

LAST BITE

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Executive Summary

The increasing problem of food waste, added to the increasing demand for low-cost meals in West Lafayette, has brought to light a large gap in the local market. Businesses like restaurants and grocery stores lose out on unsold excess food, while students and residents cannot find affordable options. In response to this two-fold problem, we have developed "Last Bite," a mobile app to connect local businesses with consumers looking for discounted food.

"Last Bite" provides a simple, sustainable solution by facilitating vendors to list surplus food items at reduced prices. Buyers could browse real-time listings and execute secure payments to collect the orders easily. The application not only helps users gain access to cheap meals but also creates an opportunity for vendors to turn potential waste into an avenue of revenue, which establishes a win-win scenario for all stakeholders.

Besides considerations related to affordability, "Last Bite" strongly advocates for sustainability in terms of encouraging businesses and consumers to reduce food waste; it increases community participation in environmentally responsible practices. Looking ahead, plans by the initiative to develop a web-based platform will ensure wider access and greater convenience for more people.

Tackling the huge problems of waste and affordability, "Last Bite" offers an innovative solution that harmonizes sustainability, cost-effectiveness, and community impact—a first in this field.

Need & Idea

The students at Purdue face the challenge of limited budgets, with food expenses forming a huge percentage of their monthly expenditures. An average meal at a restaurant costs \$15, which is a huge expense for students relying on part-time jobs, scholarships, or allowances. Our survey results indicate that 83% of respondents agree that affordable meal options are important, while only 14% strongly agree that such options are readily available. On the other hand, restaurants and grocery stores also deal with the related problem of unsold surplus food at the end of the day. This surplus turns out to be wasteful and creates environmental concerns. 90% of the respondents believed it crucial to reduce food waste, and this aligns strongly with sustainability aspirations.

The "Last Bite" app offers a dual solution by creating a platform where restaurants and grocery stores list their surplus food at discounted prices. Students can buy these surplus items as "surprise bags" at discounted prices. "Last Bite" helps students access affordable meals, while simultaneously giving businesses a way to offset waste and recover revenue. With prices ranging from \$5 to \$10, 78% of respondents expressed willingness to purchase a \$5 restaurant "surprise bag," while 83% showed interest in grocery bags at the same price point. Hence, there is a strong demand for affordable and sustainable food options. Last Bite provides an innovative and practical answer to the problem of affordability and sustainability by aligning the expectations of consumers and businesses.

Idea Testing

To evaluate the potential of the "Last Bite" app, we conducted comprehensive concept testing with two key stakeholders: consumers and restaurants. This approach provided a well-rounded understanding of the app's feasibility and opportunities for refinement.

Consumers

To evaluate the feasibility of the "Last Bite" app, we conducted a survey and focus group targeting Purdue students. The survey, designed in Qualtrics and shared across campus groups, measured purchase intention, willingness to pay, and perceptions of the app's practicality. The survey questions are highlighted in Exhibit 2. Respondents were asked about purchasing "surprise bags" priced at \$5, \$7, and \$10, with prices informed by competitor analysis (Exhibit 1). Results showed strong interest, with **78% willing to purchase \$5 restaurant "surprise bags"** and **83% interested in grocery bags** at the same price, validating demand for affordable food options. 48% respondents said that they would probably use this app and 43% said that they would definitely use.

A focus group of five participants at Purdue's Walk reviewed the app concept and interface. Participants praised the app's affordability and sustainability goals but raised concerns about the inability to choose the contents of "surprise bags" and the lack of a delivery feature, which could limit accessibility. Feedback emphasized the need for flexibility in product selection and convenience for users. Overall, these insights confirmed strong interest in the app while identifying areas for improvement.

Restaurants

To complement consumer insights, we held informal discussions with three local restaurants—Aathish Halal, Java House, and Foodlabs—and the manager at Aramark to understand how they handle surplus food and assess their interest in "Last Bite." Aramark's manager noted that surplus food is typically discarded daily, but corporate restrictions would require additional permissions for participation. This highlights the need to initially target independent restaurants with greater operational flexibility.

At Foodlabs, surplus often consists of vegetables like broccoli, appealing to consumers seeking fresh produce. Aathish Halal retains most surplus food except for rice, with the amount and type of surplus varying daily. Some days they sell out, while other days they leave significant quantities of raw ingredients or cooked meals.

Restaurant owners showed interest in the concept, valuing its potential to reduce waste and generate revenue. However, they emphasized the need for a streamlined process to manage surplus without disrupting operations. Suggestions included innovative solutions like vending machines to simplify pickups. Despite challenges, all three restaurants expressed willingness to collaborate, provided clear guidelines are established. Targeting independent restaurants offers a practical approach for scaling the app while addressing both consumer and business needs.

