# Balance

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Problem and Solution: Overview

Creating and accomplishing fitness goals can be a great way for people to heighten their enjoyment of life and create a feeling of accomplishment. However, it can be difficult to balance working on one's goals and taking care of other life necessities such as sleeping, socializing, and relaxing. Our design makes goals more achievable by not only providing easy access to communities of people working on similar goals, but also by given the goal-setter data-driven suggestions to make their goals more achievable. Too busy this week and not enough time to meet your goal? Balance will suggest options such as decreasing the goal time to 20 minutes per exercise session for the week or only exercising 3 times this week. Instead of focusing solely on accomplishing a goal, the design emphasizes attaining a greater sense of wellbeing through working on goals in an achievable manner that is more likely to lead to success and happiness.

## Initial Paper Prototype

The initial paper prototype contained too many screens - we were under the impression that we should be fully prototyping the app, not just our two main tasks. Below you can see a small overview of the screens involved in the initial prototype, followed by the screens used in our two main tasks, which were the screens that we then limited our prototype to as we began testing.
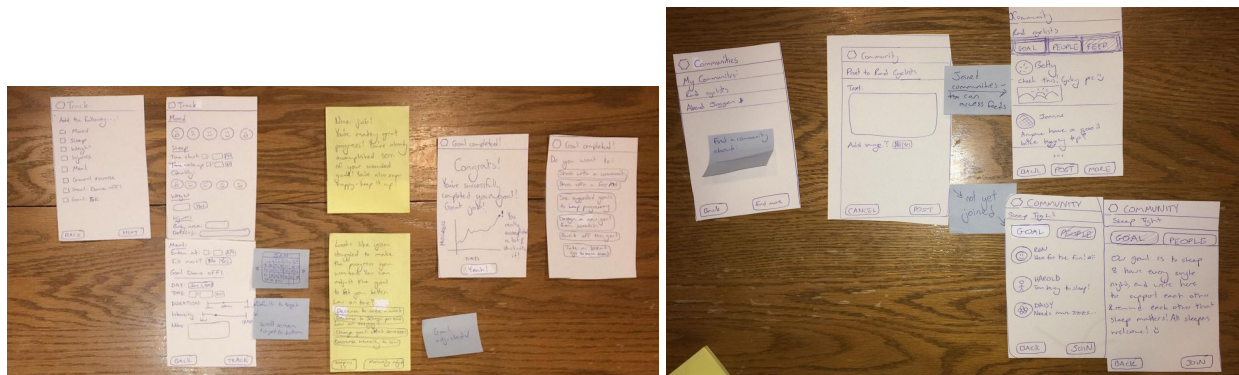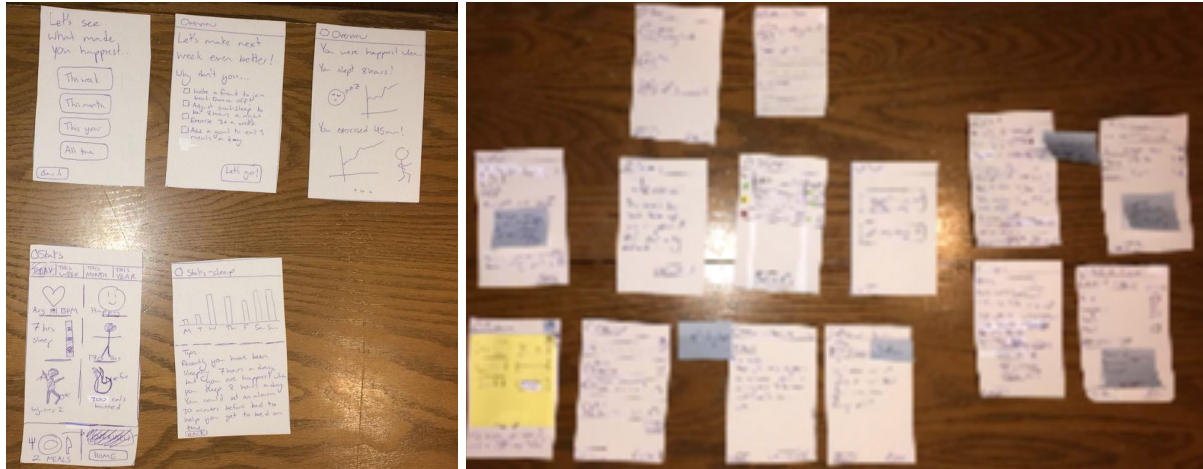
As mentioned above, only a subset of these screens were used in our tasks, which are described on the following pages.

The critical aspects of the design were the ability to receive goal-adjustment suggestions and to be able to use other people as support resources. In this design, there's the ability to message individual friends and add them to your goals. This functionality was later removed because it made the design process too bloated and was not crucial enough to be integrated in either of our two main tasks.

The first task was to be able to alter goals to prioritize mental wellbeing and happiness. This task begins by tracking progress toward a goal, and by specifically tracking less than the expected amount of time, the screens allowing the goal-tracker to alter the goal appear. From the home screen, participants should click "Track", select what they want to track on the "Track" page, click Next, input their data on the following page, click "Track", and then they could choose from a list of suggestions that pop up.
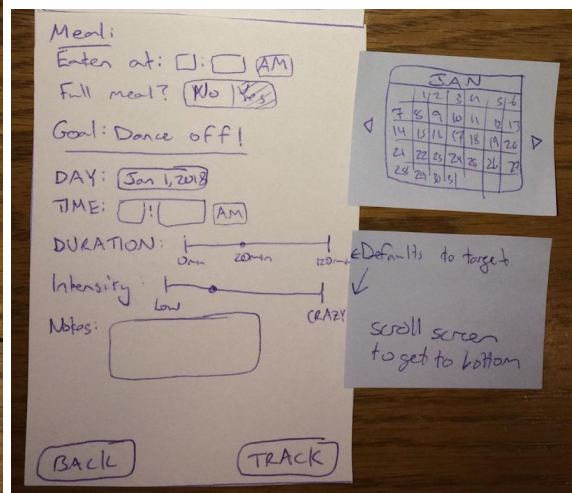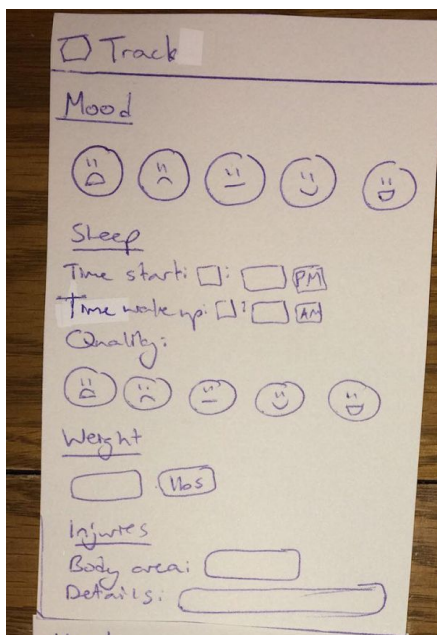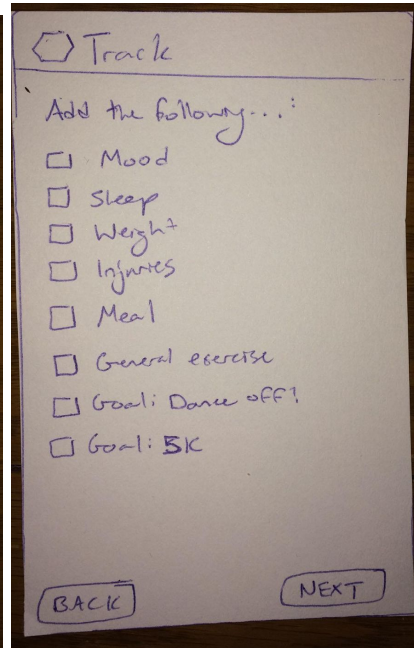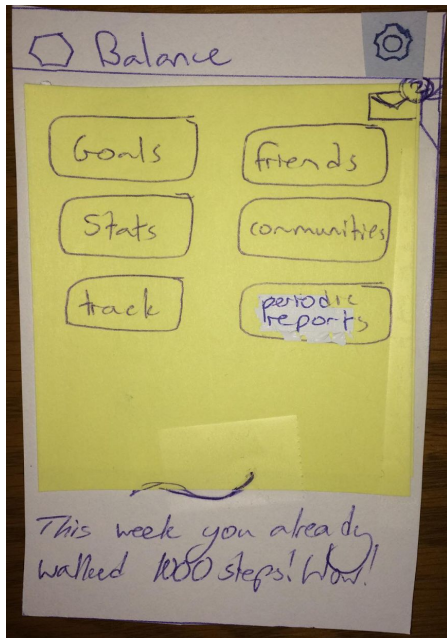
The two images directly above were presented as one scrollable screen

