COMP3423
Human Computer Interaction

Individual Assignment :
Re-Design a User Interface for a Food Ordering System in Catering

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Individual Report

User Research

User Research Findings

Part 1: Analyze an Existing System

Chosen Example: Saizeriya Restaurant's Ordering System

Strengths:

- Convenience: Customers can easily access the menu and place orders using their smartphones via QR codes.
- Reduced Wait Times: Streamlines the ordering process, allowing for quicker service.
- User-Friendly Interface: Simplifies navigation through well-categorized menu items and multiple languages for users from different cultures.
- Supports Multiple Order Types: Accommodates both a-la-carte and set lunch/dinner orders according to order time.
- Quick Editing: Enables customers to modify their orders easily, enhancing user satisfaction.

Weaknesses:

- Dependence on Internet Connectivity: Requires stable internet access, which may be an issue when no data roaming or low battery for customers.

- Technical Issues: Potential for glitches or slow loading times that can frustrate users.
- Limited Customization: Not allowing for extensive personalization of menu items, ex: customer that are vegetarian can’t choose or customize their own food.
- User Familiarity: Some customers may be less comfortable using technology for ordering like elder people and people who aren’t familiar with the food.
- Lack of Online Payment: Customers that finished their meal will still need to pay at the counter which may cause long waiting time when lots of customers finish their meal at same time.

Opportunities for improvement:

- Enhanced Customization Options: Allow more flexibility in modifying menu items according to customer preferences.
- Feedback System: Implement a feature for customers to provide feedback on their experience and menu items.
- Waiter Introduction and Ordering: Implement waiter service for ordering so customers with different preference of ordering can also be served.
- Offline Access: Consider adding offline capabilities to view the menu even without internet access.

- Promotions and Specials: Introduce a section for daily specials or promotions to attract more orders.
- Online Payments: Users can choose to pay online, and they only have to show the waiter the payment record to leave which will reduce waiting time for payment.

Part 2: Interview Results

Interviewed Person:

Name: William

Age: 20

Occupation: Student

Predicted Frequency of Visits Outside Restaurants: Once a Day

Interview Questions Asked and Answers:

1.Can you describe your ideal food ordering experience?

Answer: My ideal food ordering experience would include a mobile-friendly app or QR code to access a website that allows me to quickly view the menu and place orders without hassle. I'd like real-time updates on menu changes and specials, and the option to pay online using mobile wallets like WeChat Pay or Apple Pay. It would be great if I could modify

my meal to make it healthier, especially since I prefer healthier and vegetarian options.

2. What challenges do you face when ordering food?

Answer: One of my main challenges is dealing with long wait times, especially during peak hours when I have limited time between classes. I also get frustrated when the app has technical glitches, like slow loading or crashing, which makes it hard to place my order. Additionally, I find it inconvenient when payment options are limited, as I prefer using mobile payment methods.

3. What types of meal options do you look for when ordering?

Answer: I look for a variety of meal options, particularly healthy choices and vegetarian dishes. It's important for me to have meals that align with my health-conscious lifestyle, but I also enjoy some comfort food now and then. A diverse menu keeps things interesting and caters to my different cravings.

4. Can you share a recent experience where an app did not meet your expectations?

Answer: Recently, I tried to use a food delivery app, but it took a long time to load, and when I finally placed my order, it didn't allow me to customize my meal as I wanted. This left me feeling disappointed because I couldn't get the healthy option I was aiming for. It made me rethink whether I would use that app again.

5. How do you feel about the payment options provided by food apps?

Answer: I prefer apps that offer a variety of payment options, especially mobile payment methods like WeChat Pay or Alipay. It saves me time and makes the ordering process more efficient. When I encounter apps that only accept cash or limited payment methods, it can be a deal-breaker for me.

Summary of Needs, Preferences and Pain Points:

Needs:

- Convenient Access: William requires an easy way to view the menu and place orders quickly, especially during busy study schedules.
- Real-Time Updates: Needs timely information about menu changes, specials, and availability of items.
- Delivery Options: Prefers the ability to order for delivery to his dorm

or pick-up for convenience.

Preferences:

- Online Payments: Prefer online payments like WeChat pay, Alipay, Apple Pay instead of cash pay for saving time.
- Mobile-Friendly Interface: Values a user-friendly app that works well on his smartphone, allowing for quick navigation.
- Healthy Options: Interested in a variety of meal choices, including healthy and vegetarian options.

Pain Points:

- Long Wait Times: Frustrated by delays in order fulfillment, especially during peak hours when he has limited time.
- Technical Glitches: Experiences issues with app performance, such as slow loading or crashes, which hinder ordering.
- Limited Payment Options: Finds it inconvenient when payment methods are restricted; prefers options like mobile wallets or student discounts.
- Customization Limitations: Disappointed with the inability to modify certain menu items to fit his dietary preferences

Behaviors:

- Tech-Savvy: Comfortable using mobile apps and technology for daily

tasks.

- Social Media User: Actively uses platforms like Instagram and Twitter for updates and promotions.
- Health-Conscious: Prefers healthier meal options and is mindful of dietary choices.

Goals:

- Convenience: Wants to quickly access menus and place orders between classes or during study breaks.
- Variety: Seeks a diverse menu that includes healthy, vegetarian, and comfort food options and to customize his own changes on different dishes along with saving into favorites for next time use.
- Efficiency: Aims to minimize wait times for food to better manage his busy schedule.

Part 3: User Persona

User Persona from Customer William (Made by Figma):

URL Link for Viewing

Wireframing

Part 1: Documented objectives and prioritized requirements.

Three Documented Objectives

1.Reduce Order Placement Time

- Objective: Streamline the process of selecting items and placing orders to minimize the time users spend navigating the app.
- Implementation:
- Quick Access to Menus : Utilize a prominent QR code scan feature that leads users directly to the relevant menu based on their location (e.g., lunch or dinner menus).
- One-Click Reordering: Introduce a "Favorites" section where users can

save frequently ordered items, allowing for one-click reordering.

- Online Ordering: Users can access menus and place orders by scanning the QR code printed at the corner of each table at the restaurant to reduce waiting time.
- Smart Suggestions: Implement an AI-driven recommendation system that suggests popular items or previous orders based on user preferences, further speeding up the selection process.

2. Enhance Personalization Options

- Objective: Allow users to customize their food choices and payment methods to create a more tailored experience.
- Implementation:
- Customizable Menu Items: Enable users to modify ingredients or portion sizes directly on the menu, ensuring their meals meet personal dietary preferences.
- Diverse Payment Options: Offer a variety of payment methods, including credit/debit cards, mobile wallets, WeChat Pay, Alipay, and Octopus Card, allowing users to choose their preferred payment method seamlessly.
- User Profiles: Create user profiles that remember past orders and preferences, making future orders quicker and more personalized.

