

Hello, we are Finu.

Financial Literacy:
Family
Finance

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**Lo-fi Prototyping +
Usability Testing
Report**

INTRODUCTION

Value Proposition

Uniting families and their finances.

Mission Statement

Our goal is to unify families and their finances by utilizing existing trust. More specifically, to allow people to navigate finances with their family by their side even when they are miles away.

Problem/Solution Overview

Finances like contracts or budgets can be tricky, especially for young adults just starting to become more financially independent. Having one's parents in the home is a great way to have someone to turn to when they need advice. But when they are away from home, they can't just sit down with their families and go through serious documents like before. Finu allows families to stay connected even when they are miles away by allowing collaborative, personalized reviews of important financial documents and other materials.

SKETCHES

Figures 1 through 4 show our initial Crazy 8 sketches, where we focused on notifications, auditory interactions, haptics, messaging, and navigation.



Figure 1:
Initial ideation
Crazy 8
sketch

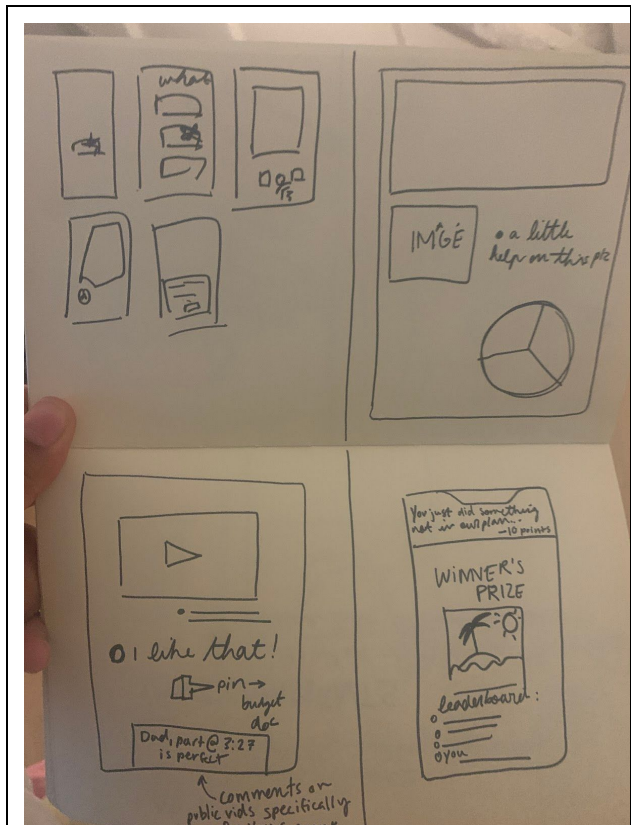


Figure 2: Initial ideation Crazy 8 sketch

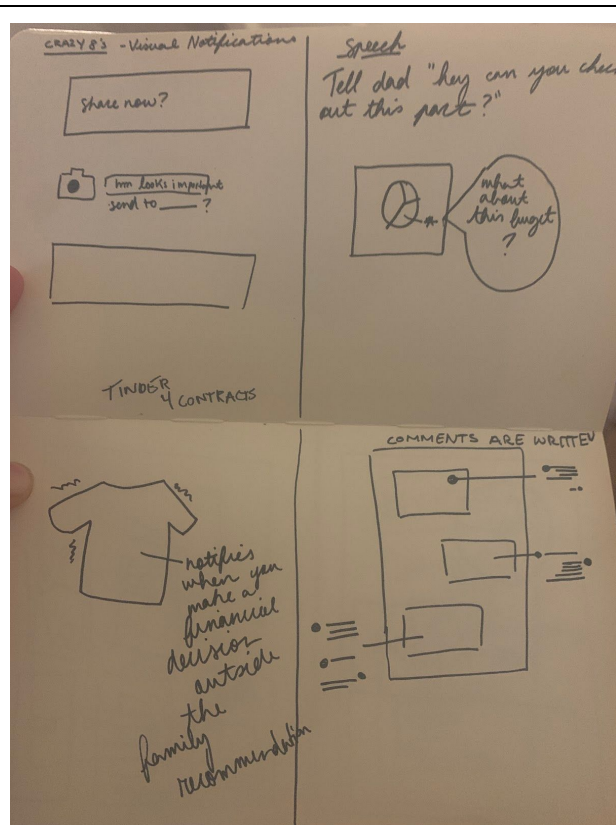


Figure 3: Initial ideation Crazy 8 sketch

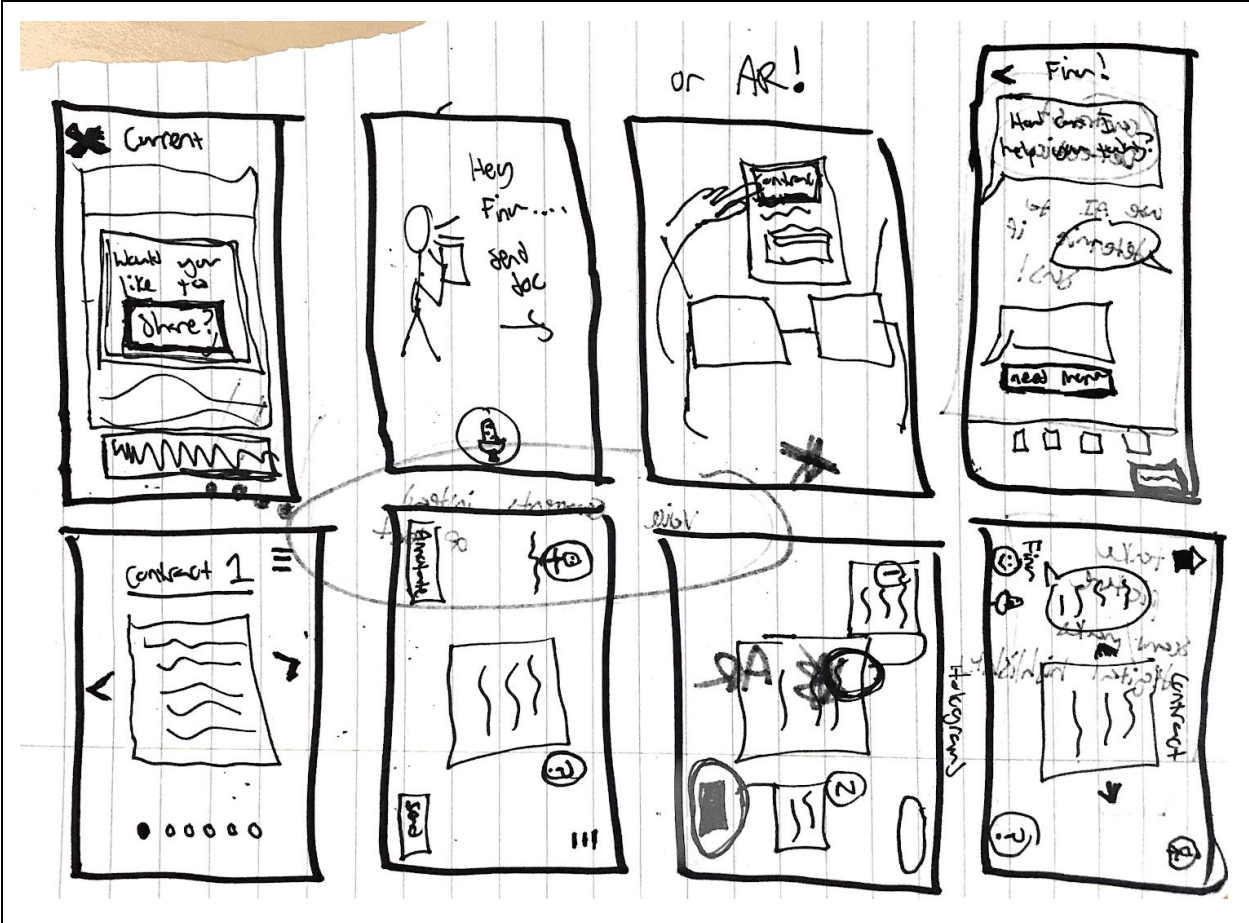


Figure 4: Initial ideation Crazy 8 sketch

Top Two Designs

We settled on audial interaction and contextual notifications to further pursue in more detailed storyboarding. In figure 5, we see an example of how a voice memo or audio clip could be annotated and transcribed. In figure 7, we see how voice memos can be used to annotate existing text documents.

