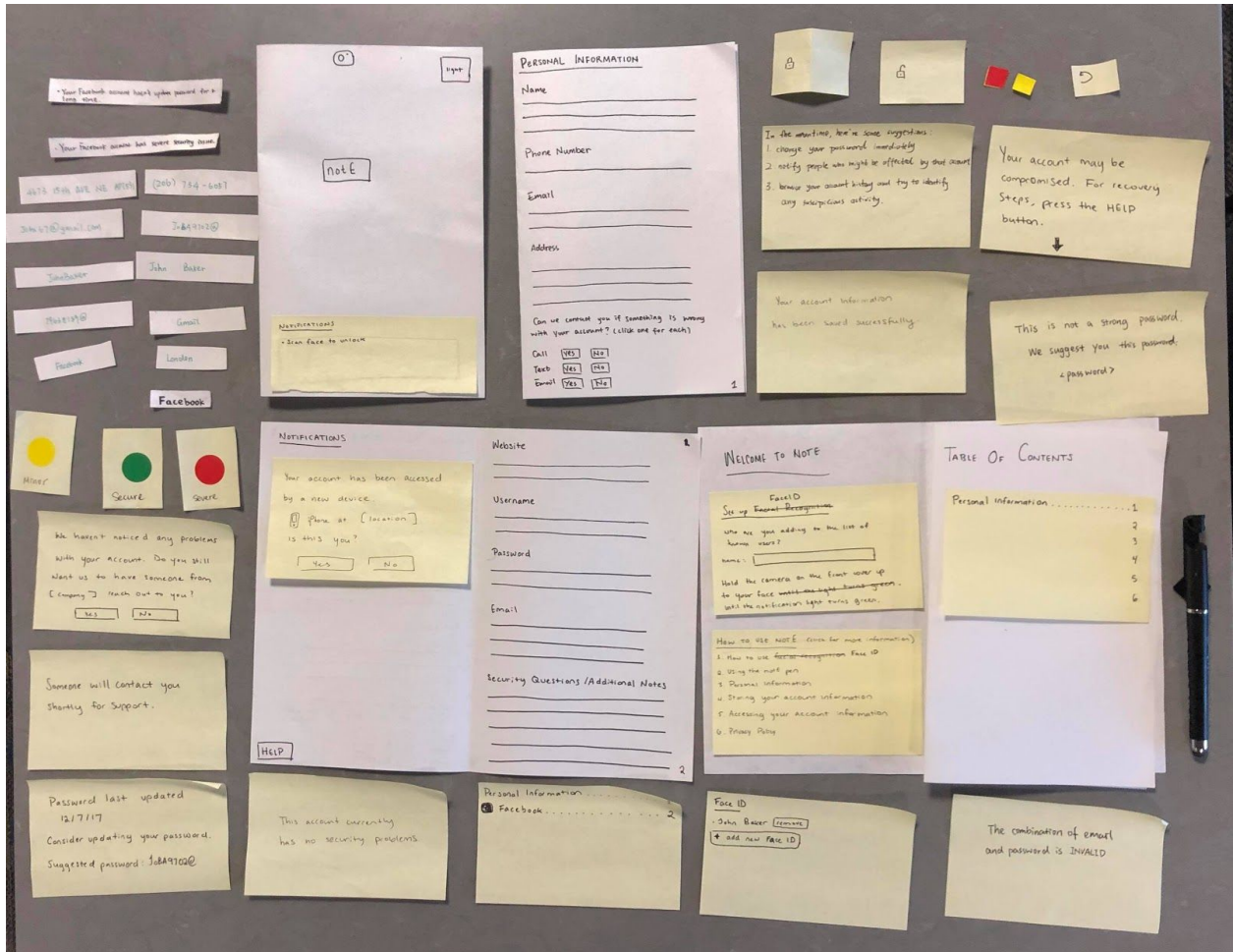# notE - Usability Testing Review

CSE 440 | Augustina Liu, Bill Phung, Celeste Cayetano, Ethan Cui

Overall Paper Prototype

Overview of Usability Tests

Usability Test 1

Our first participant is a 65-year-old librarian at the Odegaard library at the University of Washington. She mainly uses her laptop strictly for work purposes but has a habit of checking her email frequently. She has a neutral attitude toward modern technology. The usability test was conducted at a study room in Odegaard Library because the participant still had work to do in the library and wanted to choose a place close to work. Also, she wanted us to protect her privacy so we chose a relatively private area to conduct the usability test. Augustina was the facilitator and coordinator and Ethan was the observer, recorder, and notetaker in the usability test.
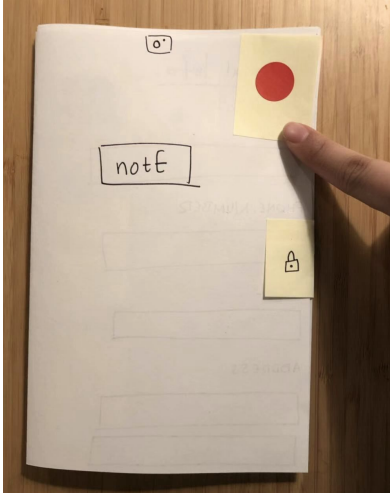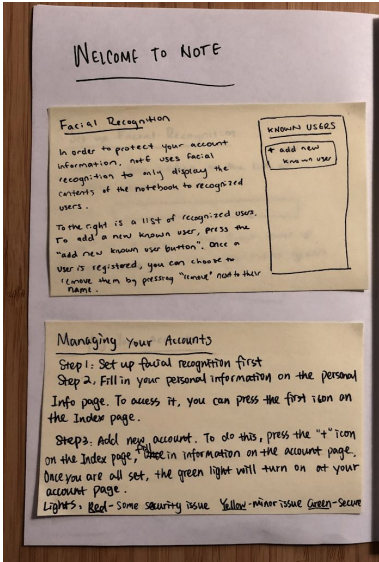
In this first usability test, participants seemed confused about which part is interactive and which part is not. To address this, we adjusted our test protocol to provide more detailed information about the prototype and give more context about the design. In addition, the participant reported that she felt anxious about making mistakes. So, in later usability tests, we were more intentional about emphasizing that the purpose of the usability test is not to evaluate the participant but to evaluate the design. So, if they make mistakes, it is not their fault and it signals that our design still needs some improvement.

Usability Test 2

Our second participant is 68 years old. Her daughter works in the field of internet security which gave our participant some background about the internet security, and also made her eager to help us with the project. We chose to do a usability test with this participant because she was in a more secluded part of Suzzallo Library using one of