Second task on following page

The second task was to find and join a group of people with similar goals. From the home page, participants click "Communities", then they click "Find more" and a popup prompts for text. Upon entering the text,
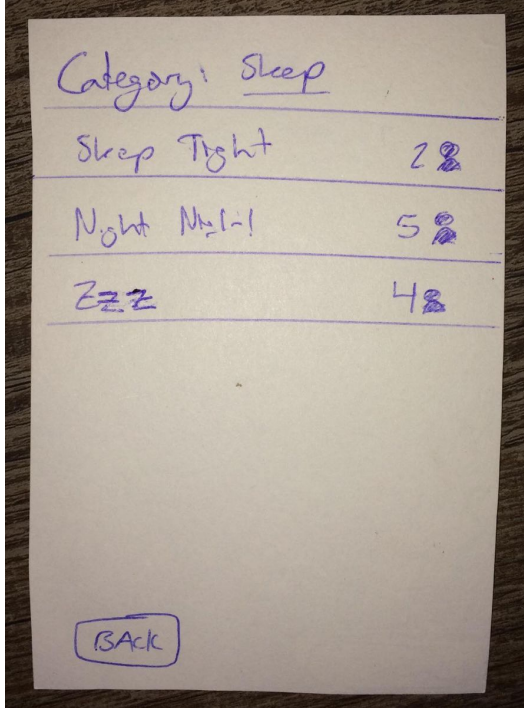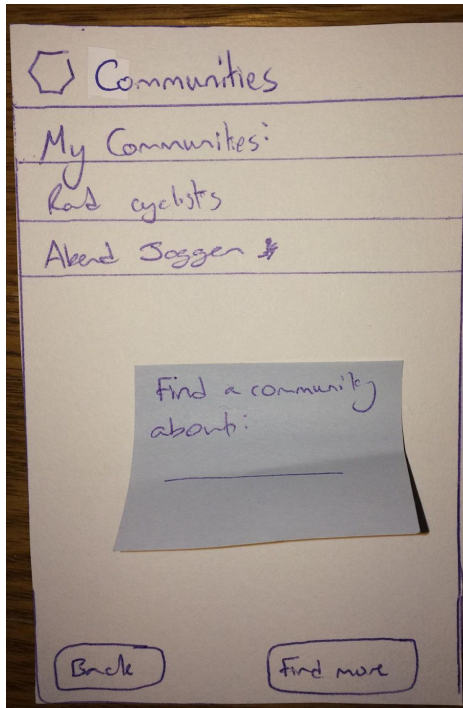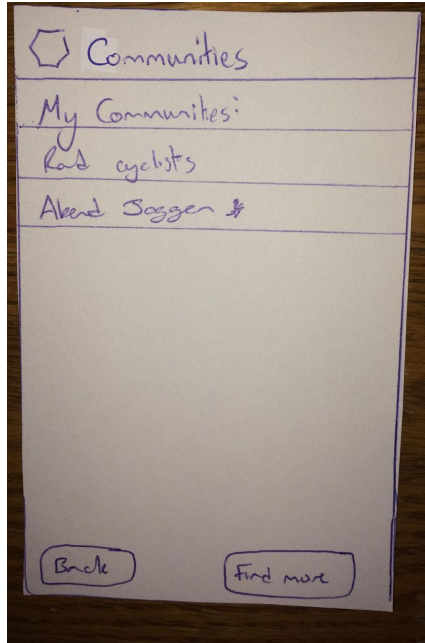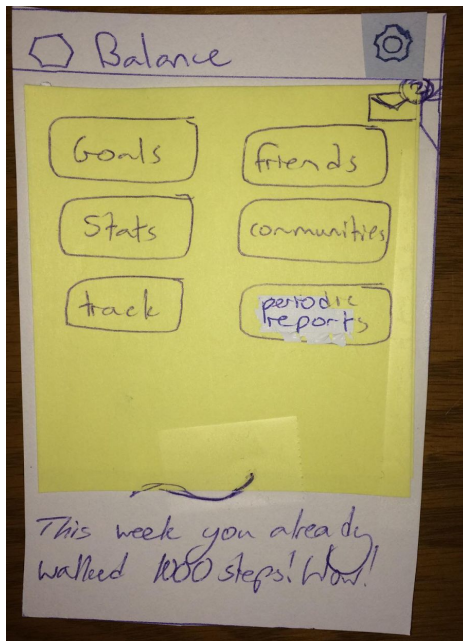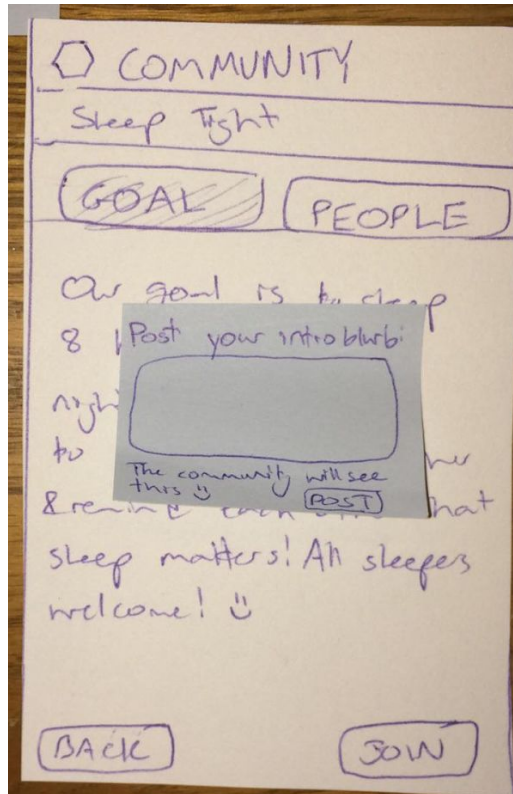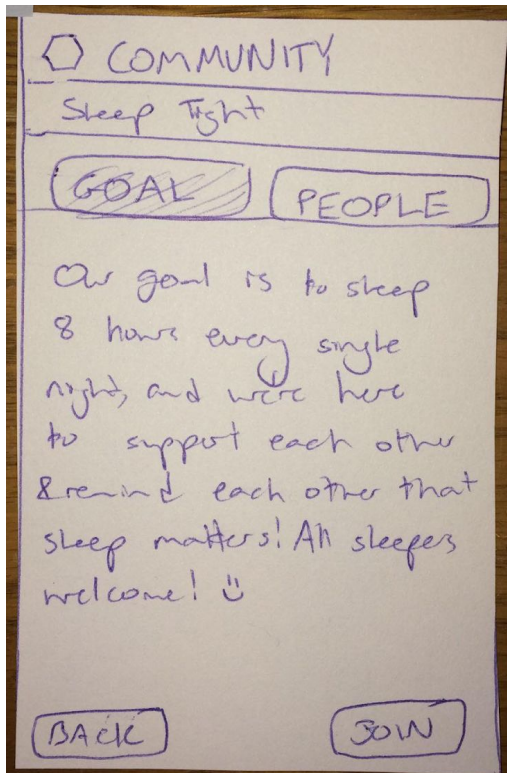
Testing Process

