Jakaa Final Report

By

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"All across America, car rides are being taken at every second. Most of these being with a single rider. Have you ever looked around while on the road and thought of how many less cars there would be if everyone just shared the ride? What about when you are walking somewhere and see cars go by? Did you think they are probably going to the same place you are? Our team has come up with a system to help with just that."

The problem that many people face in any community is their ability to commute to and from their desired locations in a reliable, safe, and inexpensive manner. Many who opt to drive their car very often face an issue with parking and with the cost of getting a pass for parking in certain locations. Those who choose public methods such as taking a bus are restricted on time and run a risk of being late if they fail to take an early enough bus. So how can we create a system that would resolve these many issues?

Data Gathering

Our team set out to tackle the problem of commuting by examining other options for carpooling services that already exist outside the United States and here locally. This included services such as Uber and Lyft, we took this information and then approached several individuals close to us. We interviewed these individuals, took pictures and sketched images of our conversations. We took the information gathered and combined them into several main approaches to our issue at hand.

We asked our interviewees a multitude of questions, ranging from past carpooling experience, to broader questions like do you trust men or women more. Following these interviews, we gathered the answers to gain some insight into the issue.

Our findings shed light on what our users want. For one, they seek a reliable system that tracks the drivers to their real identity and a system that rewards drivers for being responsible. The users are skeptical in trusting random people for rides, unless their is some company name behind them like Uber or some authority that can hold them accountable. Additionally our app needs to facilitate the creation and finding of groups sharing destinations/routes for carpooling. The interviewees also suggested having ratable profiles, and tipping systems for easy money exchange.

Overall the four main areas of our app based on our findings need to be:

1. Rating System: To hold people accountable for their actions and to give users a sense of the security with good rated people.
2. Tracking system: To help people feel more secure and is very convenient for the users to be able to see where possible rides are on a map.
3. Networking system: By forming community groups people will have an easier time finding people sharing same routes and destinations.
4. Windshield stickers: For users to easily recognize the car that is picking them up, as well as other users of the app.

Sketches

With our findings, our team stepped forward with the development through the use of sketches. Many simplistic drawings were created to implement the ideas and findings we had into a rough idea for a product we could create. Some were far-fetched such as a ring which could be used to make requests for a ride. Others were more realistic in that they focused on a mobile phone application similar in appearance to Google Maps.

Seen in figure 1 is a prime example of one of our more central designs. Our idea here was to provide two location options (from and to) as well as several route options that would appear on a map setup. It also had the idea to allow a user to tap a driver's icon and have their user profile information pop up.

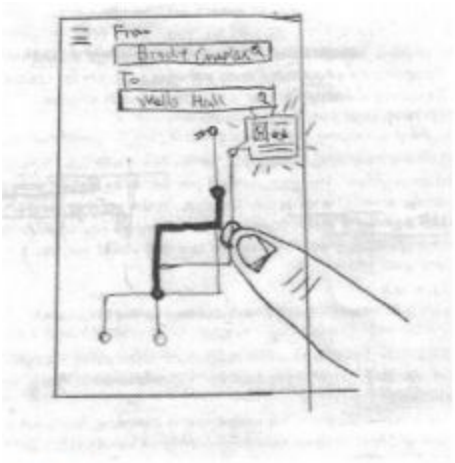


Figure 1

As it turned out, this design became our home screen design for the final application. Though the final application did not quite appear the same as this sketch, many elements such as the driver path and the two search bars did see their way to the final product.

Our research showed a strong desire for quick and clear information on a user and their perceived performance from other users. As such, figure 2 depicts an early state for a user profile screen which held the user's profile image, their rating, and a collection of reviews written by those who either gave this user a ride or that this user gave a ride to.

Figure 2

A central idea in figure 2 is the star system and its relation to the "passenger" tag. We knew that drivers needed to be rated on their performance but we also wanted a way for drivers to warn each other of poor passengers. Thus, figure 2 has an emphasis on the passenger side of a user's profile. Other sketches held the idea for what a driver's profile page would look like.

In order to join these two features, we wanted a pop-up screen to appear when trying to view a profile page. Figure 3 was our early attempt at this pop-up screen which held a lot of information in way too small a space. Though clever on paper, we discovered that the screen size for mobile devices would not aid the user in being able to read this small text or hit such small buttons. As well, this early design suggested that the search bars at the top would still be prevalent to the user at this point.