the older computers, so we thought that she would be a good indicator of whether our design was too much like a tablet. The usability test was conducted in a relatively, but not totally, secluded area at a table in the lower level of Suzzalo library at the University of Washington, because she wanted to keep her friends close by to make sure they didn't leave without her. The test was facilitated by Bill and Celeste, and Bill was the note-taker while Celeste was the computer.

For this test, we were more intentional about making sure that she knew that the point of the usability test was to test the product, not her. As a result, she was quite comfortable stating moments where she was confused and didn't know what to do. In this test, we learned that our product can be overwhelming and confusing. For instance, she often mentioned that she would feel more comfortable if her daughter were there to help her figure it out. That signaled to us that our revisions should focus in on simplicity and making things as intuitive as possible.

Usability Test 3

Our third participant is 63 years old. He used to be a truck driver. Now, he is retired and is a social student at the University of Washington. He doesn't use computers or mobile phones often but he needs to check his email every day since he needs to know information about his class or receive professors' emails. The usability test was conducted in the Starbucks at the Husky Union Building at the University of Washington. We chose this because the participant wanted to buy a cup of coffee during lunch time and he wanted to have an open space to talk, which makes him feel comfortable in the usability test. Ethan was the facilitator and coordinator and Augustina was the observer, recorder, and notetaker in the usability test.
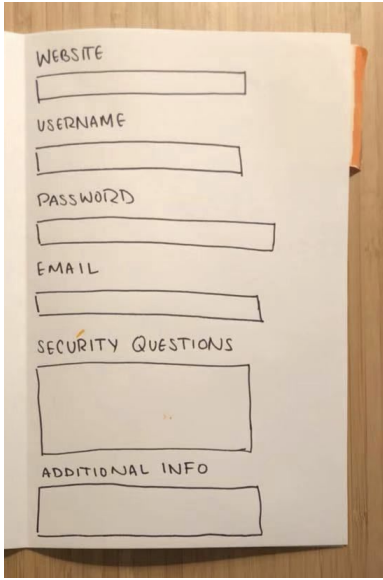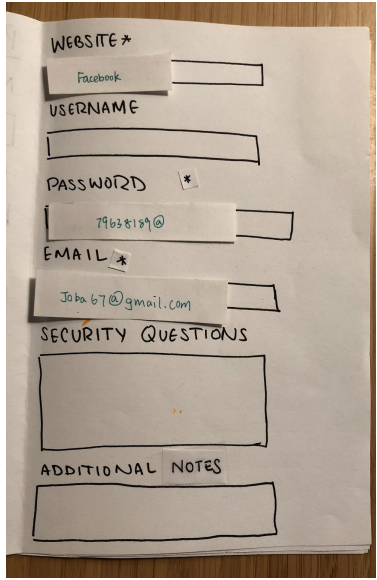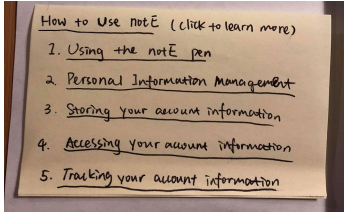
Usability Test Protocol & Script

