

SCRIBE

FINAL REPORT

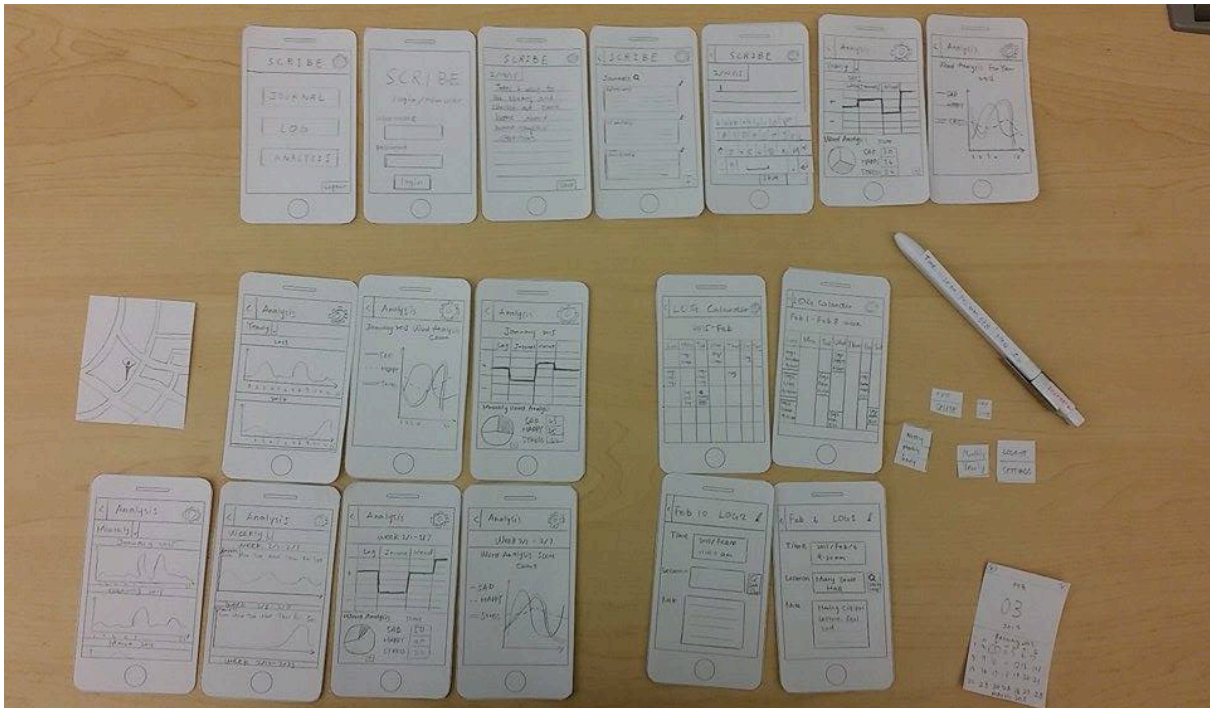
Keeping track of mood states is especially important in helping those with mood disorders improve their mental health. Lack of awareness can lead to frustration and a sense of an uncontrollable self. Our design will analyze one's journal content via word analysis to provide awareness of mood states.

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Oscar Wong, Design

INITIAL PAPER PROTOTYPES

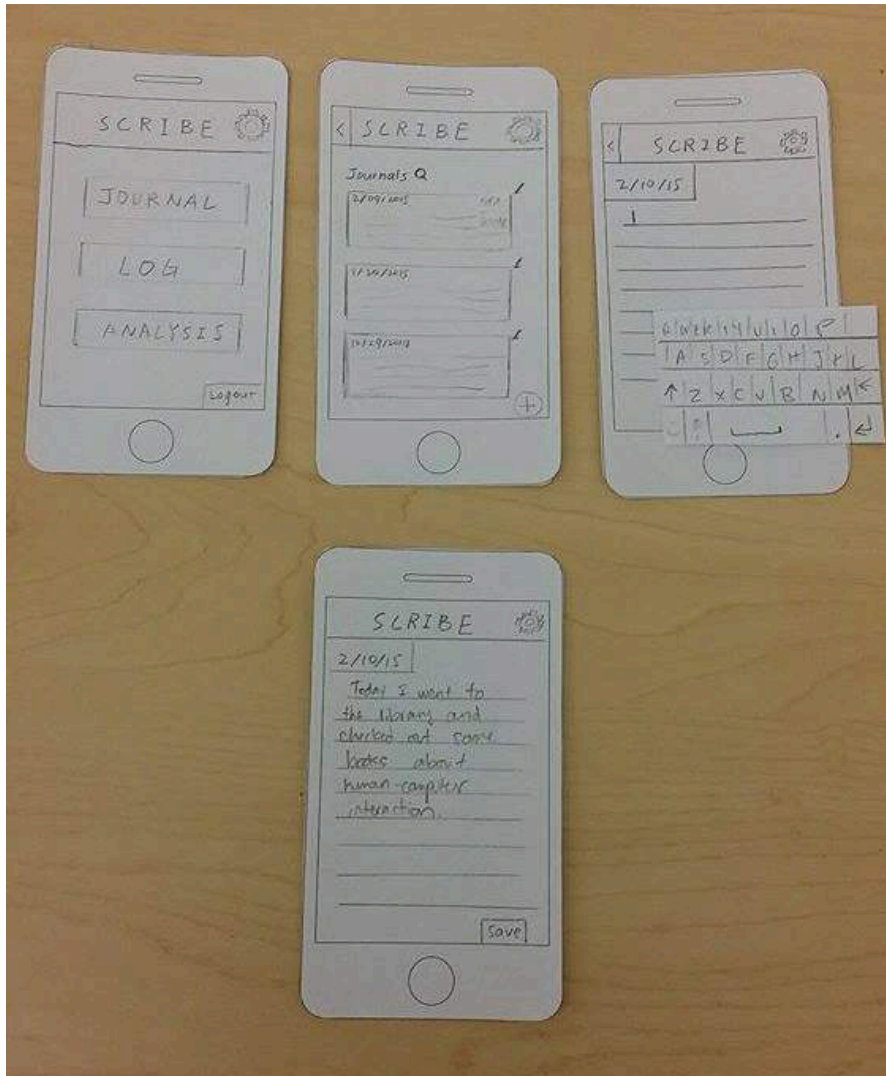
Overview of paper prototypes

This is an image of our paper prototypes used to guide a user through our tasks. We created them using mobile screens and also prototyped with a pen to represent the hardware component of our design.