STP Analysis

Segmentation

For designing this app and understanding the potential users, we conducted a survey which helped us understand the consumer segment. Under the survey we broadly segmented the consumers based on their demographic, geographic and behavioral characteristics. Since our geographical location for this app is Greater Lafayette, it was observed that most of the population were students

with an age group of 23-25 or 26-29 [refer [Exhibit 3](#)]. The gender diversity was quite significant and distributed. The behavioral segment was highly influenced by the purchasing style. It was observed that “surprise bags” of \$5 or \$7 has high likelihood compared to \$10 indicating a price sensitive consumer base [refer [Exhibit 4](#)]. It was also observed that the purchase frequency was pretty low, mostly in the range of 0 to 4 times in a month from grocery stores opposed to restaurants which had a range of 5 to 10 times in a month [refer [Exhibit 4](#)].

Targeting:

The primary aim of “Last Bite” is to target a value conscious young audience. These are the people who spend regularly on meals owing to their inability to prepare meals at home due to several reasons. The segmentation helped us determine that they prefer affordable prices irrespective of what they are served in the “surprise bag” (the concept of surprise bag itself suggests an uneven mix of different food items). Additionally, the secondary target audience includes a more sustainable audience who believes in driving environmentalism and reducing food waste. Most of the consumers find this concept unique and hence a marketing campaign highlighting sustainability and affordability can easily target the above-mentioned consumers in the market [refer [Exhibit 5](#)].

Positioning:

This app is positioned as a sustainable revenue generator for the food industry. The restaurants and grocery stores in the Greater Lafayette area will be the primary sellers from this app. They will be able to generate extra revenue from the food which otherwise would have been discarded since they had no platform available to sell it. As the survey suggests, most people are unaware of similar services available in the area (refer [Exhibit 5](#)) and the concept of “surprise bag” is unique (refer

[Exhibit 6](#)), this gives us the first movers advantage to create brand loyalty towards the app and capitalize it by differentiating it from other food apps.

Marketing Strategy:

Product:

Last Bite is a new mobile application aimed at the issue of food waste and simultaneously offering affordable meal options to students and residents of West Lafayette, Indiana. It creates a sustainable ecosystem in which restaurants and grocery stores in the area are connected with potential buyers to encourage the sale of excess food and groceries at considerably reduced prices. By doing so, it not only benefits the students seeking cheap food but also helps the businesses convert unsold stock into revenue while contributing to sustainability.

Real-Time Listings: Vendors, be it restaurants or grocery stores, can list surplus food items or groceries in real-time as they approach closing hours. The listings include descriptions of the items, prices, nutrition and allergen information and pickup windows for transparency and convenience.

Search and browse functionality: They could search deals by type of food—say, sandwiches, sushi, or groceries—location, and price [see [Exhibit 7](#)]. This allows users to quickly and easily find relevant deals without getting overwhelmed.

Secure Payment System: The application allows for a range of payment methods, including credit and debit cards, digital wallets, and campus-specific dining dollars, such as Purdue's Dining Meal Dollars [see [Exhibit 7](#)]. This functionality lets students use their campus benefits easily to pay for meals.

Cart and Checkout Functionality: Users can add to cart, modify quantities of items, and check out in the fewest possible steps. It's built to be intuitive to avoid any friction in purchase [see [Exhibit 7](#)].

Rewards Programs: Rewards programs give customers points for every purchase to motivate them to repeat the action and redeem the points later for discounts or special offers.

Pickup Scheduling: There are very clear instructions for the pickup of each order, with a defined location and defined time slots, hence allowing a smooth handover from vendors to users.

Notifications and Alerts: It also sends push notifications for new listings, price drops, and promo activities to help users stay updated with the latest offers.

Vendor Dashboard: Sellers have access to a full dashboard to monitor their sales, manage their listings, and analyze trends in their revenue [see [Exhibit 7](#)]. Key metrics include total sales, items sold, and revenue projections; all this information is in an easy-to-read format.

User Reviews and Ratings: Users can rate and review their experiences. It helps vendors to get feedback of their services and others who may use them.

Sustainability Metrics: One of the distinguishing features of "Last Bite" is the ability to track and display the environmental benefit behind every transaction. Users and vendors can see stats like the estimated quantity of food waste diverted and carbon emissions saved, further driving home the app's focus on sustainability.

Place:

The availability of Last Bite will also be provided through download at the Google Play Store and on the Apple App Store to make it available for Android and iOS phones. The application is

optimized in a fluent manner to run across smartphones and tablets, ensuring easy and handy accessibility for users. In future developments, the application shall be more accessible through its web-based platform. This will enable users to open Last Bite directly through the web browsers, thus nullifying the need for downloading of any application and ensuring compatibility with a wide range of devices, from desktops to laptops. This might increase development costs somewhat but is a strategic move to make the platform more user-friendly and hence accessible to a larger pool of people.

