

Prototyping and User Testing for HaudGo!

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UX-200-BR Design Thinking II

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March 8th, 2023

Usability Plan

Introduction

Our team recognized the importance of designing an experience that met the needs of our users, particularly in the context of sharing and respecting indigenous culture and community. Thus, we developed a usability plan that focused on formative evaluation to guide our design thinking process. Through our usability tests, we were able to collect feedback and data from users to make informed decisions on how to refine and improve our prototypes. These tests allowed us to identify areas of the experience that needed changes, and we were able to direct our focus towards making improvements. Our ultimate goal is to create an engaging and respectful experience that shares the richness of indigenous culture and community with a wider audience. By implementing user feedback and iterating on our design, we created an experience that meets the needs of our users while also upholding the values and traditions of indigenous culture.

Objective

The objectives of our usability plan were multifaceted and aimed to cover a wide range of areas to ensure that our experience met the user's needs. Firstly, we aimed to identify any usability issues that could potentially hinder the user's experience with our product. This would help us to focus on making the necessary adjustments to optimize user satisfaction and engagement. Additionally, we wanted to capture and measure performance metrics to provide quantitative data on how users interacted with our prototypes. Through this data, we could find error frequencies and identify areas for improvement to increase the effectiveness and efficiency of our design. Moreover, we aimed to improve user satisfaction and learnability by understanding their pain points and implementing changes to address them. We wanted to improve the information architecture of our prototypes and plan and develop user flows to

create a seamless experience for users. Lastly, our plan aimed to identify design changes and refinements that could improve the overall functionality and aesthetics of our prototypes. By achieving these objectives, we could create an experience that is engaging, respectful, and informative of indigenous culture and community.

Our Goals

Goal A- Ensure users can identify clickable/unclickable interactions

Goal B- Understand if users are engaged with content and material

Goal C- How easily can users adjust/view their settings and accessibility

Goal D- Understand where are users experiencing difficulties and how they find help

Methodology

Our research methods will involve a comprehensive approach to collecting primary data through experimental designs that encompass both in-person and virtual settings. We recognize that different users may have different needs and preferences, which is why we plan to include a diverse range of participants in our research. Through our experiments, we aim to capture relevant metrics and data that will allow us to identify usability issues and measure performance. Additionally, we will analyze error frequencies to help us identify areas for improvement and enhance user satisfaction and learnability. Our team will also plan and develop user flows to ensure the user experience is seamless and effective. Ultimately, our research methods will enable us to identify design changes and refinements that will help us create a highly effective and engaging experience for users.

Primary Research:

The research methods that we employed in our usability plan included a range of user-centred techniques. We conducted user interviews to gain insights into users'

experiences, thoughts, and preferences. In addition, we employed self-reported experiments to collect data from participants about their experiences using the app. Our usability issue experiments helped us identify areas where users faced challenges or difficulties. Finally, we collected user statements and quotes to gain deeper insights into their thoughts and feelings about the app. Collectively, these research methods helped us to understand user needs, identify areas for improvement, and develop a more user-centred experience.

Participant Sample & Tests

The usability plan involves two separate tests for different fidelities of prototypes. The first test concentrates on the low-fidelity digital prototype and uses both in-person and virtual data collection methods. We selected 5 participants for the low-fidelity test, focusing on users who have limited or no prior knowledge of the app. Our aim was to gather feedback on the basic functionalities and design elements of the app at this stage. The second usability test is focused on our medium/high fidelity prototypes and was conducted virtually through Discord and in person. For this test, we used Figma and screen sharing over Discord to test the prototypes. The participants for this test were chosen based on their experience and familiarity with the app's features. We hoped to gather feedback on the app's overall usability and effectiveness, as well as identify any issues or areas for improvement. Overall, these usability tests allowed us to gather valuable insights and feedback to further improve our prototypes and create a more user-friendly experience.