We had a total of three participants, each of whom gave us different insight that helped us both refine our design and refine the testing process itself. The first of these participants was "Alexa", a sophomore at the University of Washington who was in our target age category and had set previous fitness goals and therefore might realistically want to use our design. After this test, we realized that we needed to improve the wording of our tasks to provide enough information that the task could be completed without leading the participant. Additionally, we polished our introduction to the usability tests to make it clearer how we wanted our participants to show us and talk us through their thought process.

Our second test was with another female University of Washington student named "Violet" who was also in our target age range and had used fitness apps to track fitness goal progress before. After having Violet complete the tests given to "Alexa", we added the task of having Violet view the weekly overview of her statistics and weekly suggestions and asked her opinion on the page, layout, and usefulness to get more feedback on the suggestions to change goals to make them more achievable and / or rewarding. We had realized that even though participants were able to complete the tasks given, we still needed to consider whether there were more intuitive ways to complete this tasks.

Our third test we did with a male student attending UW named "Omari". We chose this participant because he has used and benefited from various fitness apps in the past and had general prior experience with those types of tools. During this test, we interacted with Omari very similarly to how we interacted with Violet, but everything was more polished and ready. We had a much better idea of how to introduce the tasks and make sure to provide just enough detail to be clear without being leading, and we were able to quickly switch out the screens of the app.

Overall, the testing process became progressively more refined as we continued, with the introduction and tasks being phrased more succinctly and clearly. Additionally, as the tests continued we began taking more time after each task to ask the participant to reflect on their experience completing the task and to tell us about any thoughts they had regarding the design and regarding the intuitiveness of each step of the task.

Testing Results

Heuristic Evaluation

Our first heuristic evaluation was done by the TA Jeremy, and he pointed out many things lacking in our then current paper prototype, so he gave us fairly general ideas to use for our prototyping and designing.
The first main thing was to make everything simpler and only include absolutely necessary information in our design, as we had a lot of text and visual fluff which distracted from main aspects of our design. This falls under the heuristic of aesthetic and minimalist design. As a result of this point, we removed a lot of text and visuals and only kept what was necessary for our customers experience.
The next point made was to organize the design so that it is always easy to access the main features instead of requiring navigation back to the home screen to get to the other features. This prevents needing as many buttons for navigation backward on each screen and also allows getting rid of the headers describing the current screen. This falls under the heuristic user control and freedom.

In response to this feedback, we got rid of being able to message individual friends and add them to goals to do together because it wasn't crucial at this point to our design. We also put the name "Balance" across the top of every screen as well as tabs along the bottom to easily navigate to other sections of our design. We combined the Stats and Results Overview pages, because it seemed unnecessarily complicated to have them in separate sections, instead we chose to have one stats page where the goal-setter can easily navigate to either more "individual" stats about just heart rate, weight, etc. or a more general page giving a broader overview with some suggestions based on that more holistic glance.
(Note: Using Jeremy's feedback as a review was OKd by James via an email)

We also got heuristic evaluation done by Nicole and Alejandro. The first point they had was to reword our "initial post" prompt when joining a community to instead say write bio, because it seems like the user would have to post to group. This is an issue with consistency and standards, and just poor word choice in general, as no one sees the word post as a way to say create a bio. So to fix this we changed the pop up to ask for a bio instead, and we also ended up letting the user be able to opt out of creating a bio if they'd like, further improving user control and freedom.

Another point made was that people in communities look clickable, but you can't click to view them. This is a false affordance and breaks the heuristic of recognition rather than recall. We decided that you would be able to view people if we fully implemented our design, especially as we realized it would be the best way to view their bio.

Usability Testing

From our usability tests we realized that we needed to improve the wording of our tasks to provide enough information that the task could be completed without leading the participant. We added some information to the prototype, including text below the main navigation icons saying what they are and a home screen.

We also later added the task of having the user view the weekly overview of their statistics and weekly suggestions and asked their opinion on the page, layout, and usefulness to get more feedback on the suggestions to change goals to make them more achievable and / or rewarding. We added some screens that fixed visibility heuristics issues.

We also fixed layout issues and changed the position of one of the suggestion screens to make it more easily usable.

Because of our three usability tests, we made many substantial revisions to our original prototype including adding captions below the navigation icons, changing the placement of the "back" buttons to match convention more closely, adding a home screen, adding feedback of system status during and after completing certain tasks, emphasizing sticking to initial goals, condensing our statistics information, and many more small changes.

Many of our testers struggled to understand what the navigation icons on the bottom represented. So we remedied this issue by adding quick captions below each icon describing what that tab entails. Testers also noted that the home screen of the app being blank was somewhat jarring to the design and prettiness of the app. We decided to add a quick rundown and complimentary message of the user's recent progress on the home page, and a toggle showing suggestions. The app will rotate through showing each one. This allows people to gain motivation and reflect on ideas to make their goals more achievable and rewarding. One tester noted that after joining a community, she would like feedback from the app that the task was achieved and she successfully joined the community. We decided the easiest way to remedy this issue was to add a quick pop-up (implemented as a sticky note) that congratulated the user for now being part of that community. The same tester also noted that the intensity input when adding progress to a goal was very subjective and vague. In order to make it more clear to users, we renamed intensity to "effort put in". Now, users will understand that it is a relative measure of how hard they worked on their goal, not necessarily on the intensity as compared to what other people would consider intense.

