Team Prototype 1

Introduction

Tasked with creating a near fully automated restaurant experience, we were prompted to explore ways for diners to seat themselves, order food, pay for their meals, ask for assistance as well as investigate ways to automate the restaurant experience for cooks and wait staff from receiving orders to delivering orders and bussing tables. Our process consisted of three phases: sketching, storyboarding & feedback, and low fidelity wireframing. Within each phase we worked individually and collaboratively to produce concepts for the automated restaurant. During the early stages, we used paper and pencil to capture our ideas and used Balsamiq to create low fidelity wireframes.

Sketching

We began our design process with virtually meeting via MS Teams video call. We read over the "client" ask and decided to individually sketch our initial ideas using paper and pencil. Pulling inspiration from the 10 Plus 10 method, we challenged ourselves to sketch ten ideas related to automating the restaurant experience within a ten-minute time frame (Greenberg et al., 2012). Once the ten minutes were over, we each took turns walking through our sketched ideas providing feedback on what we liked and where we saw overlap between ideas. Each series of sketches employs shading, annotations, and arrows to add further details to the sketches. Arrows are used to connect images to annotations while also showing the progression of ideas in a process.

Figure 1 explored a variety of ways to automate the restaurant experience with customers interacting with either a stationary tablet or their mobile device. Each idea is numbered, and some ideas include annotations such as "help" or "insert cash". Figure 2 focuses on the customer's experience when they walk into a restaurant to find seating. Similar to Figure 1, Figure 2 indicates each idea with a number yet includes more detailed notes and annotations to explain the idea. Figure 3 focuses on several restaurant experiences including orders received by the chefs, customers finding a seat, and customers interacting with a touch screen device to order and pay. Figures 2 and 3 use a mix of text and lines to represent text whereas Figure 1 just uses lines to represent text.

