Project Description:

BiteBack is an application that redistributes surplus food from food service and beverage businesses with the assistance of this application. Users are able to acquire food at a much reduced price, particularly from companies located near them, thanks to this application. The program will enable business owners to continue generating revenue from food that would otherwise be considered waste, while also providing users with access to affordable and readily available food in their neighborhood.

Requirement Summary:

Requirement Level	Specification	Details
MINIMUM REQUIREMENTS	Processor Cores	Dual-core 1.4 GHz
	OS	Android 6.0 (Marshmallow) / iOS 11
	RAM	2 GB
	Display Resolution	720 × 1 280 (HD)
	Connectivity	3G/4G or Wi-Fi
RECOMMENDED REQUIREMENTS	Processor Cores	Quad-core 2.0 GHz
	OS	Android 10 (Q) / iOS 14
	RAM	4 GB
	Display Resolution	1 080 × 1 920 (FHD)
	Connectivity	4G/5G or Wi-Fi
OTHER REQUIREMENTS	Permissions	Location, Notifications, Storage, Camera access
	Optional Features	Bluetooth (for pick-up coordination), push alerts

Table 1. System Requirements

The BiteBack prototype will operate on entry-level devices, requiring handsets with a minimum dual-core 1.4 GHz processor, 2 GB of RAM, and either Android 6.0 (Marshmallow) or iOS 11 as the operating system. The application is intentionally lightweight and tuned for seamless functioning on modest hardware; thus, our team has established these minimal standards.

Prototype Description: The prototype was developed utilizing Figma. Developers can easily disseminate Figma, an interactive prototyping software, to testers using URLs they provide.

Prototype Link:
https://www.figma.com/design/p36W1ig01DXJ0atOjAPCwu/BiteBack_Prototype?node-id=0-1&t=Xar3t
Ii9A8Sovyg9-1

User Scenario: Two university students juggling side gigs and rigorous coursework are Maria and Eric. Between lab reports, part-time work, and high living expenses, they sometimes skip meals or overspend on pricey university cuisine. Their limited budget frustrates them lately, as well as the piles of perfectly excellent food they find being thrown away at the end of the day by surrounding cafés.

Eric finds BiteBack one afternoon while surfing a student forum. Drawn by its promise of discounted "rescued" meals, he downloads the app and gives location access. They quickly find a "Study-Pack Combo" of sandwiches and salad at 60% off from a café down the street, exactly what they need for dinner. A few taps later, Maria sighs with relief knowing they will eat well without wasting food or breaking the budget. Their order is scheduled for pick-up.

Vendors Scenario: Running "Sunrise Bites," a little breakfast café close to an office park, are Carlo and Lina. Though they try their best, they deal with dozens of leftover pastries and breakfast bowls every morning—things that simply add to disposal expenses and cannot sell at full price. Unsold merchandise gradually eats into their slim profit margins and compromises their environmental commitment.

One evening, Lina hears a colleague gushing over BiteBack's vendor dashboard. She signs up, lists her extra "Morning Duo" boxes at half price for a small window, and watches orders come in as the day closes. Eager consumers flood in the next morning to scan QR codes and pick their discounted meals, so transforming what was once waste into a small income and good word-of-mouth for Sunrise Bites.
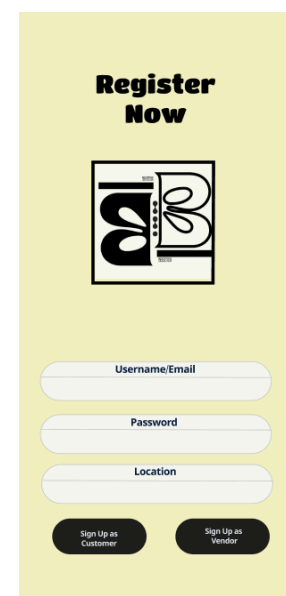