3. Ensure Ease of Navigation

- Objective: Create an intuitive navigation structure that allows users to find and select items effortlessly.
- Implementation:
- Bottom Navigation Bar: Incorporate a fixed bottom navigation bar with clear categories (Menu, Favorites, Orders, Profile) for easy access, reducing the need to use back buttons or complex gestures.
- Search Functionality: Implement a robust search feature with filters for dietary preferences, meal types, and popularity, allowing users to quickly locate desired items.
- Visual Hierarchy: Use a strong visual hierarchy in layout design, with larger, bolder text for primary actions and more subdued text for secondary options, guiding users naturally through the ordering process.
- Fat Finger Prevention: Design buttons and selection areas with adequate spacing and size to accommodate users' fingers, reducing accidental taps and selections.

Five Prioritized Requirements

1. Customizable Menu Items

- Importance: High
- Goal: Allow users to easily modify ingredients and portion sizes to suit

personal dietary preferences, enhancing satisfaction and engagement.

2. Diverse Payment Options

- Importance: High
- Goal: Provide multiple payment methods (credit/debit cards, mobile wallets, WeChat Pay, Alipay, Octopus Card) to ensure convenience and flexibility at checkout.

3. Quick Access to Menus via QR Code and Online Ordering

- Importance: Medium
- Goal: Enable users to scan a QR code for instant access to relevant menus, provide options on dine in or take away, provide online ordering to reduce wait times and improving the ordering experience.

4. Fat Finger Prevention

- Importance: Medium
- Goal: Design buttons and selection areas with sufficient spacing and size to minimize accidental selections, ensuring a smoother user experience.

