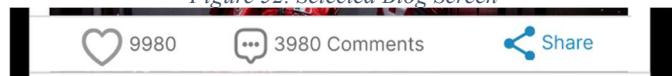
Search page: The utilization of voice input on the search page, indicated with a prominent microphone icon, enables users with physical impairments or visual disabilities to perform searches effectively, enhancing overall operability and inclusivity.

Figure 51. Search Screen



Selected blog page: The implementation of larger hitboxes in the Heart, Comment, and Share areas help people with motor impairments such as tremors achieve their goals.

Figure 52. Selected Blog Screen



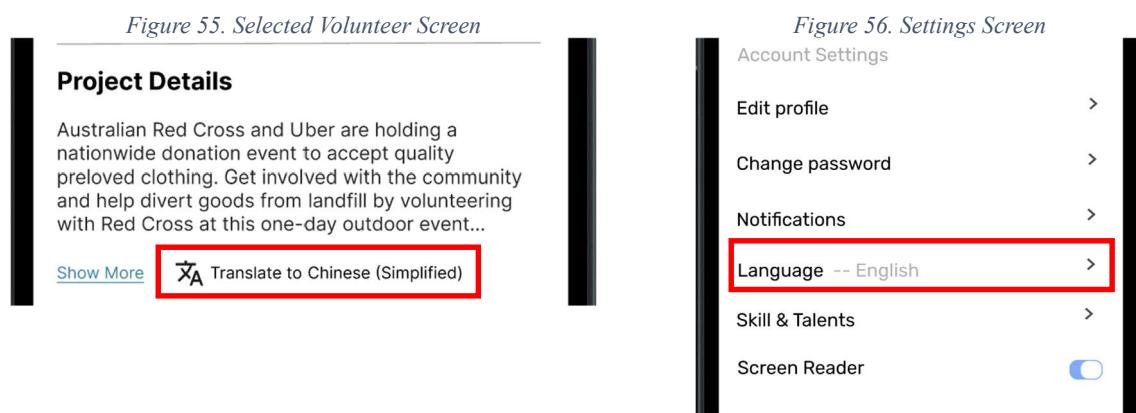
2. Perceivable

Implementing alternative text on the banner image in the Selected Volunteer/Position screen and during image editing on the Create Blog page ensures that users with visual impairments can perceive and comprehend the visual content, promoting accessibility. Furthermore, on the settings page, the provision of a "Screen Reader" toggle on the Settings page caters to users with low vision, enabling them to access and comprehend app content seamlessly.



3. Understandable

The “Translate” feature on the Selected Position screen and the "Switch Language" option on the Settings page promote inclusivity and enhance understandability, enabling users from diverse linguistic backgrounds to access and comprehend the app's content easily. By facilitating language customization and providing translation support, the app ensures that users can grasp information and navigate the interface effortlessly, emphasizing the significance of the universal accessibility principle.



2.5. Changes Made from the Low-Fidelity to the High-Fidelity Prototype

The following list is the changes made from the low-fidelity prototype to the high-fidelity prototype with their respective justification:

1. Removing a bell icon in the upper-right corner of the home screen.

Justification: Consistency in navigation design as discussed in Week 7 material is crucial to prevent user confusion and reduce the cognitive load associated with adapting to multiple access points for the same feature (i.e., bell and inbox icons). Therefore, we replace the bell icon with profile button, which is another most common UI element in the upper-right corner, to maintain a single access point for a specific feature and

Figure 57. Low-Fidelity Home Screen

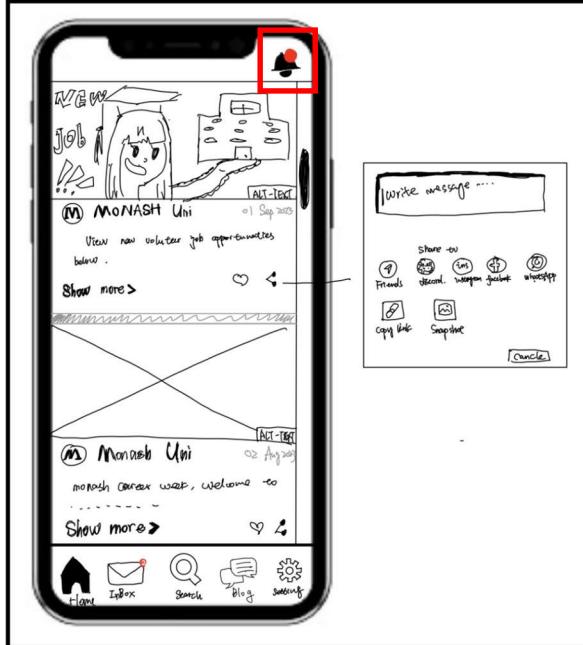
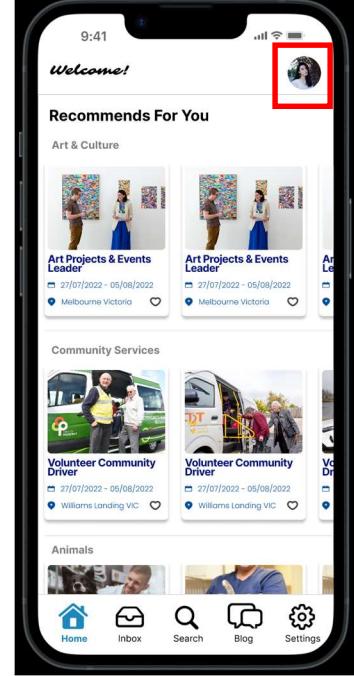


Figure 58. High-Fidelity Home Screen

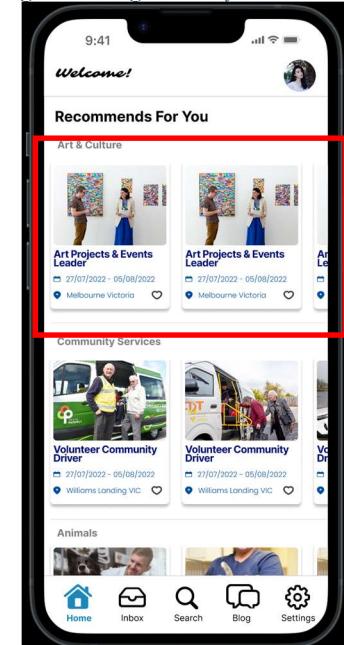


2. Designing a new home screen with a catalogue of "recommended for you" content organized into multiple sections with horizontal scrolling, limiting each section to have only 5 elements.

Figure 59. Low-Fidelity Home Screen



Figure 60. High-Fidelity Home Screen



Justification: Long lists of items can overwhelm users with too much information to process. By organizing content into manageable sections, users can focus on one section at a time based on their interest and reduce cognitive load. This design decision helps us to encourage a meaningful grouping of items as discussed in the guidelines for menu design. In addition, we also limit each section to have only 5 elements because this will highlight the most relevant and engaging content for users based on liked and shared algorithms to encourage user engagement as well as reduce cognitive load.

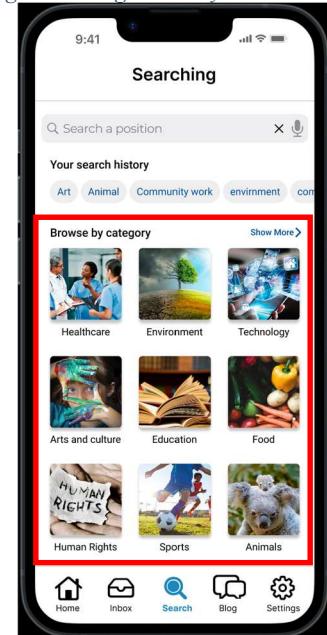
- Designing a new search screen to include “Browse by category” with images and labels instead of just keywords.

Justification: Through located labels and images in the same boundary, each keyword is perceived as a singular group. The implementation of this common region principle helps users understand the relationships between items and quickly locate what they are looking for. Furthermore, users can also recognize and identify the content they are interested in through visual images and labels without having to remember specific terms or keywords, which aligns with the “Recognition rather than recall” that reduces the cognitive load associated with recalling information.

Figure 61. Low-Fidelity Search Screen



Figure 62. High-Fidelity Search Screen



- Having larger interactive elements and hit boxes. (In the justification, we will be using Application Screen)

Justification: Based on Fitts's law, larger interactive elements and hit boxes are easier to click or tap on, reducing the chances of mis-taps. This aligns with the principle of efficiency, as users can interact with the interface more quickly and accurately. In addition, this also aligns with the “Operable” WCAG principle because it increases the chances for people with motor or visual impairments to successfully interact with the content.

Figure 63. Low-Fidelity Application Form

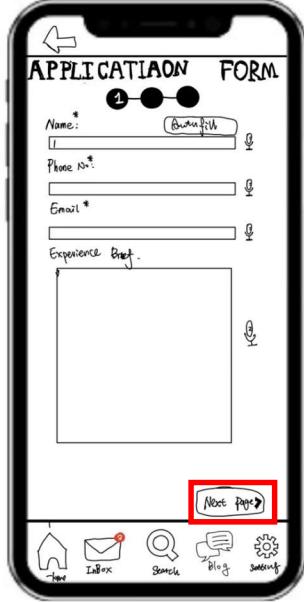
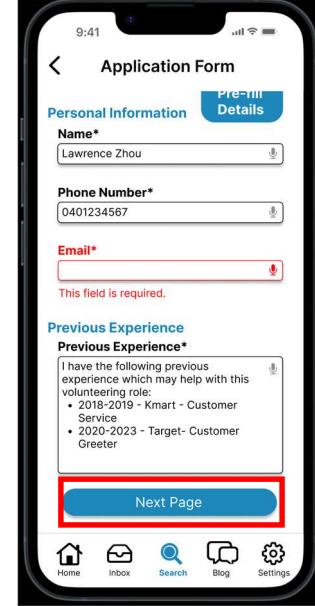


Figure 64. High-Fidelity Application Form



5. Removing the scroll bar.

Figure 65. Low-Fidelity Inbox Screen

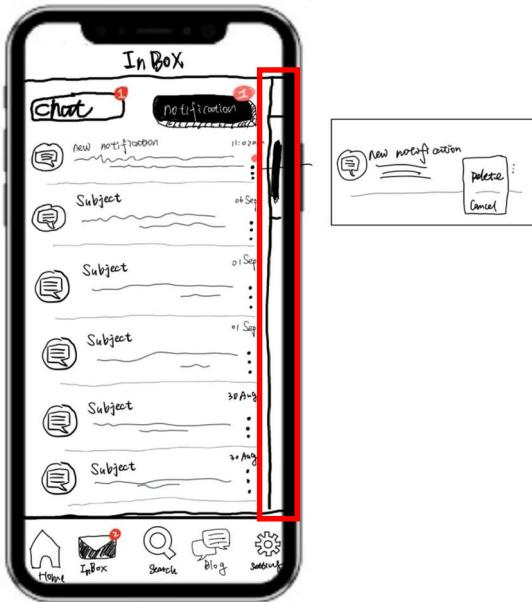
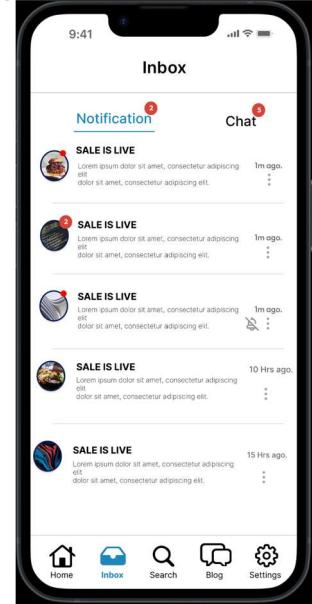


Figure 66. High-Fidelity Inbox Screen



Justification: Removing a scroll bar reduces visual complexity and simplifies the interface because users are more likely to find the content they need quickly when there are fewer distractions. This aligns with the “Aesthetic and minimalist design” principle. Furthermore, we have implemented Gestalt principle of continuation by showing that a scrollable area extends beyond the visible screen space, indicating to users that there is more content to be revealed through scrolling.