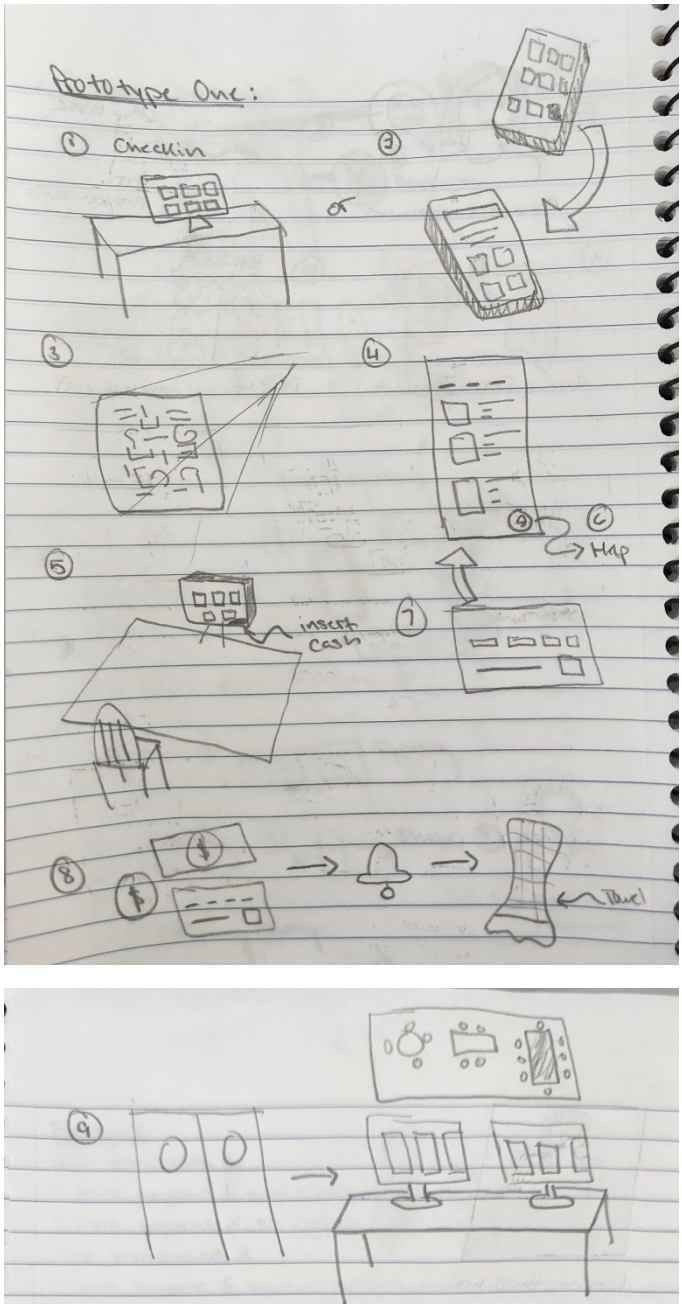


Figure 1: Sketched ideas continued from notebook A

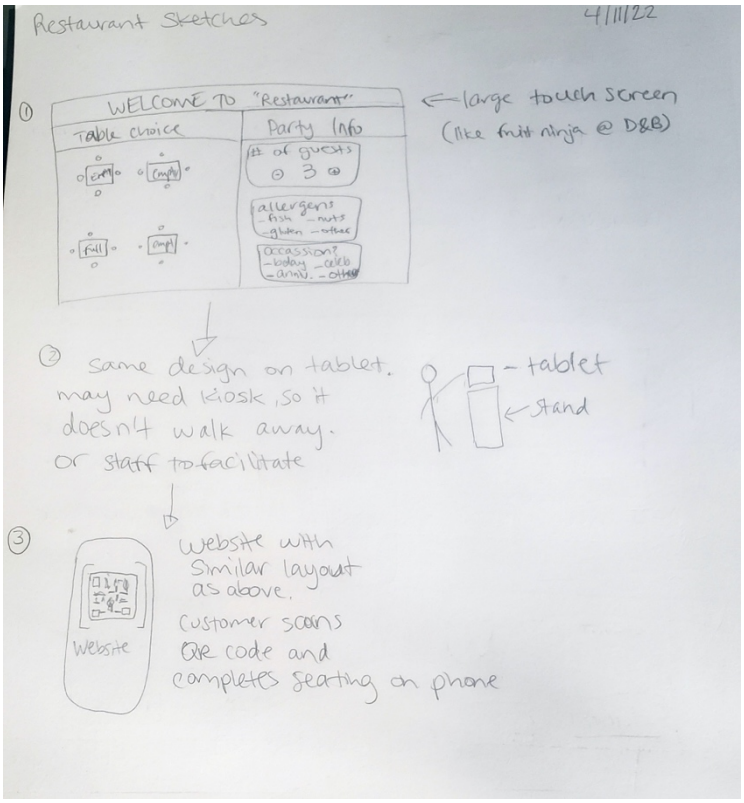


Figure 2: Sketched ideas from notebook B

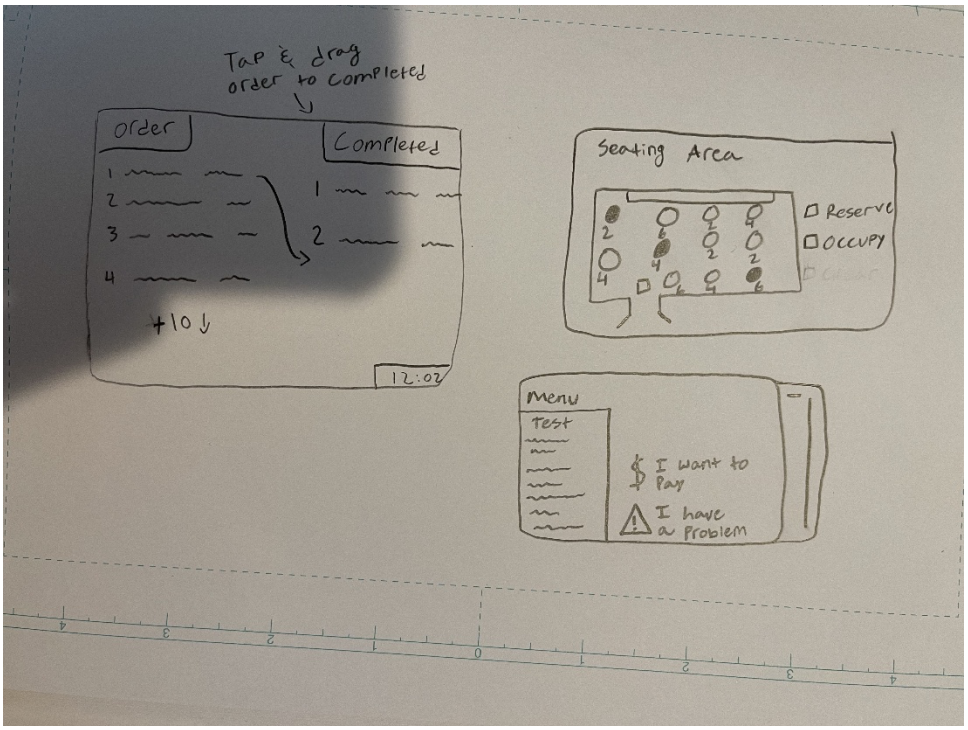


Figure 3: Sketched ideas from notebook C

Storyboarding

Once we shared our sketches, we talked about the many scenarios our initial sketches covered, further discussed new ideas sparked by the critique session. We narrowed our ideas to three scenarios to create storyboards. Since all three of us sketched ideas related to customers finding a seat, we chose to storyboard the restaurant check-in process. In our second storyboard, we decided to further explore the process of cooks receiving an order and signaling the wait staff once the food was ready to bring to the customers. Lastly, the third storyboard focused on alerting staff to tables that need bussing. Since these are scenarios we felt had not yet been automated in previous restaurant experiences, we felt excited to pursue these ideas in a storyboard. We used the idea of parallel prototyping in the storyboard process by assigning each person to storyboard two out of three scenarios, which allowed there to be two versions of the same scenario to gather feedback and iterate on (Buxton, 2007). In two instances, before creating a storyboard, Figure 5 and Figure 7 depict the creation of a user flow diagram to understand each step in the process before adding visuals that correspond to the text. This helped us to further organize our thoughts before creating a storyboard. Furthermore, the storyboard in Figure 4 utilizes a user persona and presents Lorainne as a 35 year old woman comfortable using her smartphone.