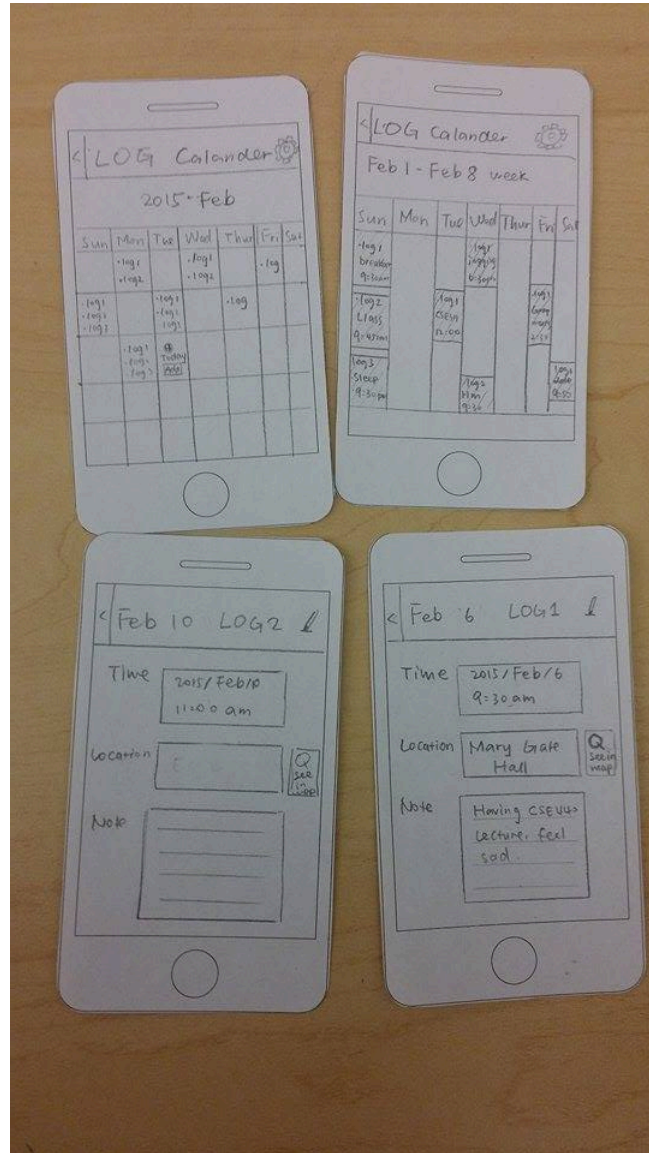


Task 1: Writing and recording entries into the application

There are two different categories of input in our application. The first one is to write entries in a journal, which provides paragraph space for the user to write. The user would take the following paths to begin and view a journal entry:



The second feature is logging, which tracks small events and integrates attributes like GPS location and time. The following displays a monthly view, a weekly view, and the interaction for adding log entries:

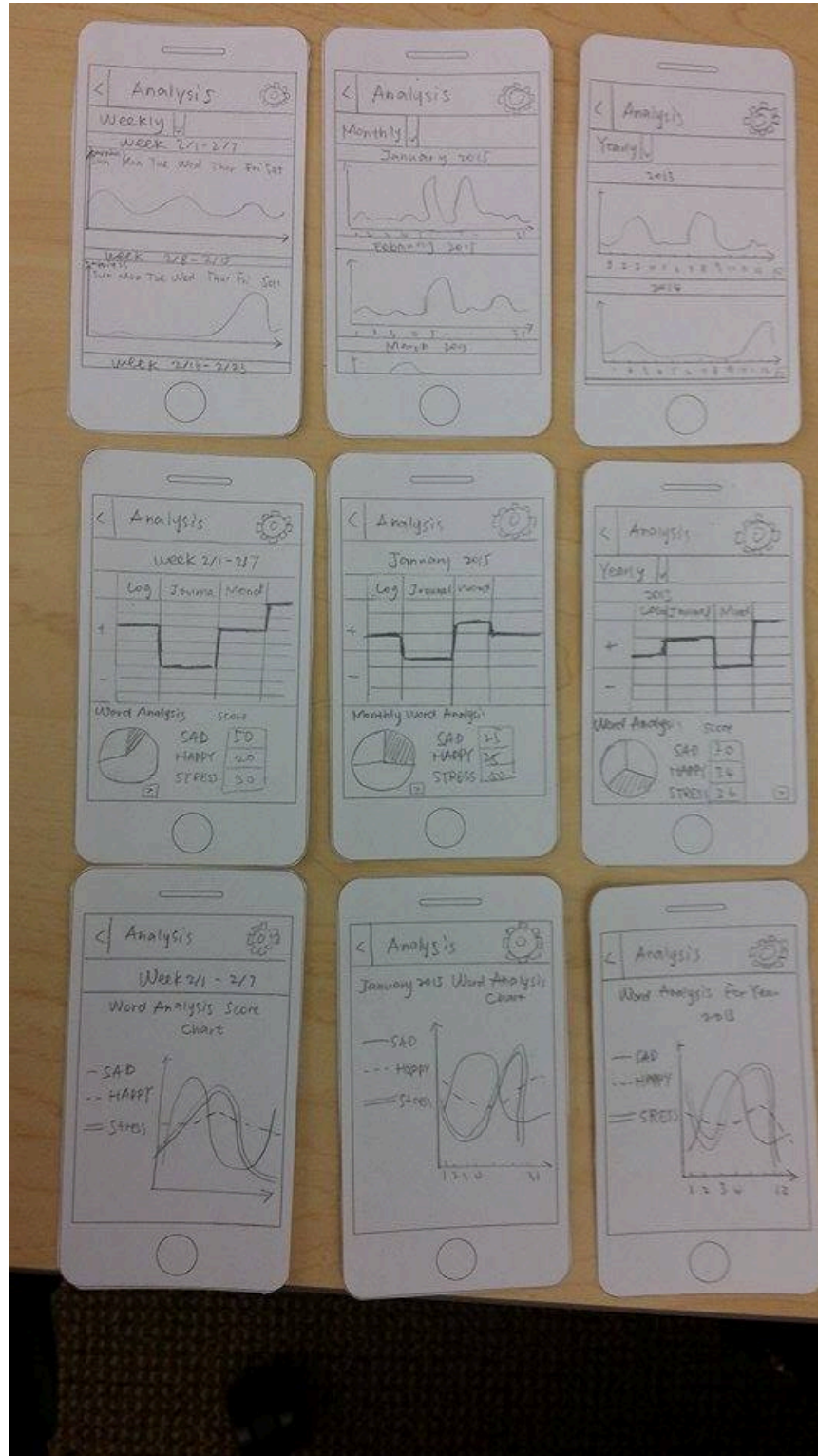


Additionally, the user could rotate the end of the Scribe pen to journal mode, which would provide a shortcut to the new entry page. Likewise for logging mode.



