

SkillSwap

A community of learners and teachers

Team:

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Problem

During our needfinding process, we found that many people felt discouraged about learning due to the inaccessibility of ways to learn topics of interest. In addition, people felt that they had skills they were willing to share, but did not really have an easy way to.

Combining these two problems, we found our solution: SkillSwap! With SkillSwap, we connect curious users who have something to teach with each other. These users would “swap” skills, and in this way everyone is a teacher and a learner. Through SkillSwap, people can learn what they want and teach what they want.



Tasks & Final Interface Scenarios




Task 1: Show others what you want to learn

This is our simple task because it is an essential part for all our users to find matches. When our users show others a skill they want to learn, there is a chance that someone else who wants to teach that skill finds them. This offers the opportunity for our users to become SkillSwap partners with each other, and thus can exchange skills.

Task flow (from left to right, top to bottom):

9:48 PM


Current Network

Partner	Teaching	Learning
 Ashley	Origami Intermediate	Guitar Intermediate
 Dave	Coding Beginner	Writing Beginner
 Justin	Coding Beginner	Fencing Beginner

My Network Notifications Search Users Message **My Profile**

9:51 PM

My Profile



Hello, my name is Alice. I look forward to swapping skills with you!

Alice
★★★★★ (4)

Can Teach	Wants to Learn
Beginner Coding	Beginner Writing
Intermediate Origami Singing	Intermediate Guitar
Advanced	Advanced Dancing

SEARCH FOR MORE SKILLS

My Network Notifications Search Users Message My Profile

10:05 PM

Search Results

NEW TRENDING POPULAR

Fencing 4 Users
Fencing is a sport in which...

Guitar 12 Users
Learn chords and melodies...

Juggling 2 Users
Become a talented juggler...

Algebra 8 Users
Become familiar with this...

My Network Notifications Search Users Message My Profile

10:05 PM

Skill Description

Fencing

Description

Fencing is a sport in which two competitors fight using Rapier-style swords.

Level

Beginner Intermediate **Advanced**

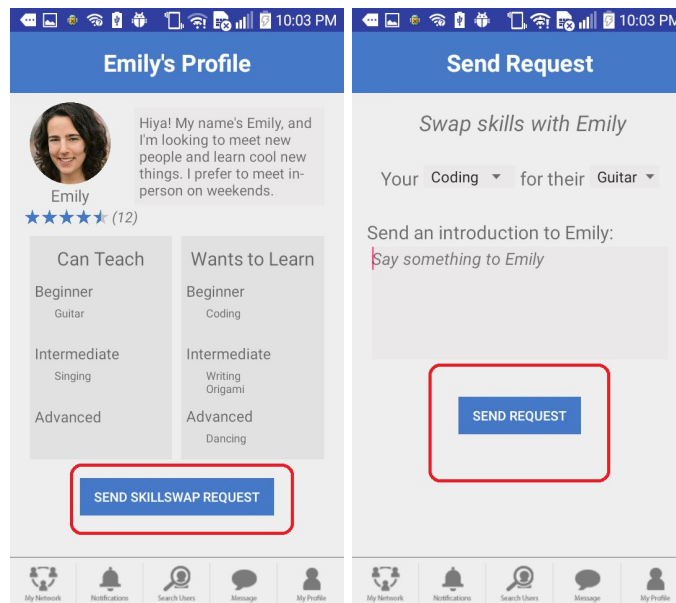
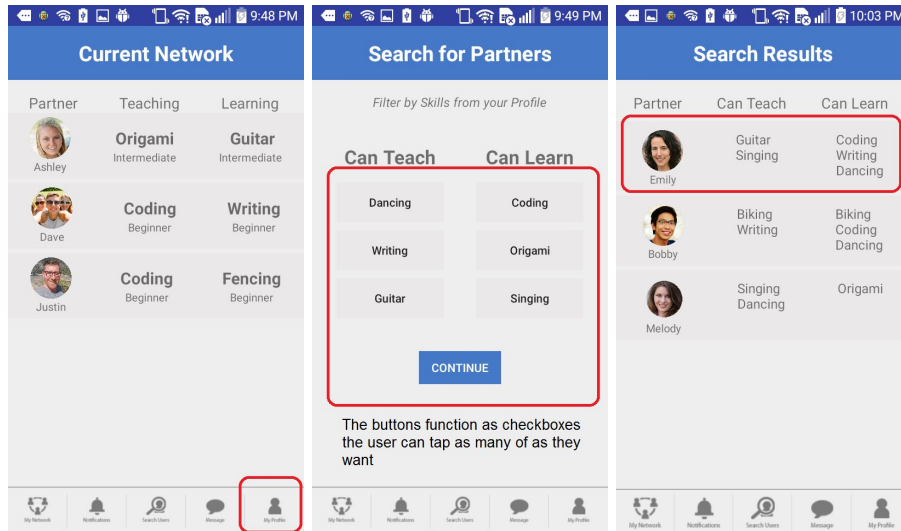
I can teach this I want to learn this

My Network Notifications Search Users Message My Profile

Task 2: Find a partner to teach and learn from

This is our moderate task and is essentially the core of SkillSwap. Our users need to connect with each other in order to exchange skills, therefore it is important for our users to be able to find SkillSwap partners.

Task flow (from left to right, top to bottom):