3. Individual Work – Heuristic Evaluation

3.1. Vincent's Heuristic Evaluation

3.1.1. Introduction

One way to explore and evaluate our high-fidelity prototype is by performing a Nielsen's 10 heuristics evaluation model. In this section, I will use this model and identify some UI elements in our screens and determine whether it is a compliance or violation for each Nielsen's heuristic rule. Nielsen's 10 heuristics evaluation approach will help me to identify potential usability issues because it provides a comprehensive framework for assessing the design from multiple angles, which leaves minimal room for oversight (i.e., due to its 10 rules). Additionally, one of the key advantages of this approach is its ability to identify usability issues early in the design process with relatively low cost, easy to coordinate, and provide immediate actionable feedback to improve the user experience compared to other usability testing methods (David et al., 2018).

3.1.2. Table of Compliances

Table 2. Vincent's Table of Compliances

#	Instance of Compliance	Heuristic Rule	Evidence	Design Choices Justification
1	Use of breadcrumb trail to indicate progress in multi-page application process (i.e., 3 pages in total)	#1	Figure 67. Multi-page Application Process	The breadcrumb trail helps users to monitor their application form completion status. Upon clicking the "Next Step" button, this breadcrumb trail will provide users with visible and timely updates on their progress, which aligns with the visibility of system status heuristic.
2	Use of familiar icons and phrases that are universally understood by users in their preexisting mental model	#2	Figure 68. Familiar Icons and Phrases in the Community Blog Screen	The magnifying glass icon is a widely recognized symbol for initiating a search action whereas the microphone icon for initiating a voice input, which is consistent with the user's real-world knowledge and expectations that these two symbols are for searching and speaking, respectively. Furthermore, "What's on your mind?" phrase is mirroring how people might inquire about someone's thoughts in a real-world conversation, which aligns with users' understanding of expressing their opinions or sharing information.
3	Use of bottom navigation bar and standard iOS back button	#4	Figure 69. Bottom Navigation Bar and iOS Back Button	In most mobile applications, it is a common standard to place the primary navigation menu at the bottom of the screen, with a different colour contrast for the selected menu option (i.e., blue colour in our design) to indicate the user's current location within the application. Furthermore, since we are designing iOS application, the placement of "Back" icon is in the upper-left corner of the screen to ensure consistency and iOS standard

				practices.
4	Use of date picker in filling the application form	#5	Figure 70. Date Picker in the Application Form Screen	In the step 2 out of 3 steps in the application form, the date picker is introduced for both “What date are you able to start?” and “Until when do you want to volunteer?” inputs to minimize the risk of manual input errors, such as mistyped dates or incorrect formats. This aligns with the error prevention heuristic.
5	Use of search history feature in the Searching screen	#6	Figure 71. Search History Feature	The design choice of search history feature adheres to the “recognition rather than recall” heuristic because by automatically save a history of the user’s recent search queries, it reduces the need for users to recall past search keywords, which enables them to recognize and selects from their listed previous queries. Eventually, this feature will help users to reduce their cognitive load.
6	Use of error messages in the volunteering application form that guide users on how to recover from the error	#9	Figure 72. Error Message in the Email Field	The design choice of changing the colour of a particular input field into red should immediately help users to recognize that an error has occurred. The red error message below a particular input field provides specific information about the nature of the error for users to diagnose as well as guide them on how to recover from the error. This aligns with the help users recognize, diagnose and recover from errors heuristic.

Figure 67. Multi-page Application Process

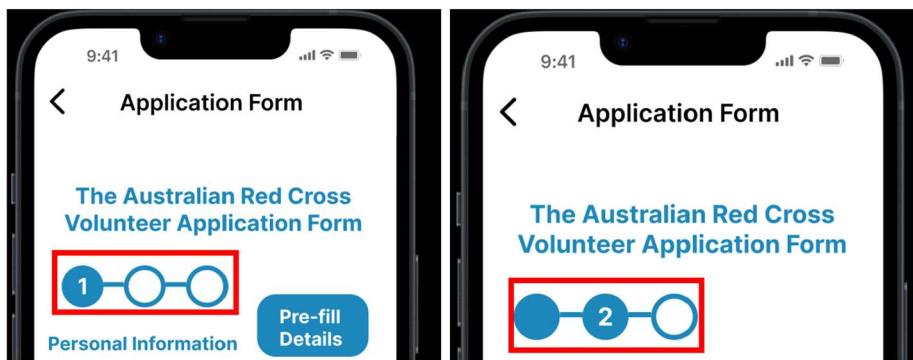


Figure 68. Familiar Icons and Phrases

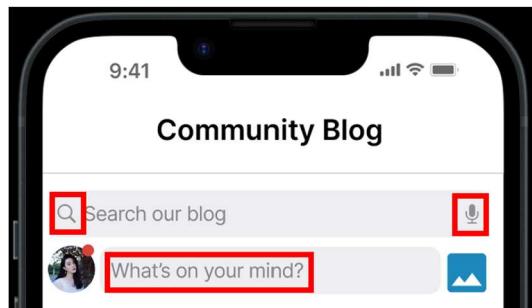


Figure 69. Bottom Navigation Bar and iOS Back Button



Figure 70. Date Picker in the Application Form Screen

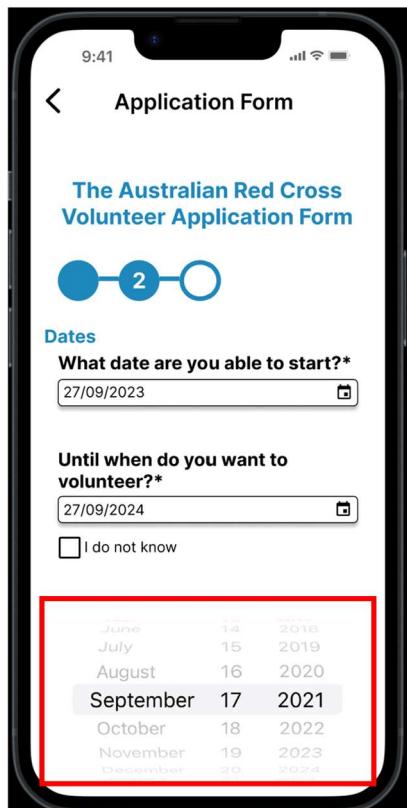


Figure 71. Search History Feature

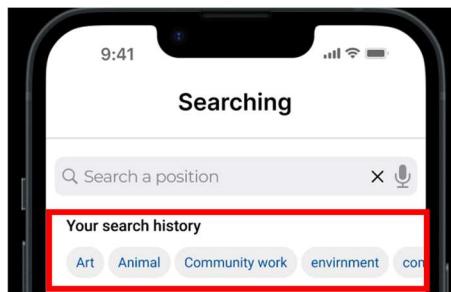
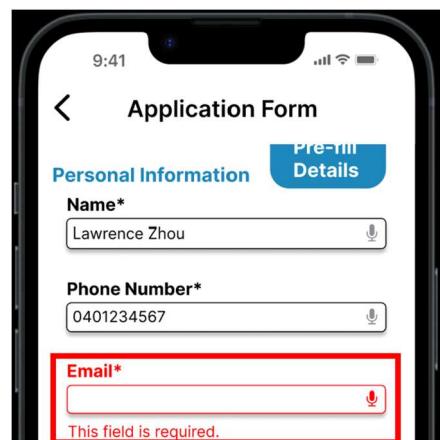


Figure 72. Error Message in the Email Field



3.1.3. Table of Violations

Table 3. Vincent's Table of Violations

#	Instance of Violation	Heuristic Rule	Evidence	Severity Rating	Recommendation
1	Not all points in the application process have a straightforward way to leave the form	#3	Figure 73. No “Cancel” Button in the Application Form	4	Add “Cancel” button on every step of the application form
2	No advanced search options for experienced users	#7	Figure 74. No Advanced Search Options for More Experienced Users	2	Add “Enable advanced search” button in the Search screen.
3	The existence of a rarely needed “vertical ellipsis” icon in the Inbox screen	#8	Figure 75. Rarely Needed “Vertical Ellipsis” Icon in the Inbox Screen	1	Remove the “vertical ellipsis” icon and instead a popup to delete or mute the chat/notification will appear when users long-press (tap and hold) on a selected chat/notification.
4	No documentation and help feature in the application	#10	Figure 76. No Documentation and Help Feature in the Application	3	Add “Help Centre” page and its access point is located as one of the options in the Settings page.

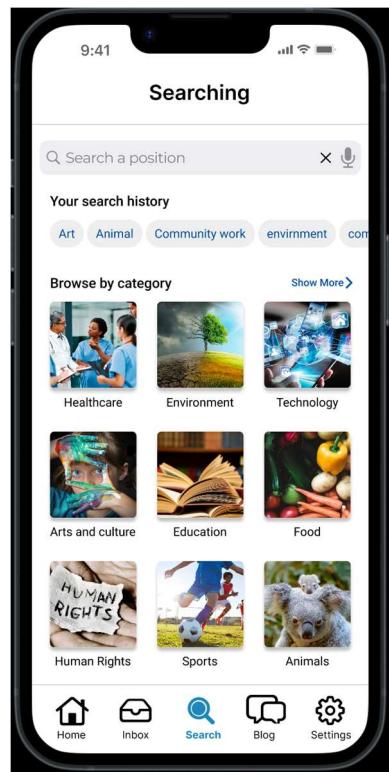
Figure 73. No “Cancel” Button in the Application Form

The figure consists of three mobile phone screenshots showing the "Application Form" process for the Australian Red Cross Volunteer Application. Each screenshot has a timestamp of 9:41 at the top.

- Step 1:** The screen is titled "Application Form". It shows "Personal Information" fields: "Name*" (Lawrence Zhou), "Phone Number*" (0401234567), and "Email*". Below these is a red error message: "This field is required." At the bottom is a "Next Page" button.
- Step 2:** The screen is titled "The Australian Red Cross Volunteer Application Form". It shows "Dates" fields: "What date are you able to start?*" (27/09/2023) and "Until when do you want to volunteer?*" (27/09/2024). There is a checkbox labeled "I do not know". At the bottom is a "Next Page" button.
- Step 3:** The screen is titled "The Australian Red Cross Volunteer Application Form". It shows an "Application Submission Agreement" section. It contains a large text box with legal language about consent and age, and a checkbox labeled "I agree to this statement". Below the text box is a "Apply Now" button.