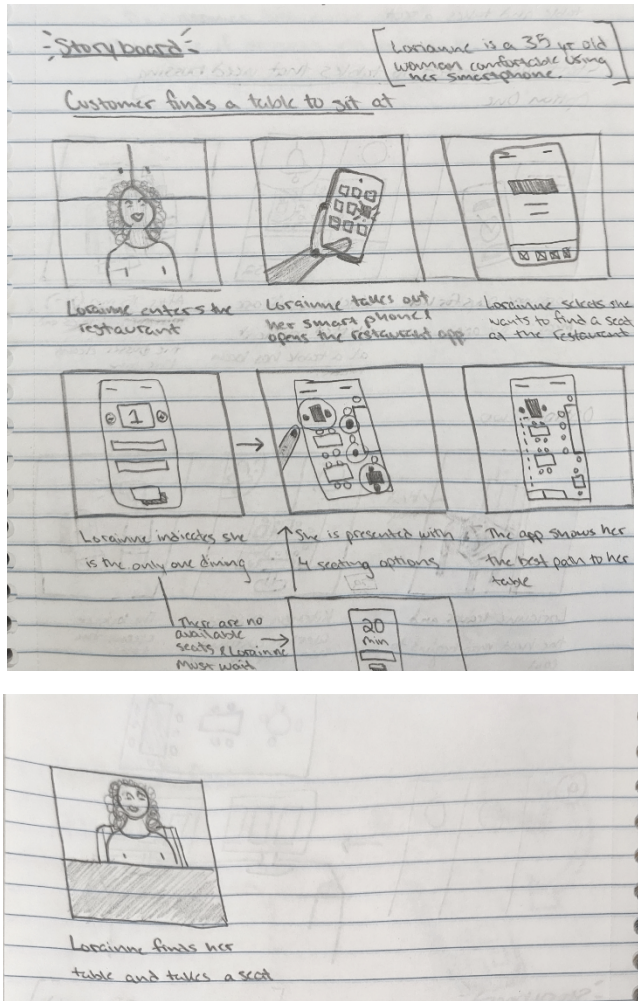


Figure 4: Storyboard of the check-in process using a mobile device

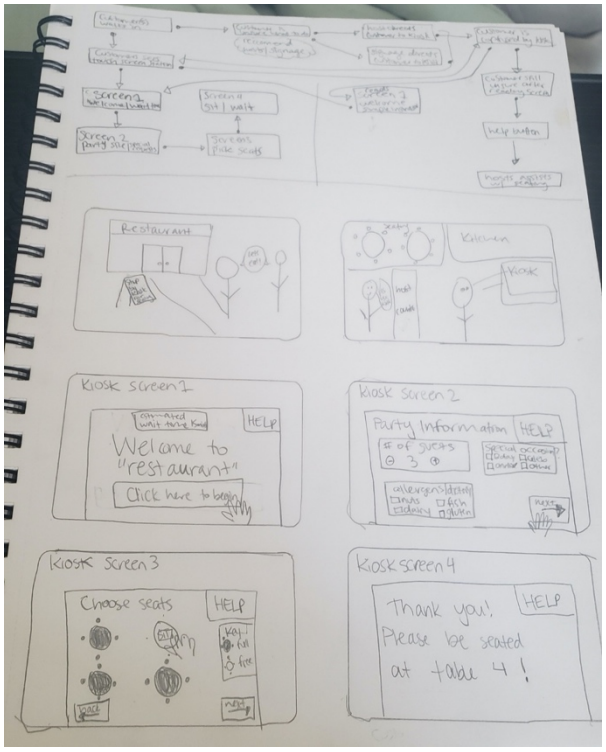


Figure 5: Storyboard of the check-in process using a digital kiosk

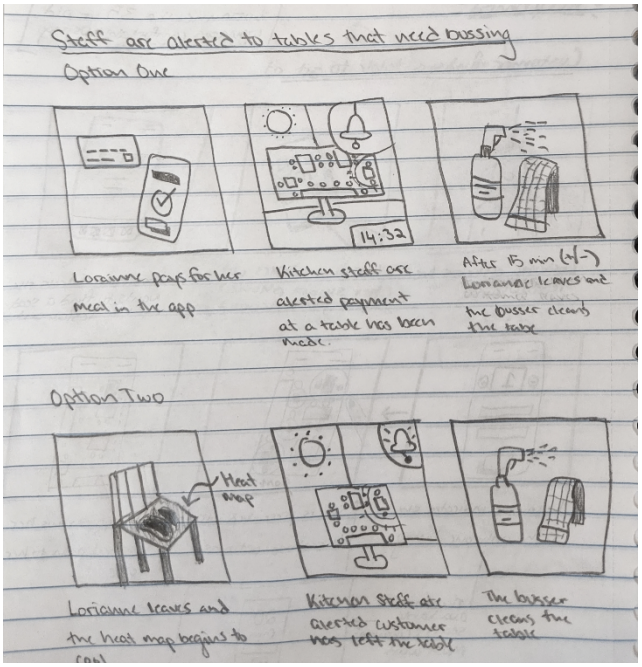


Figure 6: Storyboard alerting staff to bus tables

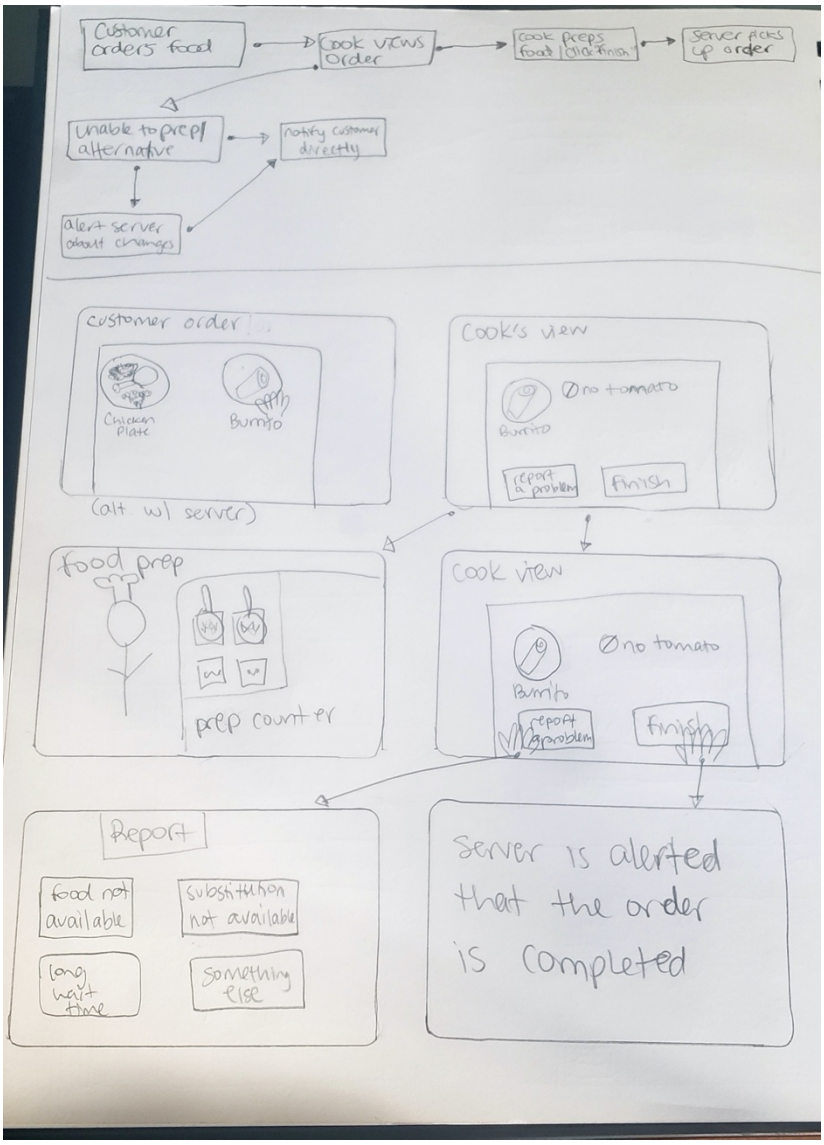


Figure 7: Storyboard of receiving orders

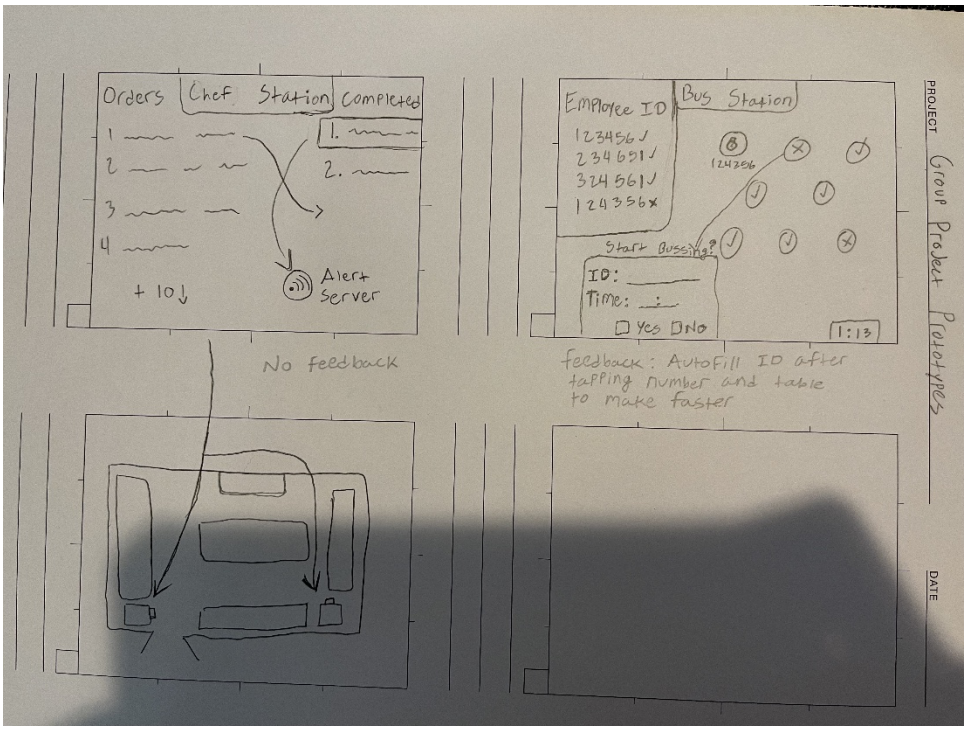


Figure 8: Storyboard of receiving orders and alerting staff to bus tables

Additionally, we each asked one person to provide feedback on our storyboards for a total of three people providing feedback. When receiving feedback on the storyboard in Figure 4 depicting the check-in process the feedback received considered scenarios in which a customer didn't have smart phone preventing them from checking-in to reserve a table. An additional concern was if the network were to go down, how would this impact the user experience? For the storyboard of the check-in process in Figure 5, the feedback provided suggested including a help button that was readily available on each page of the customer check-in process. Since some people may have an aversion to using technology, especially older customers, it was suggested we provide the option for customers to talk with a person to receive assistance. Based on this feedback, we decided to choose the large, digital touch screen kiosk experience shown in Figure 5 instead of using a smartphone based on the feedback of some customers not having a smartphone. Additionally, as shown in the low fidelity wireframes, we included a help button on each screen because of the feedback.

