Part 3G – Final Report

Each Team Member's Name and Role(s):

Team Members:

Leonardo De La Torre Cruz - Group Coordination Expertise Officer

Greg Hill - Usability Test Facilitation Strategist

Henry Wang - Usability Test Facilitation Strategist

Josh Schaffer - Paper Prototype Fabrication and Iteration Specialist

Problem and Solution Overview:

In recent times, the rising costs of car loans, insurance, and maintenance have placed a significant burden on many people's finances. As owning a car becomes increasingly expensive, more individuals are searching for alternatives to personal vehicle ownership. Public transportation offers a cost-effective option that can alleviate the financial strain and reduce unexpected challenges associated with car ownership. However, access to public transportation isn't always convenient for everyone.

Introducing Bouncr, an innovative app designed to help users easily find and plan their transportation needs. With Bouncr, you can explore various transportation options and compare prices to choose the best fit for your journey. Whether you prefer public transportation or private services like Uber and Lyft, Bouncr has you covered.

The standout feature of Bouncr is our virtual bus stop. For those living far from traditional bus stops, this feature creates a nearby, convenient bus stop just for you. Simply walk a short distance to your designated stop and enjoy the ease of public transportation. The app is user-friendly and intuitive, making it a one-stop solution for all your transportation needs. You can also purchase public transit passes directly through the app, simplifying your travel plans.

Bouncr is here to make your daily commute easier, more affordable, and more convenient. Say goodbye to the hassles of car ownership and hello to seamless, stress-free transportation with Bouncr.

Initial Paper Prototype:

The initial paper prototype of Bouncr was designed to simplify travel and make the bus more accessible to people living in areas without easy access to bus stops. Another goal was to make it easier for people to understand and use their local bus networks. We also wanted to make sure that the users were saving money, so we allowed them to compare prices to rival transit services.

Task 1: Virtual Bus Stop

- **Homepage:** This task starts on the homepage, where the user can see which bus stops and virtual bus stops are near them using Google Maps services. Then they can input their destination into the text field at the top of the screen.
- **Create/Join:** After they put in their destination, depending on if they are within any radiuses of nearby virtual bus stops, they will be prompted to join or create a virtual bus stop. If they are within the radius of a virtual bus stop, they can select join, which will give them a pop-up telling them where to go and how many people are at the virtual bus stop. Otherwise, if they are outside the radius, they will have the create button available to them, which allows them to create a virtual bus stop. This will also initiate a pop-up with information about the new stop.
- **Cancellation:** The create pop-up will have the ability to cancel if the user doesn’t want to create a virtual bus stop. Join doesn’t have a way to explicitly cancel it.

Task 2: Compare Prices:

- **Homepage:** This task also starts on the homepage, where the user can hit the compare prices button to go to the appropriate screen.
- **Compare Prices:** The user is now on the compare prices screen, which shows them the prices of competing transit services and their local bus service. There is also a buy button on the bottom. If they did not insert a destination, there will be a pop-up that prompts them to insert their destination.
- **Buy Page:** The buy page shows the day pass and the monthly pass prices for the local bus service; it also has a link that takes the user to a page that shows information and allows the user to use any student discounts that might apply to them.
- **Checkout Process:** After choosing what they want to buy, they are brought to a standard checkout process where they can enter their card information. After the payment is processed, there is a confirmation page that tells the user that the order is complete.
- **Ticket History:** The user from the home screen can access their ticket history by clicking the top-right profile icon and, from there, hitting the ticket history button in the user page.

Testing Process:

We found a total of 4 participants in different categories in order to help make our app more usable for everyone. Whether they had previous experiences in good user interface or people who aren't so great with technology we made sure to take every single feedback of theirs to improve our design. Our testing procedure involved three distinct stages. To begin, we conducted a casual demographic interview, where participants were asked about their backgrounds, their level of familiarity with technology, and their prior experience with using public transportation, particularly buses. Of course, after that, we gave the participants backgrounds on what our app is about. The second stage is letting our participants use the app, given how our app is designed the participants naturally run into the two tasks we have implemented into the application.