Figure 3

As we took this design to our prototype, we decided to remove the idea of a pop-up and simply make this profile screen on an entirely new page. This allowed for all the information to be displayed clearly and to allow the buttons to be scaled up for proper use.

A central theme was slowly being created with our app design when we started to dive into the idea of adding friends. In figure 4, we thought about ways to create quick contacts within the application that would serve as a means for users to create a set of drivers and passengers that they would be comfortable using. We already considered the idea of linking social media at this stage but primarily wanted to focus on a way to create a sense of comfort and ease when accessing the application. This idea later evolved to being a collection of "communities" which held a group of users together based on interests and locations to serve as a central point of focus for users with specialized desires for using the application.

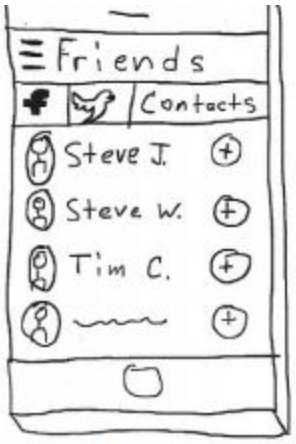


Figure 4

Finally, though as defined in our stages of development as we would have liked, we decided that there was very little motivation for early drivers and passengers to use our system. This emphasis was focused more so on the starting communities who had very few people in their networks. In order to help motivate drivers to give passengers rides and for passengers to seek rides, we wanted to "gameify" our application with the introduction of achievements and rewards. This system would serve as goals for users to try new things with our application and get rewarded for doing so. The idea did carry on into our final design but, as mentioned, was still an early stage of development as most of our efforts went into the implementation of finding a ride and joining a community.

Figure 5

Prototype

Our team turned to a prototyping tool named Proto.io which allowed us to create our prototype using their many tools and features such as pre-made icons, images, and linking conventions.

The prototype introduces the users with a screen with the app logo to highlight the brand (see Figure 6). In order to make the users easily access the communities, ride history and other related functions, a login page is provided right after the opening page (see Figure 7). Users can either login with their Facebook, Twitter, or Google+ account, or create an account directly in the app. Once the user signs in, the login page will no longer appear unless the user signs out. Instead, a map with two search bars that allow the user to quickly enter their location and

destination shows up (see Figure 8). This function resembles that of the ride-sharing app Uber, which enables users to easily navigate based on similar experiences. When entering the pick-up location, the user's current location will pop up as the first selection on the list, so the user could skip the step of entering the location.

Figure 7

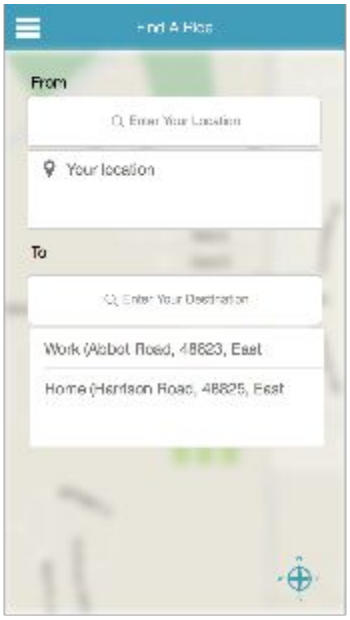


Figure 8

Figure 9

Figure 6

Additionally, users are able to set up their work locations and home locations under the account section (see Figure 9), which is located in the sidebar menu placed on the upper left corner. The sidebar houses the other features in the app, which is designed to be similar to other apps in order to draw on the user's comfort of past experiences. In the account section, the users can also optionally edit their names, upload profile photos, set up billing information, and sign out. Completing the users' profile information increases the chance of finding a ride. If users already link their account with Facebook, Twitter, or Google +, the corresponding usernames and profile photos will automatically show up. Users are able to set up their billing information using credit cards, Paypal, Apple Pay (in iOS devices) or Google Pay (in Android devices). Jakaa is designed to be a free carpool app; the billing function would only be activated when the users choose to send tips for drivers.