BiteBack Mock Up/Prototype and Application Flow
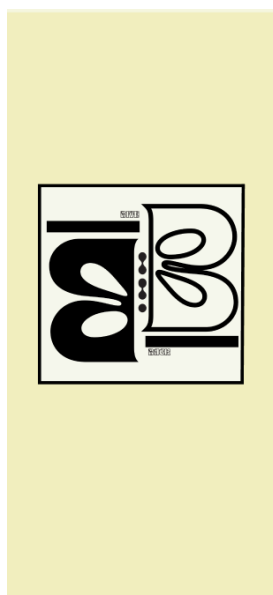
Opening Screen
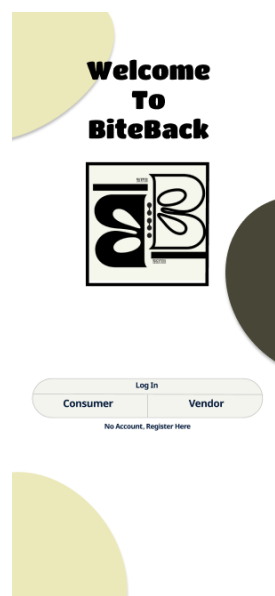
Start Screen

Registration Screen

The user initially starts the app and is presented with the start screen, where he has the choice to log in or sign up. If he chooses to register, he will need to input the appropriate details and be asked if he wants to be a vendor or seller.
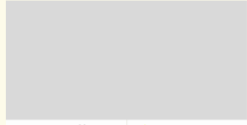
Welcome To BiteBack

Username/Email

Password
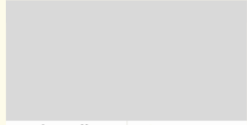
Log In as Consumer   Log In as Vendor

Login Screen

Username

user id

Reviews

User Profile

Search

Sort By Ratings
By Location

Deals Nearby

101 Buffet   ★ 4.1 stars

Blue Coffee   ★ 4.5 stars

Home Page

The user will then log in to the app. If he decides to be a consumer, he will be directed to the consumer profile where he can examine his review history as well as transactions. They can also select to go to the main page by hitting the coffee icon.

⧗ Timer: 10:00

Description:

Description here on food

✓ Pick Up

Order Page

101 Buffet - Location
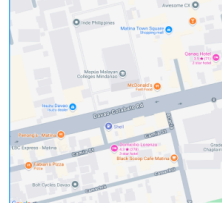
Quantity/Food Info/ Price

◉ Credit Card
○ GCash
○ Cash

✓ Confirm

Payment Option Page

101 Buffet - Location
20 Mins Away

Quantity/Food Info/Price

⧗ Timer: 05:00

✓ Order Received

Live/Geolocation Page

After selecting an order or deal, the user must complete the transaction within the timeframe specified. They then confirm the order by selecting a payment option, after which they may take the order to the location of the business, which is strategically nearby, so they can simply walk the distance.

Enjoy Your Food

Quantity/Food Info/Price

✓ Done
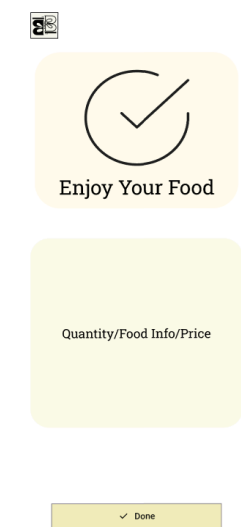
Successful Order Page

After receiving the order, he can now eat the food that would otherwise go to waste.

If the user decides to choose the vendor

101 Buffet - Location

vendor id

Ratings

Vendors Profile

Description here on food

+ ☐ —

Description here on food

Description here on food

+ ☐ —

Description here on food

✓ Add Listing

Vendors Dashboard

101 Buffet - Location

vendor id

Daily Revenue/Sales

Latest Transaction
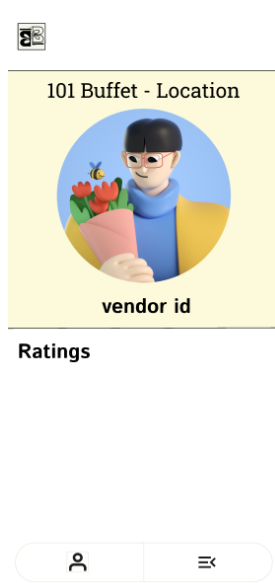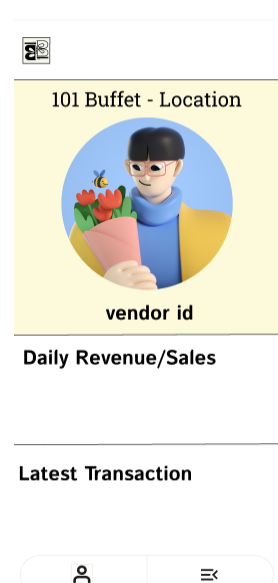
Vendors Sales/Transactions