First, the participants login or sign up for Bouncr to go to the homepage then the participants could explore the homepage which consists of the option to go to the user settings that consist of the participant's account information and ticket history the participants could go to. Then after the participants finish exploring they would go back to the homepage and are asked to do task 1 which is getting a virtual bus stop. The participants would need to choose the destination they want to go which would prompt the participants with options of directions they want to take. After, the participants hit the buy button which brings us to the second task.

For the second task the participants will see the price comparisons for each ticket/pass they could buy to reach their destination. The participants could choose a more expensive option or click on our Bouncr pass option which automatically leads them to the best and cheapest pricing. Finally, the participants check out and bring them back to the homepage to wait for the bus.

The last stage was to ask the participants their opinions of their experience on the app, their positive feedback, or the negative feedback on what we could improve upon. After compiling the feedback we focused more on the negative feedback in which we started to find ways to make improvements. Initially our testing process was not this simple but after experiences using this procedure with various participants it became much more easier.

Testing Results:

Initial Prototype

Our initial prototype mainly violated these three heuristics:

- Aesthetic and minimalist design
- Flexibility and efficiency of use
- Help and documentation.

This resulted in our users having difficulty understanding and navigating our design. After this first iteration of our design, it was clear that there was a difference between how we understood the design and how someone who first used it understood it. Users seemed to prefer simpler and more streamlined designs that didn't present them with options they didn't need. We made some changes to better align with what they wanted:

Changes:

Homepage:

On the homepage, we removed the join and create button since that was confusing for the user and ultimately unnecessary. We also combined the compare prices and buy buttons into one quick-buy button for simplicity. And since the users wanted more information about the icons on the map, we added a legend and a route pop-out sidebar to inform them

Buy Process:

We also updated the buying process. First, we improved the design, making it easier to understand and more streamlined. Then we added a "no destination" error message to the buy page, informing the user that they had not inputted a destination. Finally, we added a few minor things, like adding a drop-down menu for MCT pass options, making the student discount pop up instead of being a separate page, cleaning up the card payment input screen, and adding a button to view recently bought passes in the confirmation page.

Final Paper Prototype

The final paper prototype was significantly more solid, but it still violated these heuristics:

- Aesthetic and minimalist design
- Visibility of System Status
- Consistency and Standards

We had to clean up some issues with the design, but this round of revisions was minor in comparison to the initial paper prototype. Our users basically wanted a few quality-of-life features, more information, and a few tweaks to the design. This round of testing demonstrated that small details matter to users and shouldn't be overlooked.

Changes:

Homepage:

The homepage had three changes. The first was adding a pass button to the bottom left corner of the screen. Users wanted to be able to quickly access their passes and QR codes. We also made the search bar look closer to Google's search bar, so it's easily recognizable and understandable. Finally, the route side menu now has a drop-down menu that gives detailed step-by-step directions to the destination.

Buy Process:

The buying process had an issue with the fact that the destination text field was still available to the user while they were going through it, so that was removed. Users also wanted to know what the Bouncr Pass is, so we added an information pop-up so they could understand. Lastly, we added a huge checkmark to the payment confirmation page so that the users know their payment was successful.

User Page:

We added a button to report any problems with the app to the user page.

Final Revision

In this final revision, we only violated one heuristic, and that is:

- Recognition not Recall

Each iteration of our design seems to bring to light smaller and less impactful problems than the last. In this final revision, the users just wanted us to add some simple features that other apps have to give them a little more control and information.

Changes:

User Page:

We only encountered two issues that users wanted to have fixed; both were on the user page. The first was that the users wanted the ability to check, add, remove, and update their payment information, so a button was added to the user page and two other pages that allowed them to do this. Finally, they wanted to view their transaction information for all the purchases they made on the app.

Final Paper Prototype:

Bouncr is an app designed to make transportation easier and more accessible for users. The app offers two primary features: a virtual bus stop system and a price comparison tool for different transit services.

