

Final Report

Team Vue-nicorn

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Introduction

The primary goal of our project is to create a seamless app experience that **emulates the feeling of physical letters or writings** for incarcerated individuals. With increased scrutiny, regulations and expense surrounding the delivery of physical mails to prisoners, our client, Prisoner Express, hopes to move the contents of their newsletter digitally. Given that almost all prisoners each have a tablet of their own, we are envisioning an application that can be installed onto these tablets that will bring a similar experience as that of a physical newsletter.

User Research

To understand the goals and requirements of the application, we first **conducted [User Research](#)**, interviewing the client, a previously incarcerated individual, and utilizing survey data responses, to synthesize a summary of the following key findings.

Key findings

Our user research uncovered several critical insights and established a foundation of requirements for the app's development, as well as the goals of the app's audience. It illuminated the need to create an app experience that **mirrors the personal touch and connection of physical letters** for incarcerated individuals. Key findings highlighted the importance of **seamless operation across different tablet devices** within prisons, **without the need for internet access**. It emphasized the app's **ease of use to cater to the technological skills spectrum** of the inmate population. As user-submitted content and responses are received by Prisoner Express via physical mail, the app's administrative side should be able to **keep track of these received mails**. The research also stressed the **significance of human connection and self-expression**, and the **relevance and variety of options of engaging and enriching content**.

Gathering all findings, we created an [Affinity diagram](#) to identify key [themes](#). We identified our target audiences and their goals for our app and **created [user personas](#)** that resonated with our app's different audience. Taking all this into consideration, we established suitable [task scenarios](#) that aligned with the identified user goals.

Design Ideation

Keeping in mind the research findings, the task scenarios created, the client requirements, and the user goals, we proceeded to [brainstorm](#) **different conversation ideas on features and functionalities our app should incorporate**. This allowed us to **design a single user app flow** for each target audience. After [evaluating](#) this design with the task scenarios, we synthesized our [final design](#), which we [rationalized](#) with the expected conversations.

Final Prototype

Our final design was [Prototyped](#) in **Vue.js**, utilizing **Bootstrap and PrimeVue** libraries for components. We conducted a [usability test](#) to refine our prototype design and task scenarios, which allowed our prototype to be **functional and seamless in meeting user tasks and goals**.

Prototype PWA

<https://cornell-info4340-2024sp.github.io/vue-nicorn-project/>

To implement the prototype, it was essential to plan the implementation so we could **identify and dynamically render views based on content**, and the **reusable components** we needed to implement to the different views. We also needed to plan the **routes and route parameters** to create a seamless navigation of views. As we are using static locally stored data, we also had to plan the **structure of our content, which will be stored in the fixtures.json** file. Details of our planning process can be found in the [Implementation Plan](#). After developing our prototype, we conducted a [Prototype Assessment](#) to **review and justify our implementation** against the user goals.

We deployed the primary user application as a Progressive Web App (PWA) and our administrative user application can be run through the following commands at this [Github repository](#):

- `cd admin`
- `pnpm install`
- `pnpm run dev`

Our prototype was extensively tested, **keeping in mind the ideal “happy-path”** for each task scenario and then **proceeding to test with five proxy primary users**. Apart from one hurdle encountered, which had to do with one of our task scenarios (details reported under [Usability Testing](#)), the usability testing was seamless with no issues found in our design.

User Research

To determine the client goals and requirements, we first **interviewed the client** to understand their goals and requirements and **assessed the current physical newsletter's contents**, the summary of which can be found under [Client Goals & Requirements](#). After which we **conducted a modified user interview (proxy)** of a formerly incarcerated individual, the summary which can be found under [User Interview](#). We also obtained **survey data collected** from current Prisoner Express participants from Lyss, the developer of Prisoner Express' App Design program. We thoroughly reviewed this data to identify key findings on user needs (found under [Survey Data Analysis](#)).

Client Goals & Requirements

The **primary goal of our client is to digitize the current physical newsletter**, Prisoner Express, so as to overcome the challenge of the restricted, highly regulated, and expensive task of distributing hard-copy newsletters to prisoners. Thus, the main requirement is to develop an **offline app** that can be **updated quarterly with content** for prisoners to read. Alongside this, we want to still **retain the feeling of physical letters** or writings as **human recognition and connection is highly crucial** to offering relief from the stress, depression, and isolation brought about by incarceration. As prisoners do not have access to the internet, the app must work **seamlessly on various types of tablet devices**, displaying the **content without relying on internet access**. These **contents include** educational materials, programs, and writings sent by prisoners via physical mails as well as responses written by other prisoners. One of the key features of the physical newsletter is the option for prisoners to indicate their preference of programs to sign up for. Hence, a key requirement is to provide prisoners with the **ability to indicate their program selections** for relevant content to be distributed to them. Lastly, the app's **ability to track active and engaged users** is crucial, a goal stated by the client. These goals and requirements were narrowed down after conducting a thorough user interview with the client and assessing the newsletter they currently distribute. The interview notes can be found in the [Appendix: Raw Client Interview Notes](#).

User Interview

We conducted a proxy user interview with Richard Riviera, the Education Director for Cornell's Prison Education Program. Richard was incarcerated from the age of 16 until his release in 2019 at the age of 51, hence, he is well aware of the prison system and suitable as a proxy for our user interview. Our user interview questions and the consolidated responses we gathered are found in [Appendix: User Interview Questions & Responses](#) and raw interview notes are found under [Appendix: Raw User Interview Notes](#). This **summarized** to the following key findings:

Key Findings

1. **Importance of Validation, Expression and Connection:** Mails play a critical role in maintaining connections with the outside world and validating prisoners' humanity. As well, Prisoner Express's current impact on inmates' sense of validation and their desire for a voice, emphasizes the need for an app that prioritizes emulating self-expression and human connection.
2. **Experiences with Mail Services:** The frustration with mailing services, including limitations on what can be sent and received, and the significance of receiving mail for connection and validation, highlight the potential benefit of digitizing the newsletter.
3. **Content Relevance and Engagement:** The content of the digitized newsletter is critical to rehabilitation efforts. They should be relatable and relevant to prisoners' experiences, as well, offer educational and creative content that addresses their interest and needs.
4. **Compatibility of Digital Devices:** The introduction of tablets and digital services in prisons presents an opportunity to make content more accessible and interactive. However, given the varied infrastructure of tablets in different prisons, the app should be compatible with varied types of devices.
5. **Barriers to Technology Adoption:** Given the varying levels of tech-savviness among prisoners and apprehension of some towards new technologies, it highlights the need for inclusive design to engage a broader demographic. Hence, the need for a design with simplicity, ease of use, and intuitive navigation in mind.

Survey Data Analysis

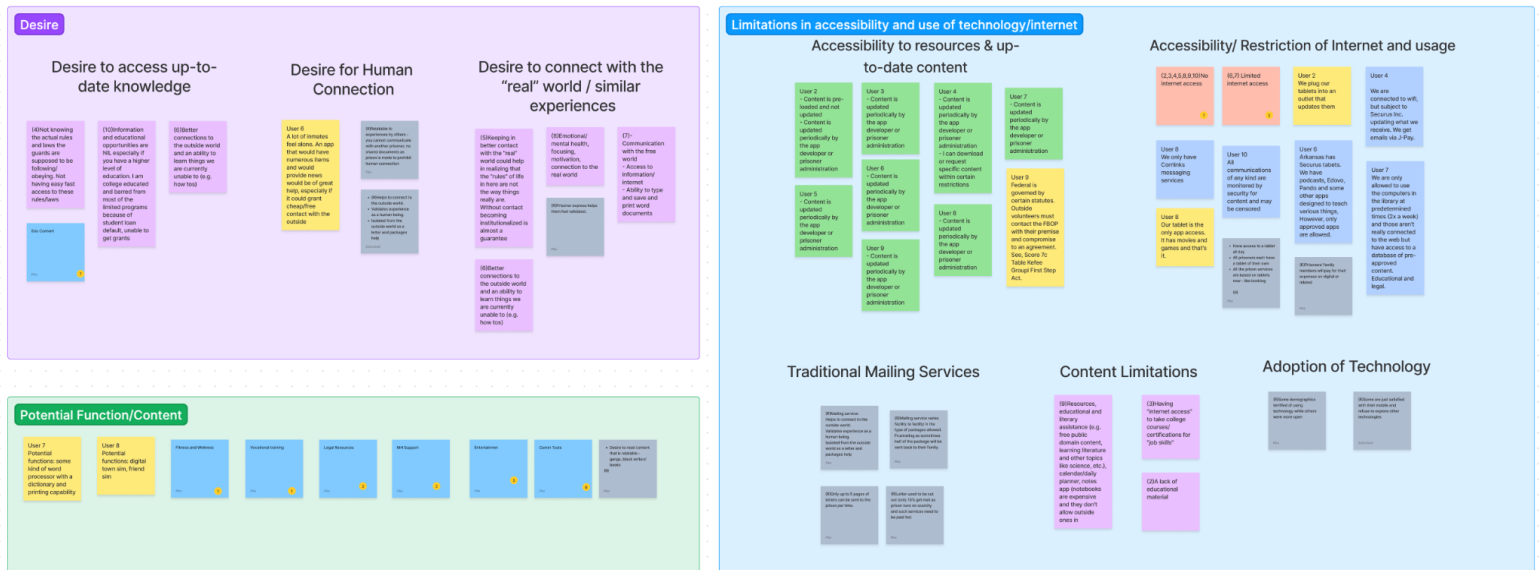
After conducting our user interview, we supported our user research using survey data collected by Lyss, the developer of Prisoner Express' App Design program, from current Prisoner Express participants. This **summarized** to the following key findings:

Key Findings

1. **Limited internet access:** Prisoners have limited internet access, with only approved apps, content being heavily censored, access to the internet being highly regulated, and web-connections being limited to a pre-approved content database.
2. **Inability to access up-to-date content:** Though the users are eager to connect with the "real" world and learn more about the up-to-date knowledge, they are not provided with content that constantly updates. Content is primarily updated by the app developer or prison administration, which suggests a delay or gap in accessing current information.
3. **Desire for different types of content/resources:** There is a notable desire for a broader range of educational material on tablets. As well, content that they can relate to.
4. **Desire for connection to the outside world:** Prisoners feel isolated and desire better connections to the outside world. They want to feel validated and have a sense of connection which they used to get through traditional mailing services.
5. **Varying knowledge & desire in using technology:** Different demographics within prisons have varying levels of literacy in technology. Some fear and are apprehensive of the use of it due to its complexities.

Themes Identified in User Research

Consolidating the findings from the User Research, we created an **Affinity diagram**, brainstorming and identifying themes. We extracted information from both the user interview and the survey data to create an [Affinity Diagram](#). We went about to identify, consolidate and extract relevant information, which then **narrowed to the following themes** which potentially captures the essence of incarcerated individuals' needs and expectations.



User, User Goals, and Persona

Using our user research findings, we thoroughly understood the different users and their goals with our app - our primary audience (prisoners) and the administrative audience (Prisoner Express admins), which we have detailed in this section, and created suitable Personas.

Primary User: Our primary users are incarcerated individuals who have limited connections and knowledge of the world outside the confines of prison walls. As such, they desire a human connection and validation, which they get from reading other prisoners' experiences, knowledge of the outside world, and when they get to share their feelings and experiences. However, they have limited resources to fuel this desire due to limited internet access and receiving up-to-date content.

Goals

- To discover works by other prisoners that they can resonate with, so as to not feel alone in their experiences.

- To view the content/work they sent to Prisoner Express published and feel recognized and validated.
- To learn and view resources that are engaging and educational that they are interested in, so as to pass time and gain relief from depression during isolation in prison.

Administrative User: Our administrative users are the admins of Prisoner Express who compile the content and resources to publish in the Newsletter to distribute to prisoners, that is updated quarterly. They publish work sent by prisoners and other educational program content that prisoners might be interested in, so as to give prisoners the opportunity to improve their mental well-being and learning. However, there are lots of mails that come through, and keeping track and ensuring each prisoner gets recognized is a hassle. As well, due to differing technical literacy of prisoners, they would want to provide content in an inclusive manner.

Goals

- To provide content such as educational materials, programs, or work by prisoners; and update it per quarter, so as to provide resources for prisoners to use and find relief from stress and depression.
- To provide content in a way that can be navigated by prisoners with varied technical literacy, so as to be inclusive.
- To keep track of all mails/content received from prisoners, so as to ensure every prisoner feels recognized.
- To be able to share the responses that prisoners received on their content from other prisoners, so as to help prisoners feel connected and validated.

