goFIT

Bryce T. | Christina R. | Denis R. | Olivia G.

Inspiration to maintain a healthy lifestyle.

Problem and Solution Overview

goFIT is a new way to stay healthy, be social, and accomplish goals. With goFIT, you can set and log fitness goals quickly and easily. Inspire your friends by challenging them to fitness activities and goFIT together! We interviewed over a dozen people, from college students to healthcare professionals, and found that the vast majority of individuals care a great deal about their health, but generally struggle to find time or motivation to prioritize exercise and a healthy diet. Although they want to stay healthy, they rarely prioritize their health, saying they don't have time, don't want to wait for the long-term benefits, or prefer to do other, more social, activities. We want a product that offers meaningful social connection and immediate rewards when users meet fitness and nutrition goals. This should motivate people to be more excited about maintaining a healthy lifestyle, demonstrating that the act itself, not the incentives, is worth prioritizing. Our final prototype design combines elements from virtual personal trainers and mobile applications targeted at gamifying health, with a focus on adding incentives, making exercise more exciting, and personalizing challenges.

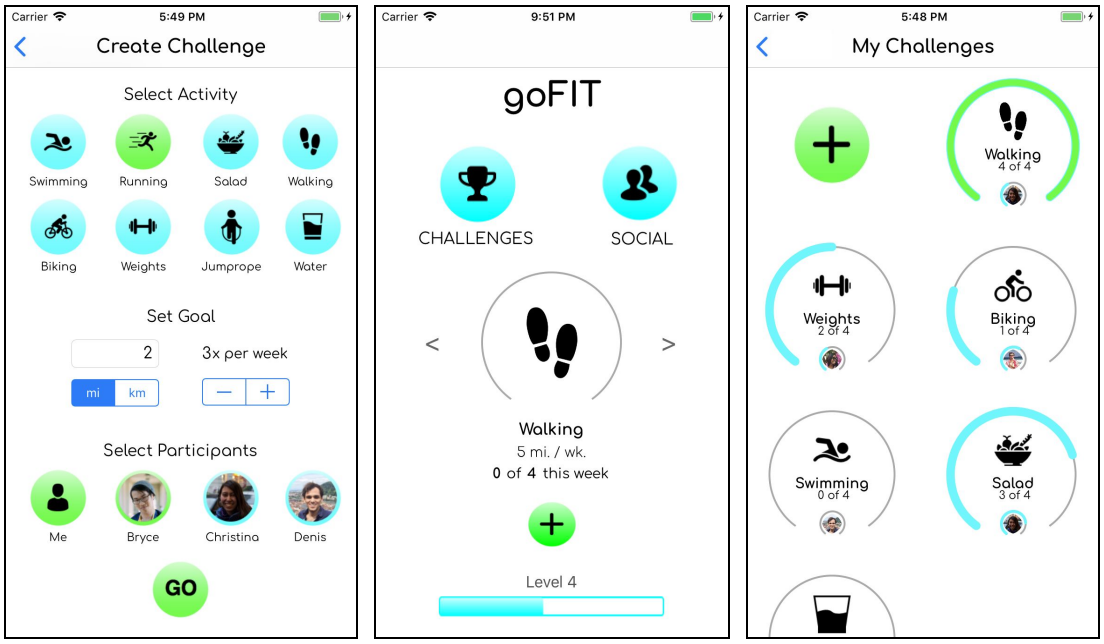

Figure 1. goFIT final prototype design.

Tasks & Final Interface Scenarios

The three representative tasks that we wanted to showcase are as follows.

1. Logging progress on fitness and nutritional goals (simple task).
2. Creating personal challenges (medium task).
3. Inviting friends to complete challenges (complex task).

Logging Progress on Fitness and Nutritional Goals

According to our needfinding interviews, people say that they hate logging their fitness progress. As this functionality is central to our design goal of helping people maintain a healthy lifestyle, this task should be incredibly easy to complete or people won't do it. We also wanted to extend this functionality to nutritional goals such as eating fruits and vegetables or drinking water. This task is important for our design because it allows users to see the long-term benefits of their activities through their personal history and see short-term progress which motivates regular activities and accomplishments. We wanted to provide a good way for users to stay healthy via incremental progress that doesn't drastically change their lifestyles. A specific example of this task is "log that you went for a walk today."