Usability Testing Plan

Usability testing consisted of a series of tests with a diverse set of participants aimed to help us improve the usability of the prototypes. The testing was conducted by the team in an in-person setting with people from their personal networks. The study was designed as exploratory research, and the methodology involved the use of a think-aloud protocol, as

clearly communicated to the study participants. The think-aloud protocol is a well-established method of data collection in research that involves participants thinking out loud while performing a given task, in this case, answering a series of questions. As part of the research process, participants were given an informed consent form that explained the purpose of the study and any risks or benefits associated with their participation. Once the consent was obtained, participants were then provided with a list of questions that were to be answered during the two stages of the study - pre-test, study questions and post-test questions. The pre-test questions were designed to gather initial information about the participants, their background, and their experience related to the research topic. The study questions were intended to elicit in-depth responses to the research questions, while the post-test questions sought to gather information about the participants' experience with the study, their overall impressions, and any feedback they had. By utilizing a think-aloud protocol and a structured set of questions, the study aimed to collect rich data that would enable the researchers to gain a better understanding of the research topic. The method was chosen because it allows participants to express their thoughts and feelings freely while providing the researchers with valuable insights into their decision-making processes. The use of the informed consent form ensured that participants were fully aware of the study's purpose, and the structure of the questions ensured that the data collected was consistent and relevant to the research topic.

The study collected various metrics to evaluate the effectiveness and usability of a new application. These metrics included time on task and task success, error rate per page, satisfaction rating, learnability, Net Promoter Score (NPS), and ease of use. The researchers also conducted a heuristic evaluation in a medium-fidelity environment with the help of professors and compared the effectiveness of the application for individuals with and without experience. The NPS was used to gain insight into why or why not the application may be shared, which could inform push versus pull marketing practices. Participants were asked to

report any errors they noticed after each page and about how easy it was to use and any problem areas.

Background

The purpose of conducting usability tests on our prototypes was to ensure that our experience is meeting user needs and creating a meaningful experience. The experiments were designed to help guide our low to high-fidelity prototype designs, ideation, and creation. The usability tests helped to provide design changes/refinements and identify user issues or errors. Our overall goal with our final design was to create an experience that educates about indigenous culture, community, facts and history.

The objectives for the usability tests that were collected, measured, and achieved were identifying usability issues, capturing performance metrics, user satisfaction, effectiveness, and other metrics. Our goals that were successfully completed through testing were ensuring users could identify clickable/unclickable interactions, understanding where users go to find information, identifying where users are experiencing difficulties, and how they find help. The tests and data were collected and conducted using in-person and virtual technology. The in-person research was conducted using a think-aloud approach and face-to-face communication. To record metrics, comments, and data, a computer was used with [Google Forms](#). The remote research was mainly conducted using *Discord*, a message and communication platform that allowed the moderator to call and stream audio/video with participants. Other streaming apps and platforms were also used.

Prototype Process

The prototype process is an essential step in the development of any digital product. In the case of the app, the process began with simple hand-drawn digital sketches. These sketches were the initial ideas and concepts that were used to illustrate the main screens and user flows that helped to plan the information architecture and layout. The sketches were created to get a clear picture of the app's design and functionality, and they helped to establish the foundation for the project. Once the sketches were created, the team moved onto the next phase of prototyping, which was to create medium-fidelity digital wireframes. These wireframes included basic shapes and titles with little copy/text. They were used to refine the app's design and to make sure that it would meet the user's needs. The wireframes were also used to test the app's usability and to make any necessary changes before moving onto the next phase. The last prototype that was created was a high-fidelity mockup of the app with interactive elements and content. This prototype was the closest representation of the final product and was used to showcase the app's design and functionality to stakeholders and potential investors. It was also used in usability tests to ensure that the app was easy to use and provided a good user experience. All the prototypes that were created were crucial in helping the team to create the final design using Figma, with an interactive prototype and completed content. The team used the feedback gathered from the usability tests to refine the app's design and to make sure that it met the user's needs. The final stage was created on Figma with a fully complete design, content and information. This final stage represented the culmination of all the hard work that had gone into the app's development, and it was the product that was launched to the public. In summary, the prototype process is a critical step in the development of any digital product. It helps to refine the design and functionality of the product, ensuring that it meets the user's needs and provides a good user experience. The process involves creating various prototypes, from simple hand-drawn sketches to