Task 2: Viewing the application's mood analysis information

Weekly, monthly, and yearly mood analyses from logs and journals are provided to the user through our application. These show the application's presentation of this content (each column is a different time period—weekly, monthly, yearly):



TESTING PROCESS

PARTICIPANTS & PROTOCOL

For our first usability test, we chose a participant who was sitting in a coffee shop, writing in what appeared to be a journal, and had no electronic devices out. We chose to ask this person to test out our prototype since they were exhibiting behaviors that were relevant to who might use our application. We asked them to write a journal entry using the Scribe pen, to record a note, and to find a yearly word analysis for 2013. Oscar was the facilitator, Keith was the computer, and Nina was the observer.

In our second usability test, our first task was to ask our participant to create a journal entry, using the Scribe pen. In this task, we aimed to test some new screens that provide instruction on how the system works (that were created as a result of confusion in our first usability test). We also asked them to create a note. The goal was to find the weekly summary of their mood analysis and find out more about the event that correlated with a positive trend. We found our next participant in Suzallo Library and asked her to test out our design since she had multiple spiral notebooks out on the table. Our roles were: facilitator (Keith), observer(s) (Oscar and Claire), and computer (Nina).

For our third test, our prototypes were modified from the revisions made in the previous test. We asked our participant to conduct the same tasks as before (create a journal entry using the Scribe pen, create a note, and find the weekly summary of mood analysis/event that correlated with a positive trend). We found our last participant at the Starbucks Roastery. He was actually performing a pretty unique form of writing--calligraphy. We thought it would be interesting to see his use with our pretty non-traditional take on a pen. Our roles were the same as the previous test.

RETROSPECTIVE

After each test, refinements were made to the design of our prototype. This was important for not only discovering flaws, but for validating that the changes we implemented were working (by testing them with subsequent participants). We refined our design by noting what made users struggle, took them longer periods of time to analyze, and what they verbally gave us through feedback.

TESTING RESULTS

VERSION 1

When our first paper prototypes underwent a heuristic evaluation, we were able to polish some of the mental models and unclear terminology our application presented. “Log” was renamed to “Notes”, and the concept of one journal with entries rather than multiple journals was clearly identified.

VERSION 2

Our refined prototypes were now presented to our first participant. We were able to identify some holes in our designs that prevented our participant from using our device and application seamlessly. For example, our participant was unaware that the pen was “smart”, and initially thought it was a stylus. From that feedback, we realized the difficulty of prototyping with an imagined technology and decided we should provide more context at the beginning of the test through a series of instructional screens. We also implemented a pretty major change with our original click + turn gesture to change application modes—our participant was swiping, and we actually liked this gesture more than our original design.

From a suggestion in quiz section, we came to the idea that we need to find a goal with our data instead of just displaying raw data to user and letting them make sense of it. For our screen that overlays mood with the user’s note and journal entries, we revised it to show a day-by-day display and a mood trend line. The user can look at mood trends (for example, a sudden drop in happiness) and then click on the overlaid entry to examine what happened that day.

VERSION 3

In this test we were able to validate that our introductory screens did in fact help the user understand our designs. We discovered a need to also differentiate our pen between two modes—writing and stylus. From the previous refinement of the mood trend and overlaid entry, we found that our design did not clearly represent that functionality because our buttons didn’t afford touching. We modified the buttons to take on a circle shape rather than a square shape.

VERSION 4

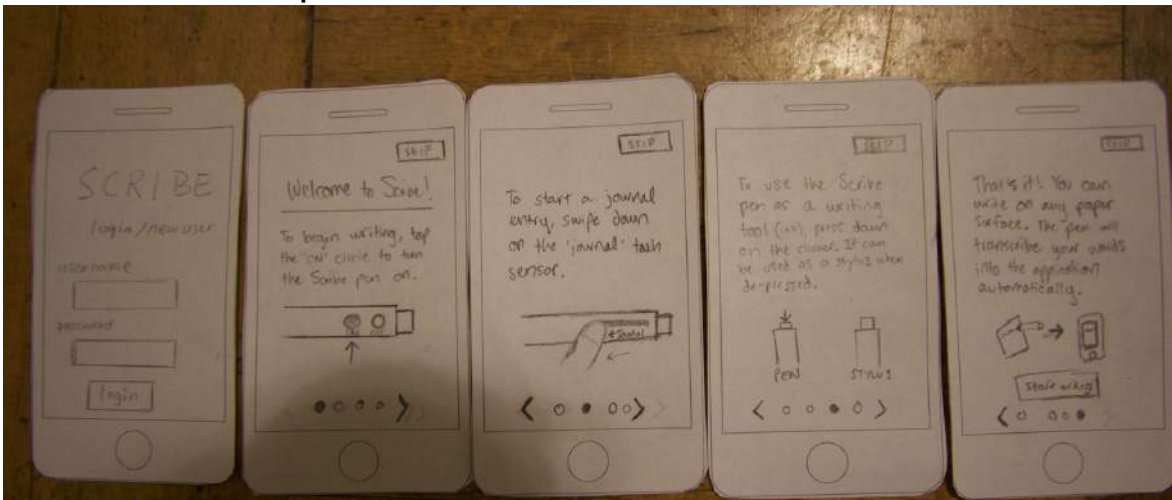
Despite the modification to our buttons, our third participant still had trouble recognizing the affordance since the circles were punched out, and looked like highlights rather than buttons. We filled the circles in after receiving this comment. He also mentioned that he didn’t know how to tell the application to save his written entry with the pen, so we implemented a hardware change and added a save swipe to the pen.