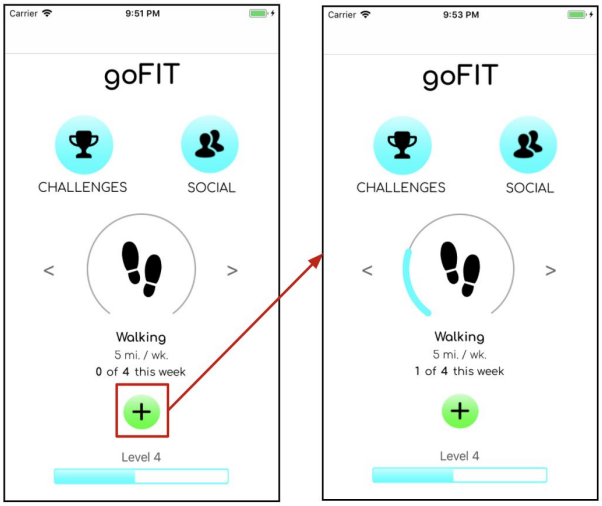

Figure 2a. Logging progress from the main screen.

Creating Personal Challenges

The task of creating personal challenges is relatively simple but requires personal accountability from the user. These challenges serve to create personal motivation and allows for goal tracking, giving rise to a means of gamifying health and providing some sort of reward (or sense of accomplishment) when completed. We wanted this challenge creation to be easy and

straightforward, with emphasis on simple goals that can be done throughout the week. A specific example of this task is “create a personal walking challenge for this week.”

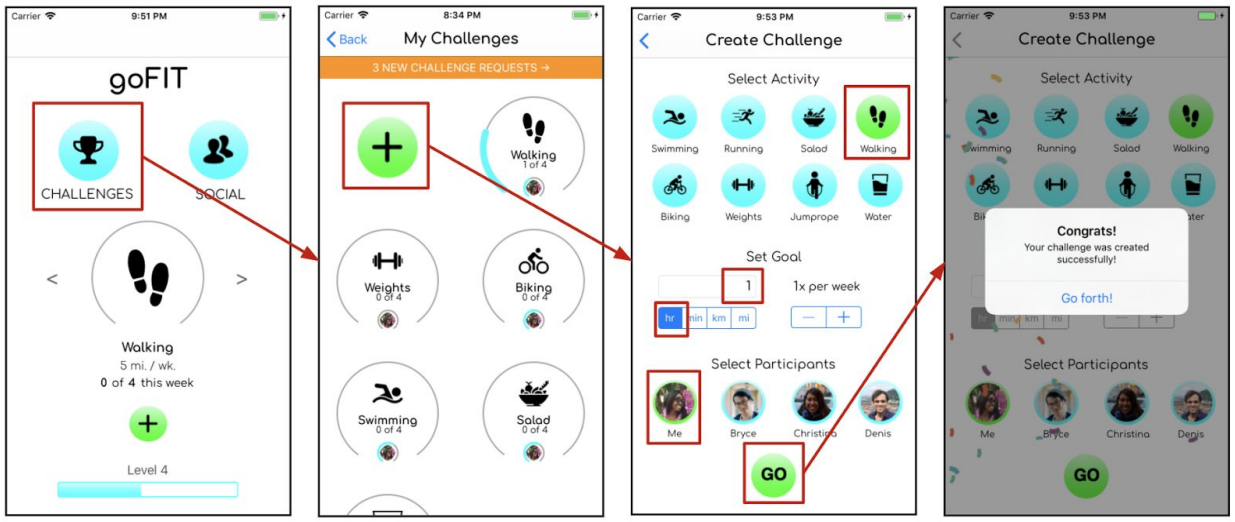

Figure 2b. Creating a personal walking challenge.

Inviting Friends to Complete Challenges

While creating challenges is easy, inviting friends to complete these challenges adds a layer of complexity due to the fact that there is now an additional social accountability and pressure measure that requires connecting with a network of friends. We also wish to extend this functionality to include challenges set by or with physicians and doctors. This task is important for our design because it creates additional motivation to accomplish goals: the desire to win. There is also a tangible social reward that comes with interacting with real people when completing these challenges. Having a network allows physicians to check in with the user and friends to keep them working towards their goals. A specific example of this task is “invite Christina to complete a running challenge for this week.”