Primary Audience Persona



Jason
Male

Jason is a prisoner at Tompkins County Jail. He has spent 20 years due to class-B felony. He loves reading law related books and playing chess, which he does during his spare time in prison. However, he has exhausted things he can read and use to advance his knowledge and skills in this area. He also feels alone as he does not have anyone who he can talk to about how he feels - being isolated and depressed as a result.

Age: 50 y.o.
Name: Jason
Occupation: Incarcerated
Primary device: Prison issued tablet (perhaps SecureView)

Goals

1. To discover works by other prisoners that he can resonate with, so as to not feel alone in his experiences.
2. To learn and view resources that are engaging and educational that he is interested in, so as to pass time and gain relief from depression during isolation in prison.
3. To view the content/work he sent to Prisoner Express published and feel recognized and validated.

Obstacles

- He only has basic technical skills with familiarity in using uncomplicated user interfaces.
- Has minimal Internet access.
- No avenue to learn more skills other than what he knows or what content he can access.
- No access to up-to-date content.
- Families having to pay for certain existing services such as mailing or app services.

Wants & Needs

- To access up-to-date knowledge resources.
- To have human connection and validation.
- To connect with the outside world and similar experiences he can resonate with, so as to not feel alone in his experiences.
- To pass the time and gain relief from depression during isolation in prison.

Administrative Audience Persona



Steve

Male

Steve works at Cornell University Library and has been helping with the Prisoner Express program for two and a half years. Reading essays and work written by prisoners motivates him to publish content that helps Prisoners find relief from their isolation as he is passionate on making positive impact on the lives of those in prison. As well, he values the importance of sharing educational material and programs to equip prisoners for life after prison.

Age: 28 y.o.
Location: Cornell University
Occupation: Librarian
Primary device: Computer, Mobile, Tablet

Goals

1. To provide content in a way that can be navigated by prisoners with varied technical literacy, so as to be inclusive.
2. To be able to share the responses that prisoner's received on their content from other prisoners, so as to help prisoners feel connected and validated.
3. To provide content such as educational materials, programs, or work by prisoners; and update it per quarter, so as to provide resources for prisoners to use and find relief from stress and depression.
4. To keep track of all mails/content received from prisoners, so as to ensure every prisoner feels recognized.

Obstacles

- Different prisons have varied technological infrastructure/devices.
- Minimal internet access so less communication with the users.
- Balancing the prison's security protocols with the inmates' need for updated content.
- Too many mails received, and potentially losing track of some to publish.
- Some of the content is not reaching prisoners via the newsletter due to changes in prison location.

Wants & Needs

- To help prisoners feel connected and validated.
- To offer prisoners relief from the stress and depression of incarceration.
- To enable human connection and recognition
- To be inclusive to prisoners of varied technical skills or demographics.

Task Scenarios

We then curated task scenarios for each audience/persona, tying them closely to achieving each user goal. These task scenarios will be pivotal in allowing us to determine if our app is designed and developed to meet client requirements, and user goals and needs.

Primary User

- **Task Scenario 1:**

Goal - To discover works by other prisoners that they can resonate with, so as to not feel alone in their experiences.

You are a prisoner at Tompkins County Jail and you feel lonely and depressed during your time at prison. You feel that nobody else is feeling lonely like you. You want to look through the Prisoner Express app to see if other prisoners are feeling lonely like you.

(Updated post usability testing): You are a prisoner at Tompkins County Jail and your cellmate has been raving about an essay he read that resonated with him. He couldn't remember the title of the essay, however he mentioned the author was Hernandez Cesar. You want to search through the Prisoner Express app to find this essay.

- **Task Scenario 2:**

Goal - To learn and view resources that are engaging and educational that they are interested in, so as to pass time and gain relief from depression during isolation in prison.

You are a prisoner at Tompkins County Jail and you want to learn more about how to play chess as you want to play and feel less bored during your time in prison. You want to look through the Prisoner Express app for program content on chess to learn.

- **Task Scenario 3:**

Goal - To view the content/work they sent to Prisoner Express published and feel recognized and validated.

You are a prisoner at Tompkins County Jail. You sent a letter to Prisoner Express with your essay titled “Improving my mental well-being” in January. You want to find your published essay on the Prisoner Express app.

Administrative User

- **Task Scenario 1:**

Goal - To provide content in a way that can be navigated by prisoners with varied technical literacy, so as to be inclusive.

You are an admin of the Prisoner Express app. You received a Poetry piece and an Essay written by some prisoners. You want to publish these works under suitable sections of the app.

- **Task Scenario 2:**

Goal - To be able to share the responses that prisoners received on their content from other prisoners, so as to help prisoners feel connected and validated.

You are an admin of the Prisoner Express app, you received a letter from Lukas Knight, appreciating the essay written by Jason Kingsley titled “Loneliness”. You want to post Lukas’s response to Jason’s Essay.

- **Task Scenario 3:**

Goal - To provide content such as educational materials, programs, or work by prisoners; and update it per quarter, so as to provide resources for prisoners to use and find relief from stress and depression.

You are an admin of the Prisoner Express app. You launch programs biannually, including chess, creative writing, book clubs, and more, for prisoners. For the next publishing, you are given the program content to post for “How to BeatBox”. You need to publish this educational program.

- **Task Scenario 4:**

Goal - To keep track of all mails/content received from prisoners, so as to ensure every prisoner feels recognized.

You are an admin of the Prisoner Express app. You received tons of mail from different prisoners. You want to manage those inputs and mark if you and your team reviewed or posted the mails as content.

Brainstorming & Design Ideation

In this section, we dive into the heart of creative brainstorming, focusing on the exploration of innovative design and solutions for our app. We first **deciphered different conversations** our app could have for each of the task scenarios we crafted previously, sketching out the different design iterations with annotations of our brainstorming process ([Appendix: Brainstorm Sketches](#)). We evaluated the different conversations and **narrowed down the conversation we wanted** our app to have for each task scenario.

Conversation we want for the primary user,

- **Task Scenario 1:**

User: "I want to find this essay by 'Hernandez Cesar' that other prisoners have been resonating with."

App: "Happy to help! You can **navigate** to the "Writings" section and under "Essays", you can view the essays written by others. You can click on "view all" to see all the essays and **search** with the search bar for "Hernandez Cesar" to find this resonating essay."

- **Task Scenario 2:**

User: "I want to view programs teaching more on chess moves."

App: "Happy to help! Sure, to do so you could **navigate** to the "Programs" section and use the **search** bar to search for "chess" to find programs related to chess."

****The current process for subscribing to read programs is by physical mail, where prisoners have to fill their preference selection on a page in the physical newsletter and mail it back to Prisoner Express. We felt that this is no longer possible with everything moving digital. Hence, to bypass this process, we decided to have the **app make all programs available to every** user.*

- **Task Scenario 3:**

User: "I want to view the essay I submitted."

App: "Happy to help! Sure, to do so you could use the **search** bar to search for content with your **name, or the title** of your essay."

Conversation we want for the administrative user,

- **Task Scenario 1:**

Admin: "I want to publish an essay written by a prisoner."

App: "Happy to help! Sure, to do so first **navigate** to the "Writings" section. Then **click the add button under "Essays"**. This will navigate you to a **view that allows you to add the content** of the essay and **publish** it."

- **Task Scenario 2:**

Admin: "I want to add a comment sent in by another prisoner to an essay that was posted."

App: "Happy to help! Sure, to do so navigate to the "Writings" section, then **search** for the essay title or author. **Click on the edit** of the essay and in the "**Add comments**" space, input the responder's name and comment. Click **save/publish** to post the comment."

- Task Scenario 3:

Admin: "I want to publish a program with a cover image."

App: "Happy to help! Sure, to do so **navigate** to the "Programs" section. Then click the **add button**, which will navigate you to a view that allows you to **add the content** of the program to publish. You can click the **upload image button** to add an image for the cover."

- Task Scenario 4:

Admin: "I want to view the pending posts and update the posts that have been published."

App: "Happy to help! Sure, to do so navigate to the "**To-do**" section. Then you navigate to the "**Pending**" tab, and **change the status** of the posts you have completed publishing. You should be able to view them under the "**Published**" tab after."

We then proceeded to **research existing reading app interfaces**, pasting them on an "[Idea Board](#)" and highlighting features we felt gelled and wanted our app to consider incorporating. We reviewed apps like *FBReader*, *Kindle*, *AppleBooks*, *Barnes & Noble*, and *RecipeKeeper* to brainstorm ideas for our Primary users.

Features we liked:

- An app that **looked like a book** when flipping through (similar to Kindle), to retain the look-and-feel of physically reading a newsletter. As well, addition of **chevron side navigation** for ways of navigating pages for the non-tech savvy users (AppleBooks). There will also be a **font-size adjuster** to be more user-friendly for a varied demographic of users (Kindle and AppleBooks).
- An app that displayed **previews** of the reading/essay/art in **big rectangular boxes** (FBReader and Barnes & Noble). This would help to give an overview of the title, writer, etc which would be easier for selecting and viewing based on preferences. **Chevron side navigation is available to scroll** through each category, and a "**See all**" button to view all under the category (FBReader, Barnes & Noble and AppleBooks).
- An app that has a **search function** to be able to search for specific authors or titles (All).

For the Administrative users, we referenced apps like *Cornell's Canvas* and the *Quizlet app*.

Features we liked:

- An app that allowed the admin to input text, attach images, change fonts/colors to the content to publish. As well, allowed them to **preview before publishing and return to edit** if they needed to make changes (Cornell Canvas).
- An app that allows the option to **upload a scan and process that content** instead of painstakingly typing out everything (Quizlet).

Taking all of these findings, as a team, we **sketched out a design flow of what we envisioned** the app to look like and features it should include. We felt this design met the client requirements and the user goals, as well, was user-friendly and intuitive. The **ideated design flow** can be found under [Appendix: Design Ideation](#).

Design Evaluation

For the evaluation process, we walked through each task scenario we had created with the app, to assess if the features and functionalities we incorporated allowed the users to perform the task scenarios smoothly. We wore the hats of each user and using the whiteboard ideation flow we designed in our [Design Ideation](#), conducted this evaluation process. The details of each task scenario's evaluation can be found in the [Appendix: Evaluation of Task Scenarios](#). The following section documents our understanding of each task scenario - the obstacles in user flow and improvements we need to make to our design.

Primary User testing:

- Task Scenario 1:
Our design supports this task by allowing the user to open the app, navigate to their desired section via the navigation bar, browse works or search specific terms.
Findings: This user flow was smooth and pretty intuitive. While there was a hiccup on which view to navigate to to search for the keyword, it is something that would not happen in a developed application which includes appropriate fixture.json.
- Task Scenario 2:
Our design supports this task by allowing the user to open the app, navigate to their desired section via the navigation bar, browse works or search specific terms.
Findings: This was also a very smooth flow, with the user navigating to the correct view and clicking the search bar to search required keywords.
- Task Scenario 3:
Our design allows prisoners to easily find and access published content. Also, intuitively navigate through the platform.
Findings: This was also a very smooth flow, with the user navigating to the correct view and clicking the search bar to search required keywords. While the Whiteboard sketch had a differing title result, our app when prototyped would have the title from our task scenario.

Administrative User testing:

- Task Scenario 1:
This design ensures users can easily navigate to the appropriate section to add the work, and it allows administrators to efficiently add and publish the content in the relevant areas.
Findings: Although the task scenario was completed correctly, however, the user mentioned that they were unsure what the "Upload Images" button was for. This made us realize there

is a need to update the labeling with clearer instructions on what is to be uploaded - which is the cover image. Thus, we revised our final design and renamed the "upload photo" button to "upload cover photo."

- Task Scenario 2:

This design supports this task scenario by allowing users to specifically find an essay piece, edit it to then add a response received.

Findings: While the whole process was smooth, the user had incorrectly tapped the "Save" button instead of the "Publish" button, which made us realize it was not clear to the user. Hence, in our final design we decided to remove both the "Preview" and "Save" button. As well, the user asked what if there are multiple comments to add to an essay or needed to remove a comment. This also made us realize that we needed a function to add new comments and delete some. This also requires a box to include the responder's name to differentiate the comments, which we added as well.

- Task Scenario 3:

Similar to previous tasks, our design also supports a smooth publishing of program content with the easy, clear navigation and the add button placement next to each section.

Findings: This task scenario was also performed smoothly, where the user correctly tapped to navigate to the required view and tapped the correct button to navigate to add content.

- Task Scenario 4:

Our design supported this task clearly with a clear label of "To-do" insinuating a task management view. And with clear button icons, the task scenario was performed smoothly.

