Spotter

The Weight Off Your Shoulders

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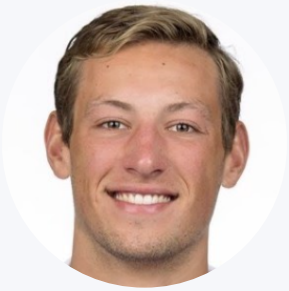

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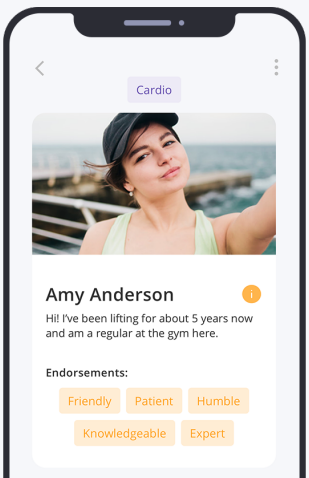
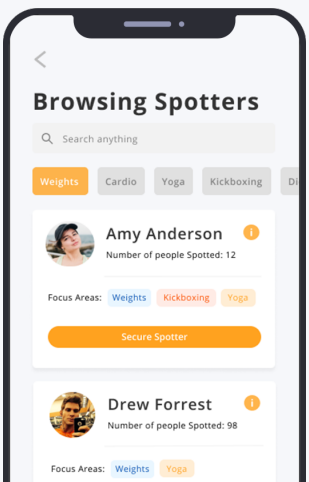
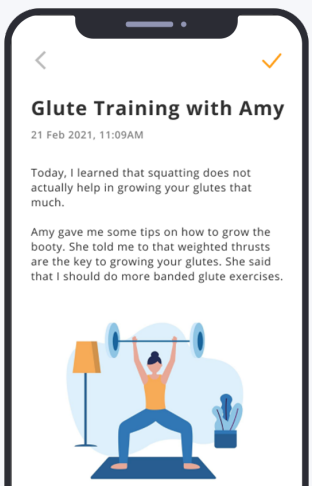
Problem and Solution Overview

We found that those who are starting out on their fitness journey are often too intimidated to ask for help at the gym out of fear and guilt of wasting an experienced gym-goer's time. Spotter empowers those who need help at the gym by highlighting experienced gym-goers ("Spotters") who are willing to provide a helping hand. On our platform, users can be matched with a Spotter, browse available Spotters at the gym, and take notes to capture their new learnings.







Needfinding Interviews

For our needfinding interviews, we acknowledged that every individual engages differently with their physical and mental health. We wanted to capture a broad range of experiences with our interviewees, rather than immediately narrowing down on a specific focus area. Our team interviewed:

John
Stanford Men's Water Polo Coach
Physically active

Jenny
University Student
Mentally active

Michael
University Student
Physically & Mentally Active

Sherry
Law Firm Analyst
Physically & Mentally Active

Out of these four interviews, we decided to delve deeper into our findings from Sherry's interview by creating an Empathy Map:

Figure 1: Sherry's Empathy Map

Understanding that Sherry struggled to build a fitness routine that worked for her, we decided to focus on answering the question: **"How can we help beginners start a physical fitness regimen?"**

We doubled down on needfinding, and did three additional interviews with:

Kevin
University Student
On a self-led fitness journey

Jeanine
Consultant
Engages in little to no physical activity

Yihui
High-School Graduate
Starting to develop his own fitness and diet routine

In all, we gathered three insights:

Insight 1

There is a **pressure to have fun and "know what you're doing"** when at the gym.

Users are **intimidated to ask for help** and don't want to waste someone else's time with their ignorance.

Insight 2

Overly restrictive and structured regimens can cause people to **give up and break the habit**.

Users want to avoid feeling like they failed in a commitment.

Insight 3

The **lack of personalization and contradiction in online sources** can make the journey more challenging.

Users have to spend **extra time to cross-reference** and verify information to suit their needs.

POV & Experience Prototypes

From these insightful interviews, we began developing and refining our three POVs.

POV #1

We met Sherry, a young professional who enjoys being active daily and the feeling of getting stronger.

We were amazed to realize she felt that she had not yet met a certain threshold in physicality and knowledge to ask for advice at the gym even though she played multiple sports.

It would be game changing if we can give Sherry a sense of security in asking for fitness help without feeling shame or guilt for taking up people's time and space.

POV #2

We met Jenny, a sedentary university student who used to be an avid tennis player in high school.

We were amazed to realize the feeling of hatred she had towards routines because of the pressure that comes from it.

It would be game changing if people can adopt flexible, failure-free routines but still move towards their goals.

POV #3

We met Kevin, an avid gym-goer who was once inactive.

We were amazed to realize that because he finds online information lacking personalization and often contradictory, he is wary of online guides and information.

It would be game changing if people could save time in absorbing online information and tailor it into something personalized and meaningful

Based on these three POVs, we asked:

From POV #1:	From POV #2:	From POV #3:
HMW 1	**HMW 2**	**HMW 3**
How might we make gym beginners **excited** to ask for help?	How might we help those who are struggling with routine **celebrate small fitness wins and forgive ourselves for small failures**?	How might we **correct false preconceptions** about fitness and physical wellness?

Inspired and excited, we launched into brainstorming solutions on Miro and arrived at our top 3 choices.

Solution 1: App for gym beginners to find those willing to help

Our first proposed solution is an app users can use at the gym to find those who are experienced and willing to help.

Experience Prototype 1a: Simulated Gym for Experienced Gym-goer

To further explore this idea, we built an experience prototype where the user role plays as an experienced gym-goer. The purpose of this experience prototype is to test the solution's **underlying assumption that experienced gym-goers are willing to help those who ask for it.**

For this prototype, the user walks into a simulated gym and has the choice to press a button to let people know they are willing to answer questions. If they do press the button, they are subsequently asked questions by the tester about fitness-related topics.

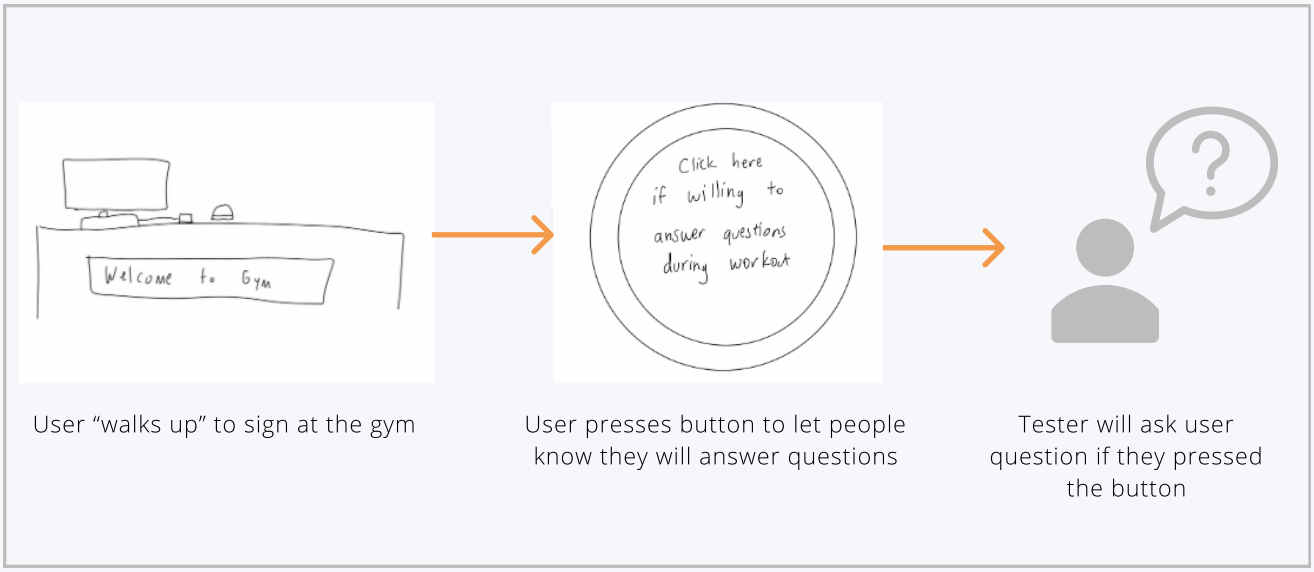


Figure 2: Experience Prototype 1a

During the experience prototype, the user seemed excited and pleased at the idea of helping people at the gym; they didn't mind taking 5 minutes out of their workout to answer questions. However, the user also raised a concern about rude and intrusive approachers at the gym. From this we learned that users might not be open to helping everyone, and this led us to ask: "How can we give the volunteer a choice in who they can approach them for help?"

Experience Prototype 1b: Simulated Gym for Gym Beginners

For our second experience prototype, we built a gym simulator with Google Forms to replicate the experience of being at the gym for the very first time. This prototype aims to **test the assumption that new gym-goers are willing to ask volunteers for help at the gym.**

For this prototype, the user is prompted to work-out at the simulated gym. At some point, the Google Form informs the user that they do not know how to use a fitness machine and prompts them to make a choice between asking a volunteer for help, watching a YouTube tutorial, and asking a gym employee for help.