Costs:

The overall budget for application development, launch, and operation of the "Last Bite" is \$30,000. We have included all major expenses in this budget: mobile app development, UI/UX design costs, cloud hosting costs for at least one year, marketing budgets for onboarding vendors as well as acquiring users and further maintenance cost for an application update or bug fixation. This distribution allows for a less expensive application, yet once again, gives the student and vendors quality. The above joint efforts will help smooth operations and build a self-sustaining financial model for the preliminary period of the application. A detailed breakdown of these expenses is shown in [Exhibit 8](#).

Pricing and Revenue:

The commission rate for vendor transactions will initially be set at 20% to hasten revenue generation and ensure the quick recovery of the app's initial costs. When a sustainable vendor base has been achieved and operational break-even is reached, the commission will be lowered to 15% in order to make the offer more attractive to potential vendors. A one-time platform joining fee of \$100 will be mandatory for vendors; this amount will help the business with initial setup and support expenses. The average monthly sales by each vendor are expected to be \$700, largely

supported by the popularity of the \$4-8 surprise bags [see [Exhibit 4](#) for pricing survey response]. In addition, the app will do in-app advertising for different local businesses and vendors at large, raising an approximated annual revenue of 5,000 dollars, assuming an average of 5-6 advertisers per month at \$84 per campaign with a CPM rate of \$10 per 1,000 impressions. With 20 vendors onboard initially, the total projected annual revenue at 20% commission is \$41,600, including joining fees. After reducing the commission to 15%, revenue will adjust accordingly. Detailed projections are provided in [Exhibit 9](#).

Promotion:

The primary consumers for such a service are students and budget conscious individuals [see [Exhibit 10](#)]. The main marketing agenda should emphasize on 'Delicious food at affordable Rate', 'Sustainability through waste reduction' and 'supporting local businesses.' This can be approached in multiple ways. Social media campaigns are an effective method of reaching a large audience in a dynamic way in a short span of time for displaying targeted ads to potential customers compared to email or SMS marketing strategies. Users can be awarded internal app currency for participating in ongoing marketing campaigns or contributing towards user generated content. Collaborations with various businesses can be done where they can promote their business in ads along with Last Bite to offset / reduce advertising costs for e.g. Collaborating in online marketing campaigns or for billboards near important locations. Offline marketing efforts like setting up booths in areas of high interest, especially during events like orientation week, can help in spreading awareness among potential users and offering exclusive sign-up discounts. Referral or sign-up discounts could be offered to users to ensure quick and smooth adoption.

Challenges involved with product

Based on the nature of the service, the company is vulnerable to certain threats that can be effectively managed with appropriate steps. Of these threats, the most significant ones are Vendor adoption issues, Food Quality control and User trust and adoption

- a) Vendor Adoption and Retention: For generating revenue, there should be adequate customers and vendors at the same time to keep the wheel rolling. In such a scenario vendor participation can be incentivized through zero-listing fees and commission free sales for the initial months while getting the owners hooked to the extra income on the side. Future efforts could involve the introduction of dynamic pricing setups where a surcharge fee could be applied in high demand situations (for e.g. Finals week in a college town) or a consumer-side bidding system for products that are in high demand.
- b) Food Quality Control: Food quality is one of the core pillars of the business. This food quality can be controlled through the following measures. Mandatory training during onboarding would include everything from the basics like appropriate food storage for reducing bacteria growth, food sorting techniques along with appropriate labelling and packaging methods. This stage would also involve checking the compliance of the restaurants with appropriate food agencies to check their legitimacy and competence with food handling. Other methods to ensure quality is by hiring freelancing agents in the local area to conduct spot checks at random times. This keeps the restaurant on their toes to maintain quality. The use of customer feedback system for evaluating metrics on complain rates, user ratings and refunds for penalizing repeat offenders is an effective way of maintaining quality [refer [Exhibit 11](#)]. Adding liability waivers on the customer side during on boarding would protect the parties involved from lawsuits and costs incurred from them.

APPENDIX:

Exhibit 1: Competitor analysis

Competitor	Average price	Areas served	Key offerings
Too good to go	\$3–\$8 per bag	Major urban areas globally, such as New York, Los Angeles, and Paris.	"Surprise bags" with discounted surplus meals from restaurants, bakeries, and grocery stores.
Flash Food	\$4–\$10 per item	Canada and select U.S. cities (e.g., Detroit, Boston).	Discounted surplus groceries, including fresh produce, dairy, and bakery items from large supermarket chains.

Exhibit 2: Consumer survey

Thank you for taking the time to participate in this survey!

What is "Last Bite"?

"Last Bite" is a mobile app that helps you save money on food and reduce waste.

Here's how it works:

Local restaurants and grocery stores list their extra food items on the app at the end of the day.

These items are sold at discounted prices. You can purchase these items as "surprise bags" or individually discounted items. After purchasing, you can pick them up before the store or restaurant closes.

Why Use "Last Bite"? Affordable meals and groceries for students and others who want to save

money. Helps reduce food waste, contributing to a more sustainable environment.