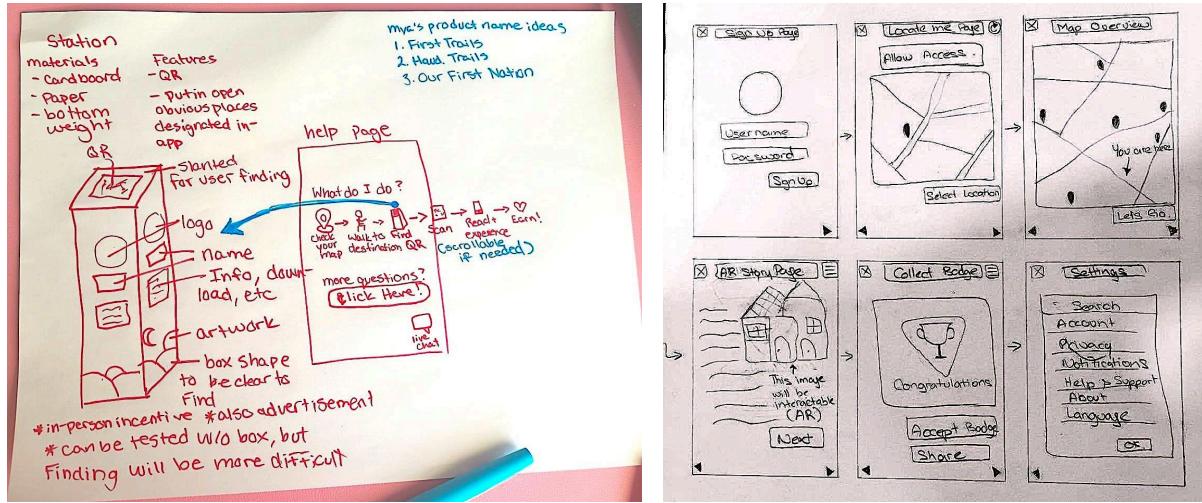
high-fidelity mockups, that are used to refine and test the app's design. The final product is the result of all the hard work and dedication that went into the development process, and it represents the team's efforts to create a high-quality digital product.

Experiment Scenarios

In user experience research, it is essential to understand how users interact with a product or service. To gain insights into the user's experience, we conduct usability tests that involve participants going through different user scenarios. This helps us to identify any usability issues, pain points, or areas where the user experience could be improved. In our usability tests, we have our participants go through three different user scenarios. The first scenario was to create an account, which is a crucial step in using many digital products and services. During this scenario, we collected various metrics, including time on task, task success, errors, and input. These metrics help us to understand how long it takes for the user to complete the task, how successful they are in completing it, any errors they encounter, and the type of input they provide. The second scenario was to read about a landmark you are near. This scenario is typical of what users would experience when using a location-based service, such as a travel app. During this scenario, we collected the same metrics as in the first scenario, including time on task, task success, errors, and input. These metrics help us to understand how the user interacts with the app when searching for information about a landmark they are near. The third scenario was to turn off notifications. This scenario is important for users who may be receiving too many notifications from an app or service. During this scenario, we collected the same metrics as in the previous scenarios, including time on task, task success, errors, and input. These metrics help us to understand how easy or difficult it is for the user to turn off notifications, and whether there are any issues or pain points in the process. By collecting metrics during these scenarios, we can gain insights into the user's experience, identify any usability issues or pain points, and make informed

decisions about how to improve the product or service. Usability testing is an essential part of the design process, and it helps us to create digital products and services that are easy to use, intuitive, and provide a positive user experience.