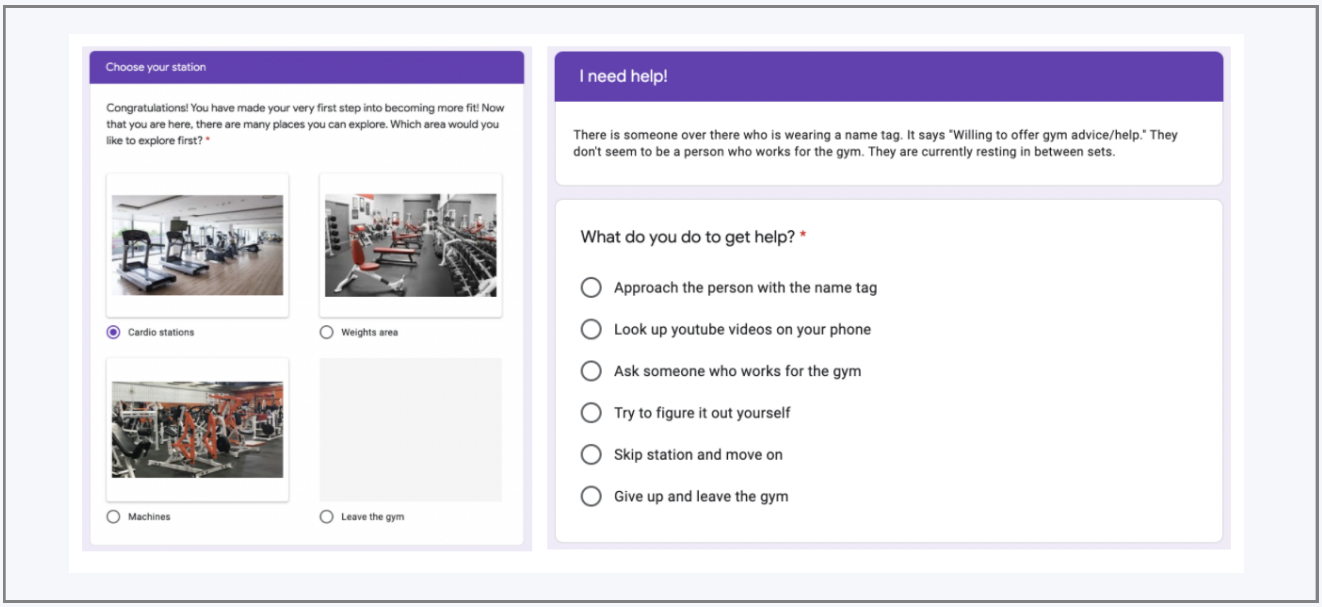


Figure 3: Experience Prototype 1b

The user, in this case, chose to watch a YouTube tutorial first. When the YouTube tutorial proved to be unhelpful, they chose to ask a volunteer next. According to the user, "a volunteer feels closer to my experience level so there is a sense of familiarity in that." However, they also noted that they would do research on how to use the machines and complete their exercise routine before going to the gym. We learned that gym volunteers are not made obsolete by gym workers, although users still preferred to do things alone as much as possible.

Solution 2: Cute Virtual Mascot

For our second solution, we thought of bringing a cute virtual mascot to life that encourages the user to perform small fitness goals and "grows" as goals are fulfilled.

Experience Prototype 2: Growing Cute Creatures with Exercise

For this prototype, we built a Google Form showing a cute creature who will request the user to perform a certain exercise. If the user completes the task, the cute creature will grow up and enter its next stage in life. This prototype aims to **test the assumption that users will be invested enough in the growth of these mascots to complete the exercises and keep to a fitness routine.**

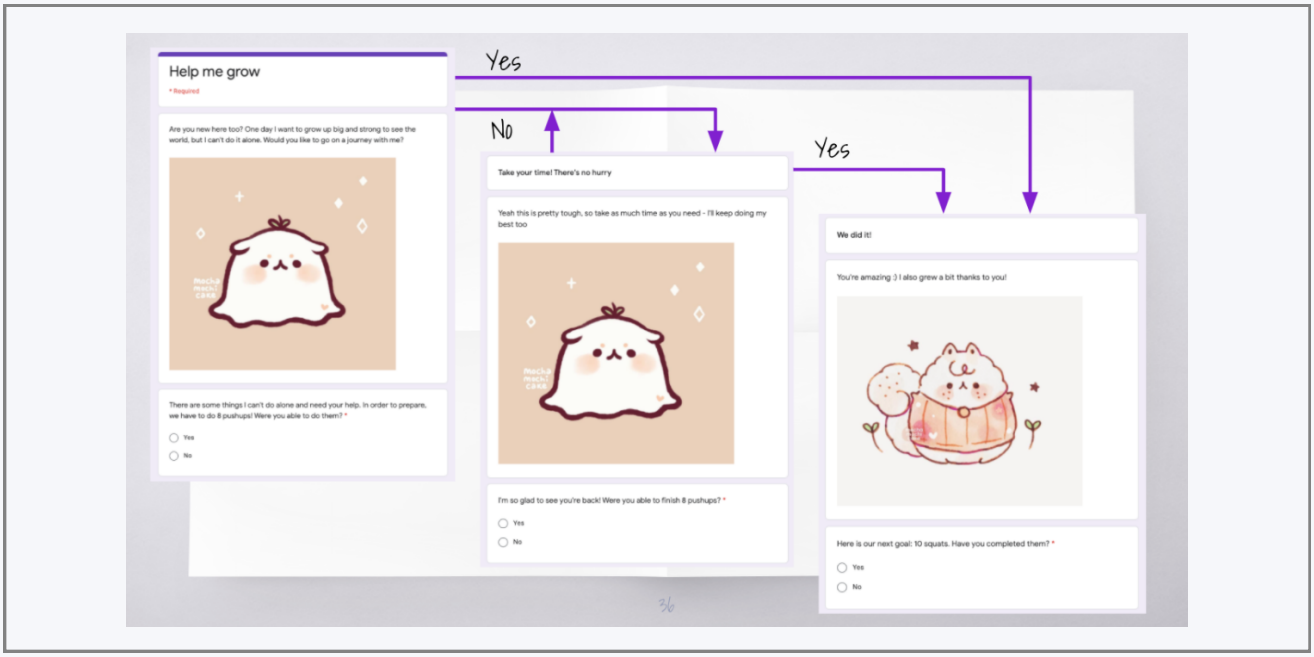


Figure 3: Experience Prototype 2

In testing the prototype, the user completed all the tasks, adding that "the mascot made it more motivational than if it wasn't there". The user also seemed invested in the mascot's growth, as they were hoping to see it grow even more.

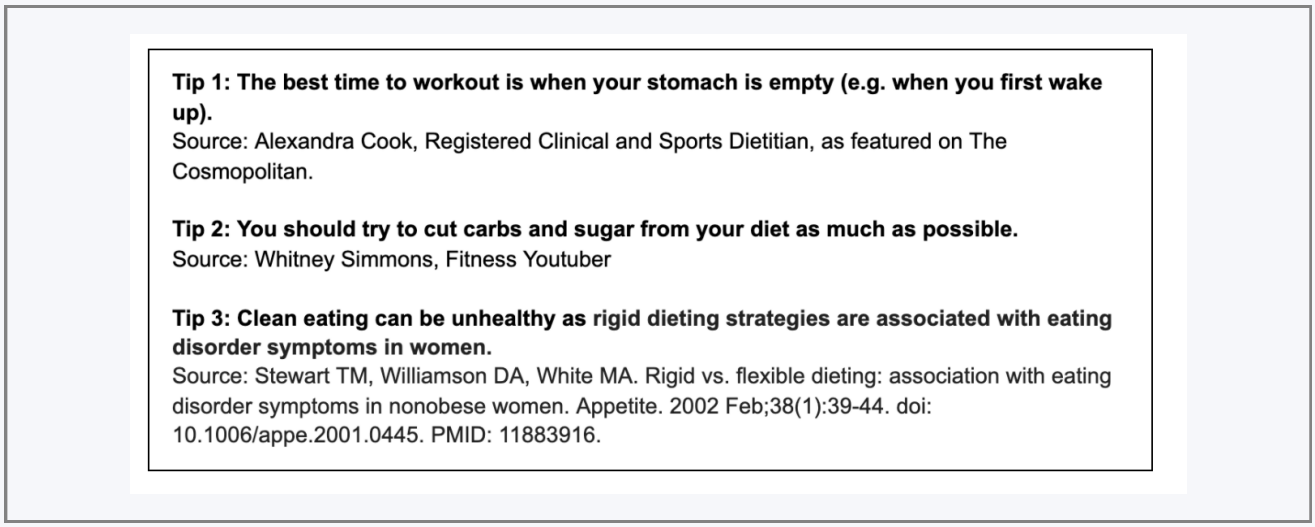
However, the user also raised concerns about not being able to physically complete the task and how this might potentially demoralize other users, as the mascot would not grow in this case. The user also commented that they were driven by curiosity and did not yet feel a deep personal connection to the mascot. As a result, they might be more prone to quitting the tasks halfway. We learned that building a connection between the user and the mascot takes more time and effort than previously anticipated.

Solution 3: Verified Channel of Fitness Tips

Lastly, we also had an idea of building a verified channel of fitness tips with links to scientific articles.

Experience Prototype 3: Fitness Tips Sheet

For our last prototype, we created a fitness tip sheet, with a list of fitness tips, cited with sources ranging from pseudoscience videos to scientific journal articles. We wanted to test the interviewee's sensitivity towards sources to **test the assumption that beginners would favor science-backed fitness tips over those that were not**. We had the user read through the fitness tips sheet and fill up a Google Form afterwards to rank the credibility of the fitness tips.



Tip 1: The best time to workout is when your stomach is empty (e.g. when you first wake up).
Source: Alexandra Cook, Registered Clinical and Sports Dietitian, as featured on The Cosmopolitan.

Tip 2: You should try to cut carbs and sugar from your diet as much as possible.
Source: Whitney Simmons, Fitness Youtuber

Tip 3: Clean eating can be unhealthy as rigid dieting strategies are associated with eating disorder symptoms in women.
Source: Stewart TM, Williamson DA, White MA. Rigid vs. flexible dieting: association with eating disorder symptoms in nonobese women. Appetite. 2002 Feb;38(1):39-44. doi: 10.1006/appe.2001.0445. PMID: 11883916.

Figure 4: Experience Prototype 3 - Fitness Tips Sheet

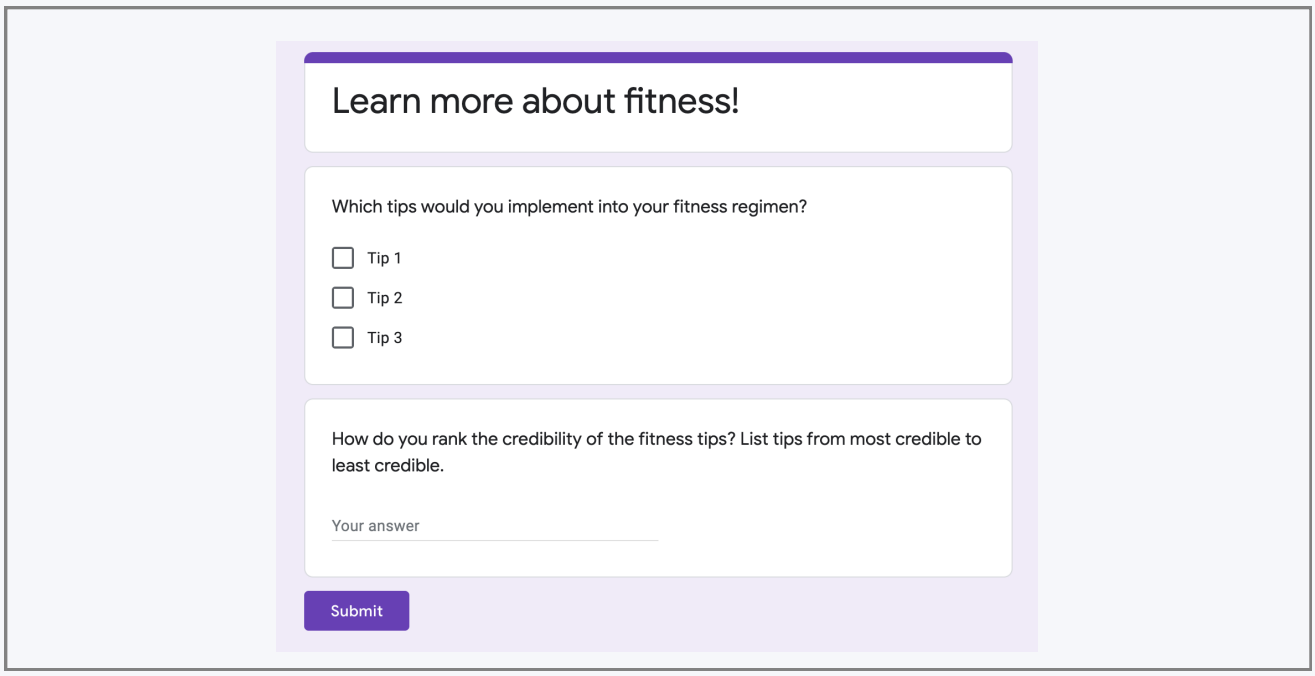


Figure 4: Experience Prototype 3 - Google Form to Rank Credibility

During the testing of the prototype, the user expressed that it is “good to know the sources behind each tip” and wanted to know a more in-depth scientific explanation behind each tip.