FINAL PAPER PROTOTYPE

Overview



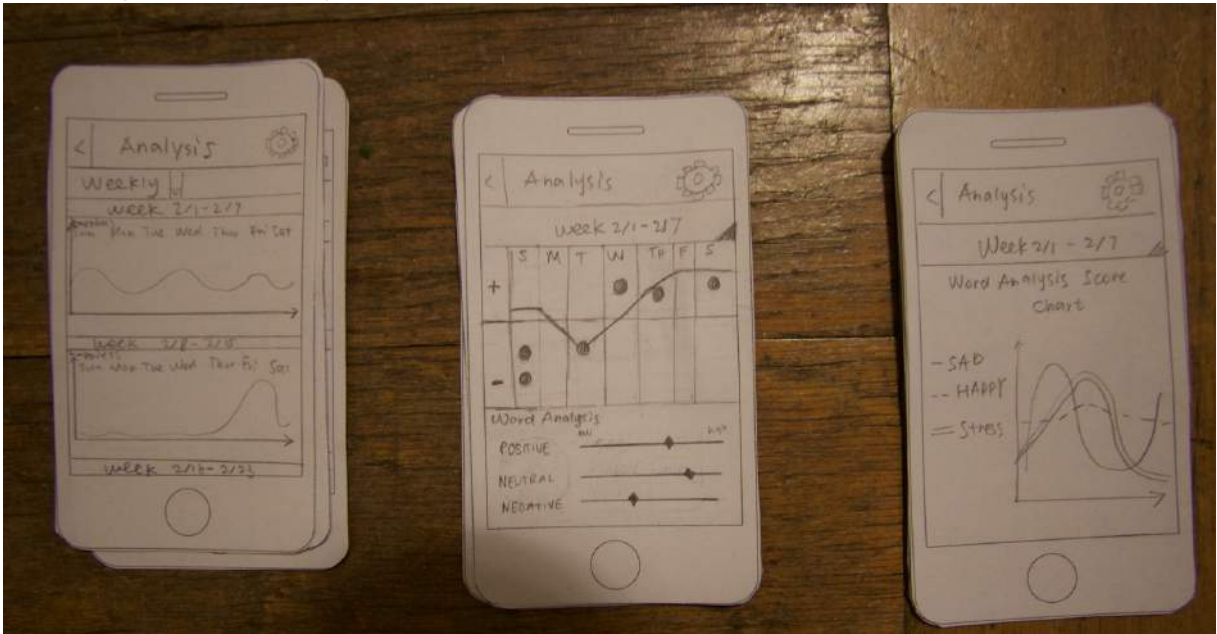
Instructional setup



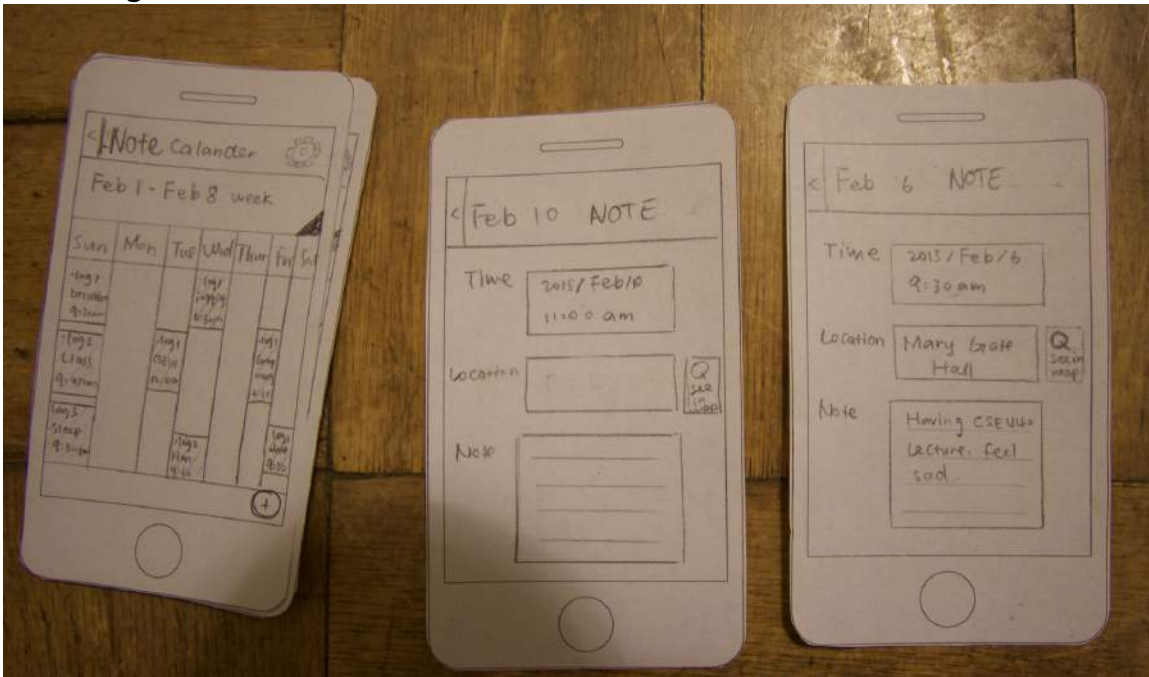
Creating a journal entry through the application



