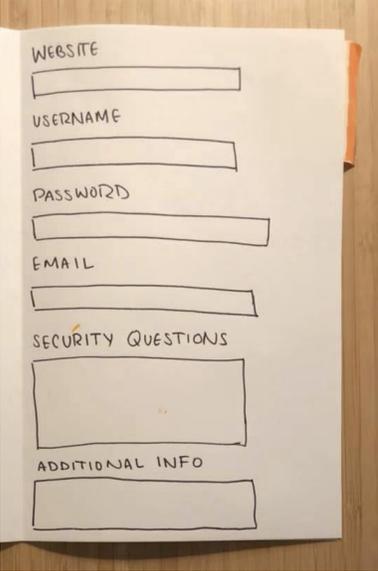
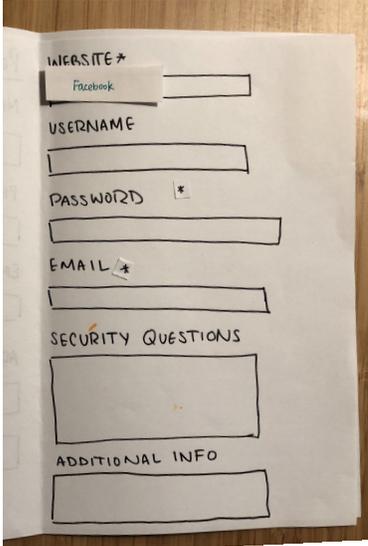
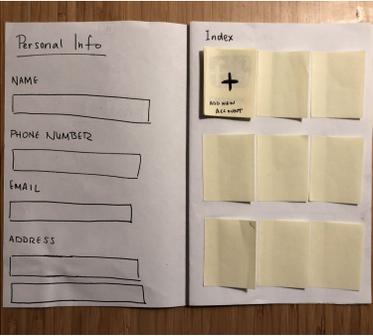
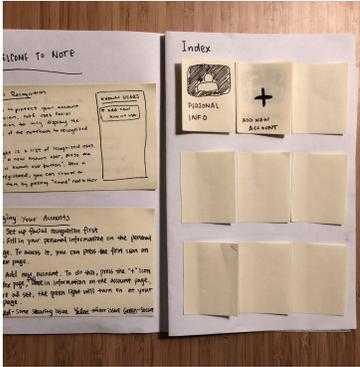
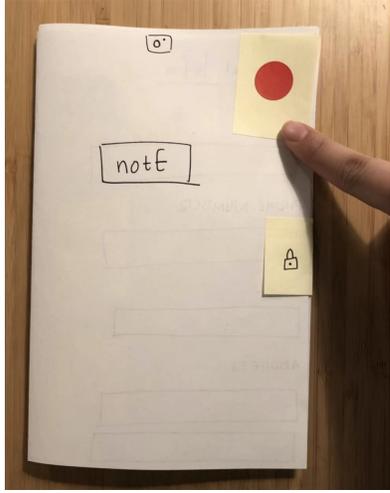
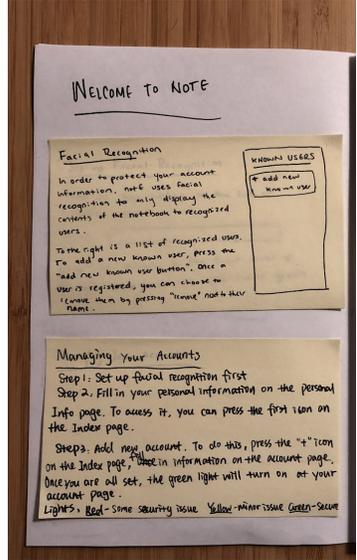
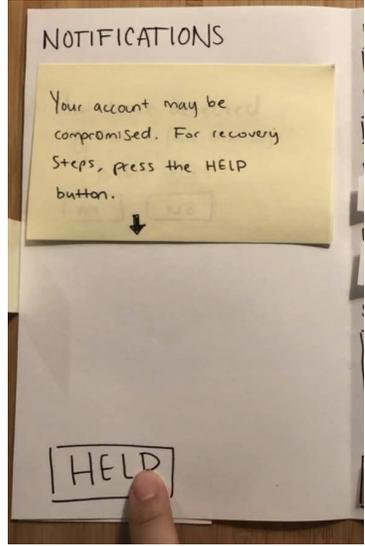
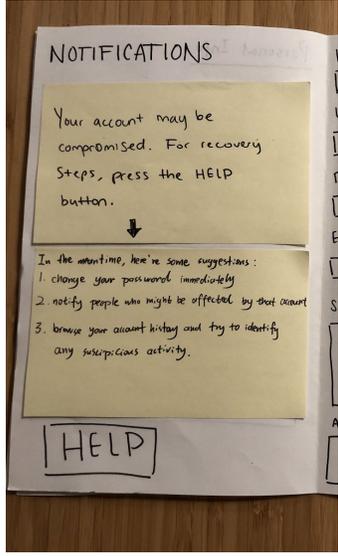
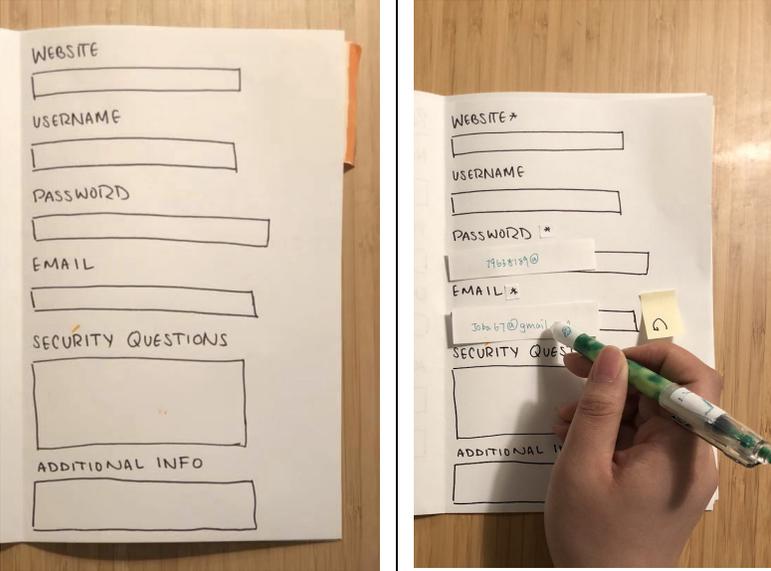
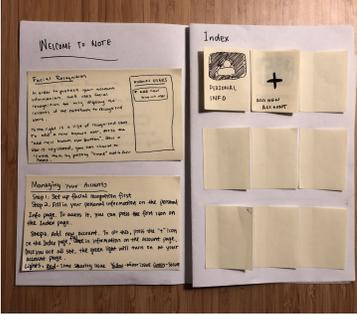


