UWB Food Finder

Primary Roles

Lukasz Bakun	**Primary Role:** Shared completion of the projects and deliverables **Responsibilities:** Usability testing, some UI Concepts, interpreting usability testing, presenting **Deliverables:** low-fidelity interface prototypes, functional and nonfunctional requirements
Anya Biryukova	**Primary Role:** Shared completion of the projects and deliverables **Responsibilities:** User research, interviewing, usability testing, user interface design, presenting **Deliverables:** Functional and non-functional requirements, usability test results, low-fidelity interface prototype
Hayeon Choi	**Primary Role:** Shared completion of the projects and deliverables **Responsibilities:** User research, usability testing, interface design, presenting **Deliverables**: User requirements, usability test results, low-fidelity interface prototype
Gabriel Smith-Dalrymple	**Primary Role:** Shared completion of the projects and deliverables **Responsibilities:** user research, interface design, presenting **Deliverables:** low-fidelity interface concepts

Product Description

Food Finder is an application that consolidates all on-campus and near-campus eatery (cafes, restaurants, food trucks) information for UW Bothell students to browse and order food from. The application allows access from each restaurant to edit and update posted information as needed; pricing, menu, and hours changes are reflected to student users in real-time. Students can add reviews of eateries and check average wait times.

The application includes the ability to place an order ahead of time to pick up food from food trucks and other participating local establishments. Students are able to put in suggestions for food trucks that they would like to see on campus, and read reviews for food trucks and local food by students for students.

Students are offered an optional user account feature that they can log into and keep a record of order history, customer preferences, filter options, food allergy alerts, and billing methods.

UW Bothell can use data from the application on the preferred cuisines of the student body to provide popular food options on campus. Food truck companies are able to use the app to gauge demand for their cuisines.

Requirements Specifications

Functional Requirements

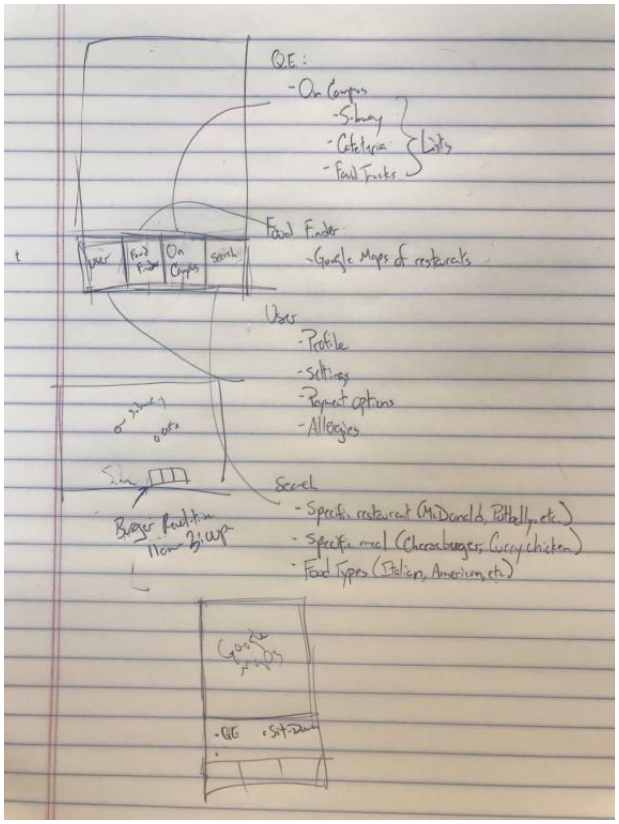
- The system must show all known food establishments in the range of five miles, sorted by shortest distance by default.
- The UWB1 building shall serve as the center of the provided five-mile range.
- The interface shall provide users with the choice of viewing establishments by a graphic map view or text list view.
- The user should be able to adjust the range of food establishments from 0.1 miles to 10 miles.
- The system must be able to show current food trucks, their schedules, menus items with ingredients, and contact information.
- The system must show the hours, contact information, and menu on all food establishment pages.
- The system must be able to order food from participating food trucks and food establishments listed in the application.
- The system should post estimated wait times for food as available.

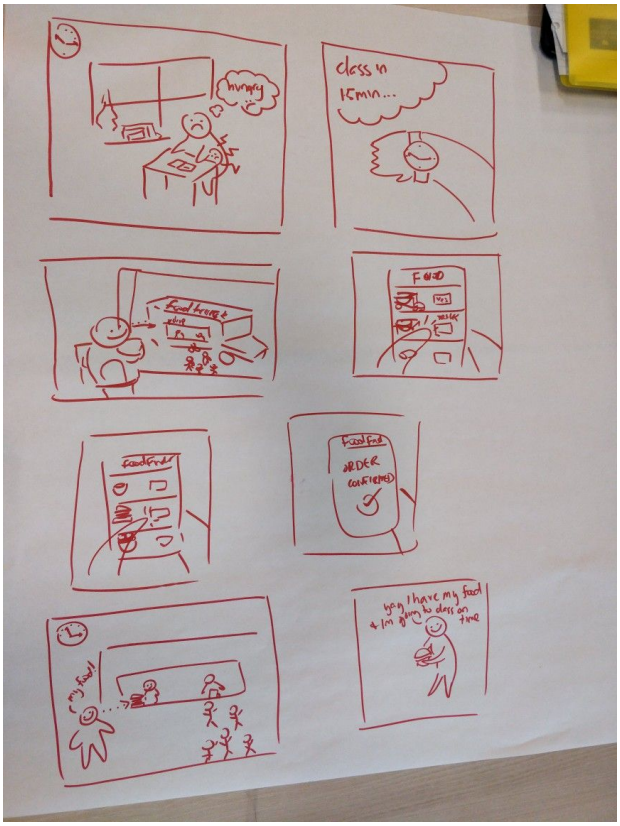
- The system must be able to accommodate the user's choice in saving personal/order/payment information.
- The system should allow users to write reviews and rate establishments on a 5 star scale.
- The system shall have a separate interface depending on if the user is a customer or an eating establishment.
- The system shall allow for a rewards program that allows users to get a 10th on campus meal free, as permitted by campus funding.
- Users without accounts shall be able to place mobile orders.
- The system shall collect end-user analytics to be used for future user support and application updates.
- The system shall provide an analytics interface for business users that provides customer statistics, if consented by customers.

Non-functional Requirements

- The system should take no more than a minute to process an order and bring up any search results.
- The system should be able to handle an average of 10,000 invocations per day.
- The system must have a 99.999% accuracy rating in relaying orders.
- The system's map and information should be available offline if specified beforehand by the user.
- The system's information and data must be easily updatable.
- The system should have a 99.95% uptime.
- The system should save payment and user information in an encrypted format, and the data saved in the system should be secure.
- The system shall ensure that payment information is processed within 30 seconds.
- Business-side information updates shall be reflected on end-user side within 30 seconds.
- The system must generate and log a problem report and notify the user in the event of a system crash.
- The system shall not be shut down more than once in a 24 hour period for maintenance.
- The application shall take less than 4 seconds for startup.
- The application shall be available for iOS devices version 8.0 and above.
- The application shall be available for Android devices version 4.0 and above.