Surprise bags: These are bags filled with multiple items which were not sold out during the working hours of a restaurant. These are completely dependent on what items are left on a particular day. Usually you can get multiple items in one bag with a combined value more than the price of the surprise bags.

Average Price: \$4–\$10 for a "surprise bag."

Q1

★

Are you a purdue student?

- ☐ yes
- ☐ no

Q2

★

Do you currently live in the Greater lafayette area?

- ☐ yes
- ☐ no

Q4

★

If this app were available, how likely would you be to use it to purchase surprise bags from "grocery stroes"?

- ☐ Definitely not use
- ☐ Probably not use
- ☐ Might or might not use
- ☐ Probably use
- ☐ Definitely use

Q5

*

Compared to other food apps, the concept of "Last Bite" is very unique? How strongly do you agree to this statement?

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

Q6

*

Do you currently know of any other apps that provide a similar service in your area?

- ☐ No
- ☐ yes (Please specify)

Q7

*

How important is it for you to have affordable meal and grocery options?

- ☐ Very unimportant
- ☐ somewhat unimportant
- ☐ neutral
- ☐ somewhat important
- ☐ very important

Q8

*

"Affordable meal options are easily available for students in Greater Lafayette"
How strongly do you agree or disagree with the above statement?

- ☐ Strongly disagree
- ☐ Disagree
- ☐ neutral
- ☐ Agree
- ☐ Strongly agree

Q9



Do you believe that this app will solve the need for affordable food options for students in West Lafayette?

- ☐ Strongly disagree
- ☐ Disagree
- ☐ neutral
- ☐ Agree
- ☐ Strongly agree

Q10



How likely are you to purchase a "surprise bag" from a restaurant at the following prices? (1 being very unlikely and 5 being very likely) Remember the value of the items inside is more than the price of the bag.

	Very unlikely	unlikely	Neutral	likely	very likely
\$5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q11



How likely are you to purchase a "surprise bag" from a grocery store at the following prices? (1 being very unlikely and 5 being very likely) Remember the value of the items inside is more than the price of the bag.

	Very unlikely	unlikely	Neutral	likely	very likely
\$5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
\$10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12



▼  Display this question

If Are you a purdue student? yes Is Selected

Which program are you enrolled in?

- ☐ Undergrad
- ☐ Masters
- ☐ PhD
- ☐ Other

Q13

*

How many time a month would you purchase a surprise bag from a restaurant?

Q14

*

How many time a month would you purchase a surprise bag from a grocery store?

Q15

*

What is your age group?

- ☐ Under 18
- ☐ 18 - 22
- ☐ 23 - 25
- ☐ 26 - 29
- ☐ 30 and above

Q16

*

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Non-binary / Third Gender
- ☐ Prefer Not to Say

End of Survey

We thank you for your time spent taking this survey.

Your response has been recorded.