However, the user didn’t understand the difference in credibility behind each source and ended up ranking the least credible source as the most credible. From this, we learned that explaining the science behind each tip in an accessible manner is more important than merely citing the sources of each tip.

Design Evolution

Final Solution & Rationale

Based on findings from our experience prototypes, we found that the assumptions underlying the cute fitness mascot solution and fitness channel solution were questionable at best, and false at worst. On the other hand, our experience prototypes had validated the assumptions underlying our idea of an app that helps users find helpers at the gym. We found that experienced gym-goers were indeed willing to dole out advice at the gym and beginners were willing to ask volunteers for help.

Given the validity of assumptions, creating an app that matches volunteers (“Spotters”) with gym beginners appeared to be the most promising.

Tasks

Simple Task: Get Matched with a Spotter

Finding a Spotter is the core functionality of the platform, and therefore we believe that getting matched with a Spotter would be one of the most frequent activities for our users. For that reason, we chose this as our simple task. Our needfinding also showed that users wanted to find a Spotter quickly, without having to go through the mental process of analyzing different choices and making a decision on the spot.

Moderate Task: Browse Available Spotters

With that being said, other users also mentioned during our needfinding that they would like to browse different Spotters, in the event that they do not like the suggestions offered by the app. Some users also mentioned they wanted to be able to control who they get help from. We chose this as a moderate task as it still allows the user to find a Spotter, but with more time and mental effort.

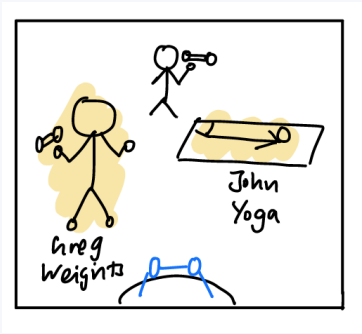
Complex Task: Endorsing Spotter after Completing Session

We decided that beginners should be able to publicly endorse Spotters for their skills on the app so that other beginners can understand more about the Spotter's strengths and areas of focus. Our needfinding interviews found that users wanted to learn more about other users' experiences with the Spotter to inform their decision of whether to approach the Spotter or not. We categorized this as a complex task because compared to the previous two tasks, it isn't necessarily a part of the app's core functionality of finding a Spotter.

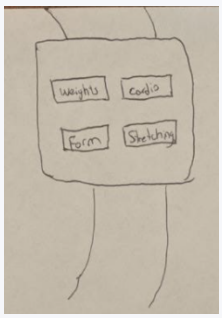
Initial Sketches

After deciding on our final solution, it was time to start designing the application.

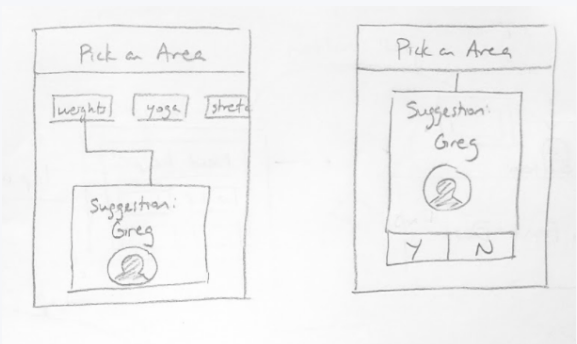
During the stage of initial sketches, we brainstormed five design directions and created sketches, including mobile applications, smart watch applications, and VR. After analyzing the feasibility of each design idea, we decided to proceed with the mobile application as it was accessible, intuitive, and more importantly, inconspicuous for beginners who don't want to stand out from the crowd.



VR Sketch



Wearable Application Sketch



Mobile Application Sketch

Low-Fi Prototype

We storyboarded our three tasks and used Marvel POP to create our low-fi prototype to facilitate user testing. At this point, we decided that our complex task is to endorse a Spotter following a Spotter session and this is reflected in the sketches below.