Low Fidelity

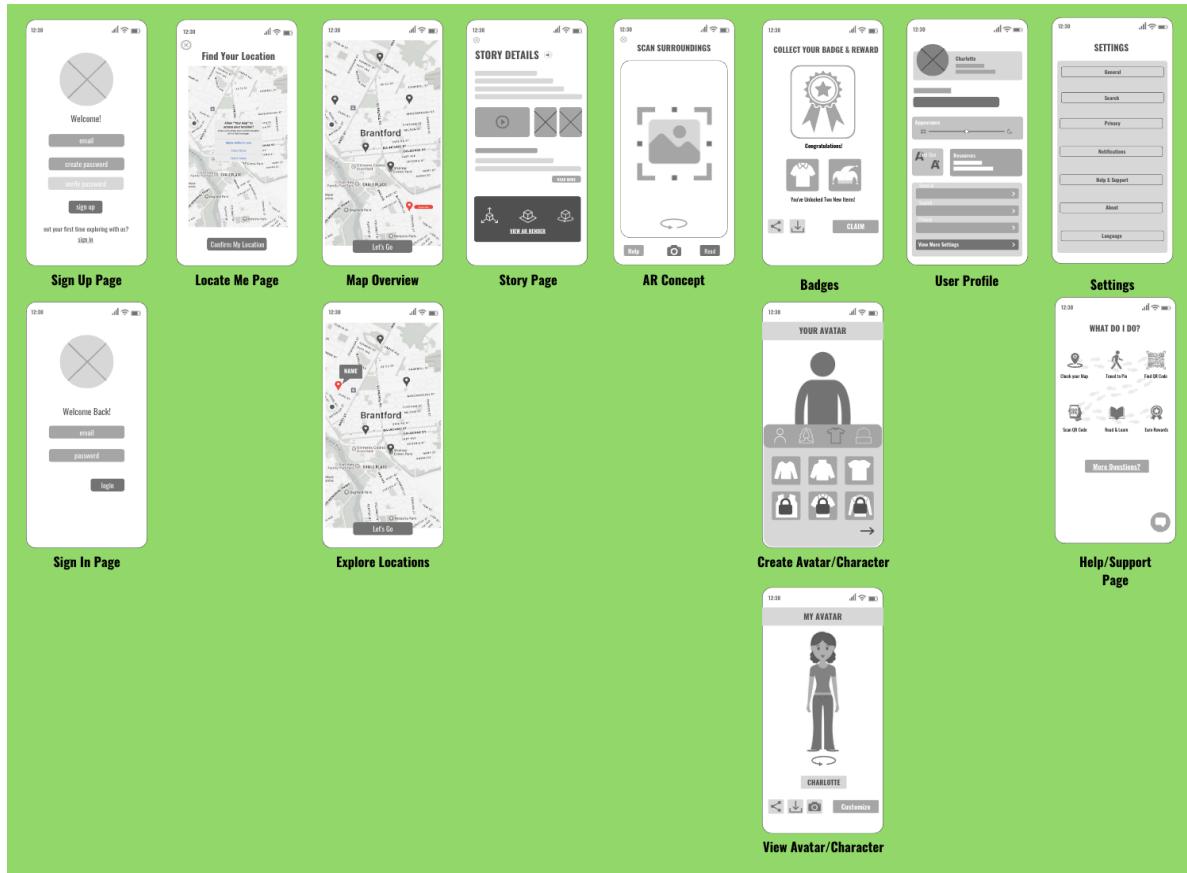


Test Results 1

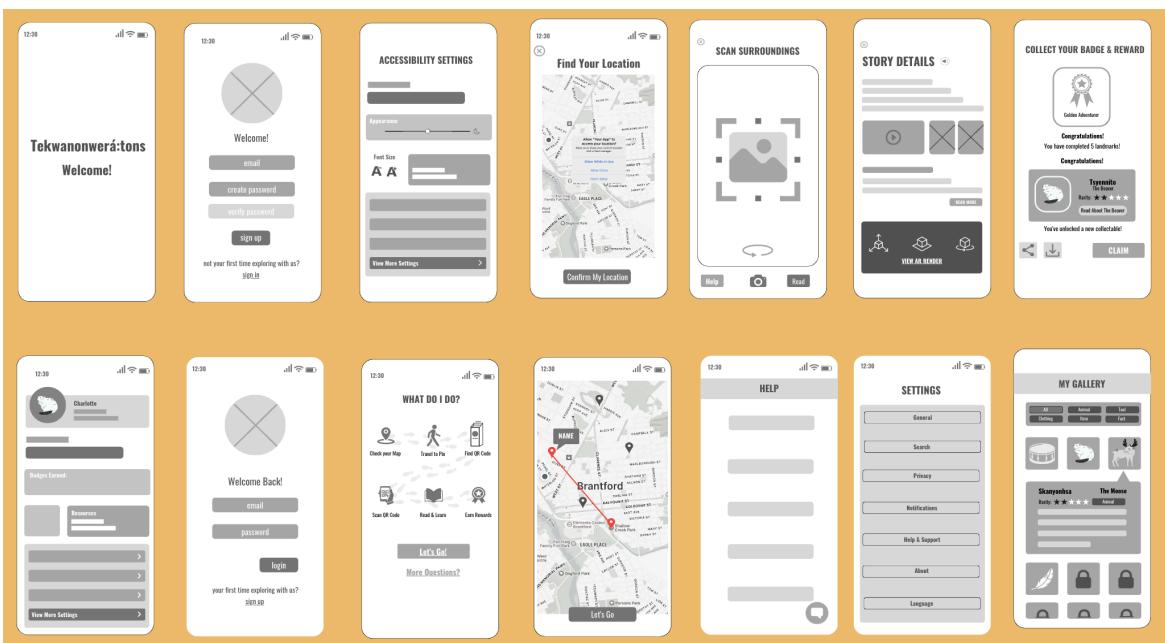
During the usability testing, the participants mainly encountered no errors, indicating a high level of functionality in the application. However, since the testing was new to all the participants, there was some slight confusion. Some participants suggested the addition of a sign-in option, which could enhance the user experience. Participants reported difficulty in identifying the correct map, and suggested that this be made clearer in medium fidelity. Additionally, participants requested better labelling of the map, which could be addressed in medium fidelity as well. Some participants suggested changing the badges to little characters and including fun colours to make the application more engaging. Another suggestion was to include a little quiz before receiving the incentive, without making it stressful or annoying for the user. These test results provide valuable feedback for further development and improvement of the application.