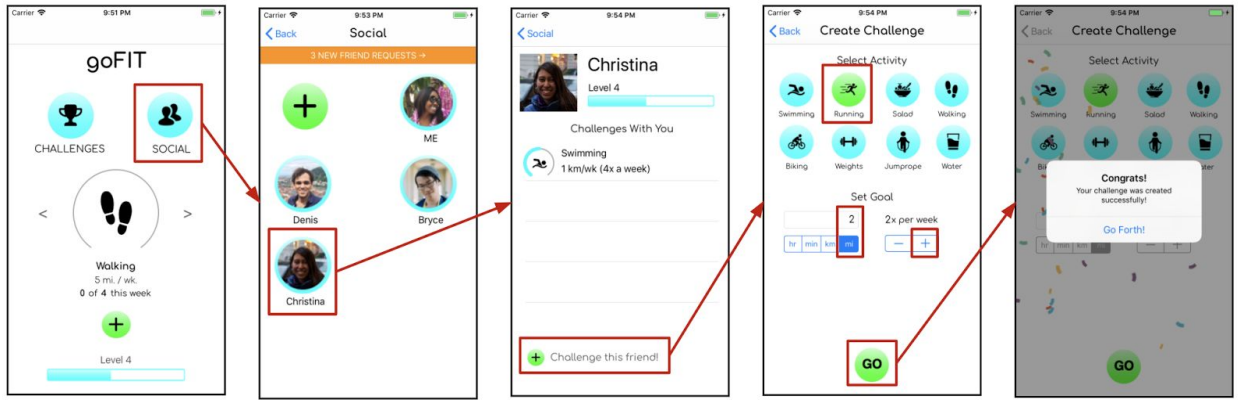

Figure 2c. Challenging Christina to a running challenge.

Design Evolution

Following initial needfinding, we prototyped several ideas that led to our development of experience, low-fidelity, and medium-fidelity prototypes.

Experience Prototypes

We developed 3 separate experience prototypes to test our assumptions in the problem space of focus. They are described below.

Virtual Personal Trainer - This experience prototype focused on a virtual personal trainer that helps users achieve small goals to increase their fitness level throughout the day. The application experience, tailored to the user's personal schedule, stemmed from the assumption that people feel they do not have enough time to complete significant physical activity. Having a personal trainer motivate them and help them perform small lifestyle changes throughout their day will have a significant impact on their overall health. The experience prototype, made of paper, mimicked a web dashboard and mobile application interface.

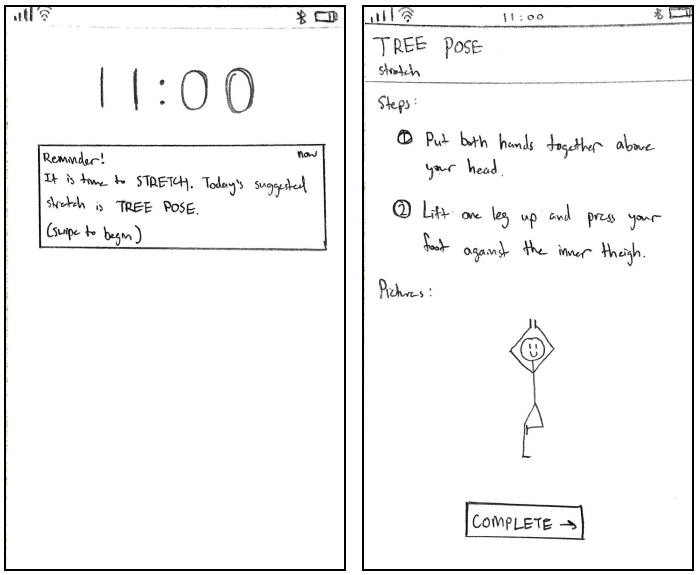

Figure 3a. Virtual trainer experience prototype.

Gamifying Health - This experience prototype stemmed from the assumption that people don't exercise because they cannot conceptualize the concrete, long-term rewards associated with it. We wanted to test whether people would prioritize their fitness if we gamified exercise (making it a competition) and gave them tangible, short-term rewards upon achieving goals. This prototype was made of paper with each sheet representing a different "dashboard," with a home page, trophy page, social page, and development page.