The vendor side of the application enables efficient management of sales and orders. Vendors can choose to add food listings for sale, manage their ratings, and provide feedback on customers. Users can also access sales and transaction history.
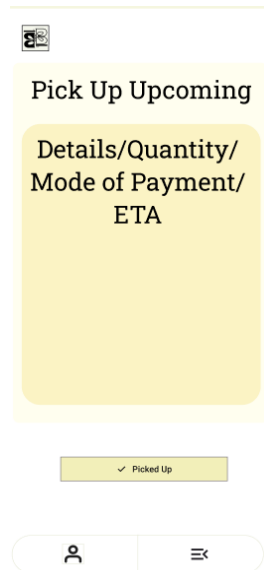
Vendors Order Page

The vendor can manage recent orders from the app, enabling them to view the details, the quantity, the payment method, and the customer's arrival time, assisting them in assessing the arrival and transaction of each order.
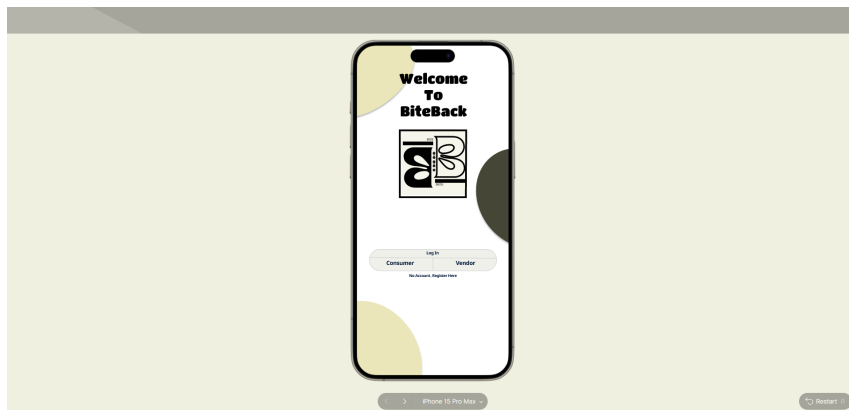
Phone Screen View

Widescreen View
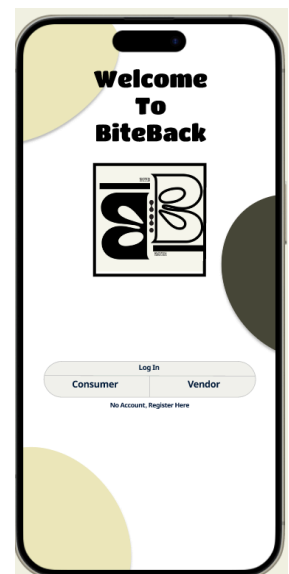
Rationale: I have chosen to use Figma as the tool for developing this prototype, as it is a complementary interactive platform that allows all team members to collaboratively alter the prototype. It also enables the team to present the application's final design upon its debut. Moreover, Figma is very convenient for presenting and sharing prototypes with remote users and can be readily modified upon receiving feedback. However, Figma is not without its shortcomings; it necessitates internet connections for saving alterations, hence preventing users from closing the program in the absence of

a connection. Utilizing it on a larger screen may pose challenges, as smaller buttons will be cumbersome to engage.

Changes to the Requirements: The main modification to the application that was eliminated involved the Sales & Waste-Saved Dashboard with daily export. Coordinating with vendors regarding their daily waste savings has proven challenging, as we are unable to measure it accurately in real time, coupled with the limited time available to fulfill this specific requirement.

Initial Evaluation Plan: Due to the ongoing challenges related to user coordination and real-time tracking, the team is unable to evaluate its original planned form. Instead, we are implementing alternative methods to monitor the app's performance and gather feedback. Online platforms such as Microsoft Teams will be used to ensure that evaluators or testers can continue to interact with and evaluate the prototype remotely.