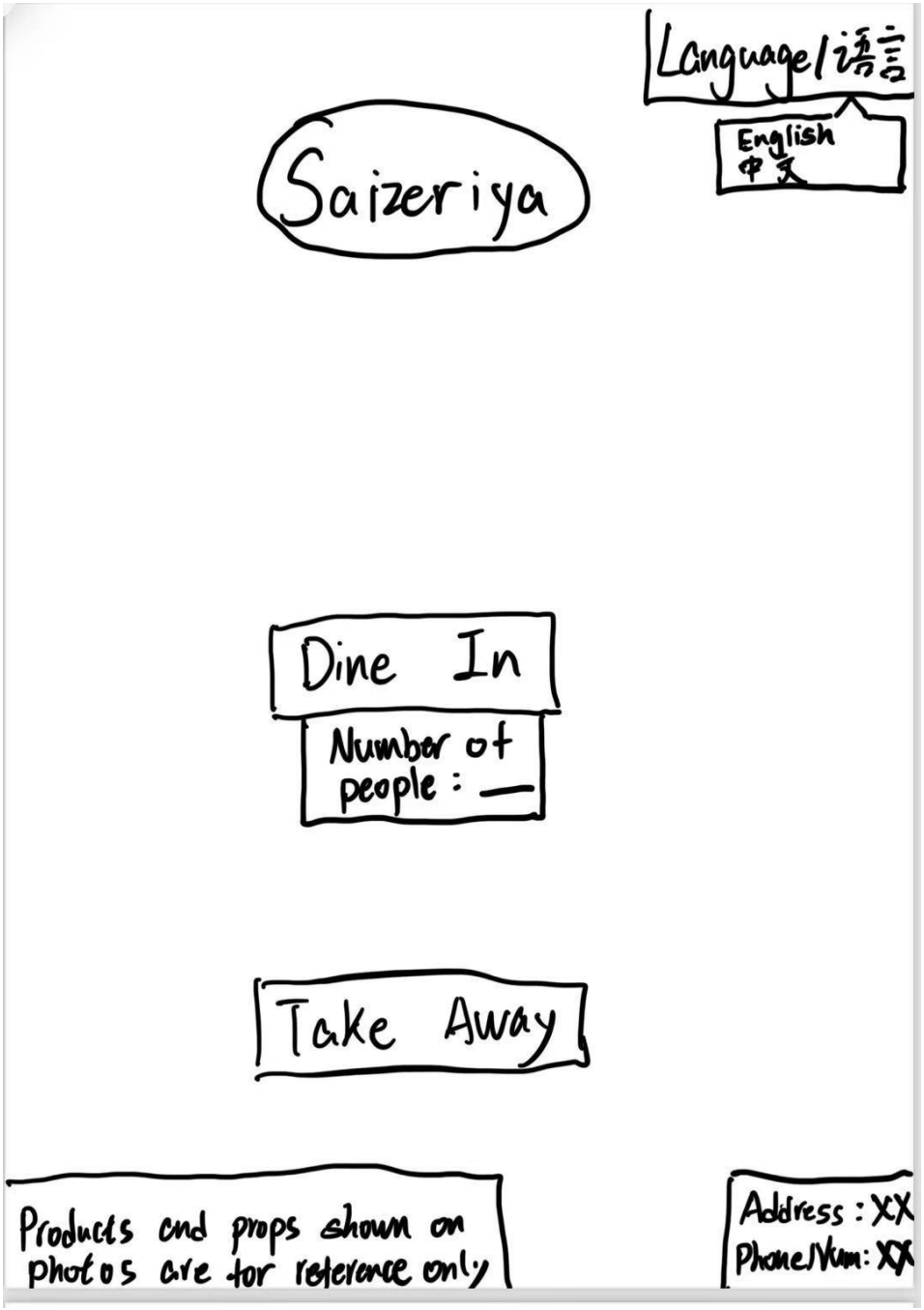
5. One-Click Reordering via Favorites

- Importance: Medium

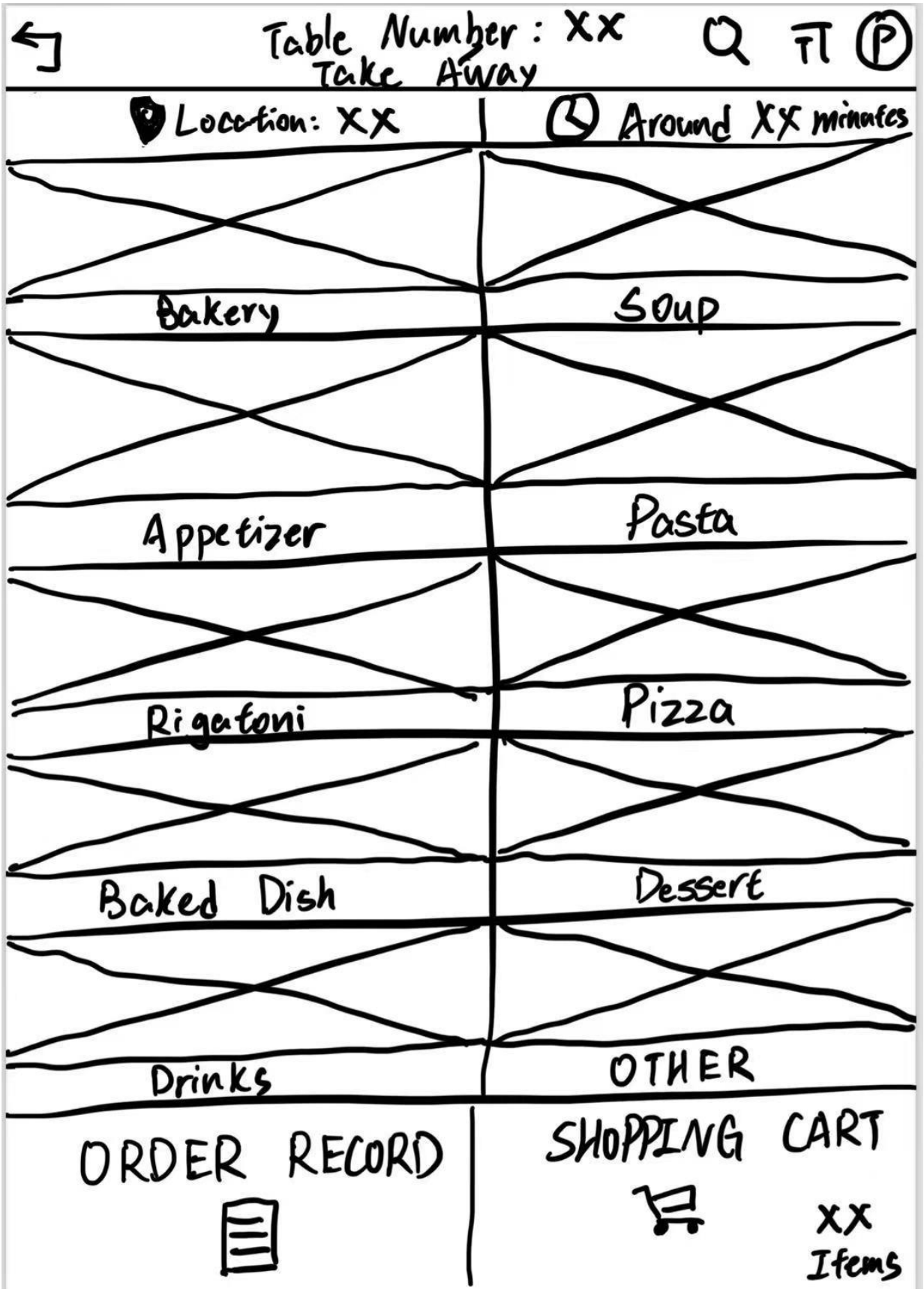
- Goal: Allow users to save frequently ordered items for quick reordering, enhancing convenience but secondary to essential features.

Part 2: Scanned paper wireframes

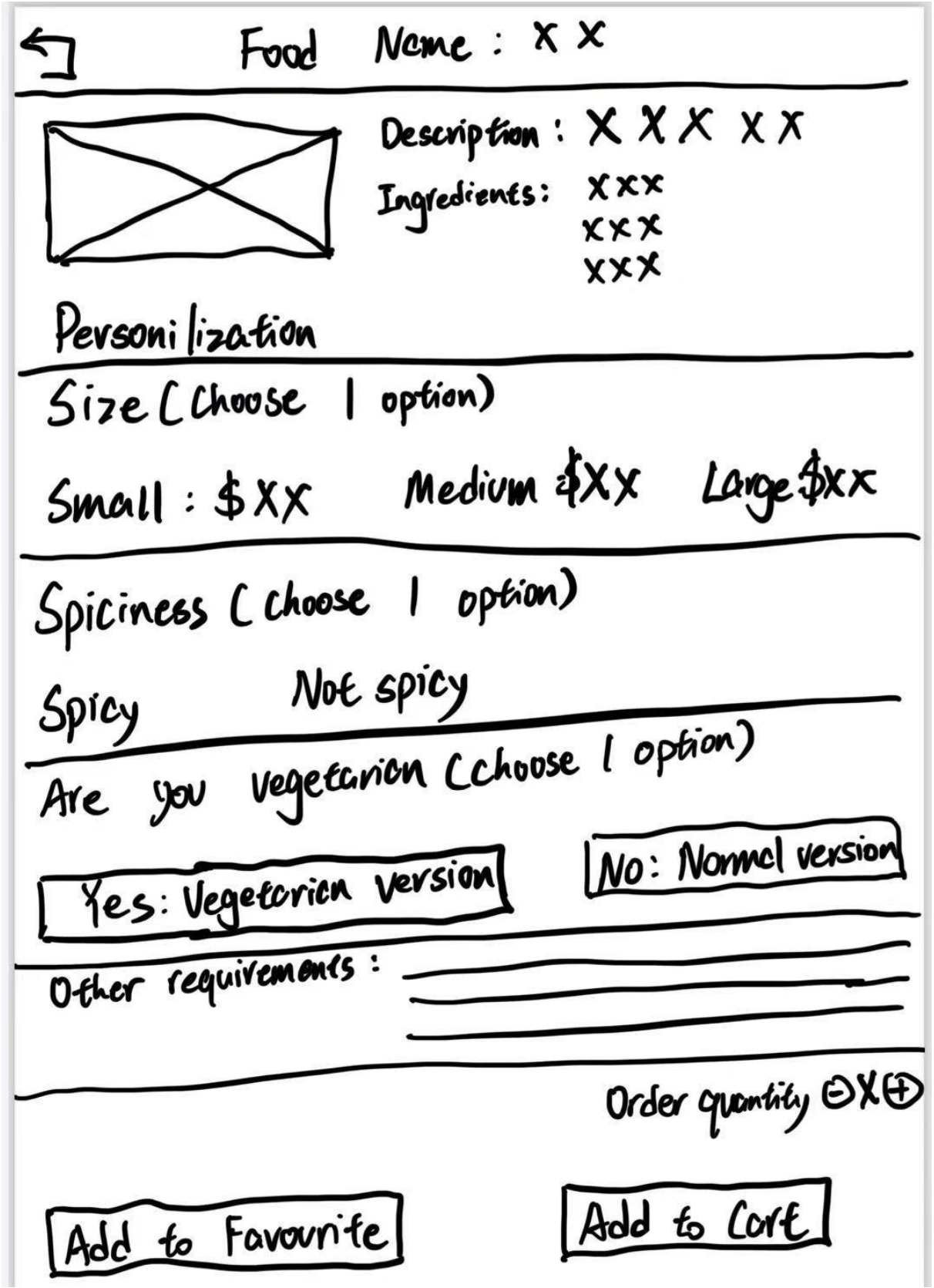
Wireframe 1(Login Screen after scanning QR code):



