

Ordering System - Portfolio 2

Group 14 - The Foodies

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Portfolio - Part 1

Background

Hundreds of hungry patrons can pass through the doors of a restaurant on a daily basis, and with each table that is seated, a server must spend time to wait on their orders. With each server dividing their attention between the many customers, inefficiencies in the form of long wait times, and incorrect orders, a lack of attention to other aspects of the restaurant might ensue. Introducing a computerized system for ordering from a table will relieve stress and provide an efficient alternative to ordering for the customers and servers.

Expectations of the System

This system allows for a customer to quickly and efficiently order food directly from their table. The majority of customers should easily be able to browse, modify, and order the food and beverages offered by the restaurant with little to no assistance from the restaurant staff.

System Constraints

The app that will allow for customers to order directly from their seats will be developed based on the IOS operating system. As such, the app will be designed to run on the 10.2-inch Apple iPad device. A hardware budget of \$6000 will be allotted towards the acquisition of 15 iPad devices.

The development of the app software will be allotted a budget of \$12000 for a team of 5 individuals to work over the course of 4 weeks. Additionally, following the development of the app, the team will provide technical support and updates to the system for a recurring fee of \$3000 per year. The final proposed budget for the project is \$21000 for the first year and \$3000 thereafter.

Expected Users of the System

The system will be designed to be used by those who are ‘technologically literate’. In this case, the term ‘technologically literate’ will refer to individuals that are familiar with operating a touch-screen device. These customers would include groups such as professionals, students, or just a regular user.

These customers will be those who are:

- Professionals
- Students
- Families
- The average user

We will specifically exclude:

- Varying Disabilities
- Technologically Resistant Seniors
- The very young

Work Context

The restaurant varies based on the number of individuals that dine-in.

- Quiet Periods
 - Staff clean up the restaurant and prepare the tables
 - Customers are able to get the attention of a server easily
 - Food orders are given within 10-15 minutes of ordering
- Busy Periods (Lunch and Supper)
 - Customers wait more than 10 minutes to be seated
 - Customers have to wait more than 15 minutes for servers to return so they can place an order
 - Customers wait more than 20 minutes to receive their order

Task Examples

1. Sheila

Sheila is having her monthly reunion with her small group of friends at Kinjo Sushi and Grill. When she gets their food menu, she immediately flips to the section containing Special Rolls as she's familiar with them. The first thing she searches for is a picture of the rolls to see what appeals to her the most. The Mango Roll and the Dragon Roll is what catches her eye. She then looks at the price and considers the health benefits/risks from eating the presented ingredients. Itching to order, Sheila waits for the server to pass-by for 10 minutes until she decides to wave at a server to come over to their table.

2. Quinn

Quinn stops by Ikusa, a sushi restaurant. Since he just came straight from his evening class, he is starving and looks at ordering an appetizer as he believes it comes faster than the bigger meal. Once deciding on Crispy Gyoza as his appetizer, he then searches the menu for a meal and looks for any eye-catching photos and names. Because the menu didn't have pictures of every meal, he looks for any stars or icons that indicate top choices by customers which then helps him choose Japanese Wagyu Steak as his main course.

3. Izen

Izen, a university student, is a regular customer at Boston Pizza. Once seated she is handed a menu and the server, Louise, gives her about 5 minutes with the menu before she comes back to take her order. Izen wants to order chicken wings so she quickly glances over the menu and goes to the section containing chicken wings. She also wants to drink a pop so she looks through the drink section. When Louise returns Izen orders an Iced Tea from her. Then when Louise brings her drink Izen asks for a straw which Louise goes to retrieve. Once Louise returns Izen orders the starter size of the hot flavored all meat bites from Louise. When Louise brings the food to the table Izen asks for a refill of her drink, which Louise then brings.

4. Sammy

Sammy is seated in a booth with her friends at Bubblemania. She looks at the menu and keeps in mind her diet, which is no dairy, no beef and no pork by reading the item description or looking at the photo. Sammy craves fried chicken as it's not easily cooked at home. She narrows down her choices by looking at the price. Sammy patiently waits about 10 minutes until the server, Emily, checks up on her and tells her that she would like to order Honey Garlic Wings.

5. Rose

Rose is a 5th year accounting student and loves to go to Joey's during their happy hour. She waits for the server to hand the drink, food, and happy hour menus once seated. Rose looks for white wine in the Happy Hour menu and decides on a Pinot Grigio 6oz. After placing her order, she mentions that she needs more time to decide on food. Rose looks through the Happy Hour menu for pastas, but doesn't find any. She goes through the regular food menu instead and looks under "Mains". She finds Spaghetti Pomodoro and decides to order this as it is within her budget of \$30.

6. Fred

Fred is an older man in his late 60s and a regular customer at Earls Kitchen + Bar. The server, Reanne, welcomes Fred and introduces the house specials for alcoholic drinks. Fred is feeling thirsty and wants a quick drink, so he decides to forego the menu and orders a 12 oz Jasper Brewing Crisp Pils from Reanne's suggestion. In browsing the food menu, since Fred is watching his weight and would like to eat something healthy, he looks for something light and green. Fred decides on a salad with chicken breast prepared Cajun style. Reanne offers Fred an off-menu upgrade from a half breast to a full breast and the addition of a side dish. Fred declines both.

Requirements

MUST INCLUDE		SHOULD INCLUDE	COULD INCLUDE	EXCLUDE
1) Modify options for an item	7) Search the menu for discounted items	12) Call a server	17) Search the menu for items that get served sooner	21) Payment of order
2) Place partial order	8) Search the menu for items under/over a specific price	13) Customer driven popularity indicator for an item	18) Search the menu for items typically difficult to prepare at home	22) Receiving of orders at preparation stations
3) Visual representation of items	9) Price provided for each item	14) Request common, no-cost items	19) Compare price of different dishes	23) Updating the cancellation or modification of previously placed orders
4) Details on item ingredients	10) Summary of items selected to order	15) Request service on refillable items	20) Get item suggestions for particular categories	
5) Search the menu for a specific item	11) Total price of items selected to order	16) Ability to tell if an item conforms to a specific set of dietary restrictions or allergies		
6) Search the menu for a specific category				

Justification For Each Task

- 1) In many cases (task examples #3, 4, 5, and 6), the user looked to select an item to order from the menu, but those **items contained certain variations** that differed from the default. If a restaurant is providing variations on an item, this must be made known to the user.
- 2) In many user interactions, some users preferred to make an initial order on an item that they considered to be quicker to be served. It was only after the initial order was placed that the users had begun to consider ordering additional food or drinks as was done in task examples #2, 3, 5, and 6. As is the nature of ordering, the **user must be allowed to make more than 1 order** without losing their order progress .
- 3) Visual representations were critical factors in task examples #1, 2, and 6 where the users selected items for their orders based on what appeared visually appealing or befitting to the user. Being able to **visualize the items** on a digital interface will help the user quickly and efficiently place an order.
- 4) **Details on the ingredients in an item** largely define the user's item choice. In task examples #1, 4, and 6, being able to know the ingredients are particularly important due to personal dietary limitations or restrictions preventing any consumption of certain ingredients, thus allowing for users to avoid certain items
- 5) A universal theme in task examples #1-6 was that the **user was searching for a certain item**. It would not make any sense for an item that is offered by the restaurant to not be reachable on the menu.
- 6) In many task examples, the user was looking to find some type of item such as “Special rolls” in task example #1, “Appetizers” in #2, “Chicken” in #3 and 4, “Mains” in #5, and a “Salad” in #6. **Categorizing the items** will allow a user to more efficiently find something that they want. It was not uncommon for a user to feel inclined to review a menu category with discounted items before even potentially viewing the main menu as is seen in task examples #5 and 6, albeit Fred in task example #6 does not even view the drinks menu since he is verbally given the drink specials. **Having a discount menu would incentivize** and help the user to pick an item quicker

- 7) It was not uncommon for a user to feel inclined to review a menu category with discounted items before even potentially viewing the main menu as is seen in task examples #5 and 6, albeit Fred in task example #6 does not even view the drinks menu since he is verbally given the drink specials. Having a discount menu would incentivize and help the user to pick an item quicker
- 8) Some users will adhere to a strict budget such as in task example #5 where Rose limits herself to only spending \$30. **Being able to narrow down the price** allows for the user to make the menu easier to read and thus makes the ordering process much easier and faster.
- 9) Failing to have prices listed could otherwise result in unhappy users having overspent on their visit to the restaurant. The prices were a major consideration in the user choosing their orders in task examples #1, 4, and 5.
- 10) In task examples #1, 2, and 4, each user always decided on what they wanted to order, then placed the order with the server. Imagine a situation where the user places their order and hopes that what was ordered actually was what they wanted. It is important for the user to be able to **know what they are ordering** just before they submit their order.
- 11) Same explanation for REQUIREMENT #9 (above).
- 12) Some tasks require the presence of the staff for tasks such as making special requests or refilling a drink as seen in task example in task example #3. **It is important to be able to request for the server from the interface**, although it should not be a common action..
- 13) In task example #2, Quinn was unsure of what he wanted to order, so he chose an item based off of what appeared to be a popular choice. **Having a “Popular indicator”** would help act as a non-complex general suggestion system that can help the user make a decision when they are unsure of what they want to order.
- 14) Common items such as straws are items that are also included in the ordering process as seen in task example #3. While they are generally complimentary, **a user should be able to order such items** assuming that the restaurant does offer it.
- 15) There exists cases in which an item or a drink is listed as being “Endless” or “Bottomless”, thus **indicating that these items can be refilled** for free such as is seen in task example #3. Since this is something that the restaurant might offer, the restaurant should be able to fulfill this promise with the user.

- 16) Although it may already be sufficient for a user with dietary restrictions or allergies to read ingredients of an item (which was requirement #4), reading through every single one in order to identify if an item can be ordered is a tedious process. Having an **indicator for common diets and allergies** would greatly improve the user ordering experience and time.
- 17) It is universally understood that the term “appetizers” refers to light food items that are served well before the main meal as was seen in task example #2. As such, requirement #6 would similarly fulfill this requirement.
- 18) Difficult to prepare items can certainly be incentivizing to the user to order such as is the case in task example #4. However, the definition of “hard to prepare” can differ from user to user and depending on the menu offerings, it might be the case that nearly every item is “hard to prepare”. Overall, it is a term that is dependent on the menu.
- 19) The price of items offered on the menu was a factor in choosing items in task examples #1, 4, and 5. Being able to compare the prices of certain items would be useful to the budget-minded user, but requirement #8 accomplishes a similar task with a higher coverage and a lower degree of complexity.
- 20) Some users often do not know exactly what they are looking for and would instead like to order by the suggestion of the server as is the case in task example #6. However, suggestions with user relevance highly depends on knowing additional user preferences, thus adding much complexity. Requirement #14 would be able to provide generalized suggestions without the extra layer of complexity.
- 21) Payment was not considered to be part of the ordering process since it comes well after any ordering, and thus falls outside of the scope of the proposed ordering app functionalities. It will therefore be excluded.
- 22) In task examples #1 - 6, the server receives the food and drink orders of the users (patrons), and it is then implied that the server processes their orders. Since this system is being developed for restaurant patrons, tasks unrelated to this user set should not be considered for our system.
- 23) Orders that have already been submitted would be assumed to be under the jurisdiction of the previously mentioned “receiving of orders” interface mentioned above for requirement #22. As such, another user audience would be involved, therefore editing of orders will be excluded

Design

Foundational Features

A common theme of negative user-staff interactions was revealed when taking a holistic look at our task examples.

- Sheila was inconvenienced to wait 10 minutes for the server just to make her order.
- Izen depended on the periodic arrival of the server to make four different orders during her visit.
- Although less distressed, Sammy had to wait 10 minutes to place her initial order.
- While Fred found it useful to order a quick drink from the server's suggestions, the server's attempt to upsell his order was rejected

To accommodate for these kinds of negative experiences for our expected users, our core goal is to design a system that significantly limits the need for the user to interact with the server during the ordering process. The system attempts to provide, in a convenient manner, the details most important to our typical customer while still providing the ability to call a server if special circumstances arise.

Keep in mind, our system ignores the payment process or handling of orders once they have been submitted. Our window of interaction starts when the customer uses the iPad hosting our application, to when the customer submits their last order. It is up to the restaurant to directly introduce or make obvious that our system is to be used for the process of ordering.

Early Prototypes

Our group first developed ideas for the design individually. Some focused on the presentation of information while others prioritized the flow of the application. Having several independent prototypes gave us all insight on the area's our individual prototypes may have been weak on.

Prototypes #2 and 4 emphasized how the customer may navigate to different sections of the system. This included design elements such as initially presenting an entry page that had the customer choose a particular section to start, and incorporating categories into the design of the menu to help the user narrow their attention when searching for items.

Prototypes #1 and 5 were designed around a grid format with large cells to present the items

of the menu, thus allowing for users to easily view details about each item as they browse. Prototype #3 introduced making use of the iPad's screen space in a more efficient and focused manner. This was done with a split screen view giving fewer details about a list of items on the left and revealing more details about selected items on the right.

Final Prototype

Version 1.0

Combining desired aspects from prototypes #1-5 led to developing prototype #6. The default "Welcome" page served as an underwhelming and quick place to start browsing (figure 6.1). What followed immediately was a request to disclose any allergies or dietary restrictions (figure 6.2 & figure 6.3). While only one of our task examples contained details regarding avoiding specific foods, due to the critical safety and high aggravation regarding the topic of allergies and dietary restrictions, we found it important to find a place to accommodate those needs.

Next the user is directed to their previously selected menu category, which is highlighted on the top left portion of the interfaceside, where they can scroll through the list of items on the left main panel (figure 6.4). The idea is to have the name of an item, its corresponding price, and, if possible, a short description in a single slot for each item. This allows the user to gather details about several menu items in a convenient to browse manner.

If any restrictions were selected in the previous section then items that do conform to their restrictions, or can be changed to conform, would be highlighted in this menu while items that do not conform will remain unhighlighted here.

When the user selects one of the items on the list, the right panel is populated with details about that item (figure 6.4). The details for the item will start with a picture of the item and a more thorough description presenting the dishes main ingredients. Accompanying the details on this panel will be any possible customizations that the restaurant would provide for this item. Options could include different dish sizes, cooking styles, seasonings, sauces, side dishes, additions, or any substitute ingredients the restaurant might offer. The price of any additions, where applicable, is explicitly labeled with the option. When a customer is happy with the item and its current orientation of options they can add the item to their order by pressing the button located at the bottom of the detailed item screen and continue browsing.

The review page for the user's current order can be accessed by selecting the shopping cart icon on the center right (figure 6.4). Since our expected clientele should be familiar with digital ordering systems we assume the common icon will be hint enough for them to proceed. On this page they can view the items they have added to their order (figure 6.5). Selecting a single item would take them back to the detailed item screen (figure 6.4) where they can modify its customizations and re-add it to the order. Finally, after reviewing their order they would submit the order with a single press of a button conveniently located at the end of the ordering screen (figure 6.5).

Version 2.0

After further review, we decided our design did not provide our users with enough functionality. Since a few of our task examples described the need to browse the menu under specific criteria we decided it would be useful to implement a searching and filtering section to the system.

By selecting the commonly used magnifying glass icon on the top of any page, the right panel of the menu page will display our searching and filtering details (figure F.2). With this action, a new category temporarily labeled "Custom" will be generated with an empty item list to indicate a new category based on the criteria selected. If the user wants to search a word, they can input the word into the search bar. This will populate the left list with any item that contains the searched word in the title or description. Alternatively, the user can select parameters such as price range or food restrictions they do not want to eat from the provided selection of filters displayed below the search bar (figure F.2).

We were also not sure the welcome page and allergies and dietary restrictions page were something we should force each user to pass through. Since our food restriction functionality was now implemented in our filtering process, we decided to remove those first two sections from our system and have the customer be presented with the menu initially (figure F.1). To make it clear that such filters can be applied, we made sure to still add a button on the top explicitly labeled "Food Restrictions." Although the magnifying glass icon and the food restrictions button both lead to the same page, it serves two different types of users. Someone worrying about their food restrictions may not think of selecting the search icon and, likewise, someone looking to search for something specific would not necessarily consider "food restrictions" to be where that functionality is found.