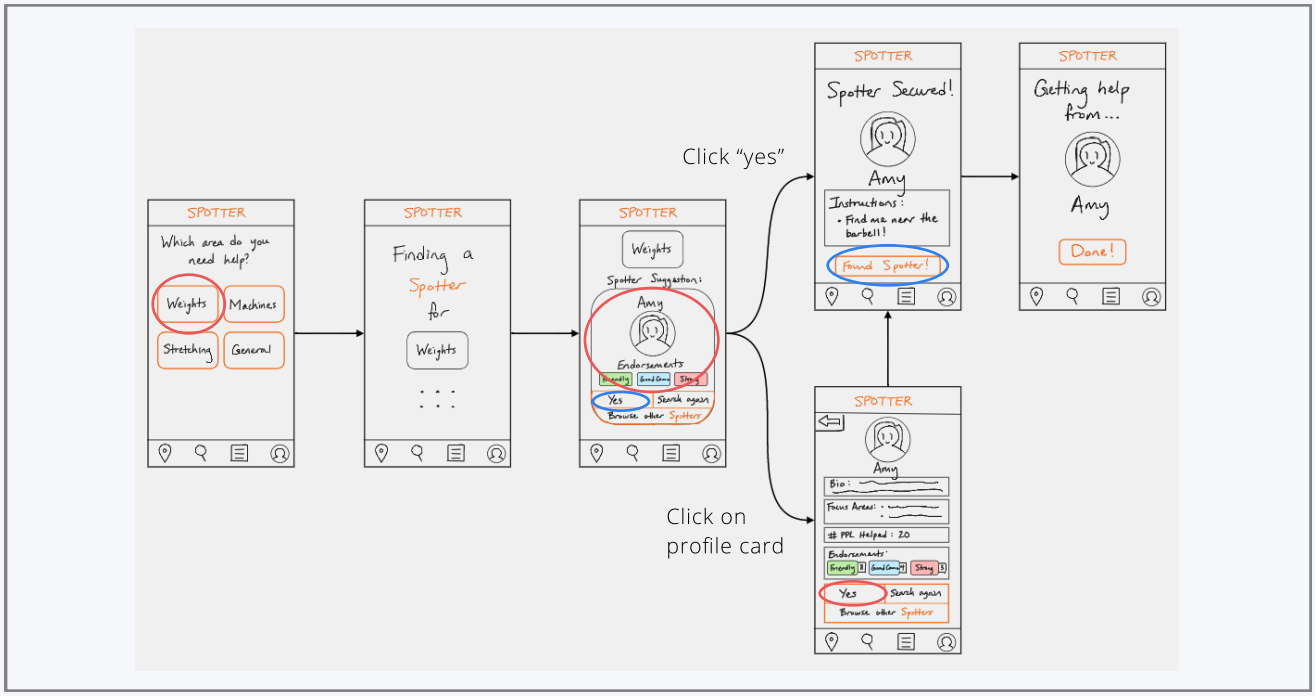


Figure 5: Initial Sketches, Task 1 - Getting Matched with a Spotter

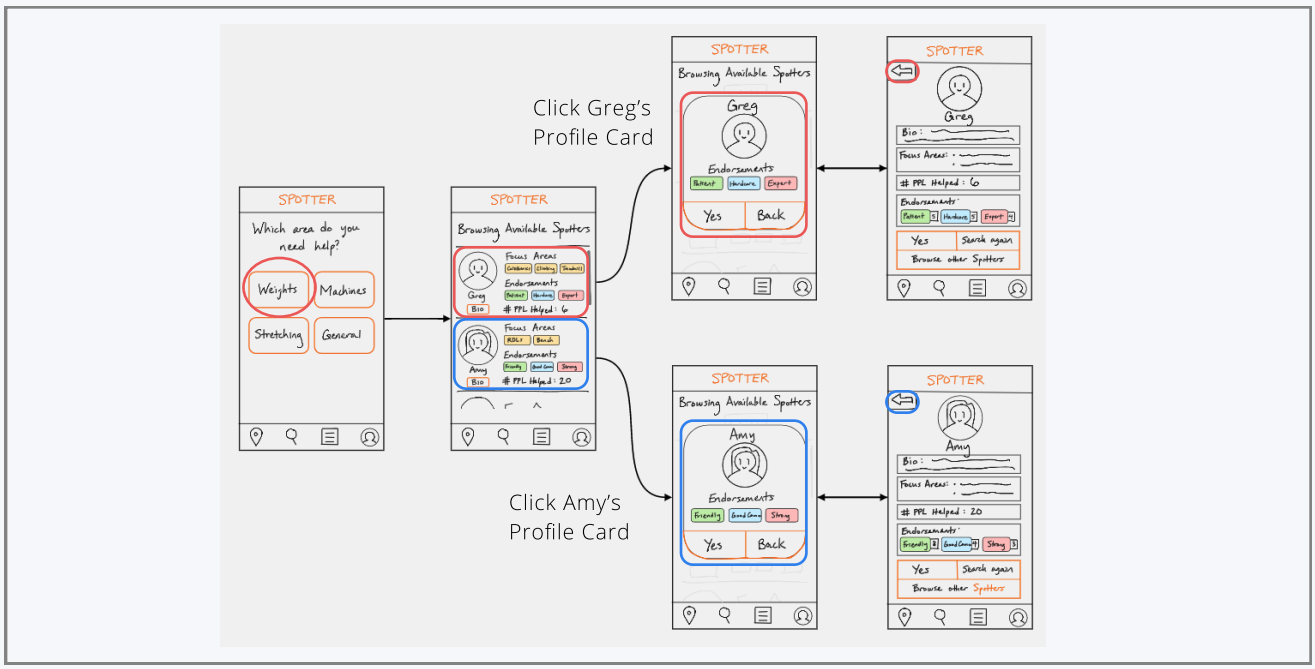


Figure 6: Initial Sketches, Task 2 - Browsing Available Spotters

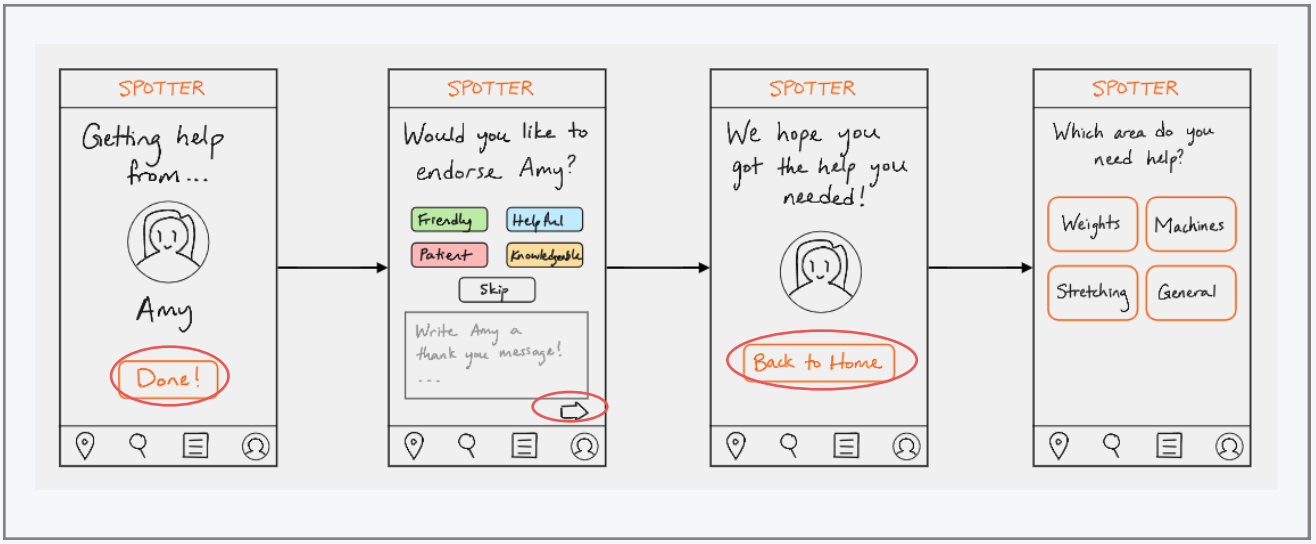


Figure 5: Initial Sketches, Task 3 - Endorsing Spotter AFter Completing Session

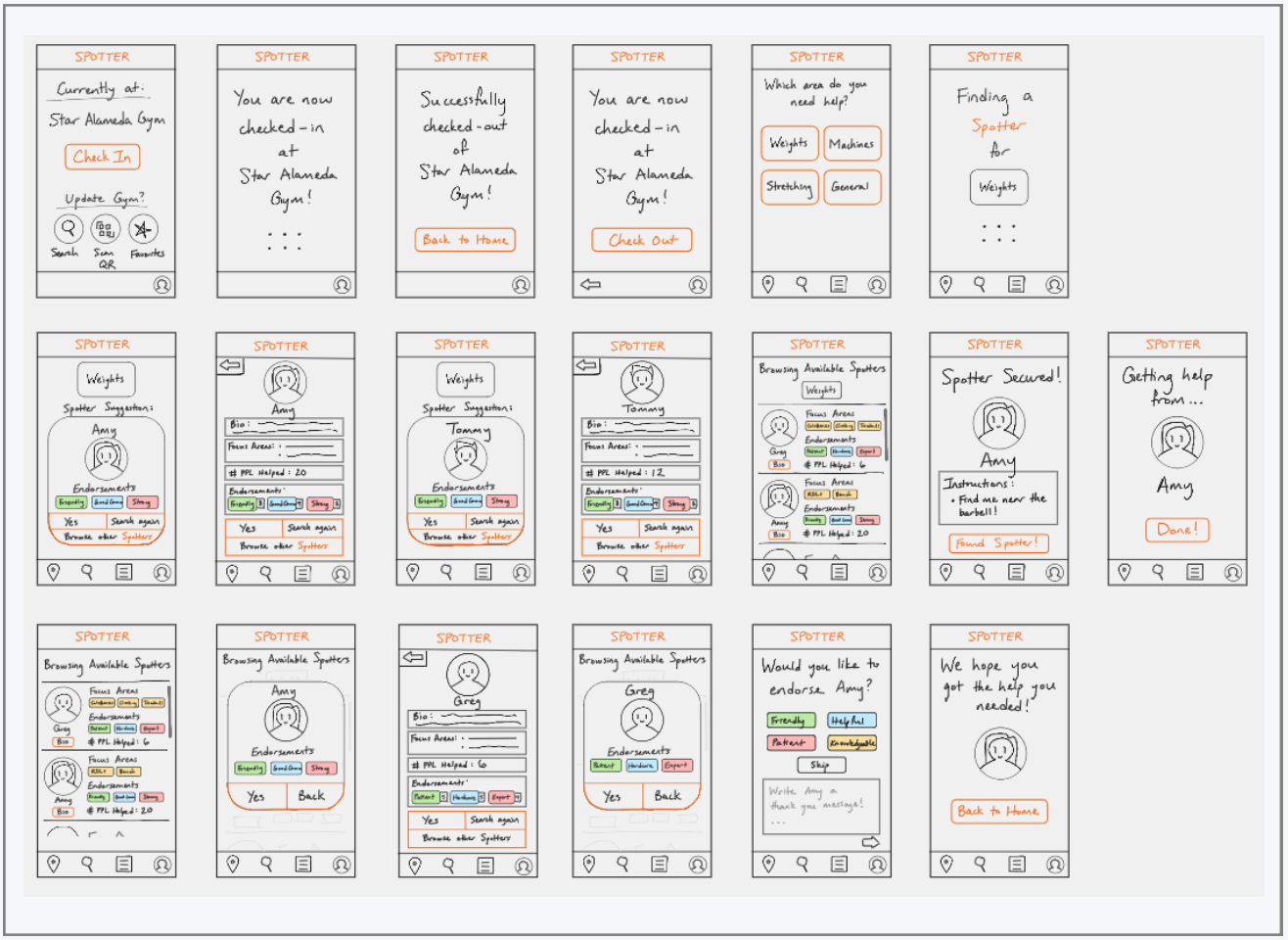
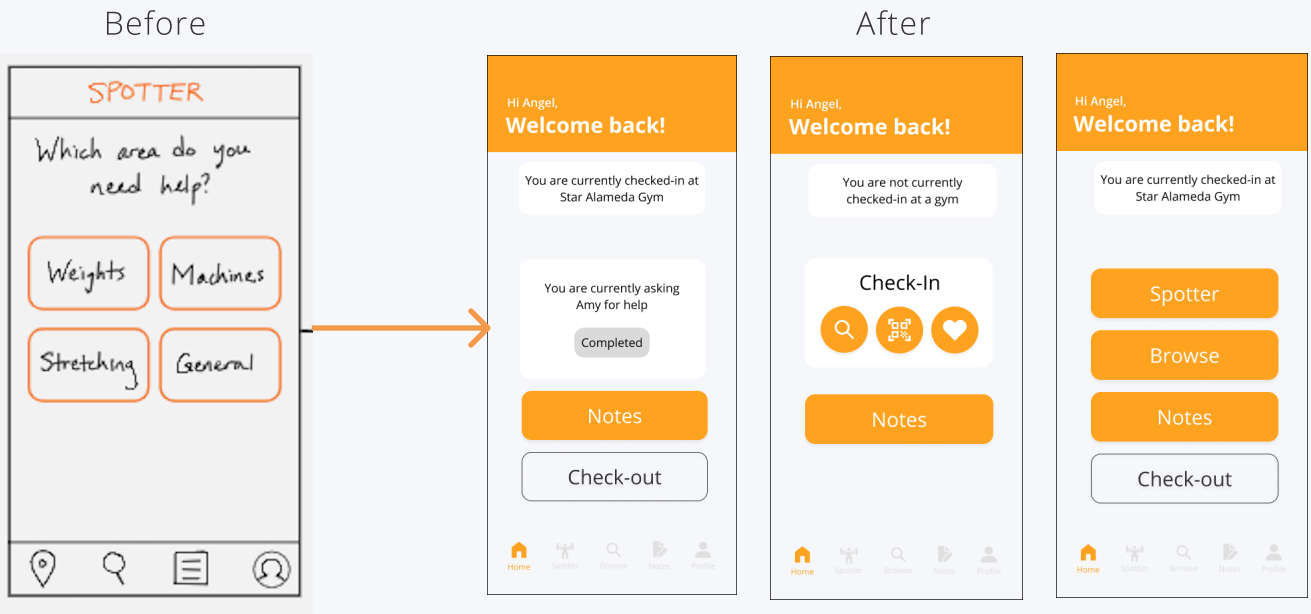


Figure 5: Initial Sketches, Low-Fi Prototype - Entire System

We deliberately sourced for participants that had varying levels of experience at the gym to capture the different types of “gym beginners” that exist on a spectrum. They gave us good feedback which led us to make three major changes to the app design during the medium-fi prototype stage.