- **Introduction:** We are students in computer science. We are in a design class and would like to test how people interact with our product.
- **Explain our purpose:** Seniors/Older people may have insecure account management habits and we would like to explore tools to make secure account management more accessible and easy for them to use. We are only to test our design rather than you. There will be no judgment. So please feel free to explore.
- **Tasks:** Our study involves us observing you performing two tasks with our product, we will ask you some follow-up questions after you finish each task.
- **Briefing:** Before we get into that lets a brief overview of the product at hand.
  - This is a smart notebook that helps you manage accounts information
  - Front cover includes facial recognition to secure to unlock your notebook
  - Pages are somewhat digital. Its higher tech than normal paper and has more functionality
  - There is a paired pen to allow you to write. This side is for writing and this side is for erasing (pointing to it).
  - Somewhat like a tablet with its writing features
  - Explain the index page:
    - Clicking on the icon would automatically flip the page for you.
  - A brief introduction on the notification page
  - We are using sticky notes and paper so if you have any confusion about how to interact with the design feel free to ask.
- **Give scenario:** This is the notebook you own and you have already set up the facial recognition.
- **First task:** we would like you to store and access your Facebook account to the notebook.
  - Observe how the participant unlocks the book.
  - Observe how the participant uses the index page.
  - Observe how the participant writes down and uses the account form.

- **Second task:** We have some security features that let you know if there is a suspicious activity with your accounts. Use the notebook to react to compromised accounts.
    - Observe how participant reacts to the change in state of the notebook(change in light color)
    - Observe how the participant uses the notebook to receive help and check up on the account.
- **Follow up questions:**
    - Did you find any aspect of the system confusing?
    - Is there any functionality you find missing or would you like to add?
    - Would you like to know your system is insecure by other means?
    - How do you feel about this design in general?

Usability Test Results

Results of Usability Test 1

Description of the Incidents	Relevant Portion of Prototype	Revision and Explanation
[Negative] **Visibility(2)** The participant didn't know what the light on the cover and on each page are for.		 Based on the participant's feedback, providing some "subtitle"(annotation) can make it more intuitive.
[Negative] **Help and Documentation(3)** The instruction is not intuitive and clear to the participant.		 We made the help section more easy to navigate by splitting it up into high-level sections, which can be

		clicked on to give more specific information and step-by-step guidelines
[Negative] **Match System and Real World(1)** The content "additional info" is confusing.		 Based on the participant's feedback, we changed it to additional notes
[Negative] **User Control and Freedom(2)** "It's hard to know when I should use the pen or my fingers."	N/A	 We add the instruction of the pen on the instruction page. We also changed the protocol to give more context about the pen and how it interacts with the notebook.

[Negative] **Consistency and Standards(1)** The HELP button should not always be there	 NOTIFICATIONS Your account may be compromised. For recovery steps, press the HELP button. HELP	 NOTIFICATIONS We haven't noticed any problems with your account. Do you still want us to have someone from [company] reach out to you? Yes No HELP We think that the HELP button should always be there. If the account is safe but the senior still wants to get help, this will give them more flexibility.
[Positive] The process of updating passwords is simple.		
[Positive] "The tab seems intuitive for this physical notebook."		
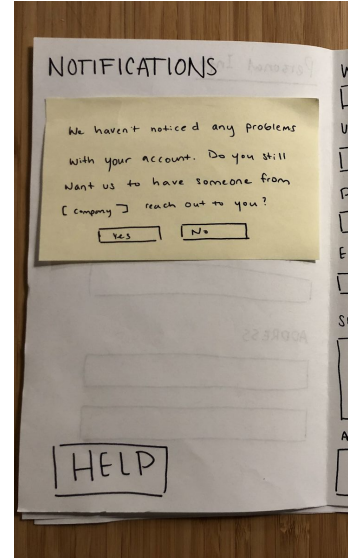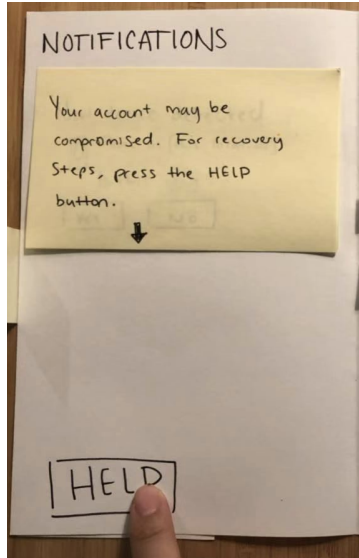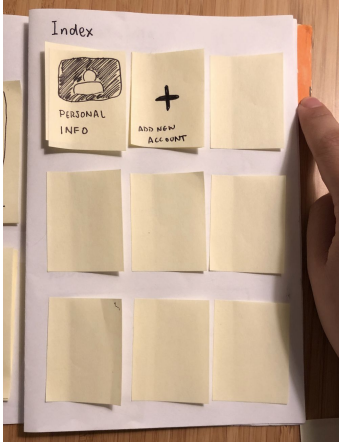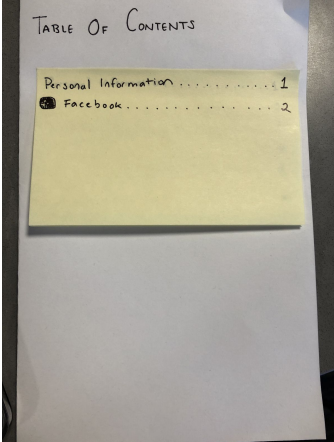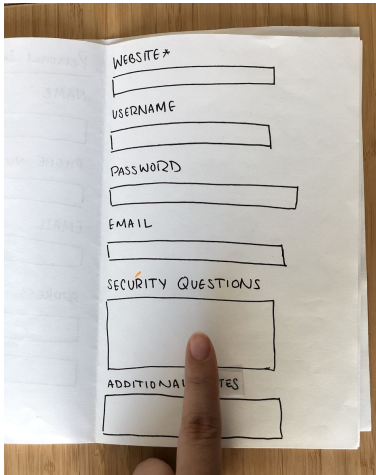
Results of Usability Test 2