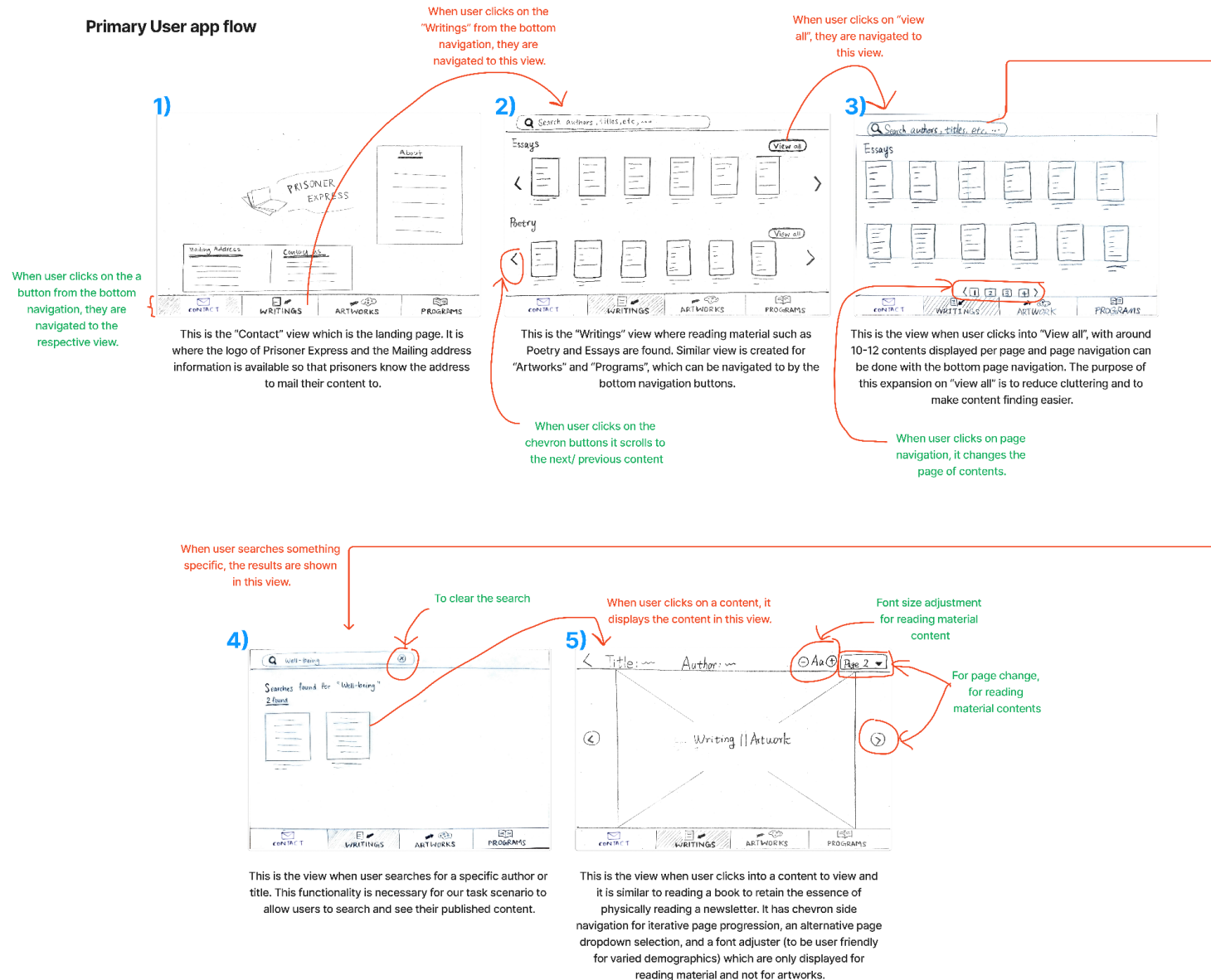
Findings: This task scenario was also performed smoothly. However, they mentioned that there is no button to add a new task or a button to edit the task. Hence, in our final design we improved it to include a "Create task" button, an edit icon button, and implemented a view for this.

Overall, for the **primary user app design**, it was very seamless and intuitive and all the features and functionality made sense. Users were able to intuitively navigate to their desired section such as writings, artworks and programs via the navigation bar, and browse using the search bar for desired content. It aligned with all the task scenarios, hence, confirmed our design was sound. For the **administrative user flow**, although sound, brought to our attention many features we needed to add and delete. We retested this Administrative flow with the changes and it ran smoother than before, validating the design and its support of the task scenarios. Additionally, it made us realize "*How will prisoners know which address to mail their content to?*" Hence, we created an additional view of a "Contact" view, which is a static view simply to provide users with mailing details and instructions. Incorporation of the changes culminated in our [Final Design](#).

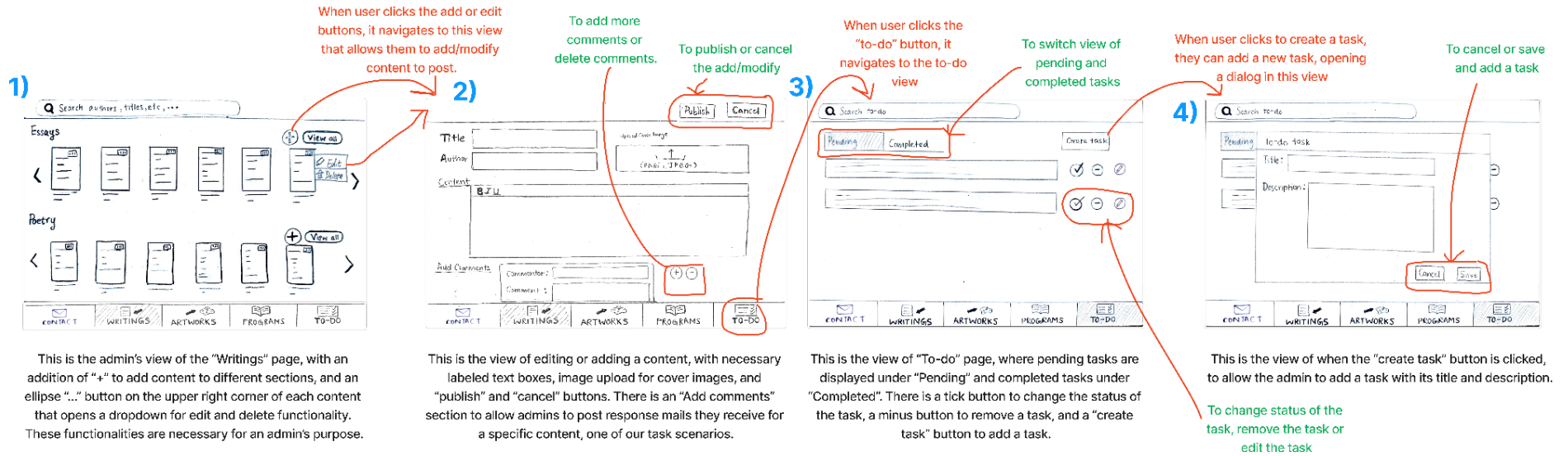
Final Design

The following is the final sketch of the app's design - the "blueprint" for implementing the application.

Primary User app flow



Administrative User app flow



Design Rationale

With our final design, we **assessed the final conversation** our app would have for each of its users using the personas we had created - **how the design met the goals of each user**. The following section elaborates on this, providing the exact conversation for task scenarios and how they meet their goals.

For the primary user, our persona, Jason, experiences the following conversation. Upon launching, the app shows Jason the Prisoner Express logo and mailing address, telling him where and how he can submit his creative work. This creates transparency and consistency, easily facilitating him to perform task scenario 3. The comprehensively labeled navigation bar buttons of the app tells Jason the views he can navigate to get access to varied content categories like "Writings" (poetry and essays), "Artworks," and "Programs" (educational resources). This addresses Jason's need to discover engaging and educational materials (Task Scenario 2) to combat boredom and isolation. Within each category, the app limits the number of content displayed to Jason at a time (10-12 items), which avoids overwhelming him with too much content to go through. By strategically placing and making a search functionality available, the app allows Jason to find specific content or his published work (Task Scenario 3), in the most efficient way. Being able to find his contribution enables validation and contribution, and being able to find relatable content fosters a sense of connection. Finally, upon clicking on a content to view, the app opens it up to a view that enables him a reading experience similar to a physical book. The app also provides him with functionalities to adjust font size and navigate to views, which ensure Jason can comfortably engage with the content, despite any limited vision capabilities or his various needs in browsing.

For the administrative user, our persona, Steve, experiences the following conversation. Displaying an akin layout as shown to the primary user, the app tells Steve that he can navigate through similarly. This consistency in design makes it more comprehensible on how published content will be displayed to the primary user when he performs Task Scenarios 1 and 3. The comprehensively labeled navigation bar buttons of the app tells Jason the views he can navigate to get access to varied content categories. As he navigates to the "Writings" view, the app prompts him with a standardly-used plus button icon that tells him he can click it to add content, allowing him to perform Task Scenario 1. By placing this button to each category heading, the app makes it clear to Jason that the content addition is to that specific content. Being able to publish content such as educational materials, programs, or work by prisoners allows him to help prisoners to use and find relief from stress and depression. The app also places a standardly-used ellipse button icon on each content, which instructs Jason to tap to get a dropdown of more functions he can perform to the content such as "Edit" and "Delete". Upon clicking on the edit button, the app brings Jason to a content add/edit view with clear labeled headers telling him what to input in which field, allowing him to perform Task Scenarios 1 & 3 with a consistent format. This allows him to display content to the primary users of the app in a consistent manner, meeting the needs of varied tech-savvy primary users. The app also prompts him with the "Add comments" header to indicate the section where he can add responses received from primary users to a content, allowing Task Scenario 2 to be performed

with ease. This functionality is crucial to foster a sense of connection and validation among prisoners. Finally, with a commonly used navigation label of “To-do”, the app communicates to Jason where he can go to manage tasks (Task Scenario 4). With standardized icon buttons and structure similar to modern task-management tools, the app makes it easy to understand for Jason how and what he can perform with each button - he can mark them as pending, completed, or reviewed. This ensures that all content received is reviewed and not missed.

Implementation Plan

In this section, we dive into planning out how to implement the designed app into a high-fidelity prototype. As a team, we sketched out different views that we needed and their components. We **identified the components that are reusable** over different views, and **views that are repeated and could be dynamically rendered**. This allowed us to plan out **appropriate routes and route parameters** to customize each dynamic view’s content. Finally, this planning allowed us to understand and devise the **skeleton structure of the fixtures.json objects** to be able to render based on the route and route parameters. The sketches of our brainstorming process can be found in [Appendix: Implementation Plan Sketches](#).

The following are **Reusable Components we first plan on developing**. These components are commonly used across more than one view and hence, need to be implemented first to follow a coding convention that reuses as much code as possible.

- A **bottom navigation bar** component - this component is sticky and rendered on the App.vue file, to display constantly across every view.
- A **top-positioned search bar** component - this component is available on the “View All” view and the “To-do” view of admin’s app.
- A **content preview card** that comprises a cover image, the content title and author details - this component is used relentlessly in the “Display” view and the “View All” view and hence is repeated multiple times. As well, in the admin app, we have to modify this component to include an action dropdown button with Delete and Edit functionalities, which can be displayed conditionally.
- A **scrollable section for the content preview cards** - this component is repeated twice in the “Essay” and “Poetry” categories under the “Writings” view. This component contains a “view all” button that navigates to the “View All” view, a category header, a couple of content preview cards, chevron scroll buttons on either sides to scroll to previous or next preview card, and if this is an admin app, then to include a “create” button to post content to the category.
- An **epub display component** - we plan on displaying the content to read in an epub file to resemble and imitate the feeling of reading a book. Hence, this component needs to be dynamically rendered and would require parameters to customize.
- A **response add/delete component** - as this component is dynamically multiplied or reduced upon the click of add/delete, this component is reusable.

- A **To-do task row component** that contains Delete, Edit, and Status change buttons - this row is repeated for each task, with the buttons conditionally rendered based on the completed/pending tab display.
- An **Add/Edit task dialog component** - this is for when new tasks or when editing tasks.

The following are the **Views we identified** and the components from above that we needed to incorporate into these views.

