CSC318 A8 – Usability Study Report

The Problem Solvers

Reece Martin
Kyle Haas
Yufei Chen
Yi Liu
Louise Xia
Manuel Velarde

TA: Neeraja Murali Dharan

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Executive Summary:

Our fitness application focuses on facilitating access to a fitness community for individuals that do not have one in their immediate network. It uses existing social networks and user preferences to suggest compatible fitness partners and groups. For solo fitness endeavours, the application offers a gamified reward approach, making working out fun for people who may not want to engage socially. By making fitness more social and rewarding, we hope to get the general population healthier and make fitness a more approachable activity.

Overall the idea of our application and the problem it is attempting to solve was well received. We had a lot of buy-in from participants stating that they would use an application like ours to plan workouts and overall, make fitness more enjoyable and enticing. There were a couple of roadblocks that we experienced during our testing. We included a lot of content on each page - in reality, users don't enjoy reading. "I know when I am trying to complete a task, I will exhaust all options before reading a text to solve my problem, actions should be intuitive" one user stated. This prompted us to eliminate some of our more confusing and unnecessary functions, making simplicity and functionality a priority. Another user stated that "There is a lot of clutter, seeing that many things on the page make me confused as to what to do next.". This made us come to the realization that we may be trying to do too many things, we came to the solution to eliminate some of the tasks. We changed our interface from offering many functions to offering minimal functions but making these seamless and easy for the user - "simplicity and functionality over quality" one of our participants stated.

In conclusion, our main finding was that simplicity is key. We may think our application is too simple and that we should offer more, but in reality, our viewpoint is biased. Since we thought about our problem space and everything that can be solved, leaving minimal functions makes the app seem too simple and trivial. From a new user who has never even thought about our problem space, simplicity is exactly what they need. After many user tests, we went through many iterations to make our interface simple and intuitive.

Our Research Method:

Our usability testing consisted of multiple phases beginning from initial paper prototypes and eventually moving into functional high fidelity prototypes. Our final two rounds consisted of Usability Testing with user experience and user interface design experts followed by Usability Testing with regular users from our target demographics. Running usability tests with industry experts before doing similar testing with regular users was highly beneficial for refining our testing apparatus and prototype as well as improving our testing scripts and procedure.

Actual usability tests consisted of having test users fill out consent forms and informing users about the purpose of the study and their rights as a participant. Next, users were presented our mobile application prototype on a laptop.

Users were asked to perform a series of actions in our application with minimal input from test facilitators. Users were told to explain what was going through their heads such that this information could be recorded and more insights could potentially be discovered, especially elements which users found confusing and to better understand what users were expecting. Users were recorded so that test sessions could be referred back to and further analyzed. Of course this was discussed as part of the consent form and it's explanation.

Once users had completed the tasks, they were asked to fill out a survey which gave us background information on the participant and their background as it related to our problem space. Having users fill out surveys on a separate computer also allowed us to run more test sessions as the survey was designed to require minimal feedback from facilitators. This allowed us to do more testing overall which was highly beneficial.

Participant Demographics:

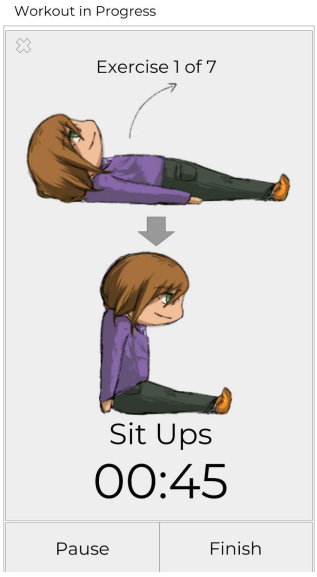
Our primary demographics are students and working age people. We based our design on issues specifically experienced by these groups of people specifically. Both students and working age adults tend to have busy schedules and often also struggle with a lack of motivation to exercise. It's also more difficult for these people to schedule activities together because of scheduling conflicts and overlap this was a problem we specifically meant to solve with our application.

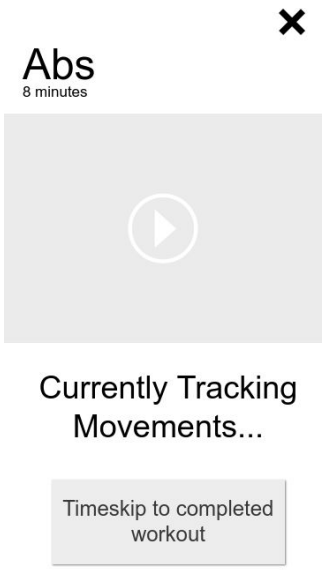
Overall, 13 people participated in our usability study, including 4 experts during the in-class testing session, and 9 people from our target demographic.