Medium Fidelity

Before Edits



After Edits

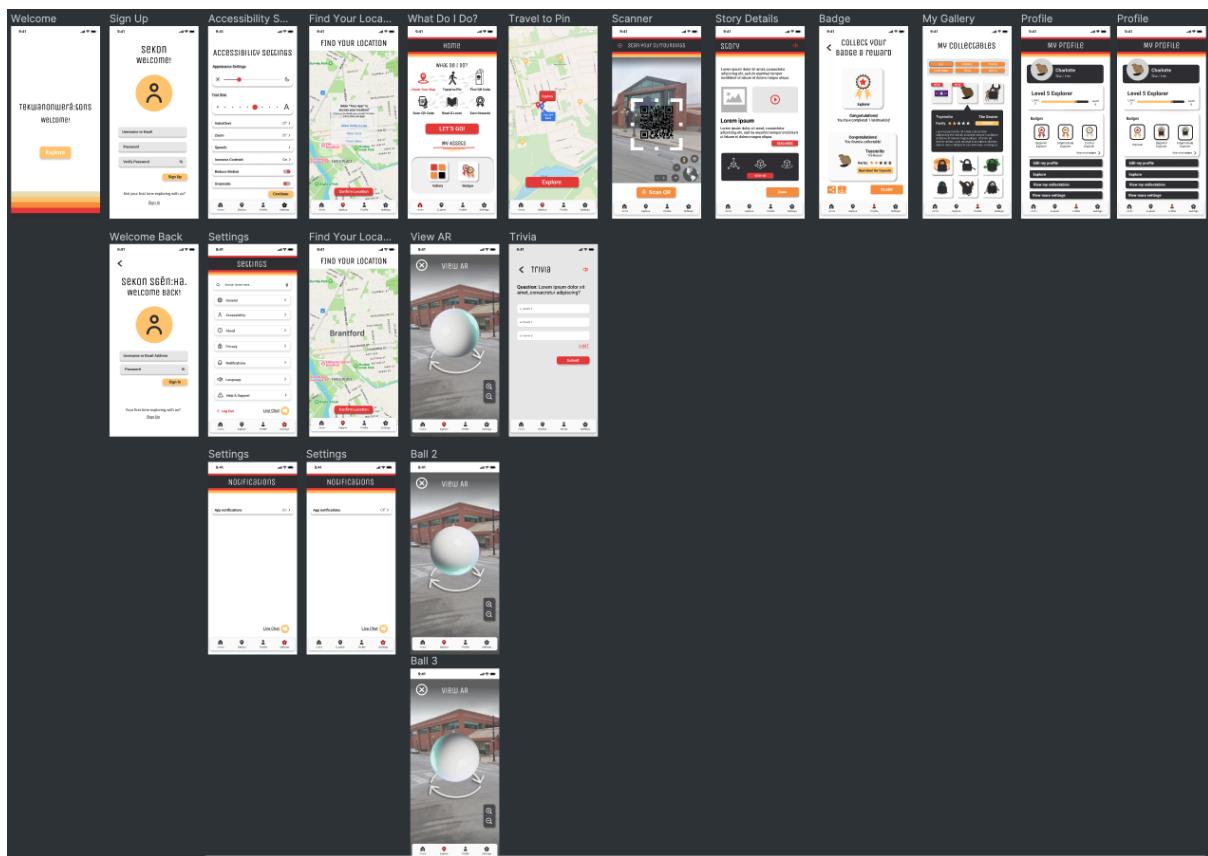


Test Results 2

During the second usability testing, participants provided several suggestions for improving the application's design and usability. Some of the key suggestions included adding the avatar to the map as a feature, changing logos on the "what to do" page to make more sense, and splitting the "what do I do" and "help" pages. Participants also recommended starting the application with the "what do I do" page, with the option to ask for help. Suggestions were also made to improve medium fidelity prototyping, such as removing character stuff as it is redundant and has no educational purpose. Instead, the application could use things with meaning and symbolism such as animals, objects, tools, themes, etc. Participants suggested adding information about the reward's significance. Another suggestion was to use a collectibles gallery as an incentive. The participants also suggested using more colour in the application and moving the search function to the top of the settings. These test results provide valuable insights for enhancing the user experience and improving the application's overall design.