Description of the Incidents	Relevant Portion of Prototype	Revision and Explanation
[Negative] **Aesthetic and minimalist design(3)** "Tabs are somewhat complicated and a little bit confusing" Participant was confused about how the index page worked.		 Make it look like a table of contents page with page numbers. Although they need to figure out the page number by themselves, this makes it more like a real notebook.
[Negative] **Match System and Real World(1)** "Would it have like a drop-down menu" Participant suggested the idea of a drop-down menu when writing down security questions because that is what she is used to seeing on internet browsers		This signalled to us that our design was too much like a tablet and not enough like a notebook, so instead of adding a drop down menu, we decided to change the pages to have lines instead of text boxes, to hopefully change the framework that our participants approach the notebook with.

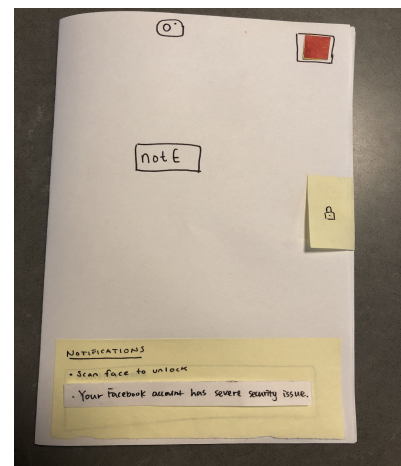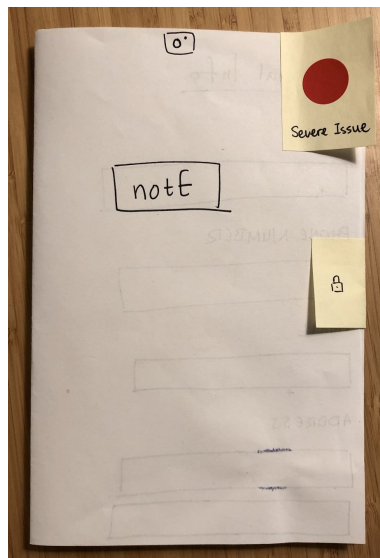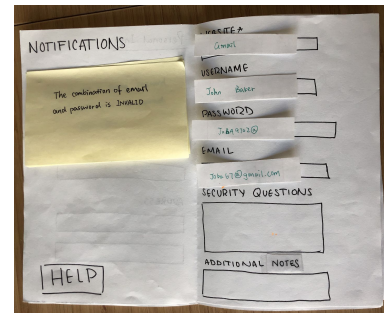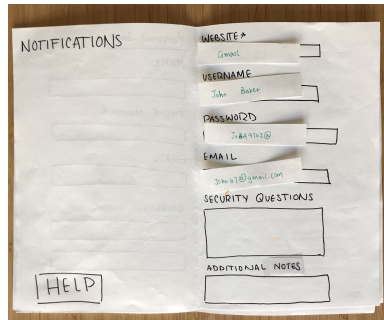|		