Early Design Sketches





Food Finder Interface Design

List of Interface Pages

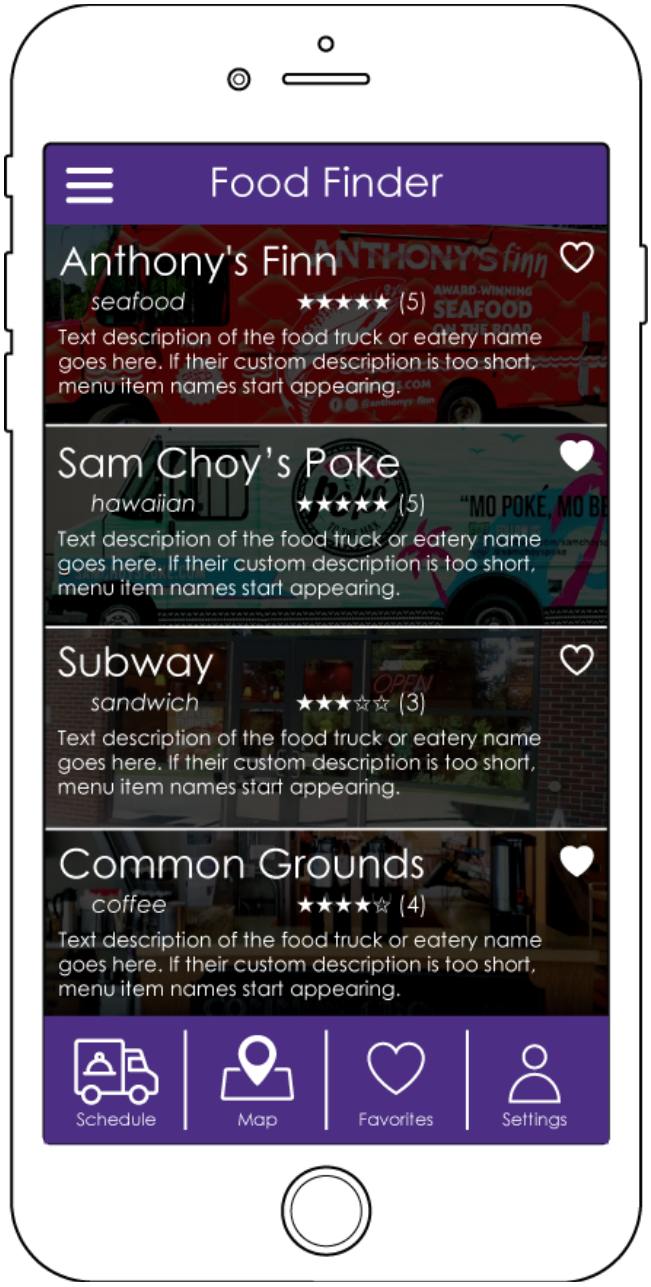
1. HOME page
    a. Food trucks on campus right now at the top
    b. Other options sorted by distance from campus
    c. Hamburger menu
        i. SETTINGS page button
        ii. NOTIFICATION SETTINGS page button
        iii. FOOD PREFERENCES page button
        iv. MY REVIEWS page button
        v. ORDERS page button
    d. FOOD TRUCK SCHEDULE page
    e. MAPS page button

   f. FAVORITES page button (similar to homepage just filters for starred entries only)
   g. SETTINGS page button
2. SETTINGS page
   a. PROFILE info
      i. NOTIFICATION SETTINGS page button
      ii. GPS location on/off
      iii. FOOD PREFERENCES page button
      iv. MY REVIEWS page button
   b. PAYMENT info
      i. Current payments on account
         1. remove button
      ii. ADD NEW PAYMENT page button
3. MAPS page
   a. Map
   b. Search bar
   c. Quick pick food categories (“Quick Filters”)
4. FAVORITES page
   a. Similar to HOME page, but filters for only starred options
5. FOOD TRUCK SCHEDULE page
   a. Similar to HOME page, but only food trucks.
   b. Food trucks for “Today”
   c. Food trucks for “Tomorrow”
   d. Food trucks for “[name of day after tomorrow]”
   e. Food truck information goes out until no more information is received from the UWB website’s Food Truck Schedule.
6. NOTIFICATION SETTINGS page
   a. Notify if favorited food trucks on campus today toggle
   b. Notify if favorite categories on campus today
7. FOOD PREFERENCES page
   a. Add/remove favorite cuisines
   b. Add/remove allergens
   c. Special category toggles (Halal, Kosher, etc)
   d. Suggest changes to options per each category.
8. ADD NEW PAYMENT page
   a. Card number
   b. Security number
   c. Expiration Month
   d. Expiration Year
9. SPECIFIC RESTAURANT page
   a. Name

   b. Restaurant rating
   c. Cuisine Type
   d. Description
      i. Address
      ii. Phone number
      iii. Hours
      iv. Introduction (opt)
   e. Menu items (plus button will add items to order)
10. PAY FOR ORDER page
   a. List of all items selected (+ individual prices)
      i. Increase/decrease options
   b. Total price
   c. Tax
   d. List of saved payment methods
   e. PAY button
   f. ADD PAYMENT button if no payment on file
11. CONFIRMED PAYMENT page
   a. Confirmation number
   b. Estimated pickup time
   c. Pickup location
   d. Notify me when ready button

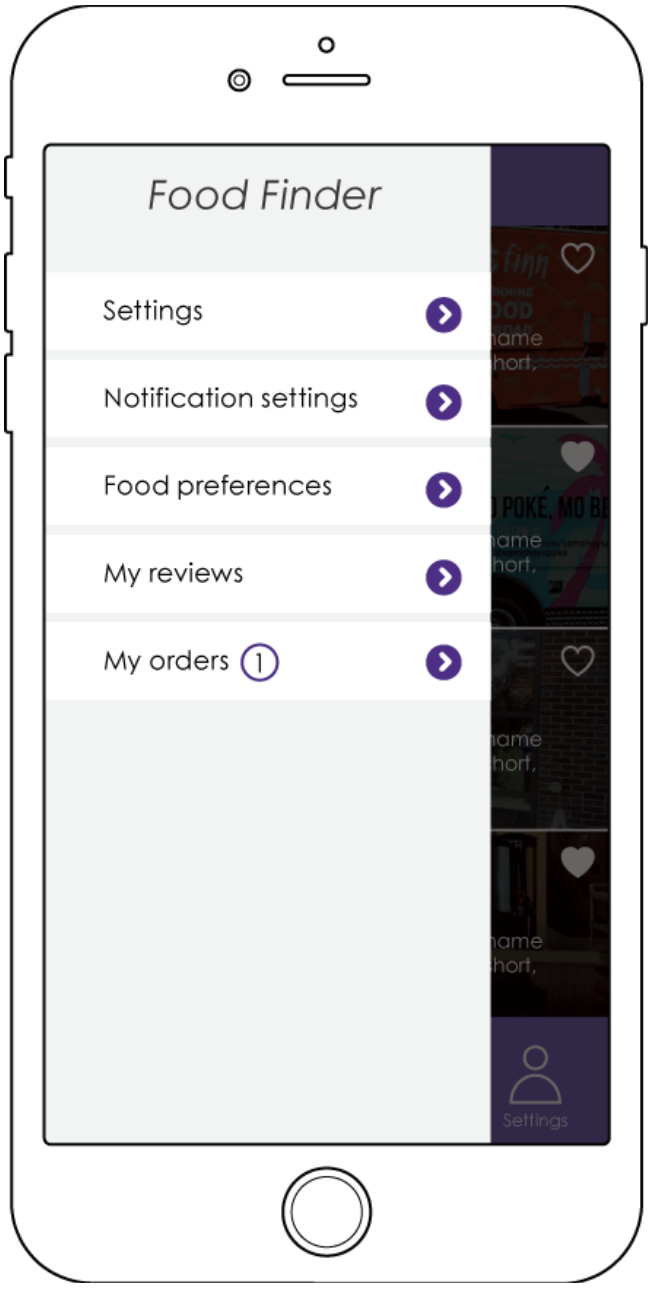
Design Screenshots

Figure 1: Home page



The home page features food trucks currently on campus at the top, and eateries closest to furthest from the user as they keep scrolling.