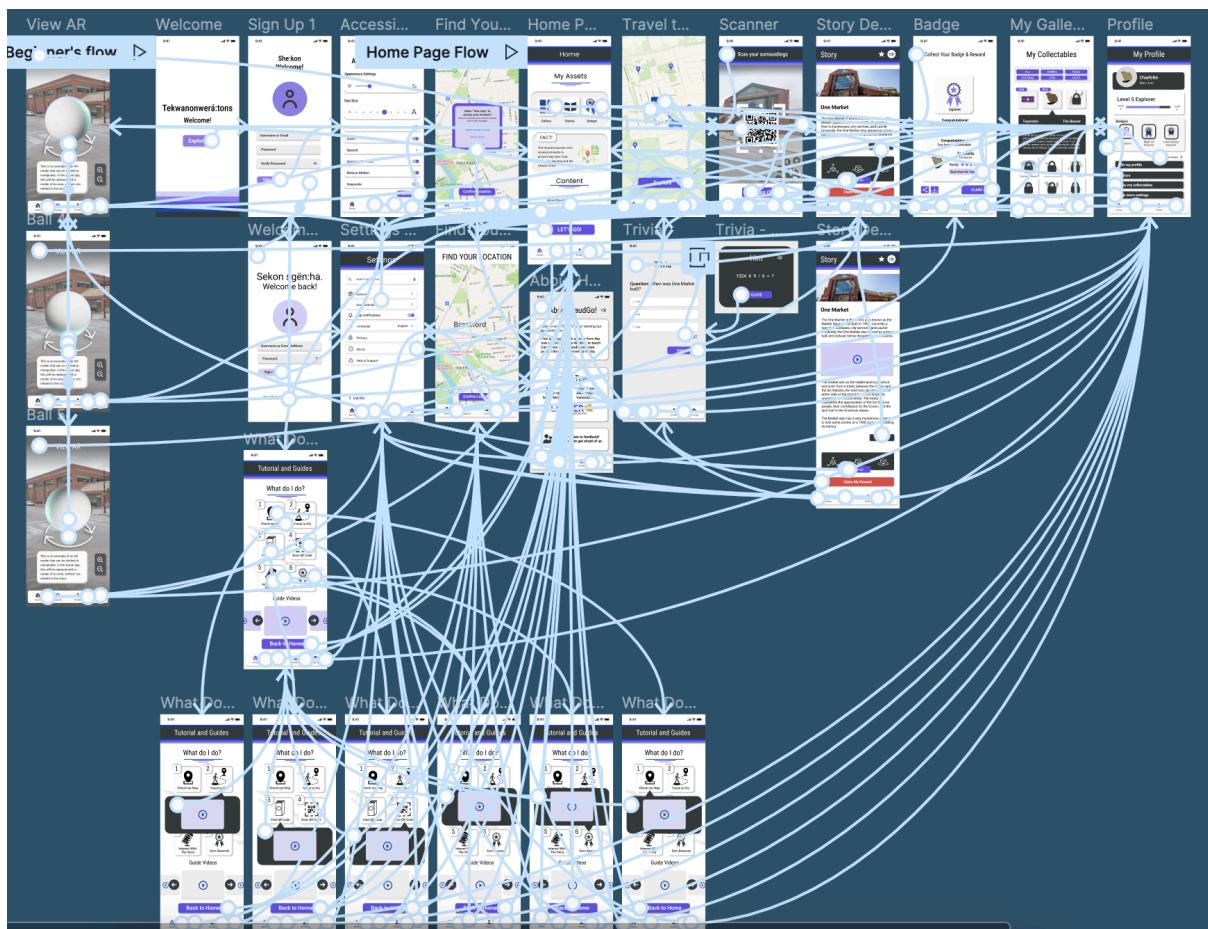