Another tester didn't like how the app didn't emphasize not adjusting a goal when a suggestion to adjust the goal appeared. To him, it seemed too easy to back off your initial goals and maybe preventing motivated users from sticking to their original challenge. To address this issue, we made the option to keep the goal "as is" as large as the choice to adjust the goal, and moved individual goal suggestions to a second screen. One modification we made was adding quick captions below each main navigation icon to describe what that tab entails, instead of only show the icons themselves. We made this change because many of our testers struggled to understand what the navigation icons on the bottom represented. In addition, we realized that adding text reduced the amount of recall testers had to do, as they had to work less hard to recognize the purpose of each icon. In interface design, it is very important to have the users to recognize each element instead of remembering them. This modification enabled us to remove the memory load for the users. Thus, we consider this modification salient. One observer expressed that the app too heavily emphasized adjusting a goal when expected progress was not made, instead of equally emphasizing sticking to the original plan and changing the goal. Even though sometimes adjusting a goal can make it more achievable and improve the goal-setter's experience, in this case, it seems like it can be too easy to back off the initial goals and maybe prevent motivated users from sticking to their original challenge. Therefore, we made the option to keep the goal "as is" as large as the choice to adjust the goal. We also moved individual goal suggestions to a second screen to simplify the screens and make them more goal-setter-friendly. Possibly one of the most important issues that was raised during one of the critiques was not having easy navigation. We had been using "back" buttons to switch between all screens, but this meant sometimes having to click back between long chains of screens, and didn't allow users to simply tap one or two buttons and easily be able to view their statistics or input information. By adding navigation icons with captions at the bottom of every screen, we made it much easier and quicker to navigate within the app, and we also made the design more appealing and simple.

Final Paper Prototype

Our final paper prototype was a slimmed down, sleek version of the first prototype. We'd discarded many screens, and the screens that we had in our final prototype were much more easily navigable (via icons at the bottom) and much simpler. Not only that, but there were a lot of smaller "transition" screens showing the current state (i.e. pop-ups saying that an action had been accomplished, like progress had been tracked). Overall, it was much more usable.

Overview:

Walkthrough of Task 1 (Tracking data, specifically progress toward a goal that was less than intended: Tracking 10 minutes of exercise for Goal: Dance Off when 20 was expected):

In this task, users hit the record icon, leading to a screen where they can check what data they want to enter. After hitting next, they are given a slide where they enter this data and hit Track. Then they are prompted to decide whether they want to keep the goal as is or change it, either manually or via suggestions. Depending which choice they choose, they will be presented with a different screen. No matter what, they will be kept in-the-loop via pop-ups when their choice is processed.
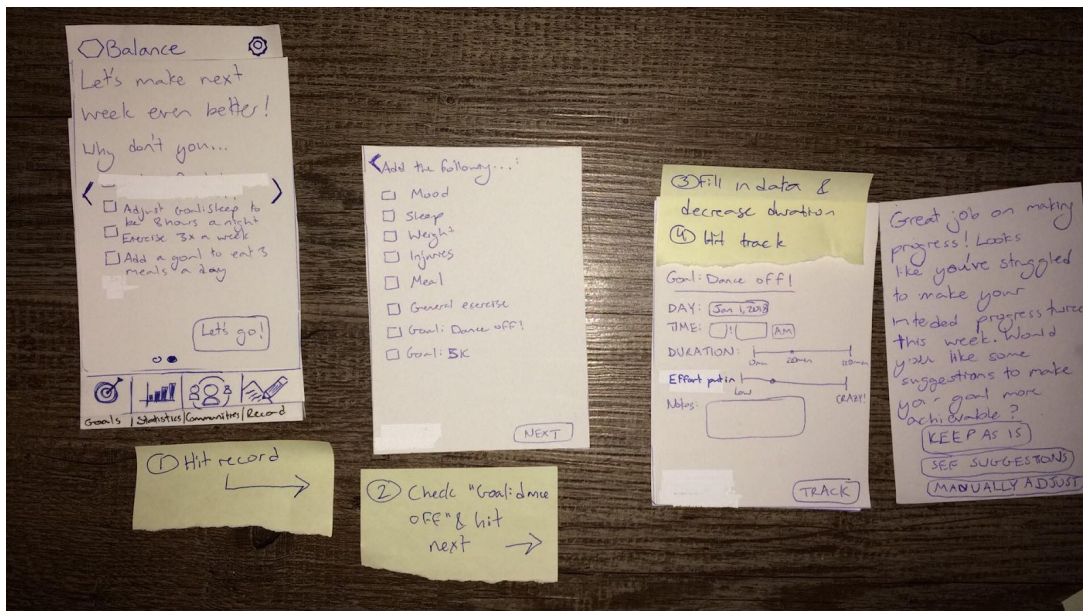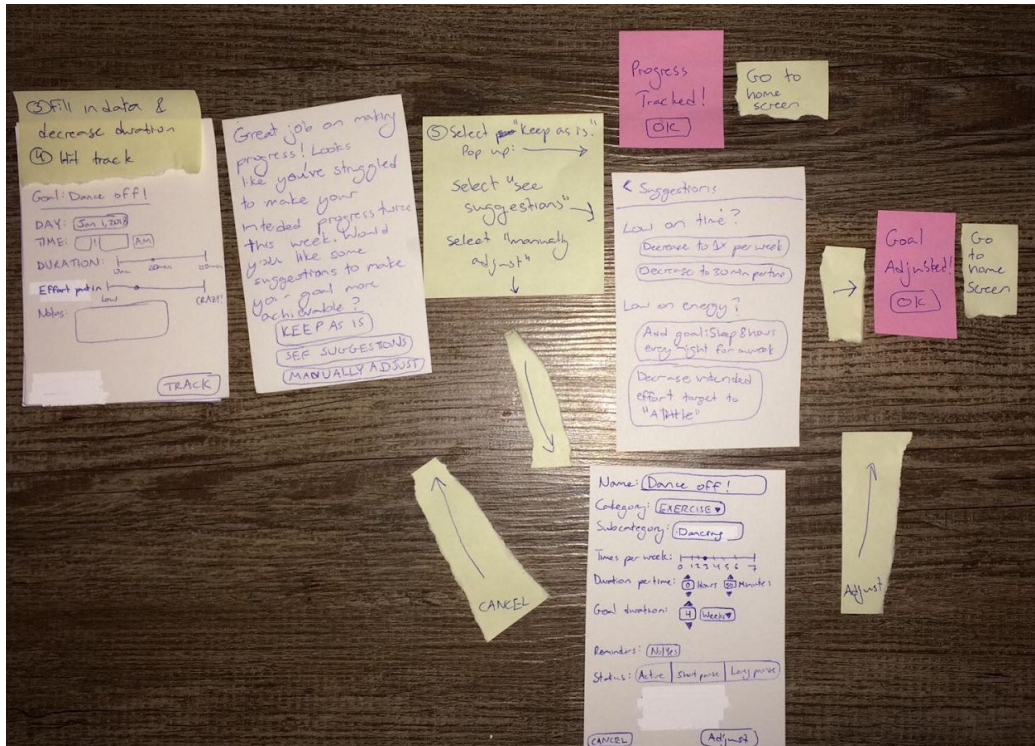
Note: Once they have seen the screen to choose to see suggestions, we will show them this screen and ask their opinion once they finish the task even if they choose one of the other options

Walkthrough of Task 2 Joining a group: (sideways because text is so small. Sorry!)

The participant chooses "Communities" at the bottom of the screen, and then "Find more" at the bottom of the screen. A pop-up allows entering a type of community to search for. On hitting "Go", the participant sees a list of related communities and taps one. They see an overview of the goal of the community and hit "Join". This leads to a prompt to enter a bio (or skip that step, or cancel). When the bio is posted or skipped, the participant sees a pop-up saying that the group has been joined and hits "OK", taking them to the community's feed. (Task walkthrough pictures on next page due to space constraints).