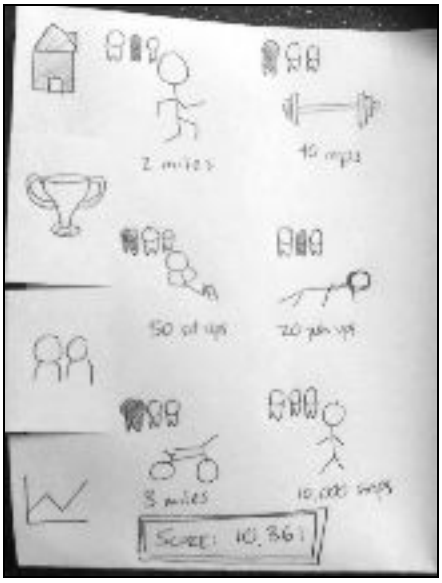

Figure 3b. Gamifying health experience prototype.

Exercising in VR - This experience prototype tested the assumption that people aren't motivated to exercise because they don't find it very enjoyable/fun, but if we could transport into a more appealing or exciting scenario, they would find the motivation to exercise. We made this prototype using a set of Google Cardboard VR glasses, as well as some images of scenarios we believe would motivate people to exercise.

Figure 3c. Exercising in VR experience prototype.

Overall, we believe that our experience prototype in gamifying health was the most successful in achieving its desired solution, with elements from the virtual personal trainer prototype added to increase the motivation factor of our application. Our test users liked that it appeared easy to use and add workouts. As one tester said: "The more I think about it, the more I think it would be

a good app. The majority of apps I've seen are come in three categories, hitting at most two: good UI, tracks multiple sports, and is free for all features. This app seems to hit all three of those."

Low-Fidelity Prototype

Following the development of our experience prototypes, we brainstormed several different designs to implement our idea. We experimented with a variety of device types to explore the design space before settling with two specific detailed designs that we liked. They are described below.

Boxy Mobile - This idea was goal-heavy, focused on giving the user as much information as possible and allowing them maximum control over their experience. The design is tabular, image-heavy, and navigable by menu.

- Pros: Very professional-feeling, very organized, more intuitive, and emphasizes tracking and personal history.
- Cons: More solitary and less social, less personality (more standard), less playful/casual, geared towards expert users, and more cluttered.

Figure 4a. Boxy mobile detailed design.

Bubble Mobile - This idea is image-oriented and focused on easy navigation. It is simpler, emptier, and prioritizes ease-of-use, with the experience based around a single, central dashboard.

- Pros: Feels more social/approachable, feels cleaner/simpler, and geared towards novice users.
- Cons: Looks less organized, separates challenges and goals, and less intuitive.

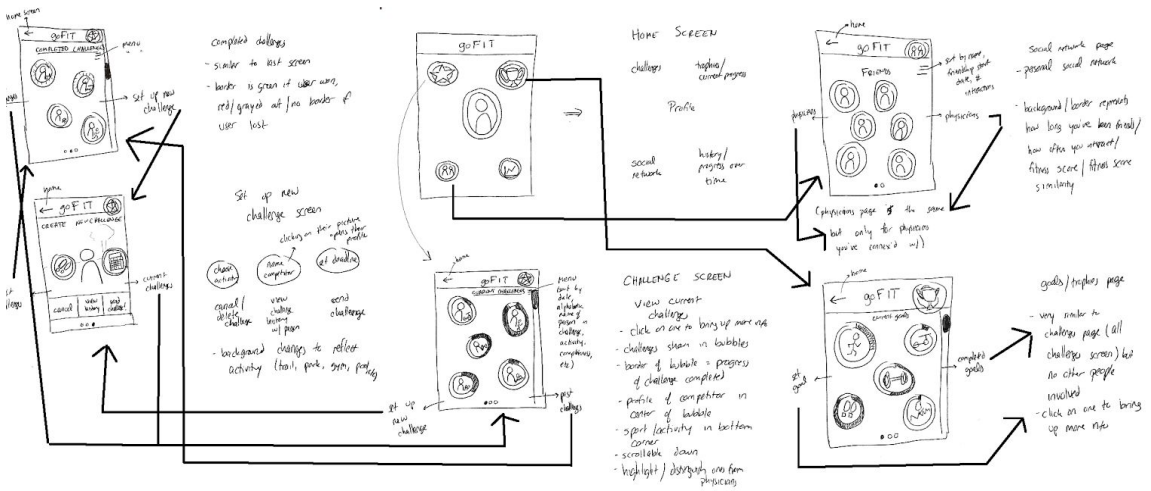

Figure 4b. Bubble mobile detailed design.