Viewing mood analysis



Creating a note



Close up of Scribe pen



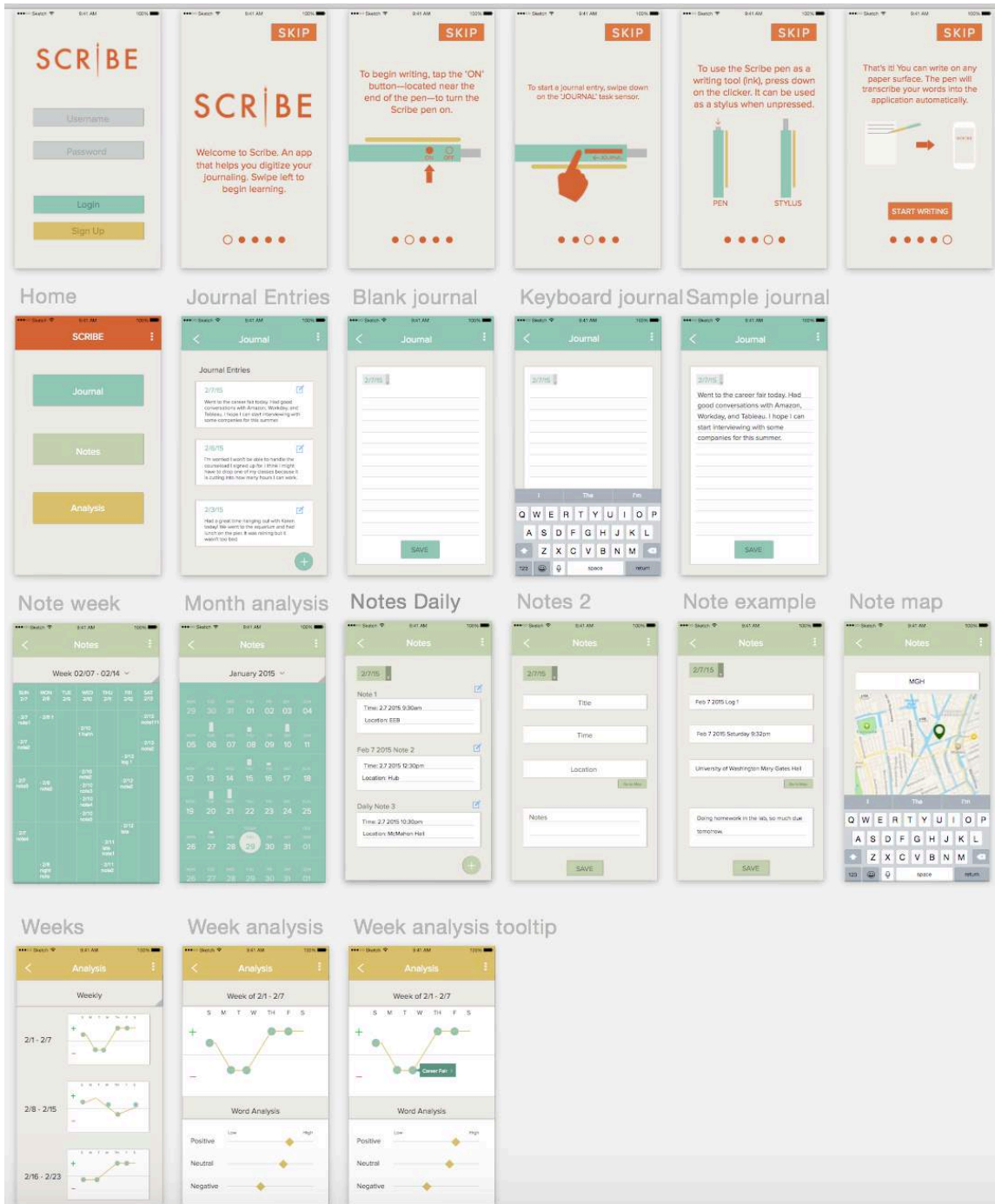


DIGITAL MOCKUP

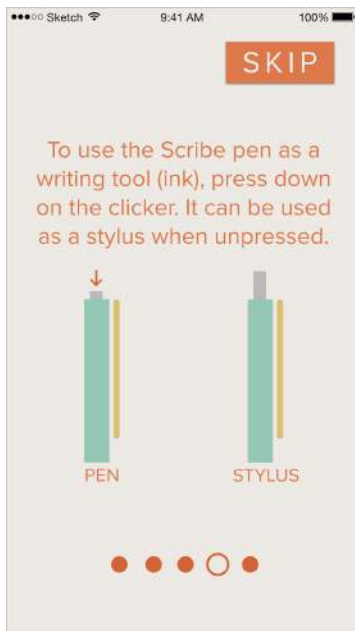
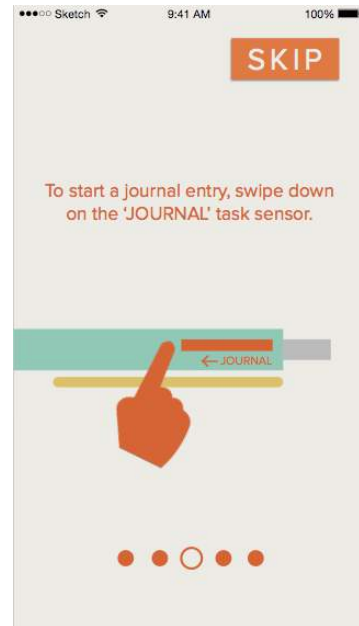
Changes we made from paper to digital:

1. We picked a color palette (orange, seafoam, pale green and yellow) and typeface (Proxima Nova) for our application.
2. We utilized drop shadows to create a “pushable” affordance for our buttons.
3. We incorporated elements from the iOS 8 design language (status bar, screen size, iconography).
4. Because we used the dimensions of an iPhone 6, we adjusted our paper resolutions accordingly.
5. We eliminated one of the paper screens in the analysis feature because it had duplicate information (word analysis chart).
6. We changed the headers to say feature title of the page instead of “Scribe”.
7. We added a tooltip screen in the mood analysis.
8. We added map screen for location when adding a note.