Walkthroughs

Task #1 - Sheila

Task Step	Motivated? Knowledgeable?	Problems/Solutions?
1. Press on the “Magnify Glass” icon	Motivation: High. The user knows what category they want so they use the search feature to help them find it. Knowledge: High. The icon is explicitly labeled at the top of each page.	
2. Select “Category” under “Filter”	Motivation: High. The user wants the “Special Rolls” category so they would like to apply this filter. Knowledge: High. The “Category” option is explicitly labeled under “Filter”	
3. Type in “Special Rolls” in the search bar	Motivation: High. The user wants the “Special Rolls” category so they type it in. Knowledge: High. The search bar is explicitly labeled and it is evident that you would type what you want in the bar.	
4. Press the “Find” button beside the search bar	Motivation: High. The user wants to look for Special Rolls. Knowledge: High. The “find” button is explicitly labeled beside the search bar.	
5. Press each item listed on the left side of the split screen and view the photo	Motivation: Low. Selecting each item to see each image is a long process. Knowledge: High. Each item is explicitly labeled on the left side of the split screen.	Problem: The item photo is only shown after clicking the item. Solution: Have the item photo included in the list.

6. Press “Mango Roll” and “Dragon Roll” in the item list to compare item details by alternating between the two.	<p>Motivation: Low. The user has to click the two items alternately and read the item description to compare.</p> <p>Knowledge: High. The item description is displayed on the right side of the split screen.</p>	<p>Problem: The user can have a hard time comparing the list of ingredients in multiple dishes since they will need to click each item on the left to view the ingredients.</p> <p>Solution: List main ingredients in the list of items on the left side of the split screen or add a feature to be able to compare multiple items.</p>
4. Press “Mango Roll” and press “Add to Order”	<p>Motivation: High. After viewing the item details, the user would like to add this to their order.</p> <p>Knowledge: High. The button is explicitly labeled on the bottom of the screen.</p>	
5. Press “Dragon Roll” in the list and press the “Add to Order” button.	<p>Motivation: High. After viewing the item details, the user would like to add this to their order.</p> <p>Knowledge: High. The button is explicitly labeled on the bottom of the screen.</p>	
6. Press the “cart” icon on the right side of the screen to review her Current Order.	<p>Motivation: High. The user wants to review and possibly submit their order.</p> <p>Knowledge: High. The subtotal and picture of the cart is shown on the right side of the screen</p>	
7. Press “Submit Order” in the Current Order page	<p>Motivation: High. The user is ready to submit their order.</p> <p>Knowledge: High. The item is explicitly labeled on the bottom left of the split screen.</p>	

Task #2 - Quinn

Task Step	Motivated? Knowledgeable?	Problems/Solutions?
1. Scroll through list of “Appetizers”	<p>Motivation: High. User wants to look at the list of appetizers.</p> <p>Knowledge: Low. The scroll bar is not shown beside the list of items.</p>	<p>Problem: There is no scroll bar beside the list of items.</p> <p>Solution: Adding a scroll bar as a visual cue that the list extends beyond the screen.</p>
2. Press on “Crispy Gyoza”	<p>Motivation: High. User wants to order this.</p> <p>Knowledge: High. The item is explicitly labeled on the left-side of the split screen.</p>	
3. Press on “Add to Order”	<p>Motivation: High. After viewing the item details, the user would like to add this to their order.</p> <p>Knowledge: High. The button is explicitly labeled on the bottom of the screen.</p>	
6. Press the “Mains” button	<p>Motivation: High. The user wants to order a main course meal.</p> <p>Knowledge: High. The “Mains” button is explicitly labeled on the top left side of the screen.</p>	
7. Presses on “Japanese Wagyu Steak”	<p>Motivation: High. The item name and photo catches the user’s eye.</p> <p>Knowledge: Low. Since the user goes through the menu to look for anything that looks “good”, the user might not know that he has to click the item in order to see what it looks like.</p>	<p>Problem: The photo is only shown when you click on the item from the list on the left.</p> <p>Solution: Display a photo of the item in the list.</p>

8. Press on “Add to Order” button	<p>Motivation: High. After viewing the item details, the user would like to add Japanese Wagyu Steak to their order.</p> <p>Knowledge: High. The button is explicitly labeled on the bottom of the screen.</p>	
9. Press “cart” icon on the right side of the screen	<p>Motivation: High. The user wants to review and possibly submit their order.</p> <p>Knowledge: High. The subtotal and picture of the cart is shown on the right side of the screen</p>	
10. Press “Submit Order” in the “Current Order” page	<p>Motivation: High. The user is ready to submit their order.</p> <p>Knowledge: High. The item is explicitly labeled on the bottom left of the split screen.</p>	

Task #3 - Izen

Task Step	Motivated? Knowledgeable?	Problems/Solutions?
1. Press on the “Drinks” button in the horizontal navigation bar on the top left corner of the left side of the screen.	<p>Motivation: High. It allows the user to reduce the number of items they need to search through for a particular item.</p> <p>Knowledge: High. Need to select between explicitly labeled buttons in the horizontal navigation bar.</p>	
2. Press on “Iced Tea” from the list of items on the left side of the screen.	<p>Motivation: High. The user wants to select an “Iced Tea” to order.</p> <p>Knowledge: High. The list of items is explicitly labeled on the left side of the screen.</p>	

3. Press on the “Add To Order” button.	<p>Motivation: High. It allows users to add the item to the order.</p> <p>Knowledge: High. Explicitly labeled on the bottom off-center right of the screen.</p>	
4. Press the “Shopping Cart” icon to review the Current Order.	<p>Motivation: High. It allows users to review their current order.</p> <p>Knowledge: High. An image of a shopping cart is shown on the center right of the right side of the screen.</p>	
5. Press the “Submit Order” button.	<p>Motivation: High. It allows users to submit their order.</p> <p>Knowledge: High. Explicitly labeled on the bottom left of the screen.</p>	
6. Press “X” on the “Thank You For Your Order” window.	<p>Motivation: High. The user wants to exit the window.</p> <p>Knowledge: High. The button is explicitly labeled on the pop-up window.</p>	
7. Press the “Call Server” button to ask the server for a straw.	<p>Motivation: Low. It requires the users to call a server when they need common, no-cost items.</p> <p>Knowledge: High. Explicitly labeled on the top right of the screen.</p>	<p>Problem: User needs to wait for a server to ask for common, no-cost items.</p> <p>Solution: Add a button that the user can press to allow them to select common, no cost-items.</p>
8. Press the “Return to Menu” button.	<p>Motivation: High. The user wants to order food.</p> <p>Knowledge: High. The “Return to Menu” button is explicitly labeled on the top left of the screen.</p>	

8. Press the “Appetizers” button in the horizontal navigation bar on the top left corner of the left side of the screen.	<p>Motivation: High motivation as it allows the user to reduce the number of items they need to search through for a particular item.</p> <p>Knowledge: High. Need to select between explicitly labeled buttons in the horizontal navigation bar.</p>	
9. Press on “Chicken Wings” from the list of items on the left side of the screen.	<p>Motivation: High. The user wants to select “Chicken Wings” to order.</p> <p>Knowledge: High. The list of items is explicitly labeled on the left side of the screen.</p>	
10. Select the “All Meat Bites” option on the right side of the screen under “Customize”.	<p>Motivation: High. Allows the user to select a particular chicken wing variation.</p> <p>Knowledge: High. Explicitly labeled on the bottom of the right side of the screen.</p>	
11. Select the “Starter Size” option on the right side of the screen under “Customize”.	<p>Motivation: High. Allows the user to select preferred size.</p> <p>Knowledge: High. Explicitly labeled on the bottom of the right side of the screen.</p>	
12. Select the “Hot” option on the right side of the screen under “Customize”.	<p>Motivation: High. Allows the user to select preferred flavor.</p> <p>Knowledge: High. Explicitly labeled on the bottom of the right side of the screen.</p>	
13. Press on the “Add To Order” button.	<p>Motivation: High. Allows users to add the item to the order.</p> <p>Knowledge: High. Explicitly labeled on the bottom off-center right of the screen.</p>	

14. Press the “Shopping Cart” icon to review the Current Order.	<p>Motivation: High motivation as it allows users to review their current order.</p> <p>Knowledge: High. An image of a shopping cart is shown on the center right of the right side of the screen.</p>	
15. Press the “Submit Order” button to complete the order.	<p>Motivation: High motivation as it allows users to submit their order.</p> <p>Knowledge: High. Explicitly labeled on the bottom left of the screen.</p>	
16. Press “X” on the “Thank You For Your Order” window.	<p>Motivation: High. The user wants to exit the window.</p> <p>Knowledge: High. The button is explicitly labeled on the pop-up window.</p>	
17. Press the “Call Server” button to ask the server for a refill of the drink.	<p>Motivation: Low. It requires the users to call a server when they need common, no-cost items.</p> <p>Knowledge: High. Explicitly labeled on the top right of the screen.</p>	<p>Problem: User needs to wait for a server to ask for common, no-cost items.</p> <p>Solution: Add a button that the user can press to allow them to select common, no cost-items.</p>

Task #4 - Sammy

Task Step	Motivated? Knowledgeable?	Problems/Solutions?
1. Press the “Food Restrictions” button on the top center of the right side of the screen.	<p>Motivation: High. The user knows their Allergies or Dietary Restrictions so they want to filter it.</p> <p>Knowledge: High. The icon is explicitly labeled at the top of each page.</p>	

2. Press the “Dairy”, “Beef” and “Pork” options on the bottom of the right side of the screen.	<p>Motivation: High. The user wants to select food restrictions that apply to them.</p> <p>Knowledge: High. Explicitly labeled options under the Food Restrictions section on the bottom of the right side of the screen.</p>	
3. Browse through the list of filtered items displayed on the left side of the screen.	<p>Motivation: High. This allows the user to browse through items that meet the selected food restrictions.</p> <p>Knowledge: High. The list of items is explicitly labeled on the left side of the screen.</p>	
4. Type in “Fried Chicken” via the search bar on the top half of the right side of the screen.	<p>Motivation: High. It allows the user to quickly search the menu.</p> <p>Knowledge: High. Explicitly labeled on the top half of the right side of the screen.</p>	
5. Press the “Find” button beside the search bar.	<p>Motivation: High. The user wants to look for Fried Chicken.</p> <p>Knowledge: High. The “find” button is explicitly labeled beside the search bar.</p>	
6. Press the item “Chicken Wings” from the list of items on the left side of the screen.	<p>Motivation: High. The user wants to select “Chicken Wings” to order.</p> <p>Knowledge: High. The list of items is explicitly labeled on the left side of the screen.</p>	
7. Select the “Fried Wings” option on the right side of the screen under Customize.	<p>Motivation: High. Allows the user to select a particular chicken wing variation.</p> <p>Knowledge: High. Explicitly labeled on the bottom of the right side of the screen.</p>	

8. Select the “Honey Garlic” option on the right side of the screen under “Customize”.	<p>Motivation: High. Allows the user to select preferred flavor.</p> <p>Knowledge: High. Explicitly labeled on the bottom of the right side of the screen.</p>	
9. Press the “Add To Order” button.	<p>Motivation: High. Allows users to add the item to the order.</p> <p>Knowledge: High. Explicitly labeled on the bottom off-center right of the screen.</p>	
10. Press the “Shopping Cart” icon to review the Current Order.	<p>Motivation: High. It allows users to review their current order.</p> <p>Knowledge: High. An image of a shopping cart is shown on the center right of the right side of the screen.</p>	
11. Press the “Submit Order” button to complete the order.	<p>Motivation: High. Allows the user to submit their order.</p> <p>Knowledge: High. Explicitly labeled on the bottom left of the screen.</p>	

Task #5 - Rose

Task Step	Motivated? Knowledgeable?	Problems/Solutions?
1. Navigate to the categories tab and press on the “Happy Hour” menu.	<p>Motivation: High. The user should be able to navigate to different food/drink categories as their preference.</p> <p>Knowledge: High. The label of categories is explicitly labeled on the top of the left screen.</p>	.
2. Press the “Pinot Grigio” drink in the menu.	<p>Motivation: High. Users must browse the list of items to search for the item.</p> <p>Knowledge: High. The list of items is explicitly labeled on the left side of the screen.</p>	

3. Press “6oz” under “Customize” and “Size” category on the right of the screen	<p>Motivation: High. Allows the user to select preferred drink size.</p> <p>Knowledge: High. The list of the options to categorize is displayed on the right under the picture.</p>	
4. Press the “Add To Order” button.	<p>Motivation: High. Allows the user to add the item to the order.</p> <p>Knowledge: High. Explicitly labeled on the bottom off-center right of the screen.</p>	
5. Scroll the left screen to find more dishes.	<p>Motivation: High. The user can browse more food.</p> <p>Knowledge: Low. Users may not know that the item list extends past the window.</p>	<p>Problem: Since the screen is split into 2 sides, there might not be enough space to make explicit how to scroll the screen.</p> <p>Solution: Adding a scroll bar as a visual cue that the list extends beyond the screen.</p>
6. Press the “Mains” button at the top of the left screen to navigate to the main dishes.	<p>Motivation: High. Users can browse more food in the same menu.</p> <p>Knowledge: High. The button is directly labeled with the user’s destination.</p>	
7. Press “Spaghetti Pomodoro” in the item list.	<p>Motivation: High. User is interested in ordering this dish.</p> <p>Knowledge: High. The list of items is explicitly labeled on the left side of the screen</p>	

8. Press the “Shopping Cart” icon to review the current order.	<p>Motivation: High. Allows the user to review their current order.</p> <p>Knowledge: High. An image of a shopping cart is shown on the center right of the right side of the screen.</p>	
9. Press the “Submit Order” button to complete the order.	<p>Motivation: High. This allows users to submit their order.</p> <p>Knowledge: High. Explicitly labeled on the bottom left of the screen.</p>	

Task #6 - Fred

Task Step	Motivated? Knowledgeable?	Problems/Solutions?
1. Press the “Drinks” category at the top left of the screen to navigate to the drinks.	<p>Motivation: High. The user would like to access a specific category of the menu.</p> <p>Knowledge: High. The category is explicitly labeled with the user’s destination.</p>	
2. Press “Jasper Brewing Crisp Pils” in the item list without scrolling	<p>Motivation: High. The user is looking for a quick drink and selects one that they can see right away.</p> <p>Knowledge: High. The item is explicitly labeled.</p>	

3. Press “12oz” under “Customize” and “Size” categories on the right side of the screen	<p>Motivation: High. The user wants to pick the size of the beverage that they will be drinking.</p> <p>Knowledge: Medium. All options are listed in view for the user to choose from. The user may not know that an option should be chosen for an item.</p>	<p>Problem: The user may not know that an option needs to be chosen.</p> <p>Solution: Addition of indicators that will let the user know when an option must be chosen or when something has a default.</p>
4. Add the 12 oz. beer to the order by pressing the “Add to Order” button.	<p>Motivation: High. In the item view screen, the “Add to order” button is conveniently placed within view at the bottom of the screen for the item.</p> <p>Knowledge: High. The button for adding items to the order cart are explicitly labeled.</p>	
5. Press the Shopping Cart icon to review the Current Order.	<p>Motivation: High. The user would like to confirm that their potential order is correct.</p> <p>Knowledge: High. An image of a shopping cart is shown on the center right of the right side of the screen.</p>	
6. Press the “Submit Order” button to submit the drink order	<p>Motivation: High. The button allows for the user to complete an order.</p> <p>Knowledge: High. The button is explicitly labeled at the bottom on the “Review Order” screen.</p>	
7. Press “X” on the “Thank You For Your Order” window	<p>Motivation: High. The user wants to exit the window.</p> <p>Knowledge: High. The button is explicitly labeled on the pop-up window.</p>	
8. Press the “Return to Menu” button	<p>Motivation: High. The user wants to order food.</p> <p>Knowledge: High. The “Return to Menu” button is explicitly labeled on the top left of the screen.</p>	

9. Navigate to the “Appetizers” category by selecting the button at the top left of the interface.	<p>Motivation: High. The user wants to view a specific category from the menu.</p> <p>Knowledge: High. The category is conveniently labeled and placed at the top of the menu.</p>	
10. Scroll the left menu and press each item to view item photos for something green.	<p>Motivation: Low. The user is looking for “something light and green”, but no visuals are available on the left screen to help indicate so.</p> <p>Knowledge: Low. Users may not know that the item list extends past the window.</p>	<p>Problem: Item visuals are only visible when an item is selected.</p> <p>Solution: Add an item picture for each item on the left screen.</p> <p>Problem: The left screen displaying menu items does not indicate that scrolling is available.</p> <p>Solution(s): Add a scroll bar as a visual cue that the list extends further.</p>
11. Press the item describing a “Salad” to view the details.	<p>Motivation: High. The user wants to pick the item to view it.</p> <p>Knowledge: High. The user has already performed this type of action once.</p>	
12. Select the “Cajun Style Chicken” option to add it to the salad.	<p>Motivation: High. The user wants to choose a different option for the way the food is prepared.</p> <p>Knowledge: High. The option is shown in a clear position right before the “Add to order” button and all the options are listed out in full view. Also, the selected option is highlighted, indicating which option is being selected.</p>	