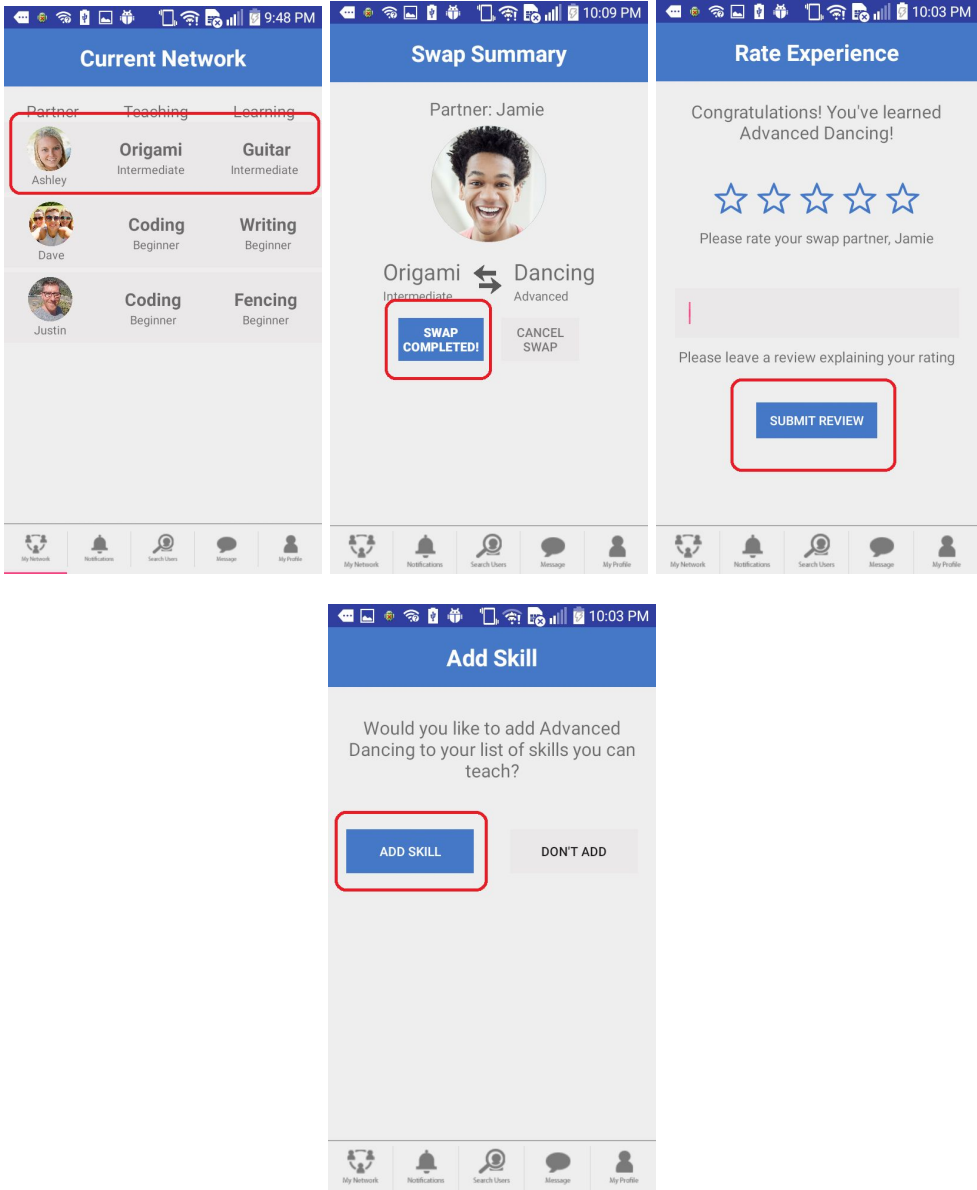


Task 3: Teach what you've learned from SkillSwap

This is our complex task and meant for power users. We chose this task because we want to encourage our power users to become teachers of skills they learn through

our app. This stems from the desire of our interviewees to share skills they found valuable. With this task, our users gain a multitude of skills that they can teach to other users with different skills, further propagating the spread of knowledge.

Task flow (from left to right, top to bottom):



The rest of task 3 would mimic the same as task 2, where a user finds another partner who wants to learn what you now know how to teach!

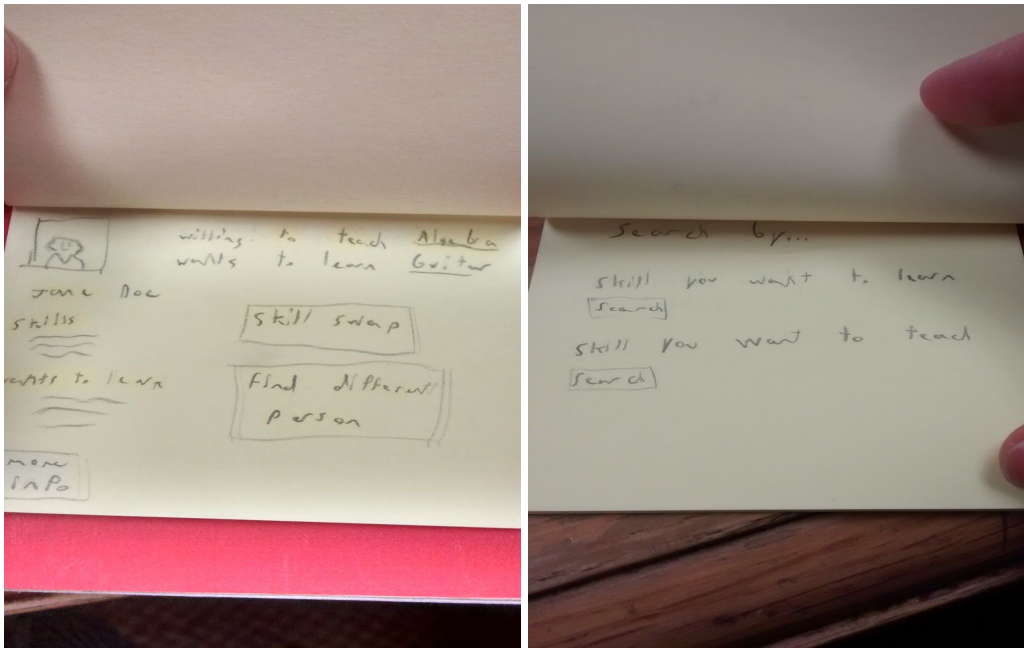
Design Evolution

We took 4 major steps in the iterative process for our app design:

1. Experience prototype
2. Low-fidelity prototype
3. Medium-fidelity prototype
4. High-fidelity prototype

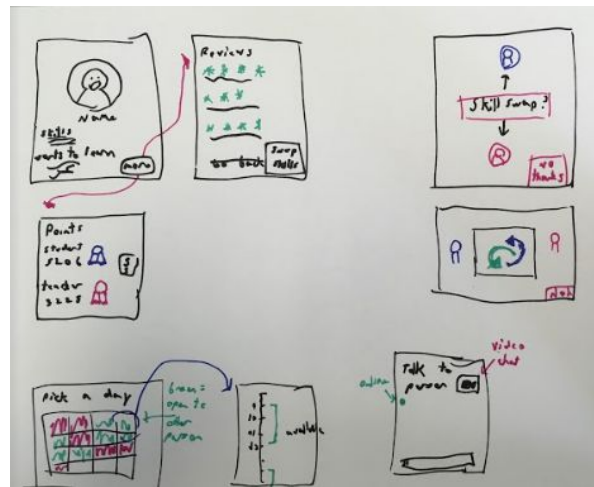
We created our experience prototype using a post-it pad. Our testers would progress linearly through the app on predetermined pathways. Every next step would be the following page on the post-it pad. Our designs were extremely simple: they were drawn in pencil and much of the text was left as scribbles.

SkillSwap Experience Prototype

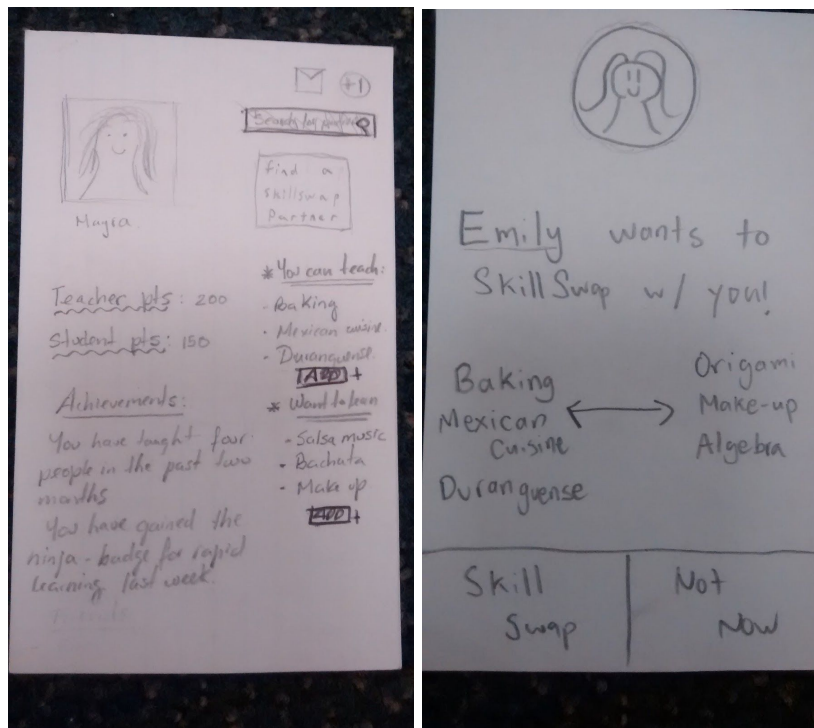


The above designs were primarily used to test the concept of our idea rather than to get design feedback. As a result, in the next stage (the low-fidelity prototype) we merely added complexity to the app's features and more detail to the design of screens. First, we created rough sketches of how we envisioned our prototype to feel like, then we created storyboards and finally the low-fidelity prototype.