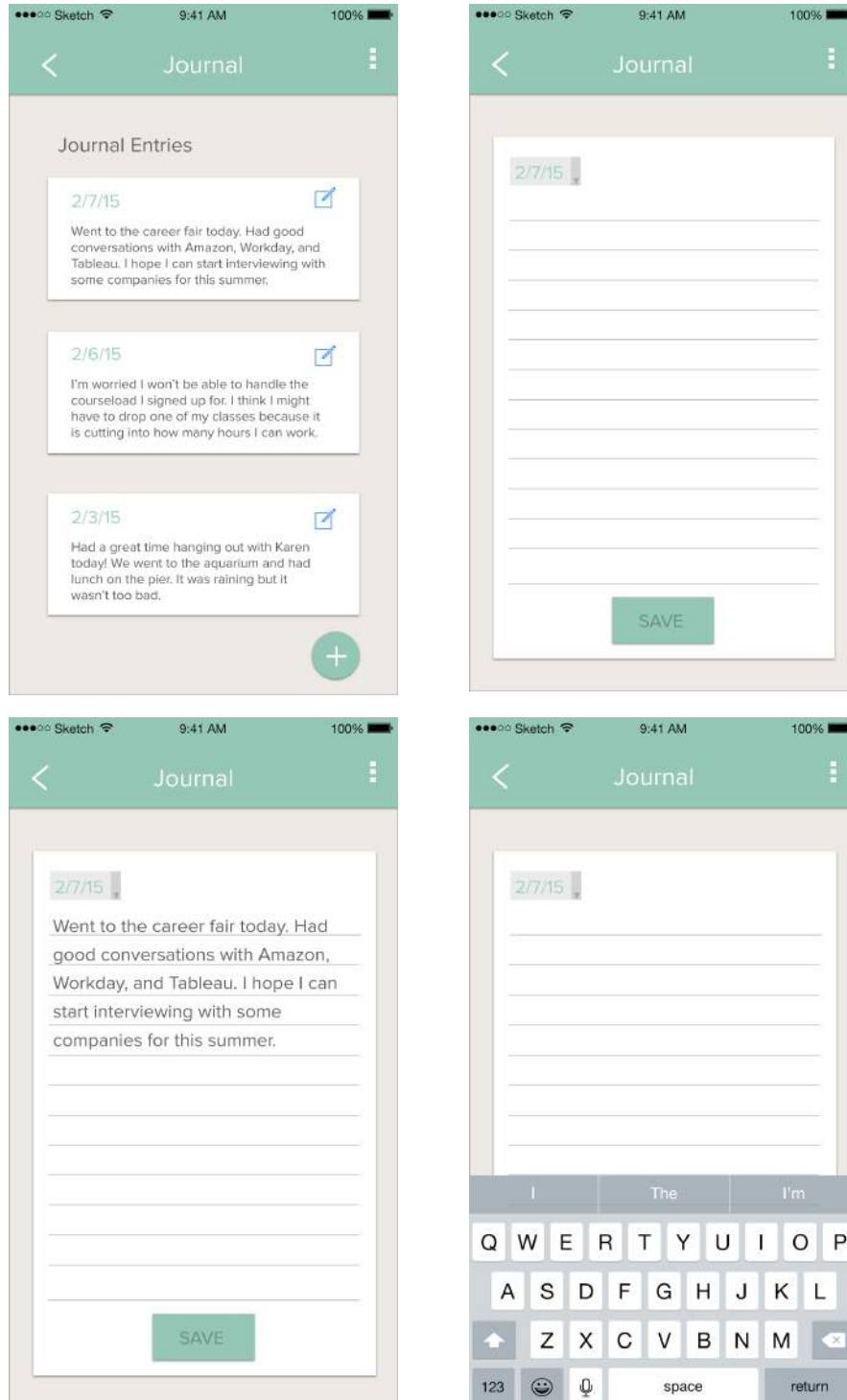
Overview of Digital Mockup

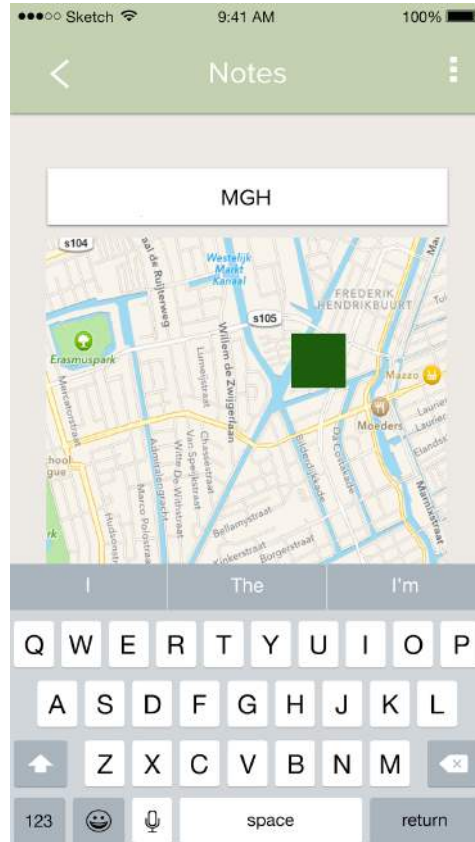
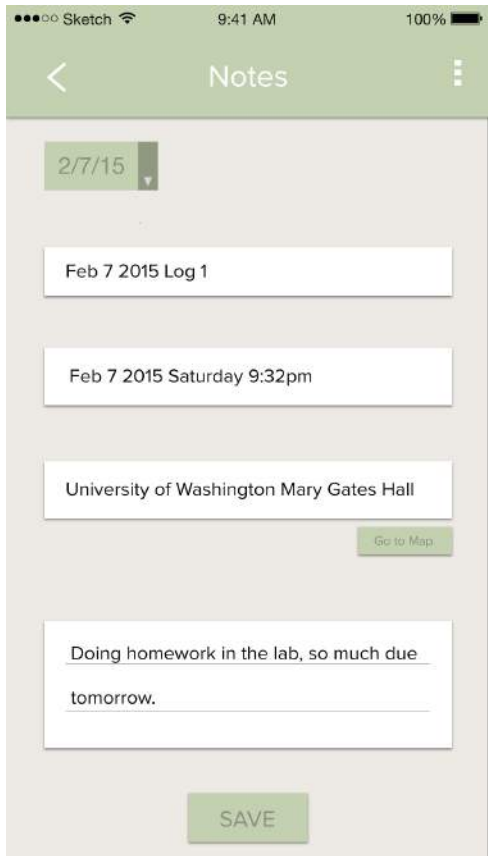
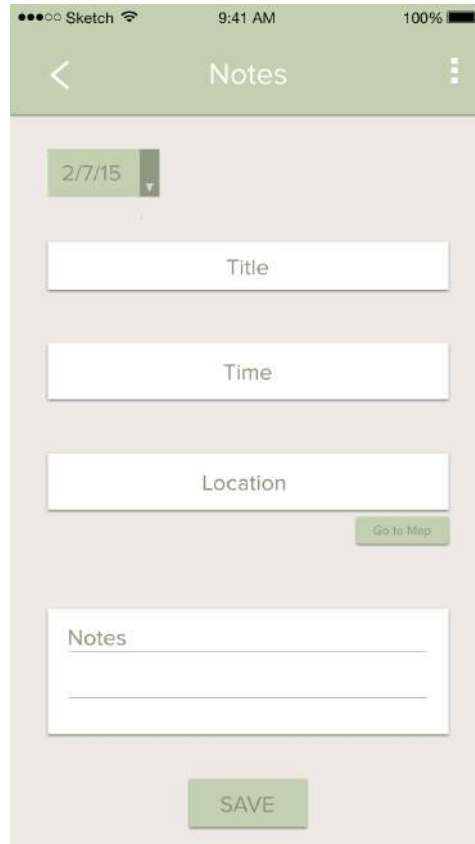
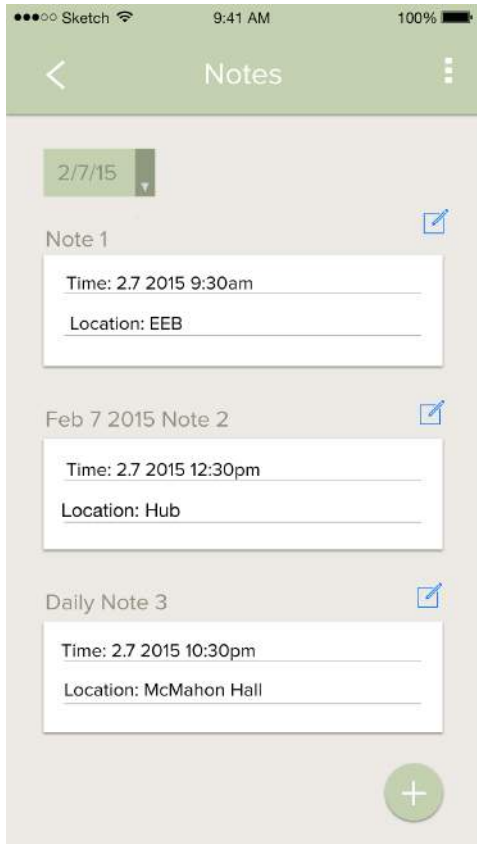


Instructional Setup



Our first task in this application was to allow users to write and record entries into the application. The following screens show how a user would create a journal entry in the application (viewing current entries, clicking on the “+”, writing, then saving). Additionally, the notes feature for recording events presents a form for user input and calendar views of the entries.