Exhibit 3: Sample question to determine demographic segmentation

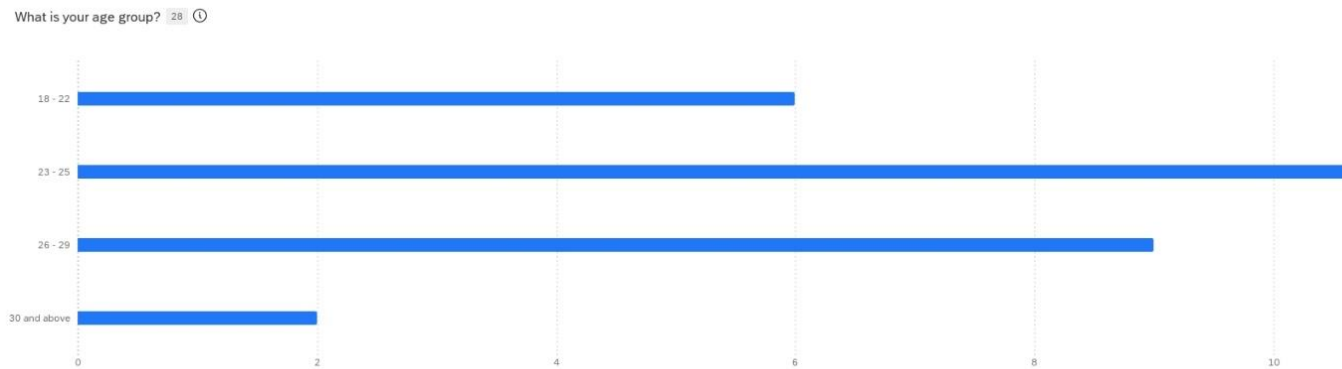


Exhibit 4: Sample question to determine behavioral/purchasing segmentation

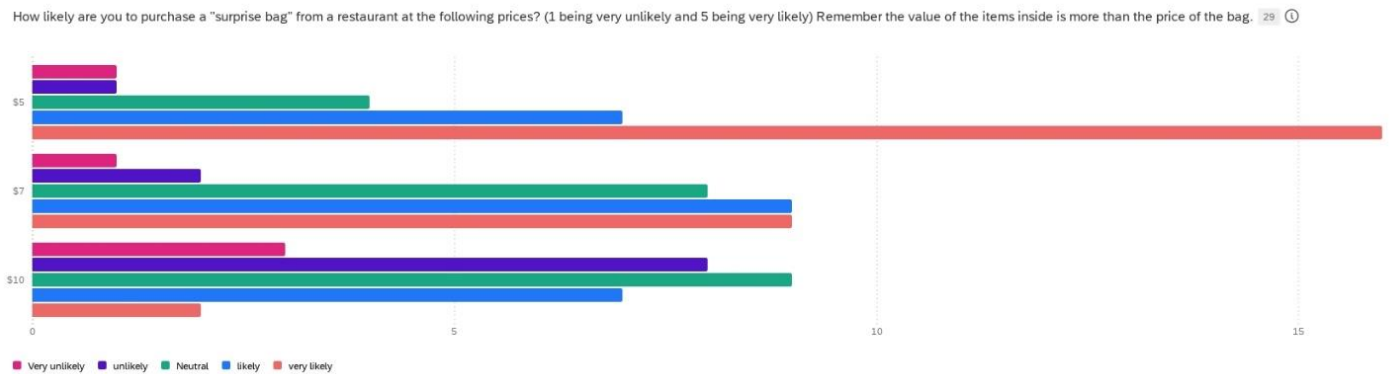


Exhibit 5: Sample question to determine awareness/competitors for the app

Do you currently know of any other apps that provide a similar service in your area? 29 ⓘ

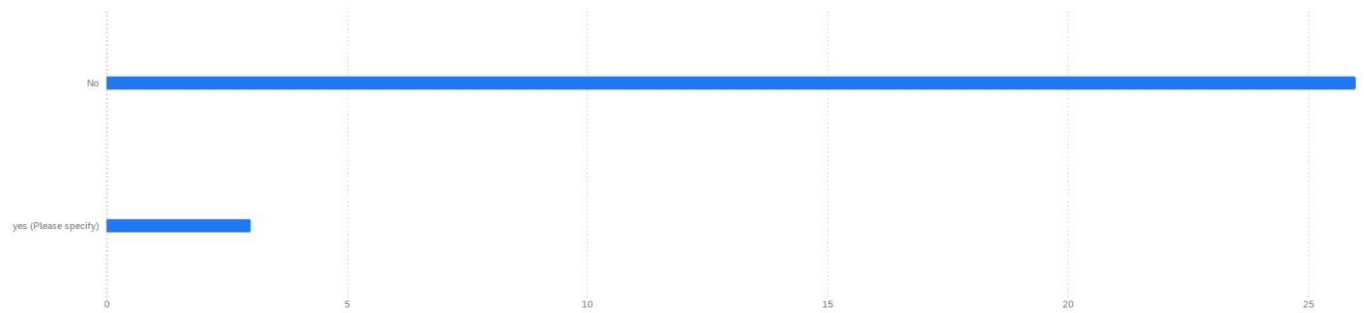


Exhibit 6: Sample question to determine willingness to buy

If this app were available, how likely would you be to use it to purchase surprise bags from "restaurants"? 29 ⓘ