SkillSwap Low-Fidelity Prototype Sketches



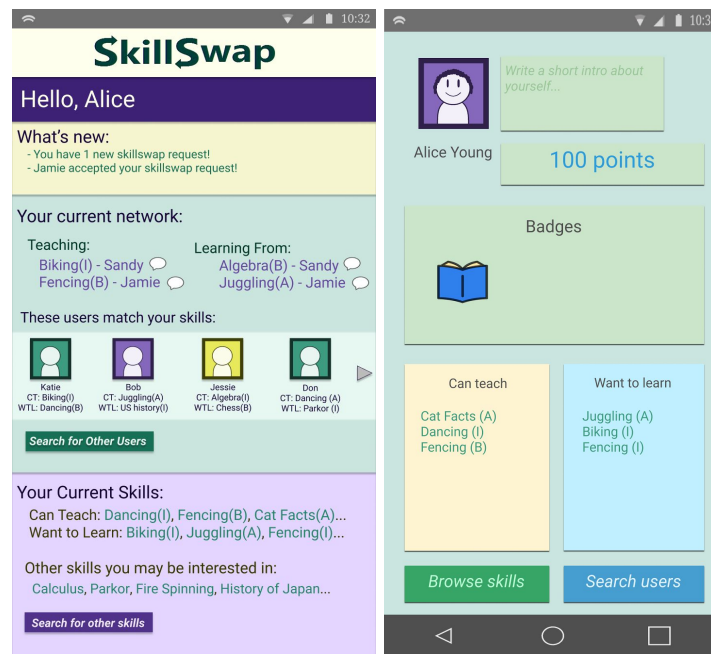
SkillSwap Low-Fidelity Prototype



Our low-fidelity prototype, created on index cards, was meant to test for both our project concept as well as some of the visual design. We received some feedback from our peers and the users who tested our prototype. There were issues regarding the amount of text in our app, particularly the main screen (which was the user profile). Also, there were issues where it was unintuitive to tap on a user's profile picture in order to access

that user's profile. We decided not to change this particular aspect since we assumed it would be more visible on a prototype not made out of paper. Regarding the issue with the text, we created a new main screen where users could have access to more features. The main user profile was delegated to simply show information about the user instead of having access to notifications and search features.

SkillSwap Medium-Fidelity Prototype

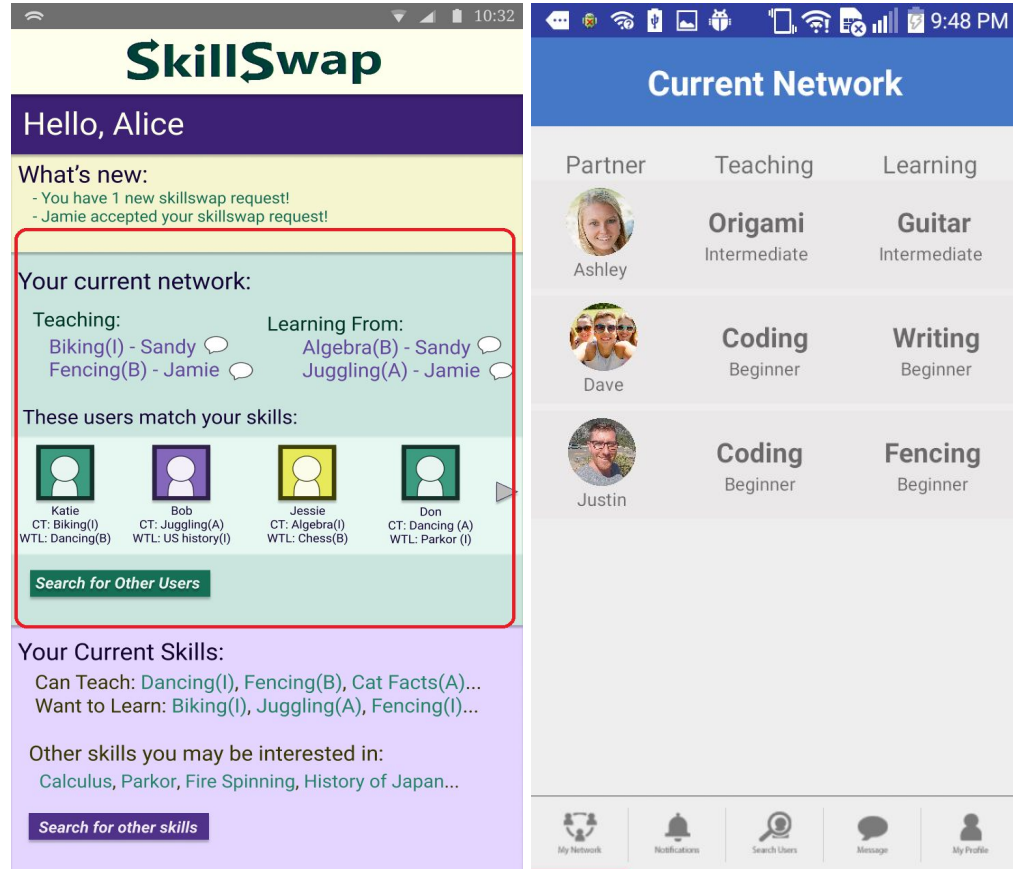


Using figma, we visually designed our medium fidelity prototype and functionally implemented it using marvel. We added color and more detail to every page. Above are the main screen and the main user's profile. Following this, our peers conducted a heuristic evaluation of our prototype which we address in the following section for our high fidelity prototype.

Major Usability Problems Addressed

1. H2-8. Aesthetic and minimalist design [Severity 3]
 - a. It is not obvious that the “current network” section is the most important part of the main screen. There is also redundancy with the names (seeing Jaime twice) that adds to clutter.

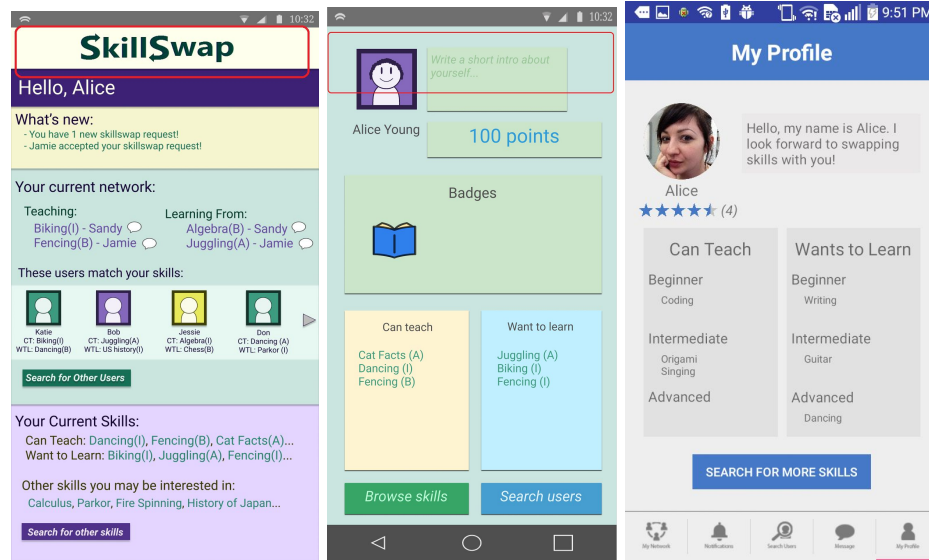
- b. Fix: We made the main screen exclusively the “current network” screen. We also adopted a table-like approach to displaying the current network to reduce the redundancy of the appearance of names.