Paper prototype — sticky note wireframes (photographed):

Card (top): < Sleep Tight — [GOAL | PEOPLE]
- Ron — "Here for the fun lol!"
- Harold — "Too busy to sleep!"
- Daisy — "Needs more zzzs..."
- JOIN

Pink note: Join →

Pink note (popup): Enter your bio. This will be posted to the group as a newbie post & viewable to members & non-members who view your profile. [CANCEL] [SKIP] [POST]

Yellow note: (above is a popup)

Pink note: Skip, post ↓

Pink note: Group Joined! [OK]

Pink note: "OK" ↓

Card: < Sleep Tight — [GOAL | PEOPLE]
Our goal is to sleep & have every single night and invite people here to support each other & remind each other that sleep matters! All sleepers welcome! ☺
[BACK] [JOIN]

Pink note: Hit "People" or Hit "Join" →

Card: < CATEGORY
- Super Sleepers ZZZ — 8%
- Sleep Rite Tn — 2%
- Sleep Tight — 3%

Pink note: Tap on a community →

Pink note: Type in keyword, Select "Go"

Blue note: Find a community about ___ [GO]

Card: < My Communities:
- Early Nighters
- About Sleepers ✦
[Find more]

Pink note: Hit "Find more" This app up →

Card (right): < Sleep Tight — [Goals | People | Feed]
Betty — Looking forward to sleep ___
AI — Any thoughts on sleep and naps today?
Chrissy — who was here to ___
[Leaderboard] [POST]

Card (bottom): Balance — Let's make next week even better!
Hey don't you...
- ☐ Adjust goal/sleep to...
- ☐ Adjust sleep amount
- ☐ Revise 30-min...
- ☐ Add a goal to each medication day
[Let's go!]
(bottom nav: Goals · Stats · Status · Communities · Record)

Pink note: Select communities ①
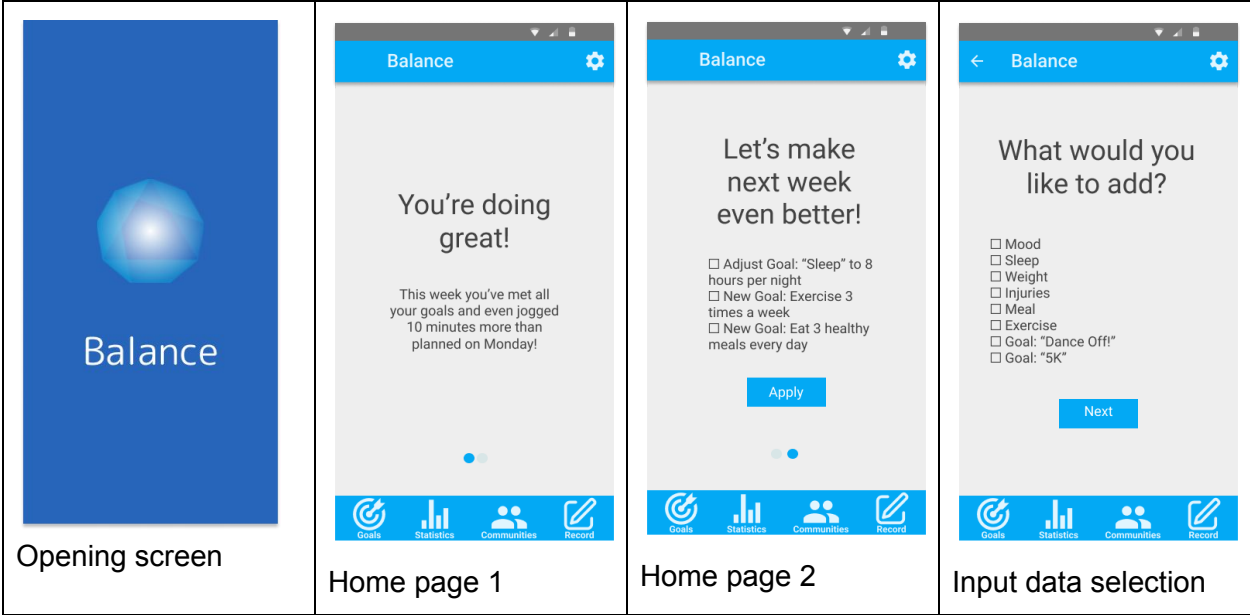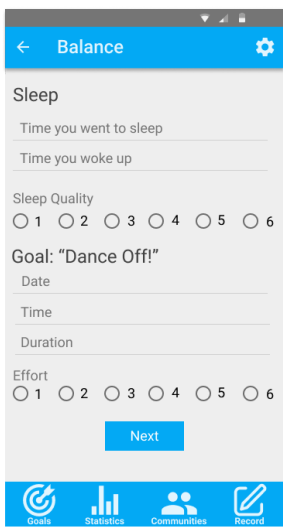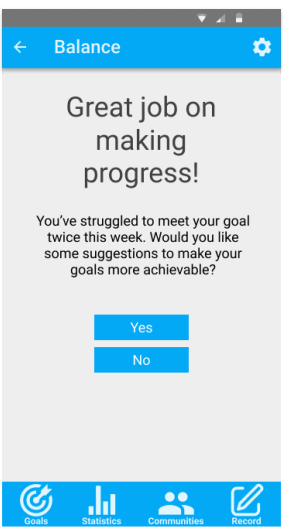
Digital Mockup

Present your digital mockup. Convey the critical aspects of your design, including your two primary tasks. Briefly discuss any changes you needed to make as you switched to your digital tools instead of paper. Briefly discuss any changes you made in response to critique. Include descriptions of how your design supports each of your primary tasks (e.g., one paragraph per task).

As we transitioned from a paper model to a digital mockup, we had to consider a lot of the little details that we had hand-waved while making the paper prototype. For example, we had to choose a color scheme, and it took us a while to find ways to balance the colors and arrange them on the screen that didn't look "off". Likewise, when we'd drawn the paper prototype, we put dividers between all the icons on the bottom to make it clear that they were separate objects the participant could interact with. When creating the mockup, we realized that this looked odd and that apps generally don't include the dividing line. We also found that inserting the logo in the top left was cumbersome and looked cluttered when combined with the back arrow feature, so we chose to omit the logo. All of the other changes we made were very small visual changes having to do with translating rough sketches to a more refined format as opposed to functionality or placement changes.
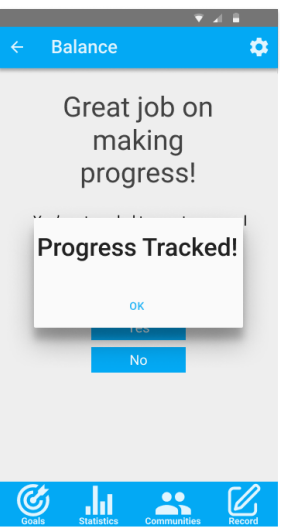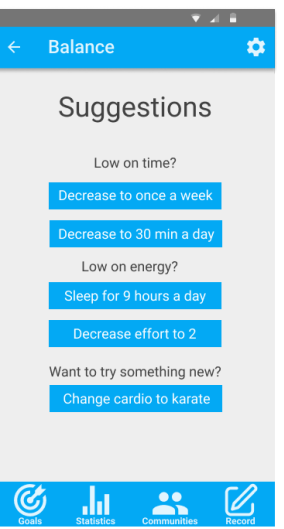
Opening screen

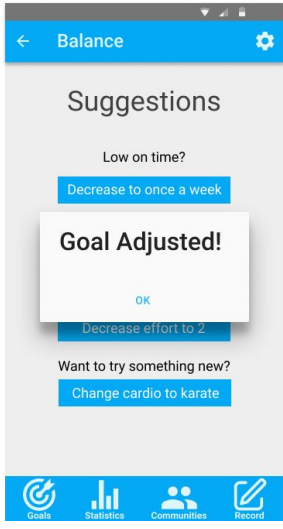Home page 1

Home page 2

Input data selection

Screen 1

← Balance ⚙

Sleep

Time you went to sleep

Time you woke up

Sleep Quality
○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6

Goal: "Dance Off!"