Findings and Their Implications:

We performed several tests individually with our first set of paper prototypes that later on were merged into our first high level prototype. The testing during the lectures pointed out to various issues, all related to the unclear separation of the workout features from the social ones. Another problem encountered was a pack design that did not followed the clean and simple guidelines underlined in the course material. We catalogued the former issue as a high severity one, and the latter a low severity one but widespread several views in the design. This were the main issues we tried to correct in the last iteration of the product.

A key measure that hints into some progress on the design of the app is the average and variance when compared between the first and final high level prototypes. While the first results show an average around the 2 minutes, the final lands closer to 1 minute and 45 seconds. This may be a small difference, but the variance in the final prototype is quite smaller. While for the first some experts took up to 3 minutes to complete a set of 4 tasks, in the final prototype no user reached the 2 minutes and 30 seconds with the same tasks. We believe this result was achieved by correcting the low severity issue with all the extra buttons and boxes the first prototype presented and making it clear for the user what he could expect to find in the social view and what in the workout view.



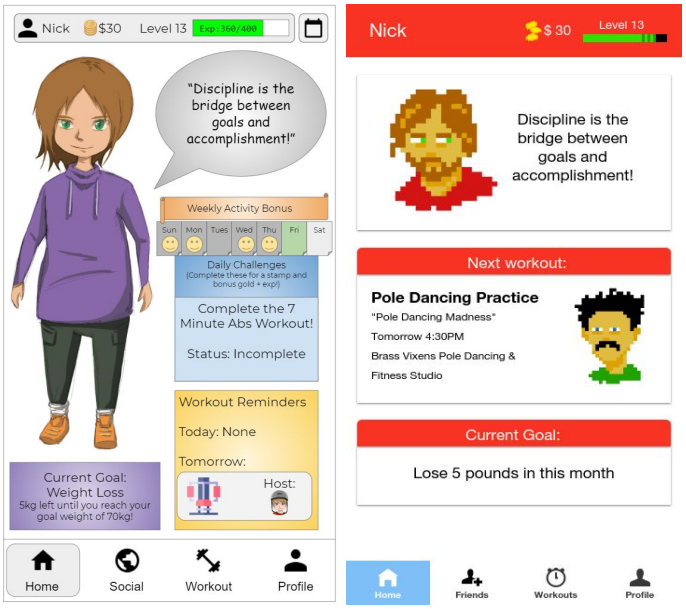


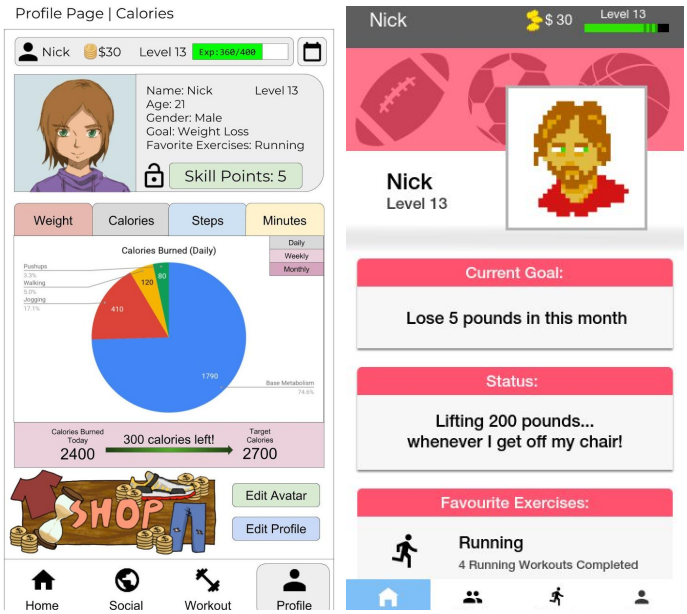
Clarity finding the views is obvious in some of the videos, user found the final prototype intuitive and there was no confusion between the social view and the workout view. With the division of responsibilities clearly stated, users had zero mistakes when selecting the option from the main menu. One of the recommendations by an expert was to switch from a set of graphics showing the instructions for the solo workout to something more interactive. We decided to go for a video to accompany the user while performing the exercises, as noticed by one of the testers.