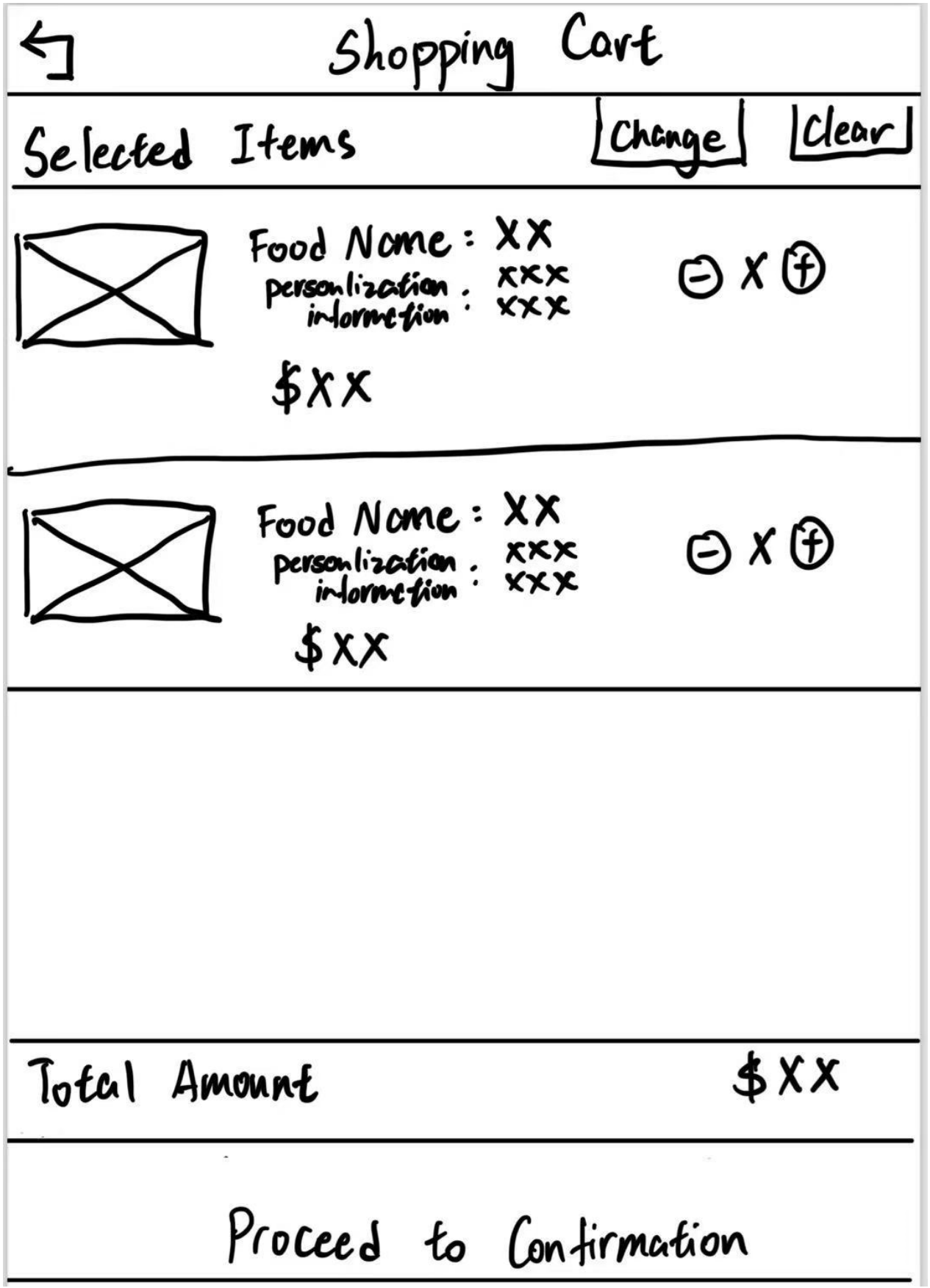
Wireframe 2 (Menu):



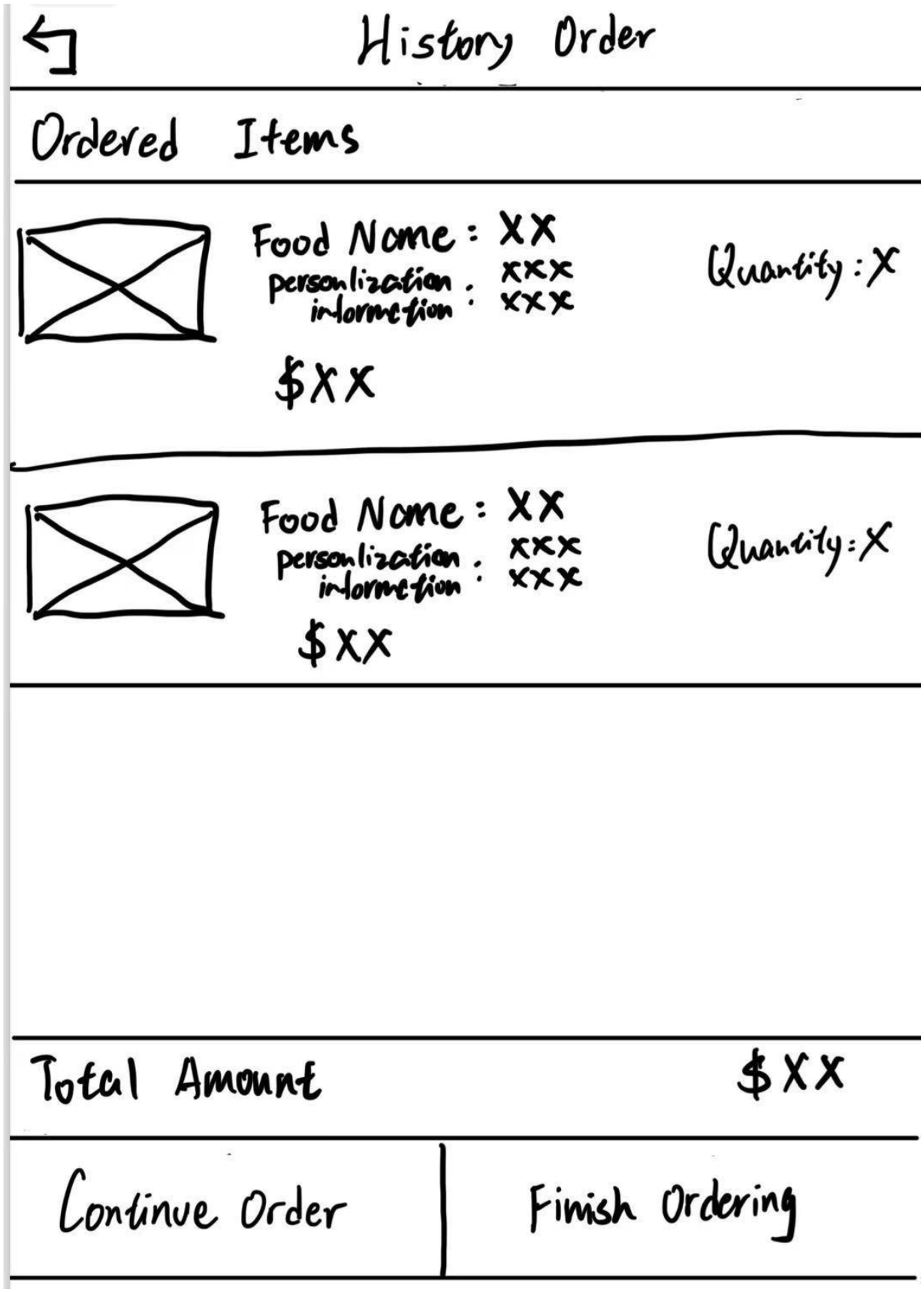
Wireframe 3 (Ordering Food: Include add to shopping cart or add to favorite after personalization for next time use):