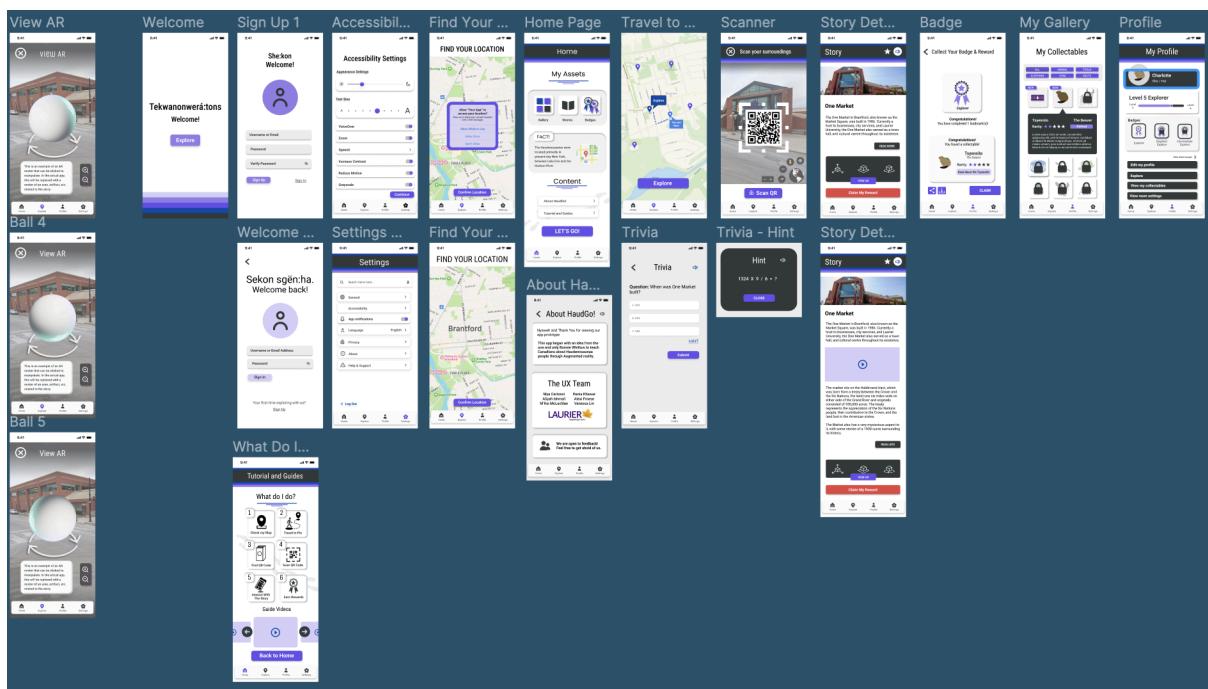
High Fidelity