[Negative] **Help and documentation(2)** "How does it connect to the internet and my accounts" Participant is confused on how the notebook is connected to the internet and how it accesses/monitors the account		Add an explanation about how this notebook works.
[Positive] Participant liked being given confirmation after entering account info		
[Negative] **Help and documentation(1)** Participant would like a notification screen in front of a notebook or would like some more immediate information on the light in the front.		 Added a notification center to the front cover
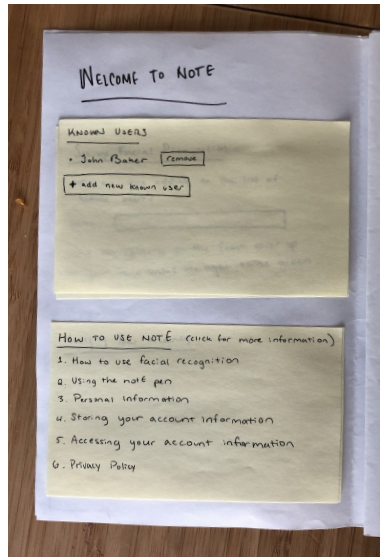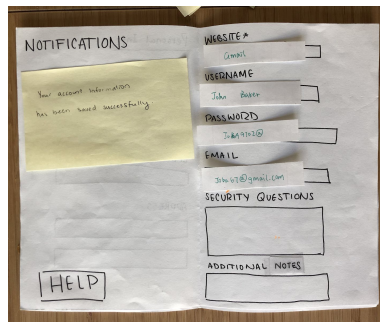
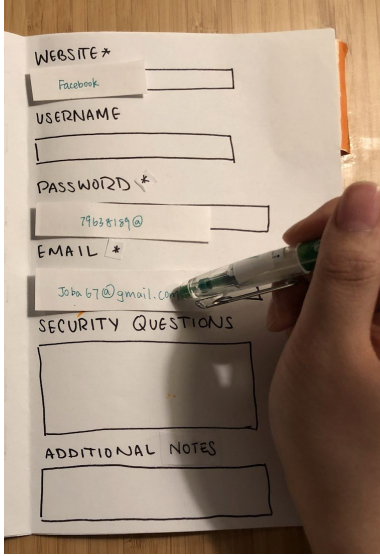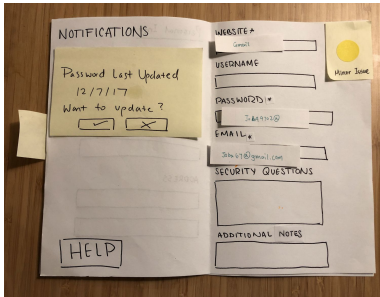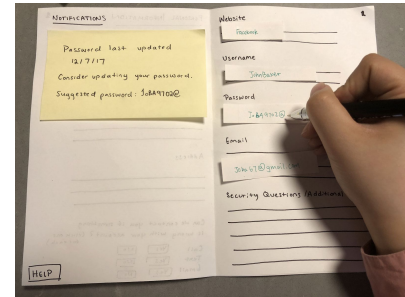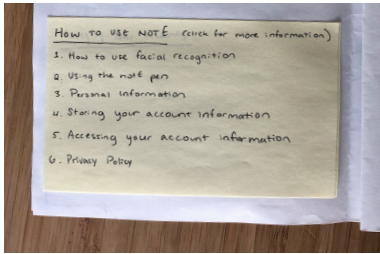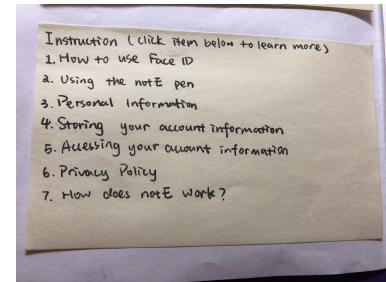|		
[Negative] **Visibility of system status(1)** Participant would like immediate password feedback.		
	  Give immediate password feedback to participants.	
[Positive] Participant liked warning messages. Likes being notified on suspicious activity.		
[Positive] Participant liked writing things down like a normal notebook. She said it was easy.		
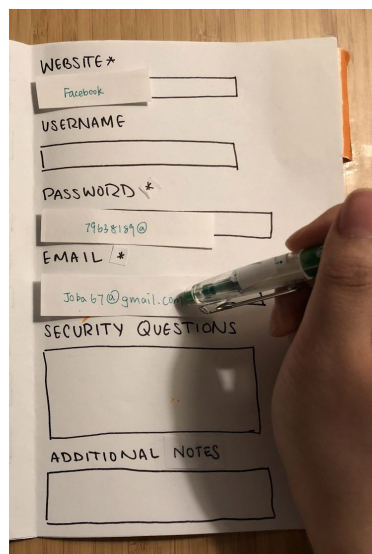
Results of Usability Test 3