Task 1: Virtual Bus Stop:

- **Home Page**: The app starts with the home page, where users can view their surroundings on a map and see active virtual bus stops nearby. Users can input their destination and have the option to buy tickets.
- **Directions**: Once a destination is entered, the app provides a list of directions to guide the user to their destination, including arrows showing the path to the virtual bus stop.
- **Tracking**: Users can track the location of their bus on the map while waiting and receive a pop-up ticket to scan when boarding.
- **Cancellation**: Users can cancel their trip via the direction drop-down list.

Task 2: Compare Prices:

- **Quick Buy**: From the home page, users can access the Quick Buy button, where they can compare pricing for different transportation services after inputting a destination.
- **Bouncr Pass**: The app recommends the Bouncr Pass but also provides information on other transportation services and directs users to other apps if preferred.
- **Bus Fares**: Users who don't input a destination see a list of bus fares only and can proceed to purchase them.
- **Checkout**: Users complete the checkout process within the app.

The app's streamlined design and modern interface aim to provide a user-friendly experience for all demographics, making travel simple and accessible for everyone.

Digital Mockup:

Our final prototype of Bouncr, our digital mockup, perfectly transitioned from our paper prototype without requiring any adjustments. By leveraging feedback from usability tests, we made the app significantly more user-friendly compared to the initial paper prototype. The digital mockup's layout is more streamlined, with each screen featuring a cleaner and less cluttered design.

One of the most notable updates based on usability tests was merging the compare price and buy pages into a quick buy page. This decision decluttered the home screen and

simplified the user experience. Another big change was giving the Bouncr app the ability to choose if a user joins an already existing bus stop or creates a bus stop. This gave the user an easier time to use the app for all demographics in our tests.

Minor improvements included adding a pass button on the home screen for quick access to transit passes and updating the user interface for a more modern look and feel.

Our design aligns with our goal to provide accessible transportation options for everyone, regardless of their tech familiarity. Bouncr aims to make travel easy and hassle-free for all users.

Task 1: Get a virtual bus stop

Our virtual bus stop will first start at the home page (figure 4). The user will have a quick look of the area around them, a map using google map services, and will also see virtual bus stops in the area that are active. The user will be presented with the option to put in a destination they want to go to, a button on the bottom to give them the option to buy passes and a button to view current passes.

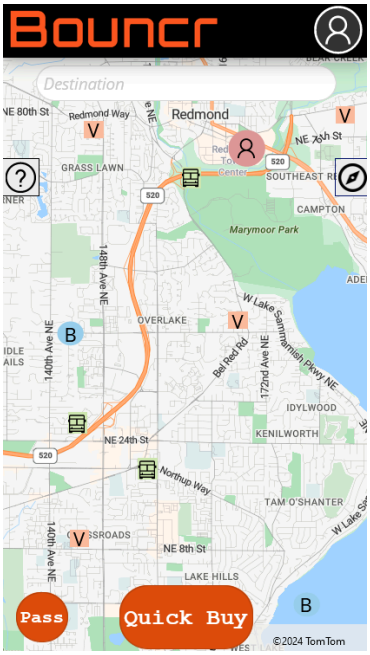


Figure 4 Home Page

When a user inserts their destination the app will generate a list of directions for how the user will get to their destination (Figure 5). The directions can be tucked away or appear like a drop down menu on the home page. If a user was near a virtual bus stop the app will tell them where they need to go to be picked up. The map will have arrows indicating where the user needs to walk to for the bus to pick them up (Figure 6). While

the user waits they will have the ability to see the location of the bus on the map (Figure 7).