Major Changes from Low-Fi to Medium-Fi Prototype

Change 1: Adding of Home Screen

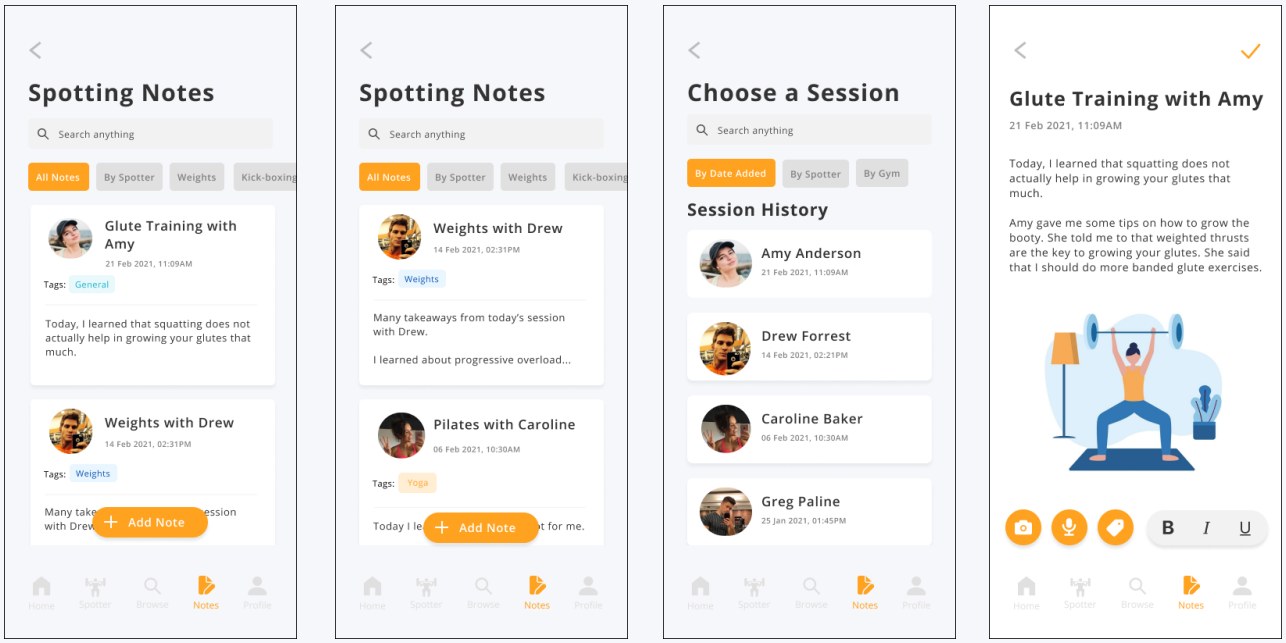


In our initial sketches, the first screen of the “Get Matched with a Spotter” task acted as the home screen. There was no centralized home screen where the user could see their check-in status or navigate to other parts of the app. Our usability test on the low-fi prototype reveals that most participants took a roundabout way to browse spotters at the gym. Users also felt lost at the end of a task flow as there was no home page to ground the users better.

Therefore, in our med-fi prototype, we decided to add a home page where the user could navigate to other features of the app. The home page would also update itself based on the user’s past activities to show them relevant information at any one point in time.

Change 2: Changing Complex Task from Endorsing Spotter to Adding Notes

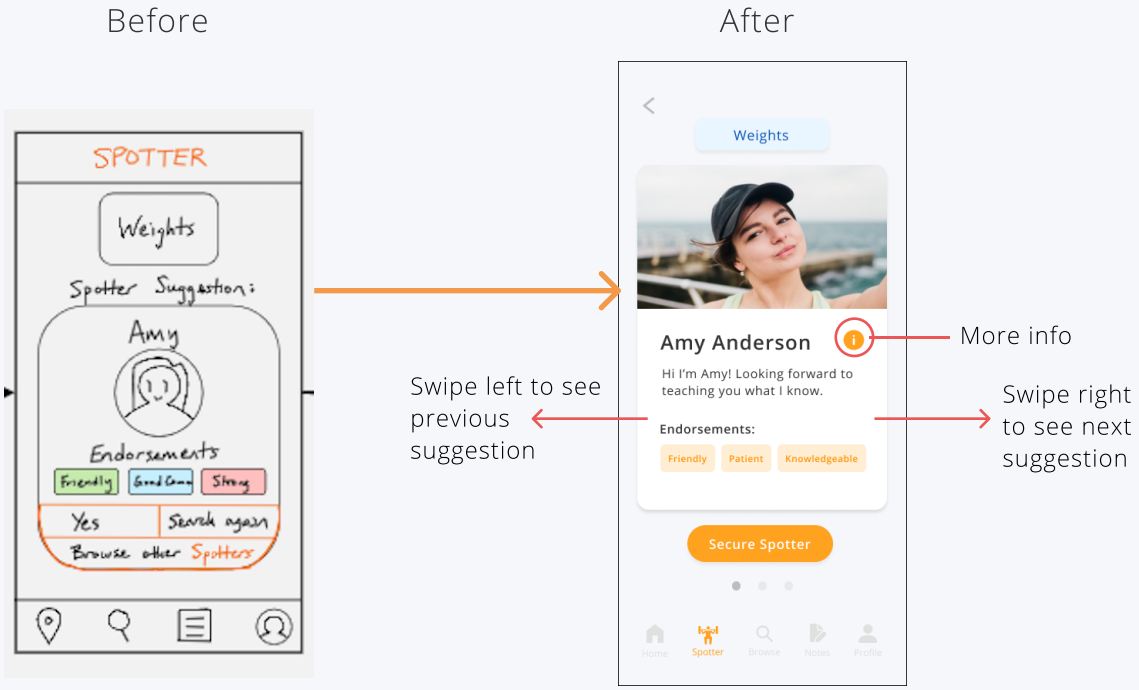
After



Before, our complex task was to endorse the Spotter after the session was completed. There was no feature where users could take down notes. During the usability test, we also realized that endorsing a Spotter followed right after the Simple Task of getting matched with a Spotter; it was not a separate task in and of itself.

Following our mission of empowering beginners at the gym with knowledge, we chose taking notes for future reference as our new complex task as users might want to record their learnings and reflections after completing their session with a Spotter. From our Experience Prototype testing, we found that users would prefer to help themselves first before asking others for help. With this note-taking function, users can look back on what they have learned in previous sessions if they meet the same issues in the future, rather than having to ask the same Spotter for help.

Change 3: Suggest a Spotter Card Revamp



In our low-fi sketch, the Spotter profile cards had three buttons the user could interact with: (1) Yes, (2) Search Again, and (3) Browse Other Spotters. However, during our usability tests, users thought that the "Search Again" button would bring them back to the start of the task flow instead of bringing up another suggested Spotter. The "Browse Other Spotters" button is also redundant given the Browse button on the bottom navigation bar. Lastly, users found it unintuitive to click on the Spotter's picture to go to the Spotter's extended profile page.

To fix this, we removed the "Search Again" button and replaced it with a swipe function, where the user can swipe left to see another suggestion, or swipe right to see the previous suggestion. We also replaced "Yes" with "Secure Spotter" for greater clarity, and removed the 'Browse Other Spotters" button as we found it redundant. Lastly, we added an info button to clarify to the users that they can click it to see more info on the Spotter's extended profile page.

Major Usability Problems Addressed

After developing our medium-fi prototype, we sent it off for heuristic evaluations and received insightful feedback on how to improve our design for the high-fi prototype.

Based on our severity 3 and 4 violations, we decided to make the following changes:

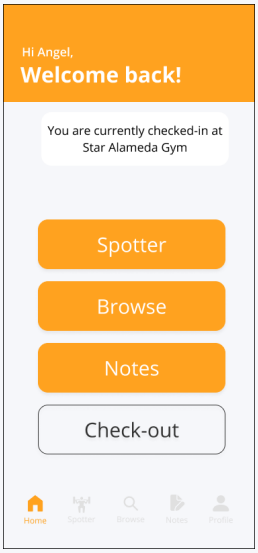
Problem 1: “Spotter” and “Browse” buttons on Home Page Unclear and Redundant

Type: H1 (Visibility of Status), H2 (Match between System and Real World)

Violation: It is unclear what the difference is between the “Spotter” and “Browse” buttons and functions. It is not obvious that the user is being matched.

Fix: Changed the wording of “Spotter” to “Find Match” on the bottom navigation bar and created new home screen without “Spotter” and “Browse” buttons as they are redundant and cause confusion since functions can be accessed from the navigation bar.

Before



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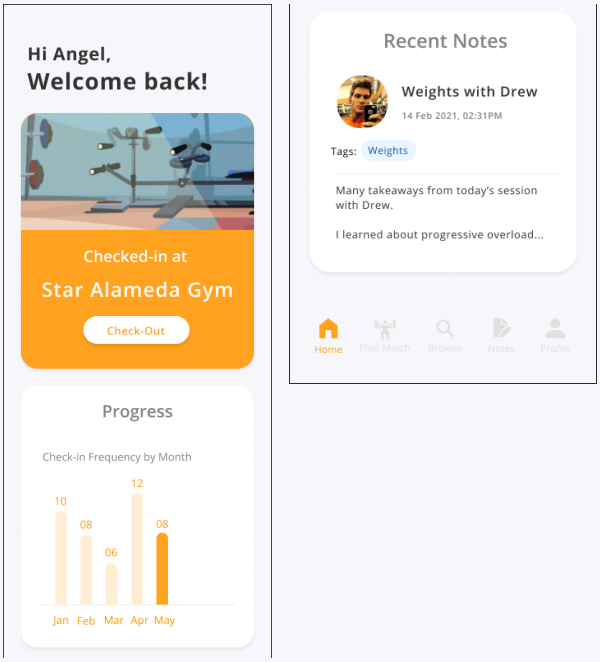


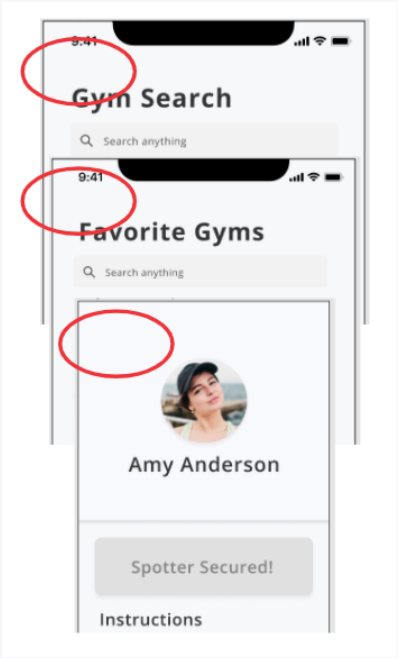
Problem 2: No Back Button on Multiple Screens

Type: H3 (User Control)

Violation: There is no back button if a user accidentally clicks search gyms at the check-in stage, so there is no way for the user to go back without clicking to notes then back to home.

Fix: Added back buttons where necessary.