After entering both the location and the destination, the available drivers nearby will pop up on the map (see Figure 10). Unlike Uber, Jakaa provides users the option to choose the driver before getting a ride, because through our interviews with potential users, we noticed that security is most of the

passengers' primary concern. Being able to review the drivers' profiles and choose the driver rather than knowing nothing about them makes the users more comfortable and confident when requesting a ride. The driver profile (see Figure 11) provides the chosen driver's basic information (the name, gender and occupation), rating (displayed as stars), vehicle information, amount of people currently in the car, communities that the driver joins, rewards that the driver receives, and the reviews given by other passengers. The rewards and reviews sections allow users to quickly get an idea of the driver's work attitudes. Also, a "send request" button and a cancel button are placed at the bottom of the driver profile page; the user no longer needs to go back to the map to send requests. After sending a request, a notification bar will appear at the top of the map to notify users that their request has been sent to the driver (see Figure 12). The driver's location and the time remaining to arrive at the user's location or destination will be instantly updated on the map during the entire process. Before the driver arrives, users could contact the driver or cancel the ride. The driver and their vehicles' information will keep showing on the map until the user arrive their destinations. The notification bar will also keep updating the status of the ride, for example, once the driver arrives at the user's location and starts driving towards the destination, the text will change to "You are on your way to (the name of the user's destination) (see Figure 13)!"

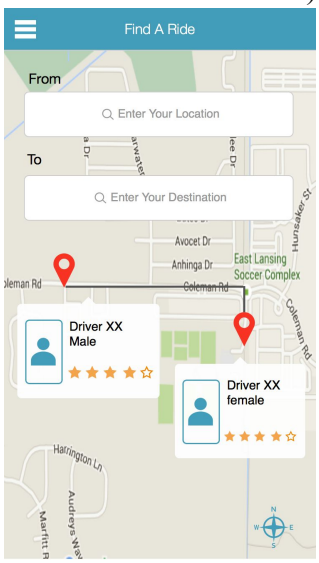


Figure 10

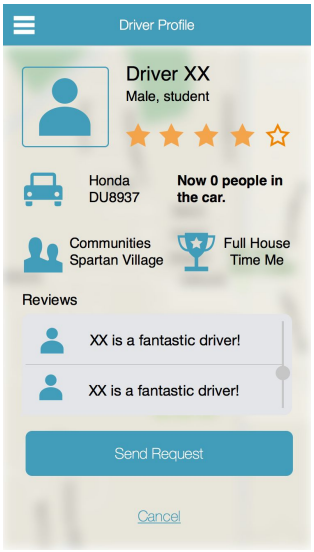
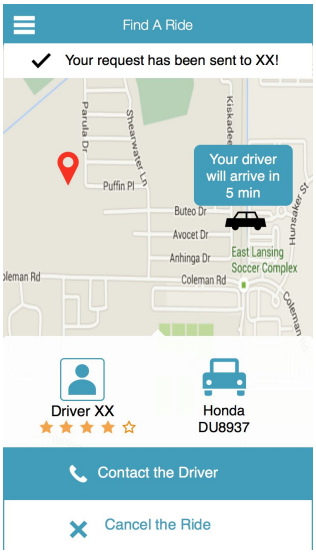


Figure 11



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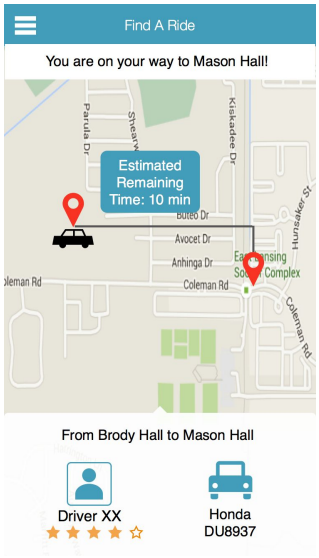
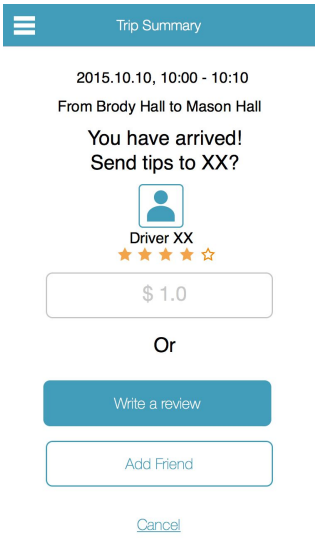