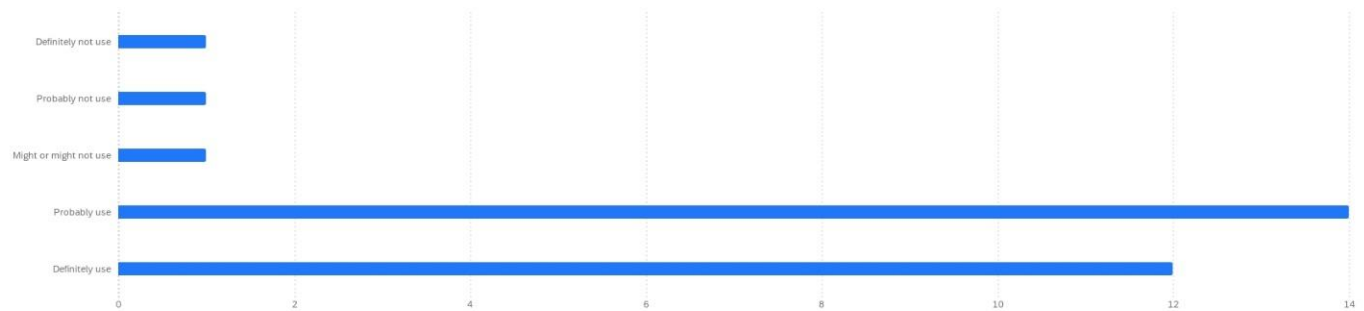
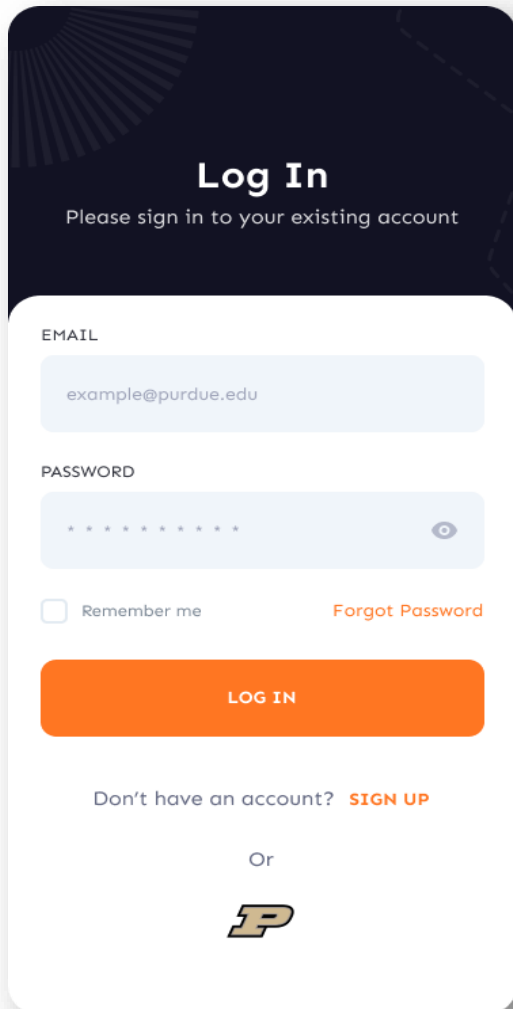


Exhibit 7: Application UI/UX Design

Figure 1: Login Page



The login page features a dark blue header with a subtle fan-like pattern. Below the header, the text "Log In" is prominently displayed in white, followed by the instruction "Please sign in to your existing account". The form area is white and contains fields for "EMAIL" (with the placeholder "example@purdue.edu") and "PASSWORD" (with masked characters and a toggle icon). A "Remember me" checkbox and a "Forgot Password" link are positioned below the password field. A large orange "LOG IN" button is centered below the form. At the bottom, there is a link for "Don't have an account? SIGN UP" and a section for "Or" with the Purdue University logo.