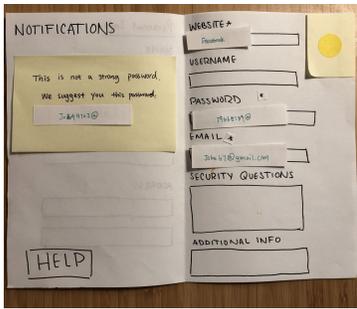
Heuristic Evaluation Feedback + Solutions:

	Heuristic Violated and Severity	Relevant Area in Prototype	Revision and Explanation
1	<p>Recognition Over Recall(1)</p> <p>Security questions should be already listed in a drop-down menu, rather than having to write them down</p>	 <p>A hand-drawn prototype of a registration form on a piece of paper. It features several input fields: 'WEBSITE', 'USERNAME', 'PASSWORD', 'EMAIL', 'SECURITY QUESTIONS', and 'ADDITIONAL INFO'. Each field is represented by a simple rectangular box with a label above it.</p>	<p>We decided not to make this revision because we felt that a drop-down menu would make the page feel more like a tablet and would be counterproductive to our overall goal of simplicity</p>
2	<p>Visibility(1)</p> <p>No confirmation given after entering account information</p>	 <p>A hand-drawn prototype showing a notification area. A yellow sticky note is attached to the left side of the form, with the text 'Way to go! You're so secure!' written on it. A hand is pointing at the sticky note. To the right, a green circle representing a light is visible in the top right corner of the notification area. The background shows the same registration form fields as in the previous image.</p>	<p>We have changed this so that the notification on the left page and the green light in the top right corner will only appear after account information has been entered, thus serving as a confirmation that the account was connected successfully</p>

<p>3</p>	<p>Consistency(2)</p> <p>Need to indicate which fields for an account are required and which are optional</p>		 <p>Put stars to indicate required fields after seniors write down the website. (This is specific to each website because some accounts require different information)</p>
<p>4</p>	<p>Consistency/Help and Documentation(2)</p> <p>Not clear what the difference is between personal info page and account page, they wondered if the inside cover was where the account info goes</p>		 <p>Moved personal info page into index page as a separate, fixed icon such that it is now an independent page.</p>