We decided to use the Bubble Mobile design for our low-fidelity prototype supplemented with some elements from the Boxy Mobile design to aid in organization and personal history tracking. Since ease of use and approachability were our most important factors, we wanted the primary interface to be easily navigable and friendly, allowing new users easy access. This lead to the resulting low-fidelity prototype below.

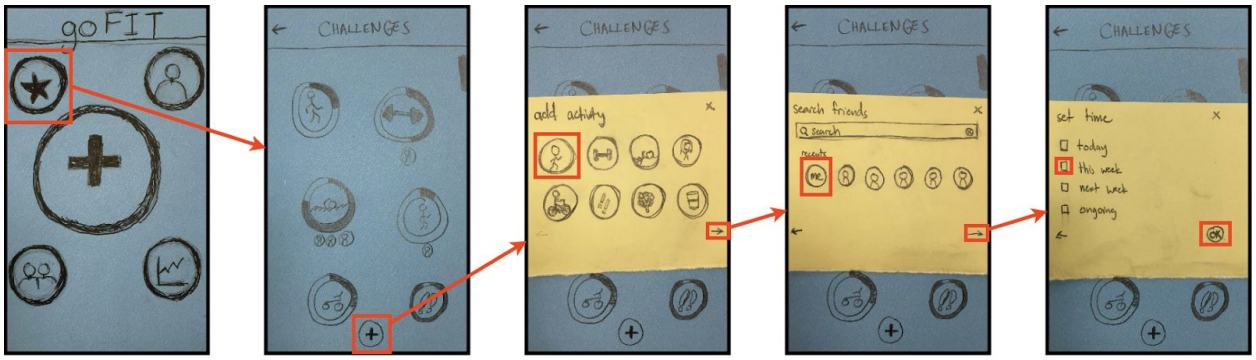

Figure 4c. Low-fidelity prototype pictures for adding a challenge.

Medium-Fidelity Prototype

Following our low-fidelity prototype tests, we found the following problems with our current design.

1. Testers didn't understand that they could access challenges by hitting the "+" button on the main screen.
2. Users wanted a way to subtract from progress, in case they accidentally logged progress.

These problems led to a complete redesign of our main screen that simplifies the logging process and eliminates functionality that may induce confusion. We did this by removing the "+"

button entirely and adding scrollable challenges directly to the main screen. This change would allow user easy access to all their challenges and view how much progress they had achieved in their activities. In addition, we changed the progress log buttons to better match what we intend the user to do.

To construct our medium-fidelity prototype, we used Sketch and InVision. Sketch was used for designing the screens themselves, and each screen generated became a static image. InVision was used for putting the screens into an interface that mimics a mobile app. Due to limitations and constraints, our medium-fidelity prototype doesn't allow the full range of motions a user would have with their phone (like swiping), no information is stored in memory (each screen transition is hard coded, so an update in part of the app doesn't update other pages), not every button has a transition/screen, and there are no working screens for user profiles and personal history. However, we implemented enough screens to demonstrate our three primary tasks, as shown below.