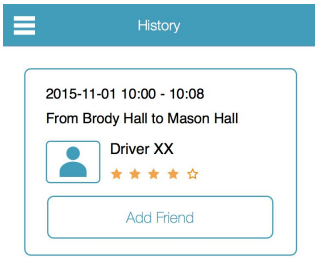
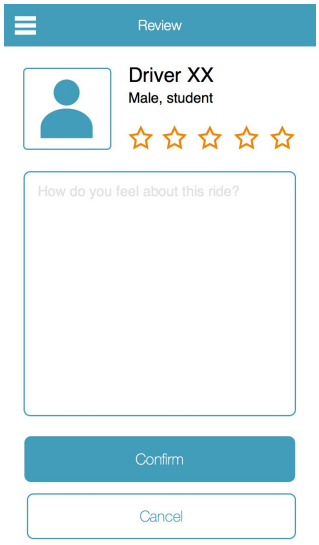
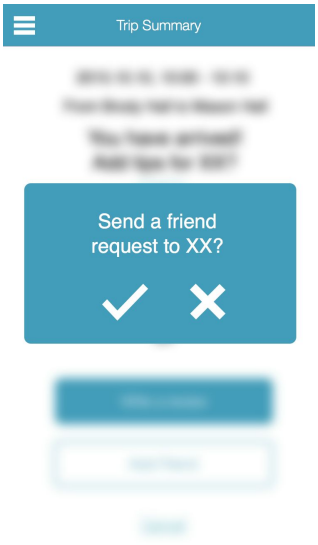


Figure 13 Figure 14 Figure 15

When the user arrives, a trip summary with the time, departure location and destination will appear (see Figure 14). The user could choose to send tips, write a review, add the driver as a friend, or just exit the screen directly on this page. All the options are optional, which provides the users as much flexibility as possible. If the user accidentally closes the page, they can still find the trip summary under the history section of the sidebar menu (see Figure 15), in which the user is still able to add them as a friend and write a review (the latter will only appear when the user hasn't already done so, because each user is only allowed to write one review for a ride in order to avoid spamming comments).

Write a review/add friend:





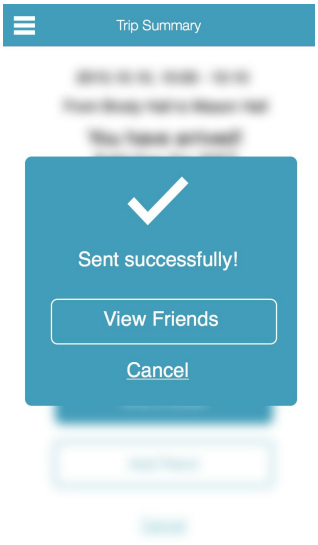


Figure 16 Figure 17 Figure 18

Instead of finding a ride on a map like most other ride-sharing apps, Jakaa provides users with another option to find a ride – join communities (see Figure 19-21). Users are allowed to find drivers from the various communities and request a ride during chats (see Figure 22-24). "Communities" was divided into two subsections – "My Communities" and "Search Communities." Both have a search bar at the top for the user's convenience. To start a chat, simply tap on the name of a community. Users could view a driver's profile or request a ride by tapping on the driver's profile photo. This function is also accessible in the Friends section. In Friends, users can add their friends from Facebook, Twitter or phone books (see Figure 25-27). Additionally, when sending a request through Communities or Friends, users are able to set up the pick-up time in case it is a ride needed in the future (see Figure 24).

Last but not least, Jakaa encourages users to send feedback through the Feedback section under the sidebar menu (see Figure 28).