Feedback provided for the storyboard depicting the automation of bussing tables in Figure 6 questioned what would happen if a customer didn't leave the table 15 minutes after paying and if the customer could extend the time before a waiter bussed the table. An additional consideration for the heat map ideas was what would happen if a customer were to get up to go to the bathroom, but the staff mistook this as the customer leaving signifying the table ready to bus. Figure 7 also depicted the bussing of tables and the feedback provided suggested that the system auto fill the ID of the waiter after they tapped the ID number to make the process more efficient. Based on this feedback we decided that the staff would be alerted once someone paid for their meal, they would bus the table 15 minutes later,

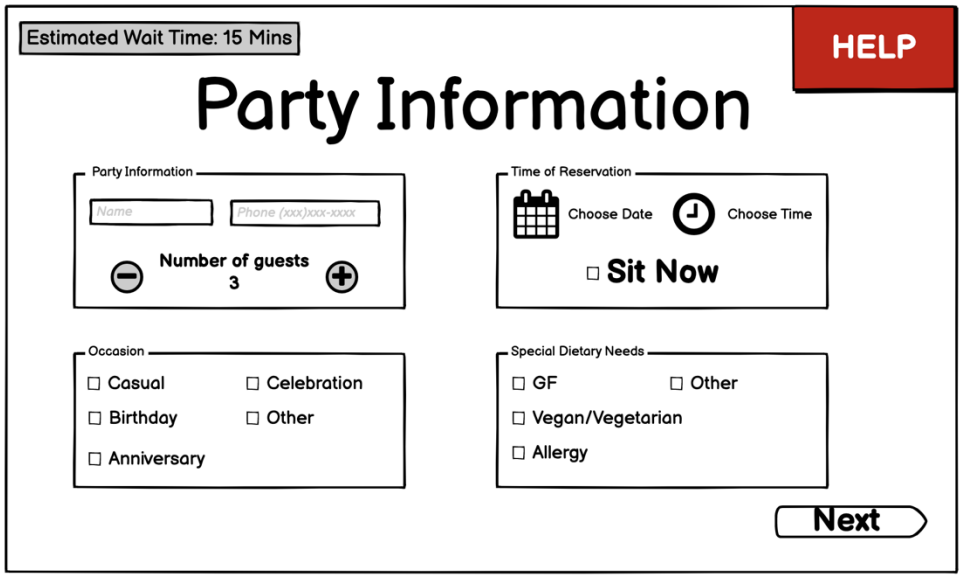
and assign themselves to the table with the ID autofill feature. The feedback collected was included in our wireframe design.