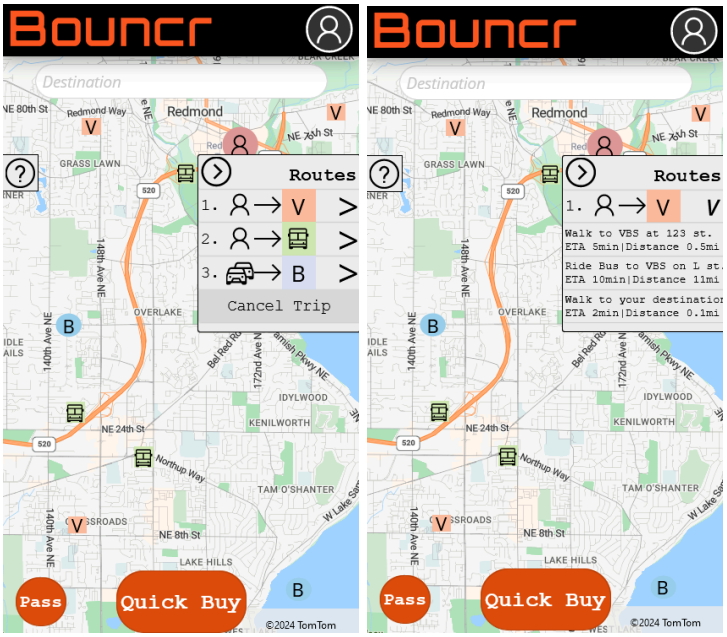


Figure 5: Directions And Canceling Trip

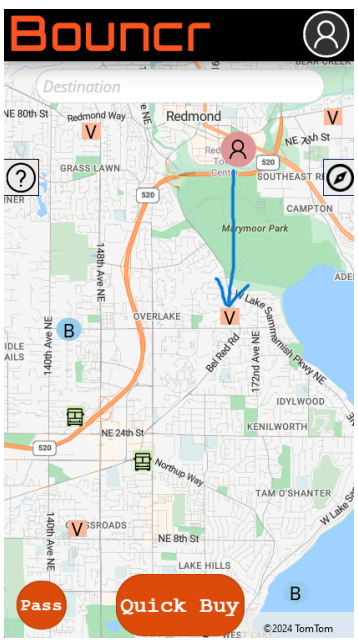


Figure 6 : Nearest VBS

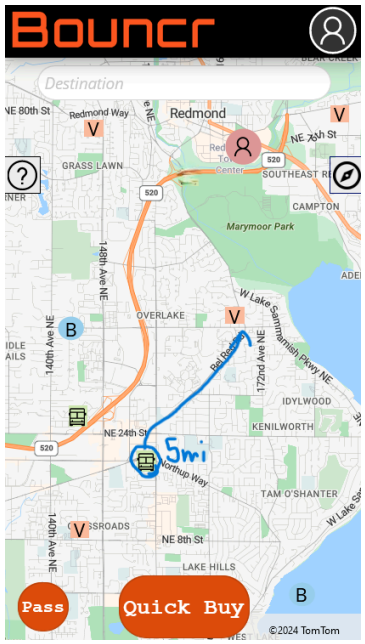


Figure 7: Bus Location

When a user and the bus picking them up are at the same location the app will have the user's pass appear as a pop-up and the user will scan their ticket on the bus (Figure 8). The user will have the ability to cancel their “trip” by going to the direction drop down list and find the Cancel Button (figure 5).

Figure 8: Pass Screen

If a user is too far from a virtual bus stop our app will make the decision to create one for the user. The app will then direct them to the created virtual bus stop and they will follow the same process as a user who would join a virtual bus stop.

Task 2: Compare Prices for different transit services

Our app will also provide a convenient way to compare pricing with other transportation services. From the home page (figure 4) users can click on the Quick Buy button. If the user inserts a destination they will then be taken to a page that will show them pricing for different transportation services (figure 10). We will provide a recommended buy for the user called Bouncr Pass. If the user wants a different option we will provide them with the information of other transportation services. We will let the user buy public transportation fares on our app and redirect users to respective apps if they want to use other services (figure 10).