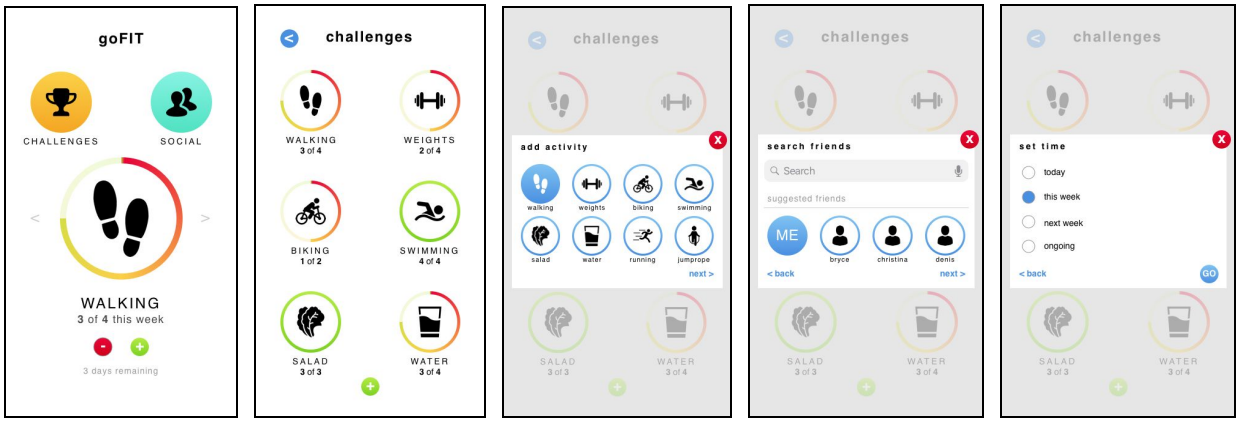

Figure 4d. Updated screenshots from medium-fidelity prototype.

Following the development of our medium-fidelity prototype, we performed a heuristic evaluation using experts from other groups. The list of heuristic violations are described in the following section as well as a discussion on the final changes we made for our high-fidelity prototype.

Major Usability Problems Addressed

The results from the heuristic evaluation on our medium-fidelity prototype found a total of 22 violations across all categories described in Jakob Nielsen's "10 Usability Heuristics for User Interface Design", 7 of which were assigned a severity of 3 or higher.

Usability Catastrophes (Severity 4)

H1 Visibility of System Status - When selecting the duration of a new challenge, it is unclear exactly what time period this challenge will be active once it is set. Our experts noted that the confusion lies in the generic descriptions of the time labels. Does this time mean the start of the activity? Or does it denote the end of the challenge? Does the user have to complete this challenge before this time, during this time, or after this time? It was recommended that we add additional descriptions to eliminate this confusion, but we opted to redesign the idea of what our

goals mean instead. Rather than have users set a duration for each challenge, we made all of our challenges weekly, with the user being able to set how many times they wish to perform a particular activity each week. This gives a simpler and more straightforward challenge-creation process without sacrificing flexibility. Note that if users wish to make a goal “purely” weekly, they can simply set the number of times to complete the activity to 1. Conversely, if users wish to make a goal daily, they can set that number to 7.

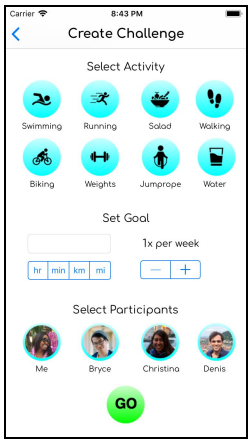

Figure 5a. New challenge creation screen.

H2 Match Between System & Real World - Our experts found that the challenges screen did not show enough information about each individual activity. The example they gave was with regards to the walking activity: how far is the user supposed to walk before they can log progress? This problem extends to the issue of how we are supposed to measure such an activity. Should it be measured by steps, distance, or duration? We decided that the best way to resolve this issue is to let the user set the unit of measurement themselves. When creating a new challenge, now that all challenges are weekly, users can now select by what quantity they wish to measure their progress by (as seen above). These changes are also reflected in the challenges screen, where each challenge now denotes the new quantities.

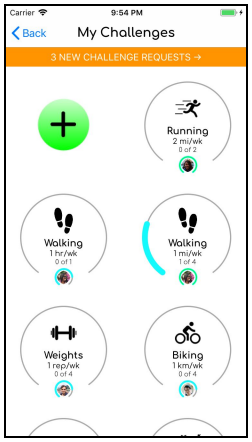

Figure 5b. New challenges screen.

Major Usability Problems (Severity 3)

H1 Visibility of System Status - Our experts noted that there are currently no examples of what it is like to receive a challenge. How would a user respond to or accept a challenge? Can you reject or alter challenges? How would a user know if their challenge has been accepted? The recommended fix was to implement some sort of notification system that would alert users of new incoming challenges. Upon opening a notification, the user will be taken to a list of new challenges from which they can accept or reject each one. This functionality is extended to the social screen in which users can accept or reject friend requests.