- **Body of the App - App.vue**
 - Bottom navigation bar component
 - Router renders the body of the app based on the view.
- **Contact View - (Static display)**
 - Prisoner Express Logo
 - Mailing address
- **Display View - For "Writings" navigation**
 - Scrollable section component for content preview cards
 - Category Headers
- **ViewAll View**
 - Top-positioned search bar component
 - Content preview card components - *different view display for artwork* where on click, the artwork maximizes as an overlay that can be closed.
 - Header of 'Search results found...' - only for Search results when searched
 - Pagination
 - For the artworks, a side panel with the comments to view.
- **Reading View**
 - Top bar with detail on Title and Author, font-adjuster to the epub, close button and a comments view button.
 - Comments modal view.
 - Epub display component
- **Post View**
 - Title, Author, Content (Quill), Upload Image, etc input fields
 - Response add/delete component
 - Publish and Cancel buttons
- **To-Do View**
 - Tab View (Pending/Completed)
 - Add Tasks button
 - To-do task row component that contains Delete, Edit, and Status change buttons
 - Add/Edit task dialog component

Based on the following views we **evaluated the required routes and route parameters** as follows. We have our main landing view as the contact view. The `"/:type"` navigation is for the Writings View, `"/view-all/:type/:category"` is the view on click of "View all" button under the Writings view for respective writings categories and will be the main direct navigation for the Artworks and Programs. Finally, with the file key as the `":url"` attribute, we can navigate to the Readings view for specific files. For the admin view, we have the additional `"/todo"` view for task

management, and “/post/:type/:category/:url” for publishing creation and editing. If the “:url” field is “create” then it is a publishing creation and if it is the file key value, then it is to edit that specific file.

```
routes: [
  //for the contact view
  {
    path: '/',
    name: 'contact',
    component: ContactView
  },
  //for the writings view
  {
    path: '/:type',
    name: 'display',
    component: DisplayView
  },
  //for the reading view
  {
    path: '/:type/:category/:url',
    name: 'display-reading',
    component: ReadingView
  },
  //assign directly for artwork and programs
  // - and writings navigation for essays and poetry
  {
    path: '/view-all/:type/:category',
    name: 'display-all',
    component: ViewAllView
  },
],
```

```
//admin side for todo
{
  path: '/todo',
  name: 'todo',
  component: ToDoView
},
//for the post edit & create view
{
  path: '/post/:type/:category/:url',
  name: 'post',
  component: PostView
}
]
```

And finally, we **planned the skeleton structure of our fixtures.json objects** as follows. We created a “content-materials” object and a “tasks” object. “content-materials” contains keys “writings”, “programs” and “artworks” which will be the “:type” attribute in our navigation. The “writings” object expands to “essays” and “poetry” keys, while “programs” expands to “programs” and “artworks” expands to “artworks” - these are assigned to the “:category” attribute in navigation. Each category’s object structure has the fields “id”, “title”, “author”, “file” (the file location in the local public directory), “cover-img” (the cover image file name under the local public directory), and a “comments” array.

```
{
  "content-material": {
    "writings": {
      "essays": { ...
    },
    "poetry": { ...
    },
    "programs": {
      "programs": { ...
    },
    "artworks": {
      "artworks": { ...
    },
  },
  "tasks": { ...
}
```

```
"essays": {
  "improving-my-mental-well-being": {
    "id": 1,
    "title": "Improving my mental well-being",
    "author": "Jason Mendes",
    "file": "files/Improving my mental well-being.epub",
    "cover-img": "improving-mental-JM.png",
    "comments": [ ...
  ],
}
```

While developing, we encountered some limitations to the current available packages, we identified better placement of some components to improve the user experience, and we identified component changes we needed to accommodate our routing and fixtures. Hence, we added a “Close” button in the ReadingView so users can close out of the reading view. We removed the search bar from the Display view (only to render in the ViewAll View) as we felt it would make more sense to search from a lot more files such as that shown in a view all view. We could not implement a page dropdown selection for the Reading View as we are using Epub files and they are only navigable via content sections. We also moved the delete button inside each comment card. To delete a comment, we initially placed the 'Add' and 'Delete' buttons together near the first comment box, but trying to delete a specific comment proved to be inconvenient. Finally, we had not designed previously, to allow comments received by other fellow prisoners to be viewed. Hence, we incorporated a comments view button and suitable displays for the Writings and Artworks views.

Prototype Assessment

Using our carefully crafted Goals and Task Scenarios, we assessed our prototype's functionality for primary and admin users' goals and needs.

Primary user flow

Our design specifically addresses the goals of our primary users, fitting their environment and level of technological understanding.

- **Goal (Addresses Task Scenario 1):** To discover works by other prisoners that they can resonate with, so as to not feel alone in their experiences.
 - The major part of our design includes sections that display prisoners' works (essays, poetry and artworks). The search bar at the top of each section in the app allows users to explore others' works by searching for keywords. Within each piece of content, a comments icon or button enables users to read brief reflections from others about the work. Through this back and forth exchange, although updates occur only once a quarter, they no longer feel isolated.
- **Goal (Addresses Task Scenario 2):** To learn and view resources that are engaging and educational that they are interested in, so as to pass time and gain relief from depression during isolation in prison.
 - When they navigate to the programs view with the bottom navigation bar, they can find all the program resources. In this section, they can easily navigate through and read the available resources. The design of the view is simple, with clear content and few components. Users are able to adjust the font size based on their preferences, this is to cater to individuals of different demographics in age or have visual difficulties in reading.
- **Goal (Addresses Task Scenario 3):** To view the content/work they sent to Prisoner Express published and feel recognized and validated.

- Once they submit their works to Prisoner Express, and after updates are made, they can find their own works by searching by the author name or the title. By checking the comments (accessible in the upper right corner for writings, and on tapping each artwork and their “View Comments” button) received from other users, they will feel recognized.

Administrative user flow

For admin users, our design has resolved the difficulties they previously faced by simplifying the content upload process while still ensuring full functionality. Additionally, with the to-do list feature, we have further enhanced their management efficiency.

- **Goal (Addresses Task Scenario 1):** To provide content in a way that can be navigated by prisoners with varied technical literacy, so as to be inclusive.
 - In the admin application, the structure remains consistent to facilitate better organization of the format. In this case, the admin only needs to navigate to the corresponding sections and click the 'Add' button, or use the Edit/Delete buttons at the top of each file to make changes. Admins can input/edit the title, author, cover image, and body content, then click the 'Publish' button to complete the upload. They can also update with the comments to publish responses received.
- **Goal (Addresses Task Scenario 2):** To be able to share the responses that prisoners received on their content from other prisoners, so as to help prisoners feel connected and validated.
 - The comment section beneath each piece of major content enables admins to upload prisoners' reflections on the work, ensuring inclusivity by giving everyone the opportunity and access to share their thoughts. This simple and quick uploading process fosters a greater sense of connection among users.
- **Goal (Addresses Task Scenario 3):** To provide content such as educational materials, programs, or work by prisoners; and update it per quarter, so as to provide resources for prisoners to use and find relief from stress and depression.
 - In the program section, admins are able to share all available resources for the educational purposes of prisoners, allowing prisoners to explore ways to expand their knowledge.
- **Goal (Addresses Task Scenario 4):** To keep track of all mails/content received from prisoners, so as to ensure every prisoner feels recognized.
 - In the to-do list at the bottom of the navigation bar, the manager can easily upload tasks along with a brief description of the received emails. With this data input, all team members will be able to monitor the upload progress and ensure that all correspondence is appropriately handled.

Usability Testing

Our user testing process involved reaching out to **5 Cornell students. We used proxy participants** for evaluating our app's design as we do not have the resources to recruit and test with incarcerated individuals who are our representative primary users. We briefly explained to our participants that they will be representing our primary user persona of an incarcerated individual. The users are valid for evaluation as they valued the importance of human connection and were mindful of the issues incarcerated individuals could be facing. We also diversified the demographic of our participants, recruiting 2 females and 3 males, as we wanted to test the inclusiveness of our app.

First and foremost, we asked each participant if they had around 10 minutes to participate in our usability testing, briefly explaining what Prisoner Express does, the purpose of our app, and what we hope to learn through the user testing. We sought consent to take notes of their actions and their process of going through the app, as well, encouraged them to verbally walk us through their thought process as they navigated the app. We then presented the participants with the task scenarios to perform. We were mindful not to aid participants in any way and simply observed their navigation and thought process. We also randomized the order of the task scenarios presented to each participant, to reduce any potential bias in our user testing. At the end of each user test, we solicited any general feedback they might have, and expressed our gratitude for their time spent helping us test the app. The user testing raw notes can be found in the [Appendix: User Testing Raw Notes](#).

Key takeaways

Based on the user testing, we observed mostly a smooth interaction between the user and our app and completion of tasks without a hiccup. However, we did **observe a hurdle with our first task** that had the context that the user was feeling lonely and depressed and wanted to look through the Prisoner Express app to see if other prisoners are feeling lonely like them. Multiple users mentioned that the **task seemed like it was asking them to look for things that could mitigate their "loneliness"** and hence, they assumed they would look through programs, or read through essays that were on "improving mental health" or "gratitude". Whereas, our goal was for them to navigate a specific titled essay "Loneliness" and the goal of the task was to allow users to discover works by other prisoners that they can resonate with. Hence, proceeding forward, we **updated this task** to as follows: *"You are a prisoner at Tompkins County Jail and your cellmate has been raving about an essay he read that resonated with him. He couldn't remember the title of the essay, however he mentioned the author was Hernandez Cesar. You want to search through the app to find this essay."* **After the change, participants were able to perform this task better.**

This smooth interaction with the app and ability to fulfill the task scenarios presented that the app's design and prototype was intuitive and user-friendly. Many participants adored how simple the interface was and how most of the navigation, icons used, etc were intuitive to them, similar to how other apps present these functionalities. Overall, the user testing was a success and proved no further changes were needed, except for an alteration to our Task Scenario.

Summary of Contributions & Signatures

Sonia Sunil:

- User Interview section: key findings, and summary
- Introduction section: summary of our user research and the methods
- User persona and Task Scenarios
- Formatting the report to be cohesive
- Brainstorming process
- Design ideation
- Client Goals & Requirements
- Introduction
- Final Design
- Evaluation
- Report write up
- Initializing and restructuring of the App with views, fixture, route, packages, assets
- Reading View and Epub component for reading view
- To-do task row component, Todo view and Task dialog component
- Search functionality
- Comments function
- Posting view's functionality for edit & create
- User Interview

Signature - Sonia Sunil

Yuqi Li:

- User interview section: key findings, and summary
- Admin persona with its task scenarios
- Brainstorming process
- Design Ideation
- Evaluation
- Post view
- Report
- Styling the application
- User Interview
- Note taker
- Check requirements and organize pages

Signature - Yuqi Li

Mingyi Shao:

- Survey data analysis: affinity diagram and key findings
- User persona with its second task scenario
- User Goals & Requirements
- Design ideation
- User task Scenarios and evaluation

- Scrollable Card/Carousel with card previews for essays and poetry
- Pagination for essays, poetry, program, and artwork in the “view-all” view
- Data fixtures for essays, poetry, and programs
- User Interview
- Report write up

Signature - Mingyi Shao

Natalia Jordan:

- Client Goals & Requirements
- User personas
- User Task Scenario
- Rationale
- Administration Goals & Requirements
- Design Ideation
- Card previews with author, title and image for view all and display all
- Modal display for the artworks
- Delete functionality on viewall
- User Interview

Signature - Natalia Jordan

Pika Cai:

- Survey data analysis: created affinity diagrams, identified user goals
- User personas and Task Scenarios
- Collaboratively worked on the Design Ideation Section for both primary user flow and administrative user flow.
- Collaboratively created Final Design Section for both primary user flow and administrative user flow.
- Evaluation section with task scenario and explanation.
- Navbar
- Search bar
- Pagination
- Contact View
- User Interview

Signature - Pika Cai

Appendix:

Raw Client Interview Notes

Sonia:

- Client's goal: to reach the newsletter to the audience (prisoners), Keep the human aspect of the newsletter -> human recognition and connection
- Requirements:
 - - If every prisoner has the tablet then the newsletter is accessible on a tablet
 - - Every content has to be pre-loaded content; no internet
 - - Keep track of who is active/engaging --> contact date to ensure that the prisoners are still in the same location
 - - User submission is by physical mail --> should include where they are mailing from, which day they mailed }} it could help admin to track any incoming flow
 - - On the admin side, need to update content quarterly

Natalia Jordan:

- want it to feel personal
 - like paper
- app that will display these letters or writings
- constraints
 - every tablets for prisons will be different
- have all programs on the app
- they can send their mail to us
- programs create compilation documents
- app messenger services have payment constraints
 - maybe physical
 - there is also a character limit
- eduvo
- number one thing is access to materials, programs offered and others writings
 - clear instructions on how to participate in any project
 - clear in this semester this is what you can participate in
- Screen is "tablets"
- want the app to be well designed (stagnant) not to many updates needed
- want to give individuals a relief from stress and depression of jail
- diverse group of men and women
- getting anything we can from them as fast as we can
- air table
 - contact date to decide who is still active
 - every cycle you see who responds and contact
- have to hand their tablets in and out
 - sign in and out???
- create list of questions for prisoners

- prisoners want to be treated like normal civilians
- GOAL: newsletter reach audience
 - req: newsletter accessible on tablet
 - req: pre-loaded news-leter/ content; no internet
- goal: human recognition, human-connection
- req: user-submissions are by mail
- req: need to be able to update content quarterly

Mingyi:

writing & mails; access the materials; for different programs
 immersive
 every 6 months for new program
 4 times
 people signing up for through mails
 data entered; contact date

Raw User Interview Notes

Sonia:

- Richard Riviera
- Education director for Cornell's Prison Education program
- Formerly incarcerated person
- After getting out of prison,
- 1990s there was no programs like that --> but it started to come
- There used to be a bi-annual magazine
- There was nothing like prisoner express back then
- The tablets were by paypal
- They discussed a virtual stand kiosk → to send mails
- Paypal is telling we need wifi now --> to understand better
- The letter used to be cutout (only 10% get mails --> prison runs on scarcity)
- Varies facility to facility ==> varying type of packages allowed
- You cannot communicate with another prisoner, made to prohibit human connection
- Idea should be something that can be applied across the different facilities
- This type of technology --> terrifying
- How they overcome the challenge of fear of technology ==> depends on the individual,
 There is a demographic that will definitely engage
- Prisoner express helps them feel validated
- They can use this experience to publish in other publications.
- Connecting back to the outside world

Pika:

Director prison Education Program:

Cornell Prison Education Program

Richard: 16-51 years in Jail, get out 2019

What is health in Prisoners?