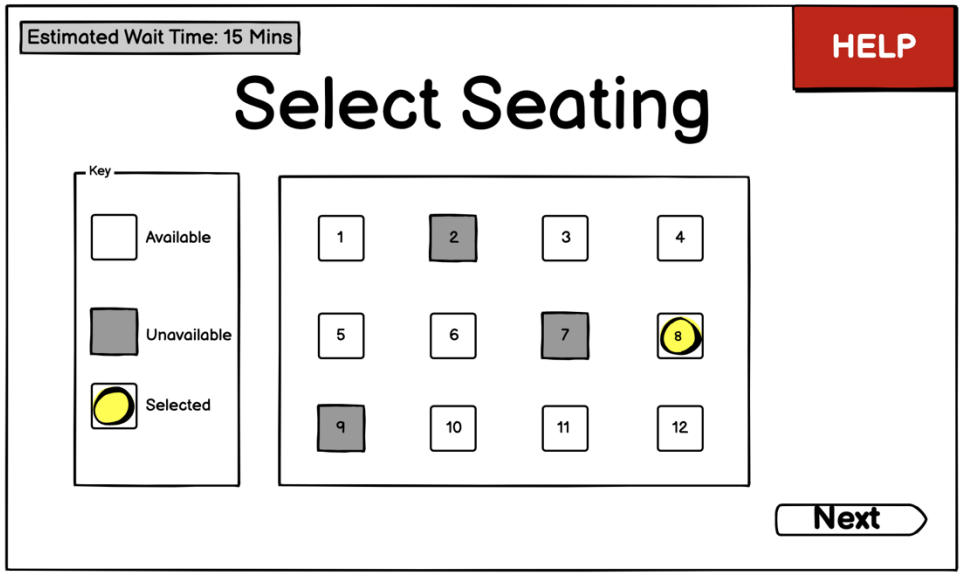
Wireframing

After reviewing our storyboards, we consolidated the storyboard check-in ideas into one experience represented in Wireframe 1 and did the same for the bussing tables scenarios represented in Wireframe 2. The wireframes were created collaboratively using Balsamiq. The first wireframe shows a customer using a large kiosk device to check-in to the restaurant. The second wireframe shows that staff are alerted to bus the table after payment confirmation followed by the bussers assigning themselves to the table using a digital touch screen device in the kitchen.

Wireframe 1: Customer Check-in

When customers arrive at the restaurant, they are prompted with printed signs to check in at the large, digital, touch screen kiosk in its stationary location. They are presented with an estimated wait time and the option to begin the seating process. Once they begin, they are prompted to enter their name, phone number, number of guests, the time they want to be seated, the occasion, and any dietary needs. Next, they are prompted to select a seat. Tables that are grayed out are unavailable either because another party is occupying the table, or the system recognizes the table as too small or large for the current number of guests. Once customer makes their selection, the kiosk shows them how to best navigate their way through the restaurant to find their seat. If at any point in the process the customer needs assistance, they can tap the “Help” button in the top right corner.


Estimated Wait Time: 15 Mins
HELP
Party Information
Party Information
Name
Phone (xxx)xxx-xxxx
Number of guests
3
Time of Reservation
Choose Date
Choose Time
Sit Now
Occasion
Casual
Celebration
Birthday
Other
Anniversary
Special Dietary Needs
GF
Other
Vegan/Vegetarian
Allergy
Next