One of the recommendations we received for the latest prototype was “maybe the add friend button should have some color, it is big but I still miss it”. The user, in this test video, struggles a bit before noticing the button for the requested task. The user also remarked on the text falling out of the button box, this was a display error corrected immediately afterwards. Other user comments from users who had the chance to test both the first prototype and the

final version were “wow, you can actually fill in the options for the search now!” and “pixels characters look ok but I liked the manga drawings more, they were cute”. As for negative comments, one user pointed out “the grey tones make everything feel boring”, this was also fixed immediately after the test video was finished.

Another suggestion by the experts during the testing was to link the options in the main menu to their respective screens. In this video a user clicks as first try the boxes on the home screen. The previous prototype had a cluttered home screen so many users ignored it, and the ones who didn’t, found no active links. Below, a comparison between the first prototype’s home screen and the new one, followed by a user profile comparison.





To sum up, the issues that confused the users and mixed together the responsibilities of the social view with the workout view were fixed. The final prototype showed a cleaner interface that allowed the users to absorb all the options presented to them. Relevant links to different views were added to the home screen. Icons were chosen more carefully to avoid possible misinterpretations and the navigation buttons were standardized.

Limitations of Our Research:

One of the limitations of our research is that since we were continuously iterating the prototype based on the results of user feedback, we have a lower quantity of data for each iteration. Once we reached the in-class usability testing session for the high fidelity prototype, we began to change some minor elements such as button placement and color in response to user feedback after every few testing sessions. This was mainly due to the time limitations in the course for the final round of prototype testing, and other changes such as emergency bug fixes were made immediately upon discovery, which may have impacted certain metrics such as the completion time / completion rates for tasks, as users who participated in testing after the bug fixes were able to complete the task with greater ease.

Another major limitation was the scale of our research, due to tight deadlines we were very limited in the number of users we could survey and perform user testing on. While we did gain a lot of useful individual insights for use in our application the data we collected was nowhere near large enough to perform any proper statistical analysis. With a larger group of participants we could have done more interesting types of research such as testing different designs for the same feature in parallel. In any case our testing could certainly have been improved with a larger number of participants than we were afforded time to test.

There may also be some issues with generalizing our findings to a larger population of users in certain cases. For example, we mainly tested our application on users in our immediate geographical location, so everybody who participated in user testing was all residing in the same city, which implies that we have only covered a certain type of geographical and cultural demographic. There are many problems that may arise out of this when extending the results to a larger population. For example, the social aspect of our application is based on pairing people / helping people find other like-minded individuals in the community to meet up with in order to engage in physical activities together. In some other cities/countries, there may be locations that lack publicly available free space. We have also done user testing on only consenting adults, and so there may be a variety of differing security/privacy needs if teenagers or children wanted to use our application to find people to play with. In order to obtain more generalizable results for a larger population, further user testing should be conducted for demographics in the larger population that were not covered in our current user tests.

The final limitation of our research is about whether out application would ultimately be effective for solving the issue we identified in our problem space, which was that “people who want to exercise more easily lose motivation”. The scale of research necessary to determine if our application is effective or not would involve a long-term study. Our user research uncovered some of the reasons why people lose motivation to exercise when they internally want to be more fit, and we designed our application based on those results. Then, our usability testing centered on the ease in which people could use our application to organize workouts and

gamify their exercise habits. However, ease of use of our application does not necessarily translate into long-term changes for exercise habits. In order to more thoroughly investigate how effective a solution our application is for this problem space, more long-term studies investigating user retention, churn rates, and why or at what point users leave our application are necessary. If users enjoy the novelty at first but eventually lose motivation to use the application, then ultimately nothing has changed. It is also necessary to launch long-term studies to track changes in activity level and body weight to see if using the application actually leads to a long-term overall increase / retention in physical activity.

Reflections:

From Assignment 6 when we developed our first combined prototype to now, we have changed our prototype drastically, remade it on a better platform, and reshaped a lot of the ways actions are carried out in the prototype.

Our first iteration was made in Google Slides. We made it slides so it is easy to make and easy to collaborate on. It was quite plain, but overloaded with a lot of information, and not very easy on the eyes. During our expert testing in class, It became very apparent that what we thought the users would understand easily was vastly different than what the users actually understood, and what we thought was simple to understand was not at all. We had to fix problems while the users are testing our prototype, but there were just more problems being noticed. We learned pretty quickly that what we thought was obvious was not to some of the testers, such as the Floating Action Button on some of the pages, and especially the fact that they had different functions based on the screen the user was on. This point violated the consistency heuristic in a bad way, and it is made even more severe due to the fact that some of our most important features were hidden away behind the button. This problem was never noticed by any of us in the group, who were familiar with this feature, and regarded this as "normal".