13. Press the “Shopping Cart” icon to review the current order	<p>Motivation: High. The user would like to finish placing their correct order.</p> <p>Knowledge: High. The user has already performed this action once.</p>	
14. Press the “Submit Order” button to submit the food order	<p>Motivation: High. The user would like to place their order which is now correct.</p> <p>Knowledge: High. The button is explicitly labeled.</p>	

Appendix

Final Prototype

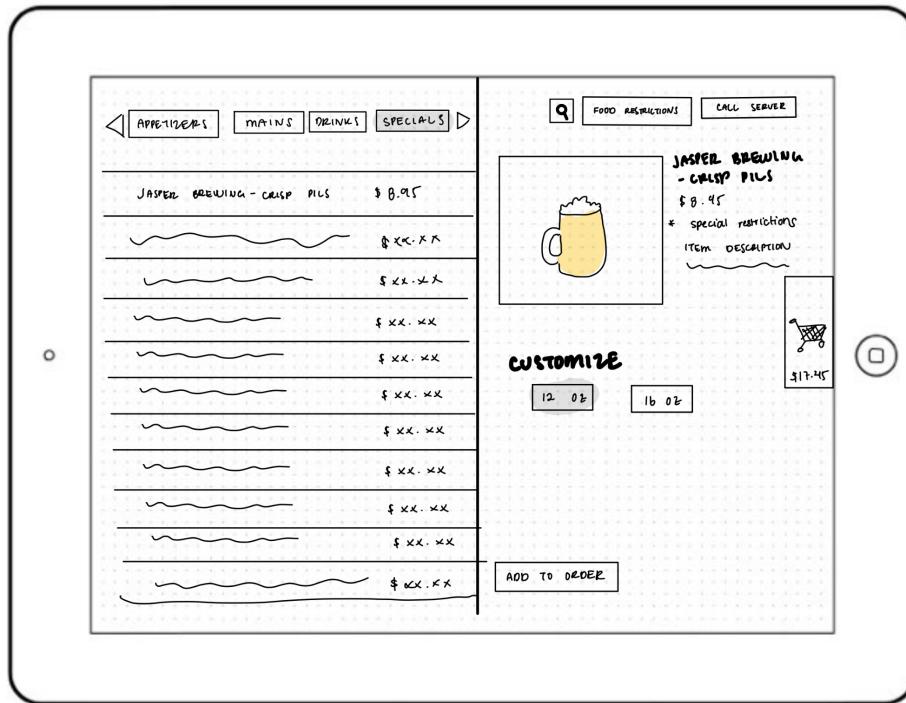


Figure F.1: Menu Page for Specials

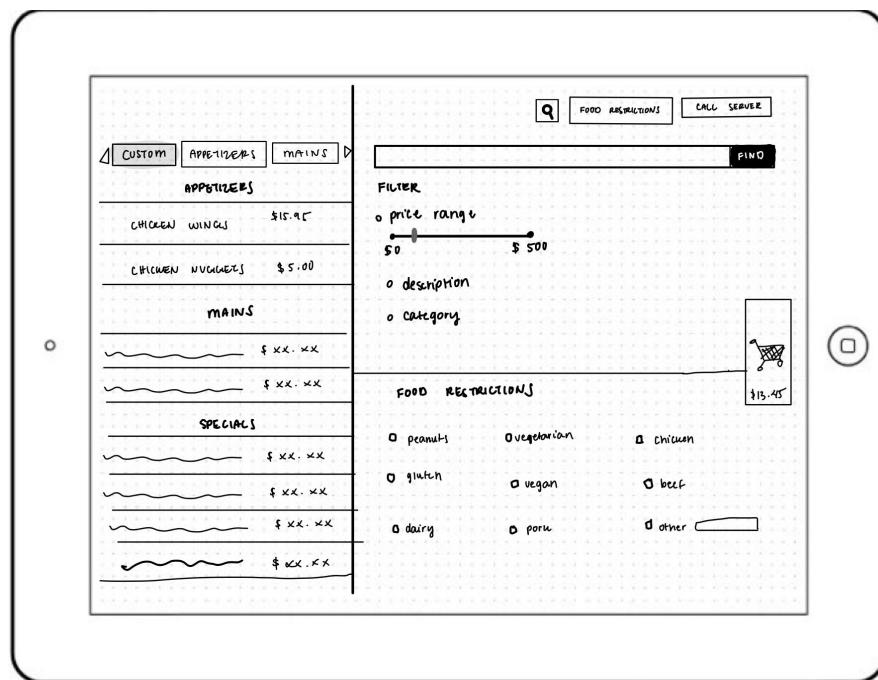


Figure F.2: Search + Filter Page

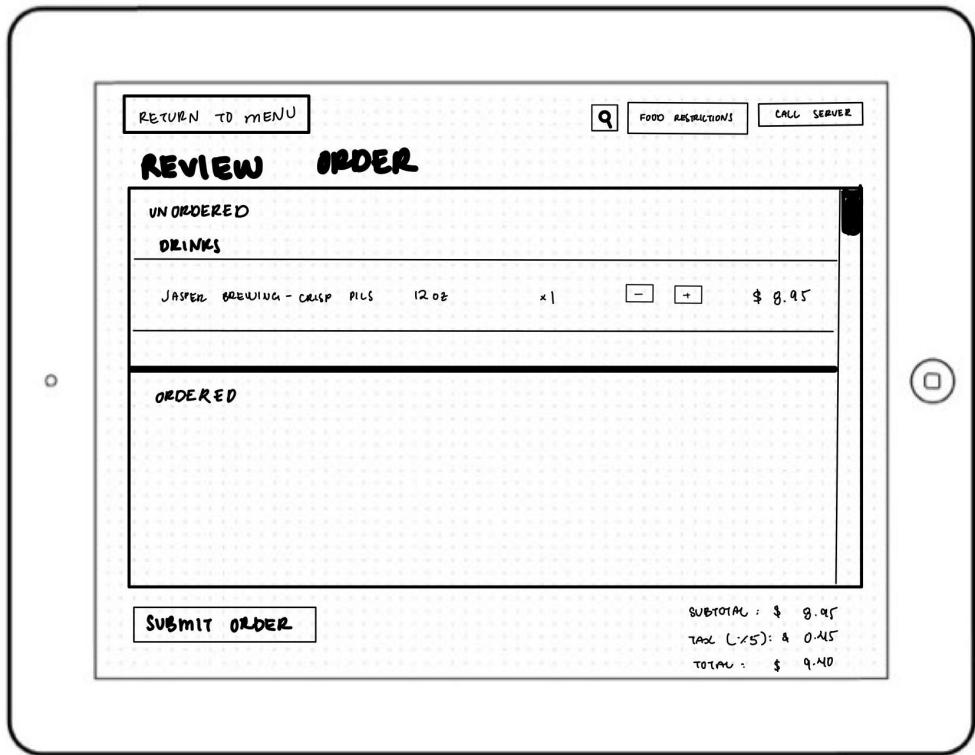


Figure F.3: Current Order Page

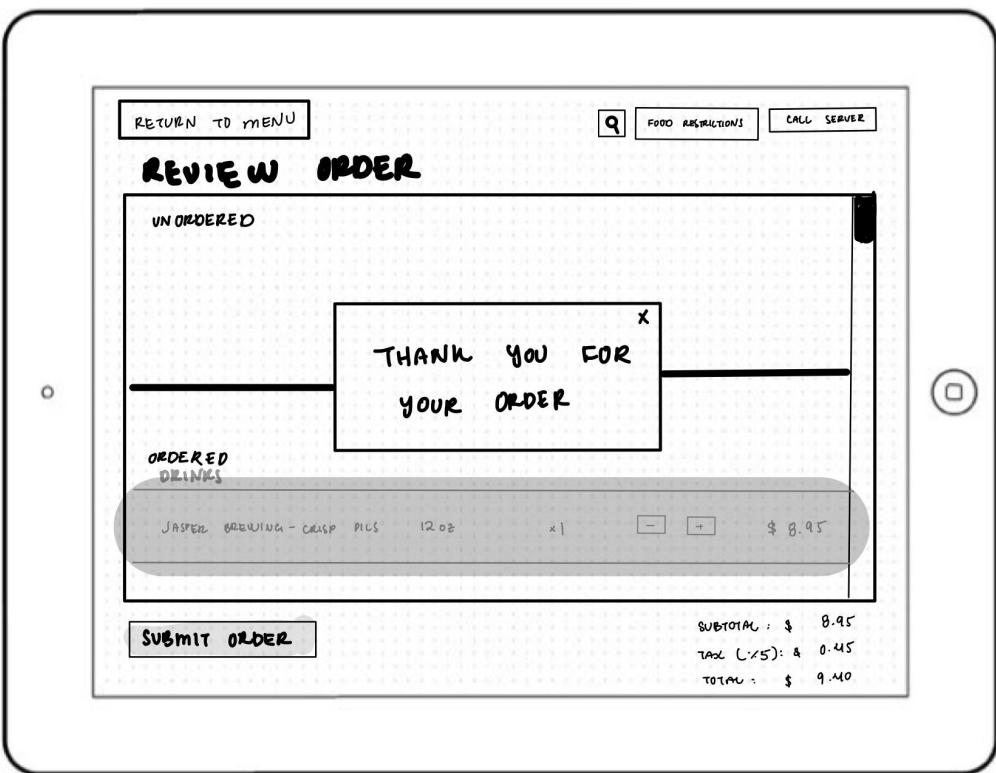


Figure F.4: Current Order Page with Thank You window

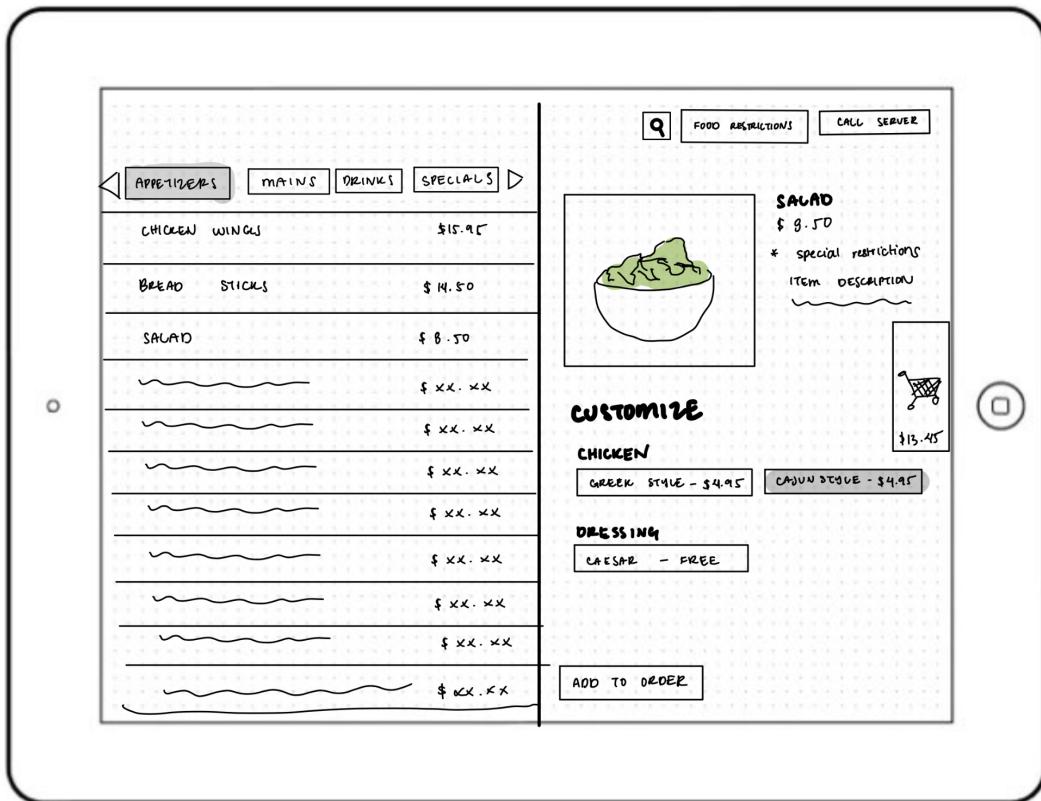


Figure F.5: Selections Page for Appetizers

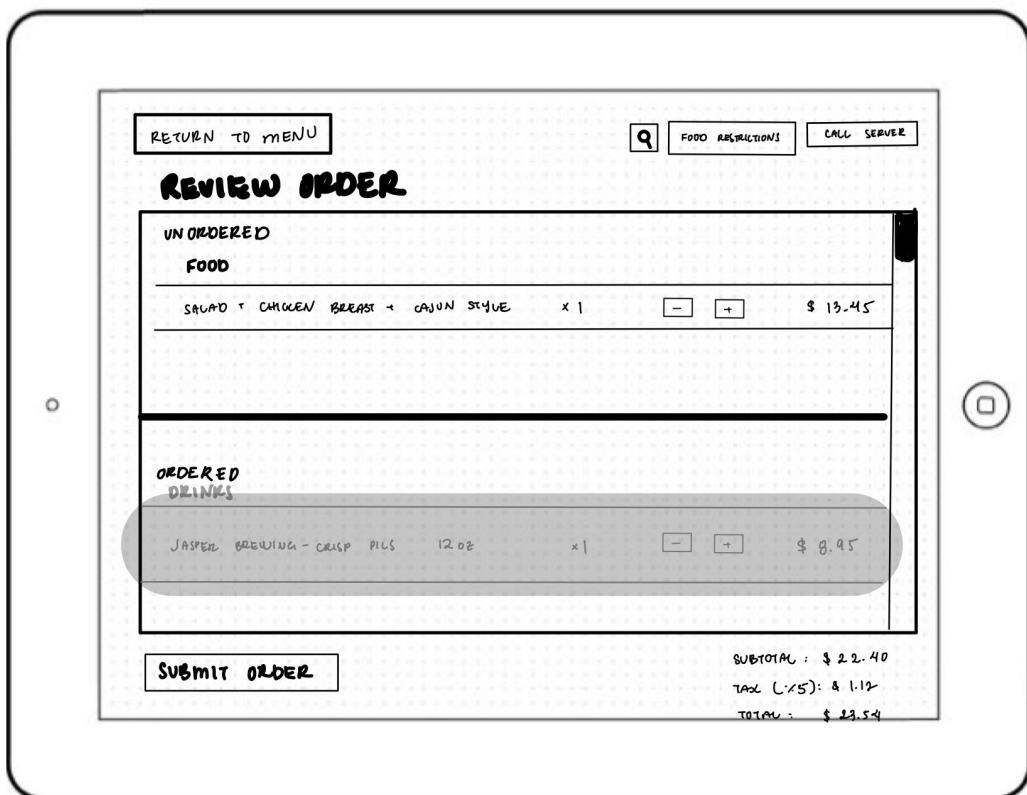