Date

Time

Duration

Effort
○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6

[Next]

Goals Statistics Communities Record

Input specific data

Screen 2

← Balance ⚙

Great job on making progress!

You've struggled to meet your goal twice this week. Would you like some suggestions to make your goals more achievable?

[Yes]
[No]

Goals Statistics Communities Record

Input response

Screen 3

← Balance ⚙

Great job on making progress!

Progress Tracked!

OK

Yes

No

Goals Statistics Communities Record

Input response: No

Screen 4

← Balance ⚙

Suggestions

Low on time?
[Decrease to once a week]
[Decrease to 30 min a day]

Low on energy?
[Sleep for 9 hours a day]
[Decrease effort to 2]

Want to try something new?
[Change cardio to karate]

Goals Statistics Communities Record

Input response: Yes

Screen 5

← Balance ⚙

Suggestions

Low on time?
[Decrease to once a week]

Goal Adjusted!

OK

Decrease effort to 2

Want to try something new?
[Change cardio to karate]

Goals Statistics Communities Record

Input response: Yes
Suggestion chosen

Screen 6

← Balance ⚙

My Communities

[Rad Cyclists]
[Joggers4Lyfe]

[Explore]

Goals Statistics Communities Record

Communities page

Screen 7

← Balance ⚙

Explore Communities

sleep

[Super Sleepers]
[zzzz bois]
[Sleep Tight]

Goals Statistics Communities Record

Explore communities

Screen 8

← Balance ⚙

Sleep Tight

GOAL | PEOPLE

Our goal is to sleep 8 hours every single night, and we're here to support each other and remind each other that sleep matters!

[JOIN]

Goals Statistics Communities Record

Individual community

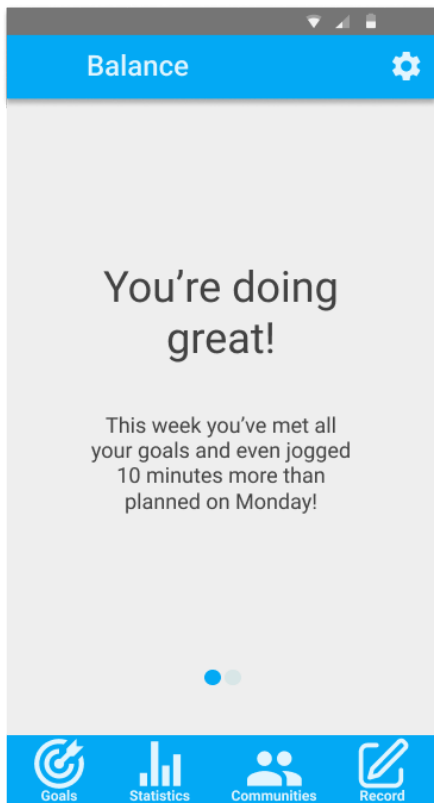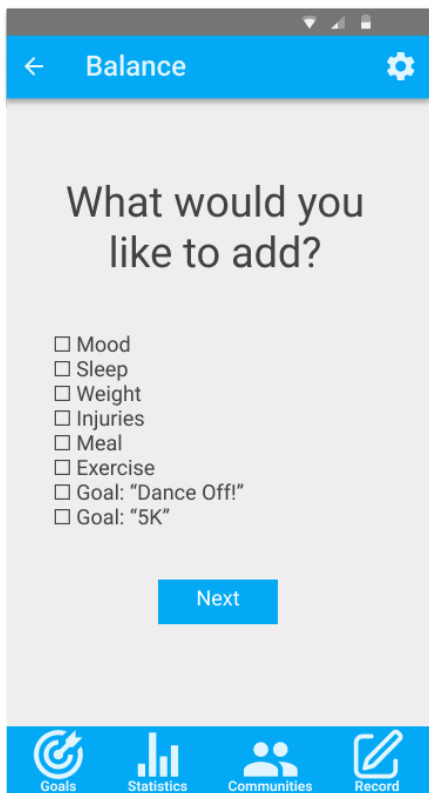|			
Join community prompt	Join community prompt skipped or posted	Feed of joined community	

Task 1: Track sleep and progress toward Dance Off. Specifically, track having completed 15 minutes of dancing when you had planned to complete 30 minutes. (Once that is done, have them chose a suggested change)

Balance ⚙ You're doing great! This week you've met all your goals and even jogged 10 minutes more than planned on Monday! ● ○ Goals Statistics Communities Record	Click on the record icon at the bottom of each screen
← **Balance** ⚙ What would you like to add? ☐ Mood ☐ Sleep ☐ Weight ☐ Injuries ☐ Meal ☐ Exercise ☐ Goal: "Dance Off!" ☐ Goal: "5K" Next Goals Statistics Communities Record	Check the desired boxes (i.e. sleep and Goal: "Dance Off!", then hit Next