Estimated Wait Time: 15 Mins
HELP
Select Seating
Key
Available
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1
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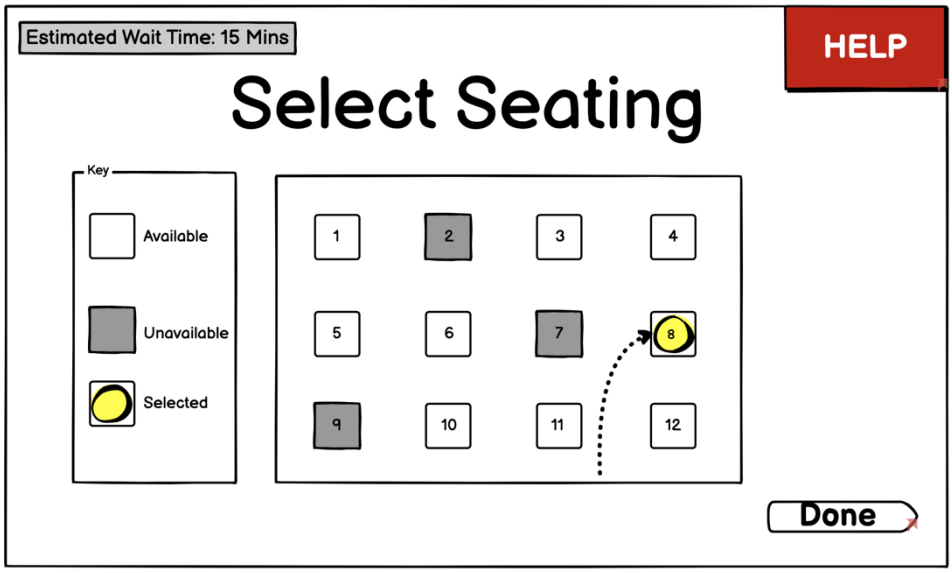
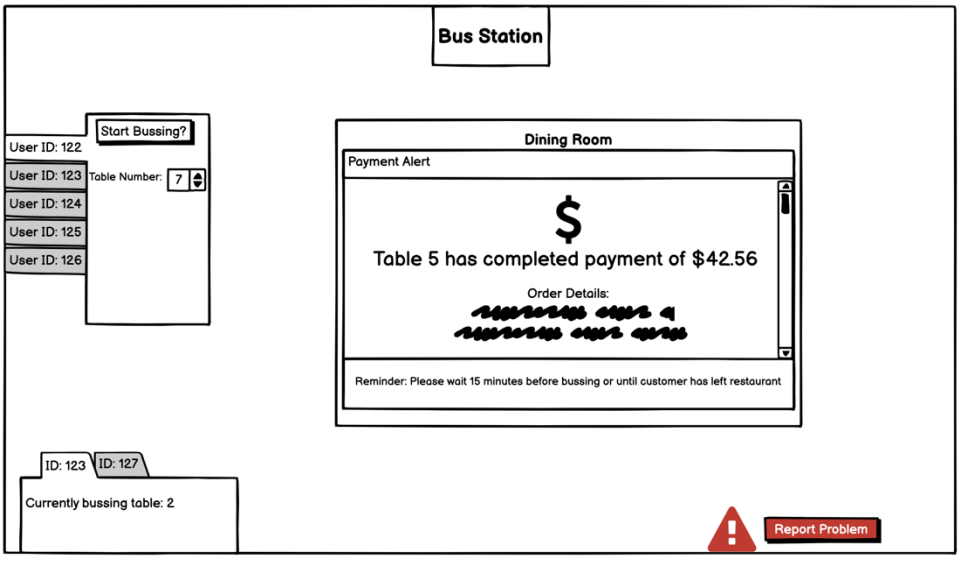
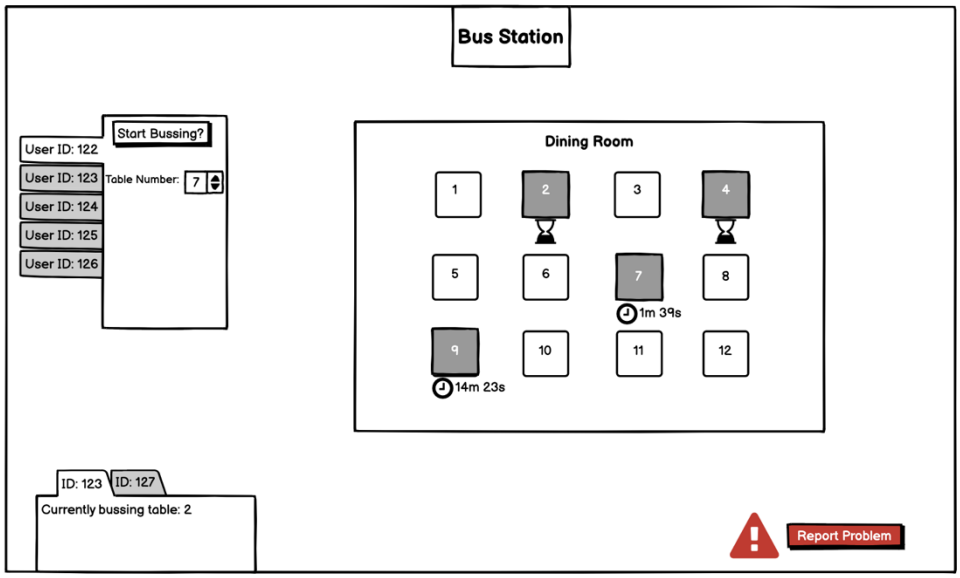


Wireframe 2: Bussing Tables

While Wireframe 1 is a customer facing interface, Wireframe 2 is employee facing and depicts the experience of the wait staff needing to bus tables. When a payment is completed by a customer, the wait staff are alerted on their digital touch screen in the kitchen that payment has been made. Tables that need bussing are greyed out with an hourglass icon. The waiter can tap on their User ID on the left side of the screen to select the table they want to bus. Once they click “Start Bussing?” button, the screen presents a fifteen-minute countdown indicating the time left until the waiter should walk over to bus the table. Tables that have a white fill are either occupied or cleaned for the next customer. In the bottom left corner, the wait staff can keep track of the waiters responsible for bussing a given table. The button right corner depicts a “Report Problem” button in case the wait staff experience any difficulties they need to report.





After creating these low fidelity wireframes, our goal is to collect feedback from our stakeholders before iterating on the idea and possibly creating a high-fidelity wireframe based on the feedback received. If the stakeholder is happy with the progress, we will proceed to a higher fidelity wireframe, otherwise we will continue to ideate at the low fidelity stage until the idea is more concrete.

References

Buxton, Bill. (2007). **Sketching User Experiences: Getting the Design Right and the Right Design**. Morgan Kaufman.

Greenberg, Carpendale, Marquardt and Buxton. (2012). **Sketching User Experiences: The Workbook**. Morgan Kaufman.