2. H2-4. Consistency and standards [Severity 4]

- a. The navigation bar disappears in certain screens which breaks platform conventions for mobile apps.

b. Fix: We included a navigation bar for every single screen.



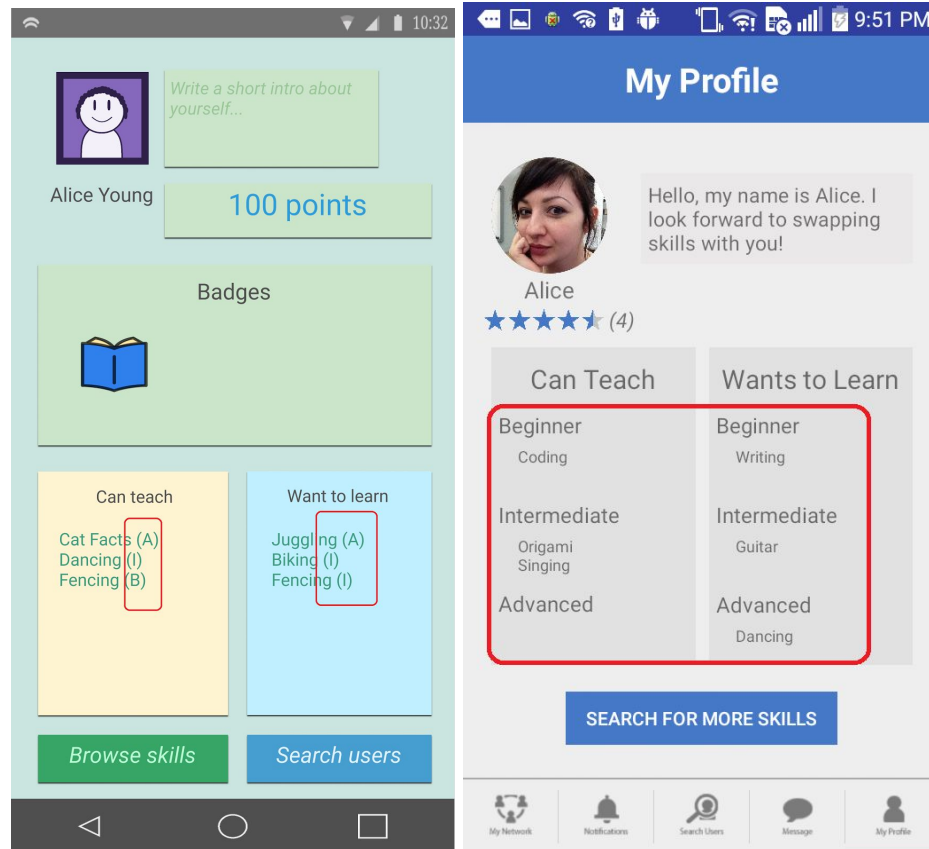
3. H2-7. Flexibility and efficiency of use [Severity 3]

- a. The “can teach” and “want to learn” cards in the user profile should allow for fast editing where users can drag and drop skills by order of importance.
- b. This feature was not implemented due to how expensive this implementation would be on time. It does not exhibit one of our core features so we opted to ignore this violation.



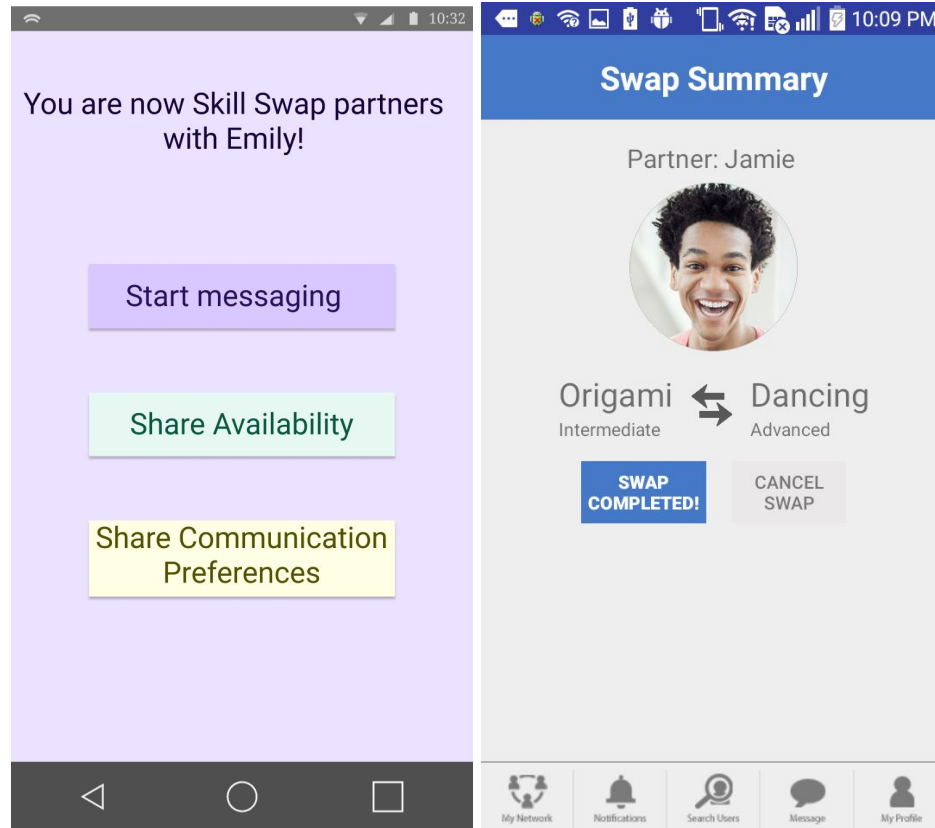
4. H2-6. Recognition rather than recall [Severity 4]

- a. The acronyms (B), (I), and (A) should not be used because they are too confusing and require the user to memorize the meaning. It is not intuitive what these acronyms stand for.
- b. Fix: In profile, we created subsections in the “can teach” and “want to learn” cards to remove these acronyms. In the current network, we used subtext to denote the full word for “Beginner”, “Intermediate”, and “Advanced”.



5. H2-3. User control and freedom [Severity 3]

- a. In the notification where another user wants to swap skills with you, there is no easy way undo the action or cancel the SkillSwap after accepting.
- b. Fix: We added to our "Swap Summary" page where users are free to cancel or complete SkillSwaps at any time.