<p>5</p>	<p>Visibility/Help and Documentation(3)</p> <p>Not intuitively clear what the lights mean when first using notE</p>		 <p>Set up an instruction page with information about various aspects of using notE.</p>
<p>6</p>	<p>User Control and Freedom(3)</p> <p>Need an option to take active steps if an account is compromised, rather than just having to wait for the company to call</p>		 <p>After notE detects a risk of account compromise, in addition to the ability to call for help, there will be suggestions on actions to take in order to minimize the loss. For example, notE will suggest</p>

			changing the password immediately.
<p>7</p>	<p>User Control and Freedom(4/3)</p> <p>We don't handle erasing/Can people undo and redo when writing down information?</p>		<p>Added a specific pen to our prototype that can be used to erase. Each side of the pen has an icon indicating whether it is the writing side or the erasing side.</p> <p>Redo: when people start to erase, the undo button pops out.</p>
<p>8</p>	<p>Visibility/Help and Documentation(4)</p> <p>Notebook setup isn't handled, not clear how to use the notebook for the first time (how does one set up facial recognition, how do we introduce the notebook and its features?)/Are there any instruction provided for first-time seniors? How will</p>	<p>N/A</p>	 <p>Created a setup instruction page at the inner cover. Moved personal info page to the index page.</p>

	seniors find out instructions?		
9	<p>Match System and Real World(1)</p> <p>People generally read left to right so having the notifications on the left side may be confusing</p>		<p>People generally use one side of the notebook and leave the other page blank, so we don't think this is an issue.</p>
10	<p>Visibility(1)</p> <p>People don't know how strong their passwords are when they first write it in the notebook</p>	N/A	 <p>The yellow light and message in the notification center are now able to indicate that.</p>
11	<p>User Control and Freedom(4)</p> <p>What will the notebook do if people record down the wrong passwords? Will there be any notifications provided? (4)</p>	N/A	 <p>After account info is entered, the light on the page will turn into red, which indicates that the account info is problematic. Specific messages will appear in the notification page.</p>

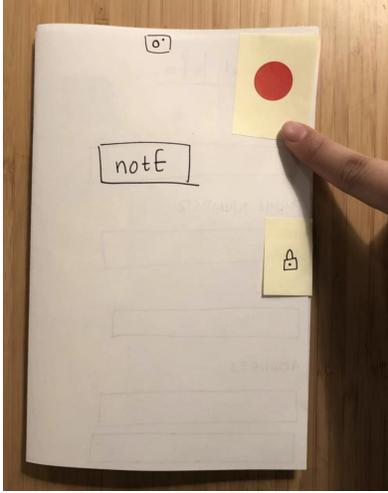
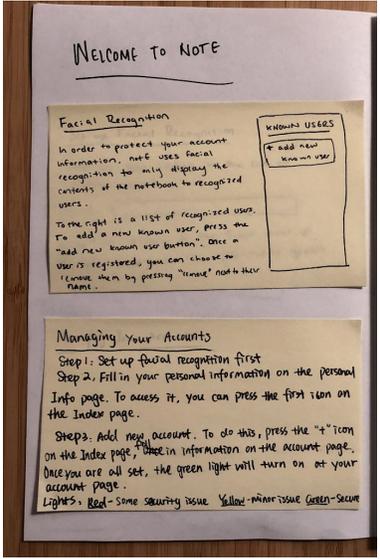
First Usability Test

Our first participant is 65 years old and is currently a 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.

At the beginning of the test, we introduced ourselves, our project, and our purpose. Then, we gave a brief and high-level introduction of the design we made to the participant to give her more context. During the test, the participant was asked to think aloud when performing the tasks. We conducted the usability test based on our primary tasks: 1) Storing, generating, and updating account information for seniors, 2) Guiding seniors after their account has been compromised. At the end of the usability test, we debriefed about the tasks and our design. We asked her what aspects of the design are the most confusing to her and what went well 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 may need to provide more detailed information about the prototype to let them know more contexts about the the design. In addition, the participant reported that she felt anxious about making mistakes. So, in future usability tests, we will need to emphasize to them 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.