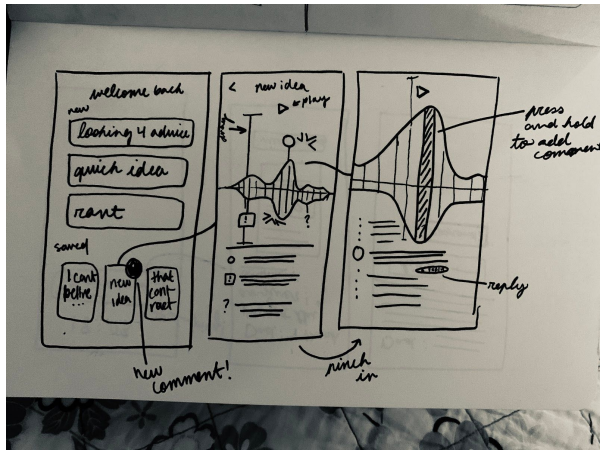


Figure 5: Audial UI sketch

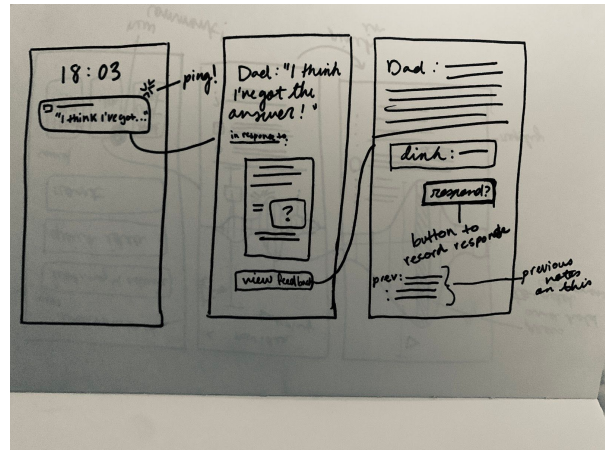


Figure 6: Contextual notification sketch

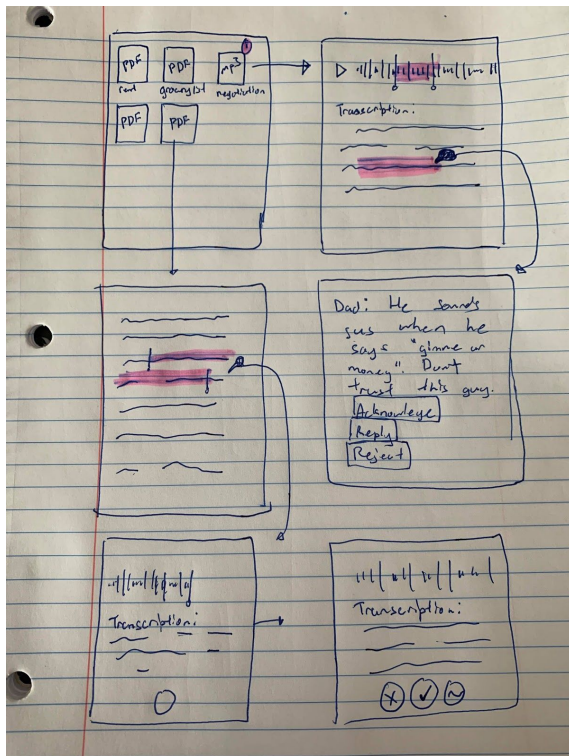


Figure 7: Audial UI sketch

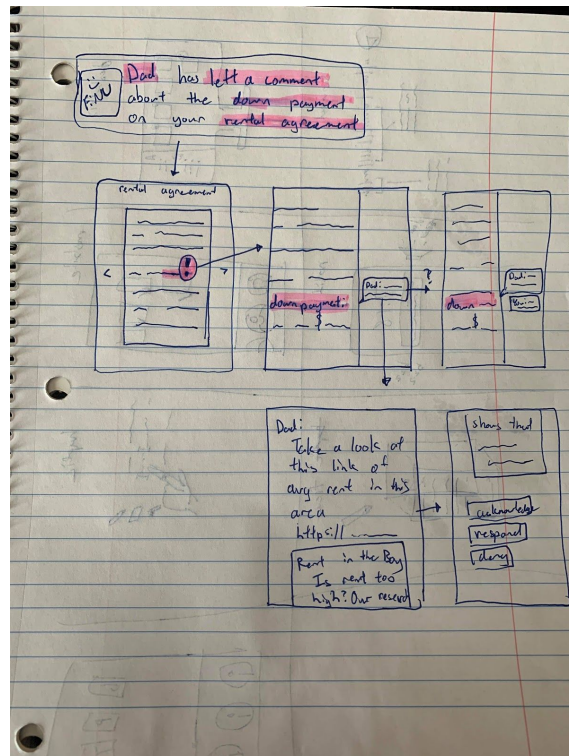


Figure 8: Contextual notification sketch



Figure 9: Audial UI sketch

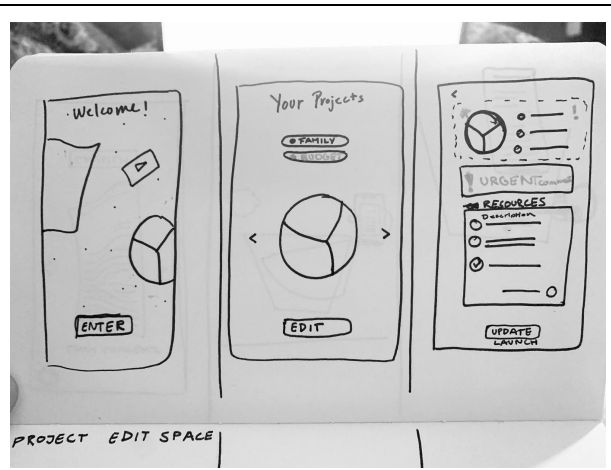


Figure 10: Contextual notification sketch

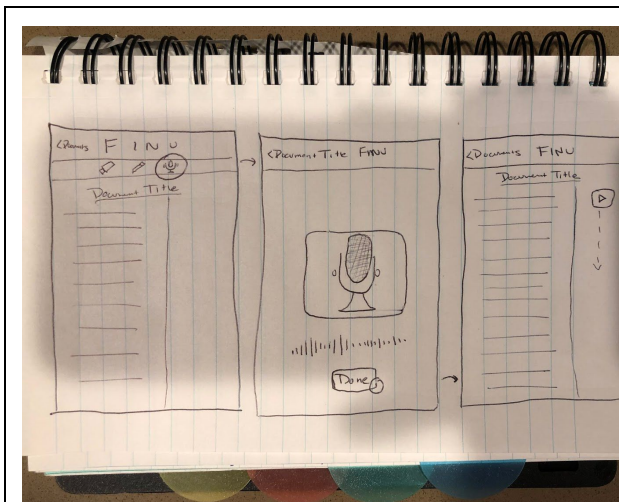


Figure 11: Audial UI sketch

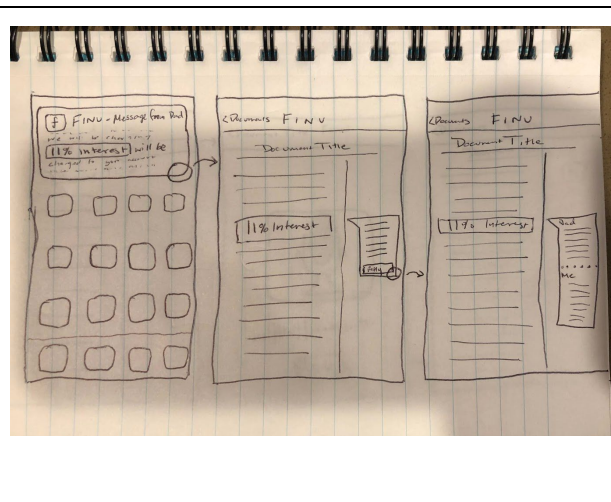


Figure 12: Contextual notification sketch

SELECTED INTERFACE

Selection Rationale

We decided to pursue an interface inspired by the voice annotation exploration because it aligned closest to our mission of unifying families through the implementation of a more personal—and thus ultimately more immersive—form of receiving feedback.

Although AR would allow for a familiarity in terms of being able to view documents integrated with one's own environment, the cost associated with the product being as

collaborative as it could be would alienate a large portion of our potential user base. Ultimately, we found it was most important to focus our attention to encourage more spontaneous and natural interactions.