Coding in the column from learning from a book. depend on the individual. How to reach out to people who normally do not engage?

Family, with rule, for making them to good listern

Men and women: different. Women need more toilet paper.

Get published. vailed. -> apply to other published

Yuqi Li:

- Paypal
- 5 years later, get wifi
- 28000dollars
- Services payment come from family
- Dots: correction of commnitye system in new York: manage behavior, security, operate substantial. Role dominance
- When they send the letter out, cut some part off of lette. Only 10% out. Frustracted. Half package will be to family.
- Reading and write: 400/900 in college program; prision are very isolate, cannot move more than 6 ppl. Different culture even in close prisions. Very unique.
- State by state different: new have more resources, cal: have radio station.
- Program: Health: what is health in prison and how they pursue it. Health is more substantial, not die in prison.
- How write, not criticle to system. They will suicide. Invented ways to communicate
- View of tech: they do not understand tech. fearful experience. 95% prision 5 years stays.
- Show them computer program: program no longer be needed. Is this only for today or future.
- Arrested prior iPhone: but love to learn coding. Depends on individual who like computer.
- How to reach people who not engaged.
- Feeling care and connection from outside: tranmitse pro, cycle of deconstruste. Stressed out not call. Cancel at last time, breakdown, truma, relation between family, detachment,
- How tablet help them feel care from outside: right now: pen and paper, women! Replicate system by male: tolit paper. Abuse system.
- Prisoner invovlment: prisoner express, validate experience as human being.
- Why submitted: chase program , happy good experience, send back to, and. See others paper. Listen when close eyes, describe around people, how they express their environment
- Experience chase program: what resource scarce: participatory program, less information about chase outside. Play and learn language using magazine.
- How to categoriy functions,
- Criticle instance
- Informal wrote running sentances, play with. Sensitivity

- What appeal in writing: voice of papers: what do they want, freedom mean accept by public. Validate by public.
- Sensorship: how tech affecting sensorship: privilege mail, lead mail have restriction, open in front of people. No more than 5 pages, restriction on books, no black authors. Gang use those book.
- Box: package room, publication don't
- Difficulties: pics shows, tracks
- When they have access to tablet and publications: 8 hrs in cell. Free time: 4h/day read books
- Services based on tablet.
- Tablet with legal is not confidential. Using email is not confidential
- Have tablet whole time.
- Share tablet

Natalia Jordan:

- tablets governed by paypal
 - in 2019 they were just implementing the tablets
 - allowed to use emails ("virtual stamps")
 - families pay for this
 - department of corrections is really expensive
 - 6-11 thousand dollars to support an individual in jail
 - exploit families
 - DOCS operates on bells and institutions
 - and operates in social existential encounter
 - prison runs on scarcity
 - health in prison is existential to not die in prison
 - prison encourages inventiveness
 - they find technology to be terrifying if they are unfamiliar with technology
 - program will show these guys computers a very basic level
 - scarcity
 - participation is important for them!
 - participate with the outside world
 - participatory magazine
 - encourage participation
 - move pieces on the board
 - make the website super interactive
 - keep it exploratory
 - likes to have exploratory
 - triggering stuff
 - experiment with writing
 - its not formal
 - more playful

Mingyi:

Encourage participation
Categorize
Legal mails : office handling
Censorship
People wait for it – kill time – education
4 hours time
Everything depends on

User Interview Questions & Responses

- **Tell us about yourself and your experience related to the prison?**
 - Richard Riviera
 - Education director for Cornell's Prison Education program
 - Attended the Cornell Prison Education Program
 - Formerly incarcerated person - 16-51 years in Jail, got out in 2019
 - While in jail, he joined a chess program to bide his time
 - After his release he conducted a program to research prisoners' health - meals provided to prisoners are bad and health in prison is substantial.
 - While in prison, prisoners invented interesting ways to communicate as resources are scarce - e.g. using a toothbrush, etc.
 - Different cultures even in close prisons - Very unique.
 - Free time: 4h/day;
- **What is your experience like with the mailing service in Prison?**
 - Letter used to be cut out (only 10% get mail as prison runs on scarcity and such services need to be paid for)
 - Services available varies facility to facility for e.g. in the type of packages allowed
 - Frustrating as sometimes half of the package will be sent back to their family.
 - Only up to 5 pages of letters can be sent to the prison per time.
 - **Follow up question: Do you think mailing service is important? Why?**
 - Helps to connect to the outside world.
 - Validates experience as a human being.
 - Isolated from the outside world so a letter and packages help
- **Did you have newsletter programs mailed like prisoner express?**
 - In the 1990s there was no programs like that but it started to arrive
 - Used to have nothing to do for the rest of the time hence.
 - There used to be a bi-annual magazine
 - But there was nothing like prisoner express back then
 - There were restrictions on books/magazines
 - No content they can relate to - gangs, less black writers' books, etc.

- **Follow up question: What is the experience and attitude towards the availability of Prisoner Express?**
 - Prisoner express helps them feel validated
 - They can use this experience to publish in other publications.
 - Connecting back to the outside world
 - Relatable to experiences by others - you cannot communicate with another prisoner, no shared documents as prison is made to prohibit human connection
 - Appeal in writing as having their voice heard via papers is what they want, as freedom means acceptance by the public and validation.

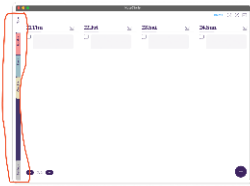
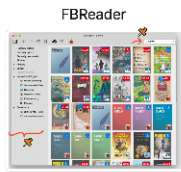
- **With the restrictions now on mailing services, how is it like now to receive packages or newsletters?**
 - Now there are tablets sponsored by Paypal
 - Prisoners' family members will pay for their expenses on digital or related
 - A standing kiosk is present which prisoners have to go to to send emails
 - But these are non-confidential
 - Only when sending legal mail then its confidential
 - **Follow up question: How long do they have access to these tablets?**
 - Have access to a tablet all day
 - All prisoners each have a tablet of their own
 - All the prison services are based on tablets now - like booking

- **How tech-savvy are prisoners and what is their experience like with technology?**
 - Some demographics terrified of using technology while others were more open
 - California and New York seem to have more related resources
 - **Follow up question: Why do you think they find technology terrifying?**
 - They are worried about clicking on the wrong buttons
 - Some are just satisfied with their mobile and refuse to explore other technologies
 - **Follow up question: How do they overcome this challenge of fear of technology?**
 - Depends on the individual - there is a demographic that will definitely engage

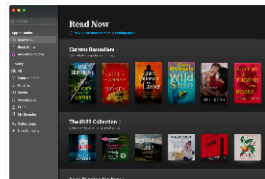
Affinity Diagram

Idea Board

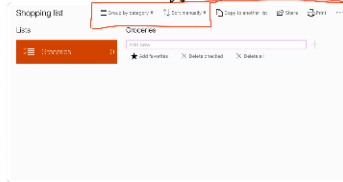
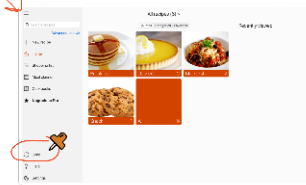
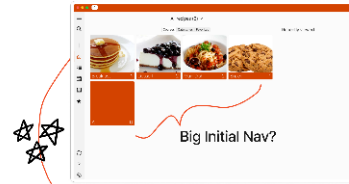
Primary



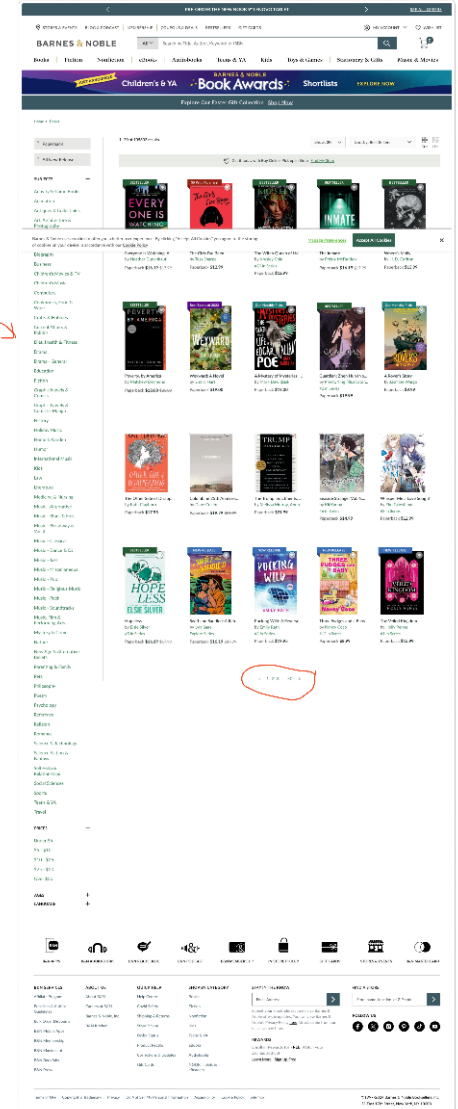
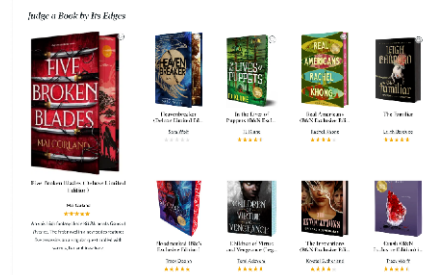
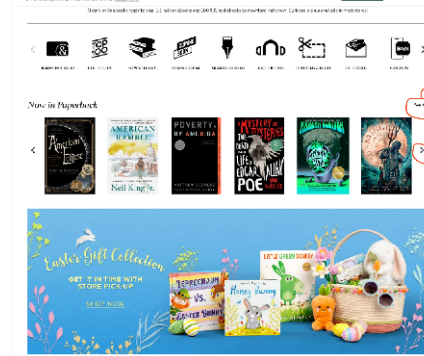
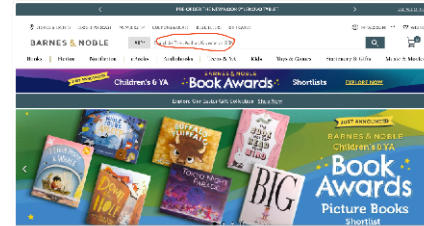
Apple Book