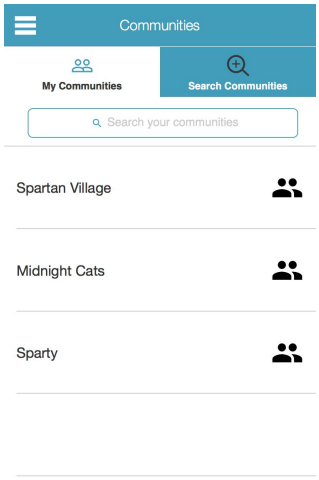
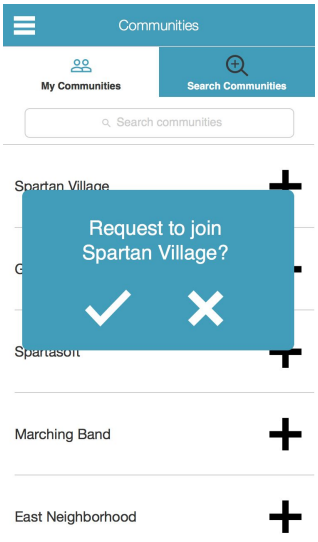


Figure 19



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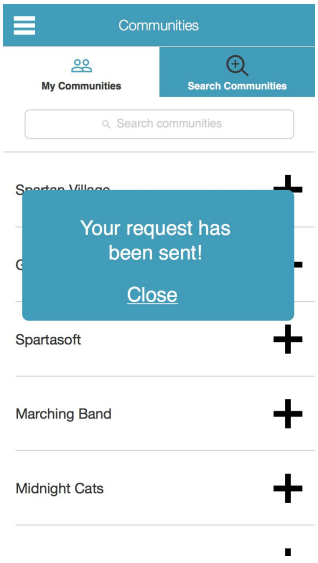

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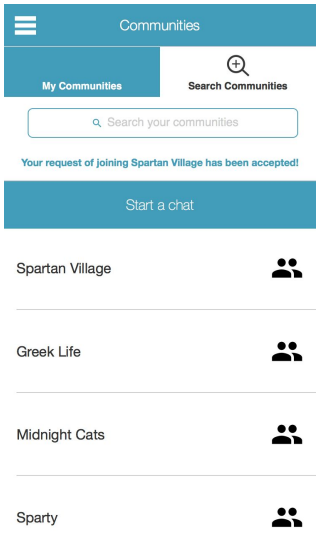

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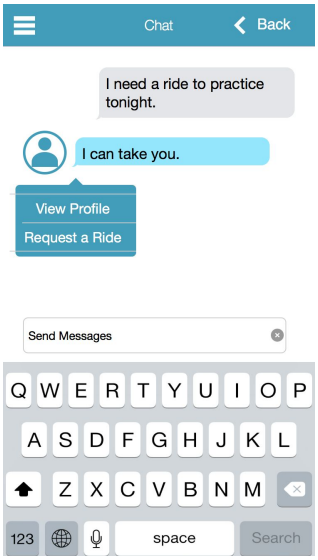

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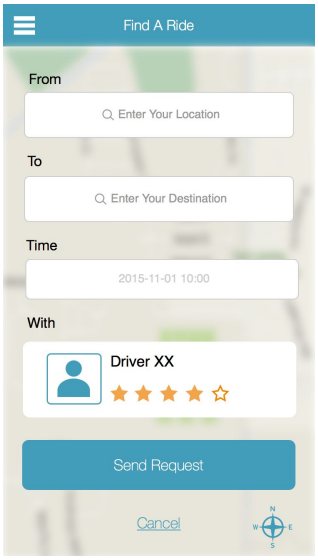

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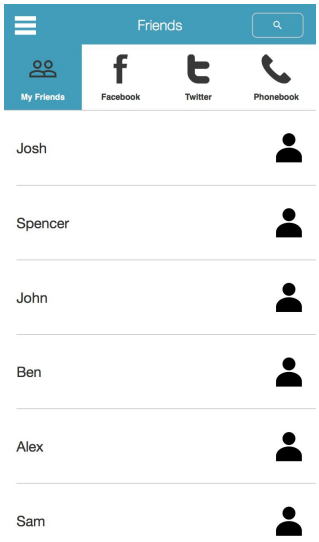

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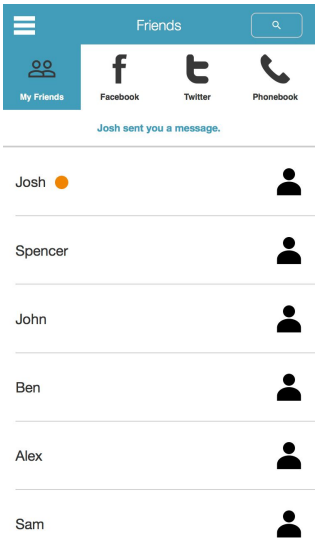