Figure 2: Home page with hamburger menu slide-out



The “My orders” option has a “1” in a circle signifying there is one pending order that has not been picked up yet.

Figure 3: Maps page

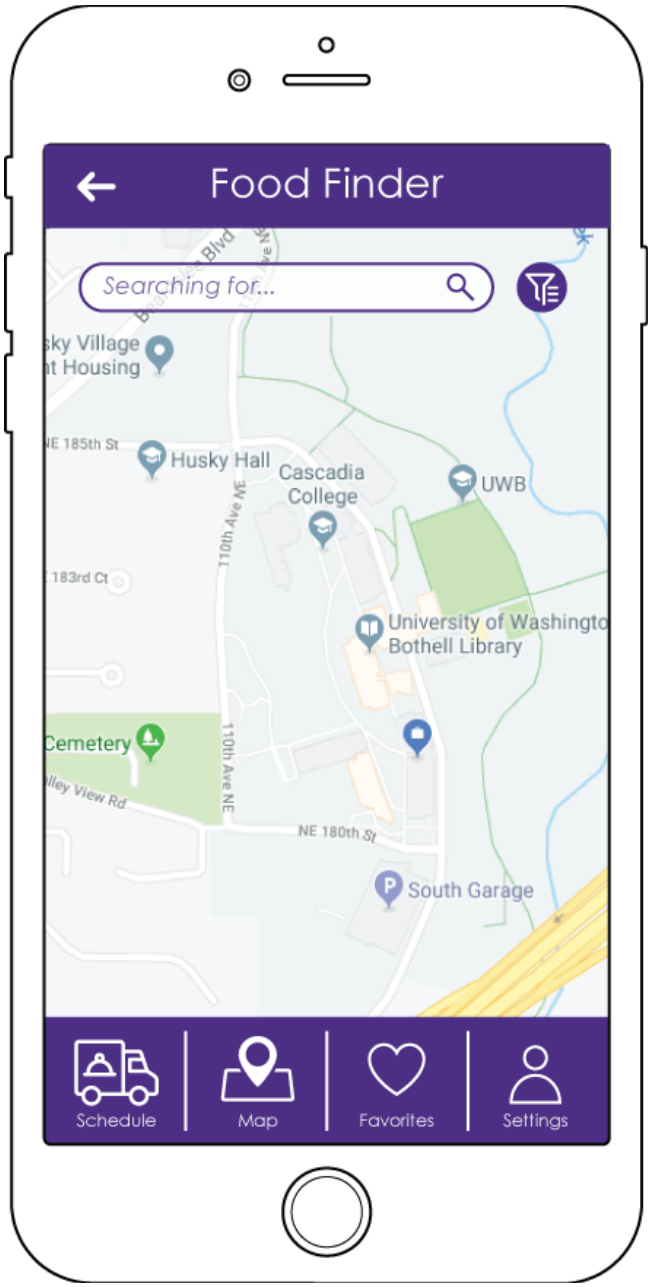
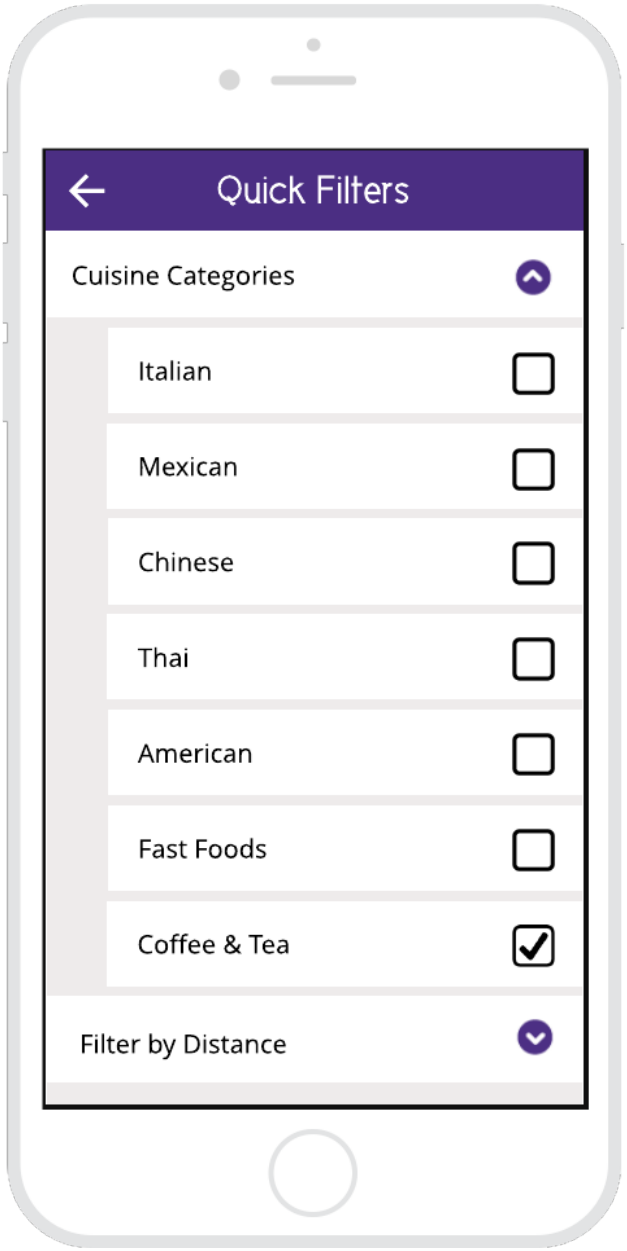


Figure 4: Quick Filters page accessed by Menu Page filter icon



The Quick Filters page gives an option to filter by cuisine type and by distance. Tapping the downwards arrow shows a drop-down menu.