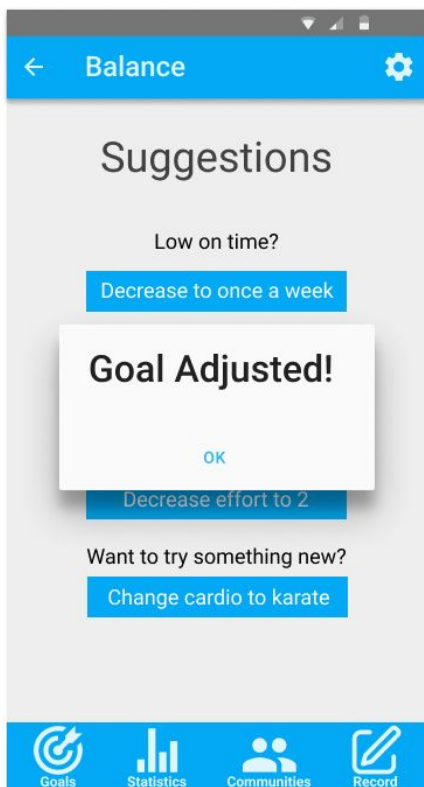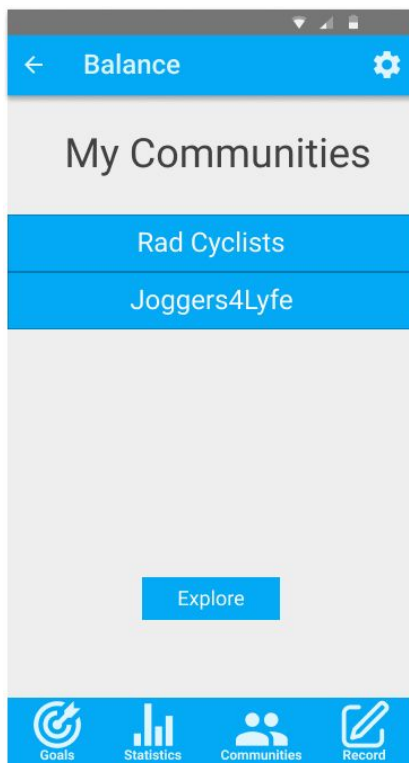|	
Balance ⚙ Sleep Time you went to sleep Time you woke up Sleep Quality ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 Goal: "Dance Off!" Date Time Duration Effort ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 [Next] Goals Statistics Communities Record	Click on each of the categories to have appropriate, standard data-entry options pop up. Click Next
Balance ⚙ Great job on making progress! You've struggled to meet your goal twice this week. Would you like some suggestions to make your goals more achievable? [Yes] [No] Goals Statistics Communities Record	To complete the second half of the task, click "Yes"
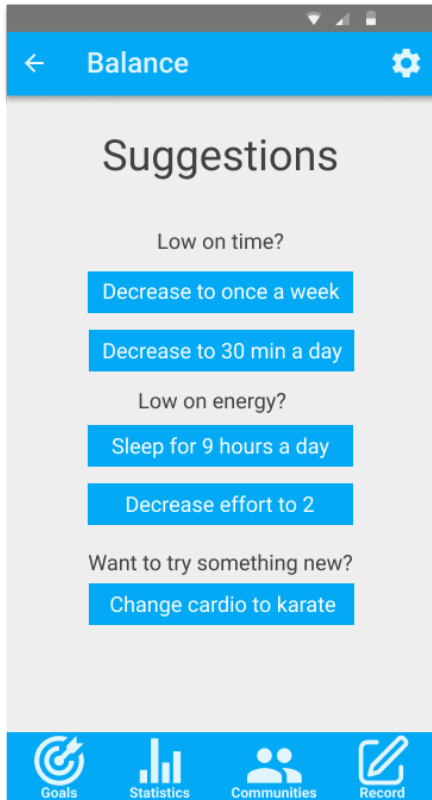
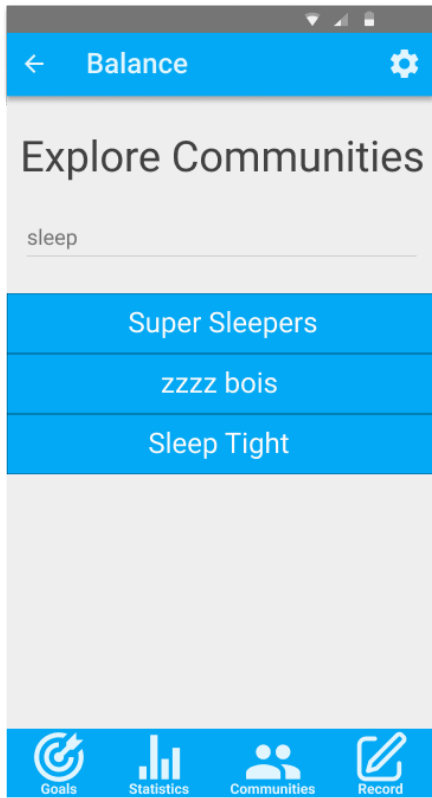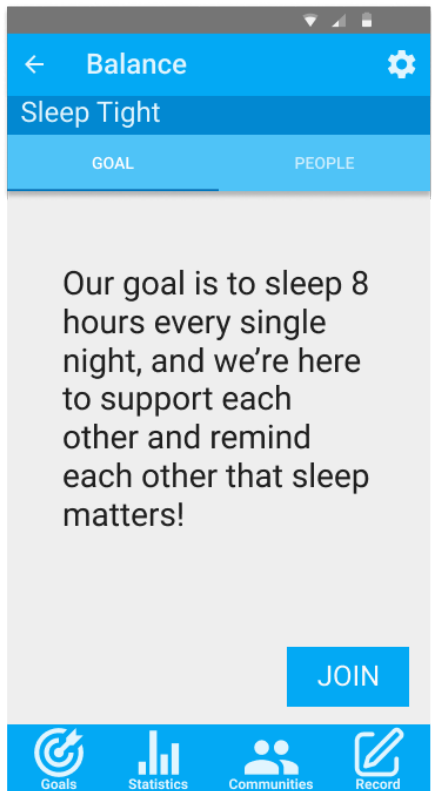|	
	The participant clicks on any of the suggestions
	The participant clicks OK. The participant is sent back to the home screen. The task is complete

Task 2: Join a community
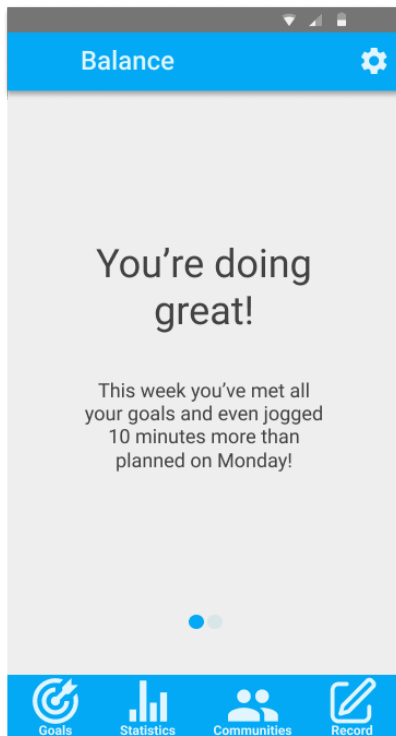
	Begin on any screen. Click the Communities icon in the bottom icon bar.
	Click Explore