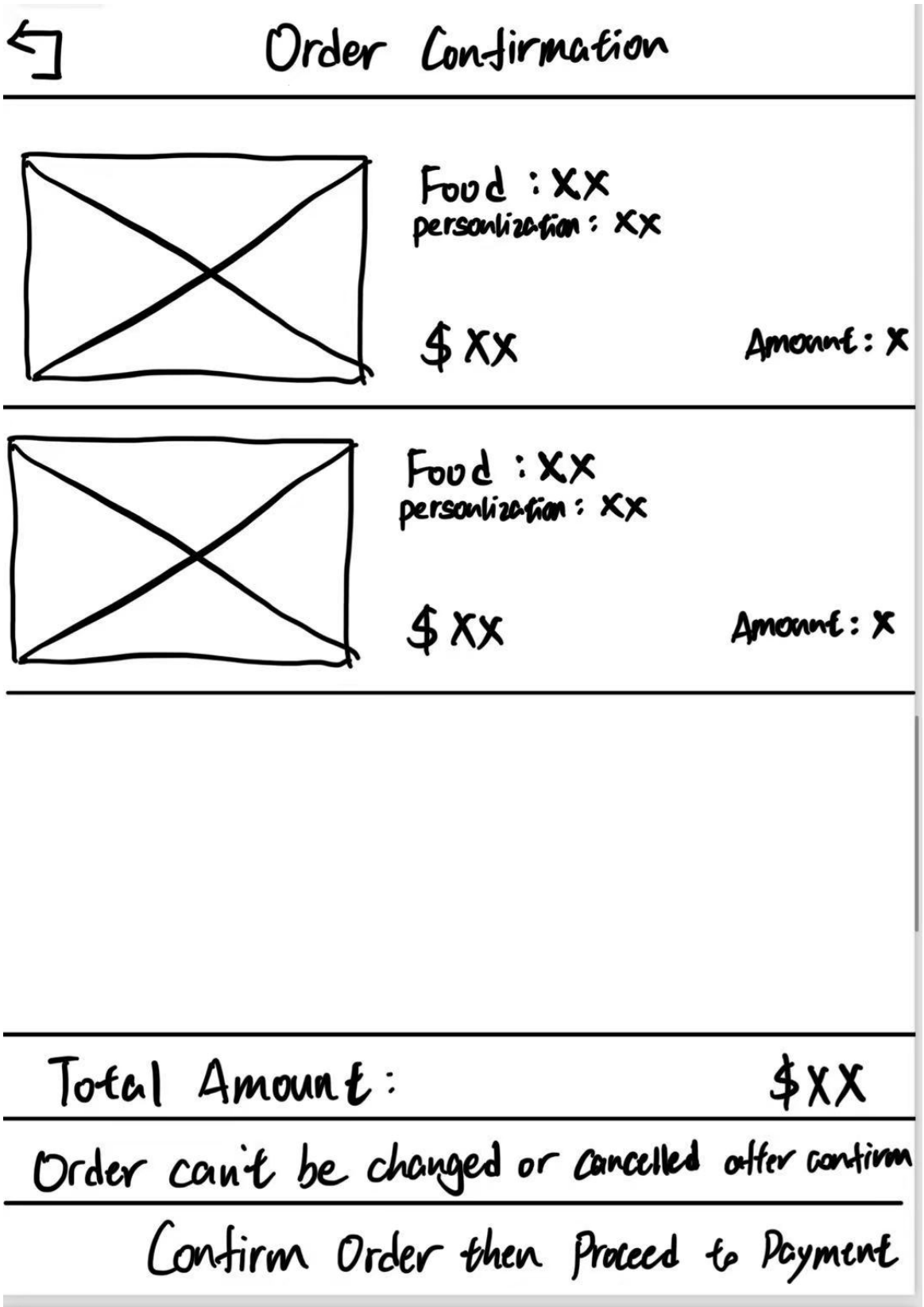
Wireframe 4 (Shopping Cart):