Usability Specifications:

Evaluation Criteria:

1. **Usability:**

   ○ Are consumers and vendors completing tasks without difficulty, meeting the ≤90 seconds for reservation and ≤30 seconds for listing creation?

   ○ Are users able to access all necessary app functions without confusion or frustration?

2. **Consumer Behavior:**

   ○ Do consumers regularly use filtering options (price, category, distance)?

   ○ Are consumers making purchases based on push notifications or app alerts?

3. **Vendor Performance:**

   ○ Are vendors able to upload surplus food and update listings quickly and accurately?

   ○ Are vendors finding value in the app despite the removal of the waste-saved dashboard?

4. **Sustainability Metrics:**

   ○ Measure the environmental impact of food savings through consumer purchasing behavior (e.g., purchases per day, total surplus meals sold).

Population:

A group of 3-5 selected participants from CCIS students will be utilizing the prototype. They will be expected to complete specific tasks that have been detailed for the Prototype. An exemplary instance is the fulfillment of an order. The BiteBreak prototype is required to execute the specified tasks to be deemed successful.

Prototype Task

Prototype Tasks for Consumers:

1. **Browse Meal Offers:**
   - Filter and browse available surplus food offers by price, category (e.g., vegetarian, vegan), and distance (≤5 km).

2. **Reserve a Meal:**
   - Select a meal offer, reserve it, and proceed to payment using e-wallet, debit/credit, or cash on pick-up.

3. **Pick-Up Confirmation:**
   - Upon arrival at the vendor's location, confirm the reservation via QR code or order ID to collect the food.

4. **Payment Process:**
   - Complete the payment through the selected method (e-wallet, debit/credit, or cash).

Prototype Tasks for Vendors:

1. **Add Surplus Food:**
   - Quickly list surplus food by uploading an image, specifying quantity, expiry, and price details. Select applicable discount tiers for the items.

2. **Manage Listings:**
   - Edit, pause, or delete surplus food listings in real time as the availability changes.

3. **Order Fulfillment:**
   - Confirm and manage orders as consumers come to pick up their reserved food items, scanning the consumer's QR code for validation

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Time Interpretation:

Consumer Task Time Goal: ≤90 seconds for completing a reservation.
Vendor Task Time Goal: ≤30 seconds for adding a new food item to the system.

Roles: A group of 3-5 students will be chosen to assess the application according to the aforementioned usability standards and tasks. The participants will evaluate the app's fundamental functionalities, concentrating on their engagement with aspects including meal browsing, reservation, and vendor listing development.

Heuristic Evaluation for BiteBack

1. **Visibility of System Status:**

   - The app should provide immediate and clear feedback to users. For example, when a meal is reserved or a payment is successful, the app should display clear notifications or confirmation messages to reassure the user that the action was completed successfully.

   - Evaluation: Does the app inform users about the status of their reservation (e.g., "Your meal is ready for pick-up!")? Does it notify vendors when a listing is successfully added or modified?

2. **Match Between System and the Real World:**

   - The app should use language and visual elements familiar to users. For example, the meal categories should be labeled clearly (e.g., vegetarian, vegan, etc.), and processes like reservations should be described in simple terms.

   - Evaluation: Are the terms used in the app familiar to users? Are actions such as "reserve," "buy," and "pick-up" easily understood by users?

3. **User Control and Freedom:**

   - Users should feel they have control over their actions and can easily reverse or cancel actions if necessary (e.g., cancel a reservation or modify a listing).

   - Evaluation: Can consumers cancel or modify a reservation easily? Can vendors remove a listing or make edits to it quickly?

4. **Consistency and Standards:**

   - The app should follow platform conventions, such as consistent button styles, color schemes, and icons, ensuring users can intuitively interact with the app.

   - Evaluation: Is the design consistent throughout the app (e.g., the "Reserve" button should look the same across all screens)? Are **users** able to navigate through the app with ease due to its consistent layout and design?

5. **Error Prevention:**

   - The app should be designed to minimize the occurrence of errors. For example, users should be warned before submitting incomplete or incorrect data.