Figure 5: Food Truck Schedule page

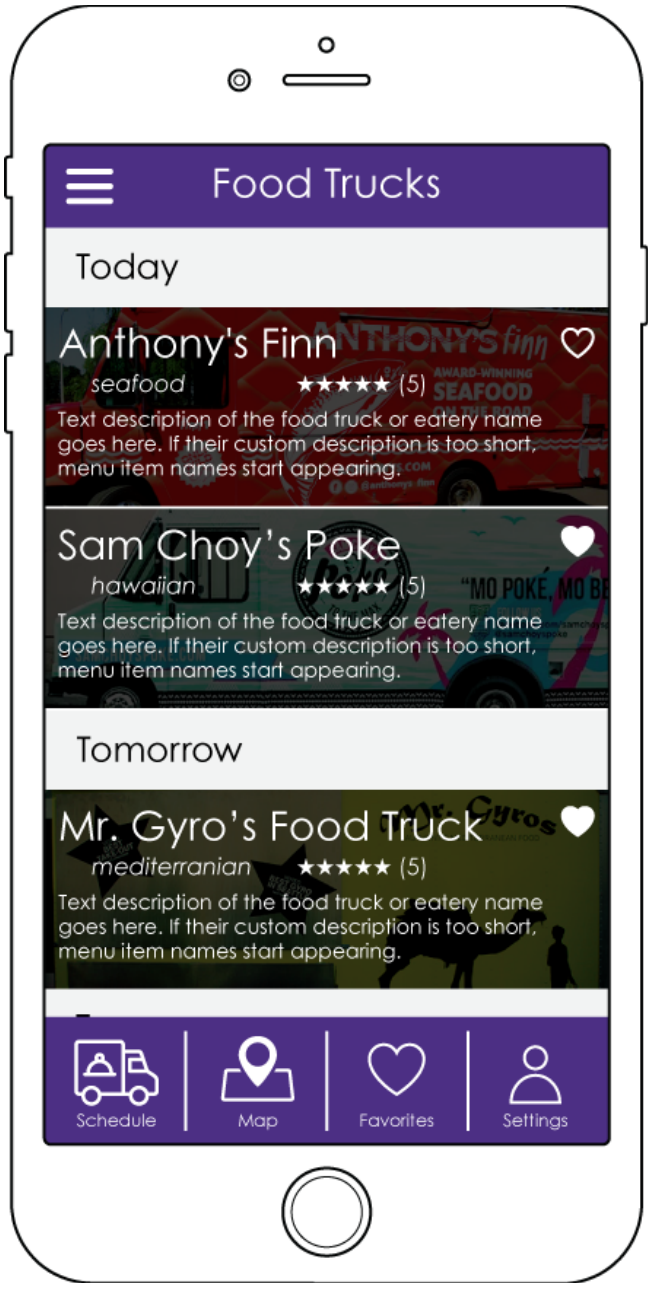
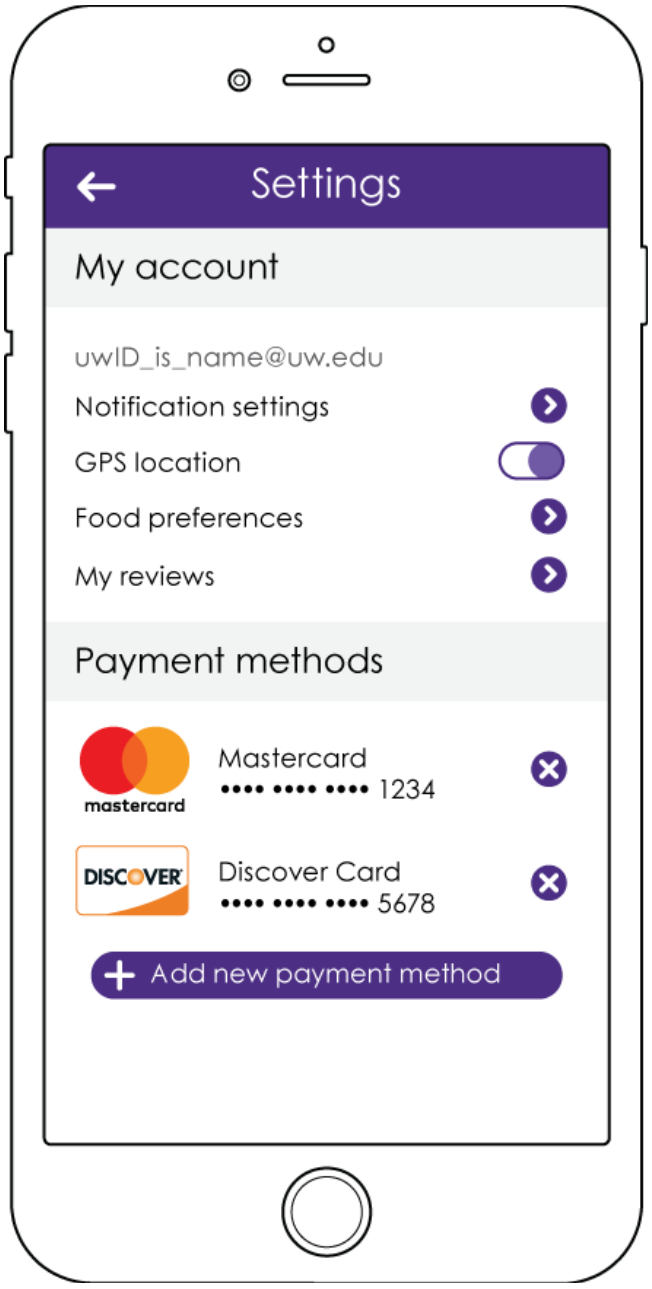
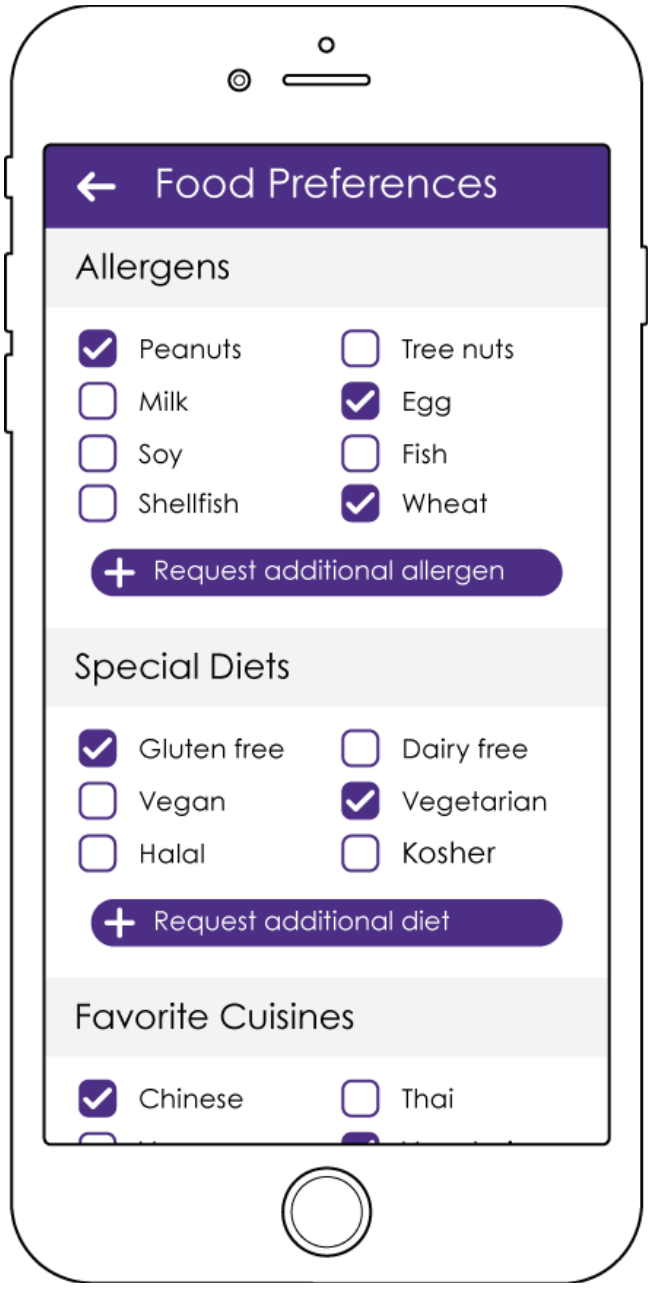