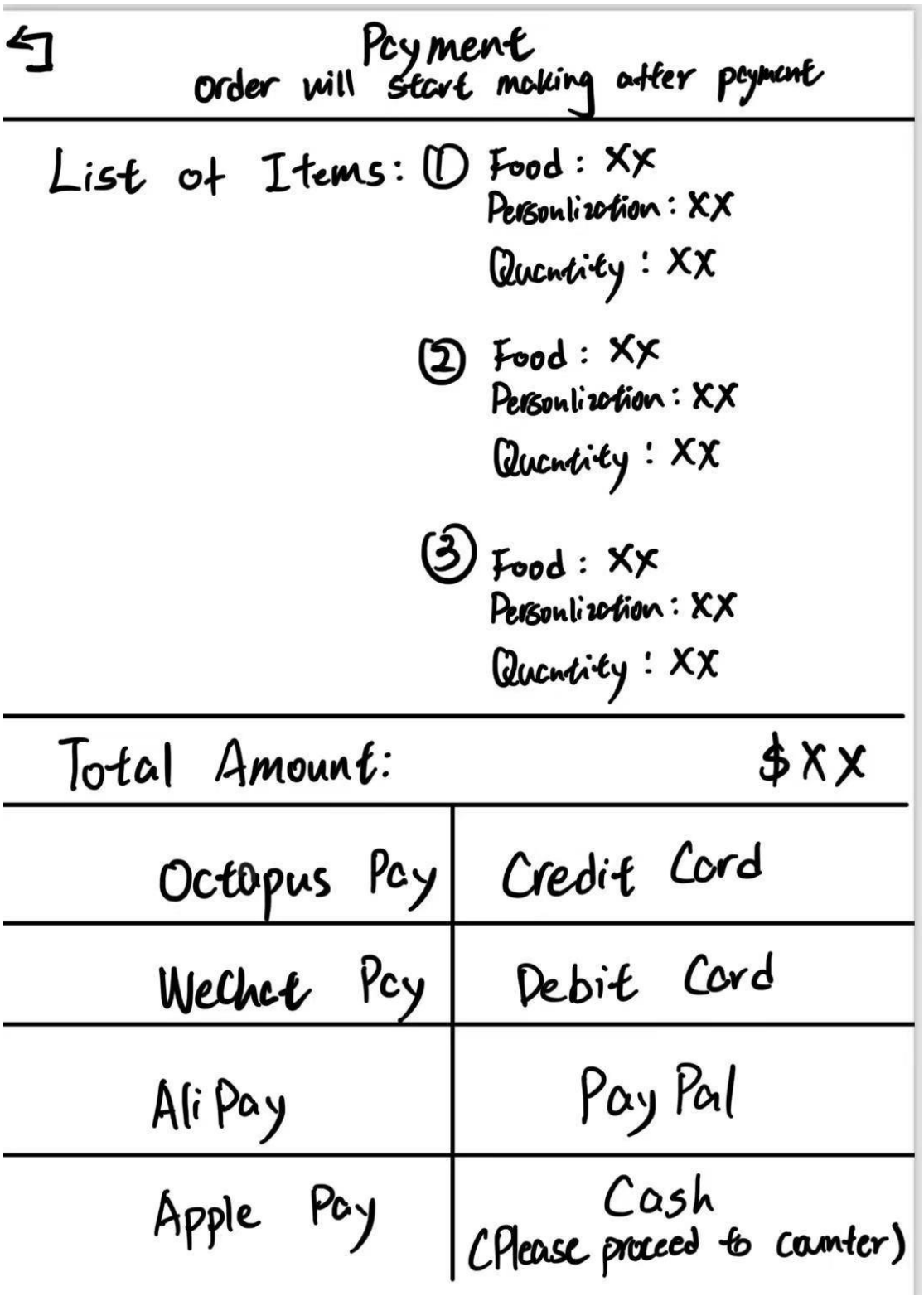
Wireframe 5 (History Order)



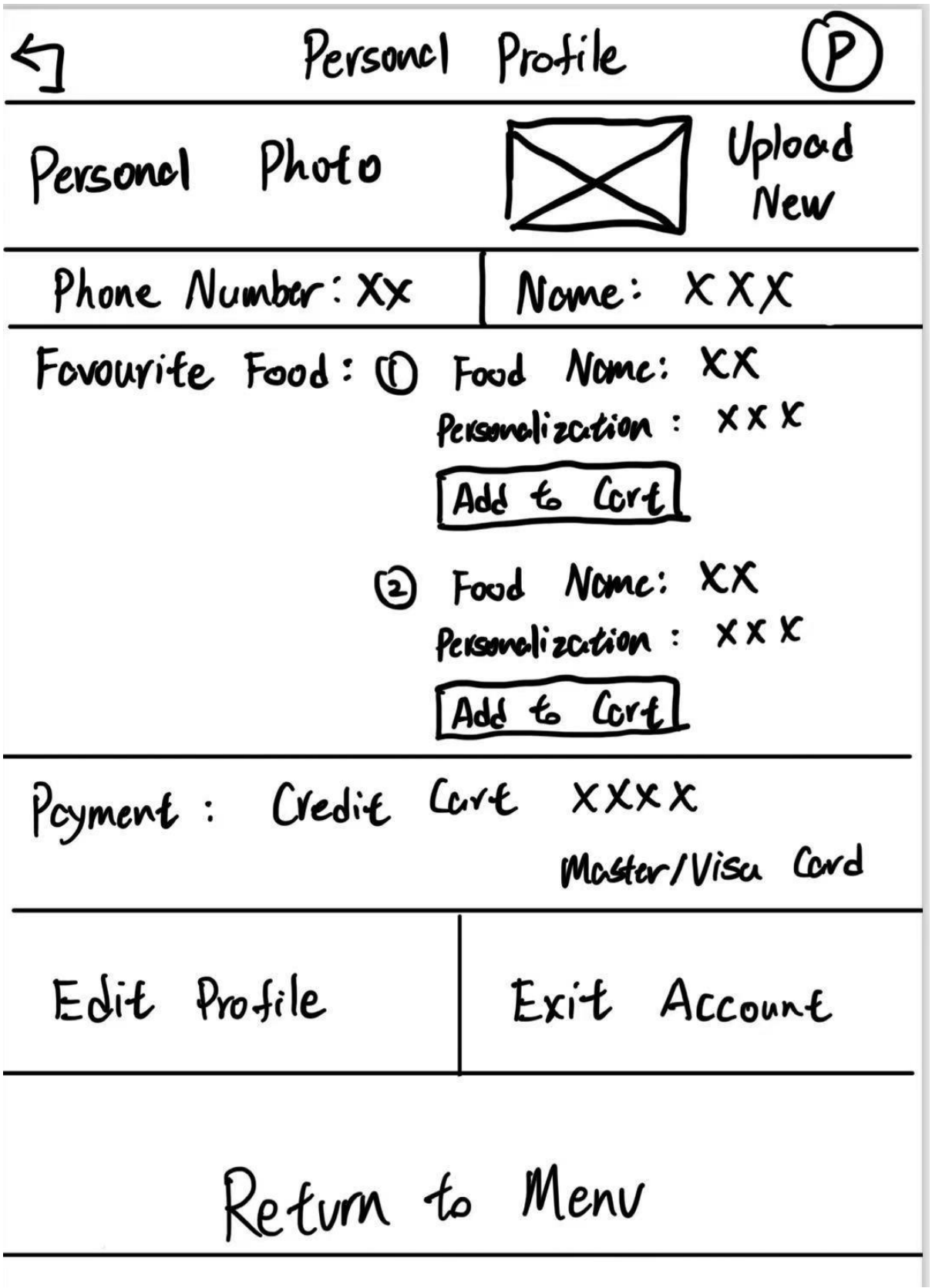
Wireframe 6 (Place order/Order Confirmation):



Wireframe 7 (Payment):



Wireframe 8 (Personal Profile):



Part 3: Defined Navigation flow diagrams:

Flow 1 (Change Language):

Scan QR code → Select Language/语言 at the upper right corner of the first screen → Choose English/中文 according to own preference → Finish Change Language

Flow 2 (Order Food):

Scan QR code → Choose Dine in or take away (Dine in need to enter amount of people) → Choose food and personalize according to own preferences → Enter shopping cart and check food ordered → Process to confirmation page and confirm order → Process to Payment page and pay according to own preference payment method → Finish food ordering