Note: In Step 1, users can still use the “Back” button in the upper-left corner. However, in Step 2 and 3, users need to click on the “Back” button multiple times to exit the form.

Figure 74. No Advanced Search Options for More Experienced Users



Note: No advanced filter such as the search phrase can contain “Keyword A” **OR** “Keyword B”.

Figure 75. Rarely Needed “Vertical Ellipsis” Icon in the Inbox Screen

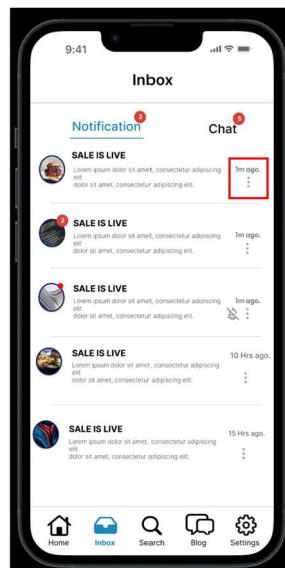
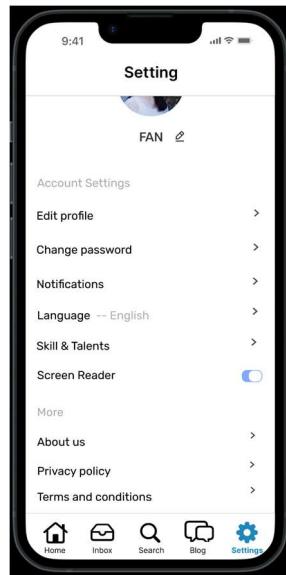


Figure 76. No Documentation and Help Feature in the Application



Note: No “Help Centre” option in the Settings page or any other locations within the application.

3.1.4. Violation and Severity Ratings

Violation #1:

Not all points in the application process have a quick way to leave the form.

Description:

The absence of a quick way to leave the application form on the Step 2 and 3 violates the principle of user control and freedom because it limits users to easily exit or navigate away when they want to reconsider their volunteering opportunity choices, or simply exit the application form without completing it. Without this freedom, users may feel trapped or frustrated, which can result in a negative user experience (Nielsen, 2020), particularly when they have to click on the “Back” icon in the upper-left corner multiple times to exit the form (i.e., if there are in the Step 3, they need to click the “Back” icon 3 times). Another option is to click on the bottom navigation bar into another screen, and start from the searching process again (i.e., cannot navigate to the current selected volunteer position).

Justification for Severity Ratings:

Table 4. Severity Rating Table of Violation #1

Frequency	Impact	Persistent	Severity Rating
4	3	4	4

The frequency of interaction with the application form among users will be very high since applying for a volunteer opportunity is a core requirement for our application, which results in the frequency rating of 4. In terms of impact, users are not being able to freely leave the form at any point although they still can click on the “Back” button multiple times or navigate to another screen can lead to frustration and a negative user experience, which results in the impact rating of 3. Since the issue always exists on Step 2 and 3 of the application form (more than 50% of the application process), it leads to a persistence rating of 4. Overall, the final severity rating is 4 or usability catastrophe for violation #1.

Justification for Recommendation:

- (Add “Cancel” button on every step of the application form.)

By adding a "Cancel" button, users gain the ability to exit the application form at any point, which directly enhances their sense of control and freedom (Nielsen, 2000), and aligns with heuristic rule #3.

Violation #2:

No advanced filter options for experienced users.

Description:

The absence of advanced search options in the application search screen limits the experienced users with the opportunity to search more efficiently and effectively, which violates the principle #7 that an interface should cater to both novice and expert users (Nielsen, 2020). Some useful examples for expert users include Boolean operators search that allow users to combine keywords using AND, OR, and NOT. By neglecting to provide advanced search options, the application disregards the potential for improving the user experience for the more proficient users.

Justification for Severity Ratings:

Table 5. Severity Rating Table of Violation #2

Frequency	Impact	Persistent	Severity Rating
2	1	2	2

Although as Nielsen (2001) said, “most users cannot use advanced search or Boolean query syntax”, there are some experienced users that would love this feature. Since those experienced users that can use advanced search are rare (i.e., mainly programmer), the frequency rating for this issue is 2. In terms of impact, experienced users can still use the traditional search box to search for their desired volunteering opportunities although having such feature will slightly improve their productivity and efficiency, which results in the impact rating of 1. This issue is likely to be continuous for experienced users (i.e., mainly programmer) if the advanced filtering options are not provided, which results in the persistence rating of 2. Overall, the final severity rating is 2 or minor usability problem for violation #2.

Justification for Recommendation:

- (Add “Enable advanced search” button in the Search screen.)

According to Nielsen (2001), designers should not offer advanced search directly in the homepage (i.e., in our case, it is Search screen) due to frequent misuse. To enhance the user experience, presenting advanced search as a button that users can link to from the search page will abide to Nielsen’s statement above.

Violation #3:

The existence of a rarely needed “vertical ellipsis” icon in the Inbox screen.

Description:

The existence of a rarely needed “vertical ellipsis” icon for deleting or muting in the Inbox screen introduces unnecessary complexity and increase cognitive load by adding an element that does not serve a vital purpose of chat or notification. Therefore, it diverts users’ attention for more critical elements in the interface such as the chat bubbles and requires users to

acknowledge its presence and understand its purpose, which violates the principle #8 that interfaces should allow users to complete tasks swiftly and with minimal cognitive load (Nielsen, 2020).

Justification for Severity Ratings:

Table 6. Severity Rating Table of Violation #3

Frequency	Impact	Persistent	Severity Rating
1	1	1	1

Since the icon is a rarely used element, the frequency rating for this issue is 1. The icon presence might confuse some users' understanding of the interface and affect their satisfaction to some extent. However, it does not hinder the primary chatting or notification functionalities, which results in the impact rating of 1. Once they understand that upon clicking the icon will allow them to delete or mute the chat or notification, the confusion of the icon purpose is a one-time problem, which results in the persistence rating of 1. Overall, the final severity rating is 1 or cosmetic usability problem for violation #3.

Justification for Recommendation:

- (Remove the “vertical ellipsis” icon and instead a popup to delete or mute the chat/notification will appear when users long-press (tap and hold) on a selected chat/notification.)

Removing the "vertical ellipsis" icon simplifies the interface, making it cleaner and less cluttered. Users can consistently apply the same long-press gesture to access options like deleting or muting, promoting the "Aesthetic and minimalist design" heuristic.

Violation #4:

No documentation and help feature in the application.

Description:

While the principle #10 does not mandate that every application must have documentation, it does emphasize the importance of providing assistance when needed (Nielsen, 2020). Users who encounter difficulties or have questions in completing their tasks may become frustrated and may not be able to effectively engage with the application due to the absence of documentation and help feature, which violates the principle #10 because this application fails to provide appropriate or effective assistance to users when they need it.

Justification for Severity Ratings:

Table 7. Severity Rating Table of Violation #4

Frequency	Impact	Persistent	Severity Rating
2	3	3	3

Since our application has strictly followed many usability design principles such as Norman's principles and Schneiderman's eight golden rules, novice users, or those who are new to the volunteer application, are more likely to encounter this issue frequently as they need assistance. With other available volunteer applications such as Helper Helper, Golden, and POINT (Whatmore, 2023), the number of these novice users are arguably small, which results in the frequency rating of 2. The absence of guidance and support may lead to user frustration, difficulty in understanding how to use the application, and increased likelihood of errors or abandonment, which results in the impact rating of 3. This issue is likely to be

continuous for novice and experienced users if the documentation and help features are not provided, which results in the persistence rating of 3. Overall, the final severity rating is 3 or major usability problem for violation #4.

Justification for Recommendation:

- (Add “Help Centre” page and its access point is located as one of the options in the Settings page.)

Having a dedicated "Help Centre" page provides the opportunity for the application to offer reactive guidance through articles, FAQs, or tutorials (Joyce, 2020). It also ensures that users can easily find help when they need it, which aligns with the “Help and documentation” heuristic.

3.1.5. Conclusion

In conclusion, my evaluation of the volunteer app's interface using usability heuristics revealed several areas of compliance, particularly in adhering to established standards and enhancing efficiency for a more professional appearance. Nonetheless, there are several pressing issues that require immediate attention, including the absence of a "Cancel" button and advanced search options, visual clutter stemming from rarely used “vertical ellipsis” icon, and the lack of a readily accessible help and documentation section. By implementing the recommendations, the app has the potential to enhance its functionality, refine its visual appearance, and ultimately cultivate a more satisfactory user experience.

3.2. Wei's Heuristic Evaluation

3.2.1. Introduction

In this part, I am going to perform usability testing for our designed volunteer app by using Nielsen's heuristic evaluation. Nielsen's heuristic evaluation offers a systematic approach to identifying potential usability issues by leveraging 10 predefined rules, which allow me to compare each element in our designed UI pages and identify compliance and violation. This approach helps me identify design flaws, consistency issues, and possible user experience roadblocks early in the development phase. Because of this, our design team can make the required adjustments, polish the user interface, and produce an app that is easier to use and more engaging for users.

3.2.2. Table of Compliances

Table 8. Wei's Table of Compliances

#	Instance of Compliance	Heuristic Rule	Evidence	Design choices justification
1	Progress from Step 1 to Step 3 displays the application status	#1	Figure 77. Application Form Progress	The form step indicator displays progress in multi-page processes so that the applicant can keep track of the form. The status is visible and timely as the applicant clicks the “Next Step”.
2	Filters and Sort features provided for advanced search	#2	Figure 78. Magnifying Glass and Microphone Icons	Employing a magnifying glass for search and a microphone icon for voice input on the blog page aligns with the match between the system and real-world heuristic, as these visual representations reflect widely recognized symbols for searching and speaking, ensuring intuitive interaction.

3	Use familiar icons and labels to follow common standards	#4	Figure 79. Bottom Navigation Bar	The bottom navigation bar follows common standards by using familiar icons and labels, which help users understand what this feature is. After the user clicks an option, the icon and word change colour to stand out from others. The user can know where they are.
4	Use constraints of the dropdown list and date selection to prevent errors	#5	Figure 80. Dropdown Lists and Date Selections	Applying constraints to the dropdown list for distance fields and implementing date selection that mandates the end date to be after the start date aligns with error prevention. The system effectively minimises potential input errors by providing available options, ensuring data accuracy.
5	Search history feature to help user reduce memory load	#6	Figure 81. Search History Options	The search history options align with the recognition rather than recall by displaying past queries, minimizing the need for users to recall specific terms. By offering recognizable choices, the system reduces cognitive load, facilitating quicker and more accurate search operations.
6	Filters and sort feature to provide efficient use for users	#7	Figure 82. Filters and Sort for Search Results	The filter and sort feature in search results adheres to flexibility and efficiency of use for both novice and experienced users. Filters empower users to customize their search results and quickly locate their preferred information.
7	Email input field is prompted to be required and help users recover from errors	#9	Figure 83. Required Email Value	The email input field is marked as red and requires an entry that aligns with helping users recognize and recover from errors. The red colour for this field reminds users of the error and the error message explains what the problem is and provides a solution.