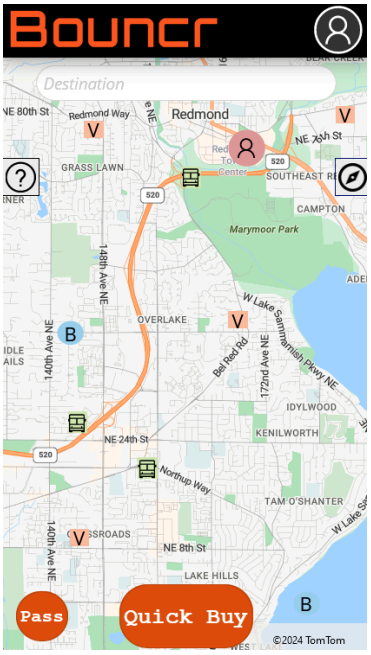


Figure 4 Home Page

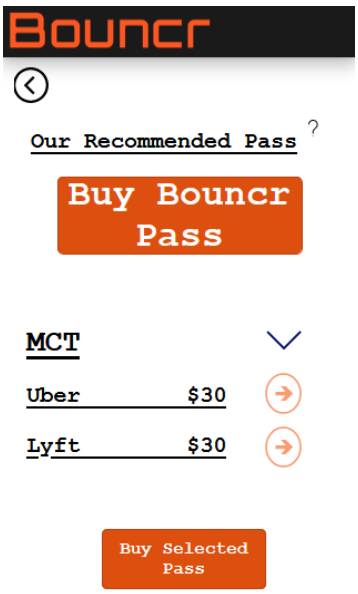


Figure 10: Bouncer Pass and buy menu

If users did not insert a destination on the home page and went to the Quick Buy page they will only see a list of bus fares and nothing else. They are able to buy bus fares if they want to (figure 11).

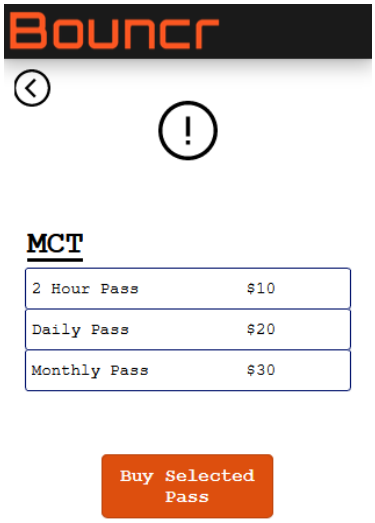


Figure 11: Buy page but no destination input

Once the users chooses what they want to buy they will go through the checkout process on our app (figure 13).