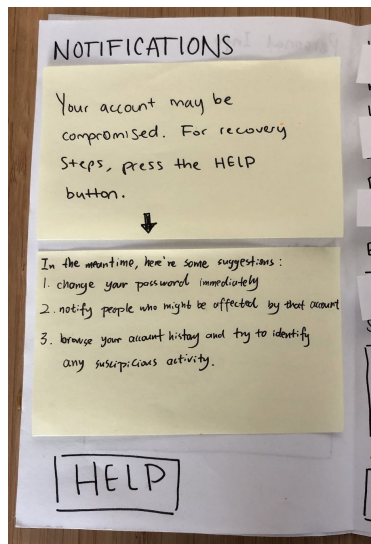| Description of the Incidents	Relevant Portion of Prototype	Revision and Explanation
[Negative] **Visibility of system status(1)** "What if I don't remember my passwords before I record them down? What shall I do to recover it?" Participant want to know how to solve the case that he forgets the password before writing them down.		We do not believe that our design should support this additional service.
[Negative] **Flexibility and efficiency of use(3)** "I prefer that let myself to generate a password for the update." Participant wants to generate the password by themselves.		 We provide suggested password for updation but seniors can write down any passwords they want.
[Negative] **Match System and Real World(1)** "Click for more information? Where shall I click?" (on the instruction page)		 Make it as "click the item

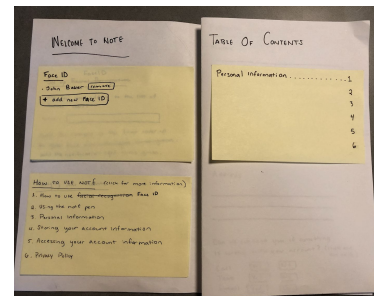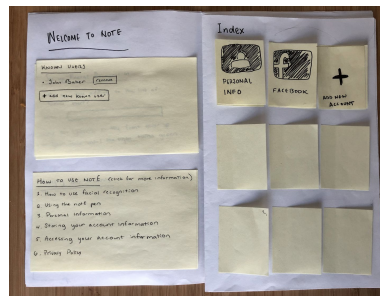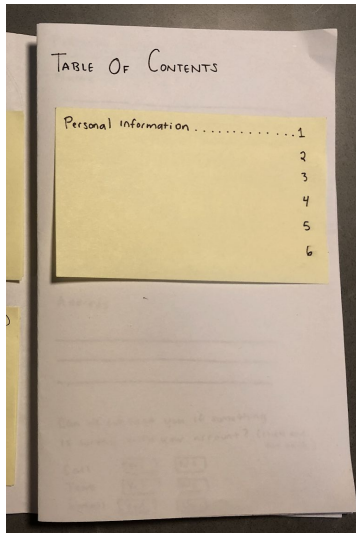|		
Participant feel confused about where to click.		below to know more information"
[Negative] **Aesthetic and minimalist design(1)** "Too many texts provided for recovering an account." Participant wants fewer texts provided in this page		We do not think we need to change this because we think it is important to provide any assistances immediately in such situation. We don't want to let users take another extra step to choose how they want to take actions in such a situation.
[Negative] **Match System and Real World(1)** "The instruction at the back of the front cover makes me confused...because I read from the left to right. I hope I can directly see the index rather than the instruction…" Participant feel very confused about the instruction page and index page.		 We make two pages more distinctive to each other.
[Positive] "I think the way to add face is very simple!"		
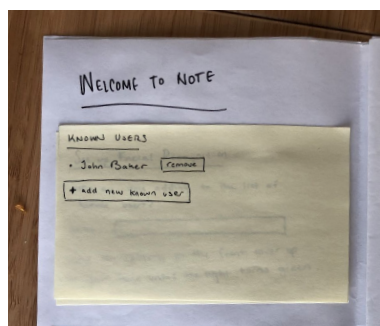
| [Positive] "Having color light on three sites (cover, index page, account page) is very easy for me to know which account has problems." | | |
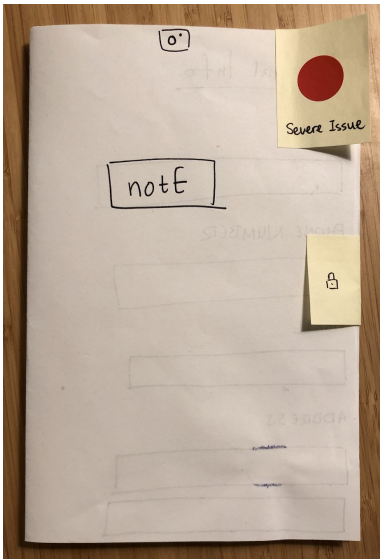
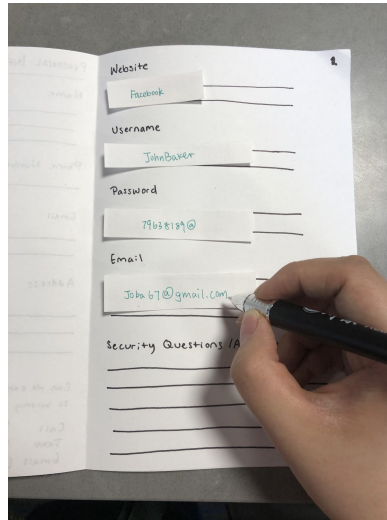# Task Walkthrough