Figure 77. Application Form Progress

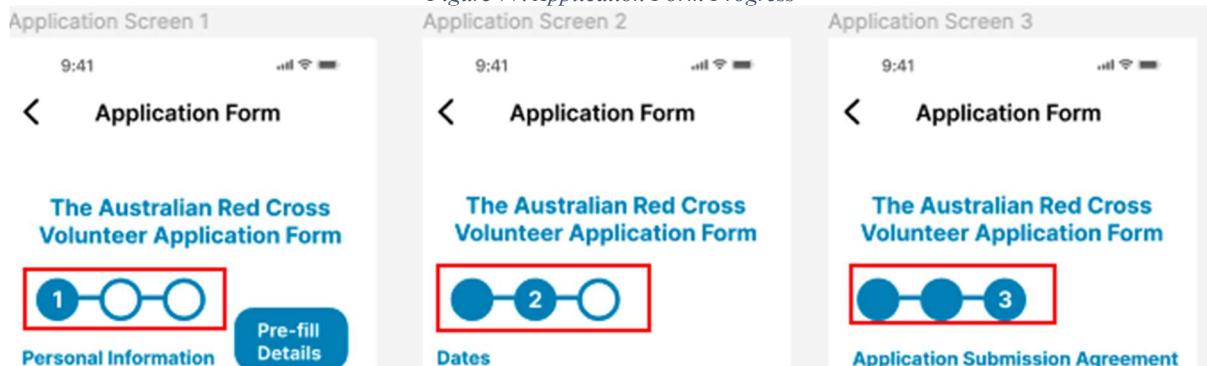


Figure 78. Magnifying Glass and Microphone Icons

Community Blog

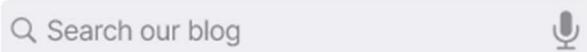


Figure 79. Bottom Navigation Bar



Figure 80. Dropdown Lists and Date Selections

Filter

Distance
0 - 5 km

Date
27/10/2023 to 27/11/2023

Skills
Computer

Search

Figure 81. Search History Options

Searching

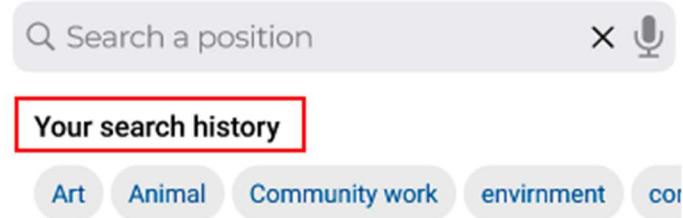


Figure 82. Filters and Sort for Search Results

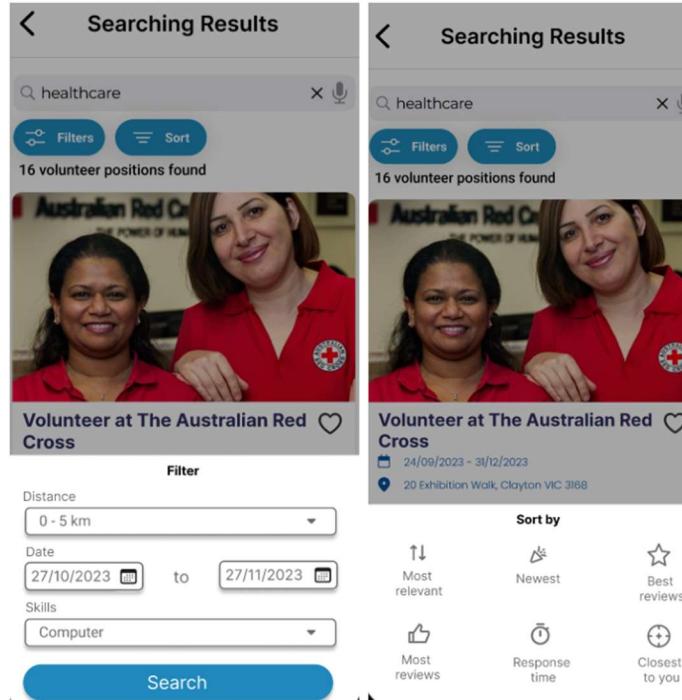


Figure 83. Required Email Value

Email*

This field is required.

3.2.3. Table of Violations

Table 9. Wei's Table of Violations

#	Instance of Violation	Heuristic Rule	Evidence	Severity Rating	Recommendation
1	No “Previous page” button to allow for user control and freedom	#3	Figure 84. No “Previous page” Button to Go Back	4	Provide the “Previous page” button on Step 2 and Step 3 of the application form.
2	Rarely used buttons in chatting screen	#8	Figure 85. Rarely Used Mute and Three Dots Buttons in Chatting Screen	2	Remove the mute and 3 dot buttons.
3	No quick help and documentation section for users to find information easily and fast	#10	Figure 86. No “Quick help” Section on the Settings Page	3	Add a quick help page and put an option in Settings page.

Figure 84. No “Previous page” Button to Go Back

The Australian Red Cross Volunteer Application Form

Dates

What date are you able to start?*
27/09/2023

Until when do you want to volunteer?*
27/09/2024

I do not know

no "Previous Page" button to go to last page

Next Page

The Australian Red Cross Volunteer Application Form

Application Submission Agreement

By agreeing to this statement, I agree that the information provided myself when filling out this form is factual. I also agree that as of submission of this form, I am over the age of 18, or that I have received permission from my legal guardians to submit this form.

I agree to provide my account details, including name, age, email address, phone number, as well as the contents filled out in this form to the third party in which I am applying to. I agree that I am able to withdraw my application at any time by contacting the support services of this application, and that a maximum of 2 business days is provided before my withdrawal is confirmed.

I agree to this statement
no "previous page" button to go to last page

Apply Now

Figure 85. Rarely Used Mute and Three Dots Buttons in Chatting Screen

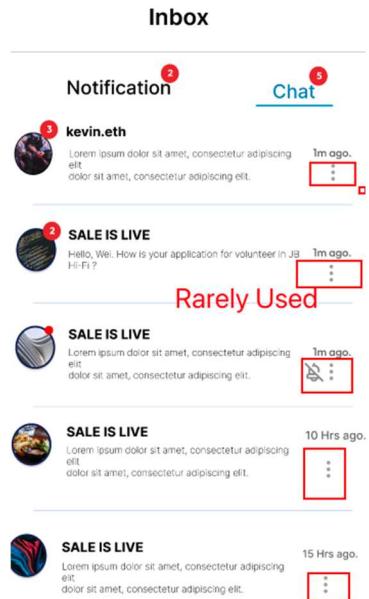
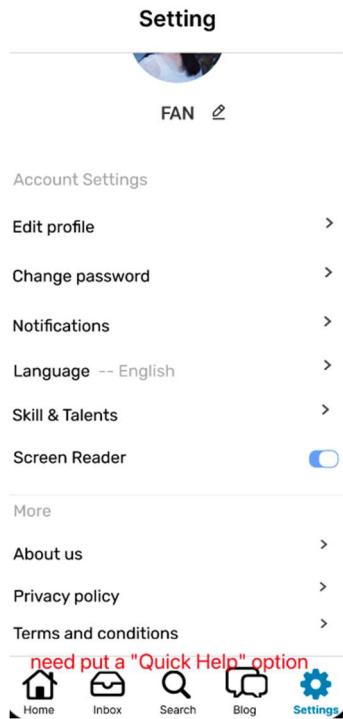


Figure 86. No "Quick help" Section on the Settings Page



3.2.4. Violation and Severity Ratings

1. No "Previous page" button to allow for user control and freedom

Table 10. Severity Rating Table of Violation #1

Frequency	Impact	Persistent	Severity Rating
4	4	4	4

Description: The absence of a "Previous page" button in the application form restricts users from navigating backward, potentially leading to frustration and hindering the completion of the form. This lack of control affects the user experience, particularly during the data input processes.

Justification for Severity Rating: With a severity rating of 4, this issue poses a critical obstacle, impeding users from revisiting or correcting their entries. Without a clear path for users to backtrack, completing the form becomes an arduous task, potentially resulting in data loss and user dissatisfaction.

2. Rarely used buttons on the chatting screen

Table 11. Severity Rating Table of Violation #2

Frequency	Impact	Persistent	Severity Rating
2	2	2	2

Description: The presence of rarely used buttons, such as the mute and 3 dots buttons, in the chatting screen, contributes to visual clutter and unnecessary cognitive load for users. These buttons, not frequently used during normal chatting activities, add complexity without significant functional benefit.

Justification for Severity Rating: Rated 2, this issue indicates a minor problem, as the buttons do not hinder the primary chatting functionalities. While their presence slightly detracts from a minimalist design, their removal would offer a simpler and less confusing interface, contributing to a more pleasant user experience.

3. No quick help and documentation section for users to find information easily and quickly

Table 12. Severity Rating Table of Violation #3

Frequency	Impact	Persistent	Severity Rating
4	3	2	3

Description: The absence of a quick help and documentation section deprives users of a readily accessible resource for information and guidance. This feature is necessary for users to navigate the app or resolve potential issues, leading to frustration and reduced user engagement.

Justification for Severity Rating: Rated 3, this issue is considered a major problem as it affects user onboarding and overall user satisfaction. Without a quick help option, users may struggle to navigate the app effectively, potentially leading to increased support requests. Implementing a quick help section would significantly aid in effective task completion and minimizing user frustration.

3.2.5. Conclusion

To sum up, the heuristic assessment of our volunteer app's interface identified many compliances, especially following common standards and efficiency of use to make our app professional. However, several critical issues demand immediate attention, such as the lack of a "Previous page" button, the visual clutter of infrequently used buttons and the absence of a quick help and documentation section. By implementing the recommended solutions, the app can optimize functionality, improve aesthetics and foster improved user interaction and satisfaction.

3.3. Yazhi's Heuristic Evaluation

3.3.1. Introduction

I used Nielsen's heuristic evaluation on our team's prototype, analysing each screen against the heuristics. This identified usability issues and improvement areas, ensuring our design offers a seamless, user-friendly experience.

3.3.2. Table of Compliances

Table 13. Yazhi's Table of Compliances

#	Instance of Compliance	Heuristic Rule	Evidence	Design choices justification
1	Undo button	#3	Figure 87. Undo Button	That undo option is for someone clicks out by mistake or does not want to post it. That gives users the ability to cancel this posted status. It can enhance user experience.
2	Pre-fill	#6	Figure 88. Pre-fill	The pre-fill function helps users save from the effort of recalling previously entered information. That can help users in reducing cognitive load
3	Sort and filter	#6	Figure 89. Sort and Filter	The sort and filter functions can let users see only the relevant data they need, so users do not need to recall or scroll through vast amounts of

				information. That can help users in reducing cognitive load.
4	Placeholder	#1	Figure 90. Placeholder in the Search Box	This placeholder provides users with a clear indication, informing them that this search box is intended for searching for positions. placeholder letting users know they can enter keywords related to positions here. That provides users with a clear indication of the system's status.
5	Navigation bar	#4	Figure 91. Navigation Bar	The main navigation bar present at the bottom of the screen remain there across all pages and maintain the same order. That helps users always know where to find it.
6	Form validations	#5	Figure 92. Form Validations	Using an asterisk to indicate mandatory fields is a clear hint, informing users which information is essential for form submission. Under the "Email" field, since the user hasn't provided any information, a red "This field is required" prompt is shown. That can provide a hint to users which filed is required and avoids errors.
7	Personalised recommendations	#7	Figure 93. Personalised Recommendations	The system tailors the "Recommends for You" section based on the user's search history. This aligns with the principle of allowing users to tailor frequent actions, as it saves them time by directly presenting content relevant to their interests.
8	Bottom Navigation Icons	#2	Figure 94. Bottom Navigation Icons	The icons for "Home," "Inbox," "Search," "Blog," and "Settings" are conventional symbols that users frequently encounter in various apps and digital platforms. Using these standard icons ensures that users do not need to learn new symbols. They can quickly identify the function of each button.