Figure 6: Settings page



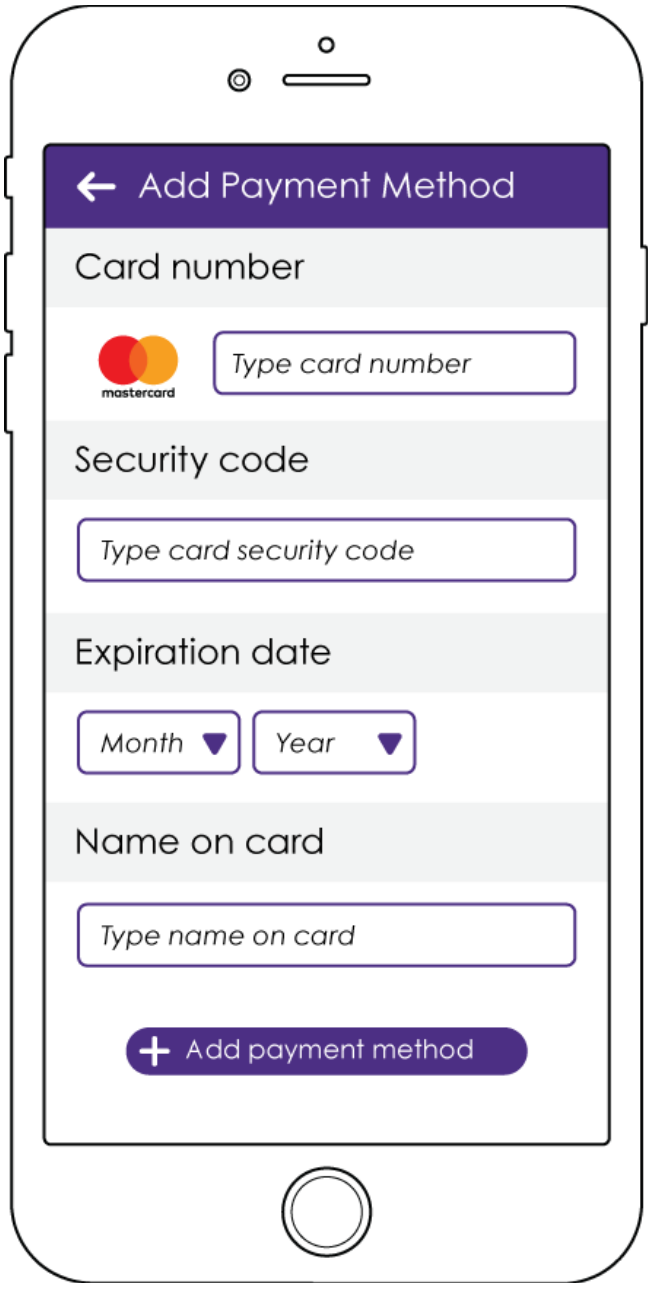
Settings page is accessed by selecting the hamburger menu from the application home page, then selecting “Settings”.

Figure 7: Food preferences page



Food Preferences page is accessed by selecting the hamburger menu from the application home page, then selecting “Food Preferences”.

Figure 8: Add payment page



Add Payment Method page is accessed by navigating to the Settings Page, then selecting “+ Add new payment method” option on the bottom.

Figure 9: Specific restaurant page (food truck)