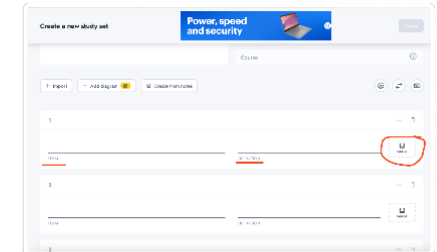
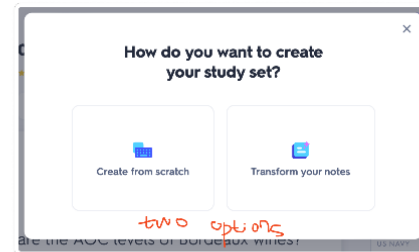
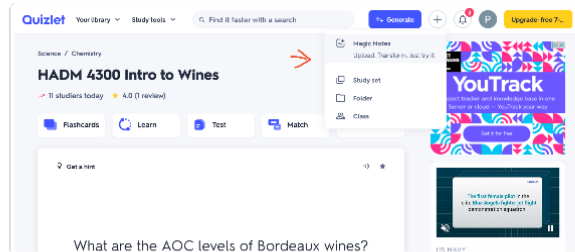
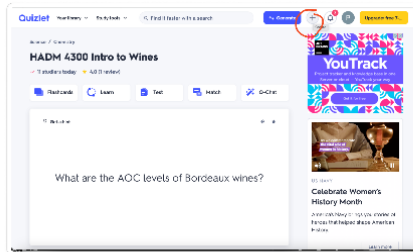
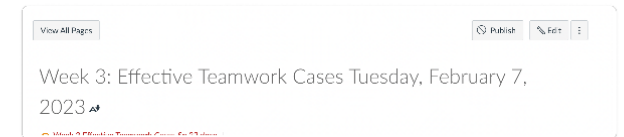
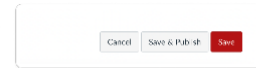
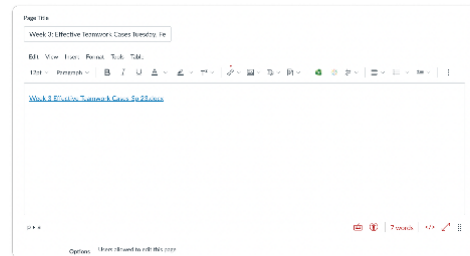
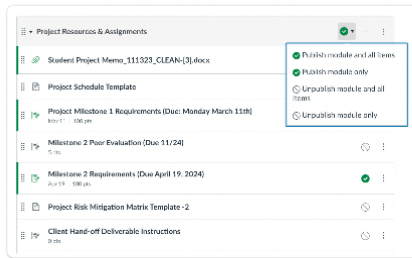
Recipe Keeper



Barnes & Noble

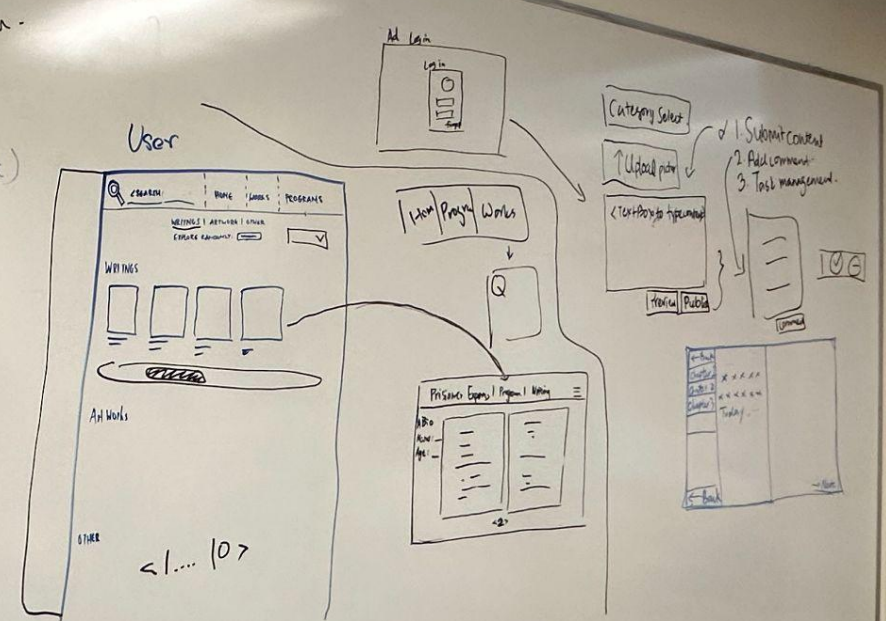
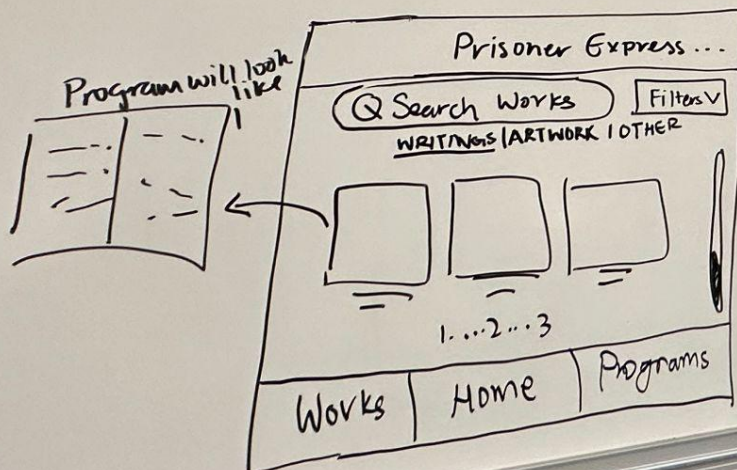


Admin

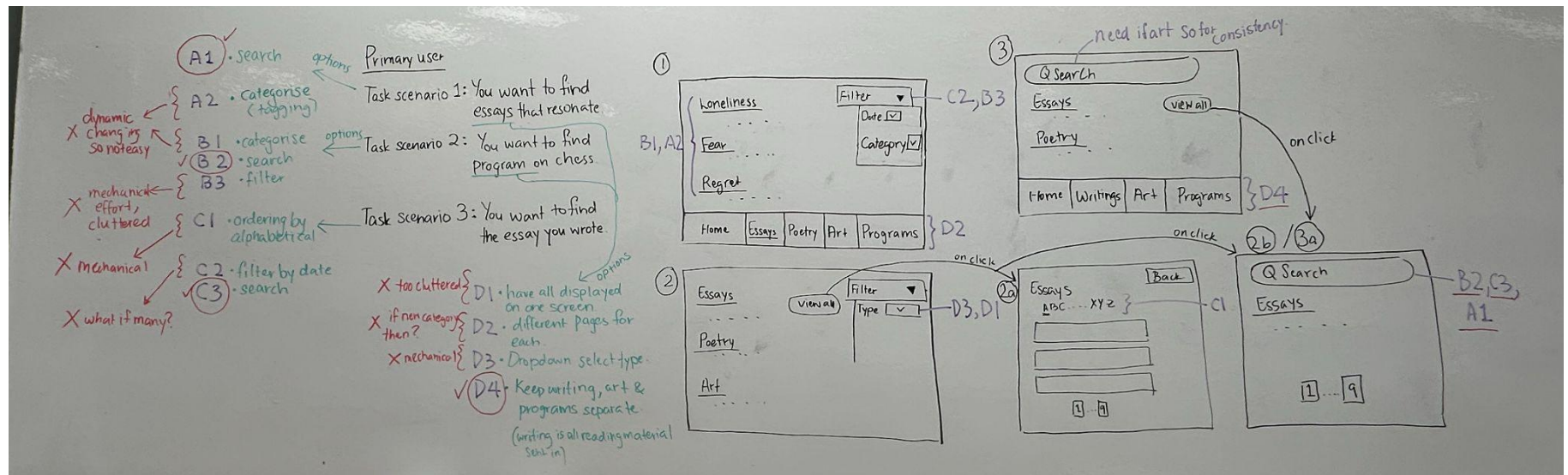


Brainstorm Sketches of different Conversations

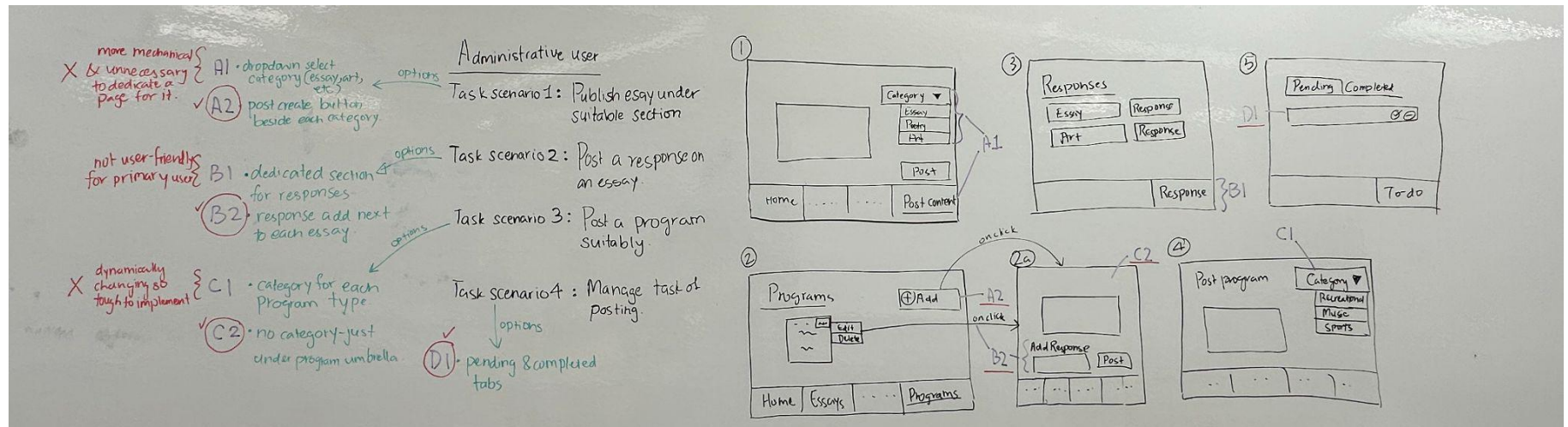
1. Discover other work ^[exploring] → Search-
(Writing, Art work)
2. Learn & View diff. programs
3. To view their ^{Research} own content sent published.



For Primary User view:

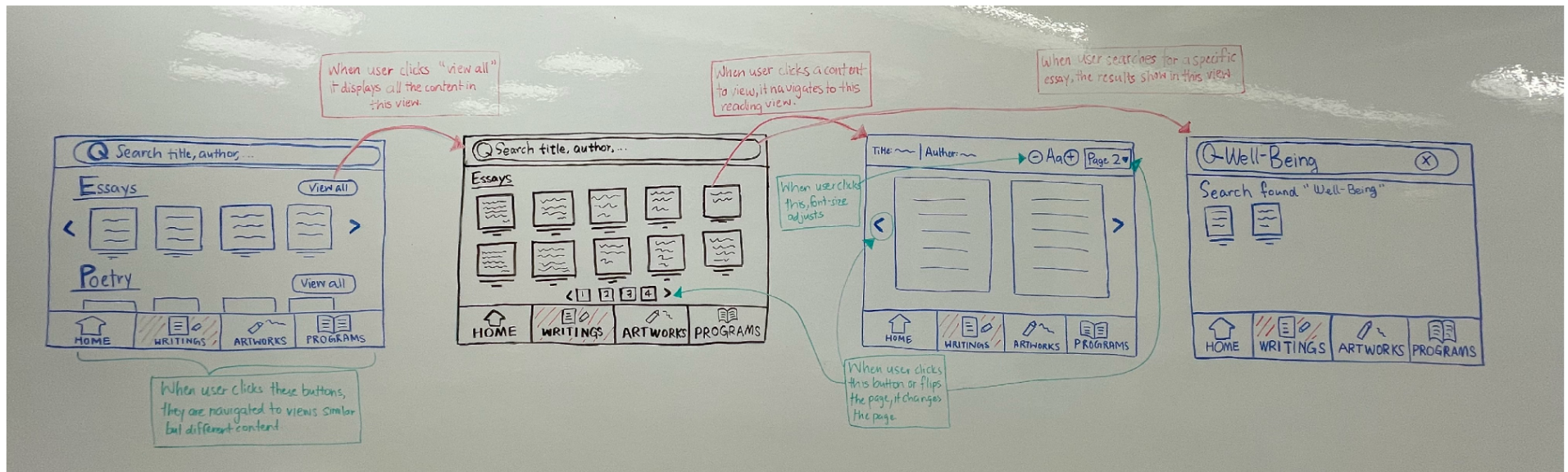


For Administrative User view:



Design Ideation

Primary User flow:



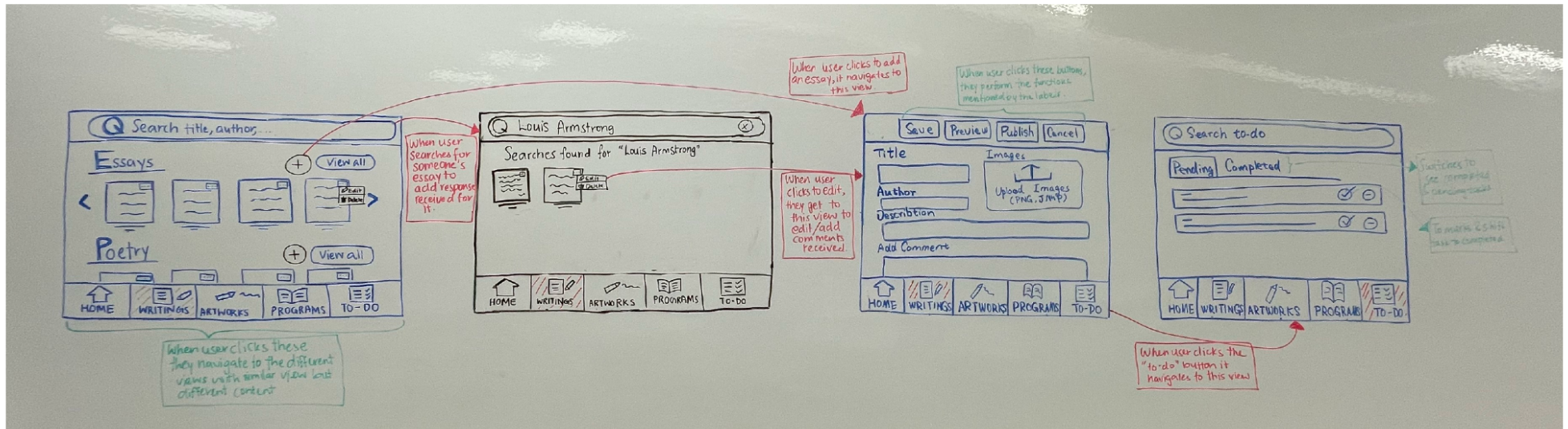
This is the view format for "Writings", "Artworks" and "Program". "Writings" categorizes the Essays and Poetry submitted by users. We decided to use rectangular preview boxes to give an overview of what the content is about, and we used chevron side-buttons to scroll to be user-friendly to non-tech savvy individuals.

This is the view format for when user clicks on "view all" button - it displays around 10-12 content per page. Pages can be navigated via the bottom page navigation. We decided to implement a "view all" to reduce cluttering on the main page.

This is the view when user clicks on a specific content. It resembles a book to replicate the essence of reading a physical newsletter, especially for non-tech savvy or individuals who fear using technology. We incorporated a font adjuster to accommodate varied demographics. We also added chevron buttons and a page dropdown selector for page navigation.

This is the view when user searches for a specific title or author under each section such as "essays". This is to fulfill one of our task scenario which entails enabling a user to quickly find a specific content they are looking for.

Administrative User flow:



This is the view when admin navigates. It is similar to the user's view, with an addition of a plus button under each category to add content to it, and a hovering ellipse button on each content which shows a pop-up for edit and delete functions for the content. These enable the admin to add, edit and delete content into each page and each category

One of our task scenario was to allow the admin to add responses received to a content. Hence, we have a search function to find a specific content.

Primary function that an admin has to perform is to post content. Hence, we have this view that allows admin to fill required fields and then publish the content. We included an "Add Comment" section for another task scenario that required adding responses received to a specific content.

One of our task scenario is to be able to manage and track tasks of publishing mails received. Hence, we have a "To-do" view with completed or delete icons to update task status.

Evaluation of Task Scenarios

Primary User testing:

- Task Scenario 1:
What the user did: User first tapped to navigate to the “Artworks” view. However, after specifying that “Essays” are what resonated, they went to “Writings”. Next, they tapped on the search bar and explained that they would search with keywords.
Outcome: This showed us that there was an issue with our task scenario for a paper prototype, however, in an app we can also have resonating searches in the “Artworks” view. But otherwise, it showed that it was intuitive to search with keywords.
- Task Scenario 2:
What the user did: User correctly tapped to navigate to the “Programs” view and then tapped the search bar, explaining she would search “Chess”.
Outcome: This was a very smooth flow, which showed the feature was clear and explanatory.
- Task Scenario 3:
What the user did: User correctly tapped to navigate to the “Writings” view and then tapped the search bar, explaining she would search for the titled essay. While the Whiteboard sketch had a differing title result, our app when prototyped would have the title from our task scenario.
Outcome: This was also a very smooth flow.

Administrative User testing:

- Task Scenario 1:
What the user did: User first tapped to navigate to the “Writings” view. Then they found the “Essays” and a plus button next to it. They instantly knew to click it, which brought them to the content adding view. They tapped the “Publish” button and completed the task scenario successfully.
Outcome: Although the task scenario was completed correctly, however, the user mentioned that they were unsure what the “Upload Images” button was for. This made us realize there is a need to update the labeling with clearer instructions on what is to be uploaded - which is the cover image. Thus, we revised our final design and renamed the “upload photo” button to “upload cover photo.”
- Task Scenario 2:
What the user did: User tapped on the “Writings” section and then on the search bar explaining they will search the user’s name. They saw the ellipse button next to the searches found and tapped on the “Edit” button, which navigated to the content view. They then tapped the “Add comment” box saying they would input the comment there. Finally they tapped the “Save” button, instead of the “Publish” button.

Outcome: While the whole process was smooth, the user had incorrectly tapped the “Save” button instead of the “Publish” button, which made us realize it was not clear to the user. Hence, in our final design we decided to remove both the “Preview” and “Save” button. As well, the user asked what if there are multiple comments to add to an essay or needed to remove a comment. This also made us realize that we needed a function to add new comments and delete some. This also requires a box to include the responder’s name to differentiate the comments, which we added as well.

- Task Scenario 3:

What the user did: User correctly tapped to navigate to the “Programs” view. However, as we did not have the “Programs” view, we told them to assume the “Essays” are the “Programs” for the time being. They then correctly tapped the plus icon to navigate to add new content.

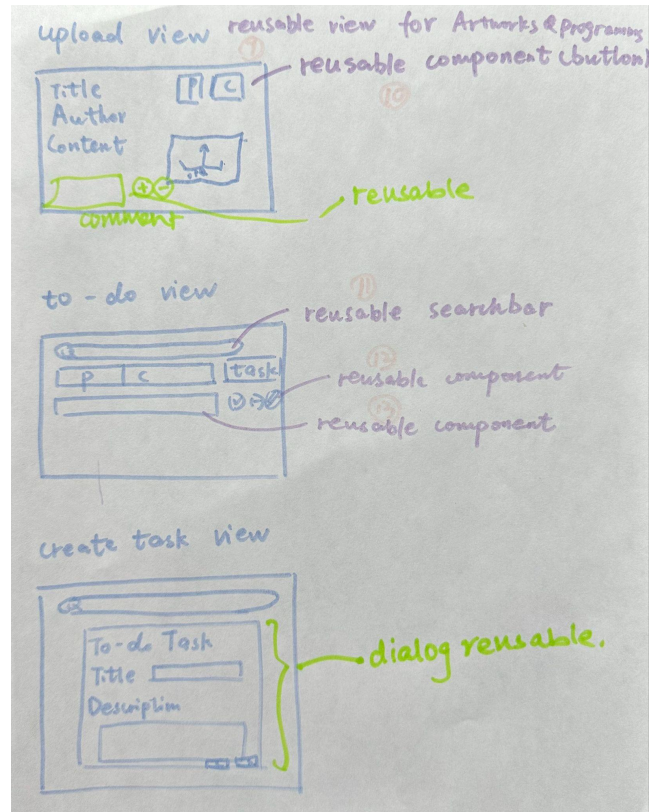
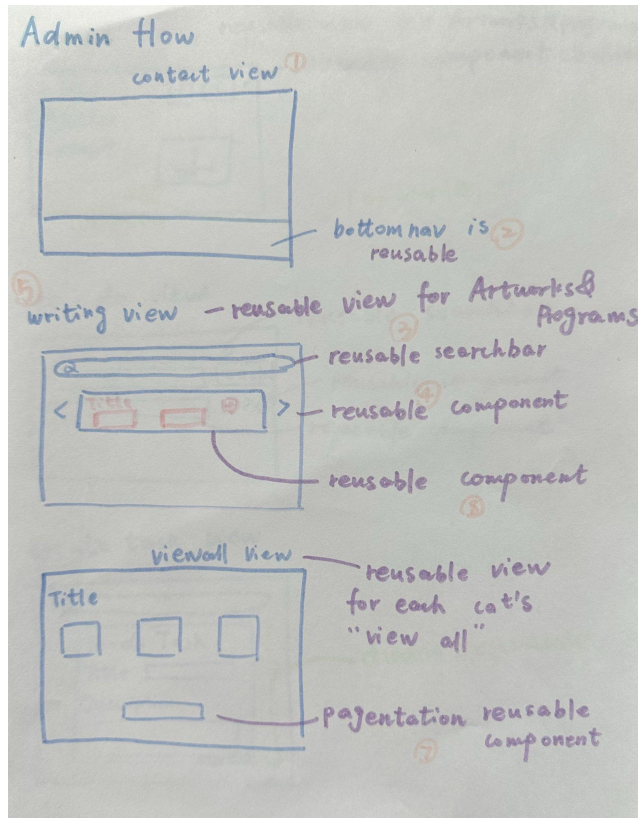
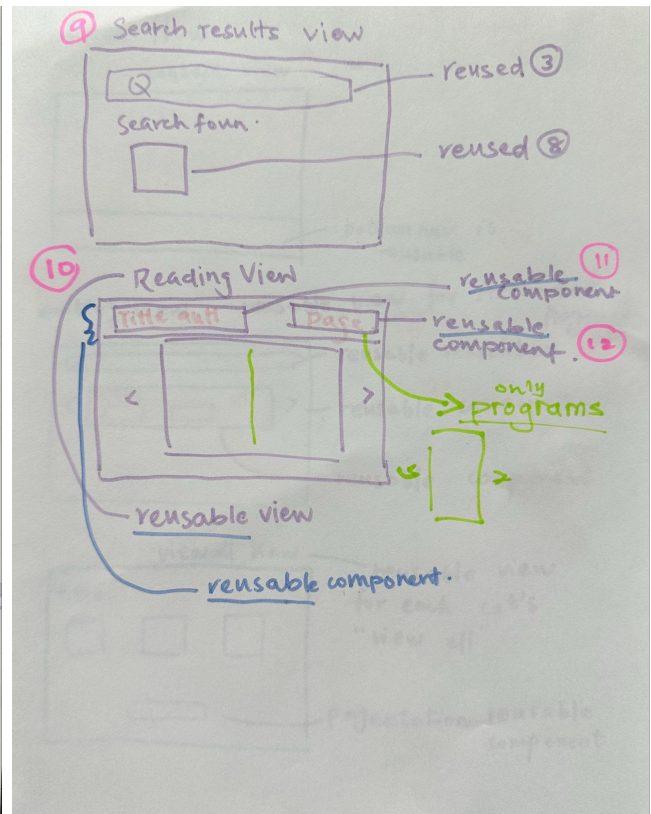
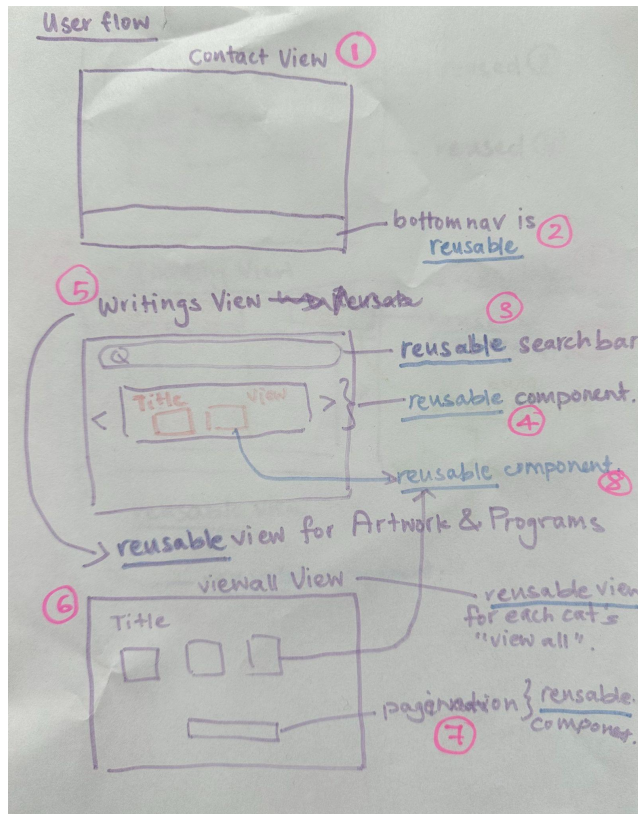
Outcome: This task scenario was also performed smoothly.