Figure 87. Undo Button

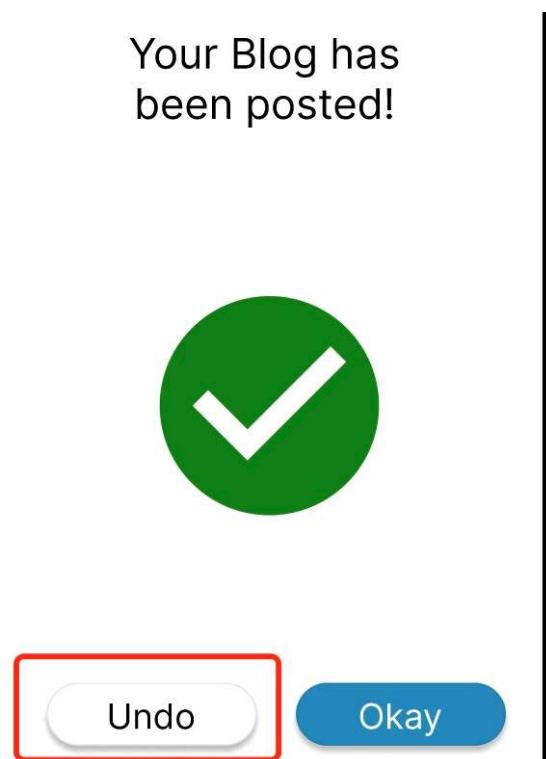


Figure 88. Pre-fill

The screenshot shows the 'Application Form' section of the Australian Red Cross Volunteer Application Form. At the top, there is a blue circular icon with the number '1' and a connection line to another circle. Below it, the title 'The Australian Red Cross Volunteer Application Form' is displayed in blue. A large red box highlights the 'Personal Information' section. Within this section, two fields are also highlighted with red boxes: 'Name*' containing 'Lawrence Zhou' and 'Phone Number*' containing '0401234567'. To the right of the 'Name' field is a blue button labeled 'Pre-fill Details'.

Figure 89. Sort and Filter

The screenshot shows the 'Searching Results' page. At the top, there is a search bar with the placeholder 'healthcare' and a microphone icon. Below the search bar are two buttons: 'Filters' and 'Sort', both enclosed in a red box. The 'Filters' button has a gear icon and the 'Sort' button has a list icon.

Figure 90. Placeholder in the Search Box

The screenshot shows the 'Searching' page. It features a search bar with the placeholder 'Search a position' and a microphone icon. The search bar is also enclosed in a red box.

Figure 91. Navigation Bar

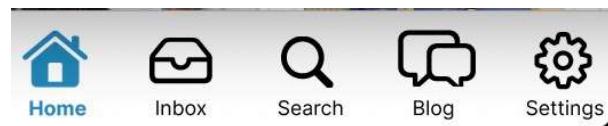


Figure 92. Form Validations

Application Form

The Australian Red Cross Volunteer Application Form

1 —

Personal Information Pre-fill Details

Name*
Lawrence Zhou

Phone Number*
0401234567

Email*

This field is required.

Figure 93. Personalised Recommendations

Recommends For You

Art & Culture

Art Projects & Events Leader
27/07/2022 - 05/08/2022
Melbourne Victoria

Art Projects & Events Leader
27/07/2022 - 05/08/2022
Melbourne Victoria

Community Services

Volunteer Community Driver
27/07/2022 - 05/08/2022
Williams Landing VIC

Volunteer Community Driver
27/07/2022 - 05/08/2022
Williams Landing VIC

Animals

Your search history

Art Animal Community work environment com

Figure 94. Bottom Navigation Icons



3.3.3. Table of Violations

Table 14. Yazhi's Table of Violations

#	Instance of Violation	Heuristic Rule	Evidence	Severity Rating	Recommendation
1	Lack of "clear all" option in the notification inbox.	#3	Figure 95. Add "Clear all" Option	3	Implement a "clear all" feature at the top of the notification inbox.
2	Lack of "Previous page" button in application form	#3	Figure 96. Add "Previous page" Button in Application Form	4	Implement a "Previous page" button within the form, allowing users to go back to the previous page.
3	Lack of limitation of date selection in application page	#5	Figure 97. Add Limitation of Date Selection	3	Implement date restrictions on the application page. Ensure the start date cannot be chosen from dates in the past and is limited to today and future dates. Additionally, the 'until' date should always be after the selected start date.
4	Lack of 'help' button	#10	Figure 98. Add 'Help' Button on Top Navigation Bar	3	Implement a 'Help' button or icon on all pages.

Figure 95. Add "Clear all" Option

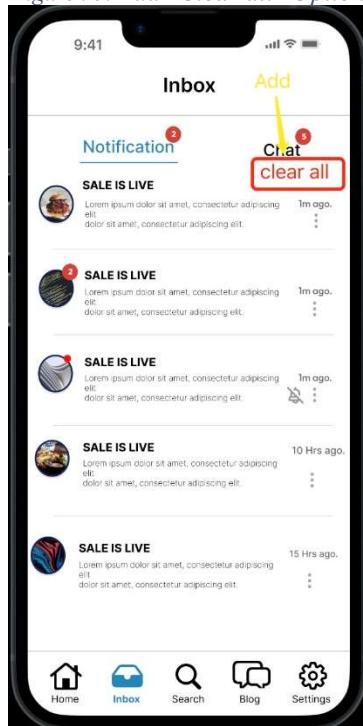


Figure 96. Add “Previous page” Button in Application Form

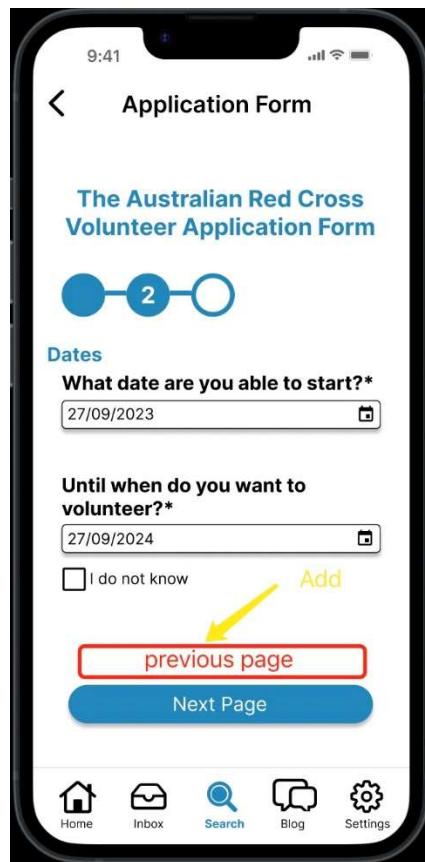


Figure 97. Add Limitation of Date Selection

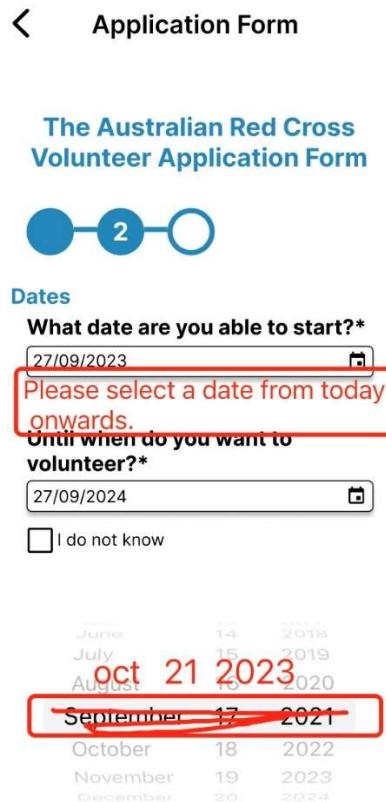
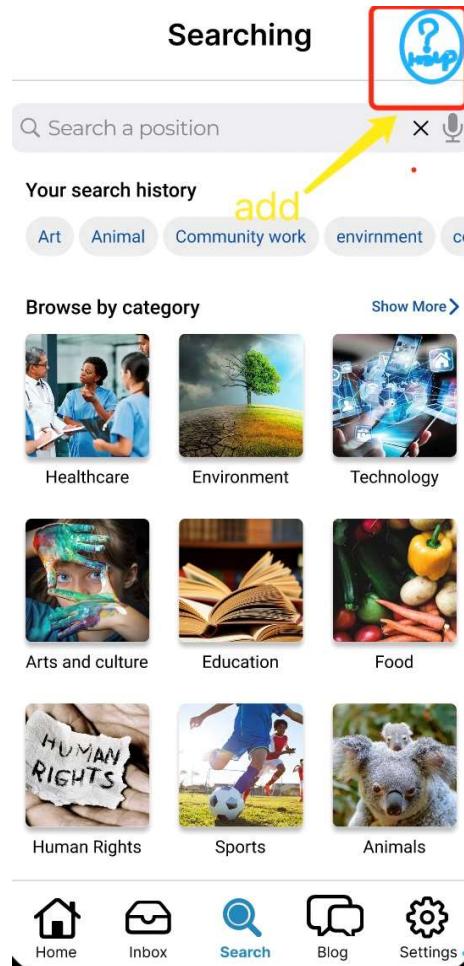


Figure 98. Add 'Help' Button on Top Navigation Bar



3.3.4. Violation and Severity Ratings

1. Lack of "Clear all" or "Mark all as read" option in the notification inbox.

Severity Rating: 3

Table 15. Severity Rating Table of Violation #1

Frequency	Impact	Persistent	Severity Rating
3	3	3	3

In the context of the notification inbox, the absence of a "clear all" or "mark all as read" option means that users have to manually mark each notification as read or clear them individually. This can be time-consuming and frustrating, especially if there are a large number of notifications. While this issue doesn't prevent users from using the main functionality of the app or platform, it can negatively impact the user experience by introducing unnecessary friction.

2. Lack of "back" button in application form.

Severity Rating: 4

Table 16. Severity Rating Table of Violation #2

Frequency	Impact	Persistent	Severity Rating
4	4	3	4

The absence of a “back” button prevents users from easily revisiting and revising previous sections of the form. This restriction can lead to potential errors or incomplete submissions, forcing users to restart the entire process if a mistake is identified later.

3. Lack of limitation of date selection in application page.

Severity Rating: 3

Table 17. Severity Rating Table of Violation #3

Frequency	Impact	Persistent	Severity Rating
3	3	2	3

Lack of limitation of date selection, users might inadvertently submit incorrect dates and only realize their errors later, leading to possible missed opportunities or obligations. Given the serious consequences and potential disruptions this flaw can cause to the primary task of application submission.