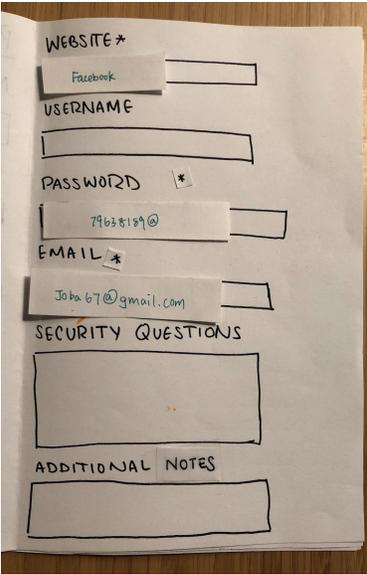
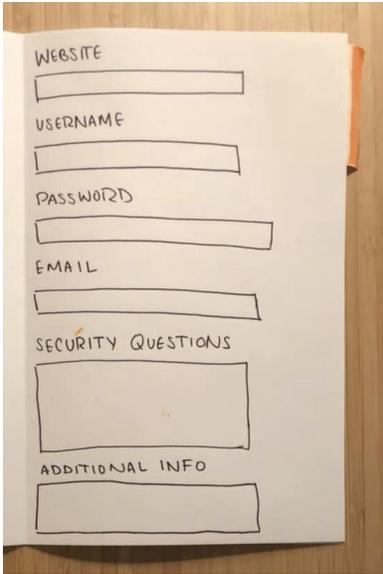
Results From the First Usability Test

Description of the Incidents	Relevant Portion of Prototype	Revision and Explanation
<p>[Negative] Visibility(2)</p> <p>The participant didn't know what does the light on the cover and on each page stand for.</p>		<p>Based on the participant's feedback, providing some "subtitle" (annotation) can make it more intuitive.</p>
<p>[Negative] Help and Documentation(3)</p> <p>The instruction is not intuitive and clear to the participant.</p>		<p>We added more specific and detailed information, including steps by steps. Specific information is provided after seniors click</p>

each high-level questions/steps listed above.

[Negative] Match System and Real World(1)

The content “additional info” is confusing.

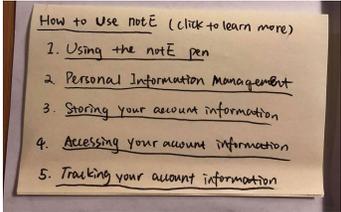


Based on the participant's feedback, maybe change to additional notes would be better.

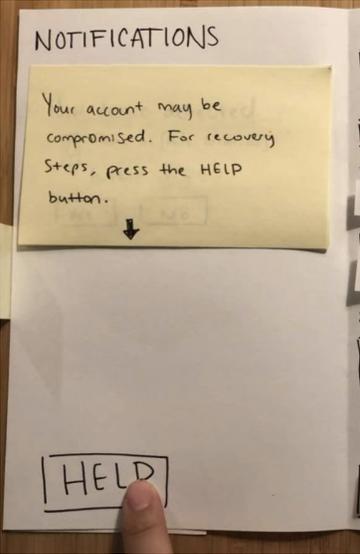
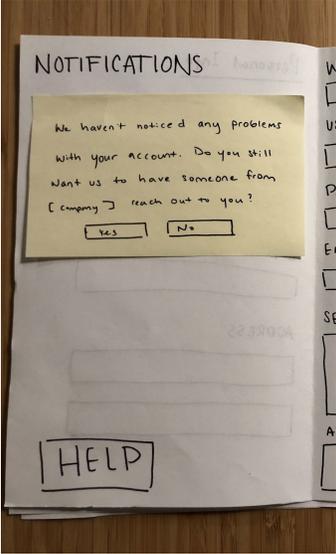
[Negative] User Control and Freedom(2)

“It's hard to know when I should use the pen or my fingers.”

N/A

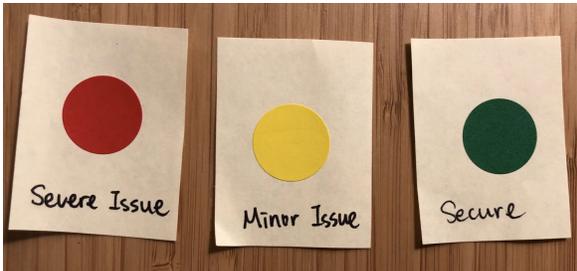


We add the instruction of the pen on the instruction page.