Before



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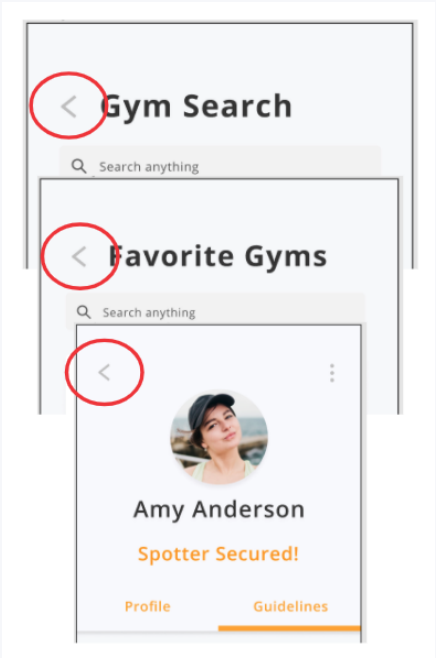


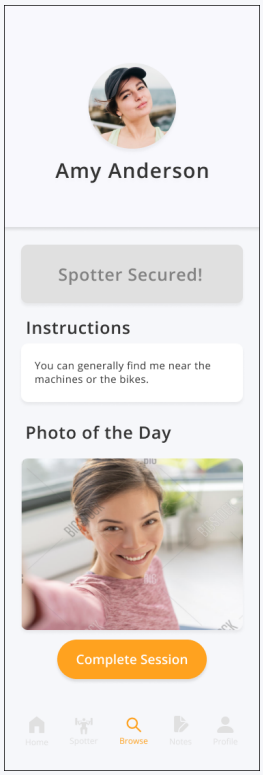
Problem 3: User is Unable to Back Out of a Secured Spotter

Type: H3 (User Control)

Violation: Once the user has secured a spotter, there is no way for them to go back if they made a mistake and they are forced to complete the session and submit feedback.

Fix: We added a back button to the Secured Spotter screen, along with a pop-up message that asks the user to confirm that they wish to cancel the session, in case the user had clicked on the back button by accident.

Before



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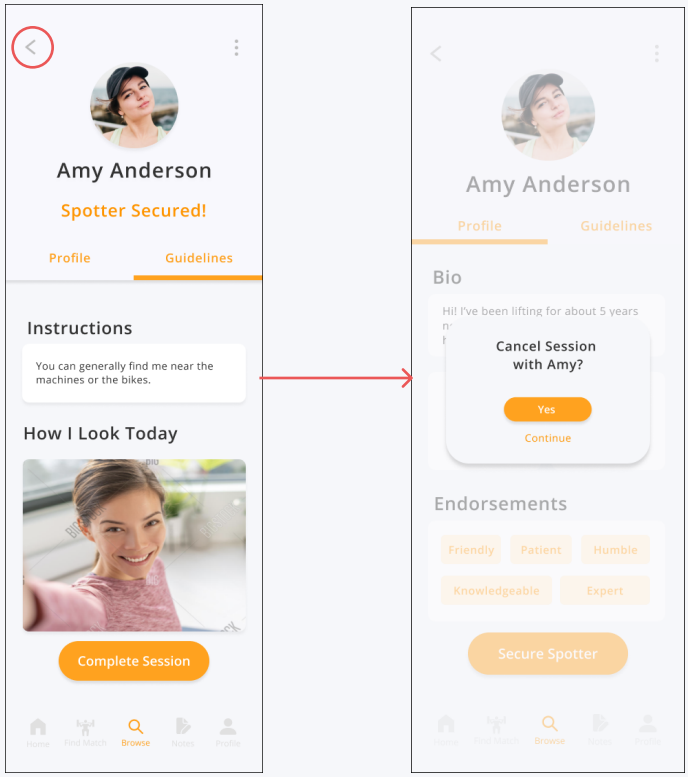


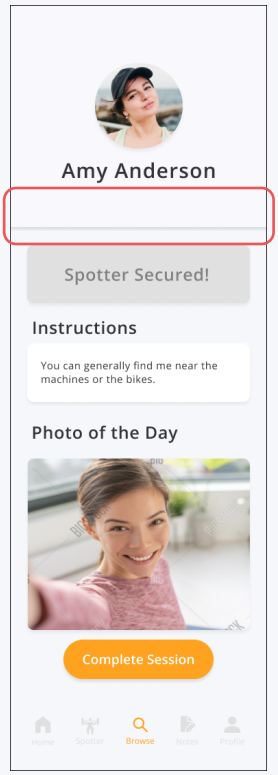
Problem 4: Cannot See Profile of Spotter after Securing Spotter

Type: H4 (Consistency)

Violation: When the user clicks “Secure Spotter”, the app shows only the Spotter’s guidelines and not the profile section. This is inconsistent with the other Spotter bio screens. The user would still want to see the profile if they need more information on the Spotter after securing them.

Fix: Added tabs to the “Spotter Secured” screen to include both profile and guidelines, like the other Spotter Bio screens.

Before



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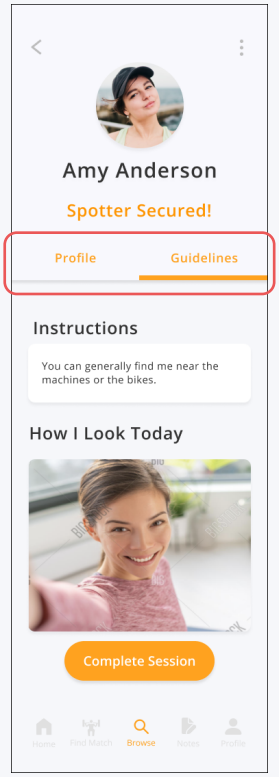


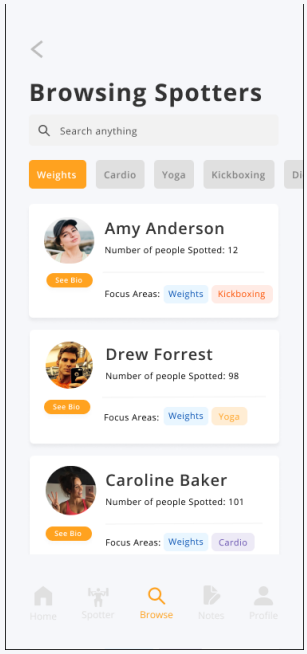
Problem 5: User Forced to view Spotter Bio Before They Can Secure Spotter

Type: H4 (Consistency)

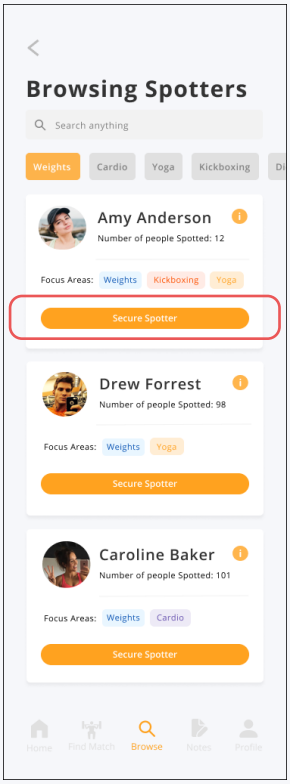
Violation: On the Browsing Spotters screen, the user must click the “see bio” button in order to get to a screen that has a “secure spotter” option. Thus, when users are scrolling through the spotters on this page, it is unclear how to actually secure the spotter from this screen. If the user doesn’t click see bio, then they won’t know how to reserve the spotter.

Fix: Added “Secure Spotter” button to each Spotter card in “Browse Spotter” screen.

Before



After



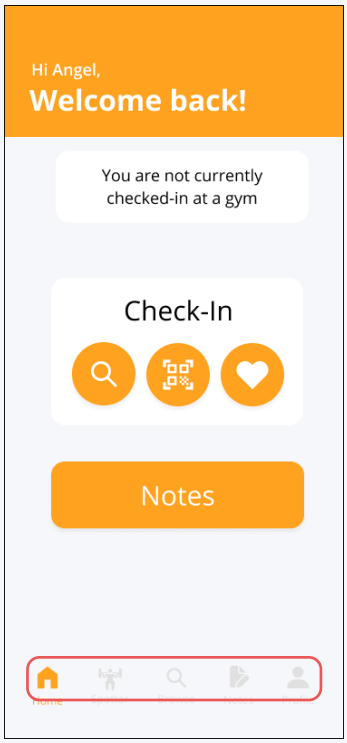
Problem 6: “Spotter” and “Browse” Button Greyed Out Before Check-in

Type: H4 (Consistency)

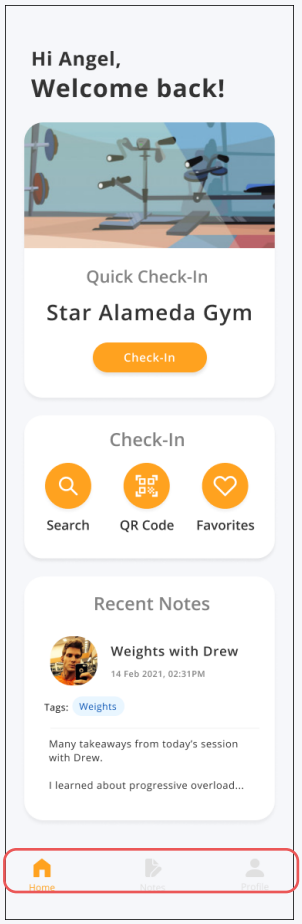
Violation: When the user is not checked-in, they are not supposed to be able to access the spotters’ and browse menu. When the user are checked-in, they can access the spotters and browse menu. However, the UI looks identical in both cases. Greyed out icons in the bottom navigation bar usually indicate clickable but not selected. However, when the user isn’t checked in for the spotter and browse menu icon, then greyed out seems to indicate that the icon is clickable.

Fix: Removed Spotter and Browse Icons from navigation bar when the user is not checked in.

Before



After



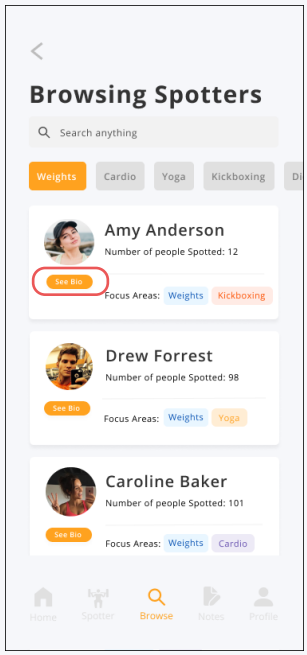
Problem 7: “i” Icon vs “See Bio” button to view more info

Type: H4 (Consistency)

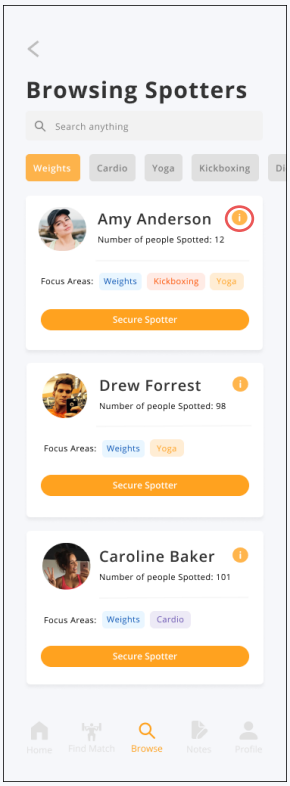
Violation: On the Browse screen, clicking on “See Bio” button leads to the spotter’s bio page, but on the screens for swiping through the spotters, the “i” button leads to the spotter’s bio page.