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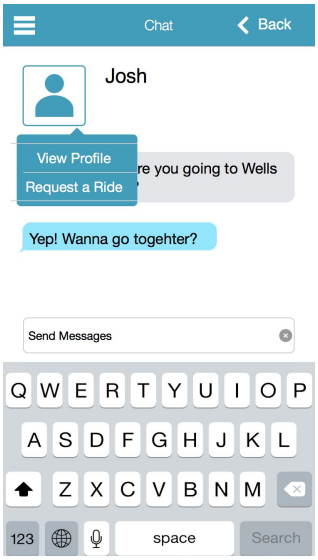

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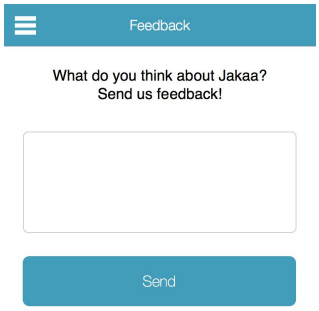

Figure 28

Evaluation

Having created a high-fidelity prototype, the next step of the design process was evaluation. In order to evaluate our prototype we enlisted the help of seven participants. The evaluations were conducted in a lab-like setting where we could record what the participants were doing and take detailed notes. These participants were then given two tasks to complete: 1) Find an available ride to Mason Hall and request a ride from that driver, and 2) Join the East Neighborhood community. After completing the tasks, the observer would then ask the participants ten questions regarding their feelings and thoughts on the experience. The ten questions were:

1. How do you feel about the color?
2. How do you feel about the font?
3. How do you feel about the layout?
4. What other features that you saw we didn't touch on did you want to explore?
5. What do you like most about this app?
6. What is your first thought about this app?
7. Does this app have a feeling resembling any other app? Why?
8. If you were alone with this app and had to find a ride, what about this app makes you confident that you could find one?
9. If you could change one thing, what would it be and why?
10. What do you find most frustrating about this app?

Our seven evaluations provided a plethora of information about what how users will use our carpooling application in everyday usage. All of our participants liked the colors, font choice, and layout. Other positive finds included a feeling of familiarity and similarity to Uber, another ridesharing application, and a liking of the community focus of the application. However, not everything was perfect and we also received useful negative feedback. Most participants found themselves trying to click on items that were not finished or linked due to the

parameters of the prototype. Feedback was another weak area, with almost every participant at some point relaying a feeling of uncertainty; especially on the "ride request sent" screen. The most important feedback we received was every user felt confident they could use this app to get a ride if they needed it, proving the design to successfully accomplish its purpose.

Based on the feedback we received from conducting evaluations, a couple of changes need to be implemented to our carpooling application. First, the "ride request sent" screen has been changed to show users the request has been sent, a map of where the driver currently is along with the estimated arrival time, and the addition of contacting or canceling the ride. Second, the application has been further developed and is much closer to full functionality.

Conclusion & Future Work

Thinking up a concept and seeing it through to near-completion has taught us much about the design process. Interviews conducted in the data gathering stage taught us to narrow our focus on four specific aspects of our application that potential users are most interested in. The sketching stage taught us the importance of drawing a wide variety of ideas and that not all ideas that work well on paper will work on the dimensions of a smartphone screen. In the prototype stage we learned that implementing our ideas in an aesthetically pleasing manner is deceptively tricky, and learned the realities of a wireframe prototype is not capable of replicating all the functions of a real smartphone (e.g., vibrating, notifications). Finally, in the evaluations stage, we learned that the general public views and uses the application in different ways than we creators do.

Despite being so far along the design process, more work is still left to bring Jakaa from a concept to reality. The application should undergo a larger evaluation after implementing the feedback from the first one. Jakaa is still not 100% fully functional, and needs more polish to give it a more "finished product" look. There is also the many legal details to work out and add as is necessary to the final design. After those steps, development on the actual code of the application could begin turning the design prototype into a functional alpha build.