- Task Scenario 4:

What the user did: User correctly tapped to navigate to the “To-do” view. They said they would tap the “tick” button to mark tasks as done, the “minus” button to remove them, and tap the “Completed” tab to view completed tasks.

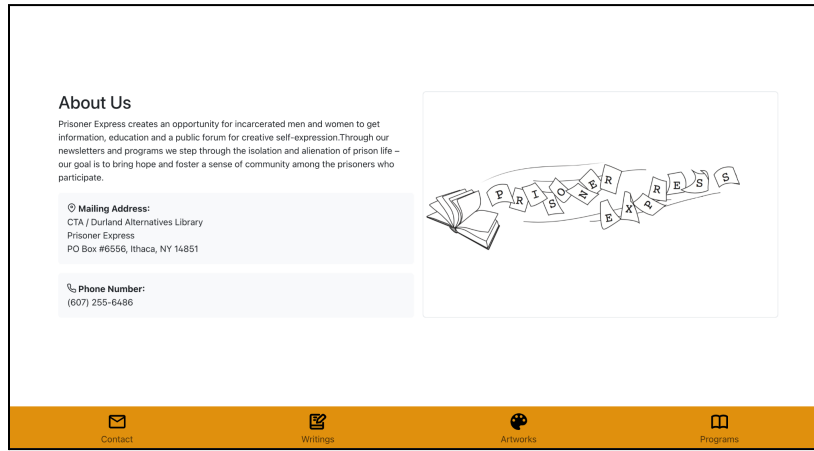
Outcome: This task scenario was also performed smoothly. However, they mentioned that there is no button to add a new task or a button to edit the task. Hence, in our final design we improved it to include a “Create task” button, an edit icon button, and implemented a view for this.

Implementation Plan Sketches

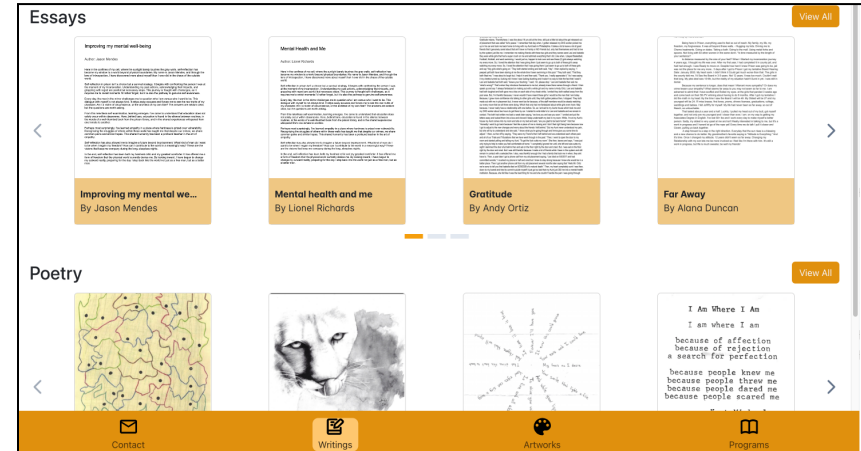


Prototype

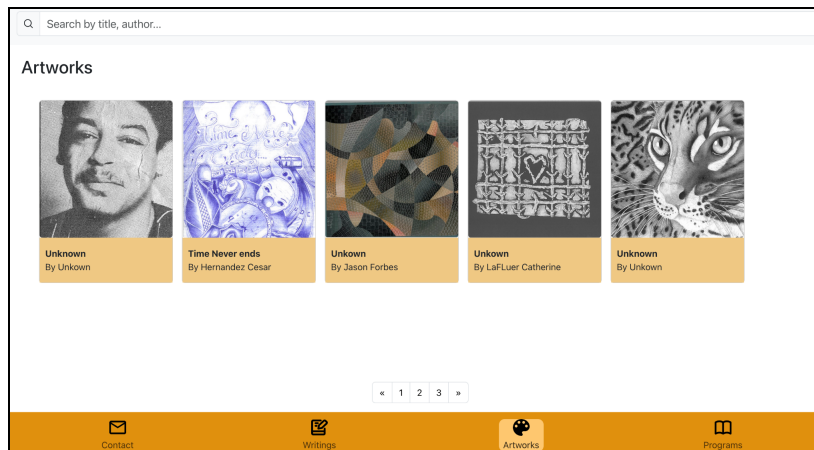
Contact View



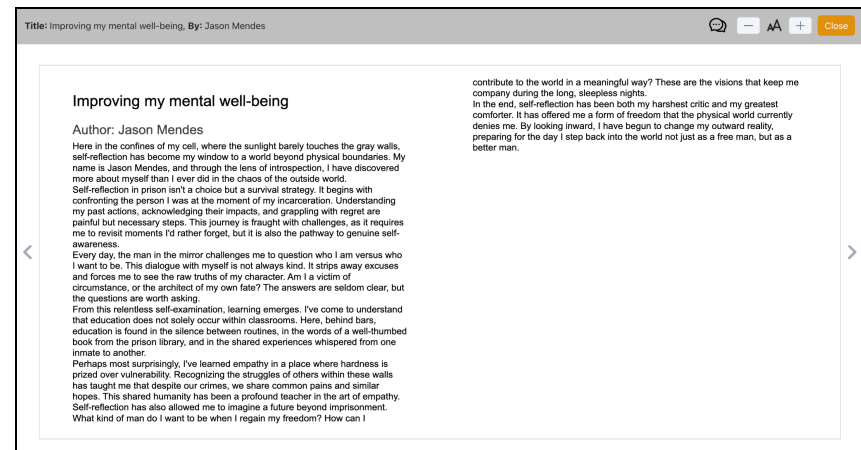
Display View - Writings & Poetry



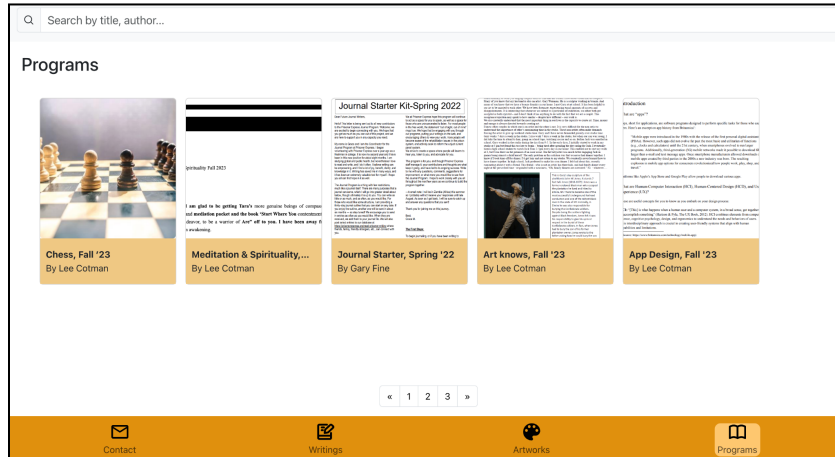
ViewAll View- Artworks Views



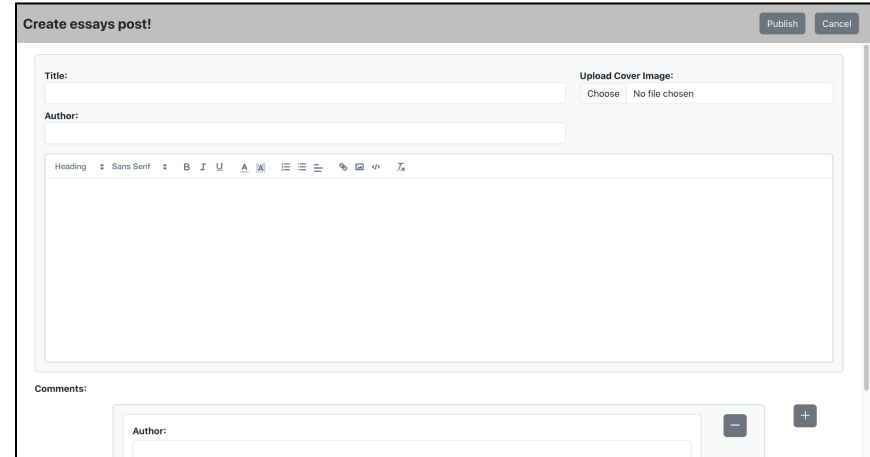
Reading View



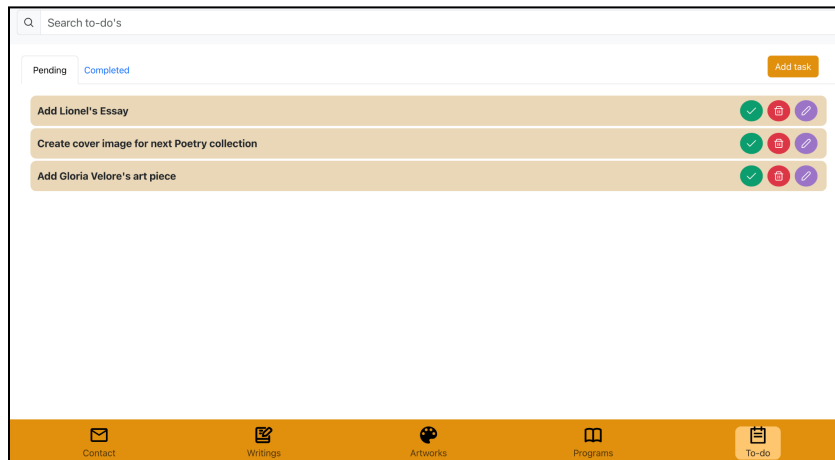
ViewAll View - Programs



Edit & Create Post View



To Do View



Data & Artifacts Used

- PrimeVue components
- Bootstrap Vue3 components
- epub.js library to render Epub
- Figma icons from Iconify
- Prisoner Express logo from <https://prisonerexpress.org/>
- Program, Essays, Poetry and Artworks content from <https://prisonerexpress.org/>

User Testing Raw Notes

Participant 1

- Task 1
 - Goes to writings view -> Click into all the essays and poetry
 - Goes to artwork view -> See artworks
 - "I just see what comes out to me first. I did not see the "view all" button because it is small compared to the articles." "It's indirect for me to search 'loneliness' but I can explore different writings and artwork to explore".
- Task 2
 - Goes to the program view -> successfully clicks the "Chess" program epub.
- Task 3
 - Goes to writings view → scrolls through cards and successfully locates the "Improving my mental well-being" epub.

Participant 2

- Task 1
 - Goes to the programs view → clicks into different content
 - Goes to the writings view → click the "Improving my Mental well-being" epub.
 - "like if I'm depressed right I'm probably not gonna read more on such content, i would read something that makes it better or look for programs to help me."
- Task 2
 - Goes to the programs view → successfully clicks the "Chess" program epub.
- Task 3
 - Goes to writings view → scrolls through cards and successfully locates the "Improving my mental well-being" epub.

Participant 3

- Task 1
 - Use the Navigation bar → browse each view
 - Goes to writings view → see portray and essays, hesitate, then click an essay
 - "If I feel lonely, I probably won't search for loneliness, I will just scroll."

- Task 2
 - Goes to the programs view → successfully clicks the “Chess” program epub.
- Task 3
 - Goes to writings view → successfully and directly locates the 'Improving my mental well-being' epub, as she reviewed this essay at the beginning of Task 1.

Participant 4

- Task 1
 - Went to the writings → “see what they are about” → “do some reading”
 - “Maybe join a program to meet other lonely prisoners or contact someone”
 - Went to poems → read some of the poems and essays → see what others are writing about
 - Mentioned that if feeling really lonely wouldn't want to read about loneliness but would want to connect with people to feel less lonely
- Task 2
 - Went to programs view → successfully located the chess program, circling over the chess image from the programs view
- Task 3
 - Immediately went to the writings view → located it as the first one on the view
 - “writings it's the first one, but if not, I could press view all in search of mental health”

Participant 5

- Task 1
 - Goes to writing tabs -> check some essay and poetry
 - Click on artworks -> Click on program -> back to writing tabs
 - Ask us for clarification "what do you mean?" and we explain where to find the essay
- Task 2
 - Goes to the programs view → successfully clicks the “Chess” program.
- Task 3
 - Goes to writings view → scrolls through cards and successfully locates the “Improving my mental well-being”

Group Photo