Detailed pros/cons for each option:

XR Interface

Pros	Cons
<ul style="list-style-type: none"> ● Familiar environment ● Intuitive to use ● Give those not used to digital writing the ability to contribute using pen and paper ● As if the contract is in front of you, makes it more real 	<ul style="list-style-type: none"> ● Technically complex ● Needs additional equipment, limits pool of users ● People aren't used to using AR for daily tasks ● Cost of product

Voice Annotation Interface

Pros	Cons
<ul style="list-style-type: none"> ● Personal family connection by hearing their voices <ul style="list-style-type: none"> ○ Builds on trust by enabling personal connection ● Clearer than text to explain things <ul style="list-style-type: none"> ○ Miss various communication cues if in written form ○ Voice has inflection instead of written comment (help convey meaning better) ● Quicker, more natural than typing 	<ul style="list-style-type: none"> ● Longer to digest information ● Difficult to use in noisy environments ● Complicated to make second-nature, hard habit to build compared to texting or calling

UI Storyboards

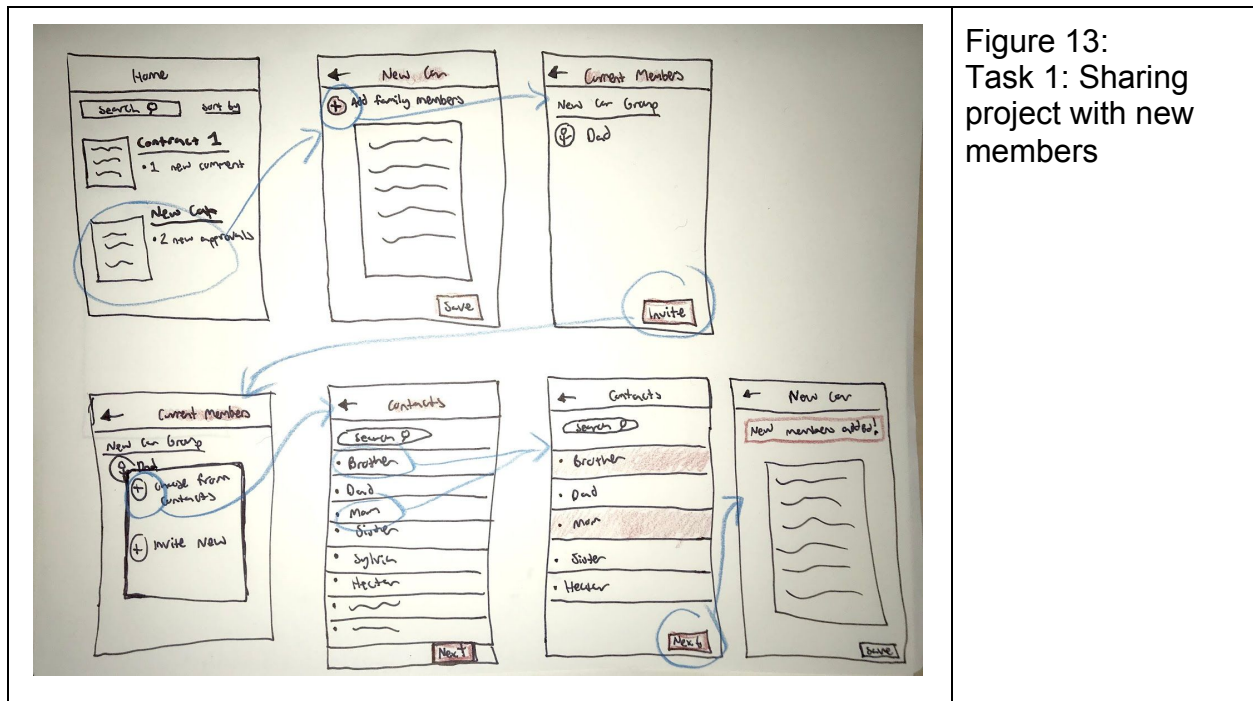


Figure 13:
Task 1: Sharing
project with new
members

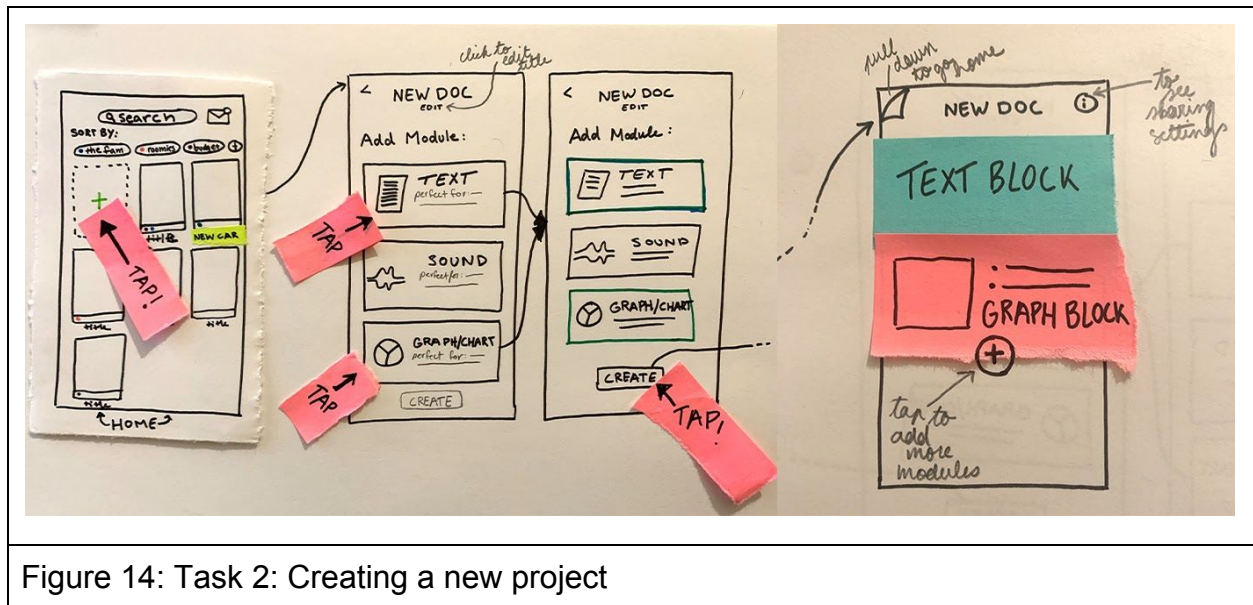


Figure 14: Task 2: Creating a new project

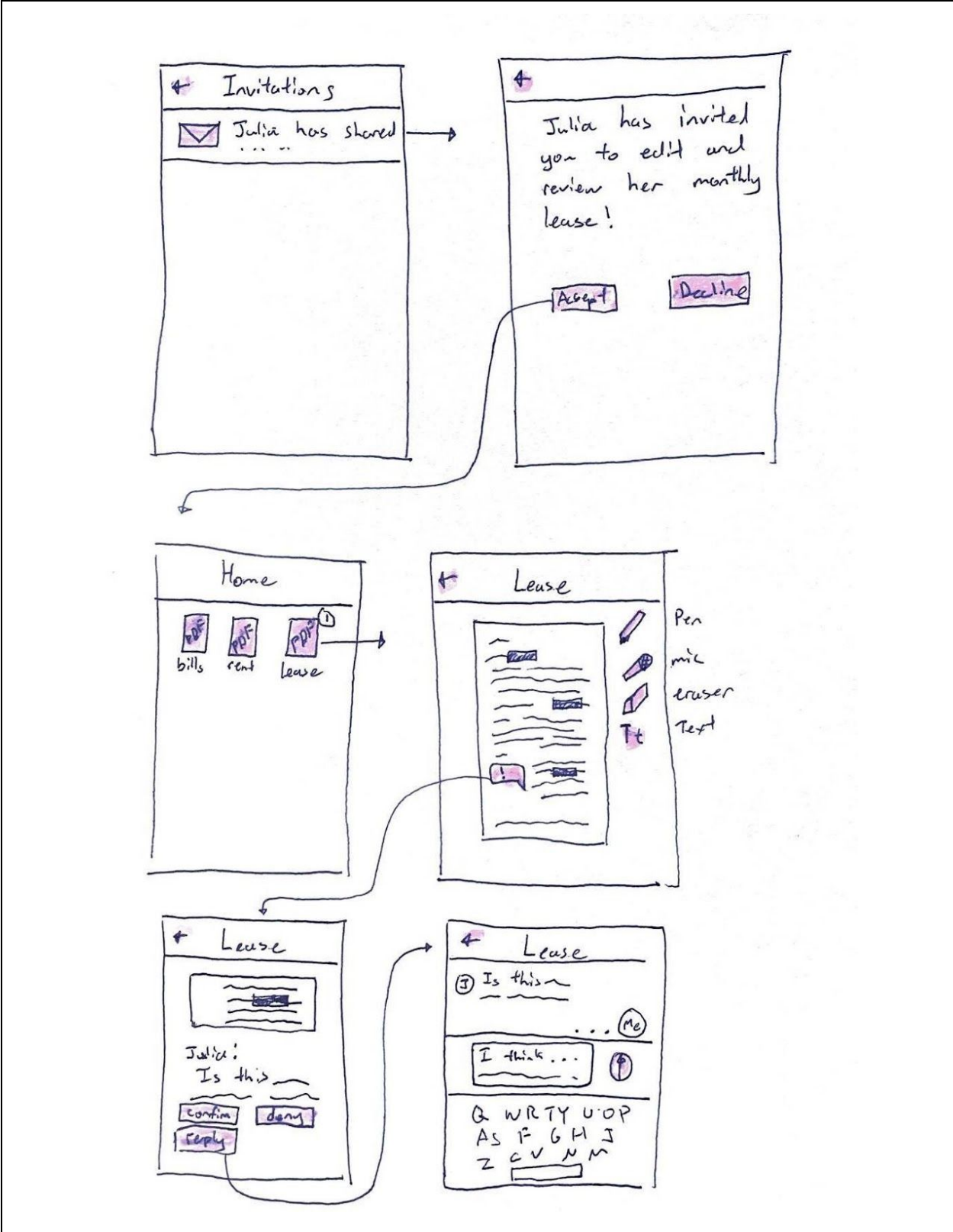


Figure 15: Task 3: Responding to feedback

PROTOTYPE

Description

We designed the prototype by modifying the sketches from the selected interface into an interactive physical format representing a mobile application. The overarching objectives were to create, share, and annotate financial documents with the user's trusted circle. We used the home screen as the base page and used paper-cut-out-screens and sticky notes to indicate a user's choices and changes in state of the app.

Each new page opened was indicated by its own physical sheet of paper, where changes affected directly by the user were denoted using bright colored notes. We drew this distinction to help discern which physical features of the screen would be consistent across every participant, and which were customizable and unique. This was an important method we used to highlight the module nature of the document creation features and the various types of annotation that are possible.

Each type of action (tap, swipe, hold) also had a matching bright colored sticky to help us and the participant easily identify their steps throughout the experience and have the ability to backtrack if so wished. This consistency in colored pieces vs. black and white pages also helps to further connect the customized elements to the actions of the user.