<p>[Negative] Consistency and Standards(1)</p> <p>The HELP button should not always be there</p>		 <p>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.</p>
<p>[Positive] The process of updating passwords is simple.</p>		
<p>[Positive] "The tab seems intuitive for this physical notebook."</p>		

Task Walkthrough

Task 1: Storing, generating, and updating account information for seniors

Picture	Description
	<p>***Additional notes: When the notebook is locked, seniors learn about their account security through the front cover light (<u>green and constant means safe, yellow and moderately blink means minor issues, red and flashy means severe issues</u>)</p>

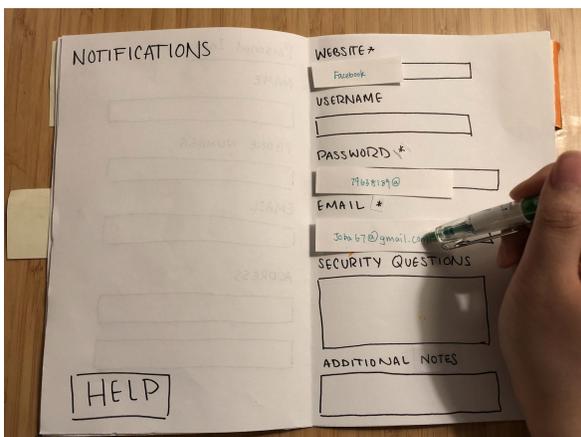


Storing account information

Click on the "+" icon on the index page to add a new account



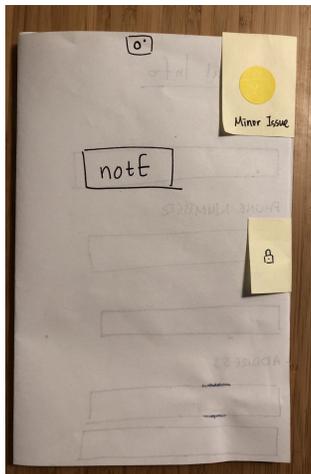
Flip to the next available page by using the smart tab



Write down account information (there will be suggested strong password)

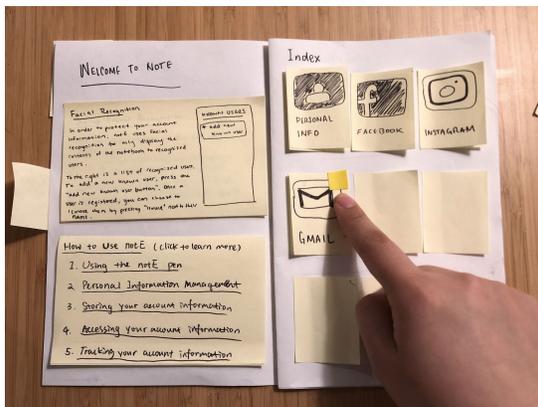


After the account is connected, the light on the account page turns into green.

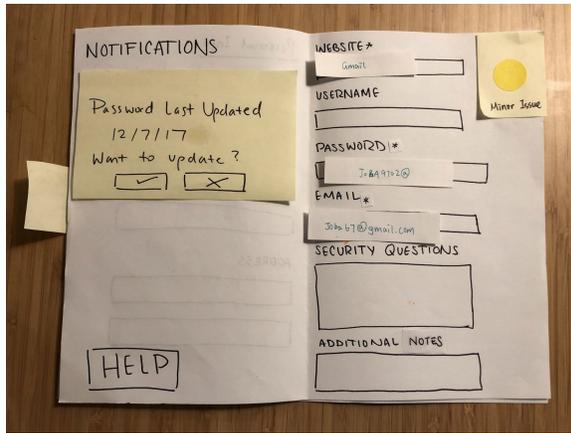


Generating and updating account information if needed

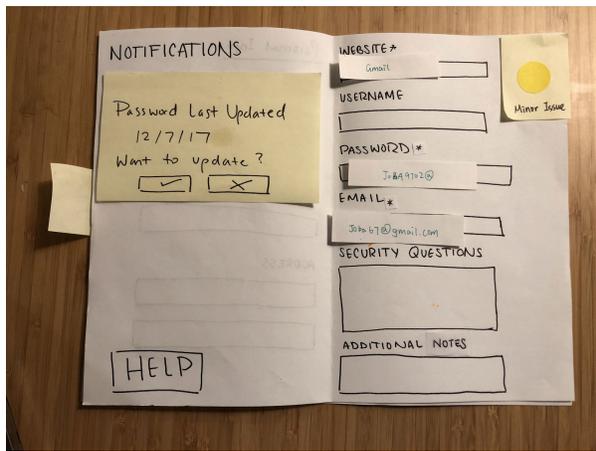
If the password should be updated, the light on the cover turns into yellow with moderate blinks.