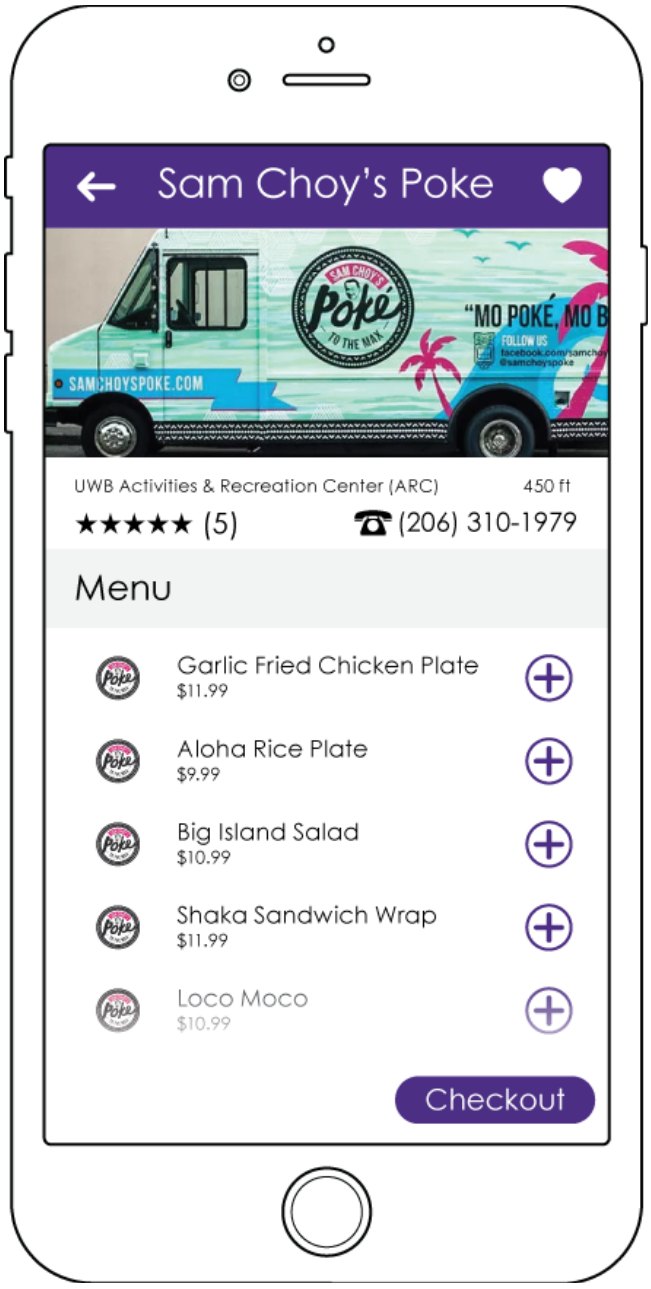


Figure 10: Order page

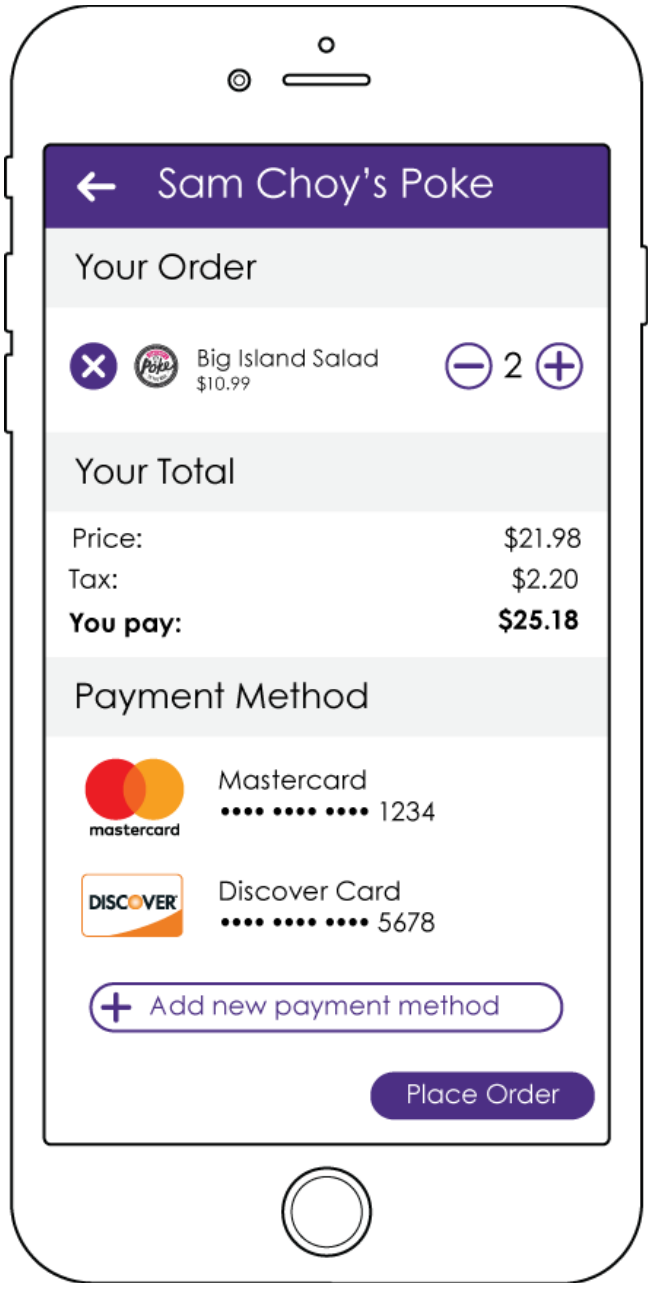
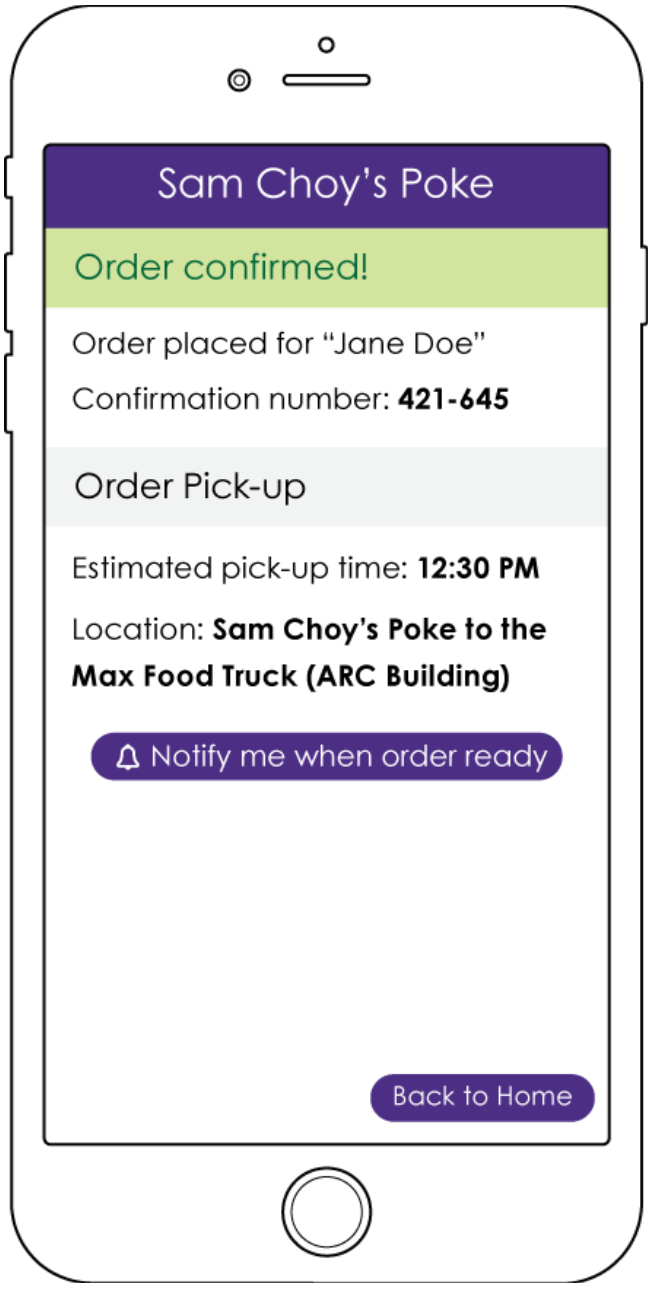


Figure 11: Order confirmation page



Figures 12-16 show screenshots of the application during an instance of ordering food from a static restaurant. Small differences in visual layout from previous images are results of exploring different design elements during the design process.

Figure 12: Specific restaurant page (static restaurant)