Figure F.6: Current Order Page

Prototype #1

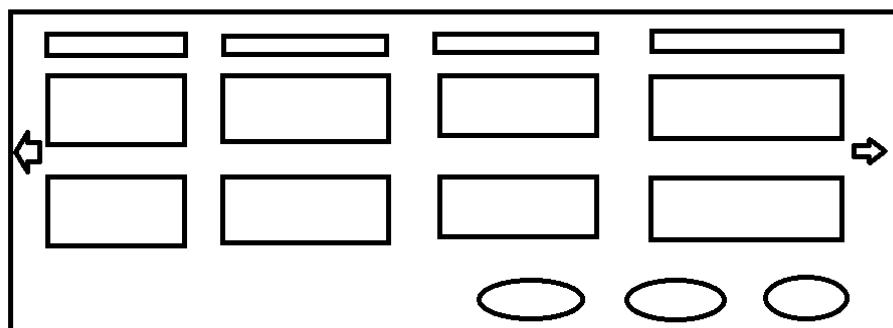


Figure 1.1

Prototype #2



Figure 2.1

Prototype #3

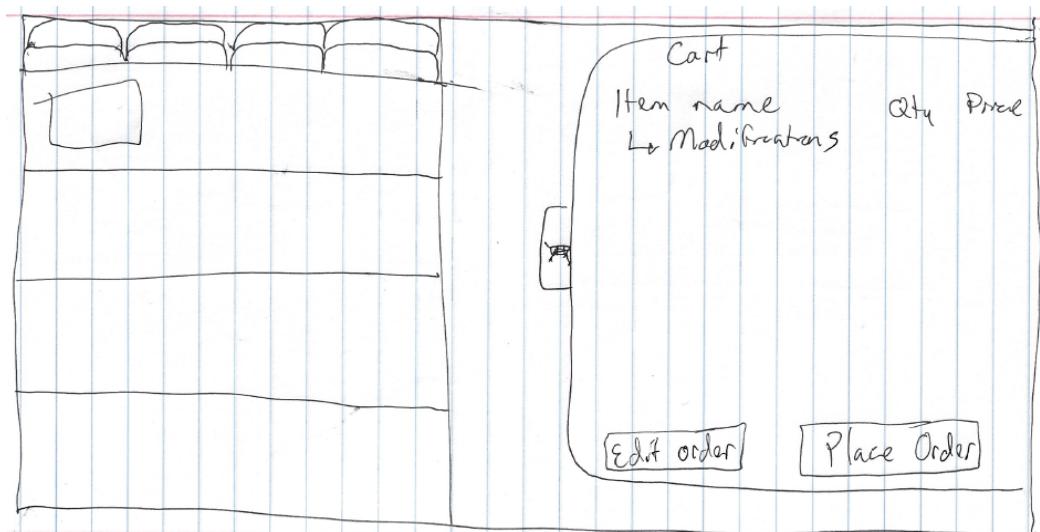


Figure 3.1

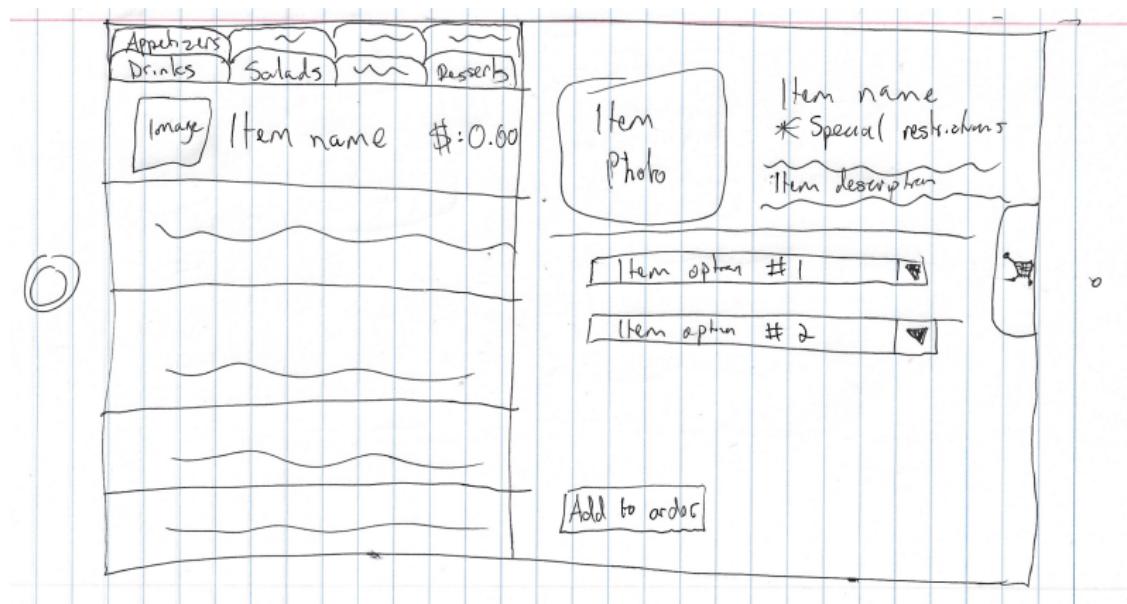


Figure 3.2

Prototype #4



Figure 4.1

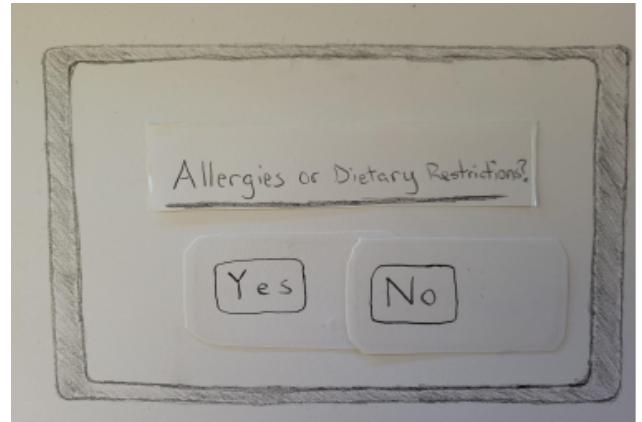


Figure 4.2

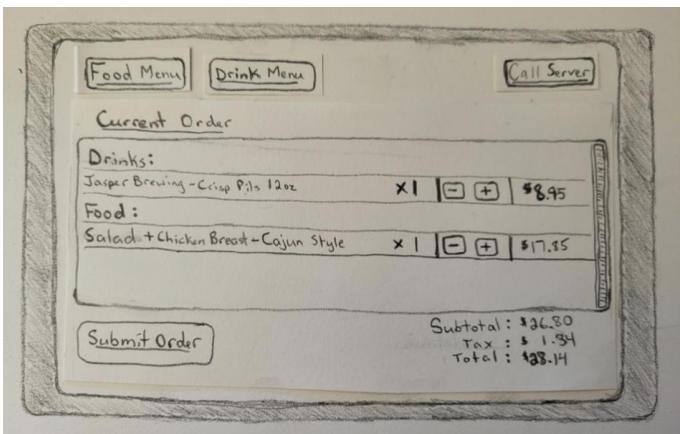


Figure 4.3

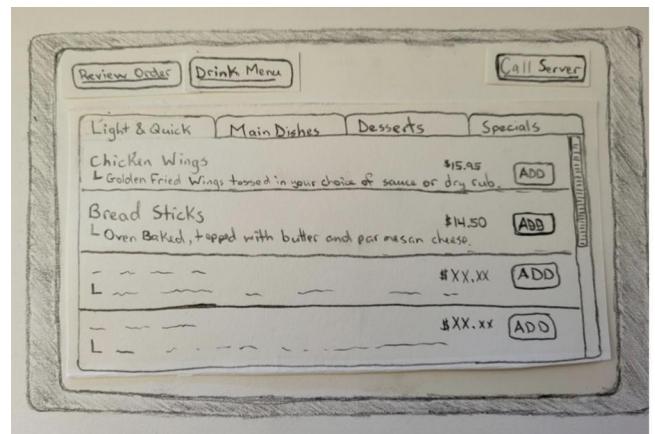


Figure 4.4

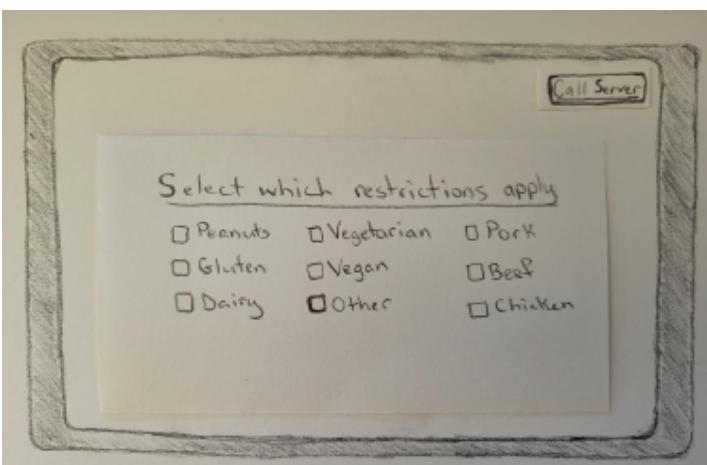


Figure 4.5

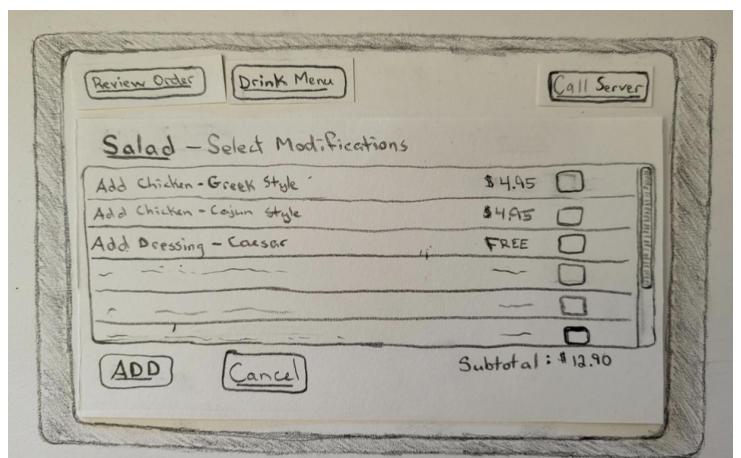


Figure 4.6

Prototype #5

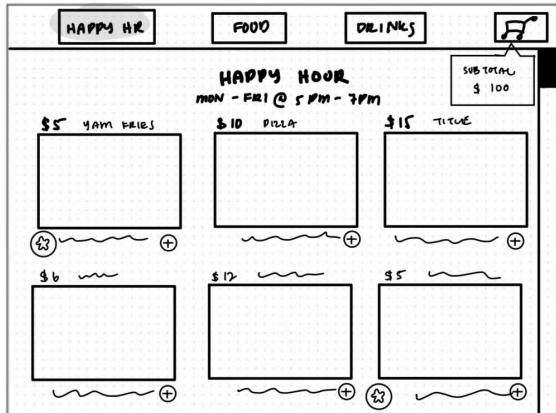


Figure 5.1

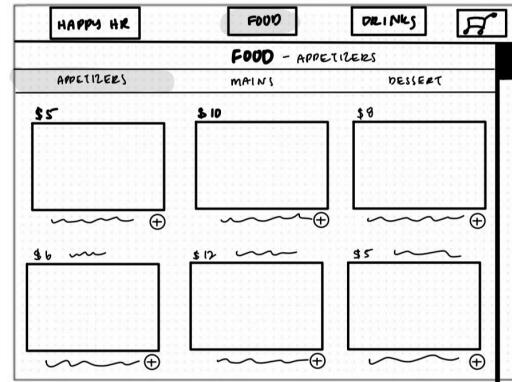


Figure 5.2

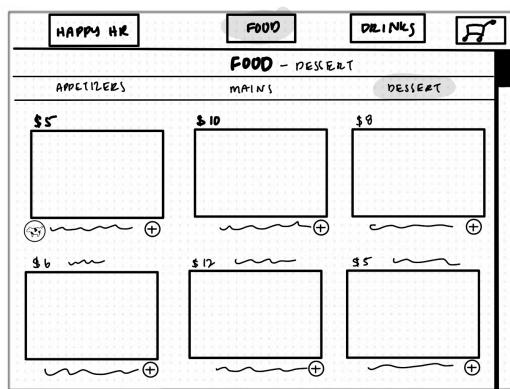


Figure 5.3

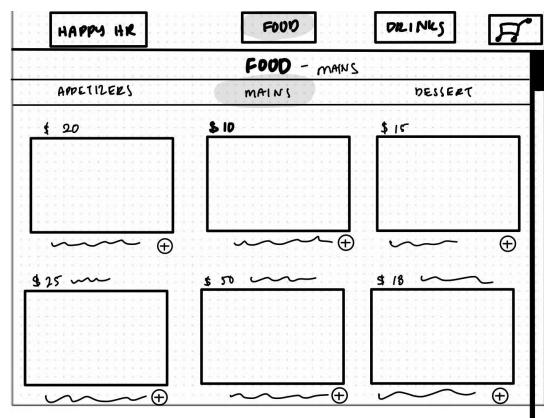


Figure 5.4

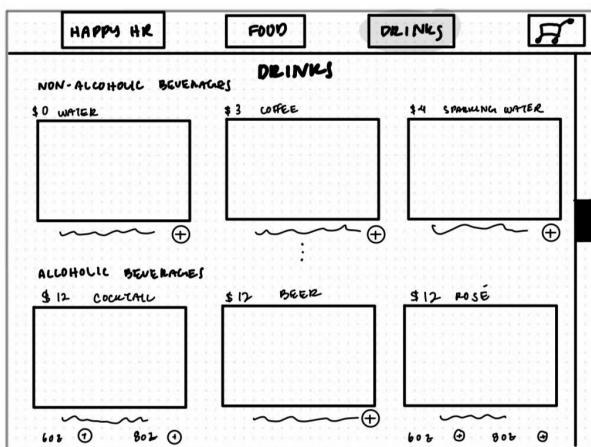


Figure 5.5

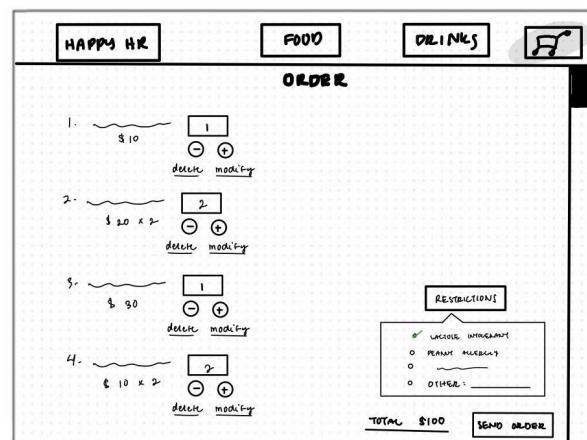
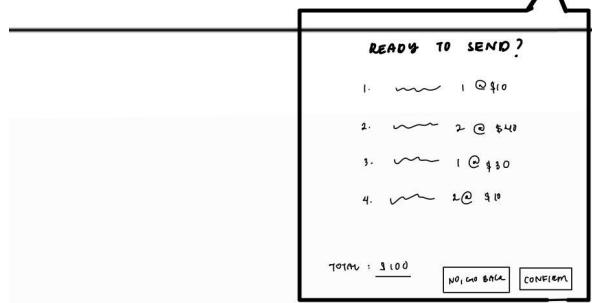