○ Evaluation: Does the app prevent users from making errors, such as trying to reserve a meal that has already been taken or trying to enter invalid payment information? Are there adequate error messages to help users correct mistakes?

6. **Recognition Rather Than Recall:**

   ○ Users should not have to remember information between screens. The app should make options and information visible, reducing the cognitive load.

   ○ Evaluation: Are consumers able to quickly see their recent meal choices? Are vendor actions (e.g., uploading a new meal) easy to identify and act upon without remembering previous steps?

7. **Flexibility and Efficiency of Use:**

   ○ The app should cater to both novice and expert users, providing shortcuts or easy-to-use features for experienced users (e.g., pre-saved payment information).

   ○ Evaluation: Can frequent users quickly perform tasks such as reordering their favorite meals? Can vendors easily upload multiple food items at once?

8. **Aesthetic and Minimalist Design:**

   ○ The app should maintain a clean and simple design that only displays the necessary elements to prevent information overload.

   ○ Evaluation: Does the app have a clutter-free interface that displays only the essentials (e.g., meal details, payment options)? Is the layout aesthetically pleasing yet functional?

9. **Help Users Recognize, Diagnose, and Recover from Errors:**

   ○ If an error occurs, the app should provide clear guidance on how to fix it (e.g., "Your payment method was declined. Please try again").

   ○ Evaluation: Are error messages clear, and do they help users understand what went wrong? Are there clear steps to recover from any issues (e.g., problems with payment processing)?

10. **Help and Documentation:**

    ○ While the app should be intuitive, it should also provide help options for users when needed (e.g., FAQs, in-app tutorials, or customer support).

    ○ Evaluation: Is there an easy way for users to access help or support (e.g., via an FAQ or customer support chat)? Is the information helpful and easily understandable?

Participant Survey and Feedback

To assess the effectiveness of the app, gather insights on user experience, and identify areas for improvement, a survey will be administered to both consumers and vendors after they have used the app. The feedback will focus on usability, user satisfaction, and suggestions for improvement.

Consumer Survey:

1. **Ease of Use:**

   - On a scale of 1-5, how easy was it to browse meal offers on the app?

   - On a scale of 1-5, how easy was it to reserve and complete the payment for your selected meal?

2. **App Performance:**

   - Did the app load and respond quickly during your interactions? (Yes/No)

   - If you encountered any delays or errors, how would you rate the impact on your experience? (1 = Not disruptive, 5 = Very disruptive)

3. **Satisfaction with Meal Offers:**

   - Were you satisfied with the variety of meals offered on the app? (Yes/No)

   - On a scale of 1-5, how would you rate the quality of the meals offered through the app?

4. **Overall Experience:**

   - On a scale of 1-5, how would you rate your overall experience with the BiteBack app?

   - What improvements or additional features would you suggest for the app?

Vendor Survey:

1. **Ease of Listing Food:**

   - On a scale of 1-5, how easy was it to list surplus food items on the app?

   - Did you face any challenges in uploading food listings? (Yes/No)

   - If yes, what issues did you encounter?

2. **Managing Listings:**

   - On a scale of 1-5, how easy was it to manage your listings (e.g., pausing or deleting items)?

   - Were you able to track your sales easily within the app? (Yes/No)

3. **Sales and Engagement:**

   ○ Have you seen an increase in sales or customer engagement since using the app? (Yes/No)

   ○ If yes, how much impact do you believe the app has had on your sales?

4. **Satisfaction with App Functionality:**

   ○ On a scale of 1-5, how would you rate the app's ability to meet your needs as a vendor?

   ○ Were there any features or functionalities you found missing or lacking?

5. **Overall Experience:**

   ○ On a scale of 1-5, how would you rate your overall experience with the BiteBack app as a vendor?

   ○ What suggestions do you have for improving the app for vendors?

DATA GATHERING METHOD	DESCRIPTION
Survey (Quantitative)	After the testing phase, the team will distribute a survey to participants to gather data on their user experience with the BiteBack prototype. The survey will utilize a 5-point Likert scale (Refer to Table 5. 5-Point Likert Scale Interpretation).
Feedback (Qualitative)	The survey will also include a feedback section where users/participants can voice their concerns, suggestions, or issues regarding the BiteBack prototype that need to be addressed.