Flow 3 (Create Personal Account):

Scan QR code → Choose Dine in or take away (Dine in need to enter amount of people) → Click on P button which is the 3rd option on the upper right corner of the menu → Press Edit Profile →Upload new photo, phone number, name and credit card number for paying if like, then save→ Finish creating personal account

Flow 4 (Personalize and Add to favorite food):

Scan QR code → Choose Dine in or take away (Dine in need to enter

amount of people) → Choose a food to start editing → Choose size, flavor, and write any extra requirements at the other requirements → Press add to favorite or add to cart → Finish adding favorite food

Flow 5 (Moving to previous/next page):

Scan QR code → Choose Dine in or take away (Dine in need to enter amount of people) → Choose a food to start editing → Press arrow on upper left corner of each page to return previous page or proceed to XX session button to next page → Finish moving to previous or next page

Flow 6 (Add or minus quantity of item ordered):

Scan QR code → Choose Dine in or take away (Dine in need to enter amount of people) → Choose food and personalize according to own preferences → Enter shopping cart and check food ordered → Press on – or + button at the right side of each food order to add or minus quantity of item → Finish add or minus quantity of item ordered

Flow 7 (Search for an item):

Scan QR code → Choose Dine in or take away (Dine in need to enter amount of people) → Click on mirror button which is the 1st option on the upper right corner of the menu → Enter Item name for searching → Finish searching item

Flow 8 (Editing text size):

Scan QR code → Choose Dine in or take away (Dine in need to enter amount of people) → Click on mirror button which is the 2nd option on the upper right corner of the menu → Edit text size → Finish editing text size

Flow 9 (Check shopping cart/History order):

Scan QR code → Choose Dine in or take away (Dine in need to enter amount of people) → Click on shopping cart/History order button → Finish checking

Visual Design and Prototyping

Part 1: Screen Capture of Five high-fidelity screens created using Figma, along with a style guide.

Capture 1:

Brief Explanation:

This is the front page of the prototype, users can select Dine In or Take

Away by clicking the letters to enter and access the menu. (Note: The Language icon on upper right is for reference, no functions added for it)

Capture 2:

Brief Explanation:

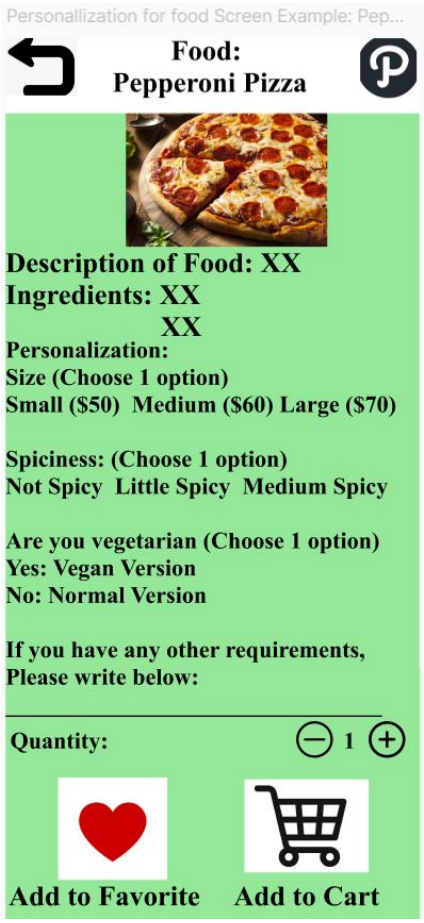
This is the main menu of the prototype; users can click on upper left button to return back to enter screen to change to dine in/take away. Users can click on the P icon on the upper right corner of the screen to enter personal profile. Users can click on the order history icon to enter order history page to check order history. Users can click on shopping cart icon to enter shopping cart and confirm order. Users can access the pizza sub-menu by clicking the pizza icon and enter. (Note: Other icon except pizza aren't functioned, the T and search function has not be implemented.)

Capture 3:

Brief Explanation:

This is the sub-menu of pizza section. Users can click on upper left button to return back to main menu screen to choose other types of food. Users can click on the P icon on the upper right corner of the screen to enter personal profile. Users can click on the order history icon to enter order history page to check order history. Users can click on shopping cart icon to enter shopping cart and confirm order. User can click on pepperoni pizza icon for an example of personalizing food and add to shopping cart. (Note: Any other food except pepperoni pizza isn't functioned)

Capture 4:



Brief Explanation:

This is an example of the ordering page of pepperoni pizza. Users can choose to personalization their own choices (Words not functioned). After personalization, users can choose to add to favorites food which will jump to profile page or add to cart means add to shopping cart and wait to confirm order.

Capture 5:

Brief Explanation:

This is the profile page where users can edit their own name, profile photo, phone number, update payment, check favorite food and exit account (Words not functioned). If customers have their own favorite food personalization last time, they can just press add to cart next to the food to add food and jump to the shopping cart. Users can press continue order icon to go to main menu and continue order.

Extra Notes for other pages

(Note that all functions are applied on icons instead of words):

History order screen and shopping cart screen, only continue order, confirm order , finish ordering, return to previous page, and profile button functioned.

Order confirmation screen, only return to previous page, profile, continue order and confirm order and proceed payment screen available.

Payment Screen, only the return to previous page button and return back to main page button can be used, the payment functions aren’t available.

Style Guide for the Visual Design:

Color schemes:

31D83A 50% (Background)

FFFFFF 100% (For Above Section of each Page except front page)

000000 100% (For some backgrounds to make darker)

Typography font sizes and font faces of a few selected parts:

Screen Frame:

iPhone 16 pro max

Font:

Font Color:

Green (31D83A) (Front Page)

Black(000000) For Rest of the Page

Red (FC0606) For Important Note

Font Format:

Times New Roman | Bold | Size: 45 and 15 (Front Page)

Times New Roman | Bold | Size: 30 and 18 (Menu /Sub-part of menu Page)

Times New Roman | Bold | Size: 23 and 25 (Introduction Text for Food)

Part 2: Publicly accessible URL to the Figma prototype

The Public Link to access the Figma prototype is pasted bellow:

Link for Editing Link for Prototype

Testing

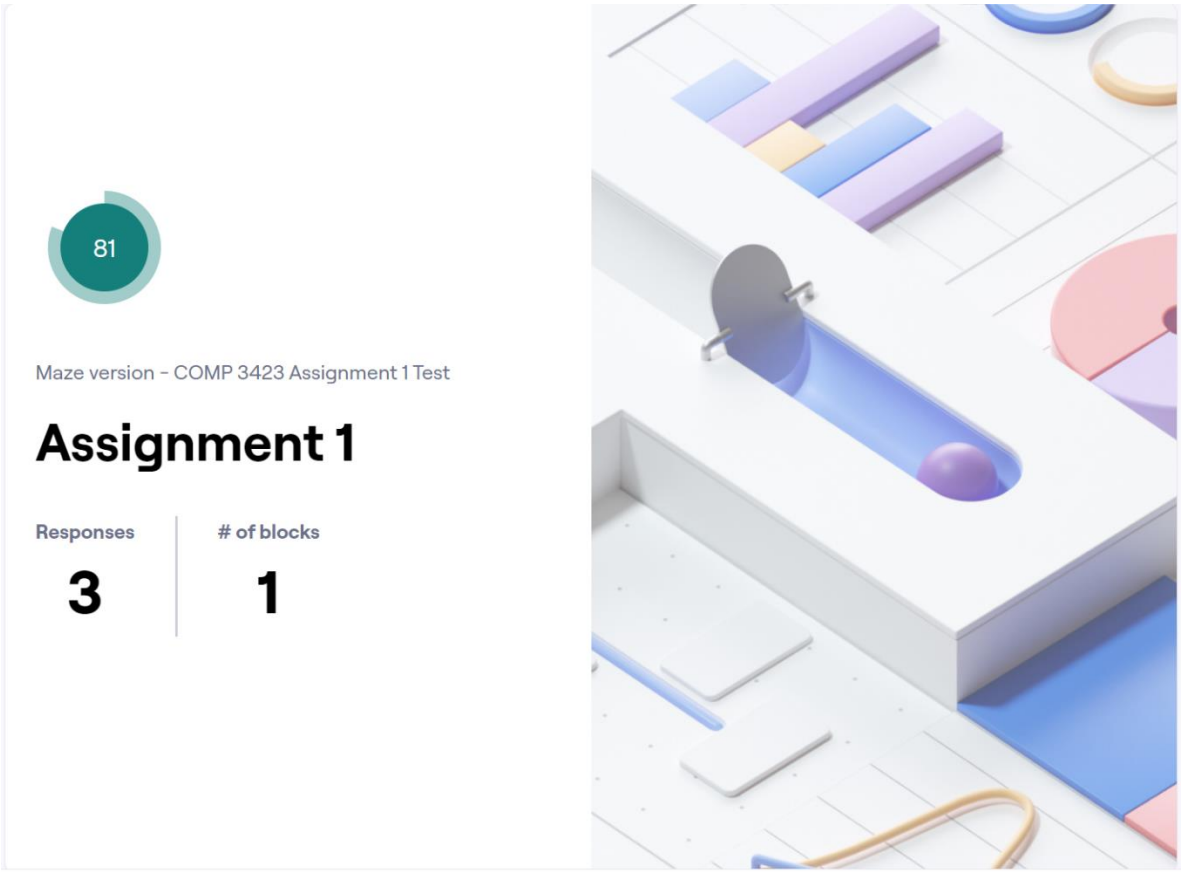
Part 1: Result of two user test

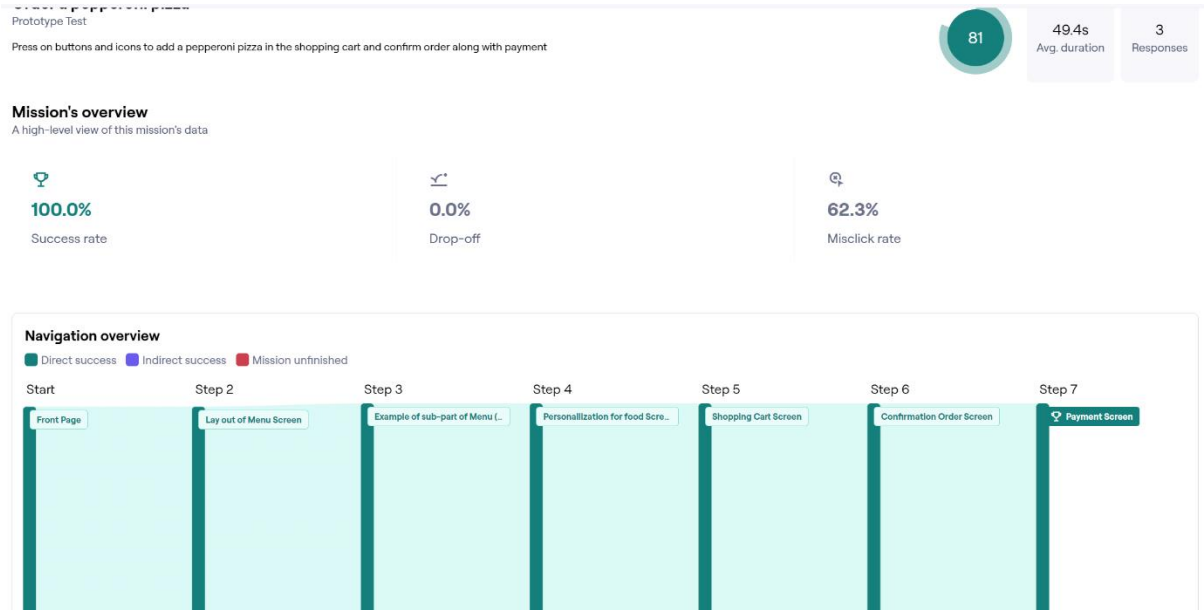
Task Designed to test functionality:

Order a Medium Size Pepperoni Pizza and proceed to payment

Maze link: Link

Conducted Result Report:





Verbal comment Feedback from two user test:

User Comment 1:

"I find the prototype quite limiting because there are not enough functions available. Many icons I try to press don't do anything, which leads to a lot of misclicks and frustration. It would really help if more features were added so that I can use the app more effectively and avoid these issues."

User Comment 2:

"Returning to the main screen to switch between dine-in and take-away options is quite cumbersome. I have to press the return button 4-5 times, which is frustrating. It would be much more efficient if there were a home button to take me back directly to the main page, or if you could add a sidebar menu for easier navigation to other screens from anywhere in the app."

Quantitative Feedback

Measurable Factor: Time used for users to finish task

Time for User 1: 119.5 sec

Time for User 2: 14.4 sec

Part 2: Two findings precisely in the user tests based on user feedback and analysis

From the verbal comment and quantitative feedback of the two real users, the two findings upon the system is as follows:

Finding 1:

The prototype has a limited number of functions, with too few features developed. As a result, users are pressing icons that do not have any associated functionality leading to high misclick rate and time for completing tasks like user 1. For improvement, the system should add more system functionality for reducing misclick rate when using.

Finding 2:

To return to the main screen in order to change between dine-in and take-away options from the payment page, users must press the return button 4-5 times. It would be more efficient to implement a home button that allows users to return to the main page, or to add a sidebar menu for easy

navigation to other screens from any page.