4. Lack of ‘Help’ button.

Severity Rating: 3

Table 18. Severity Rating Table of Violation #4

Frequency	Impact	Persistent	Severity Rating
3	3	3	3

The user interface does not offer a 'help' button or feature, which can assist users when they encounter problems or have questions. A 'help' feature is essential in ensuring a smooth user experience, especially for complex applications or platforms with diverse user demographics. The absence of a 'help' button may lead to increased user frustration, potential errors, or abandonment of the process altogether.

3.3.5. Conclusion

In conclusion, while the app displays several user-friendly features, it also has notable violations that hinder the optimal user experience. Addressing these, particularly by adding essential functionalities like "back" buttons and "help" options, can significantly enhance user navigation, reduce potential errors, and overall improve user satisfaction.

3.4. Lawrence’s Heuristic Evaluation

3.4.1. Introduction

Evaluating the effectiveness and efficiency of an interface is an important step in the application development process. This can be done by using Neilsen’s 10 heuristics model, which will be used to identify different aspects of the application which comply with or violate the heuristic models. In particular, design choices will be discussed and for the rules that are in compliance, with severity ratings being provided and further recommendations for ones that are not.

3.4.2. Table of Compliances

Table 19. Lawrence's Table of Compliances

#	Instance of Compliance	Heuristic Rule	Evidence	Design Choices Justification
1	Error message clearly specifies the current problems, and provides guidance	#9	Figure 99. The first application page, where the email has not been filled in.	Red colour was chosen as a standout colour in comparison to the rest of the page with black text, and mostly blue coloured themes.
2	Use of common icons	#6	Figure 100. The selected position screen, with many different icons on the page and in the bottom navigation.	Common icons were used to increase the recognition of specific actions or items for the user. These icons, whilst very distinct from each other, are very common in other applications.
3	Support for people with screen readers. Flexibility in language options	#7	Figure 101. The account settings portion of the settings page. Figure 102 The translate button on the selected position screens.	The flexibility in language options is provided. In this case, English has been selected. However, if English is not the first language, they would be able to select other languages as well. The screen reader option is also provided for people who require it. Flexibility is also provided in the selected position screen, with the user being able to translate the project details.
4	Use breadcrumbs to indicate the progress of a task, and provides feedback for when a task is complete	#1	Figure 103. The breadcrumb found on the first application screen. Figure 104. The breadcrumb found on the second application screen. Figure 105. The breadcrumb found on the third application screen.	The breadcrumbs are used such that the user knows how far into the application form they currently are. For example, on the second page of the application form, the user would know they are somewhere in the middle of the application form, and still needs to complete a bit more for them to complete the application form. The feedback provided on the blog posted and application submission pages are used to let the user know that their action has been posted. Without this feedback, especially for the application screen, the user will not know whether their application or post has been submitted or posted.
5	System has messages which contain simple and familiar language and concepts	#2	Figure 106. Screenshot showing that the user's application has been submitted on the application submission feedback page. Figure 107. Screenshot showing that the user's blog post has been posted on the blog posted feedback page.	The messages stating that "Your application has been submitted!" and "Your Blog has been posted!" uses straightforward and clear language, as well as concepts that are familiar to the user. These messages also match the intentions of the user to submit an application form and post a blog.
6	Prevent errors by providing constraints and ensuring that other events do not work unless the criterion is met	#5	Figure 108. Screenshot showing the "Next Page" button being disabled in the application form screen.	The "Next Page" button was made into a grey colour, instead of the usual blue to signify that the button is currently unclickable. This lets the user know that they cannot immediately progress onto the next page without meeting the criterion on the current page.

Figure 99. The first application page, where the email has not been filled in.

Email*

This field is required.

Figure 100. The selected position screen, with many different icons on the page and in the bottom navigation.

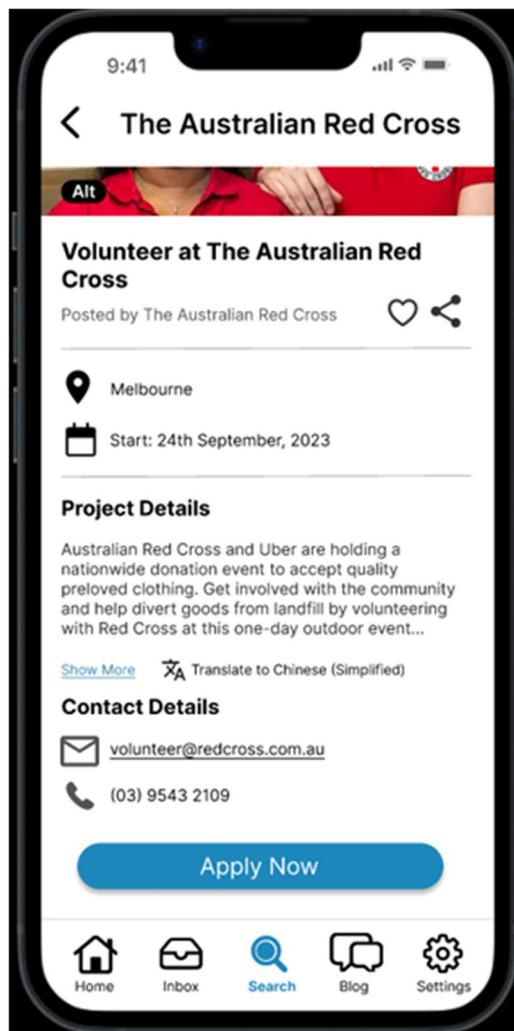


Figure 101. The account settings portion of the settings page.

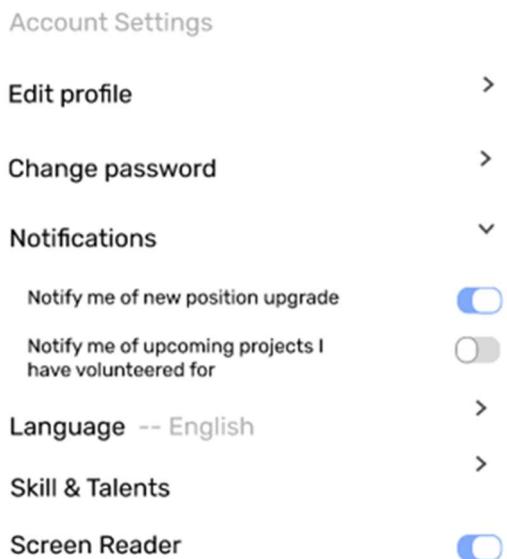


Figure 102. Translate button near the bottom of the selected position screen.

with Red Cross at this one-day outdoor event...

[Show More](#)  [Translate to Chinese \(Simplified\)](#)

Figure 103. Breadcrumb on first application screen.



Figure 104. Breadcrumb on second application screen.



Figure 105. Breadcrumb on third application screen



Figure 106. Screenshot showing that the user's application has been submitted on the application submission feedback page.

Your application has
been submitted!



Figure 107. Screenshot showing that the user's blog post has been posted on the blog posted feedback page.

Your Blog has
been posted!



Figure 108. Screenshot showing the “Next Page” button being disabled in the first application form screen.

Next Page

3.4.3. Table of Violations

Table 20. Lawrence's Table of Violations

#	Instance of violation	Heuristic Rule	Evidence	Severity Rating	Recommendation
1	Drastically different heights of the “Undo” and “Okay” buttons for the blog posted feedback page, and the “Okay” button for the application submission feedback page.	#4	Figure 109. Screenshot of application submission feedback page. Figure 110. Screenshot of the blog posted feedback page. The button on Figure 109 (first one) is much larger, and easier to click on in comparison to the buttons on Figure 110 (second one).	2	The buttons on the blog posted feedback page should be taller to match the heights of the button on the application submission.

2	Unable to go back to the first screen of the current section via the navigation bar.	#3	Figure 111. Screenshot of unclickable search icon when in the selected position screen. Figure 112. Screenshot of unclickable inbox icon when inside of a chat. Figure 113. Screenshot of unclickable blog icon when inside of a particular post.	3	Allow the user to go back to the first screen of the current section via the navigation bar.
3	Elements too close together, and too close to the edge.	#8	Figure 114. Screenshot of the top of the blog home screen.	2	I would move the elements away from the side of the screen. One example of this is the “search our blog” search box, as well as the profile and picture icons. I would also add more padding between the two icons in the bottom of Figure 114, and the “What’s on your mind” input box.
4	No documentation or help provided throughout the application.	#10	Figure 115. Screenshot of the blog page not showing any “help” information. Figure 116. Screenshot of the settings page, providing no guidance on the application overall.	4	I would include a “help” icon on each of the pages, where the user is able to click on and the system will guide them through the page.

Figure 109. “Okay” button in application submission feedback page.

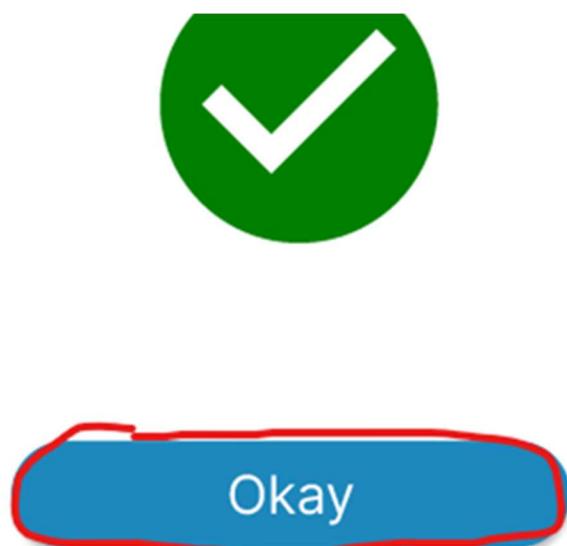


Figure 110. “Undo” and “Okay” buttons on the blog posted feedback page.

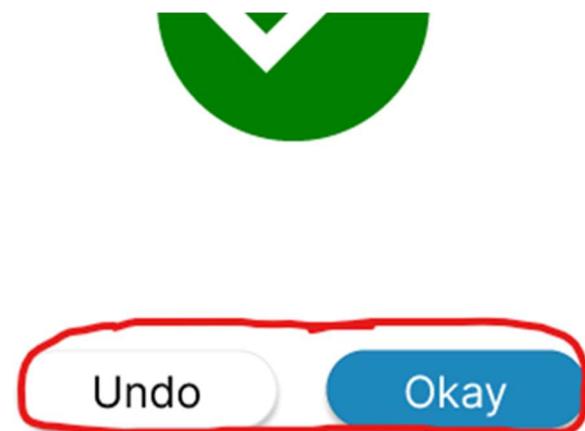


Figure 111. Bottom navigation on selected position screen.

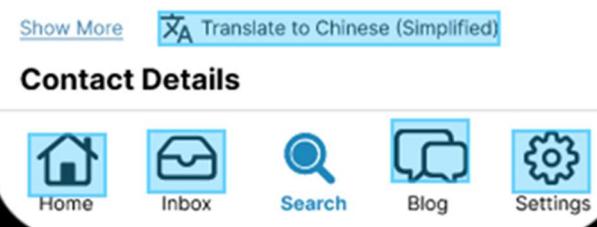


Figure 112. Bottom navigation on chat screen.