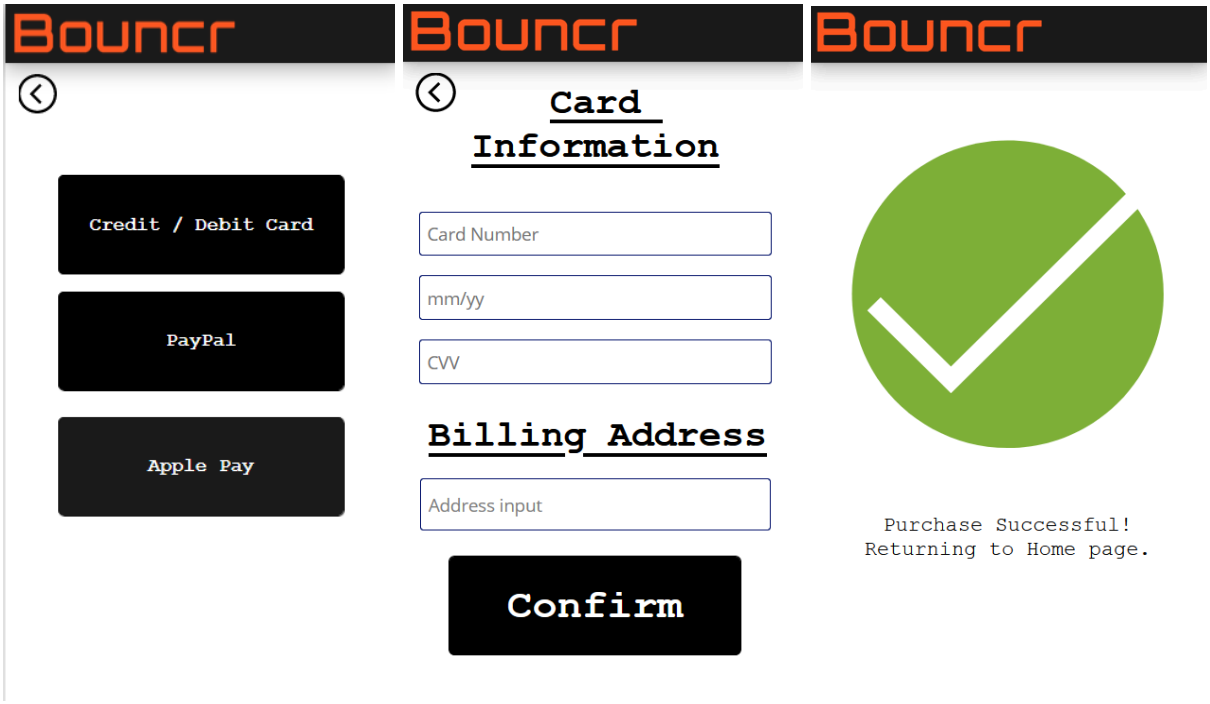


Figure 13 Checkout Process

Discussion

Using the iterative design process, we learned that there are many necessary implementations that the design requires for usability. Many people have different outlooks and ideas that can be used for improvement. We interviewed multiple people of different age groups and backgrounds which gave us insight on how to improve. From these tests we were able to meet everyone's concerns while still maintaining a streamlined, user-friendly design. There are many additions which we made that had an overall positive effect on our final design. Finally, we have learned that iterative design doesn't ever stop, more tweaks are always necessary to combat user preferences and changing times.

Our final design is much larger than our initial prototype. We added many things such as saved card information, a report button, and many others. Getting feedback from multiple individuals helped us see the flaws in our design. There were three specific individuals which had the most impact. First a computer science student, who understands development, was able to give us insight on a deeper level. Second, a business major. This individual was able to give us feedback from the standpoint of someone who uses applications on a regular basis and what is needed in standard

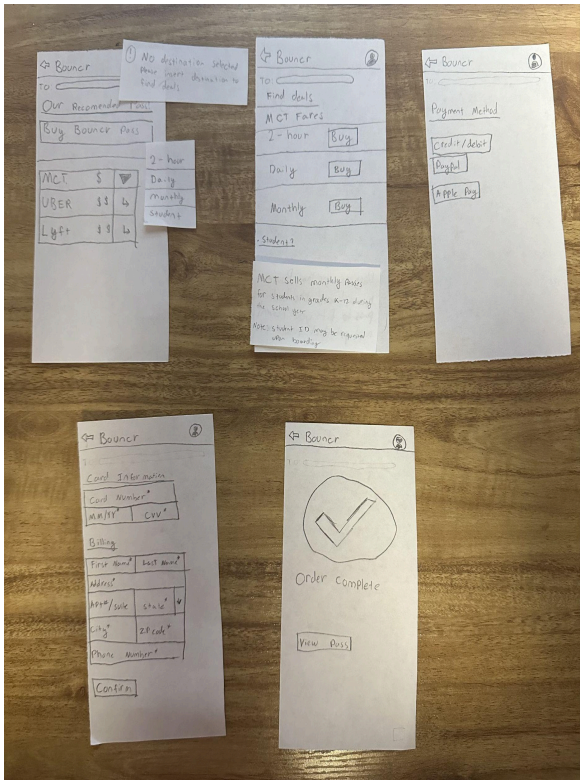
design. Lastly, we interviewed an older individual who struggles with the usability of modern designs. This was able to give us insight on how to make our design more user friendly for these age groups. Since the target audience of our design is for all age groups, this was important for refinement of the layout of our design. Overall, we believe we have achieved a design that is simple enough for a broad set of users.

We narrowed down our tasks to what we believed was the most important for users of our design. One of our initial tasks had to do with the implementation of a “party bus” which was originally planned to pick up patrons from bars and take them to the nearest bus stop to their final destination. We abandoned this idea due to safety concerns. This idea has been fused with one of our current tasks of getting a “virtual bus stop,” task #1. This way, users will still be able to have a bus pick them up from a bar if enough people are requesting that location. Another reason why we abandoned this task is that it was not a priority for most people we asked. It would not make sense to make our design surrounding this if not enough people were interested, so we switched to the “virtual bus stop” route because we had better feedback surrounding it.