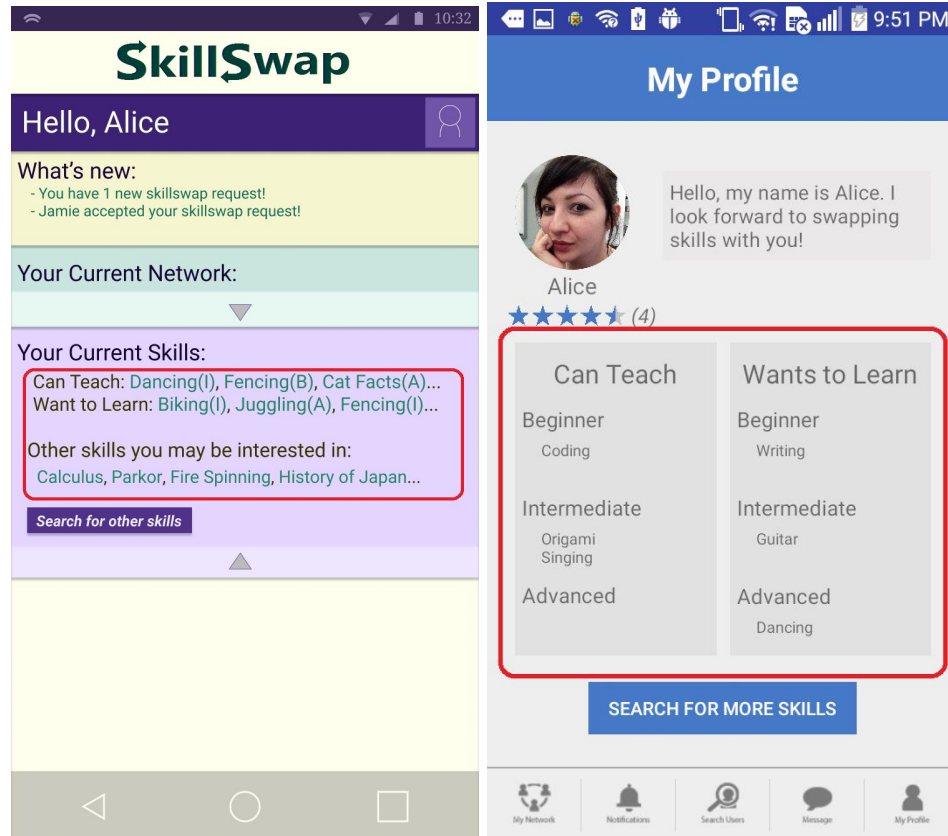


6. H2-3. User control and freedom [Severity 4]

- a. The way users view their matches is very abstracted and not direct. This is related to the first violation listed.
- b. Fix: We streamlined the current network display by using a table format.
*Refer to the first violation for relevant images.

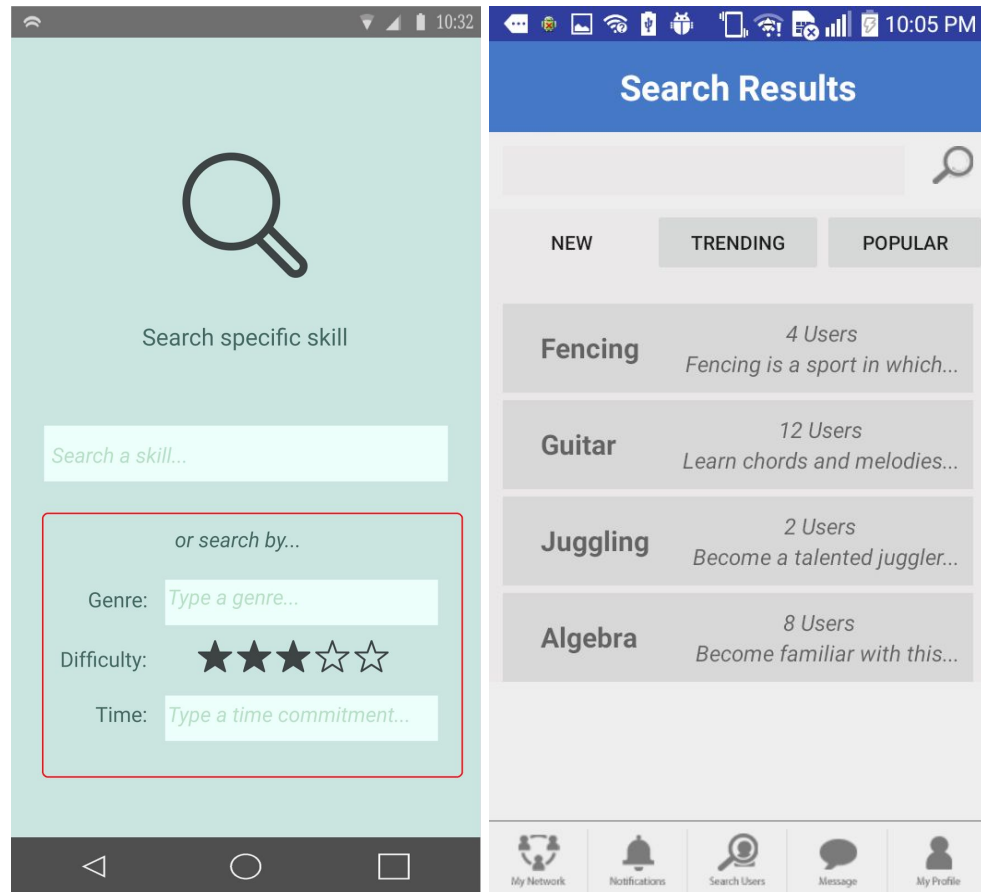
7. H2-7. Flexibility and efficiency of use [Severity 3]

- a. Under “your current skills”, none of the lists or skills are clickable.
- b. This was more of an issue with us not implementing the feature in our medium-fidelity prototype, but those links were meant to be clickable. That display has since been removed from our app however, by moving the relevant information to the user’s profile.



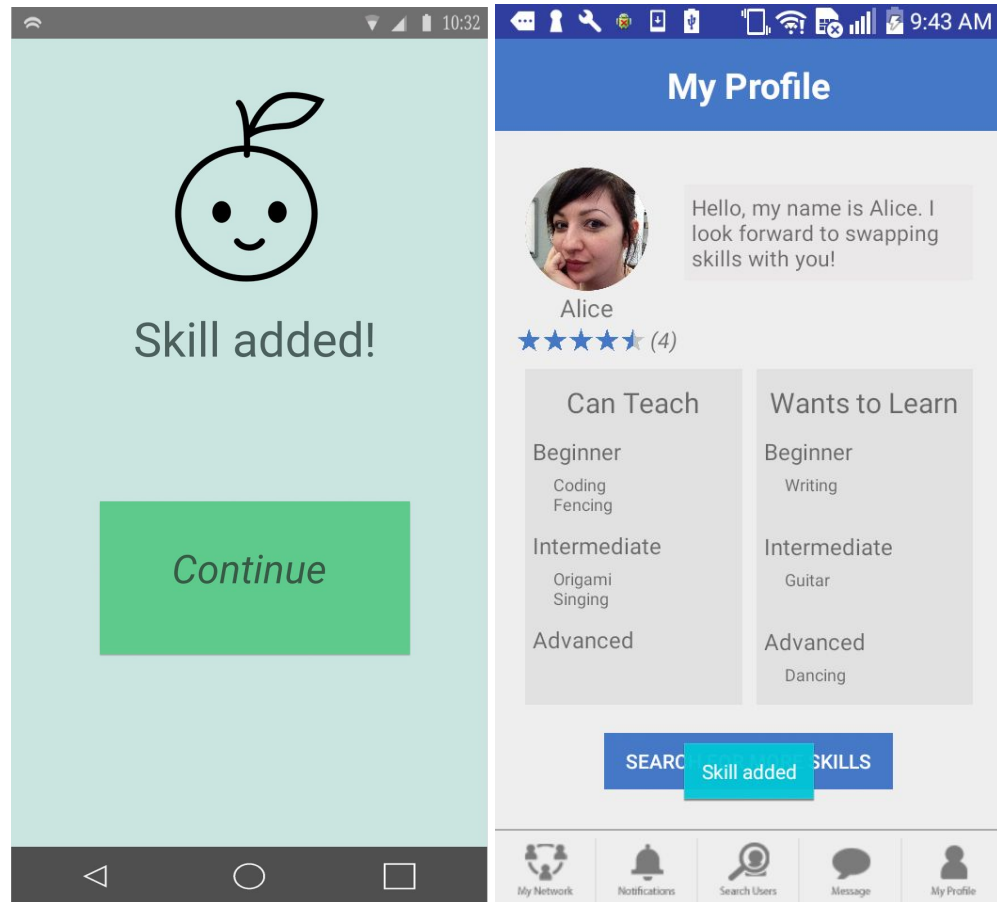
8. H2-4. Consistency and standards [Severity 3]

- a. The “or search by” extra widgets in the “search skills” page are out of place with the rest of the app since there are no mentions of “genre” or “time commitment” anywhere else in the app.
- b. Fix: These widgets have been removed from our app. We agreed with this idea and realized these widgets were unnecessary.