	Enter a topic to explore in the entry area that appears. Click on a community
	Click Join
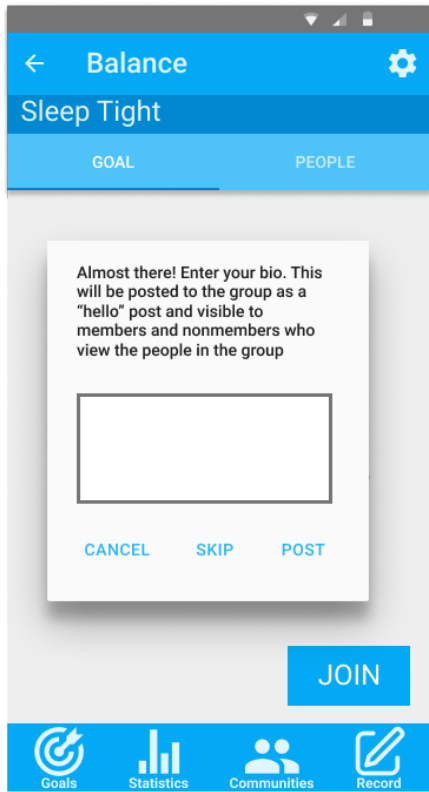
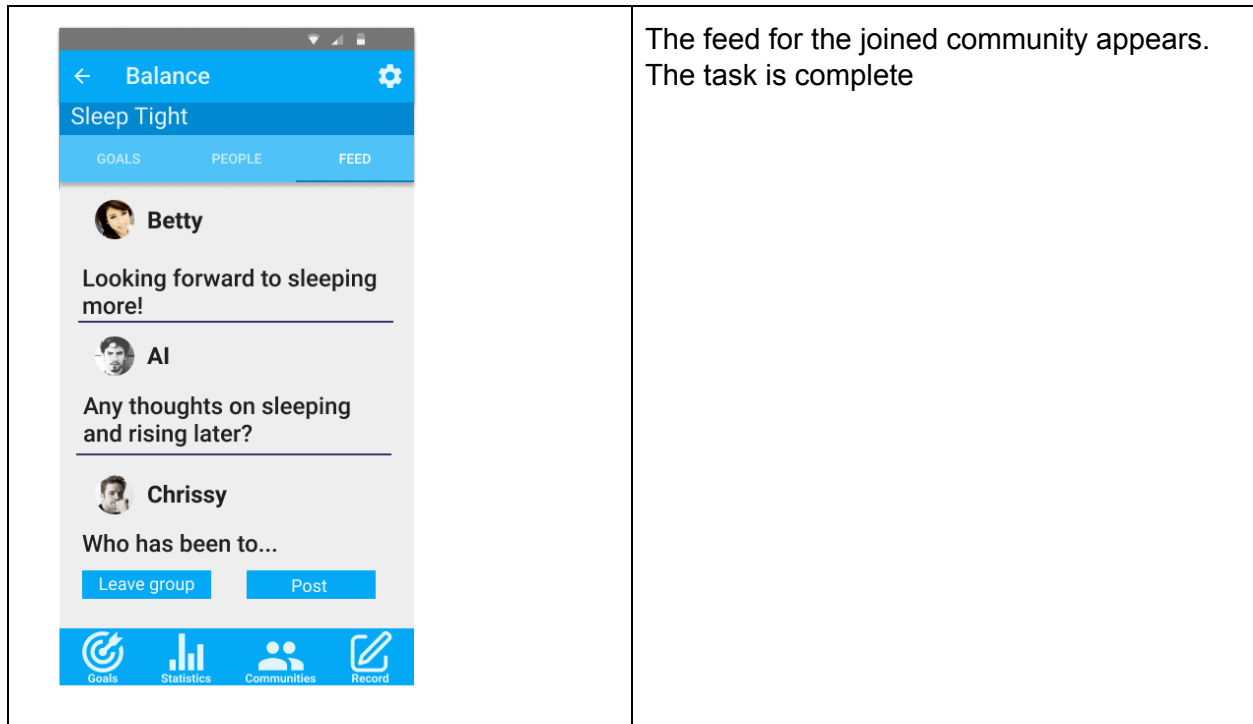|	
	Either enter a bio and click post to post the bio and share with others, or just skip this step by clicking skip
	Click OK.

	The feed for the joined community appears. The task is complete
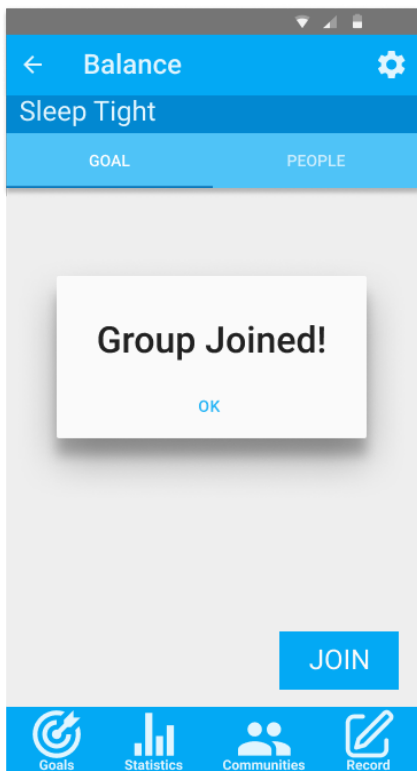
Discussion

We learned a lot about seamless navigation through our heuristic evaluations and usability tests, and then iterating on our design to make navigating through our app more natural. Through testing and evaluation, we learned we could use upper-left back arrows and bottom-fixed navigation tabs to help users navigate our app easier with these navigation conventions, which are used in many popular apps such as Instagram and YouTube.

The iteration process changed our initial paper prototype drastically, especially in terms of navigation, but also in functionality. For example, when creating the initial prototype we completely overlooked that some users may not want constant prompting to adjust their goals, especially if it's an important goal they're motivated to finish and that they don't want to make easier. So, after a usability test to design update cycle, we added and emphasized the option to not adjust your goal when the system recommends it.

A significant thing we changed after our usability testing, was adding system status indicators and feedback to the user. When we designed the interface, it was obvious to us that after performing certain actions, the system would have completed what we wanted it to do, but this was not obvious to many of our testers. So, in order to address this issue we added feedback in the form of popups indicating that the user had successfully completed a task.

Given how much the design changed and improved after each iteration, having more iterations would have likely been beneficial to an extent. Of course, continually iterating would eventually hit a point of diminishing returns, where the minute improvements would not match the resources put in. Also, some aspects of our design are minute enough that human subjectivity kicks in, and different testers can give totally opposite opinions, which makes usability testing less useful when all of our larger issues have been addressed.

Appendix

Testing instructions: Hello! Thanks for agreeing to participate in our usability test. We want your help in seeing whether our app is intuitive to navigate. Our app is about achieving fitness goals. We're going to give you some tasks to try out, and we would like for you to walk us through your thought process as you work toward them. Let us know what you're thinking and show us with your hands what you would do to interact with your phone screen if this were a real app.

Task 1 (Joining a community): You've just set a task to sleep eight hours per night. We'd like you to join a group of people who are also focused on sleep-related goals.

Task 2 (Tracking progress toward a goal (but tracking less progress than was "expected" when the goal was set, causing the suggestions screen to pop up): Now please enter some data related to goal progress, specifically that you just danced for 10 minutes, which you planned to do for your goal "Dance Off"
(After the task is complete): At the end, you were given the options to see some suggestions to change the goal to be more achievable. Do you think this was valuable? Would you use this option if you had this app? Can you think of other suggestions or a different way of presenting them? Overall, how did you feel about the suggestions?

See next page for critical incidents

Critical incidents not already discussed:
The tabs on the bottom need to include words or it is easy to forget what each icon represents. Also, the home screen needs to have some amount of text or an image - it can't just be blank. Severe.
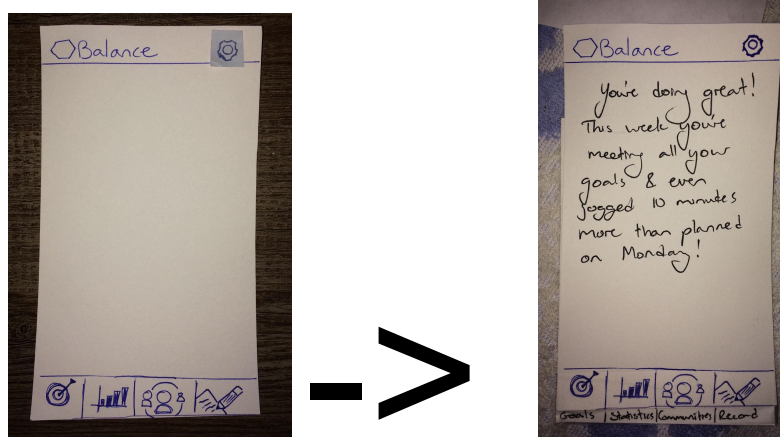
Contribution:
25% each. Work was fairly even split as each person completed a portion of the writeup and proofread and added to the others.