Fix: Replaced “See Bio” button on Browse screen to “i” icon, to be consistent with Spotter profile cards swiping screen.

Before



After



Problem 8: “See Bio” Button is Too Small

Type: H5 (Error Prevention)

Violation: The “See Bio” buttons on the Browse screen is too small. Users might not see the text on the button or might misclick it.

Fix: We decided to remove the “See Bio” button, as per the fix for Problem 6, but made sure that the “i” icon that we replaced it with has a large enough clickable area for our high-fi prototype.

Problem 9: Clickable Area for Buttons Too Small

Type: H5 (Error Prevention)

Violation: The clickable amount of space for each button throughout the app is often minimal and would require pressing exactly the right pixels. This will increase the number of slips that users make.

Fix: This violation came about in part due to the limitations of figma, as it did not allow us to increase the clickable space for vectors, for example. To overcome this limitation, we ensured that we had a large enough clickable area for every button in the high-fi prototype.

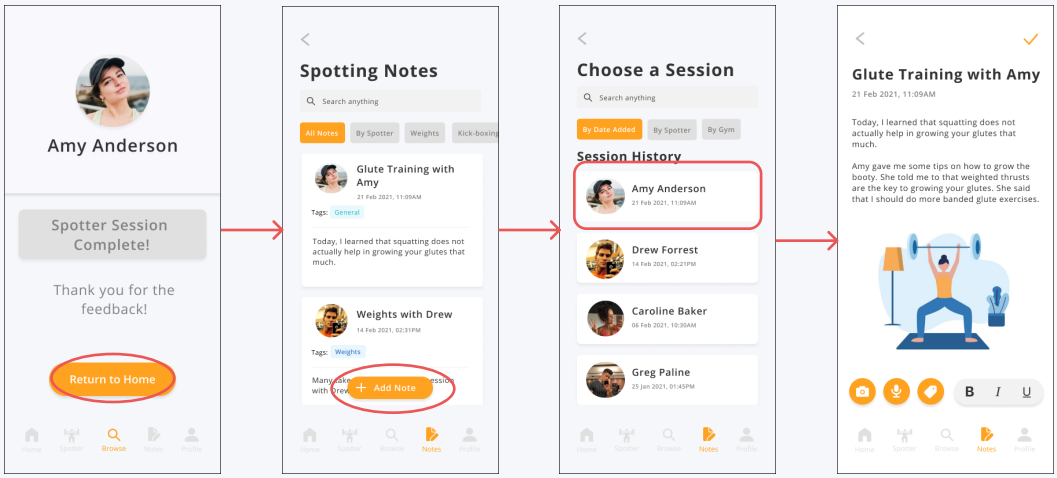
Problem 10: Separation between Notes Task and Spotter Session if user adds note

Type: H6 (Recognition not Recall)

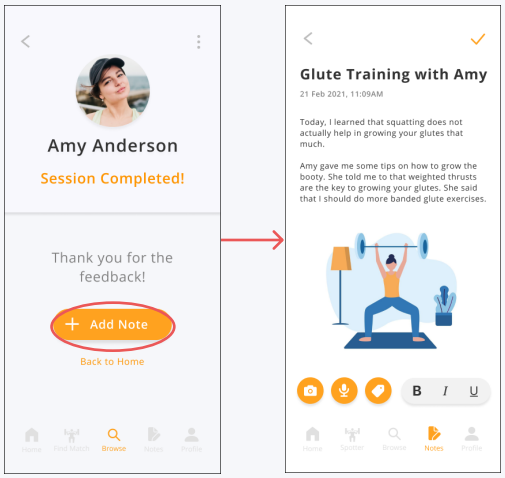
Violation: The notes screen is very separate from the rest of the actions on the app. A user may forget the name of the spotter they just used when they go to create a new note.

Fix: Added “Add Note” button shortcut on the Session Complete screen.

Before



After



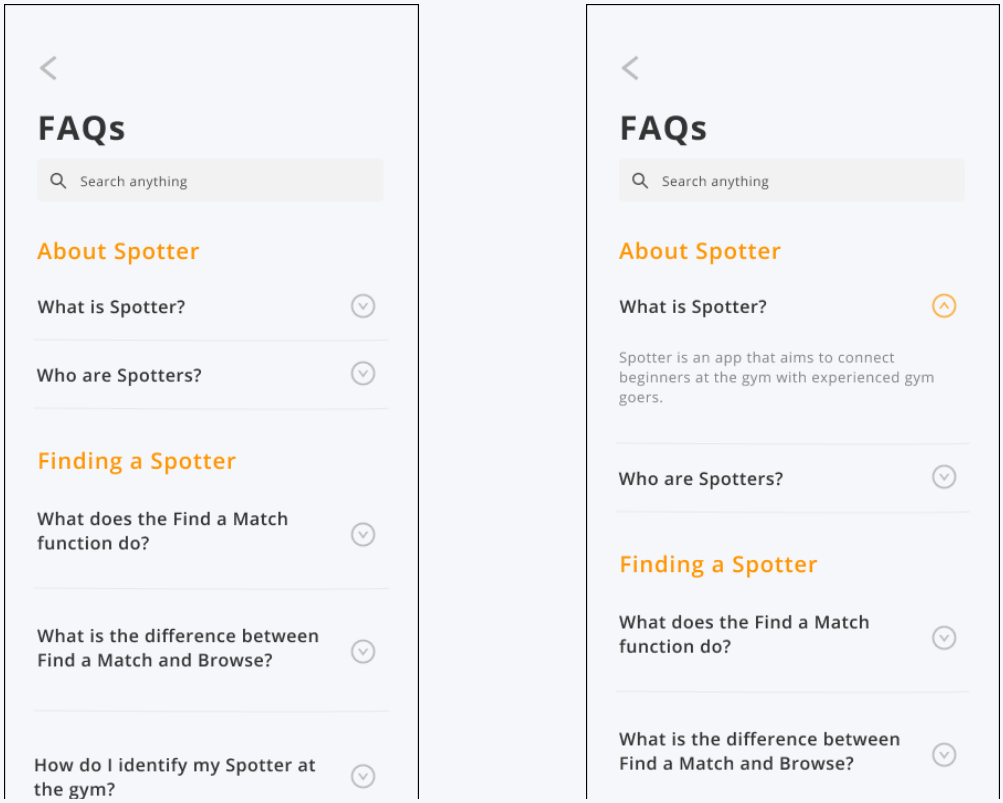
Problem 11: No FAQ Documentation

Type: H10 (Help and Documentation)

Violation: There is no FAQ or help documentation. Adding one might help users navigate and learn more about how to use the app.

Fix: Added a FAQ page that addressed basic questions about the app.

After



Due to several reasons, we decided not to implement the following changes:

Problem 12: No Emergency or SOS Button

Type: H2 (Match between system and real world)

Violation: Emergency button should be available in the scenario a user feels unsafe or is in immediate threat of physical harm while in a spotting session.

Reason: We found that this was not within the scope of our project, even though it is important for the safety of the user. More user research would be needed to determine if this is useful in the app's final implementation; though we hypothesize that the user would seek the help of a gym employee first in this situation.

Problem 13: Users are not able to provide negative feedback

Type: H2 (Match between system and real world)

Violation: Users should be able to provide negative feedback for the spotters as well, or to report the spotter for any violation for safety.

Reason: Similar to the previous problem, we found that this was not relevant to our main task flows, and we felt that negative feedback might disincentivize Spotters from volunteering their help. Reporting Spotters that violate community guidelines might be useful, but additionally, due to the limited time frame of the project, we have decided to not implement it for now.

Problem 14: Note Screen has a different background from other screens

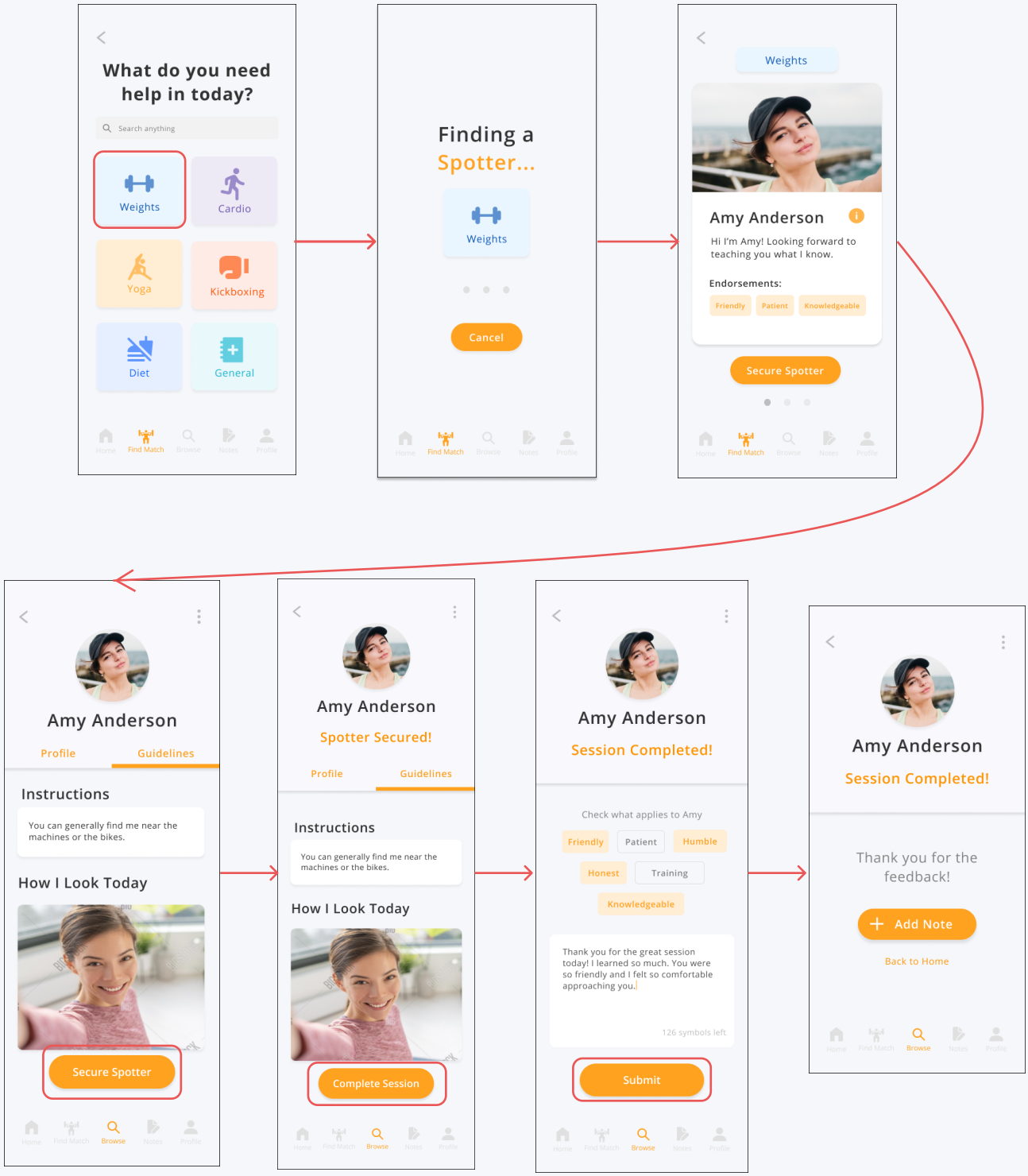
Type: H4 (Consistency)