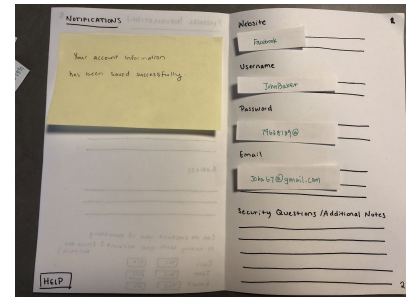## Task 1: Storing, generating, and updating account information
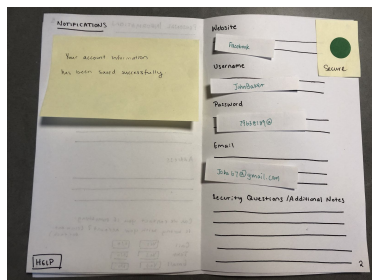
| Storing account information		
Senior can directly flip to the next available page or they can use the index page to find the next available page.	Write down account information (there will be suggested strong password)	A message will show up to notify the senior that their information is saved.
After the account is connected, the light on the account page turns into green.		
Generating and updating account information if needed		
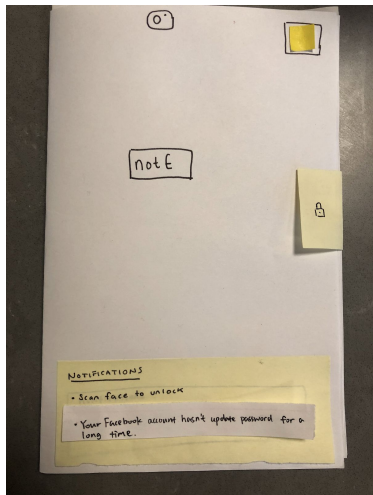
If an account hasn't been updated for a long time, the screen on the front cover turns yellow and a text notification will appear at the bottom of the page.
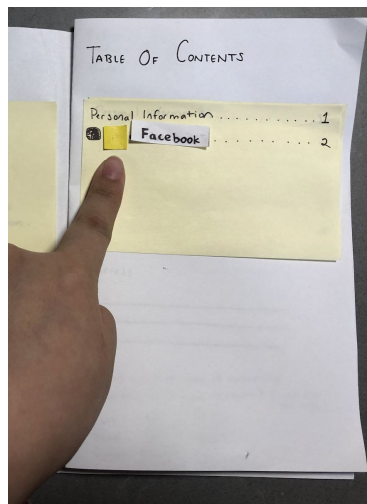

After using facial recognition to open the notebook, senior can see that the light next to the name of the account and the name is bold.
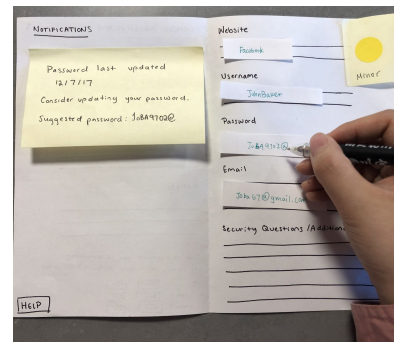