Figure 1-3: The Floating Action Button had three different suites of actions depending on the screen the user was on, which is highly inconsistent and not obvious as the user would not think to click on the plus button to check what the options were.

Another big hit to the usability of the prototype was the clutter in the home page and in the profile page: the numerous colours and buttons, while appealing to the eye, was creating an overload of sensations, especially for the users who have never seen the app before. From this fact, we learned that not everything had to be laid out on the page, and it is okay if some of those are hidden away in a sub-menu or another page, so that users can decide what they want to look at and what they don't. For this first prototype, we really didn't know how to grasp the principles of simplicity, intuitiveness, and low-frictioness, which were the exact design principles that we set out to follow in the first place.

Figure 4 & 5: The home screen and the profile screen from our first hi-fi prototype, with a lot of clutter and confusing buttons that weren't clear to users

For the next iteration of the prototype, we were able to cut out a lot of the fluff that was unnecessary, such as some parts of the home screen that we deemed unnecessary to the overall functionality of the app, changing the colour of the buttons in order to differentiate the different functionality, as well as general quality-of-life improvements to the look and feel of the prototype. However, the big problems still remained, as we did not change the overall structure of the app a lot, and it was still confusing to navigate through.

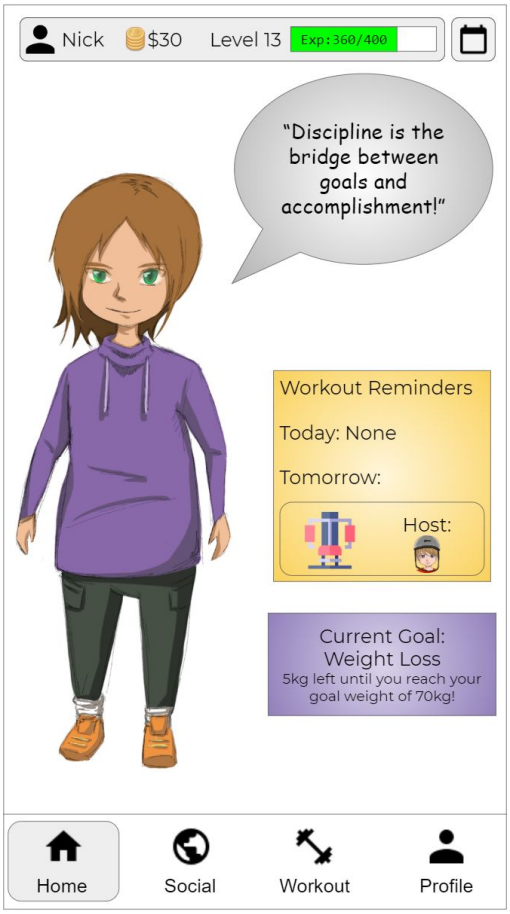


Figure 6: The home screen is decluttered in the second iteration.

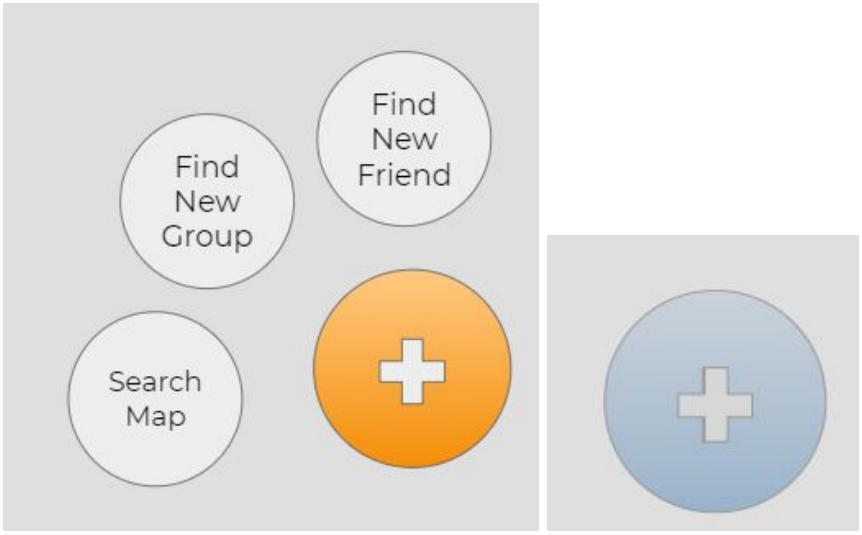


Figure 7-8: Clarifying updates to the prototype in the second iteration, with different FABs now having different colours to differentiate between them.