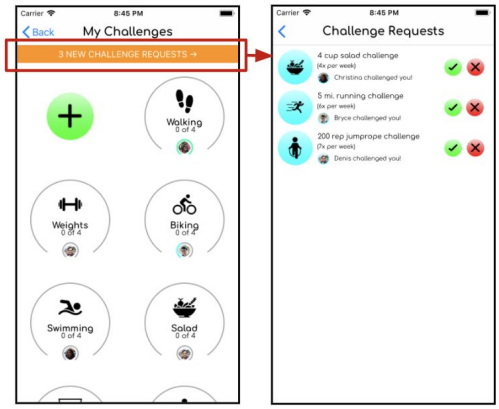

Figure 6a. Notification alert and challenges screen and notification center.

H4 Consistency & Standards - Our experts noted some confusion over the small green button on the bottom of our challenges and social screens. The claim was that its use in both screens may confuse some users, and while we do not think this problem is as severe as our experts made it seem, we decided to make a change that would both rectify this issue and make it even more clear what the button is for. Specifically, we moved the button to become the first entry in our table of challenges/friends such that it is properly attributed to each screen. The size of the button has also been made larger, and so there is no longer confusion over what it does.

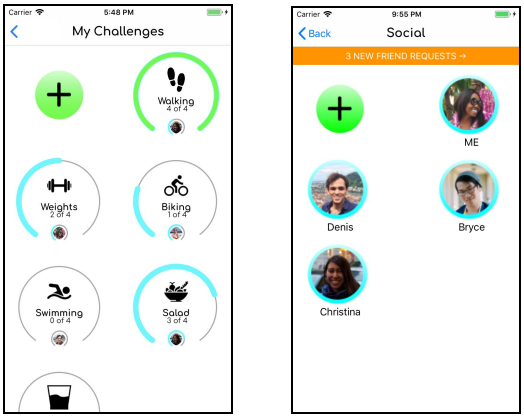

Figure 6b. Updated challenge screen (left) and updated social screen (right).

H5 User Control & Freedom - While creating new challenges is a relatively intuitive process, there seems to be no way to delete or alter a challenge once it has been created. Our experts recommend a way to edit challenges, and we agree. This can be done on each individual challenge screen.

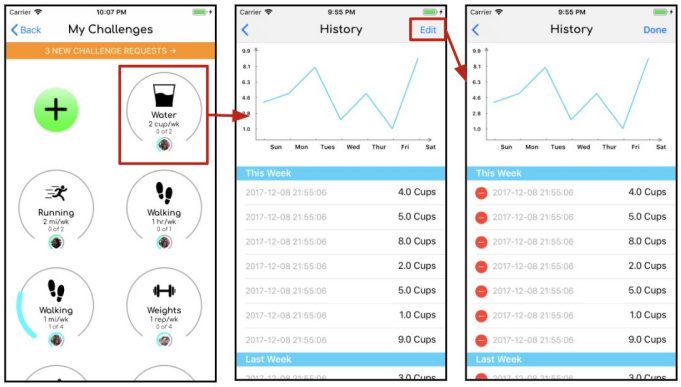

Figure 6c. Method of editing challenges: detailed history with way of deleting data points.

H8 Aesthetic & Minimalist Design - While one of the goals of this application is to incentivize a healthy lifestyle by making it immediately rewarding, our experts felt that there doesn't seem to be enough of a reward for completing tasks. They recommend defining a rewards system or providing a means of viewing overall accomplishment. We decided to do both. First, we created a leveling system based on progress and challenges completed. Second, we added redefined each challenge card as a separate screen that would show historical progress on that particular activity (as seen above).

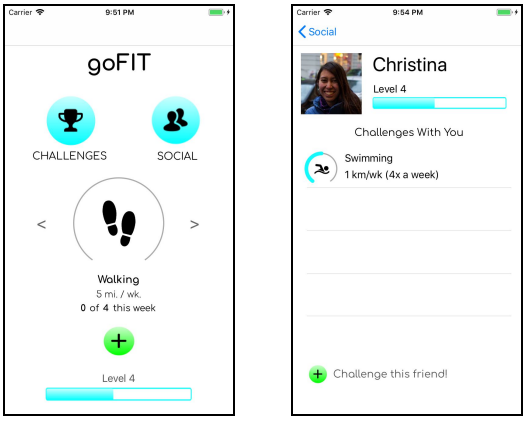

Figure 6d. Both the home screen (left) and a friend's profile (right) display that user's level.