Senior flips to the page of the account and they can see the suggested password listed in the notification center. They can either use the suggested password to update, or generate their own password. They will erase the original password and write down the new password.
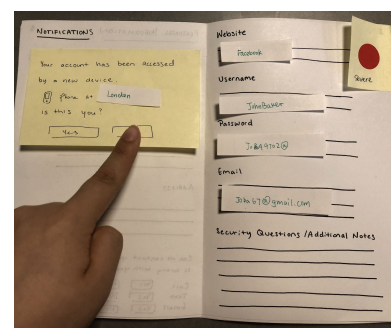
Task 2: Guiding Customers after Their Account Has Been Compromised
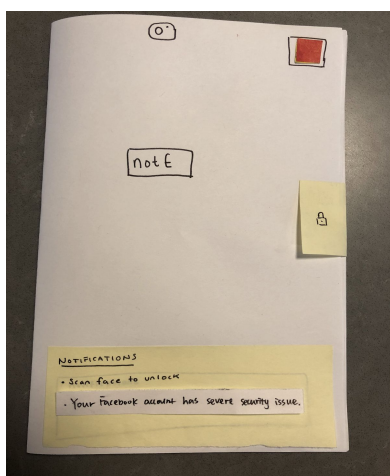
If an account has a severe security issue, the screen on the front cover turns into red and a text notification will appear at
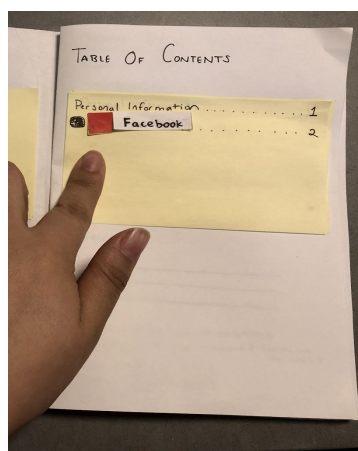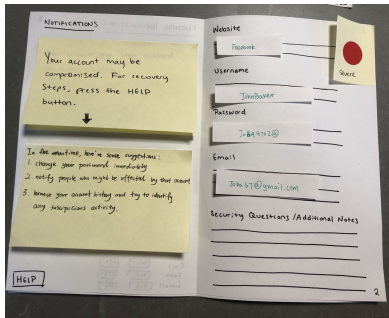

Seniors open the notebook and go to the index page. The problematic account will be identified by red light and bolder font.
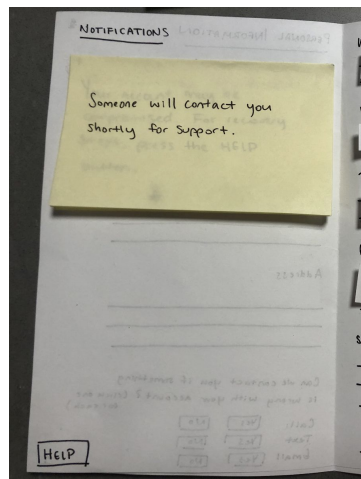

Seniors navigate to the problematic page whose page light is red and there are notifications indicating the specific risk on the notification(left) page.

the bottom of the page.		
  If the senior thinks this is a problem, the message asks if the senior wants to receive any help from others. A list of suggested solutions will also be shown.	 The senior could either let someone contact them or take actions actively. If they choose to take action actively, they can follow our suggested solutions. If they choose to receive help from others, the officer from that company will contact and help them.	
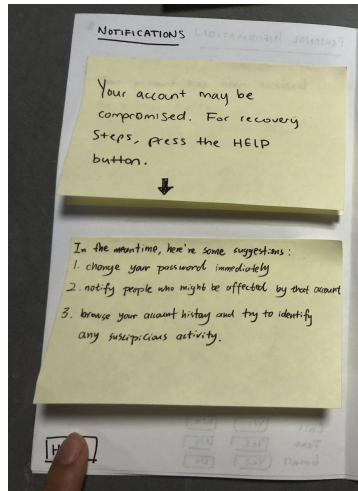
Important Modifications

1. Simplicity on the Index Page

One incident reported that the index page function and tabs were unintuitive and confusing. The idea of clicking on icons on the index page to search seemed too complex and our participants generally had a hard time understanding how to interact with them. This goes against our main goal of simplicity. We found that our participants found our interface too technologically advanced. For instance, our second participant often mentioned that it would be better if she had her daughter there to help her, which is the opposite of what our initial goal was. So, we have changed the index page to resemble that of a more traditional table of contents found in books. We believe that this would be better as our participants are more familiar with this form. We think this change would allow our product to more closely resemble a notebook which was the initial appeal of the design.

2. Page layout

One issue we encountered was that our participants had trouble understanding whether they should interact with notE as a touch screen or as a notebook. For instance, our participants were expecting a drop-down menu for their security questions and were not clear on where they should write, click, or interact in another way. Rather than focusing on many micro-edits, we decided to tackle the underlying problem: people are interacting with notE as a screen, while we want our participants to interact with it primarily as a notebook. So, to fix this issue, we changed the page layout to lines rather than text boxes. We also got rid of the tabs and opted for a more simple table of contents in order to best leverage the existing familiarity of the notebook.

3. Notification changes

Another issue we encountered was that our participants were confused about how to know exactly if an account was compromised. In our initial design, we had a light that indicated any suspicious activity but in our usability test, our participants were confused about what the light meant and weren't sure how to find out what is wrong. We introduced more documentation to inform participants of incidents, including a notification screen on the cover along with improved notification messages inside the notebook. We believe that these changes will help give more timely information about what is wrong with the account.