Figure 5.6



Prototype #6

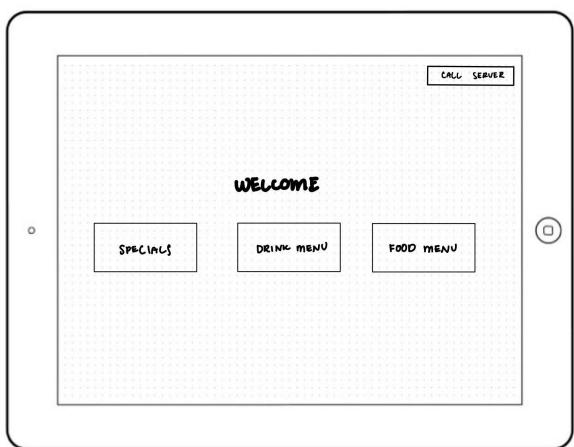


Figure 6.1

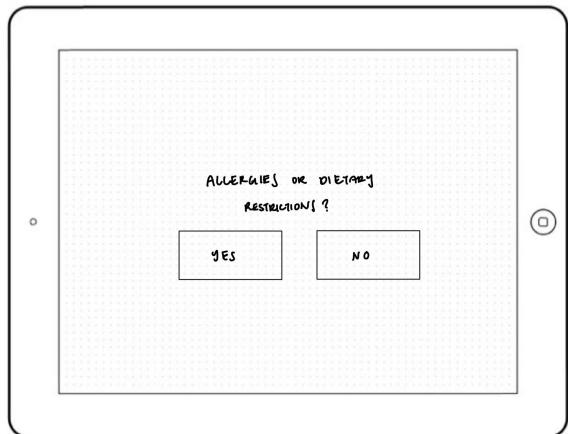


Figure 6.2

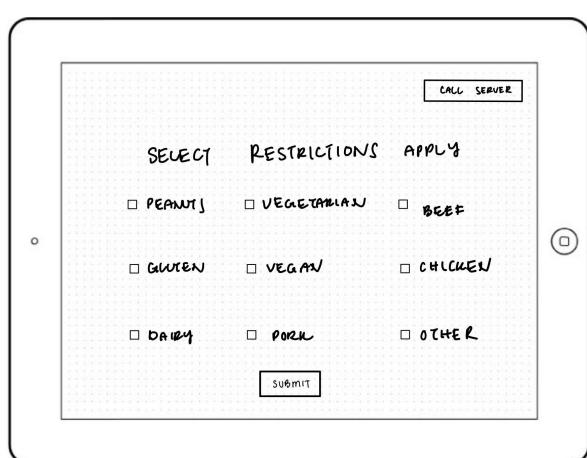


Figure 6.3

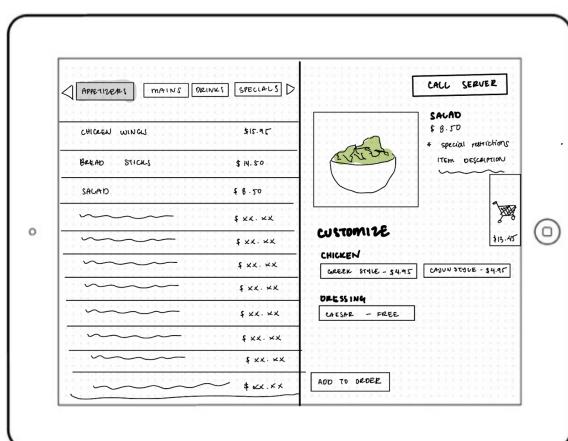


Figure 6.4

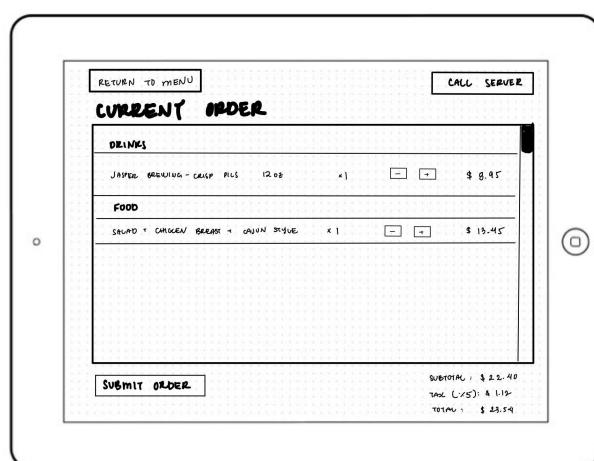


Figure 6.5

Portfolio - Part 2

Horizontal Prototype

Redesign Rationale

Page	First Portfolio Design	Second Portfolio Design	Justification
1. Menu Page	Each individual item in the item list doesn't have an image.	Added images to the item lists.	<p>Reasons: In some of our use cases, the users tend to have some quick glances over visuals of food before narrowing down their search. Hence, having images in the item list helps them narrow their search quicker without having to click on the food and look at the right panel of the dish.</p> <p>Alternatives: Instead of having the images, we could have the food description with a dropdown to avoid overflow text under the food name in the item list so that users can read it. However, we think that in terms of efficiency, this will take more time for the customers to read through all the details as well as not too many people will spend time reading each of the food descriptions.</p> <p>Improvements: Given the size of the screen, one drawback of using images is that it might be hard for the user to see it clearly. We can improve this by making an individual item box bigger. However, the user can look at the bigger image by choosing the dish and look at the right panel. Thus, we think that the current design for the</p>

			image is reasonable enough to cause users' attention.
2. Menu Page (general)	The cart button including the current cost is on the right side of the right panel.	The cart button was moved to the top right of the split screen.	<p>Reason: After getting feedback from other teams during the in-class activity, people found the position and functionality of the button to be confusing. For instance, they thought the button slides left to open the cart. Thus, we have decided to move it to the top where all the buttons currently are located.</p> <p>Alternative: Another way to do this is to create a left and right arrow to indicate that a user can slide left or right to transition between pages and move the cart button on the top of the right panel. However, we found this way could make users confused in terms of page direction if they never used the system before as well as the action of sliding and clicking. Alternatively, we can also move the cart button to the bottom below the add to cart button. By this design, when the user scrolls down, the attention might focus on the items/ buttons in the bottom of the screen. Thus, it is easier for them to keep track of the total prices. We do think that this is a possible solution but considering how we order the buttons right now, it might be hard to move the button to the end because there's no empty space there as well as we think that sometimes, users might be confused between the current dish's price and the total price.</p> <p>Improvement: As mentioned above, in terms of</p>

			<p>users' flow, it is better to move the cart button to the bottom because it helps users keep track of the changes in the total price faster with regards to the motion.</p>
3. Menu Page (selected an item)	There is a food restriction and search button on the top right of the screen.	Combined 2 buttons into a filter button.	<p>Reason: Both buttons: "food restrictions" and "search" redirect the users to the same panel/view which was the filter page. Thus, combining 2 buttons into one will minimize the confusion. We do think that for this solution, the users will have some difficulty to find the food restriction section the first time if they intentionally look for it because the filter icon is not an indication of the food restriction section. However, we do think that the majority of people that have dietary restrictions are typically motivated enough to spend extra effort in finding this functionality.</p> <p>Alternative: On the other hand, we could create a separate screen for food restrictions and redirect the users to that screen if they click the food restrictions button. But we think that this way will create an unnecessary screen and users will have extra work to do such as navigating back and forth to that page.</p> <p>Improvement: The filter icon doesn't clearly indicate the food restriction included in the filter section. Thus, if the users intentionally look for the food restriction section, it might be difficult for them. We could experiment with quick startup tutorials that provide context of where to find major features, including the dietary restrictions.</p>

4. Review Page	There's no way to delete the item from the cart.	Added an "X" button to the left of an item in the "Unordered" section to delete the dish.	<p>Reasons: When users navigate to the review page, occasionally, they might change their mind and want to remove the item from the cart. The design change will give them an easy way to do this because the "X" icon is commonly known as 'remove'.</p> <p>Alternatives: Since we have the quantity button in the item details page/view and the default quantity when a user orders is 1. We can potentially create a button that redirects them to the selected dish and make them change the quantity to 0 and add it to the cart. However, it will make the users go through a lot of steps to remove a single dish. Thus, we consider our redesign is reasonable to give users freedom and efficiency to remove the item from the cart.</p> <p>Improvement: Currently, if a dish has many selected options and users click the dropdown to view it, the "X" button will be resized to the same height as the dropdown. There are multiple problems with this such as the separation between multiple items is unclear and the dropdown button is too close to the "X" button which might give people with big fingers hard times to press.</p>
5. Review Page	No indication to tell what the user should do after they've finished ordering food	Add a button to tell user "how to make a payment"	<p>Reason: Currently, there's no indication what users should do after they order food. Thus, we have added a button to tell users how to proceed with a payment. When a user clicks the button, the popup will appear and tell the user how to make payment.</p>

Alternative: We can also add a direct message to the screen to tell the user how to make payment. However, we think that this will show unnecessary information when the users don't want to pay yet. Another way to do it is instead of using a button, we can use an icon such as an exclamation mark or a banknote to indicate payments but we don't think icons are descriptive enough to draw attention from the users as a clearly stated button.

Improvement: When a user wants to make a payment, they are more likely to pay attention to the total price of the order. With our current design, the total price is at the bottom right of the screen. Thus, having the "How to Pay" button on the top and the total price in the bottom of the screen may split the users' attention. A better way to design this would be moving the total price to the top right of the screen under the "how to pay" button.

Redesign Rationale Summary

After carefully considering some aspects of the application from the users' perspective, we have implemented some changes for our design. One of the changes that has the biggest impact on the users' workflow in the app is removing and combining buttons that perform identical functions. For instance, we used to have 4 buttons on the top of the right panel including cart, search, food restriction, and call server. However, the functionality of food and search buttons are the same which would redirect users to the same page. Thus, we have combined those 2 buttons into 1 button called "Filter". Another example of this issue is that when users navigate to the filter page, there used to be a submit button in the bottom of the panel for updating the applied filters. As customers scan through the filters from top to bottom, they may pay more attention to the bottom of the application, thus, the idea of having a submit button is more convenient for them. However, the functionality of the submit button is duplicated with the find button for the search bar. With 2 buttons having the same functionality but differing names, it may cause some confusion for the user. We find it better to keep the "find" button next to the search bar and have the filters be applied upon selection. Moreover, we also have some minor redesigns on our text size and color to compensate for the readability on our chosen device's screen size.

Vertical Prototype

Heuristic Evaluation

Heuristic Table

Heuristic Violation Legend:

- | | |
|----------------------------------|-------------------------------------|
| 1 - Visibility of System Status | 6 - Recognition Over Recall |
| 2 - Match System with Real World | 7 - Flexibility & Efficiency of Use |
| 3 - User Control & Freedom | 8 - Aesthetic & Minimalist Design |
| 4 - Consistency & Standards | 9 - Error Recognition & Recovery |
| 5 - Error Prevention | 10 - Help & Documentation |

Heuristic Violated	Location	Description	Suggested Fix	Severity
10	Initial startup	Not apparent how a new user begins browsing the menu.	On start, and when no item is selected, right side of Menu Page shows brief details on possible navigations	2
1, 4	Initial startup	The left side item menu starts in the 'Appetizers' category' with no items selected, but the item on the right side does not reflect any viewable item.	Update the right side item detail to reflect the first item in the list on the left side.	1
4	Item List 'Appetizers' category	All photos except for that representing 'Fresh Lettuce Leaf Salad' features the item with a square background.	Switch the photo for one more consistent with the others.	0
8	Item List Category label	When a category containing a character that hangs down (y, g), the bottom part of the letter is cut off	Set the z index of the label to a higher priority	0

4, 5	Item List ‘Beverages’ & ‘Specials’ category	Lack of indication between categorical classifications of items, especially for beverages where there are alcoholic beverages	Addition of labels similar to that seen in the custom section.	1
4, 8	Item List category layout	Category buttons at the top of the left side overlaps with the right arrow button when it is visible, but does not overlap onto the left side.	Make both sides overlap or make neither sides overlap	1
1, 9, 10	Item List ‘Search Results’ category	If no search result has been performed, the text “No available results” is displayed. This gives no indication that a search should be performed or how they would perform it.	Replace the text to include instructions on performing a search or remove this category until a search is performed.	2
5, 8	Item List Menu item names	The words are pretty small and also bolded making it somewhat hard to read.	Make the text a bit bigger or remove bolding on the name	1
10	Item Details ‘Customize’ section	Some options can select multiple choices while others select only one but there are no indications which options conform to either rule.	Addition of text beside the option name indicating what rule of selection each option falls under	2
2	Item Details ‘Customize’ section	Option choices display prices after their descriptions, but lack sufficient indication that it is an additional cost	Addition of a ‘+’ before the price of a choice	1
5, 10	Item Details ‘Add a Note’	No indication is given as to what might be typed into the note section	Add placeholder text with suggestions on potential notes	2

8	Item Details description & ‘Customize’ sections	Scroll bar present although there is no scrollable action	Remove scrollbar for instances in which no scrolling is available	0
1	Item Details ‘Add to Order’	When an item is added to the cart, there is no representation that it has been added besides the updating of the cart button price.	Addition of a notification indicating that an item has been added or a more noticeable textural change in the cart’s appearance	3
1	Item Details ‘Add to Order’	After item is added to order there is no clear indication if more steps are required to complete their order or what those steps might be	When ‘Add to Order’ is selected, deselect the item and remove item details from right side to indicate a completed submission, provide brief instructions on right side on current order status and how to continue	2
1, 2	Item Details ‘Add to Order’	The button for adding an item to the cart is labeled ‘Add to Order’ which might cause confusion as when the item is added, it is added to the ‘Unordered list’ from which it then needs to be submitted.	Change the text of the button to be ‘Add to Cart’. This also reflects the cart button at the top of the screen.	2
8	Item Details name	Items with longer names such as the ‘Merlot + Syrah - Cherries & Rainbows’ do not fit within the constraints of the window.	Adjust the name so that when a name is longer than the bounds, part of the name goes to a new line. OR Limit the number of characters in a name.	1

3, 5, 7	Item Details ‘Customize’ section	Selected options do not reset upon navigating to a different item or screen. This could result in ordering an item with unintended customizations.	Selected options should reset to default values when the item detail pane is changed to a different item.	3
5	Item Details ‘Add to Order’	There is no enforcement of selecting choices for options that are required in order to complete that item’s order.	When attempting to add an item to the order, check for the selection of choices in options that are required and notify the user of missing options before allowing the submission	4
9, 10	Item Details ‘Customize’ section	Options that require at least one choice to be selected in order to complete that item’s order do not have any indication that those options are required.	Add separately noticeable text or icons to options that require a choice to be selected	3
4	Item Details Cart Button	When an item is removed from the cart, the total does not update until an item is selected in the item menu	Update the cart button price to update whenever the total price is changed.	2
1, 9	Filter Page	When a search provides no results the menu list displays “no available results”. When an alteration to the search is made that also provides no results, there is no indication that the new filters have been applied.	Include with the text the filtering options the user has applied. When an alteration to the filter also provides no results, make the newly applied options visibly different.	2

4	Filter page	The shopping cart button at the top has no function and no price displayed despite being the same button elsewhere.	Add functionality to the shopping cart to bring you to the Review Order page and include the current total - similar to when you're viewing or browsing an item.	2
4	Filter page	The 'Call Server' button does nothing when selected.	Add functionality to the Call Server button - similar to when you're viewing or browsing an item.	2
3, 7	Filter page	The result of a search could include many items listed across many categories. It may become difficult to find a particular category.	Add a filter for selecting a specific category.	2
10	Filter Page	Blank textbox of the search bar is ambiguous and provides no instruction on how it is used.	Include ghost text that provides an example of its use.	2
4, 8	Filter Page	Text weight, size, and grammar consistency is off when compared to other areas of the app	Resize and re-weight the text to match the consistency of text found elsewhere	1
1,6	Filter Page	The actual amount on the slider is not shown. Users may not know what price they actually applied in the filter.	When the slider is moved, then the price that is being applied should be displayed.	0

8	Review Order page	Each item in the “Unordered” section has a large “X” button for deleting an item and an “Edit” button for editing an item. This creates a lot of clutter when many items are present.	Reduce the size of the buttons or make the buttons only appear for each item when that item is ‘focused’	1
8	Review Order Page	When expanding an item in the unordered list to view its options and selected choices, options that were not provided with a choice appear immediately before the next option making it difficult to visually separate.	Add bullet points for each option in the expanded menu. OR Only show options in the items list that had a choice selected.	1
8	Review Order Page	All items in the review list are able to be expanded, even if the item does not have any options.	Only have an expander for items that have an option added.	2
5, 8	Review Order Page	The edit and delete buttons are expanded whenever the expander is clicked. This can clutter the list and when the user has an item expanded, the user might accidentally press these buttons that cause drastic changes to the list.	Have the edit and delete buttons remain their original size and located at the top of the expanded section.	3
5	Review Order Page	The expander is very close to the delete button. A user may accidentally hit this when viewing their selected options.	Move the expander to the right of the Item Name text.	3

1	Review Order Page	Submitting an order does not indicate what happens next or if the user is required to perform more actions to complete the ordering process.	In the pop-up window that appears when an order is submitted, indicate that the server will bring your ordered items and that the user can continue adding new orders.	2
4	Review Order Page	When the ‘unordered list’ is empty, the ‘submit order’ button is still pressable and it still results in the ‘Thank you for your order’ popup	Lock the ‘submit order’ button so that it does not ‘submit’ an order when the ‘unordered’ list is empty.	1
4, 8	Review Order page	The size of the buttons have increased drastically from other pages.	Reduce the size of the buttons to be consistent with other pages.	1
3, 6	Review Order Page	If a special request is made (indicated in the Add to Note section). This doesn’t actually show what note the user submitted in the Review Order Page.	Save the special request/note from the Item Details Page and include it in the expander for an item.	2
3, 5	Review Order Page	The “delete button” deletes the item right away. This may be pressed by accident and the user cannot change their mind before it actually gets deleted.	The ‘X’ becomes a check, the button changes color and requires the user to press the button one more time in succession in order to confirm the action.	2
3	Edit Item Window	There is no method to leave the Edit Item Window without clicking “Apply Changes”.	Add a button to discard the changes and exit the window.	2

4, 8	All pop-up windows	The popup has poor formatting and is inconsistent with the rest of the app. May be mistaken for an advertisement and ignored.	Revise the popup window to match the font and color theme of the app.	2
3, 7	All pop-up windows	The windows are persistent and do not close until the user presses the ‘X’ button.	After a short delay, allow the user to tap anywhere on screen to dismiss all pop-up windows and automatically dismiss the windows after a while.	2
4	All pop-up windows	Opening one of these pop ups does not prevent the user from interacting with the app behind it, thus allowing for the user to continuously open more instances of the same popup despite the “Edit Item” popup does not.	Pressing anywhere should close the popup	0
1	All buttons	Many buttons on the interface have no reactions to being pressed	Visual color change when the button is pressed ‘down’	2

Heuristic Summary

Required Options

Problem Severity 4:

In providing the user with more flexibility, we allow them to modify menu item options, in the item details section, that are critical to how the item is prepared. Since these options are required to be selected to complete the order of particular items, our system needs to enforce those selections before the user can add the item to their order.