Figure 2: Available Locations

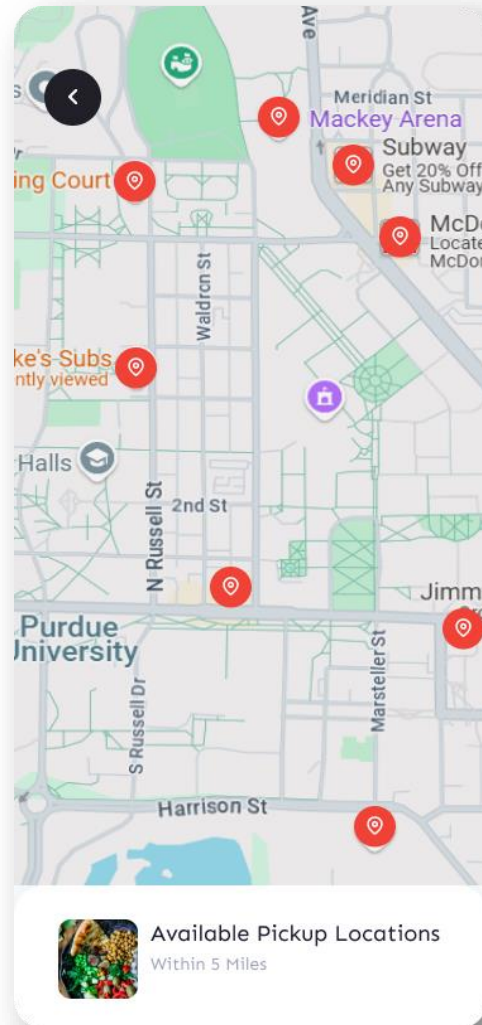


Figure 3: User Homepage

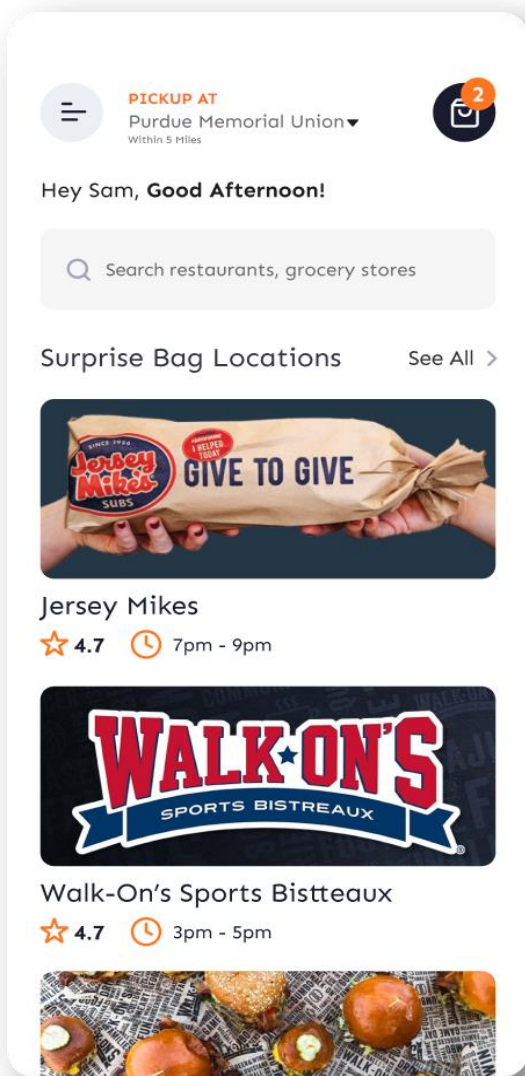


Figure 4: Food Details Page

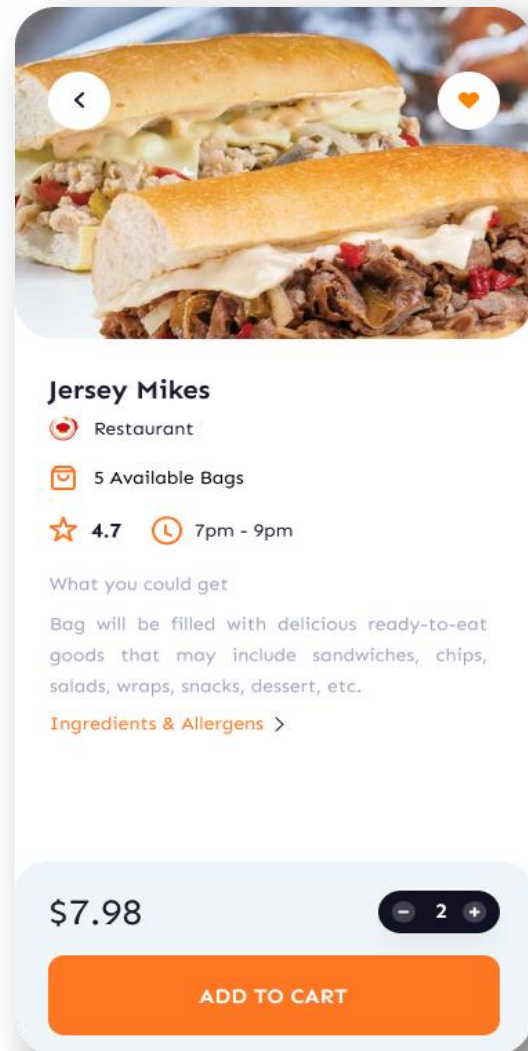


Figure 5: User Cart

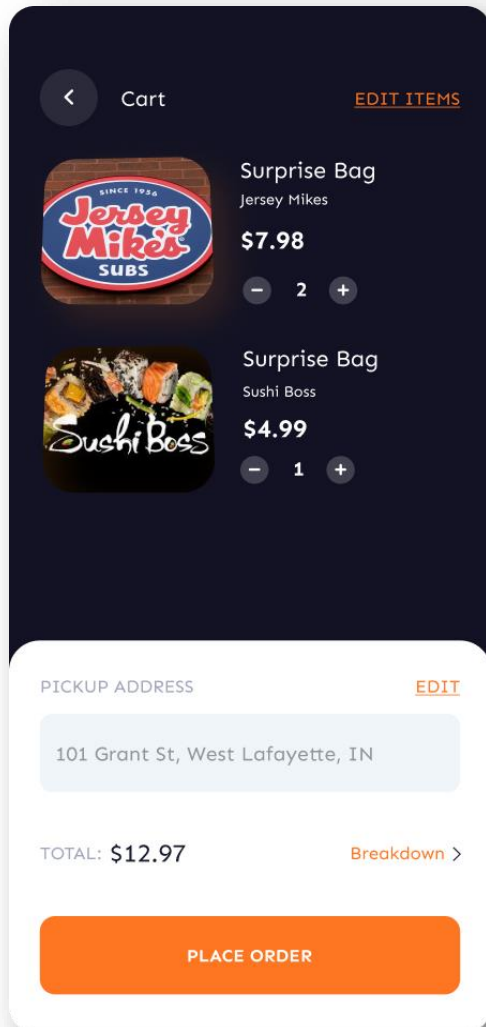


Figure 6: Payment Page

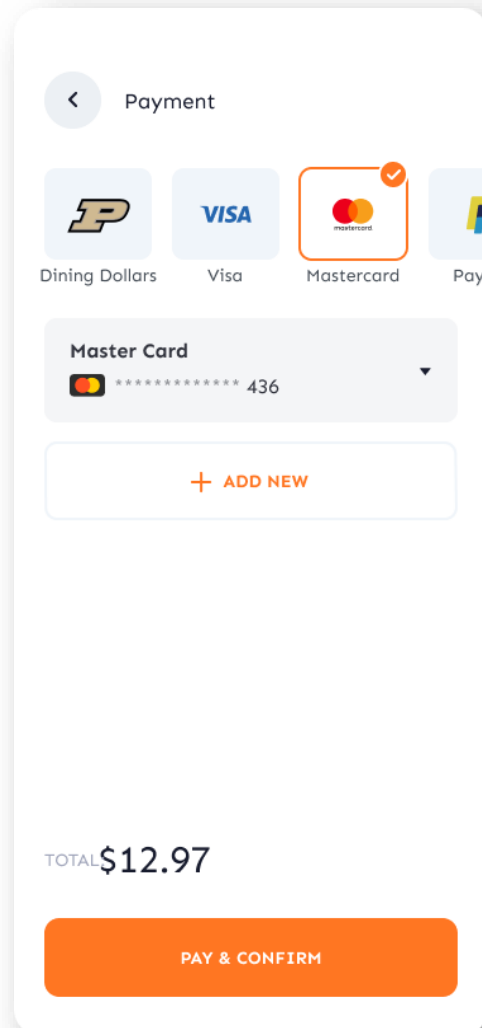


Figure 7: Seller Dashboard

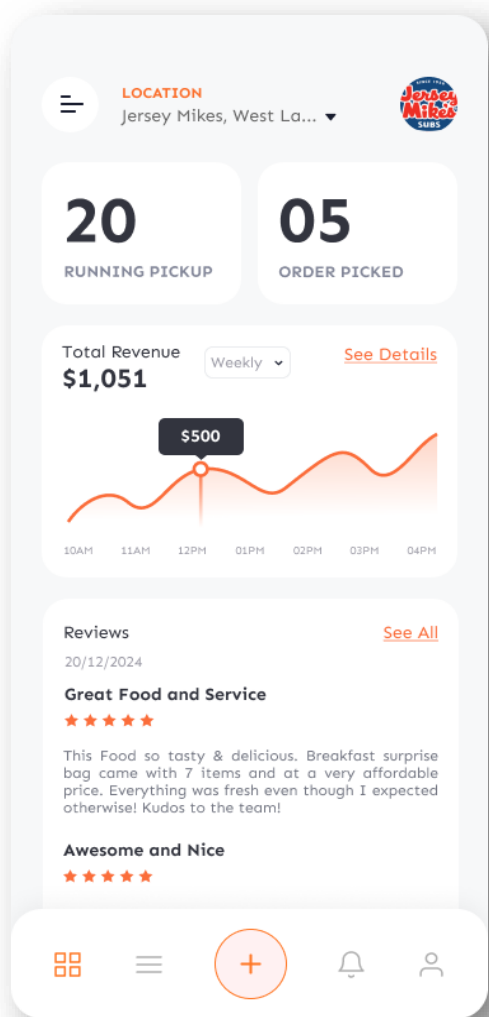


Exhibit 8: Cost Breakdown

Cost Component	Amount (USD)
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App Development	\$20,000
UI/UX Design	\$5,000
Cloud Hosting (1 year)	\$1,000
Marketing and Outreach	\$3,000
Vendor Onboarding	\$1,000
Total	\$30,000

Exhibit 9: Sales Forecast Table

Metric	Monthly Estimate	Annual Estimate
Units Sold (Surprise Bags)	1,500 - 1,750	18,000 - 21,000
Average Price per Bag (\$)	\$4 - \$8	
Revenue from Transactions (20%)	\$2,400 - \$2,800	\$28,800 - \$33,600
Vendor Joining Fees (\$)	\$100 × 20 vendors total	\$2,000
In-App Advertisers	5-6 advertisers per month	
Ad Revenue (\$10 CPM)	\$416.67 - \$500	\$5,000 - \$6,000
Total Revenue (\$)	\$3,000 - \$3,400	\$35,800 - \$41,600

Exhibit 10: Consumer Demographics

Demographic	Details
Age	18-25(student and young professionals), 30-45 (blue collar workers)
Avg Income	< \$30,000/annum
Education	Undergraduate – PhD students, GED
Technology	Active on social media like Instagram and TikTok
Key Motivation	Save Money while contributing towards sustainability

Exhibit 11: Vendor Performance Metrics

Metrics	Details
Average Revenue	Indicates how much the business was able to save up on lost food at the end of the month.
Average Rating	Customer Satisfaction with food quality, portion size and service
Top food Categories	Food category that was highest in demand

Local Vendor Rank	How the business has been performing compared to its local competition in terms of rating and complains
Food complains / Refund	Checks how often food was deemed of uneatable quality
Order Cancellation	Measures how many orders the restaurant cancels after accepting payments.
Customer Loyalty	Indicates repeat customers