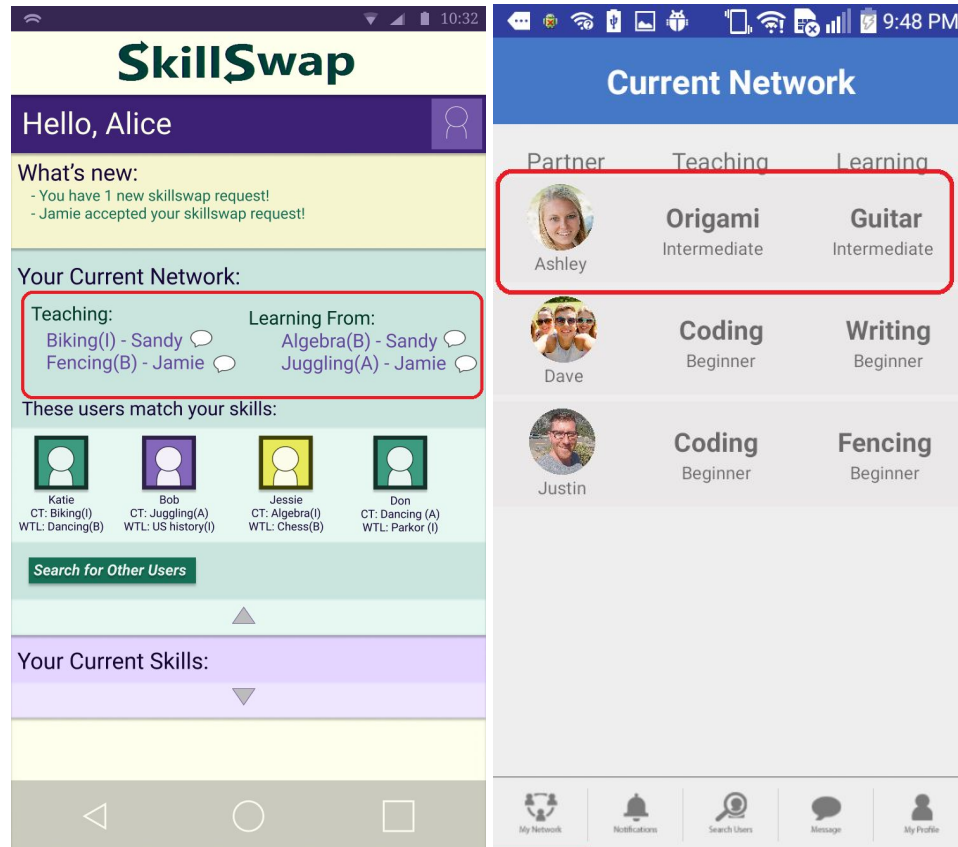
9. H2-1. Visibility of system status [Severity 3]

- a. In the “piloting” skill page, saying you want to learn the skill leads to a new page that says “skill added”. Users may not know what is going on.
- b. Fix: Adding a skill now directly leads back to the user’s profile with a toast that says “Skill added”. This makes the user understand that the skill is added to their profile.



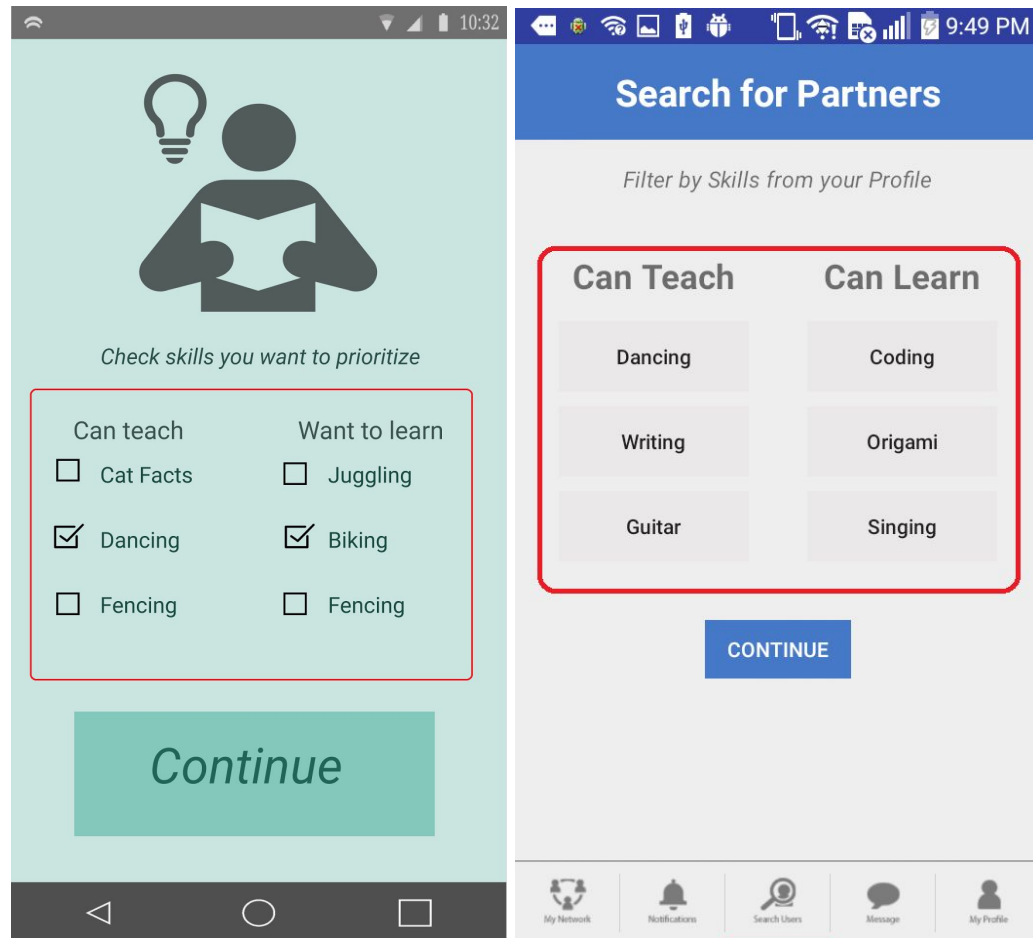
10. H2-4. Consistency and standards [Severity 3]

- a. On the main screen, clicking on both “learning” and “teaching” with Jamie leads the user to the same screen (the Swap Summary page). This may be confusing to users since they may not know what this means.
- b. Fix: With a table view of the current network, there is now only one link, and that leads to the “Swap Summary” screen. This eliminates the aforementioned user confusion.