After testing with our Google Slides prototype iterations, we decided that the platform was simply not good enough for our needs, and was more annoying to work with than the benefits in collaboration it is able to bring us. For the better part of 2+ weeks before we

commenced the final round of user testing, we worked to port our prototype onto a new platform, proto.io. This platform proved to be much easier to work with in terms of actually building the website, and it required a lot less work to make a usable prototype. We took the chance to revamp some pain points that needed extra work to deal with, such as the look of the home and profile screens, as well as workflows for certain tasks. Reception of the prototype was positive, and most testers who tested both the original and the new prototypes prefered the new one. We did, however, have to cut back on some of the features for the new prototype, since we did not have enough time to implement everything, and we thought some features were not essential enough for us to prioritize.

Throughout the process of iterating, testing, and creating our prototypes, we learned a lot of things that we should definitely do differently the next time we approach creating a new product.

First and foremost, the platform to do the prototype on is very important. We chose an inferior prototyping tool at the beginning with Google Slides, which wasn't even a tool specifically for prototyping and UI design, and that cost us a lot of time and effort in order to make something that would come remotely close to the quality of a prototype made with a prototyping tool. These prototyping tools give us the benefit of pre-made UI components that we can customize and add to our project easily, as well as stateful interactions that make the effects of the features in our app better represented. Starting with proto.io would have made our lives much easier, and save us a lot of time during the making of the prototypes.

Secondly, we had a lot of ideas that we wanted to incorporate into the prototype, but the time constraints meant that we weren't able to do all of them to high quality. We wanted to make sure everyone's ideas had a place in the prototype, but we were spread so thin, and was not able to make any features stand out as nicely built. This also lead to us wanting to cram a lot of things in the same screen since we did not have a good plan to organize things in sub-menus and screens, which caused our prototypes to be messy and harder to navigate. At the end, since we did not include some of these features in our test plan, users did not get to see all of them, and we spent time on them for nothing. In the future, before diving into any time-consuming move with high stakes such as making a prototype, we should really be careful about which features and elements we should incorporate, so that we can focus on the important things rather than wasting time on things that do not fit in our vision. Developing a testing plan simultaneously with the planning of the prototype is also important as well, since we should only focus on making the features that will be tested, and that we will get feedback for.

Finally, we have really started to appreciate the iterative, user testing-driven process of developing our prototype. Being the designers of this product, we have lived and breathed this product for more than two months now, and in our minds we are very protective of what we have accomplished. However, through testing with our target userbase, we learned of many shortcomings that we simply glanced over or ignored, that otherwise would have had a great impact on the usability of the application. Even though we all fit within the our target userbase, the fact that we are the designers of this project means that we are not the user, and what the user sees/wants is drastically different that what we would imagine.

Resources:

Audio Video Segments:

- **Demo of Creating a Workout:** https://youtu.be/KCTFsRBmJQM
- **Demo of Finding Friends:** https://youtu.be/JVb-2w1F2Lw

Supplementary:

- **User canceling a petition to add another user:** https://youtu.be/hlrxgmarilk
- **User finding a way to do some exercise by himself:** https://youtu.be/eXDG2iGnDE4
- **User finding a new user to befriend:** https://youtu.be/XVvc-wodXtM
- **User changing his health target and then checking his closest appointment:** https://youtu.be/1Vs3JaTda4Q
- **User commenting in the colors of the app:** https://youtu.be/hDQvpEbIULc

Assignment Attribution:

- **Yufei Chen:** Poster, User Testing, Reflections
- **Yi Liu:** Usability Study Report, Resources, User Testing as well as Executive Summary.
- **Kyle Haas:** Executive Summary, Audio / Video Recording and Usability Testing with Users, in class Presenting and Presentation..
- **Manuel Velarde:** Audio / Video Recording and Usability Testing with Users and in class Presenting. Also, our Findings and their Implications.
- **Reece Martin:** Usability Study Report, Demographics, Assumptions, Findings and Implications, Presentation.
- **Louise Xia:** Poster, User Testing, Presentation, The Limitations of our Research