After using facial recognition to open the notebook, seniors can see that the light next to the icon of the targeted account is yellow.



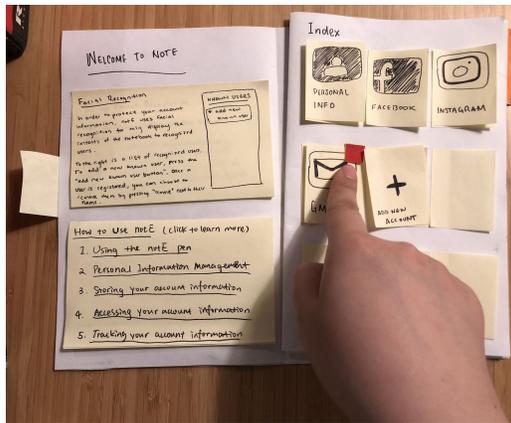
Seniors could use tab to locate the page. The light on the account page turns into yellow to indicate that this is the page they are finding. The message in the notification center asks seniors that if they want to update their password.



After pressing yes, the password is being updated.

Task 2: Guiding Customers after Their Account Has Been Compromised

Picture	Description
	<p>The light on the front cover turns into red and starts to flash quickly to indicate that the account has risks of compromise</p>



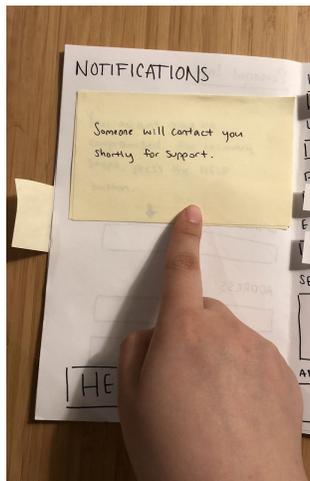
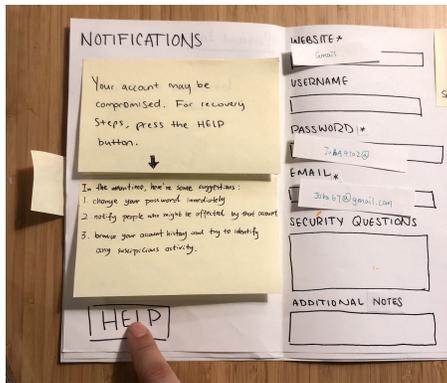
Seniors open the notebook and go to the index page. They can see that the light next to the problematic icon is red. Senior click on the problematic icon and navigates to the account page with the help of smart tab.



The light on the account page turns into red. On the left page of the notebook, there are notifications indicating the specific risk of the account.



If the senior thinks this is a problem, the message asks if the senior wants to receive any help. A list of suggested solutions is shown.



The senior could either let someone contact him or take actions actively. If they choose to take action actively, our products will give suggested solutions. If they choose to receive help from others, the officer from that company will contact and help him.

Future Usability Tests

For our next usability tests, we plan to continue to target elderly participants, since this is our target audience member. Our goal is to observe their interactions with our product and learn how to avoid places of confusion. A theme found in our research is simplicity. In order to make notE simple and easy to use we must understand their thought process and intuition when presented with these new tools and interfaces. We also want to keep note the level of stress the participant has when learning how to perform tasks with our product. From our research, we observed that many of our audiences have high levels of uncomfortability with the complexity of technology. This discourages them from using certain products. This is something we want to steer away from.

A problem that we faced while performing our first usability test was that participants did not know which parts of our product supported interaction and what tool to use when interacting. We believe this might be because of the low fidelity of the prototype. To remedy this we plan on providing more context and instruction when performing tests, such as explaining that the green dot in the upper-right corner is intended to be a light, rather than a button.

Another approach we want to take in future usability tests is that we will emphasize the purpose of the test is to test our design and we will not judge participants if they fail to complete tasks or make mistakes in the tests. We hope them to feel comfortable in our usability tests.

Due to time conflicts, we plan on having two people per usability test. We want to use the roles of the facilitator/computer(someone who helps walk the participant through the process) and note taker(someone who records the events that transpired during the test).