Suggested Solution:

When the “Add to Order” button is selected our system should check if the user has provided selections for all required options. If the check fails, then the addition should fail and an appropriate prompt should appear indicating to the user which options require a selection.

Unrecognized Additions

Problem Severity 3:

When the user adds an item to their order, in the item details section, there is very little indication that an item has been added. Although the order’s subtotal, that accompanies the cart icon, gets updated upon submission, the visual distance for that update is far from the button the user is focused on pressing. This could result in the user applying duplicate submissions, not knowing if they are actually being applied.

Suggested Solution:

By adding an affirmation popup when the user selected the “Add to Order” button they get obvious feedback that the submission was successful. Alternatively, adding a more noticeable textural change in the cart icon’s appearance, when an item is added, may more easily bring the user’s attention to the update.

Expanding Buttons

Problem Severity 3:

While a user is reviewing their order, in the review order page, and selecting items in the unordered section to expand the item’s options, the buttons for editing and deleting that item also expand. This might provide some accessibility for the user when the expanded list is significantly long, but it greatly increases the odds that users might accidentally select those buttons while scrolling through the list.

Suggested Solution:

By keeping the edit and delete buttons their original size and locating them at the top of the expanded section we would avoid the increase in accidental selections. Incidentally, this also provides a visually clear separation between the expanded item and its consecutive neighbor.

Prevalent Heuristic Categories

The heuristic categories our design most commonly violated were 4 (Consistency and Standards) and 8 (Aesthetic and Minimalist Design). This may have been a result of our efforts to supply many details to the user without the need to navigate to separate sections of the system. This aggregation of information made it difficult to spot inappropriate content that might distract the user or mislead them during their exploration of our system. Fortunately, the majority of these violations were of lower severity and did not impose significant usability challenges.

Final Design Critique

Design Summary

Our project aims to help local restaurants relieve the stress during rush hour by automating some of the work that can be done by computerized system. DigiDine is a mobile app that allows customers to view and order food via restaurant supplied iPads. Our targeted users would be students, professionals, and families who are technologically literate. This current iteration of evaluating our system shows that our design is not yet ready to be implemented into the real-world market.

Strengths

Overall, we think that DigiDine has done a great job in providing a user-friendly experience for our targeted users and meets the needs of the users in our task examples.

The filtering feature is the main highlight of the app and stands out compared to traditional paper menus. The filter page allows users to narrow down the list of menu items by choosing the maximum price, applying common dietary restrictions, or searching for keywords found in the menu. The price range filter is a great convenience to users who are in a certain budget like Rose in task [example #5](#). Being able to apply dietary restrictions to filter out the items in the menu helps the users avoid ordering items that they may have serious restrictions to. This feature is a huge benefit to users like Sam in task [example #4](#).

who is restricted to beef, dairy and pork. Furthermore, DigiDine also helps customers like Sheila, Quinn and Fred pick items that are visually appealing by providing photos in several locations (noted in task examples #1, #2, and #6).

Finally, the addition of complimentary items in the system allows users to ask for complimentary items (ex. Napkins, utensils, condiments) without having to call a server as they can request these items through the interface. Izen in task [example #3](#) would find this feature to be very convenient. Therefore, DigiDine meets the needs of those individuals in our walkthrough.

Weaknesses

On the other hand, DigiDine lacks in displaying the status of the system. When a user opens the filter panel there are 2 buttons in the top right, “Call Server” and the cart button. However, the user cannot click either of the buttons. There is also no indication that these 2 buttons are disabled.

Our current system lacks error prevention in several areas. In the heuristic evaluation, we found that there is no indication that choices are required for an option to fulfill an item order or any indicators as to how many options a customer can select. In other words, there are limited instructions that help users select the choices for options on a current dish, which may lead to confusion and mistaken submissions.

Another drawback of our design is the arrangement of some of our components. For instance, when a user navigates to the review order page, for any item in the unordered section, the space between the “x” button for deletion and the “collapse” button are too close. This introduces a likely place for frustrating, accidental selections.

Overall, we think there are many aesthetic changes that could have been done to prevent errors and provide a more appealing presentation of our system.

Improvement

After doing the heuristic evaluation, one of the aspects that can be improved on is the consistency and standards of the application. The appearance, responsiveness, and functionality of many of the buttons in our system do not conform to what a user would assume. For example, in the filter page, the call server button doesn’t have any functionality if a customer presses it. Thus, an improvement for this problem is to either add functionality to the button or remove it if there’s no necessary functionality.

Another way to improve our system is to clearly display the status reflecting the current state of the system. For example, when a user finishes adding an item to a cart, there should be a notification saying “Item Added to Order” or some other indication to confirm that the user has successfully added an item to their cart. Additionally, there is no instruction stating what is expected from the user after the submission of an item to their cart.

Furthermore, we think that our application can improve some minor design issues, such as, providing text next to the option of an item to indicate how many choices they can pick, or if a selection is required, to avoid input error. Overall, there are a lot of things that can be improved in the application’s design to prepare it for a release to the current market.