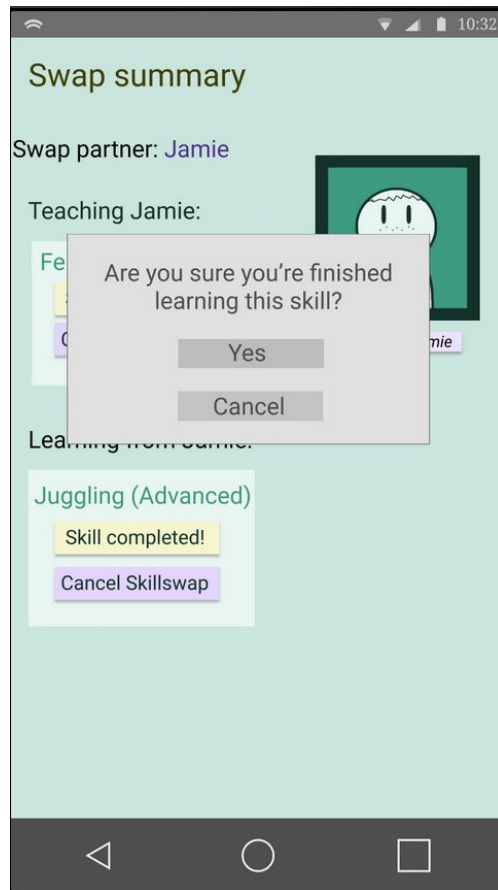
11. H2-7. Flexibility and efficiency of use [Severity 3]

- a. In the “Search for Other Users” screen, expert users would not be able to prioritize which skills they want to learn. They are also unable to make changes on the fly.
- b. We did not do anything to change this because we did not feel it was that necessary. We chose to prioritize the core functionality of the app and it would take more time to implement this extraneous functionality.



12. H2-10. Help and documentation [Severity 4]

- a. When the user marks that they have learned a skill, a pop-up shows up which may confuse users as to what it means. It says “Are you sure you’ve finished learning this skill?”
- b. Fix: We removed this prompt altogether.



13. H2-4. Consistency and standards [Severity 3]

- a. After going into chat message and selecting availability date, the continue button was expected to take the user back to the chat message but instead takes the user to the main screen. This is unexpected.
- b. Fix: We no longer have availability implemented into the app. We decided it was not necessary for most users, who could simply coordinate through instant messaging.



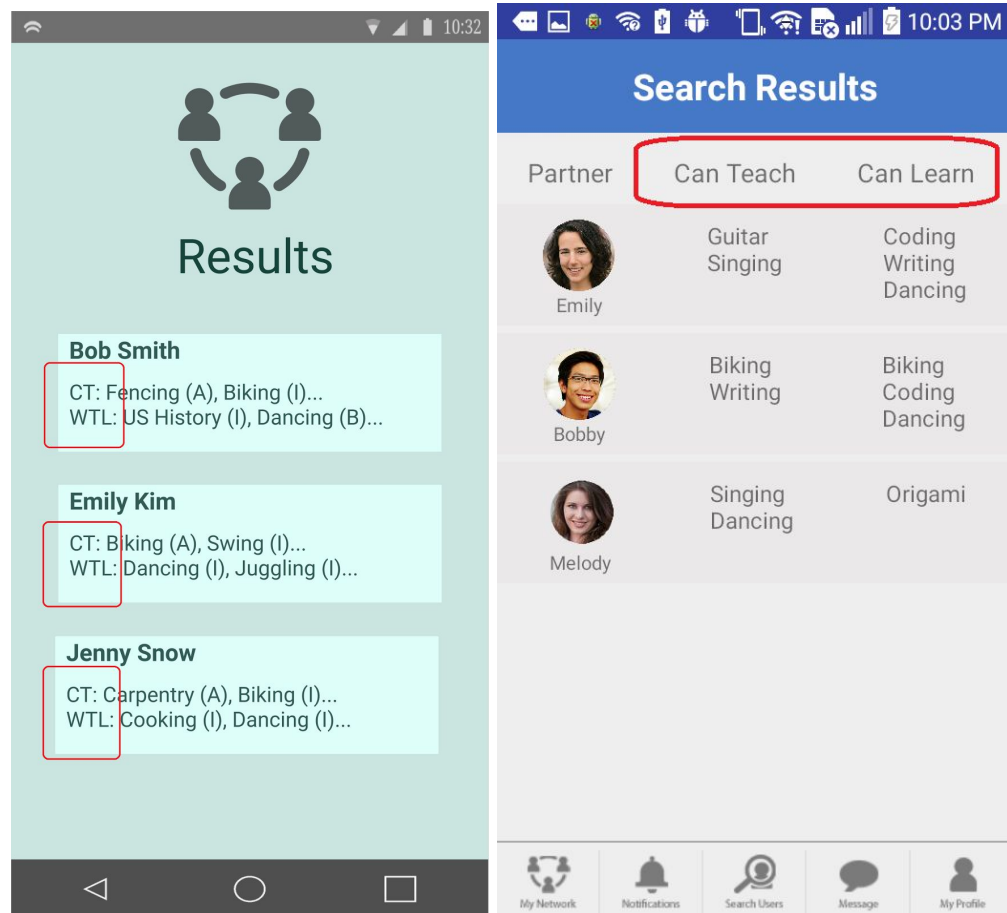
14. H2-5. Error prevention [Severity 3]

- a. After clicking complete skill, the user could hit the back button to return to the previous page even though this change was made.
- b. We feel that this is an issue that is a result of a constraint of the platform. In order to fix this we would need to implement more back-end code, which we did not have the time to do.

15. H2-6. Recognition rather than recall [Severity 3]

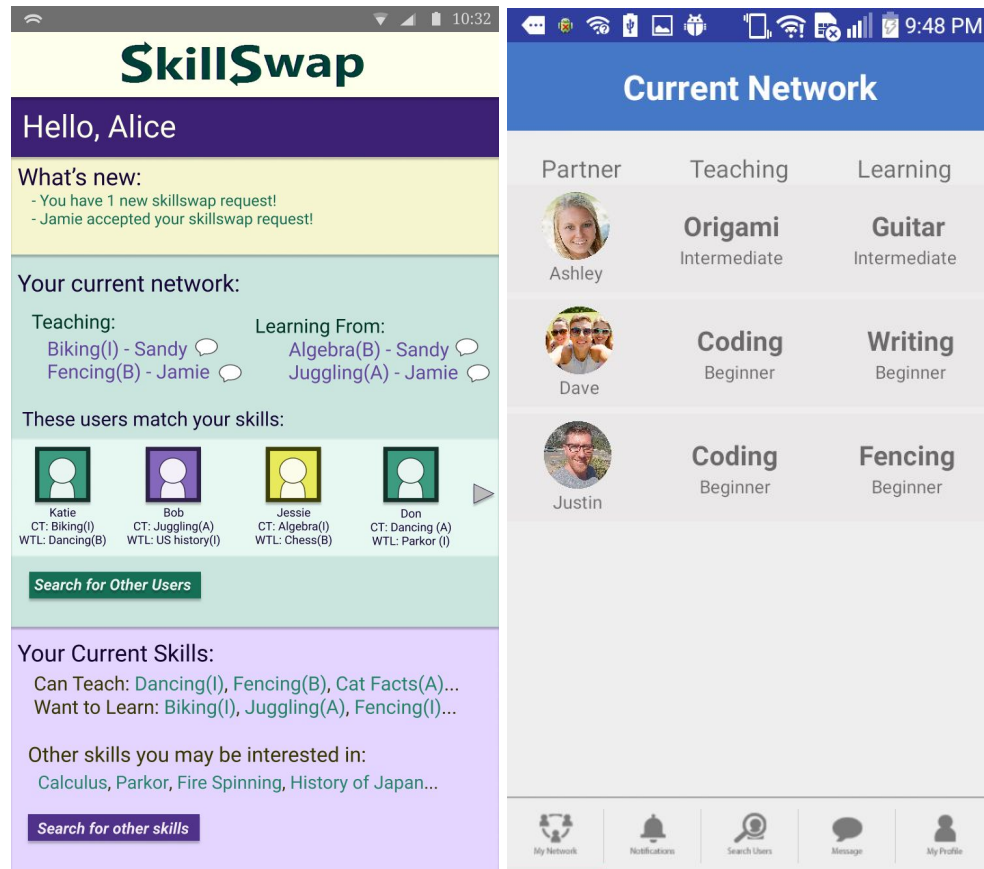
- a. On the user search results page, the acronyms "CT" and "WTL" are not intuitive and could be confusing to the user.