Task Screens

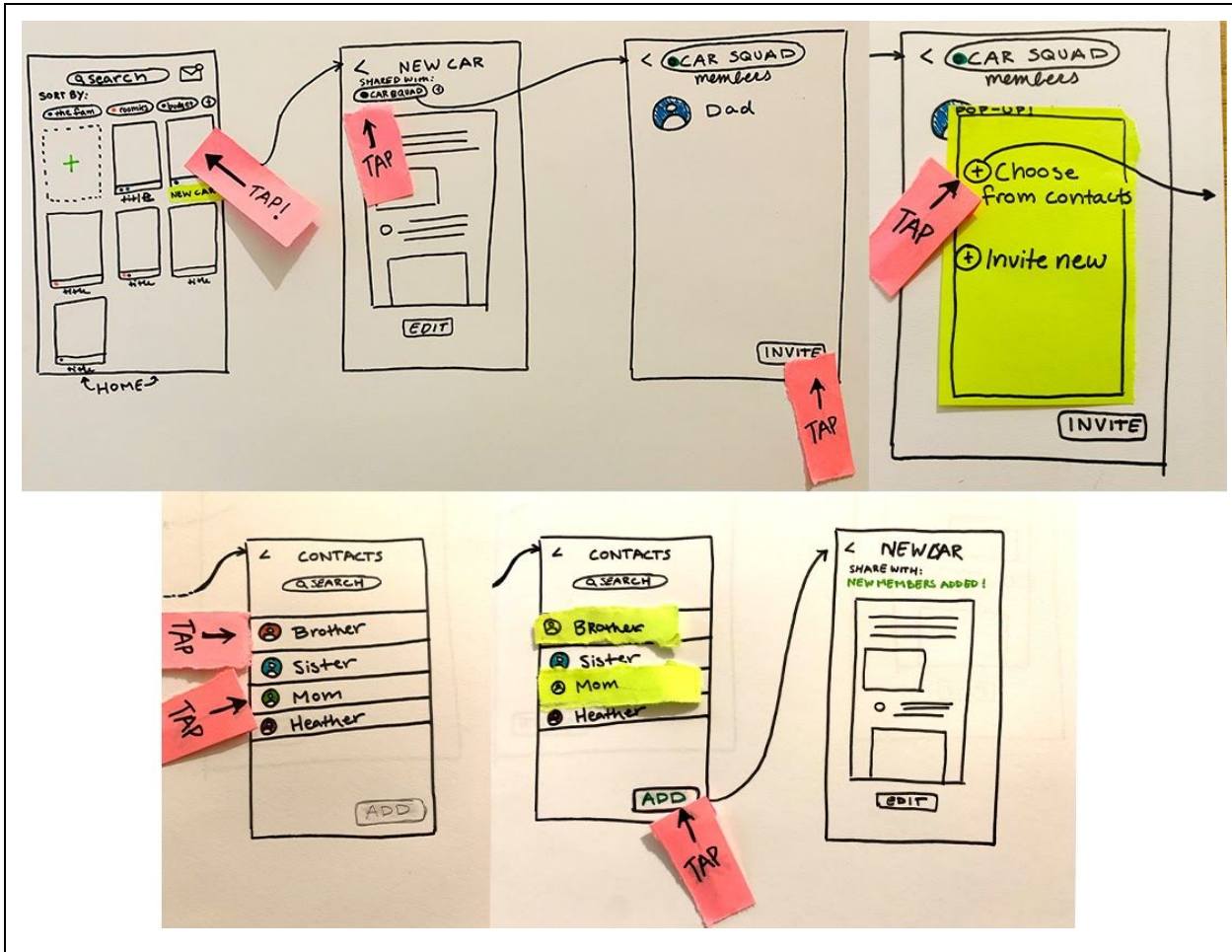


Figure 16: Task 1 Prototype Screens (Sharing project with new members)

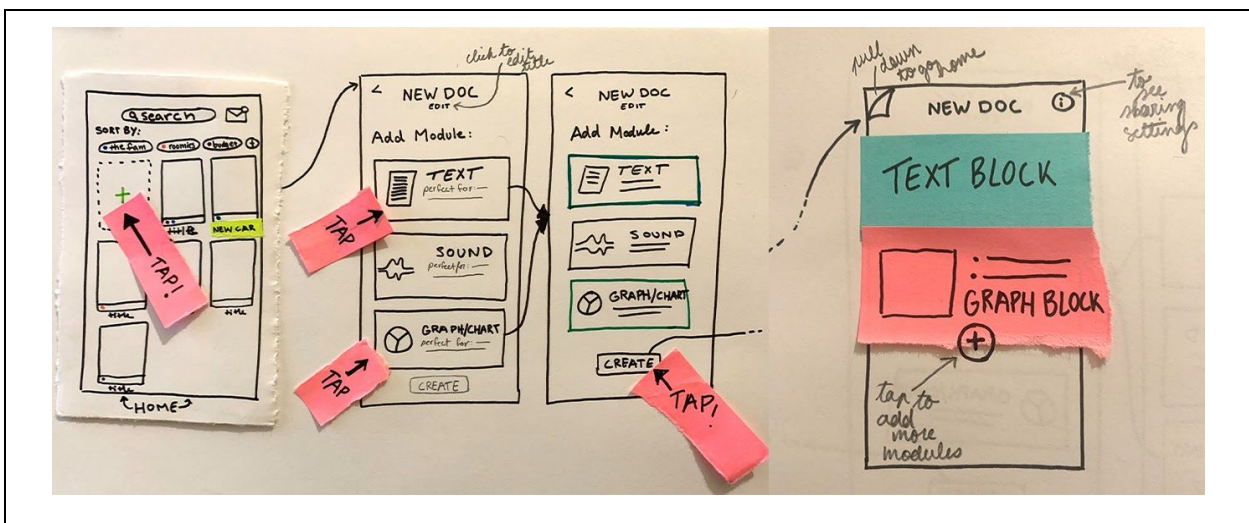


Figure 17: Task 2 Prototype Screens (Creating a new project)