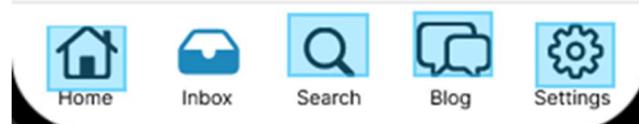


Figure 113. Bottom navigation in selected blog screen.

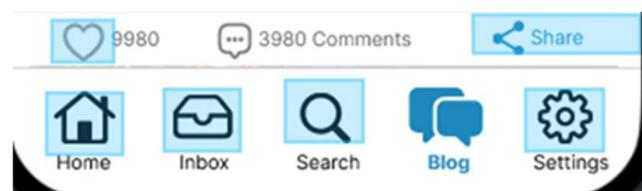


Figure 114. Top of the blog home screen.

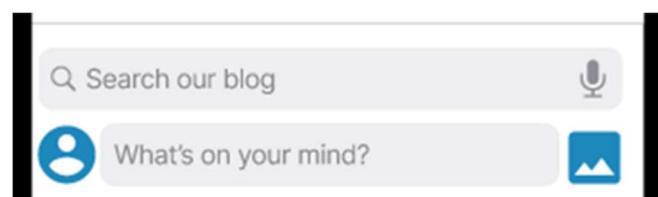


Figure 115. Screenshot of the blog page not showing any “help” information.

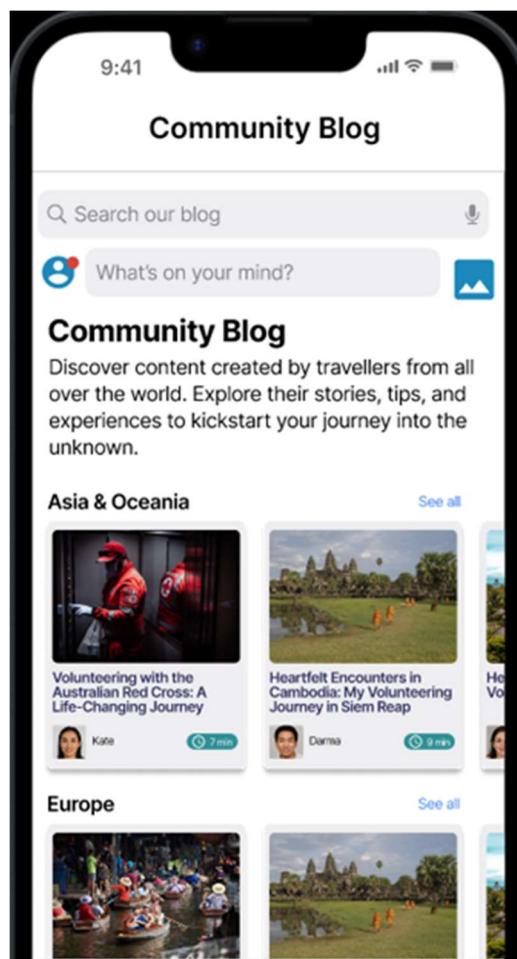
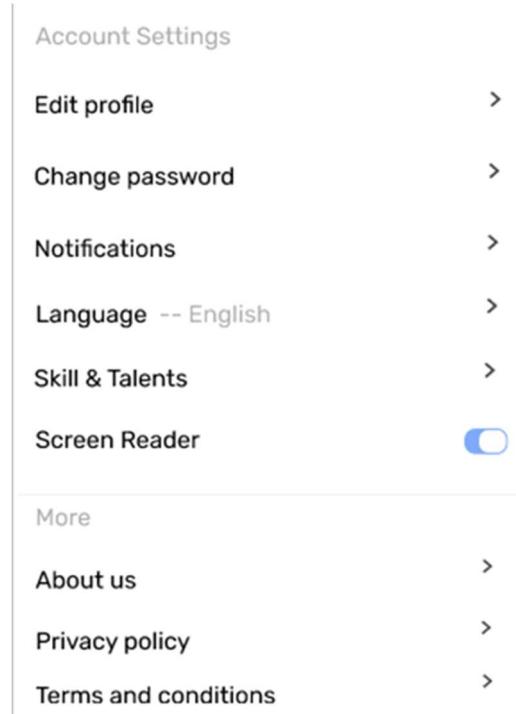


Figure 116. Settings page providing no guidance on the application overall.



3.4.4. Violation and Severity Ratings

1. **Violation #1:** Drastically different heights of the buttons on the application submission feedback page and the blog posted feedback page.

Description:

This is a direct violation of the “consistency and standards” rule. The button on the application submission feedback page is more than double the height of the buttons on the blog posted feedback page. Even if they are not exactly the same height, it should be very similar, as the pages themselves are very similar. No standard has been set for these types of feedback pages, and this could hinder the user experience of the application overall.

Justification for severity ratings:

The frequency for this is marked as a 1, as it is only two screens that contain the consistency issues. The impact will not affect the whole population. However, it will still affect many people, especially those with fine motor skill limitations. This is why a rating of 2 was given for impact. For the users who do encounter issues with the buttons, and are making blog posts or applications often, they will be relatively consistently experiencing those problems. Because of this, a rating of 3 was given. Averaging all 3 categories out, a severity rating of 2 was given for this problem.

Table 21. Severity Rating Table of Violation #1

Frequency	Impact	Persistent	Severity Rating
1	2	3	2

Justification for recommendations:

The reason why I would make the buttons on the blog posted feedback page to be taller, is in compliance with Fitts’s law. As the content is further away from each other in those screens, having larger buttons would make it easier to click on for the user. This would also help people who have trouble with their fine motor skills be able to click on the button more easily.

2. **Violation #2:** Unable to go back to the first screens of the same section via the navigation bar.

Description:

This is a violation of the rule of “user control and freedom”. This is because there are less navigation options if the user wants to get back to the starting screen of their current section. The two options currently presented for the user is to click on the bottom navigation bar into another screen, and then click back to the original icon, or to click the back button a bunch of times. The most optimal option would be to allow the user to click on the icon, and be able to go back to the starting screen of their current section.

Justification for severity ratings:

This is an issue on almost every single page where the user cannot immediately click the back button to go back to the starting screen of the section, with the rating of 4 given for the frequency of the issue. The impact is relatively low in comparison, as the current optimal solution does not take many more steps for the user to get to the desired page. However, this issue will persist for every time the user wants to get back to the start of their current section. Because of this, a rating of 4 was given. With this in mind, the overall severity rating for this violation is 3.

Table 22. Severity Rating Table of Violation #2

Frequency	Impact	Persistent	Severity Rating
4	2	4	3

Justification for recommendations:

Having it such that the user is able to click on the icon makes it easier for the user to travel between the pages they are after.

3. Violation #3: Elements too close together, and too close to edge

Description:

The elements on the top of the blog screen are far too close to each other, and far too close to the edge. This would provide particularly tricky for those who do not excel from fine motor skills. The user may accidentally click on items that they did not intend on clicking on, or miss the screen entirely.

Justification for severity ratings:

This is one of the only places where the icons are too close together, and too close to the edge of the screen overall. Because of that, a frequency rating of 1 was given. However, the impact is much larger, because the buttons are so close together. The lack of padding around the elements of the page will likely severely impact user experiences as they may click on the wrong item. This is even more likely for people who experience issues with their fine motor skills. This is why a rating of 3 has been given. In terms of persistence, this issue only happens on the blog home screen. However, because of the likelihood that people will experience this issue multiple times with the usage of the application, a score of 2 was given. Overall, a severity rating of 2 is given for this violation.

Table 23. Severity Rating Table of Violation #3

Frequency	Impact	Persistent	Severity Rating
1	3	2	2

Justification for recommendations:

Moving the buttons away from the side of the screen increases the likelihood of people missing the screen entirely, or not having the user hit other buttons in order to compensate for the side of the screen. More padding between icons and the input box would also greatly increase the chances that the user is able to more consistently click on what they are after, especially if they experience troubles with their fine motor skills.

4. Violation #4: No documentation or help provided throughout the application.

Description:

Help and documentation within an application greatly increase the chances that the user will be able to more quickly move forward in their goals within the application. On the other hand, the lack of this greatly decreases the chance of goal completion, and greatly decreases the user's satisfaction within the application. The user would then be unable to effectively engage with the application, with their frustrations decreasing the chance that the user will choose to engage with the application in the future. This application fails to provide any help or documentation in the usage or navigation of the application overall.

Justification for severity ratings:

There is no help or documentation to be found anywhere within the application, which is why a frequency rating of 4 is given. If the user is unable to progress through the application to complete their goals, then the lack of help or documentation will not assist the user in any way. This leads the user to foster a sense of frustration towards the application and have them engage with it less. Because of this, an impact rating of 4 is given. In terms of persistence, if someone is experiencing issues navigating one part of the application, they are likely to experience similar issues with different components. Whilst this can be learned, it is currently up to the user to do trial and error with the learning of the application. This is why a persistence rating of 3 is given. Overall, a severity rating of 4 is given for this violation.

Table 24. Severity Rating Table of Violation #4

Frequency	Impact	Persistent	Severity Rating
4	4	3	4

Justification for recommendations:

The help icon on each of the pages would help guide the user in their navigation throughout the application, without the user having to go to separate pages. This would then help the user more quickly complete their goals, with less errors throughout.

3.4.5. Conclusion

In conclusion, whilst the application excels and is in compliance with many different areas of Neilsen's heuristics, the application still creates big violations of the heuristics, which should be rectified whilst improving the design of the app. For each of the violations, descriptions and justifications have been noted. The severity ratings and recommendations for the violations have also been noted and justified, in order to increase the usability of the app for the user.

4. Group Work – Evaluation Summary

4.1. Similarities and Differences among Members' Evaluations

Whilst all the team members are able to have their own evaluations, many similarities and differences were found between the teammates. Many of the same heuristics were discussed, with both violation and compliance, with many of the same examples used.

One of these similarities came with the discussion of rule #1, with the visibility of the system status. One example that is shown, as mentioned by 3 of the teammates, is the usage of breadcrumbs on the application screen.

Another similarity between the teammates evaluations was rule #3, where the application was seen to be violating the heuristic rule. Two of the team members mentioned the inability to undo an application after it has been submitted, whilst another mentioned the lack of a “previous page” button within the form itself. This makes it clear that the application form itself lacks user control and freedom overall.

Some differences can be found between the teammate's evaluations of rule #4, discussing the consistency and standards within the application. Two teammates have discussed that the navigation bar is in compliance with the heuristic rule. Another teammate, on the other hand, discussed a violation with the two submission feedback screens having drastically different

sizes for one of the elements. This may mean that whilst some parts of the application are consistent, there are others which can improve.

All team members found that most of the application form was in compliance of rule #5, with the discussion behind error prevention. Almost all of them, however, mentioned different elements with how errors can be prevented. This part of the application form can be seen as a strong suit in general in terms of Nielsen's heuristics.

Whilst all teammates were able to find elements that were in compliance with rule #6 from Nielsen's heuristics, almost all examples that were found were different from each other. Whilst two members discussed the usage of the search history to reduce memory load, another mentioned the pre-filling of information to achieve the same effect, and another mentioned the usage of common icons.