H9 Help Users With Errors - At the time setting page, something should happen when click "GO" button without selecting a date. This is simply a bug in our medium-fidelity prototype and has since been fixed.

H10 Help & Documentation - Some users may be motivated by not wanting to fail a challenge, but there is no way to tell what will happen if a challenge is failed. We discussed this as a potential issue when designing our initial prototype but decided against any form of punishment system. We felt that we wanted our application to be friendly and helpful, and punishing users for not accomplishing their goals goes against that principle.

Other Changes

Streamlining Challenge Creation - In addition to the changes we made to the challenge creation process described above, we also made several improvements to make creating a new challenge easier than ever. One improvement we made was combining all the steps of creating a new challenge into one screen, thereby reducing the number of screens required to complete the process.

Views Instead of Modals - You may notice that the challenge creation process now occurs in a new view rather than in a pop-up modal. This is part of an overall change we have made with our application in order to adhere to Apple's iOS guidelines and maximize the utilization of the entire phone screen.

Updating Iconography - Our experts claimed that the icons used for some of the challenges were confusing and do not adequately describe what each challenge is. We updated our icons to make them more aesthetically pleasing and better communicate the meaning behind the challenges.

Novice Users - This is more of a change in vision rather than the application itself. We have decided to focus our application on the novice user (i.e. those who wish to get started on maintaining a healthier lifestyle). This decision is what drove many of the changes described above, particularly those that involved simplifying the basic processes of the application in order to make it easier and more intuitive to use.

Prototype Implementation

Tools

We used Xcode to build the prototype of our iOS app. Along with this, we used the features that come with Xcode, like the iOS simulator, Apple's libraries for building UI's, and Swift. These tools were helpful in that they allowed us to build the framework and functionality for our app as well as provide a platform from which we could launch and demo our product.

However, there were many aspects of our project where Xcode was not a helpful tool. For example, one major shortcoming of finally coding up our project was that many of our aesthetic changes and design became much harder to implement within the constraints and confines of the code. In order to incorporate our ideas and keep our prototype in line with our vision, we used draw.io to design many of our icons, buttons, and pictures, and MBCircularProgressBar to implement our border progress bars.

Wizard of Oz

We also had to incorporate several Wizard of Oz techniques to feign a multi-user community for a single-user demonstration. The first is that all challenges that our user creates are automatically accepted by all parties involved, as we wanted all challenges to be immediately

displayed on the screen. The second has to do with notifications; as no other goFIT users exist, all notifications that our testers see are not fake, giving the experience that one of his friends has challenged him to some activity or that one of his friends is trying to connect with him via our platform.

Hard-Coded Data

In a similar vein, we hard coded several elements of our app in order to make the user experience more authentic during the demonstration. The current friends list displayed, as well as the other goFIT users to which you can send requests, are both hard-coded. All statistics shown in each challenge's fitness history are also hard-coded; the graph shown for each challenge, regardless of individual metrics or type of challenge, is also the same.

Future Improvements

There were several aspects of our app for which buttons are shown, but no functionality is implemented: examples include accepting and rejecting requests, editing statistics, and adding friends. These were left out because of time constraints, and we deemed these aspects not as crucial to our app and experience as our tasks and other elements. In the future, we of course want to give these full functionality.

Building upon this, we know that, currently, users can only view statistics and graphical data about one challenge at a time. In the future, we want to implement a way for users to be able to analyze data about multiple challenges together, or add some way for them to view their full progress history over the past week.

Summary

At the beginning of the quarter, we found through our needfinding interviews that many people were excited about the idea of being healthier and exercising more, but few actually followed through. We iterated through the design process, determining what we could offer, and began crafting sketches and prototypes. We moved from brainstorming to having users test experience prototypes, redefining our ideas and creating a low-fi prototype, and, via layers of feedback, producing a medium-fi prototype that really represented our ideas. After sending out our medium-fi prototype to more evaluators, we got feedback in the form of a heuristic evaluation that allowed us to make design changes that focused on a more specific target audience. As a result, we began implementing our final design and crafting a hi-fi prototype with an aesthetic that falls in line with our overall vision.