Sketch 9:41 AM 100%

Notes

Week 02/07 - 02/14

SUN 2/7	MON 2/8	TUE 2/9	WED 2/10	THU 2/11	FRI 2/12	SAT 2/13
- 2/7 note1	- 2/8 1		- 2/10 1 hahh			- 2/13 note111
- 2/7 note2					- 2/12 log 1	- 2/13 note2
- 2/7 note3	- 2/8 note2		- 2/10 note2 - 2/10 note3 - 2/10 note4 - 2/10 note5		- 2/12 note2	
- 2/7 note4				- 2/11 late note1 - 2/11 note2	- 2/12 late	
	- 2/8 night note					

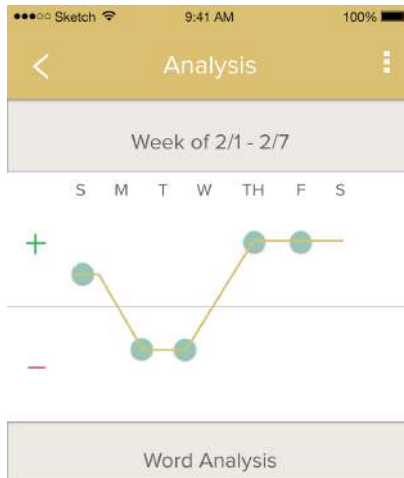
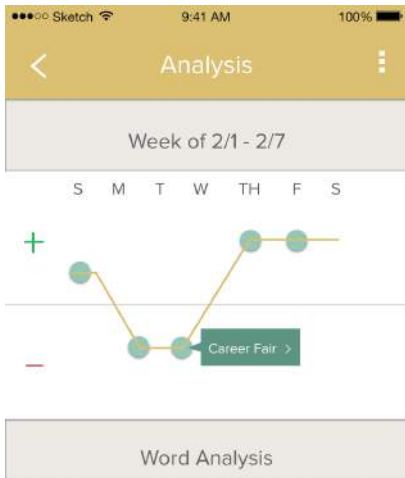
Sketch 9:41 AM 100%

Notes

January 2015

MON	TUE	WED	THU	FRI	SAT	SUN
29	30	31	01	02	03	04
05	06	07	08	09	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	TODAY 29	30	31	FEB 01
26	27	28	29	30	31	01

Our second task was to allow users to view mood analysis data. From the screens below, users can navigate through different weeks and view a graph of their mood analysis overlaid with their entries. Additionally, analysis of their words is presented in a simple scale of low to high usage.



DISCUSSION

Iterative design substantially improved our application design. We learned that it is crucial to show our design to other people, and that the evolution from the first to final version could not happen without obtaining feedback since we have such different perspectives of the application as the designers. The cycle of uncovering the problems in our design, modifying, and testing them allowed us to see and change things that we never would have thought to alter on our own. Repetition was good in the sense that more exposure would give much more rationale for a design decision—for example, what works for more than one person was a good sign. Using simple paper prototypes paired really well with the iterative process because changes were really easy to implement. Because of that reason, we also weren't afraid to make these changes or try new things since it was as simple as an eraser and pencil to completely change the application's functionality.

This process helped shape our final design through identification of flaws, creating a solution for them, then testing on those solutions in the next usability round. When conducting a new usability test, we constantly focus on how our product can be redesigned to best tailor towards the user. As these changes continuously improve our design, our modified product addresses many issues that existed in our initial design. In general, these tests gave us insight into what problems exist and allowed us to address them in later design iterations.

We always tried to provide our participants with the right balance of instruction and independence. We didn't want to give away an answer, but wanted to ensure that they weren't confused because of our wrongdoing of not providing enough contextual information. This problem was identified during our usability test—we didn't think that "learning the tool" was a task. But when we talked to our first participant, we discovered this application's hardware had a high learning curve so we added five screens specifically on teaching users how to use our product. Thus, a task was created during our usability tests. As for our existing tasks, they experienced changes in their UI as a result of our testing. These changes clarified their purpose and polished the user experience.

As each test revealed problems, either major or minor, participants nevertheless improved on our design. Even if they didn't reveal a problem, they could confirm our changes which hadn't been looked at yet. More iteration would always be useful to our design.

APPENDIX

Script used for user testing:

“Hi! Thank you for participating in Scribe’s user study. Scribe is an app that aims to enhance and digitize the journaling experience. Today, I will be giving you tasks to complete using our paper prototype that my group made. While you’re going through the tasks, please talk about your thought process and verbalize your decisions. If you ever feel lost, it is not your fault and is instead a flaw in the app design. We are interested in evaluating the design of the app itself; we are not evaluating you. Before we get started, do you have any initial questions?”

Tasks

1. Write and record an entry into the application.
2. Write a journal entry using the digital pen.
3. Create a new note entry.
4. View an analysis of mood for this current week.
5. Find out more about the event that correlated with a positive mood trend.

Questions to ask at the end

Did you ever feel like you were stuck and completely unsure what to do?

Did you feel like you can fix your mistakes and go back like undos?

What did you like the most/ the least?


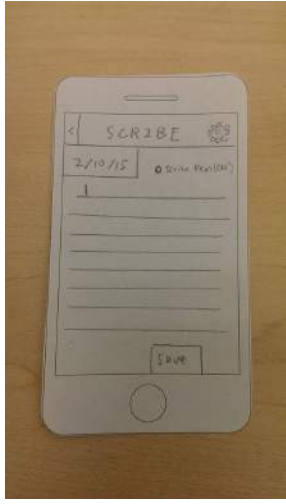
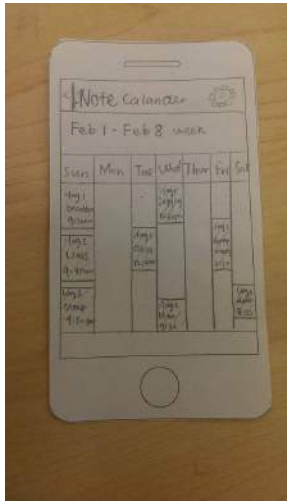
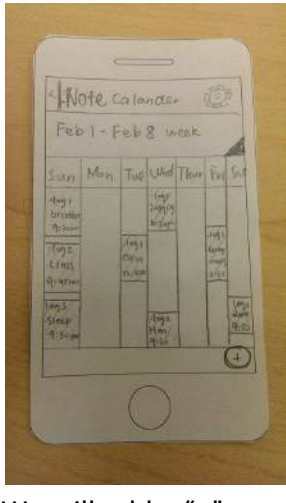
Was there anything unexpected or unnecessary?

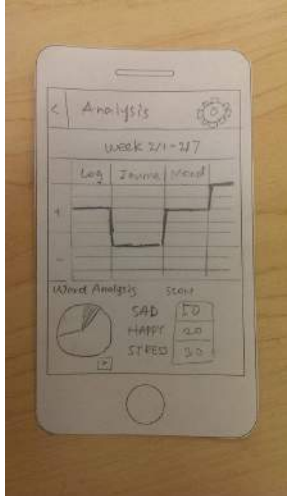
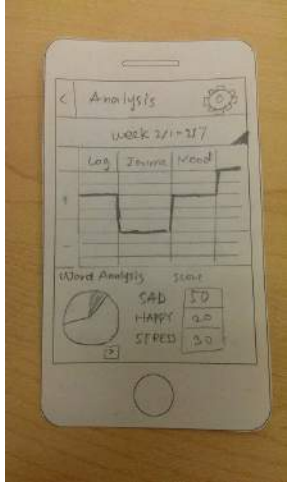

Do you have any suggestions for our app?

Was there anything critical you felt was missing?