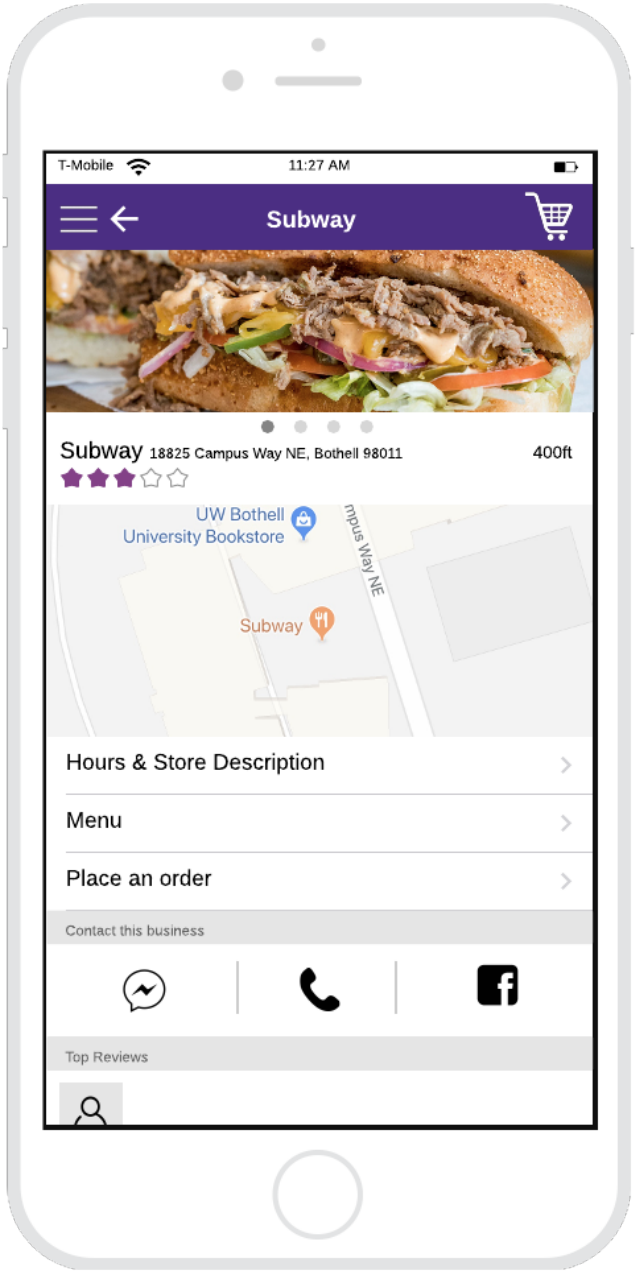
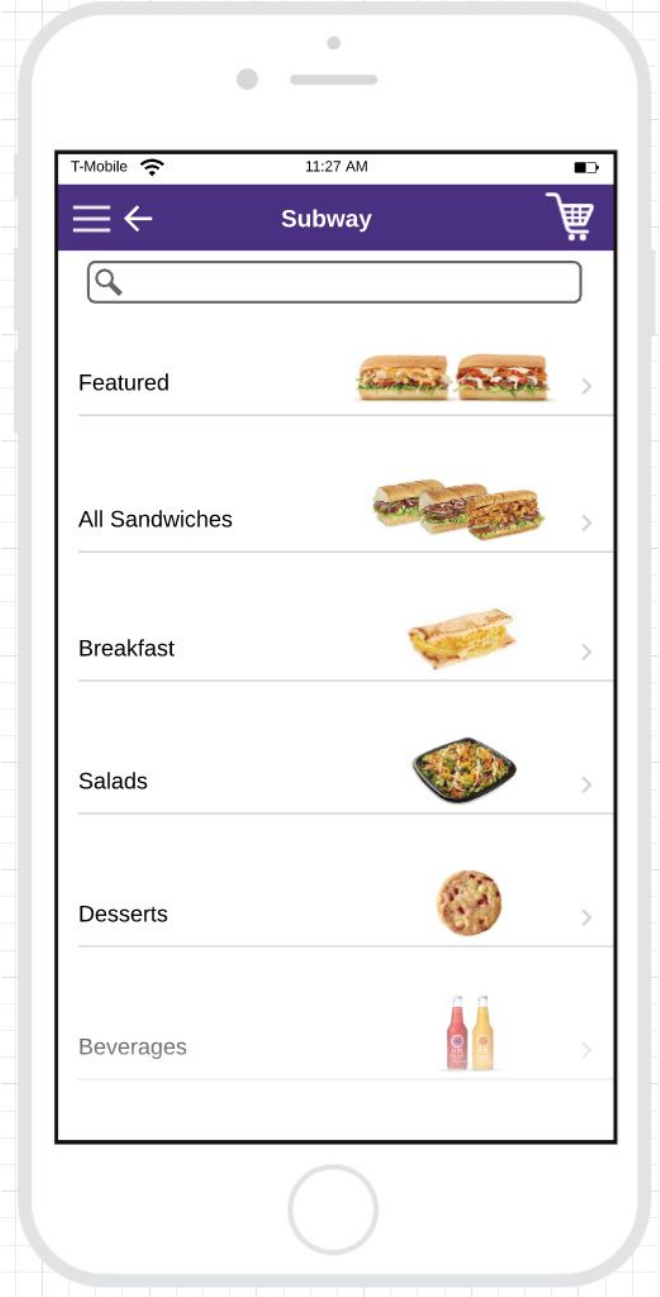
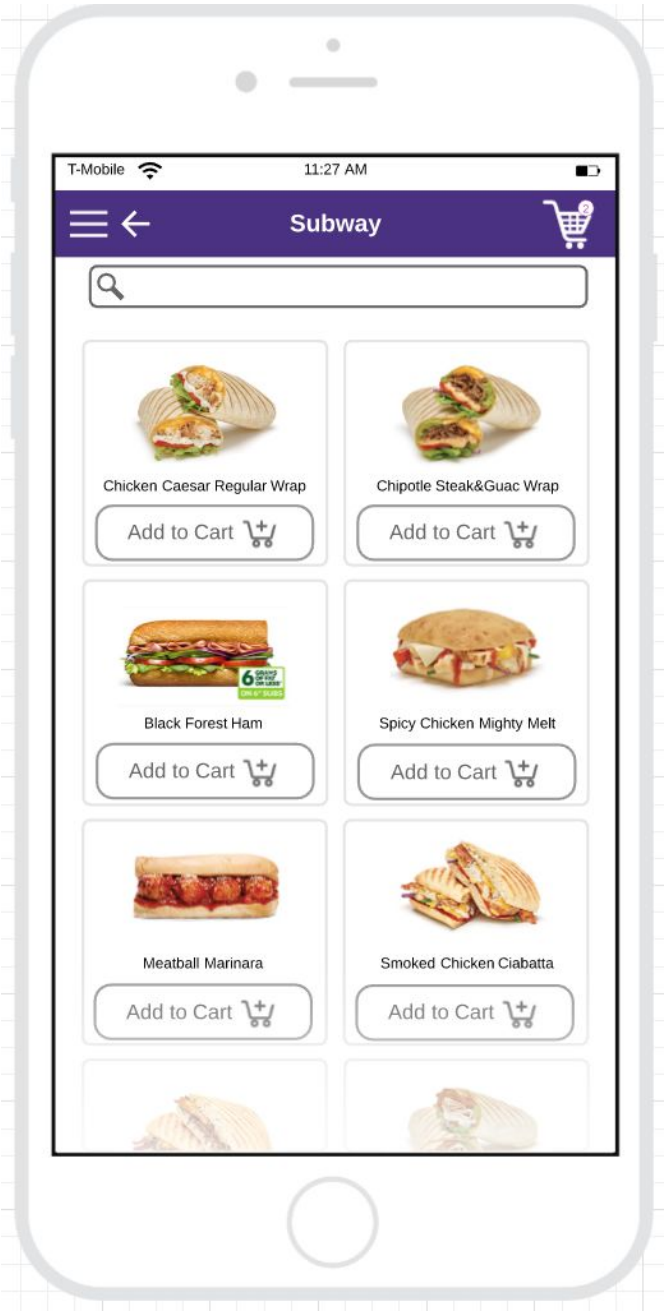


Figure 13. Restaurant menu page (organized by subcategories)



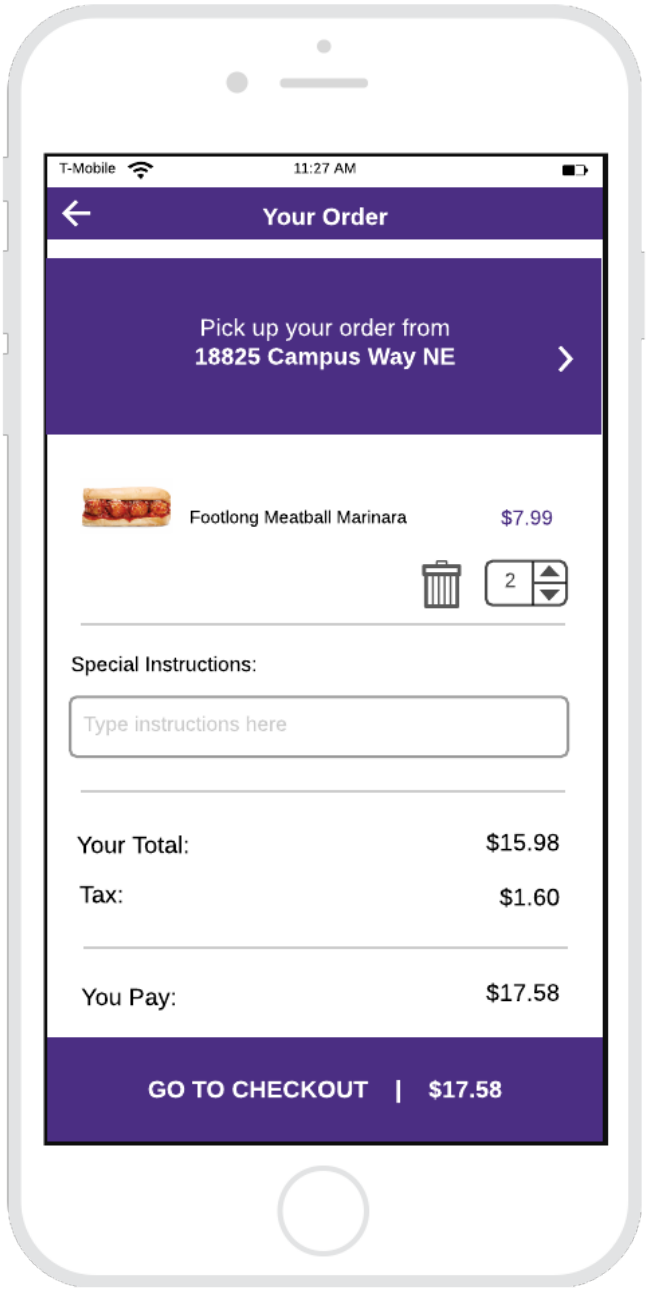
Restaurant menu page is accessed by selecting the “Menu” option from the restaurant’s main page.