- b. Fix: We now use a table format which fully denotes “Can Teach” and “Can Learn”. We changed “Want to Learn” to “Can Learn” to provide more consistent wording during this section.



16. H2-8. Aesthetic and minimalist design [Severity 3]

- a. The font size is too small, it makes the app feel cluttered.
- b. Fix: We increased the font size of our app and reduced the amount of displayed information on each screen. We hope this reduces the cluttered feel.

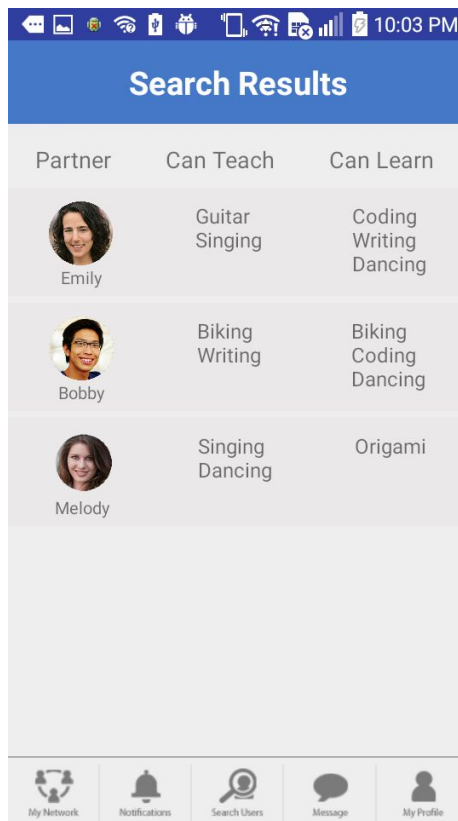


17. Color scheme change

- In lecture we learned that it is better to design in grey scale and add one or two colors afterwards. We received some “severity 1” issues that the colors we originally used had consistency issues and did not look aesthetically pleasing either.
- Fix: We designed in grey scale and decided to change the color scheme to a blue color as well. This is evident in all previous images.

18. Addition of a bottom toolbar

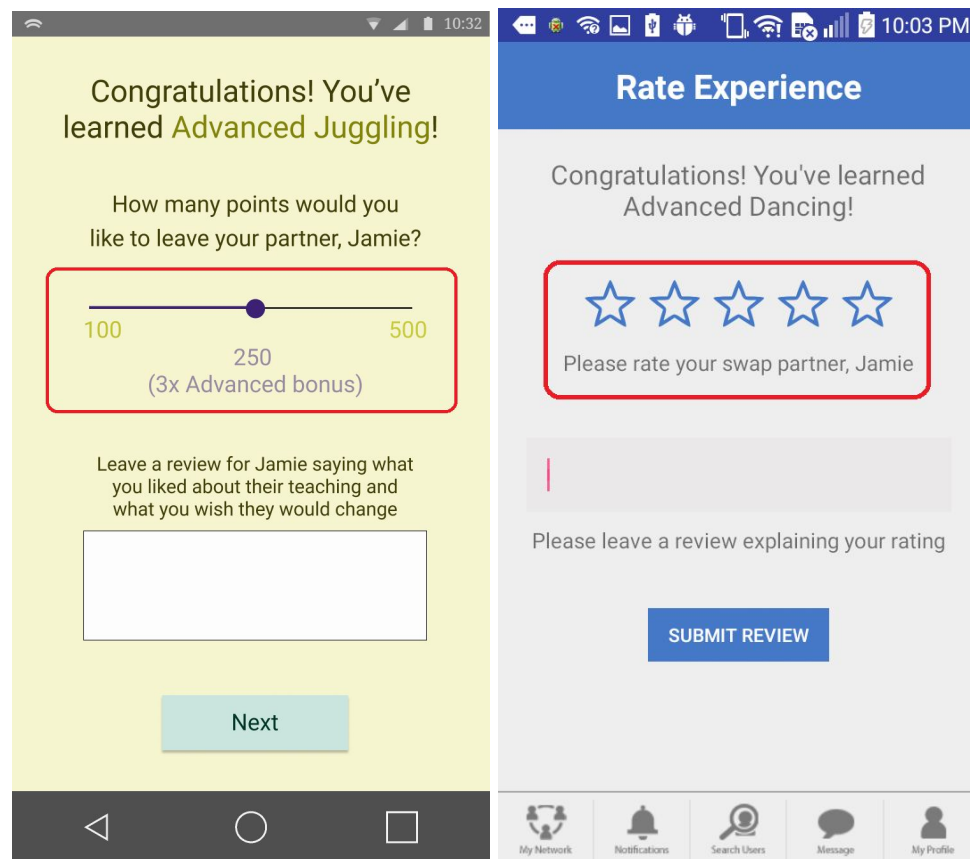
- We received some “severity 2” issues regarding the clutter of the app and how users may get lost in trying to complete each of our tasks.
- Fix: We included a toolbar at the bottom of the screen to help users navigate to important parts of the app.



19. Change of rating system

- a. We had some issues with users not understanding what the “level” meant as an indicator of user evaluation
- b. Fix: We changed this to a star rating system commonly used in companies like Amazon, Yelp, Uber, and Airbnb to get our users to understand the

rating idea better.



Prototype Implementation

For our tools, we used Figma for visual redesign, Paint and Photoshop for icons and other visuals, Github and Codepad for sharing code, and Android Studio for programming the hi-fi prototype.

Figma worked fairly well just for visuals, because the interface is built for apps and we were familiar with the program from our med-fi prototype, although it didn't map directly to android studio or account for functionality.

Paint and Photoshop worked very well for visuals in the app, as Paint allowed for simple changes and photoshop worked for more advanced changes such as transparency.

Github did not work for code sharing - we spent several hours trying to figure out the bugs, but it ended up being easier to share the code via flash drives as a base and sharing single pages through Codepad. Therefore, we tried to communicate in person as much as possible.

Android Studio worked well enough for our purposes; it's designed for Android apps, has good documentation and an active user base, and two of us had some amount of experience in it.

Most of our Wizard-of-Oz techniques revolve around hypothetical other users and skills. We hard-coded in things such as users having sent you a SkillSwap request. All of the other users and skills are hardcoded into the app. For the sake of time, only the first option on any given results page (e.g. the first skill listed under "search skills") can be interacted with.

In a full app, all skills, tabs, etc. would be implemented. We also would include the option to edit skill pages, add skills, and the instant messaging functionality.

Summary

We created SkillSwap because we love learning. We want to make learning more accessible to everyone who is curious enough to actively pursue it. Everyone looking to learn has something to offer, and our goal has always been to connect these individuals together to form a community. In our app, learning begets even more learning, and we are proud to have been able to bring this concept to life.

SkillSwap has been in development for 9 weeks and it is satisfying to have come this far. From the needfinding process to the high fidelity prototype, we learned a lot about design and the iterative process that takes place when producing a mobile application. Our design has gone through many changes that we hope were for the better. Still, numerous more improvements can be made to our app. Given more time, it would be a pleasure to iterate more and more to produce a product of the highest quality.