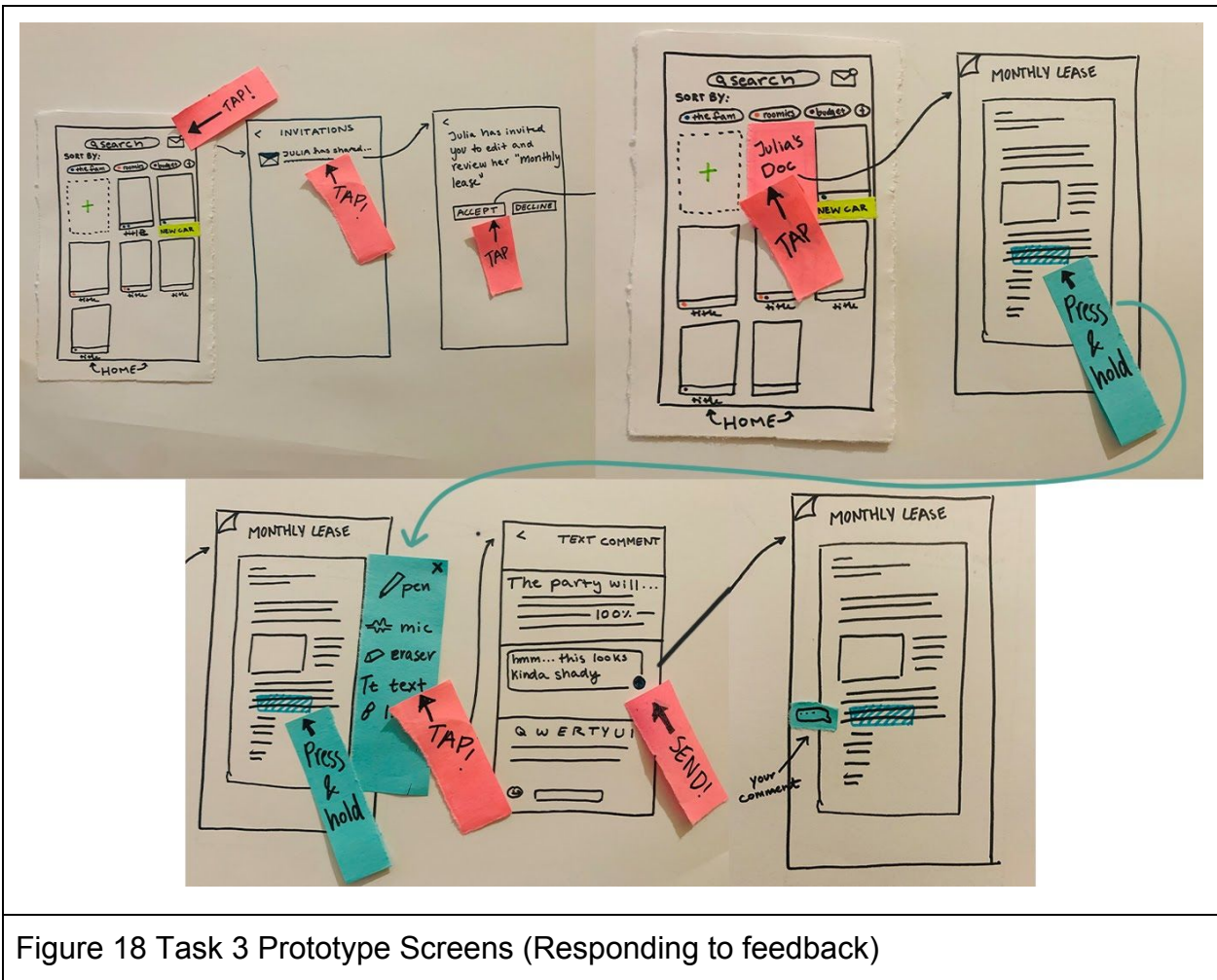


Figure 18 Task 3 Prototype Screens (Responding to feedback)