Figure 14. Restaurant menu page displaying specific foods



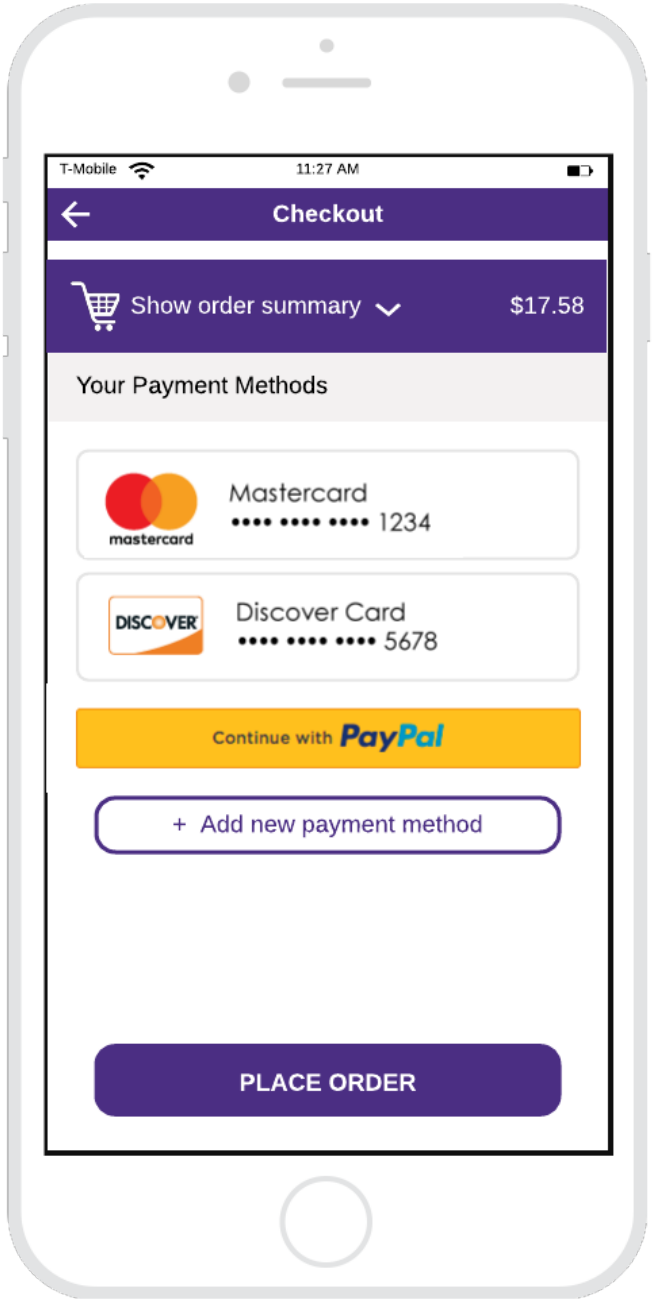
Selecting a subcategory from the restaurant menu page displays the menu with options to add to cart.

Figure 15. Order Review page



Tapping on the cart icon on the top right corner (present during all restaurant browsing interactions) leads to a Order Review page displaying the menus selected and the subtotal amount. This is a precursor to the checkout page.

Figure 16. Checkout Page



User selects a preferred payment method and taps on the “PLACE ORDER” button. The user is then directed to a Order Confirmation page(see *fig.11*).

Design Considerations

Our goal was to design simple yet robust interfaces that are easy to understand, while providing all necessary functionalities that a user may expect to see. We referred to Gestalt design principles, common iconography and design traditions to create designs that are instantly familiar to all users.

The following are some of the examples of how these considerations were implemented:

- Color: The color palette is restrained within varying shades of gray, white, black, and the UW purple (**HEX**: 4b2e83). This ensures uniformity and lets users know that the application is a UW-specific application.
- Contrast: White and gray backgrounds contain black and purple texts, while purple backgrounds contain white texts for readability. The majority of the layout is kept white to reduce visual fatigue.
- Navigation: Each page is provided with as many navigational options as it is logical. For example, while browsing a restaurant's menu, the user can either select the back arrow to travel back one page or select the hamburger menu to travel to entirely new pages. For checkout pages, such navigation is limited to prevent payment error.
- Design conventions: The application follows well-accepted design conventions to reduce user confusion. For example, selecting the hamburger menu icon on the left corner of the screen opens a menu that slides from the left side. Downward arrows display drop-down menus, while left-facing arrow display the previous page.

Usability Evaluation

Usability Tasks

The following tasks were used to evaluate the usability of the application to unfamiliar users:

1. Find the Subway restaurant, and list three menu items.
2. Set that you are allergic to tree nuts.
3. Order two salads from Sam Choy's Poke food truck, and find the confirmation code you would use to pick-up the order.

Usability Criteria

- Effectiveness: whether or not the user was able to accurately complete the tasks listed above.
- Intuitive design: whether or not navigating the application was effortless for the user.

- Ease of learning: was anything confusing or complicated to the user during the process?
- Satisfaction: were there any elements the user felt were missing or would be useful to include?

Usability Metrics

The following metrics were considered to evaluate the usability criteria:

- Speed: the time it took for the user to complete the task
- Error rate: the number of times the user goes to an option that doesn't lead them to finishing the task
- Completion rate: user's task accomplishment rate
- Subjective user satisfaction: questionnaires about how certain features felt to use with Likert scales

Test Process and User Feedback

The team found that conducting usability testing with low-fidelity interface prototypes (figures 1-16) was very effective within the scope of the usability tasks. We were able to garner generally positive responses and valuable feedback from users that included:

- Improving navigation flexibility
- Improving perceived affordances
- Feedback on visual elements
- Increasing the amount of information per page

Users were also given questionnaires that asked about features that users would like to see or expect to see in the application. Throughout the future development of the Food Finder application, the team plans to conduct a series of similar usability tests (containing usability tasks with evolving complexity) regularly to collect user feedback.