Before Edits



Test Changes from High Fidelity

Based on the user testing of our [high-fidelity prototype](#), we were able to gather a variety of design changes. To improve our sign-up page, we ensured there was a back button and made the login info more clear. To adjust our AR interaction, we added signifiers to show that users can click and drag instead of having no interactive portion. To keep buttons consistent, we added toggles instead of “On and Off” setting buttons. One comment from participants stated that they enjoyed the trivia aspect as it prompted information recall. To improve the “What Do I Do” page, we made the icons into buttons as our users already perceived them as clickable. One main aspect that our team was the font choices. We wanted to ensure our app was readable and accessible for all users, so we chose a simpler font.



The Bias of Our Data

It is essential in the collection of data to recognize possible bias in the study. In the case of this study, personal relationships may have contributed to the positive nature of the answers from participants. This being stated, the participants still gave valuable ideas and insights to the development of the project. Young people also often give positive answers and have a mental map that already understands icons and other basics of design. We mainly tested with people who know how to use phones and apps and who can fill in technological blanks when tasked with confusing tasks (20 year olds).

What We Learned

Throughout our design process, we were able to gain valuable skills and knowledge that will help us in our future endeavours. As a team, we had the opportunity to learn and use various design tools, such as Figma. Through this program, we were able to create and refine our design prototypes, and utilise the prototype feature to make our designs interactive. This experience allowed us to better understand the importance of creating functional and user-friendly designs that are intuitive for our target audience. In addition to refining our design skills, we also gained a deeper understanding of our target user group and their culture. We recognized the importance of incorporating cultural values and traditions into our design to create a meaningful and respectful user experience. By conducting research and engaging with members of the Indigenous community, we were able to gain valuable insights and feedback on our design approach. This process helped us to better understand the needs and preferences of our target users, and allowed us to design an experience that truly resonates with them. Overall, we are grateful for the opportunity to learn and grow through this design process. We believe that the skills and knowledge we gained will not only benefit us in our future design work, but also allow us to create meaningful and culturally respectful

experiences for our users. As a team, we look forward to continuing our growth and learning, and applying these lessons to future design projects.

Conclusion

Overall, the usability experiments conducted on our prototypes provided valuable insights into the user experience and helped us to achieve our user needs and goals. The feedback, comments, and suggestions provided by the participants were crucial in identifying areas where the application could be improved. We were able to use this information to further develop our design and move through the design thinking cycle/process. By analyzing the results of the usability experiments, we were able to identify the strengths and weaknesses of our design, and make necessary adjustments to create a better user experience. As a team, we recognize the importance of learning from these experiments and using the feedback received to improve future designs. We plan to use the lessons learned and limitations identified during this process to inform future design decisions. Additionally, we will continue to conduct usability experiments throughout the design process to ensure that our designs are meeting the needs of our users. Overall, we believe that the usability experiments were instrumental in creating a better user experience and helping us achieve our design goals.