All Screens

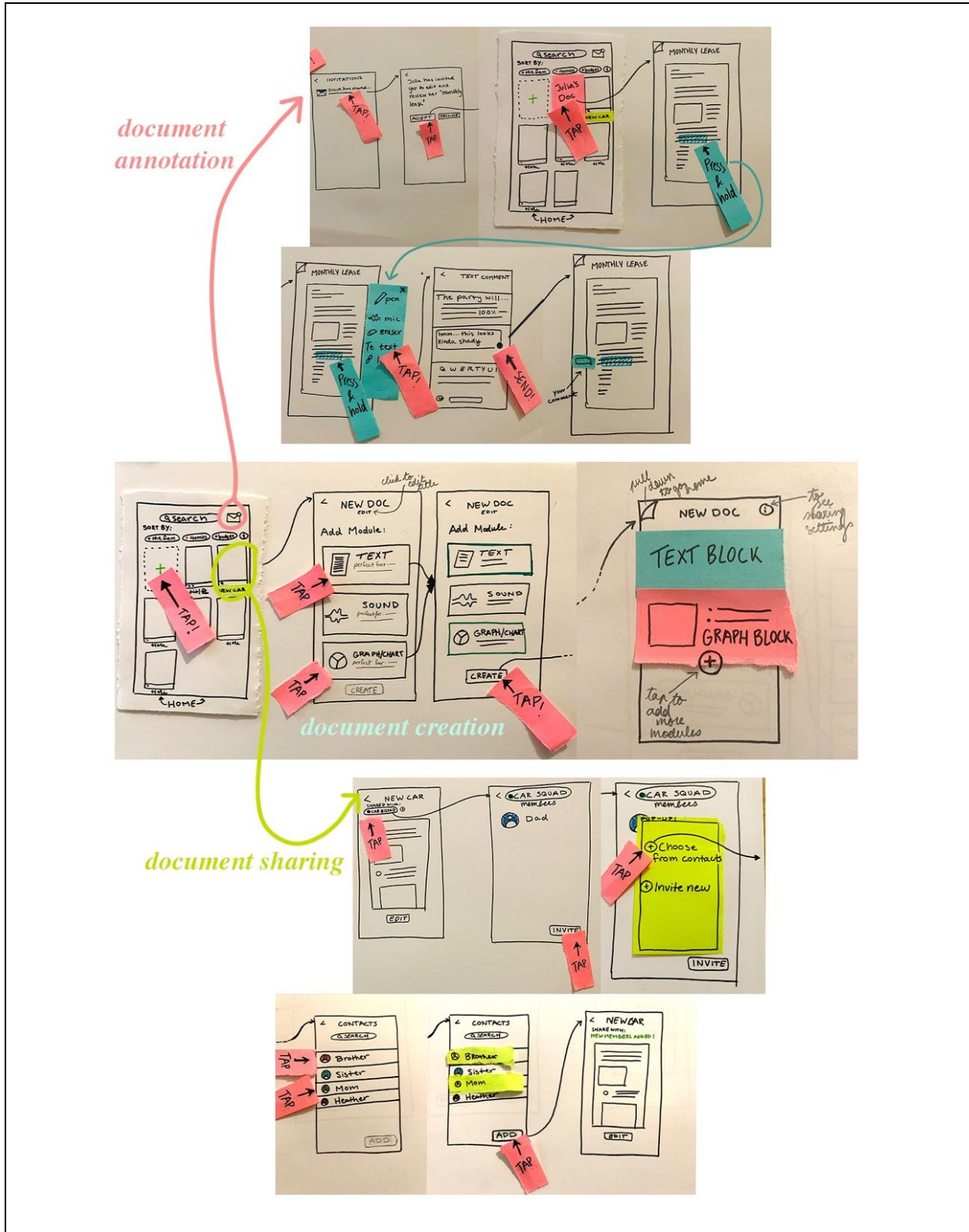


Figure 19: All prototype screens

TESTING METHODOLOGY

Participants

We tested our lo-fi prototype with a junior at Brown University, a junior from the University of Pittsburgh, and a father of a young adult. In the selection of our participants, we targeted the predicted users of our product-specifically young adults learning to navigate their personal finances and the experienced family members that would give them advice. We also wanted to gain some more perspective from the parent's viewpoint to ensure it was usable by both age groups. The participants were recruited through personal connections given the time constraint.

Environment

The test was conducted virtually over Zoom. The test giver would share their screen, showing photographs of the prototype. The participants would describe how they wanted to interact with it. We asked the participants to undergo testing in an environment they would normally make phone calls in.

Tasks

We tested three tasks with this prototype: sharing an existing project, creating a new project, and giving/reading feedback on an existing project.

Procedure

First, we gave an overview of the purpose of the product and the prototype test and provided the consent form. At the start of the meeting, we collected general data about the participant's background. Specifically, we looked for financial experience and family demographics. Once we finished gathering the necessary information, we started the actual testing of the prototype. The prototype was shared through Zoom screen sharing, and the participant would describe how they wanted to interact with the prototype. We tested each of our three tasks in the order of creating a project, sharing a project, and interacting with a project. The participant was requested to narrate their thought process and point out any specifics they particularly liked or was confused about. After each task

was completed, the facilitator would return the prototype to the home screen and ask the participant about their thoughts.

Test Measures

With our tests, we aimed to measure the ease of use of the platform, its learning curve and how intuitive it was to use, and the efficacy of the platform in comparison to standard texts and phone calls.

Team Member Roles

Due to time conflicts, we were unable to have multiple team members to fill the different roles during our testing interviews. We instead had each team member fill all 4 of the roles for the interview they conducted.

RESULTS

In testing the first task of sharing a project with new members, we observed that users were able to navigate through the pages easily and we received feedback that performing the task was simple and straightforward. However, when prompted to remove members, the users did not use the “swipe-to-remove” feature for which we were testing. This test also showed us that the interface lacked a mechanism to edit the list without adding new members and a mechanism to name members added by phone number.

Regarding the second task of creating a new project, that the users navigated the pages efficiently. We received feedback that the interface clearly communicated how to edit the document after it had been created, though the “create” button serving as a final barrier to upload a new document confused users. Additionally, the users wished they could start typing immediately and felt like after the project space was created, there wasn’t anything else to do. Lastly, we noticed that the information density of the home screen could make finding the appropriate task flow difficult for the user.

Finally, for the third task of responding to notes, the users really liked the multiple annotation options including text, highlighting, and voice annotations. The users were particularly excited by the voice annotation option as a novel option. However, the users were also confused by the email icon representing notifications. Additionally, we observed that users would begin clicking on areas they were confused about.

DISCUSSION

Walking through each task with different possible users of Finu, we were able to see what went well and what didn't in terms of usability and assumptions. We focused on the errors that occurred and ranked each error with a severity ranking. We also were sure to take note of what was successful.

From our process, we learned that Finu doesn't need to accomplish everything in the financial realm for users. It just needs to help users reach their main goals really well. We also found that navigation is key; users need to be able to go back or begin a new task from any point in task flows. We also found that icons must be clear as possible in order for them to work properly; users became confused, especially with the 'envelope' icon. We also were confirmed that users do find the use of voice annotation to be novel and add a touch of personal connection with family.

We decided on the following design changes:

1. Adding centralized add and delete buttons.
2. Limit what is presented to the user to only relevant information or tools.
3. Change icons to be more intuitive and descriptive.
4. Use Spacing to separate existing members from new members.
5. A clear, discoverable home button is needed.

APPENDICES

Forms

Consent Form

This student team is interviewing and observing as part of the coursework for Computer Science course CS 147 at Stanford University. Participants provide data that is used to understand the possible opportunities of the design. Data may be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers Braedon Silvers, Cyan D'Anjou, Peng Lu, Laikh Tewari or with Professor James Landay, the instructor of CS 147:

James A. Landay
CS Department
Stanford University
650-498-8215
landay at cs.stanford.edu

Participant anonymity will be maintained by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the research and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to Finu's research. I also give permission for images or audio/video recordings of me being interviewed to be used in presentations or publications, as long as I am not personally identifiable in the images/video. I understand that I may withdraw my permission at any time.

Name _____

Participant Number _____

Date _____

Signature _____

Witness name _____

Witness signature _____