Our design would definitely benefit from more iterations. The reasoning behind this is that our design is still quite bare in terms of how it is laid out. Unfortunately, we don’t know what these changes would entail, we would need more feedback in order to get new ideas. More usability tests would be required in order to tweak out design to be even more appealing to users. Nothing will ever be perfect, but I believe we can get much closer as more additions and changes are implemented

Appendix:

Attach copies of all materials involved in your testing. Includes any instructions or task descriptions you handed out or read aloud to your participants. Include identified critical incidents from your usability testing. The appendix materials and screenshots do not count in your page limit.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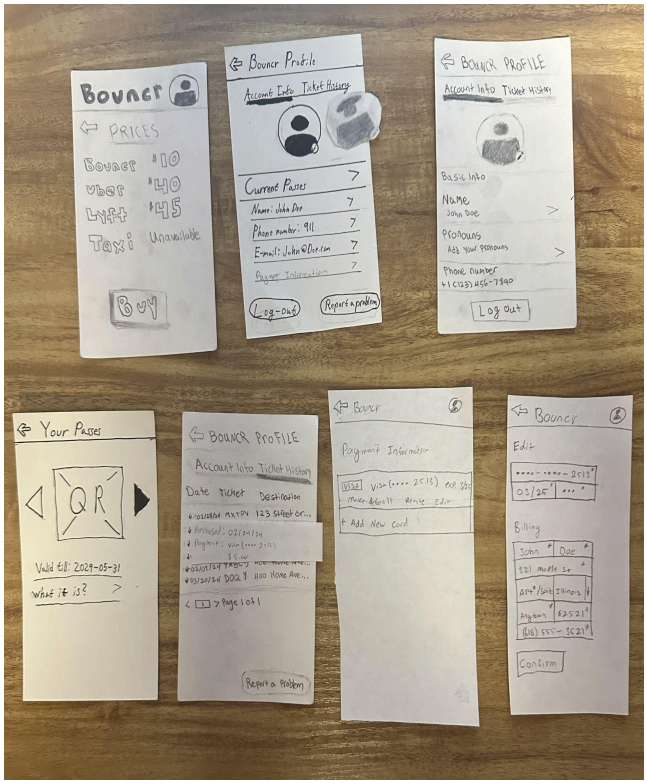
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Email: John@Doe.com
Log-Out
Report a problem
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Pronouns
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Log out
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What it is?
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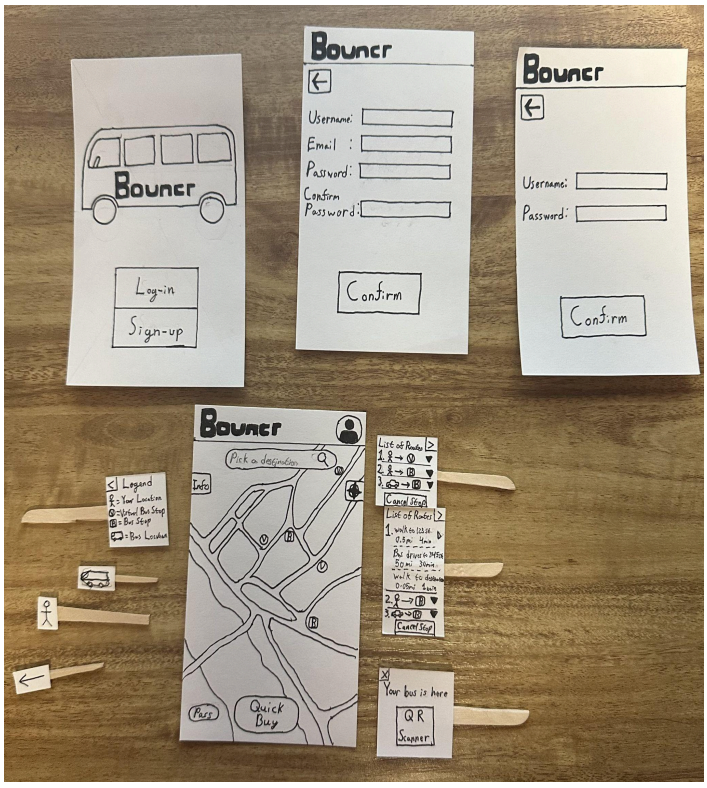
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List of Routes
Cancel Stop
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