Differences could also be found in the discussion of rule #7. Whilst most team members provided different examples of how the application was in compliance with this rule, there were still team members who were able to find violations as well. In particular, even though there are different sorting and searching filters currently in the search section, more improvements could be made with advanced search functionalities to improve the flexibility and efficiency of use of the application overall.

Rule #8 of Nielsen's heuristics was agreed upon as one of the main violations within the application. Two of the team members discussed features that would rarely be used inside the inbox - specifically inside the chat screen and within the main inbox screens. A third team member also discussed the overloading or clutter that is found at the top of the main screen of the blog section. This brings into discussion of other elements that could be removed or realigned to create a more aesthetic and minimalist design into the application.

The most similarity from all the teammates came with the compliance of rule #9, where it was agreed that the error message for the email in the application form is sufficiently helping the user recognise, diagnose, and recover from their user errors. The user is able to quickly understand what needs to be done.

All team members agreed that no help or documentation has been provided throughout the application, and that the application as a whole violate rule #10 from Nielsen's heuristics. However, different solutions and recommendations have been provided. Two teammates have provided recommendations of providing help throughout the main pages of the application, the other two suggested a dedicated help page that is provided under the settings. These are two different approaches to increasing the help that is provided for the users navigating the application, with their own benefits and drawbacks.

Table 25. Table of All Identified Issues among Members

Description of issue	Heuristic #	List of individual severity scores		Average score
No previous page or cancel buttons to allow for user control and freedom	#3	4, 4, 4		4
No clear all option in notification inbox	#3	3		3
Unable to go back to the first screen of the current section via the navigation	#3	3		3
Different heights of buttons	#4	2		2

Lack of restriction of date selection in application page	#5	3	3
Lack of advanced search options	#7	2	2
Rarely used buttons in inbox section	#8	2, 1	1.5
Element closeness	#8	2	2
No help or documentation	#10	3, 3, 3, 4	3.25

4.2. 3 Most Severe Violations and Recommendations for Improvements

The application has been viewed to violate Nielsen's heuristics rule #10 by all team members, with a relatively high severity rating. Breaking this down, the average frequency and impact ratings is 3.25, and persistence rating to be 3. Overall, this leads to a severity rating of 3. This came to be as there is no help or documentation to be found anywhere within the application. If a user is stuck with completing their goal within the application, the lack of help hinders the user's overall experiences, leading to a sense of frustration when using the application. One recommendation is for a "help centre" to be provided within the settings page of the application. This would allow the user to find "answers to their questions and solutions to their problems" (Ashby, 2023). When the user comes across this, the help centre can be noted as a point of reference for whenever the user is stuck. Another recommendation is the implementation of the help icon on every, or most screens of the application. This type of help would be more tailored to the current screen the user is on and allow the user to not have to move to the help centre to find the solution they are looking for. This also means the help is more immediate, and the user would be able to accomplish their goals within the application more quickly.

There is a lack of user control and freedom throughout many different parts of the application. One of the more prominent areas is the application form, where there is no straightforward way to go up and back between the different sections of the form, or to leave the form entirely. Averaging the 3 individual evaluations that mention the application form with this rule, there is a frequency rating of 4, an impact rating of 3.3, and a persistence rating of 4. This means that the overall severity rating of this violation is 4.

To fix this, we recommend adding "cancel" and "previous page" buttons into each page of the application form. According to Gibbons (n.d.), interactive breadcrumb in general is an important factor that influences the user's experience. This is the reason for our other recommendation, which is to make breadcrumbs an interactive element within the screen. This is done so that as many options can be provided as possible to navigate between certain screens or exit the application form entirely.

If the user makes a mistake within the form and submits it, there is currently no way of undoing these mistakes. One way to fix this is to copy the design of the blog posted feedback screen, and add an "undo" button, which un-submits the form and goes back to the previous screen.

Another violation of rule #3 from Nielsen's heuristics is within most parts of the application. The user is unable to navigate back to the start screen of their current section in the application, thus having to go through extra steps to get to their desired location. The severity

of this has also been rated quite highly, as it is an issue in every part of the application. The recommendation we would make to fix this is to

In some parts of the application, aesthetics and minimalist design rule of Nielsen's heuristics is not met, containing different elements that are potentially rarely used. The inbox section is the main culprit, with potentially rarely used buttons in the chatting screen, and the vertical ellipsis in the inbox screen. Our recommendation would be to remove those types of buttons, as well as the vertical ellipsis to minimise the amount of clutter, and only have the functionalities that most users will use.

Another section where the application violates rule #8 from Nielsen's heuristics is at the top of the main page of the blog screen. The elements are too close together, with not enough padding. Ravoof (2023) states that if clickable items are too close together, there is an inherent risk of the user clicking the wrong one, hurting the user experience. In this case, if someone wanted to click on the profile image, they may accidentally click on the "What's on your mind?" input box instead. This would mean that they have to click back, and then try to aim for the profile image again, hoping they click correctly the second time around. In this case, the error rate when the user is trying to see their own blog posts has increased. Our recommendation would be to increase the spacing between the elements in that section, which would help decrease the error rate, allowing the user to see their own blog posts more quickly.

5. Future Development Ideas

Aside from the individual and group recommendations on how to rectify the mistakes in the application with regards to Nielsen's heuristics, there are also some future development ideas we would like to propose.

Our first proposal is to include an onboarding process for the people who are experiencing the app for the first time. Having an onboarding process in the application allows the user to quickly figure out how the application works instead of allowing them to "lose interest" (Davic, n.d.). Whilst any onboarding process may be used, our recommendation is to go with the guided walkthroughs, as through our user-base, that was the option where the most people stated that it was their "First Choice", according to Lawrence's survey results (Appendix A).

A second proposal is to include an interactive map to showcase volunteer opportunities near the area, or to show the location of an organisation or volunteer opportunity. This would help the user as another way to search for opportunities without the need for the search feature. Showing the location of an organisation also helps the user determine if the opportunity is something they want to pursue. This proposal is based on some of the comments asking about features and functionalities that the respondents would like to see within the app, and can be found in Appendix B, where 6 of 10 respondents discussed "location" or "map" based features and functionalities. The idea of using maps to find different opportunities is backed by the number of "near me" queries, which "grew by 136% in 2023" (Consuegra, 2023). Whilst this is not an action that the user can take on the application, it is clear that the locality of the volunteering opportunity is likely to be an important factor when the user decides to volunteer for an organisation.

Our third proposal is for the inclusion of a contribution page, where users are able to see their own contributions to volunteering via the application. This can come in the form of different

summaries and statistics, or an interactive dashboard, and allows the user to see their own contributions and efforts that they have made to their communities. This proposal was based on Vincent's survey results (Appendix C), where respondents have stated that inclusion of different metrics or visualisations are of some importance within the application. In particular, when asked about the importance of tracking volunteering activities with metrics or visualisations (with 1 being not important and 5 being extremely important), the average rating was approximately 3.42.

6. Conclusion

In conclusion, a high-fidelity prototype has been developed based on the low-fidelity prototype that was made for Assignment 2. The first section of this report screenshots of the high-fidelity prototype, as well as descriptions and justifications of design guidelines. and accessibility guidelines on each screen. Furthermore, the first section includes descriptions and justifications on some of the changes that were made between the low and high-fidelity prototypes. Once the prototype was complete, each person completed their individual heuristic evaluation of the prototype with regards to Nielsen's heuristics, before a group discussion was had. The thoughts of the group were compared and summarised. The most severe violations of Nielsen's heuristics were discussed in more detail, as well as our recommendations to fix them. Further proposals were made to allow improvements to be made to the application, based on the results of surveys done by some of the group members.

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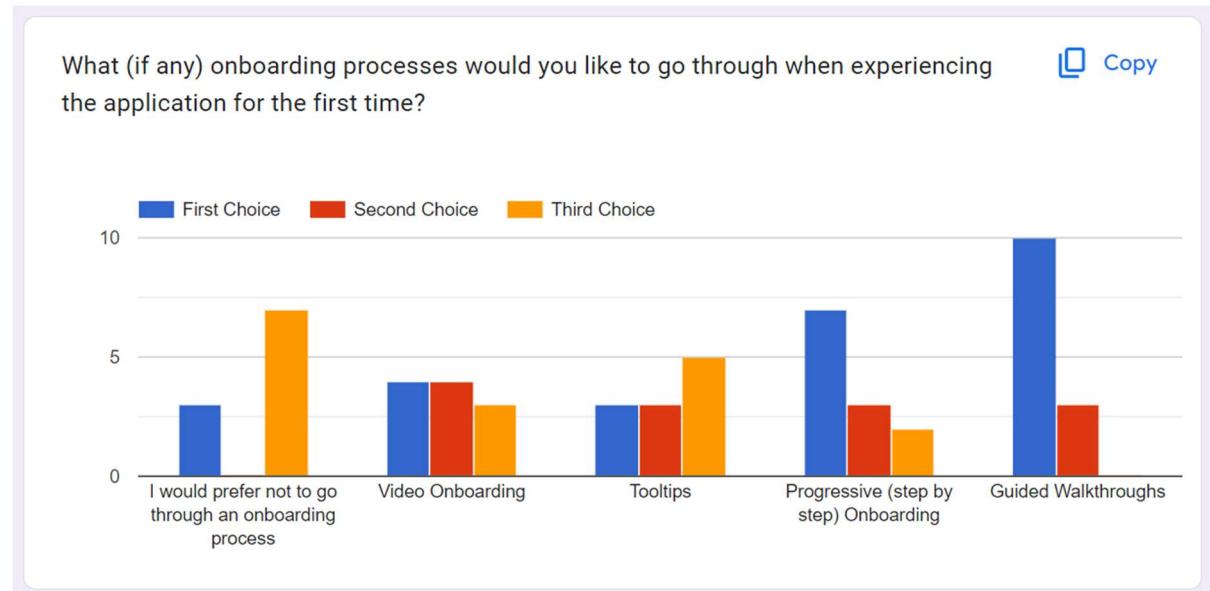
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8. Appendixes

Appendix A

Figure 117. Lawrence's survey results to the question "What (if any) onboarding processes would you like to go through when experiencing the application for the first time?".



Appendix B

Figure 118. Lawrence's survey results to the question "What features or functionalities would you expect to see in a mobile application for volunteering opportunities?".

What features or functionalities would you expect to see in a mobile application for volunteering opportunities?
Map to show the exact location of the volunteering opportunities
Maybe something to link interests/skills to better match up volunteers to organizations. Maybe also a location feature that shows which organizations are closest to you
see available opportunities in a map
Multiple ways of contact shown easily for the service you are volunteering for
List of volunteer activities
Connections, scope verification, enrolment
Simple to use interface, categories of different types of volunteer opportunities, categoris for descriptions of the organizations
auto matching based on preference / profile
know location and timetable exactly
Volunteering opportunities near me. A social media like UI where we can see the posts requiring help.

Appendix C

Figure 119. Vincent's survey results to the question "How important is an ability to track your volunteering activities with particular metrics or data visualisations in the application?" (1 being not important and 5 being extreme important).

1	8. How important is an ability to track your volunteering activities with particular metrics or data visualisations in the application?
3	3
4	4
5	3
6	3
7	5
8	5
9	1
10	2
11	4
12	3
13	4
14	4
15	
16	