Violation: The Create Note Screen is the only screen with a different background colour to the rest of the app.

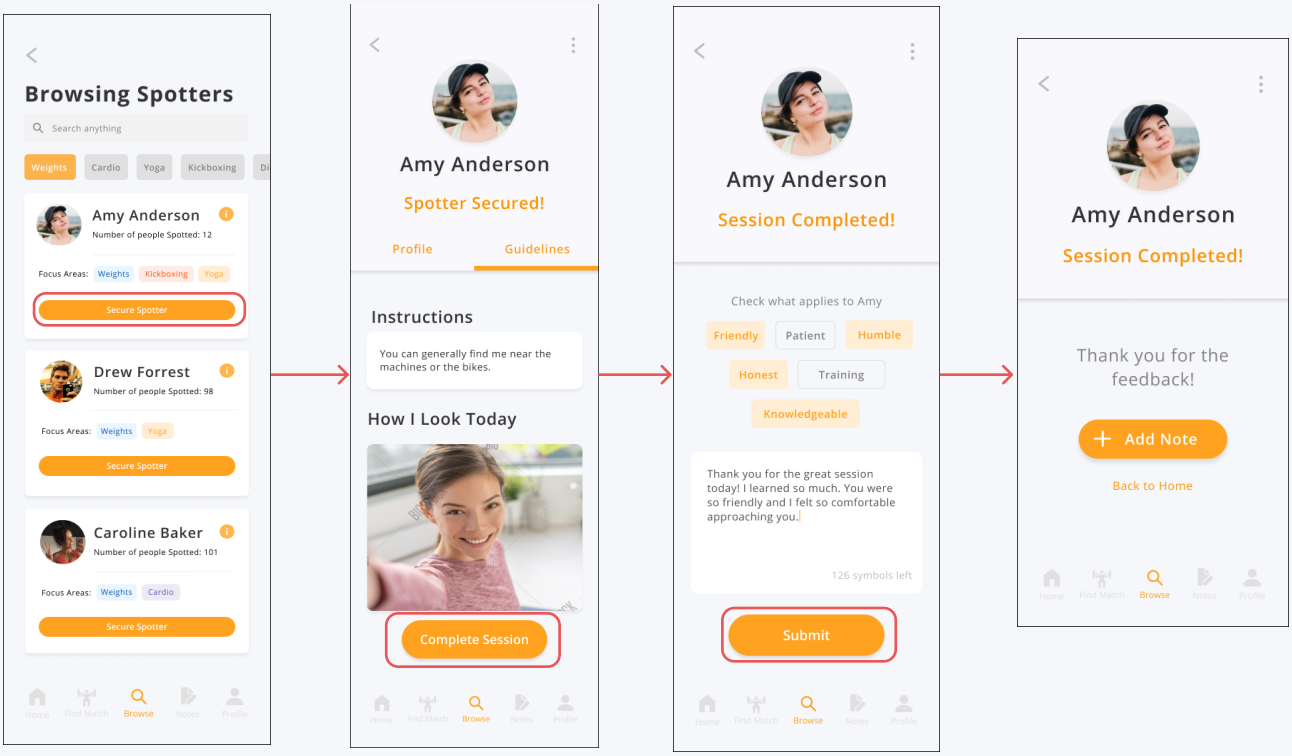
Reason: We decided not to change this as the white background color is intentional to indicate to the user that it is an editable text screen. As the text input box on the Endorsements Screen is white as well, we believe that the background color is consistent with the other elements in the app.

Final Interface Scenarios

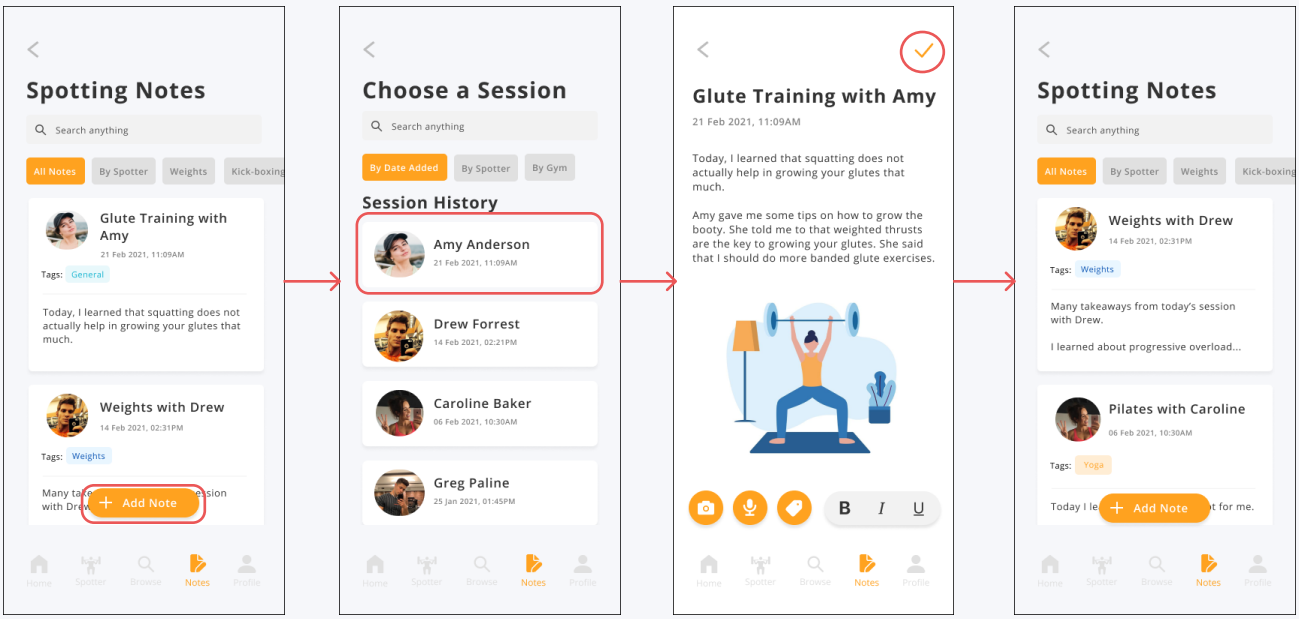
Task 1: Get Matched with a Spotter



Task 2: Browse Available Spotters



Task 3: Add Notes



Final Prototype Implementation

Tools

We used React Native (with Expo.io) and Firebase to build our high-fi prototype.

React Native was useful as it allowed us to build components that we could reuse them across many screens without having to build it again from the ground up every time we needed to use it. This was especially useful for Spotter as many screens contained identical elements, such as the profile cards, the browsing Spotter slots, and the buttons. React Native therefore helped us save a lot of time and ensured that the design was consistent across the app. Lastly, React Native allowed us to develop for both iOS and Android platforms which enables our app to be accessible for all users. One limitation of its versatility is that React Native cannot perform certain functions on iOS and Android platforms, and requires native developers to perform those extra steps. Fortunately for us, we did not run into those problems while developing our high-fi prototype.

Expo was extremely handy as it allowed us to test our application on different mobile devices. Being able to see our app on varying screen sizes helped us to ensure that our app looked consistent across all devices and that the design worked well for all screen sizes.

Firebase was also essential to the development of our app. Since the app displays user data that is constantly changing based on the type and number of Spotters that are available at the gym, we needed a database to store all this information. With Firebase, we also did not need to implement a session management system as Firebase took care of that for us. One limitation of Firebase is that if the app scales in the number of users and there are many users making requests to the server, Firebase can get expensive as it charges a service fee based on the number of requests.

Wizard of Oz & Hard-Coded Data

The Spotter matching process is an example of Wizard of Oz in the app. The app does not actually search for a Spotter but emulates the process of matching a Spotter for the user with the loading screen so that the user has a better feel for how the Spotter flow works as if they were using a real app.

In terms of hardcoded data, we hardcoded the Spotter information on the app; they are not reflective of real user data as we have not implemented the Spotter-facing part of the application. We also hardcoded the user's previous notes so that the notes page does not look empty and gives the user a feel for how the app would look like if it were populated with notes.

Summary

Being a beginner at the gym is awfully nerve wracking, and even when one has developed a habit of going to the gym, it can still be intimidating to ask others for help. Spotter comforts beginners with the knowledge that Spotters are there to help and guide them towards success. Over the course of 10 weeks, we designed, prototyped, and iterated Spotter to create a high-fidelity prototype with React Native. We are extremely grateful for everyone who has helped us along the way by giving us feedback and participating in our needfinding interviews, concept video, and heuristic evaluations.

If we had more time, we would implement the following features:

1. Check-in/check out feature
2. Fully functional search bar
3. Report Spotter function to report Spotters who violate community guidelines
4. Ability to add personal reviews and have them displayed on the Spotter's profile
5. New users should be able to walkthrough the app when they first sign up
6. Functionalize buttons to allow users to take a photo, add tags, record voice, and stylize text when editing/adding note
7. Analytics tracker that tracks how many times the user has checked-in to the app that week

We learned a lot about design thinking along the way by applying it to develop a real product and we are beyond excited to do more design work in the future!