First Usability Test

For our first usability test, we chose a participant who was sitting in a coffee shop, writing in what appeared to be a journal, and had no electronic devices out. We chose to ask this person to test out our prototype since they were exhibiting behaviors that were relevant to who might use our application. We asked them to write a journal entry using the Scribe pen, to record a note, and to find a yearly word analysis for 2013. Oscar was the facilitator, Keith was the computer, and Nina was the observer.

Image of Prototype	Issue	Severity	Revisions
	<p>Participant was unaware that he could write automatically without going into the application, and when to start writing. This violates the “visibility of system status” heuristic.</p>	<p>2</p>	 <p>We will provide an indication that displays the status of the Scribe pen when user creates a new journal entry.</p>
	<p>Creating a new note was unclear, there was no “+” sign and touch to add wasn’t easily learned. Because there was a “+” sign to make a new journal entry, our participant thought that adding a new note would incorporate a similar interface. This violates the “consistency and</p>	<p>2</p>	 <p>We will add a “+”</p>

	standards” heuristic.		button in the bottom right to keep it consistent with the journal entry feature.
	Navigating to the word analysis was unclear. Switching to yearly view wasn't afforded for, and it took a while for the user to know that clicking on the word analysis would take him to a closer view. This violated the “match between system and the real world” heuristic.	3	 There should be an indication that views can change, with the use of a corner triangle.
	When tasked with using the Scribe pen to begin writing, our participant didn't know how to switch between the note and journal mode. He swiped the pen, rather than using our twist toggle design. This violated the “visibility of system status” heuristic.	3	(No image because it will be a gesture) We liked the metaphor of a swipe gesture to switch modes that is similar to pens that provide multiple colors of ink. We will switch the gesture from a toggle to swipe recognition.


Critique Revisions

From a suggestion in quiz section, we came to the idea that we need to find a goal with our data instead of just displaying raw data to user and letting them make sense of it. For our screen that overlays mood with the user's note and journal entries, we've revised it to show a day-by-day display and a mood trendline. The user can look at mood trends (for example, a

sudden drop in happiness) and then click on the overlaid entry to examine what happened that day. Users also had difficulty understanding that the Scribe pen can be initiated separately from the phone application, so we added a brief tutorial for the first time experience. It explains how to turn on and use the pen and also informs the user that they can write on any paper surface--the pen movements will transcribe the words to the application, rather than direct contact with a screen.

Second Usability Test

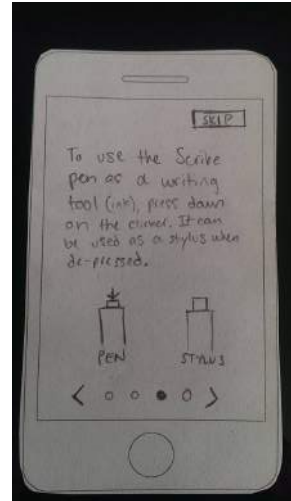
In our second usability test, we tried out our improved protocol that was altered from the section feedback. Our first task will be to ask our participant to create a journal entry, using the Scribe pen. In this task, we will be testing some new screens that provide instruction on how the system works. We will also ask them to create a note. The final task will be to find the weekly summary of their mood analysis and find out more about the event that correlated with a positive trend. We found our next participant in Suzallo Library and asked her to test out our design since she had multiple spiral notebooks out on the table. Our roles were: facilitator (Keith), observer(s) (Oscar and Claire), and computer (Nina).

Image of Prototype	Issue	Severity	Revisions
	<p>[Positive] Our participant was able to follow the three instructional screens easily and liked the tutorial. She said that it helped her understand how to use the hardware, and wasn't overwhelming.</p>	<p>N/A</p>	<p>N/A</p>

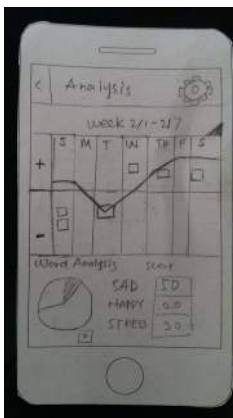


There was a tendency for the participant to use the Scribe pen as a touch stylus when navigating through the application, which we hadn't accounted for. She touched the screens with the pen in "ink" mode, which didn't seem strange since these prototypes are on paper. However, on a mobile phone it could be damaging.

2

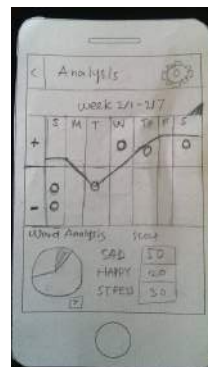


We decided to add another screen in the first time experience tutorial that defines the stylus functionality of the pen.

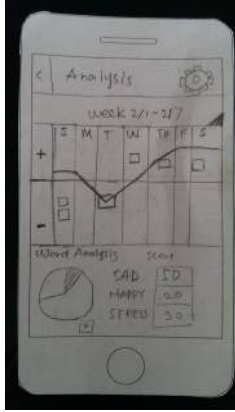


It was unclear to our participant that they should touch on the squares in the chart to view the entry correlated with the trendline.

3










Our participant informed us that the squares didn't make them think of them as clickable buttons. To revise this issue, we changed the buttons to be circles to create a more recognizable affordance.

	<p>[Positive] A comment we received from the participant was the breakdown of the week into days. She said it was easy to understand because it resembled a weekly planner that she uses.</p>	<p>N/A</p>	<p>N/A</p>
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Third Usability Test

For our third test, our protocol was modified from the revisions made in the previous test. We will be asking the participant to conduct the same tasks as before (create a journal entry using the Scribe pen, create a note, and find the weekly summary of mood analysis/event that correlated with a positive trend). We found our last participant at the Starbucks Roastery. He was actually performing a pretty unique form of writing--calligraphy. We thought it would be interesting to see his use with our pretty non-traditional take on a pen. Our roles were the same as the previous test.

Image of Prototype	Issue	Severity	Revisions
	<p>[Positive] Our participant also complimented our instructions. He thought it was important in not only explaining how to use it, but in making the pen idea explicit and believable.</p>	<p>N/A</p>	<p>N/A</p>
	<p>Creating an entry was straightforward for our participant, but he was unsure about how to save an entry using the pen without having</p>	<p>2</p>	

	<p>to press the "Save" button on the application.</p>		<p>We added a "Save" touch sensor (similar to the journal and note sensors) to the pen, utilizing all four sides of the pen.</p>
	<p>Despite the circle shapes that were created from the last test, our participant had a difficult time picking up on the clickable nature of them. To him, the open circles looked like they were highlighting a piece of information rather than representing a button.</p>	<p>3</p>	 <p>To revise this issue, we filled in the circles to create a better representation of a button.</p>
	<p>When performing the second task, our participant was drawn to the word analysis but was confused by the presentation. He wasn't sure if the score metric with higher numbers was good or bad.</p>	<p>2</p>	 <p>We created a clearer display for gauging how frequently different words were used.</p>