Appendix B

Horizontal Prototype Screenshots

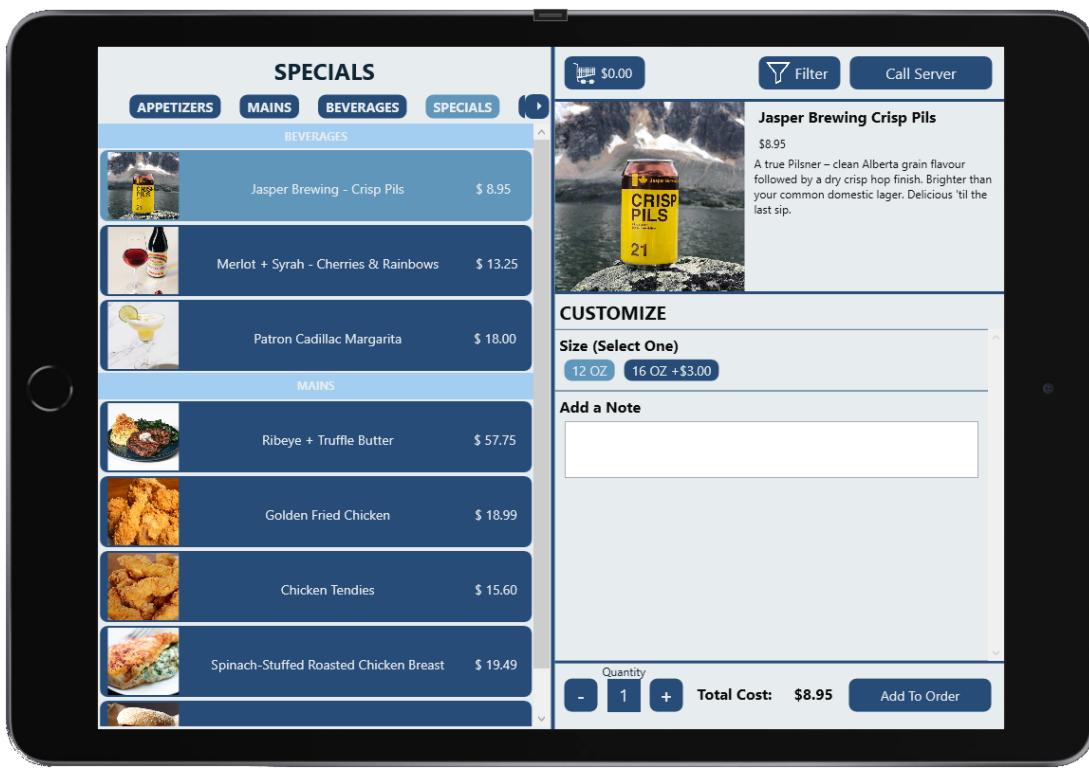


Figure 1.1 - Menu Page + Item Page/View

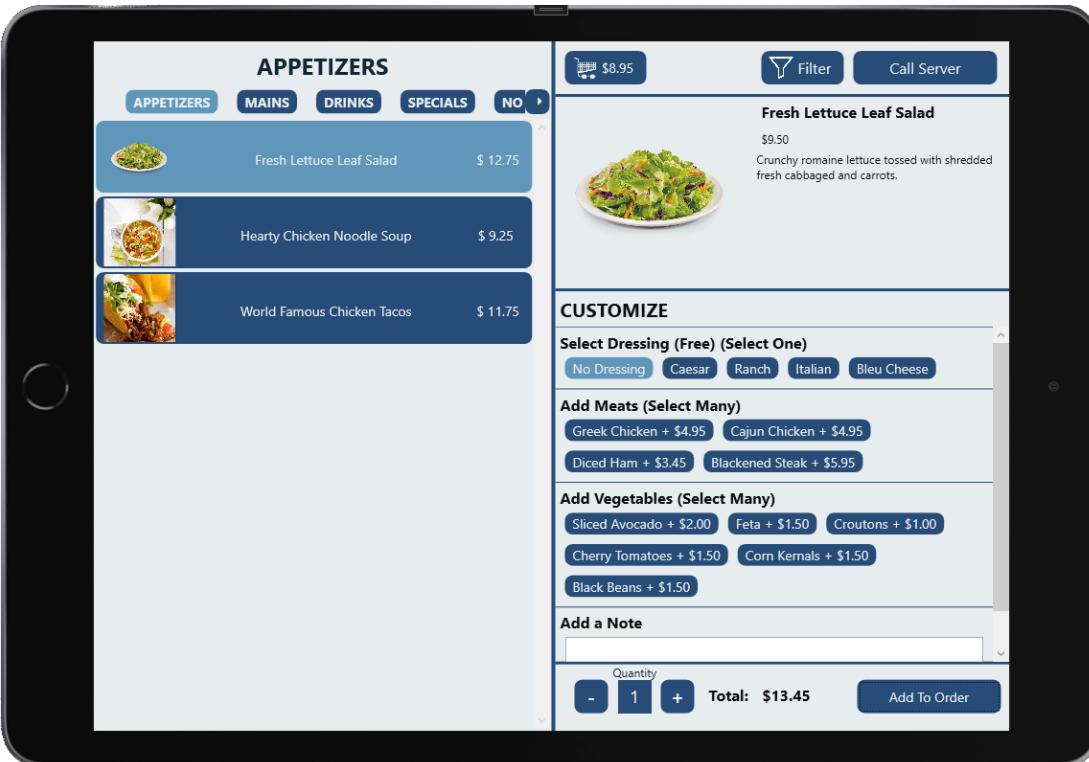


Figure 1.2: Menu Page + Item Page/View

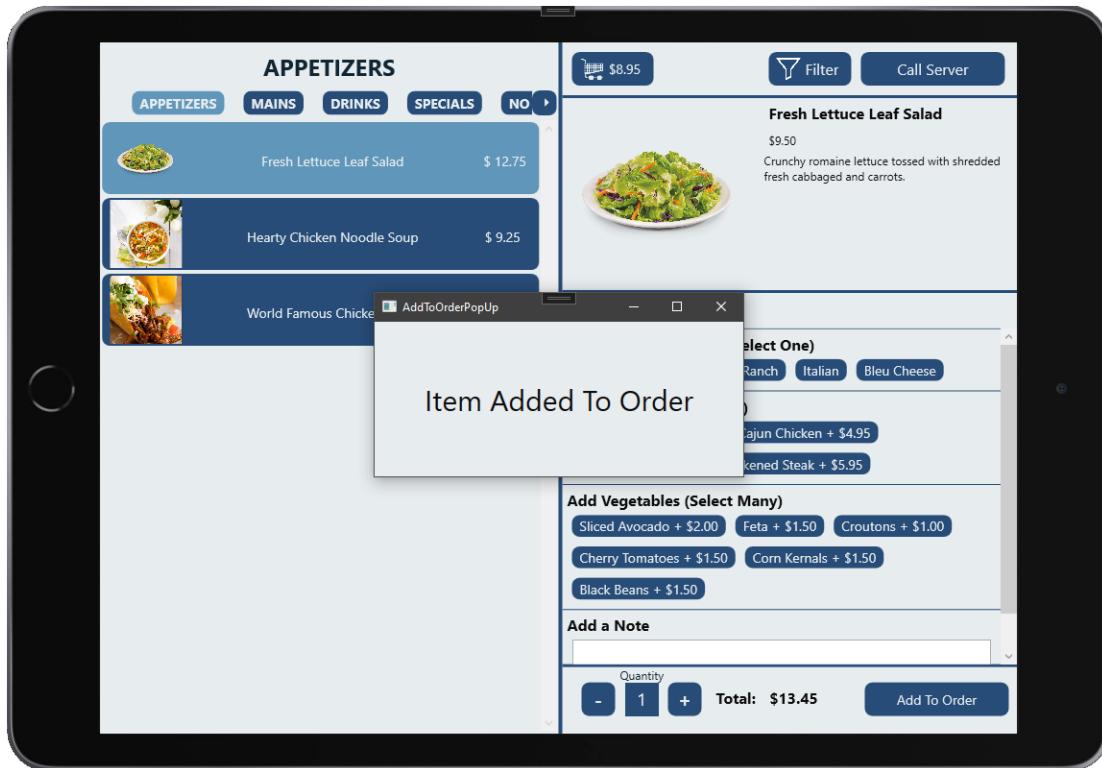


Figure 1.3: Menu Page + Item Page/View with Item Confirmation

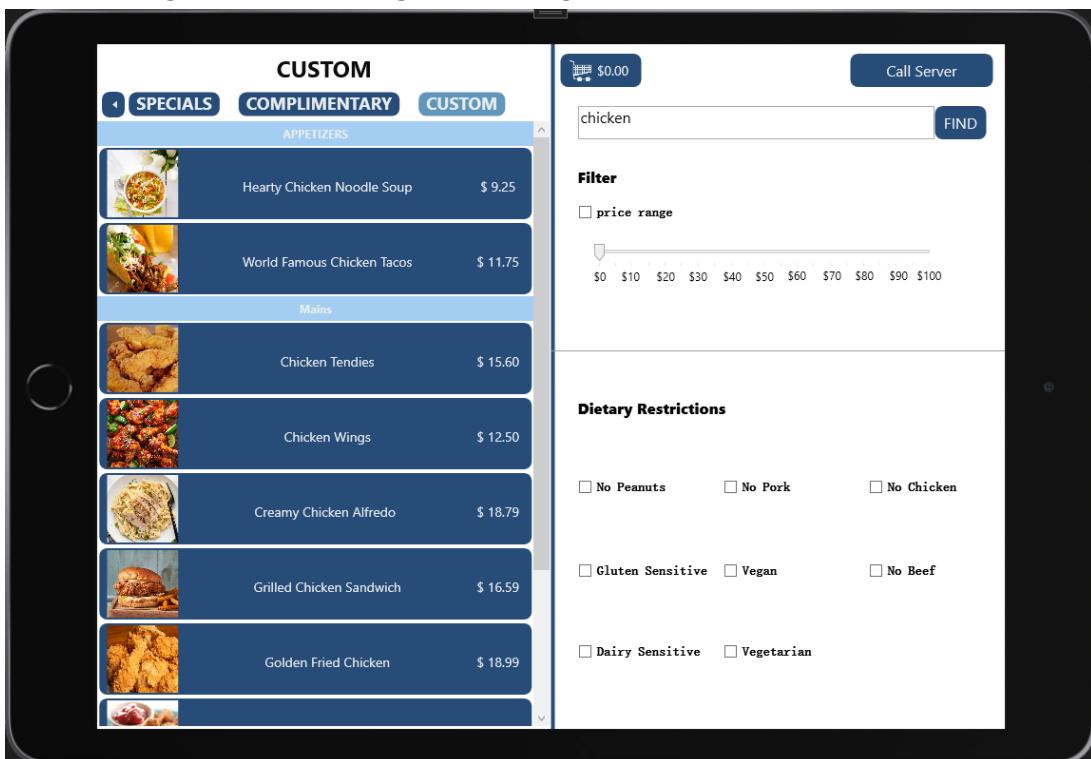


Figure 1.4: Filter Page

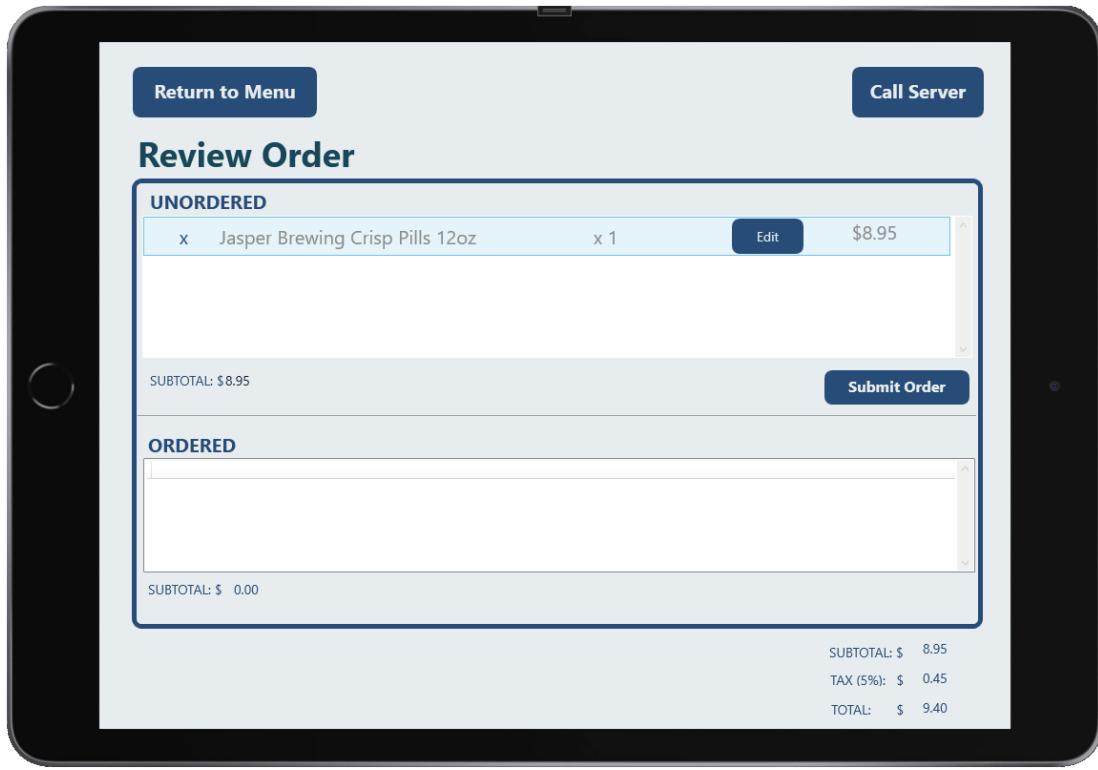


Figure 1.5: Review Order Page

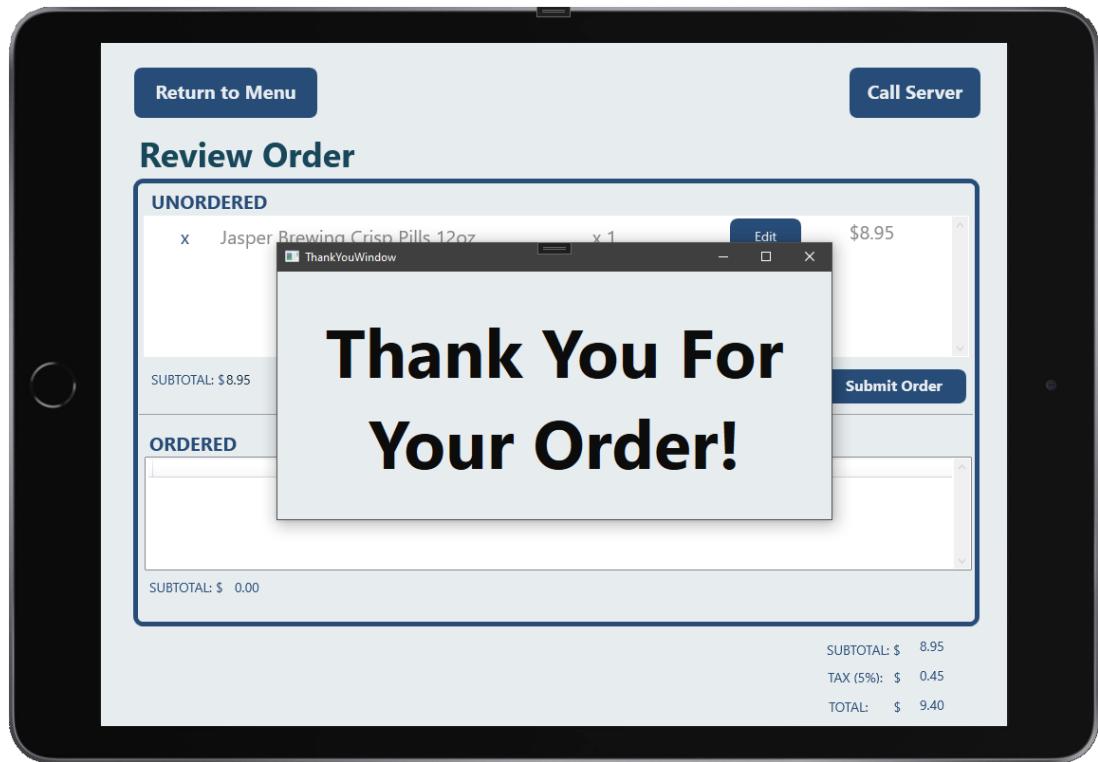


Figure 1.6: Review Order Page + Confirmation when an order is submitted

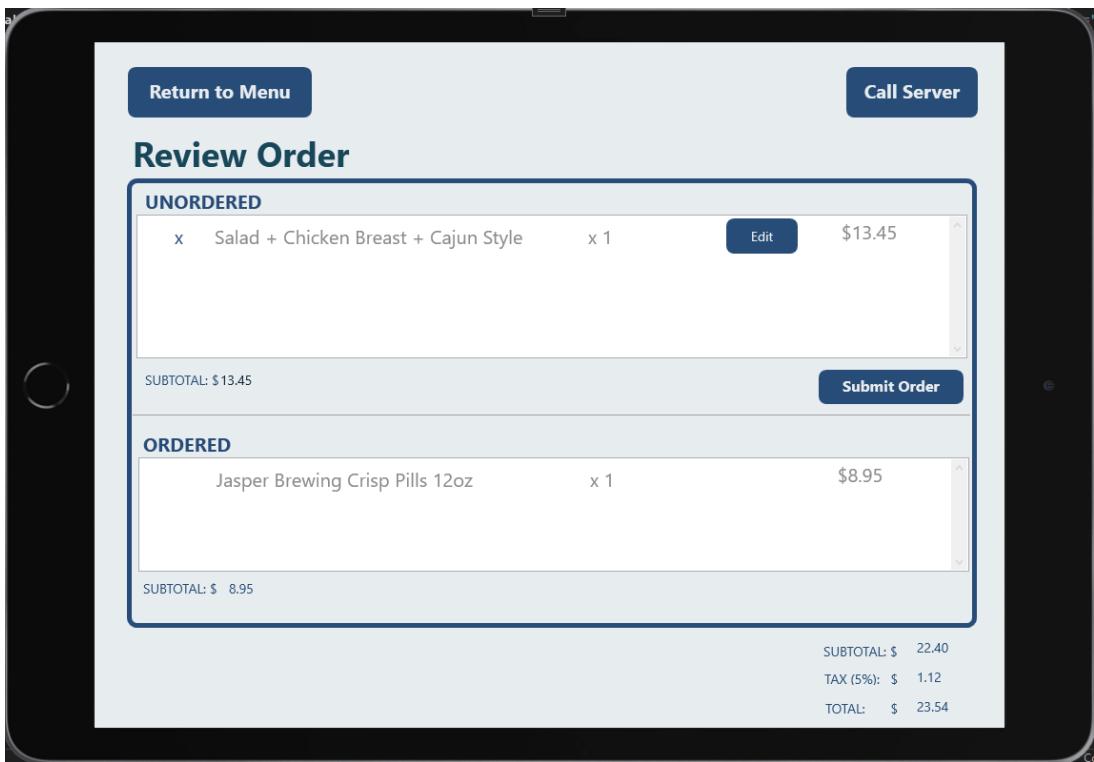


Figure 1.7: Review Order Page with Partial Order

Final Screenshots

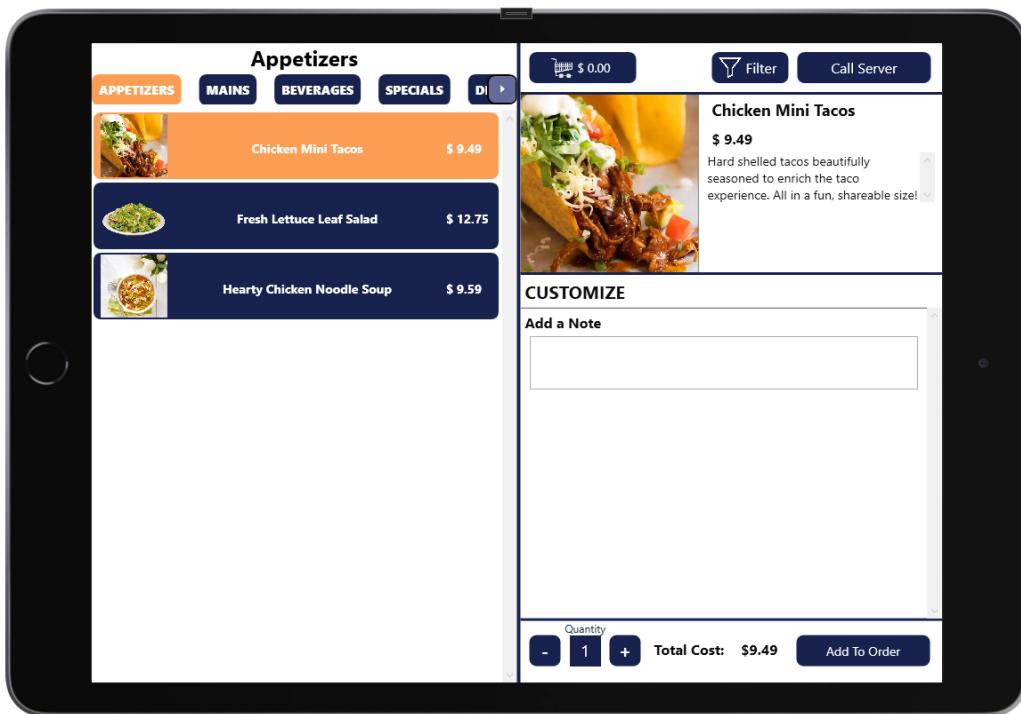


Figure 2.1: Menu Page + Item Page/View

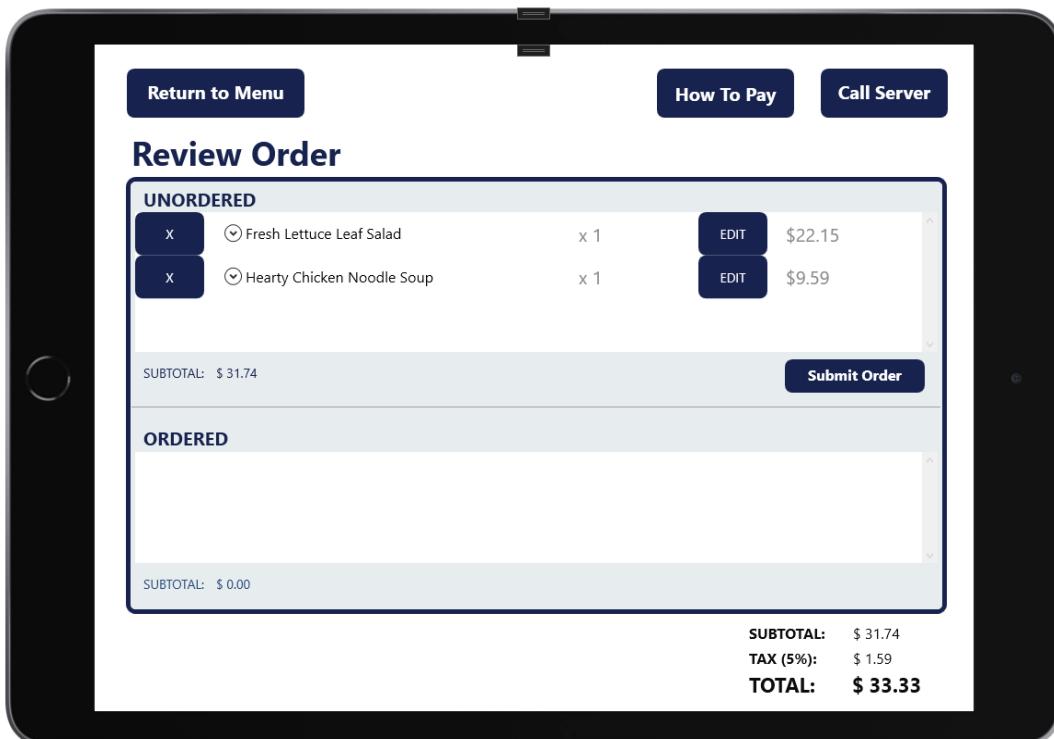


Figure 2.2: Review Page

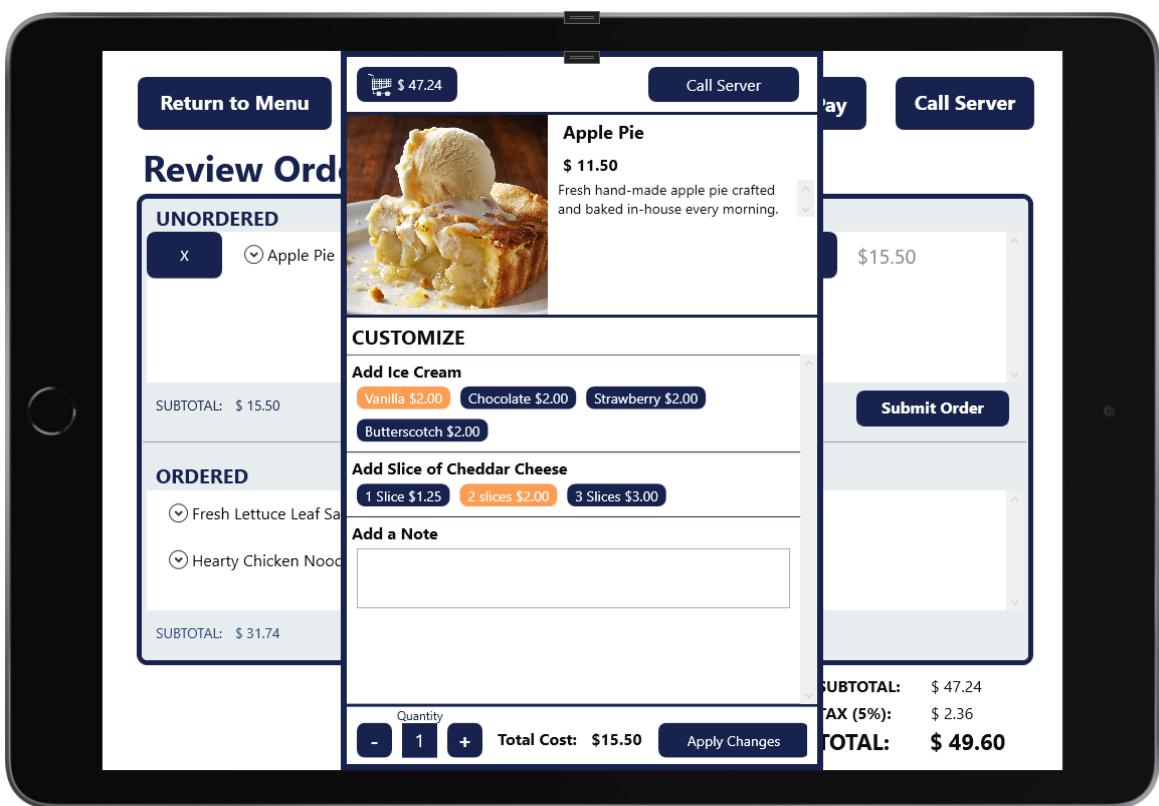


Figure 2.3: Review Page + Edit Item Window

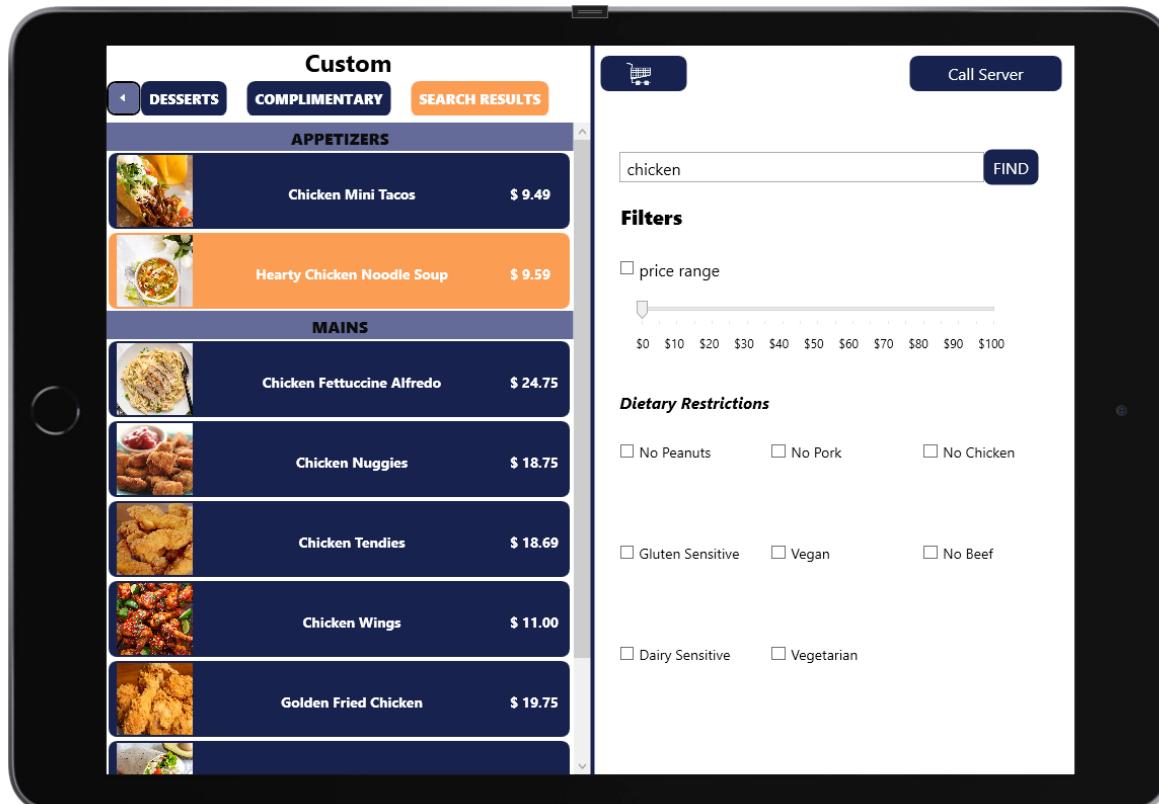


Figure 2.4: Filter Page

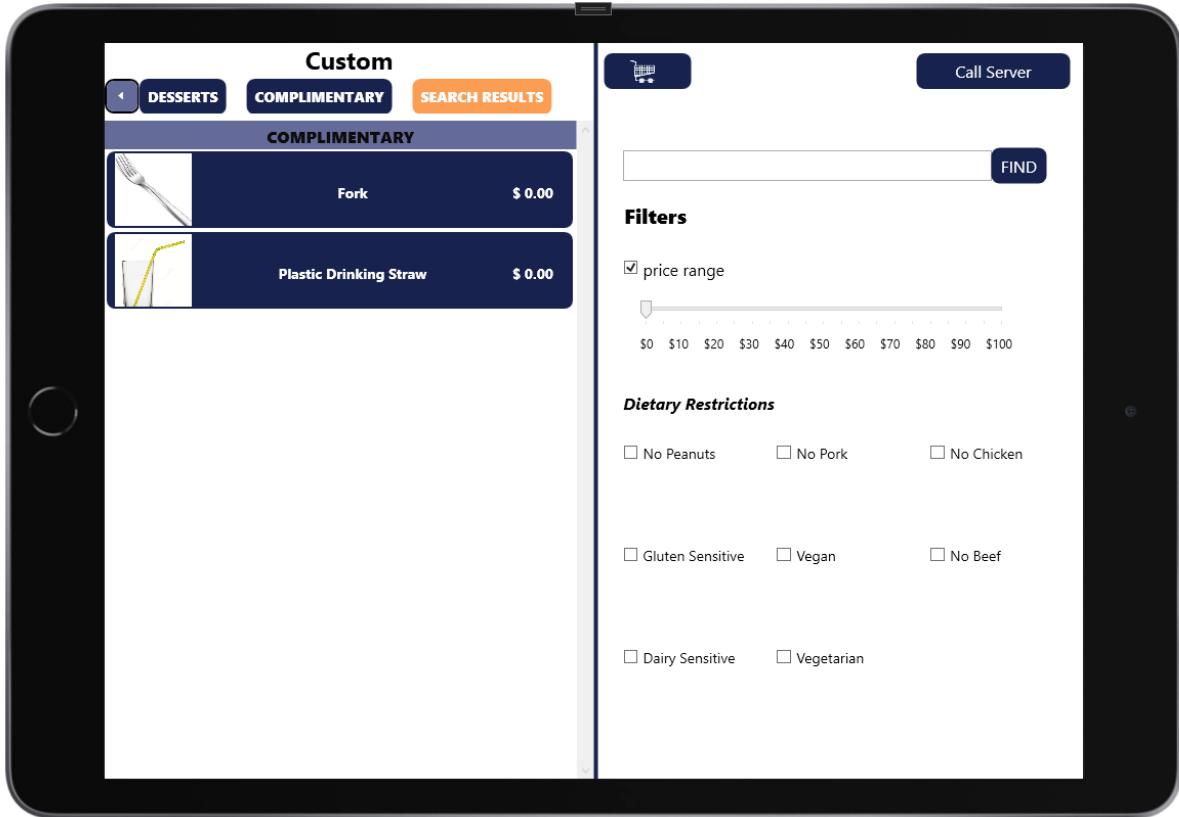


Figure 2.5: Search Results from Filter Page

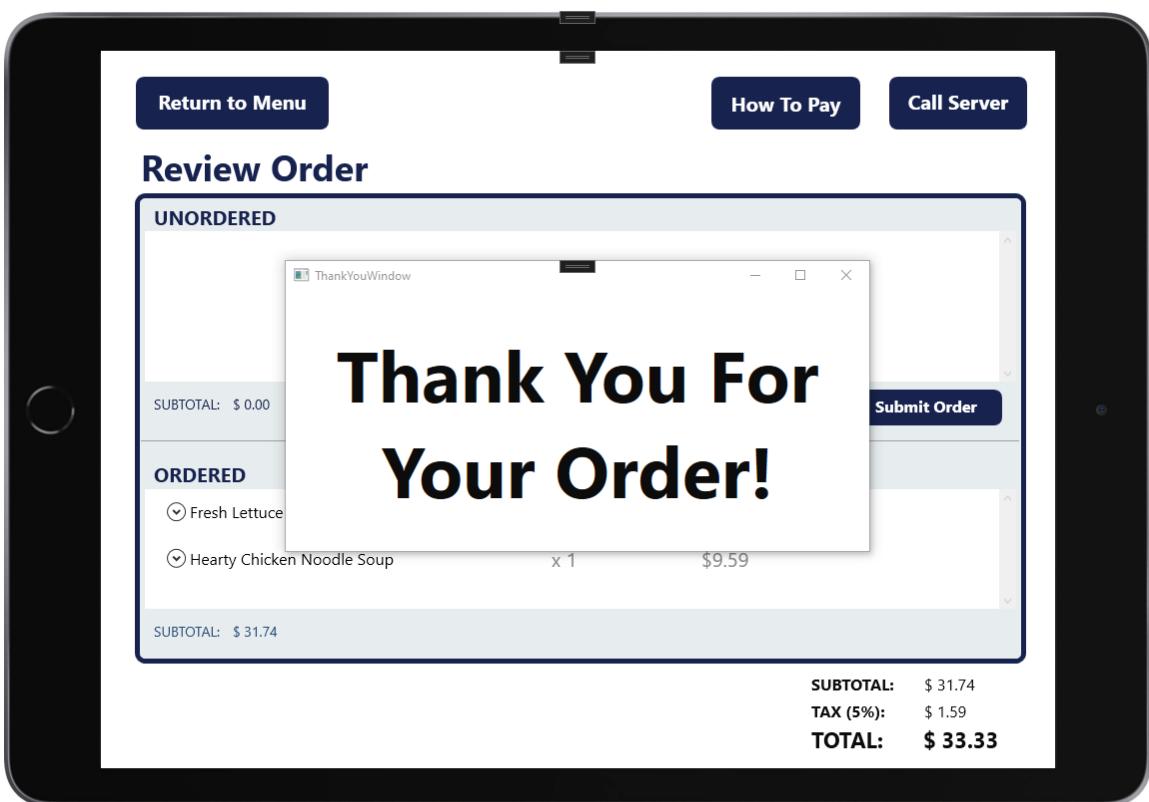


Figure 2.6: Review Order Page + How To Pay Window

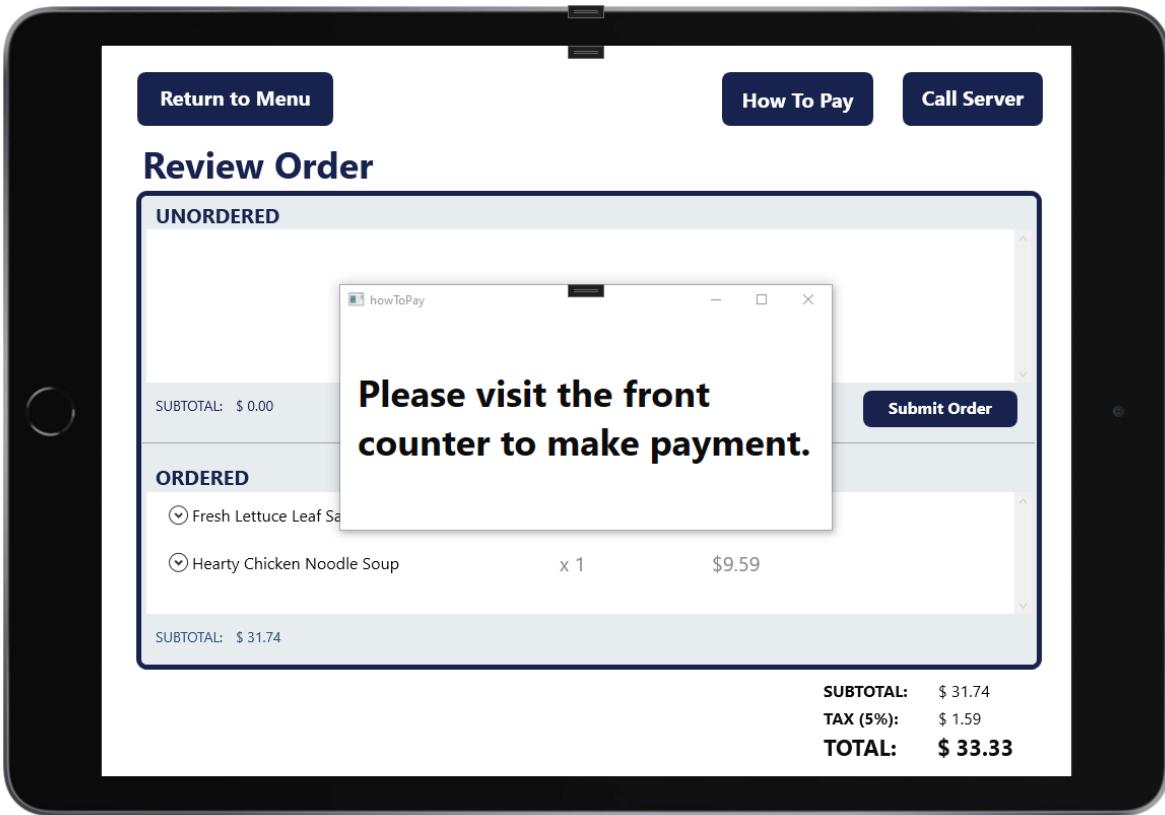


Figure 2.7: Review Order Page + How To Pay Window

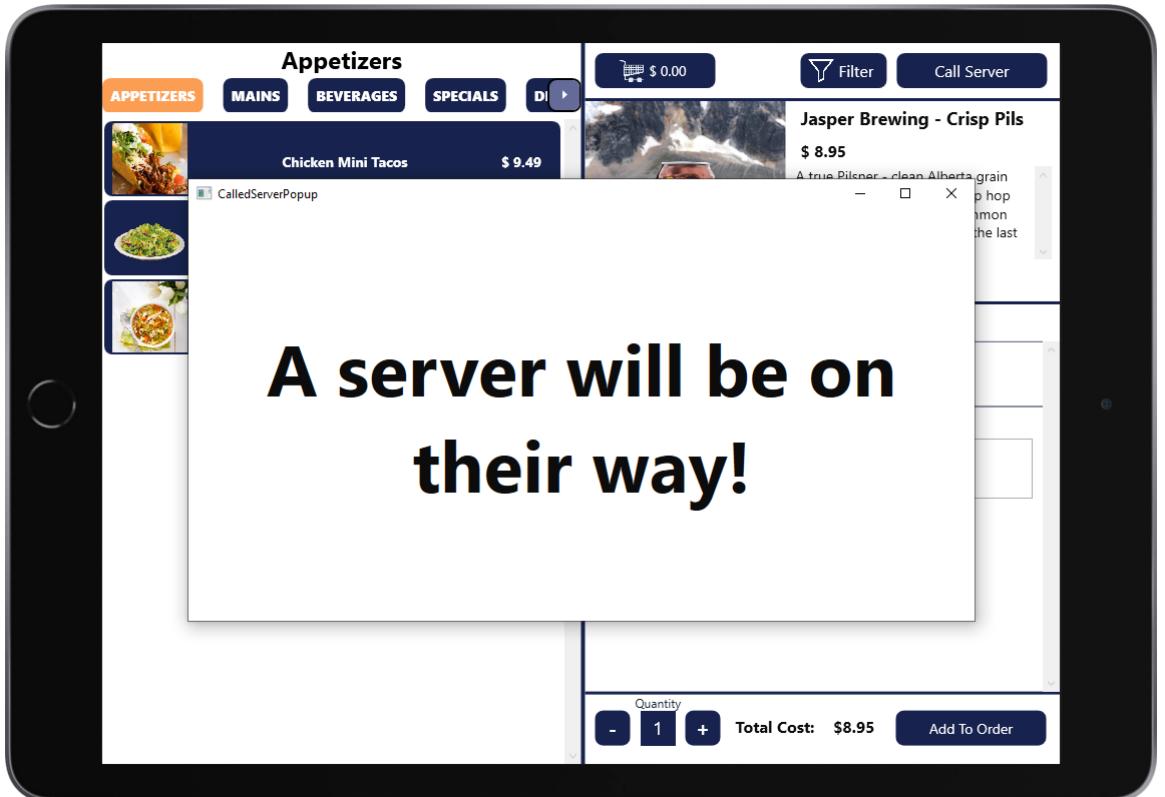


Figure 2.8: Menu Page + Call Server Window

Rubric

6. Project Grading Guidelines

Students _____

Names _____

Emails _____

Note: These are just guidelines detailing "convenience" checkpoints. Getting many satisfactory checks does not necessarily indicate a good project (or vice versa).

Completeness of Project	Missing	Incomplete portions	Satisfactory
--------------------------------	----------------	----------------------------	---------------------

Original submission for the first assignment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Part I, A2: Redesign writeup: Screens & redesign rationale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Part II, A2: Heuristic evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Part II, A2: Redesign rationale & final design critique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working end of term demo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All team members completed all weekly 'Most Valuable Team Member' surveys	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To portfolio final due date			

Horizontal prototype

Quality and completeness of the redesign rationale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	--------------------------

Screen snaps/final design rationale	Poor	Ok	Great
--	-------------	-----------	--------------

Fixes major flaws in horizontal prototype	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good rationale behind design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design critique indicate major problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design critique indicates how these problems may be solved.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your Heuristic Evaluation	Poor	Okay	Great
----------------------------------	-------------	-------------	--------------

Problems categorized by heuristics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Major problems detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severity ratings are reasonable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main points of the evaluation are summarized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sophistication and quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Completed system	Poor	Okay	Great
Depth of interface shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Breadth of interface shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-interface aspects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Graphical design	Poor	Okay	Great
Visual appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensibility of layouts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evaluating the project	Poor	Okay	Great
Simple and natural dialog	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Speaks the users language	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minimizes memory load	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consistent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provides feedback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clearly marked exits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortcuts for experts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
User error handling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provides relevant help	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technical aspects	Major problems	Adequate	
Robust/bulletproof	<input type="checkbox"/>	<input type="checkbox"/>	
Final video figure and project demonstration	Unacceptable	Adequate	
Gave a good feel of system?	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
Overall impression	Poor	Okay	Great
Final design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design evolution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Portfolio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heuristic evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implementation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Final demo and video figure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>