# CS 361 Software Engineering I

## HW2: Evaluating Requirements

Meal planner to promote healthy meals with low waste

10/27/2019


## Group 24

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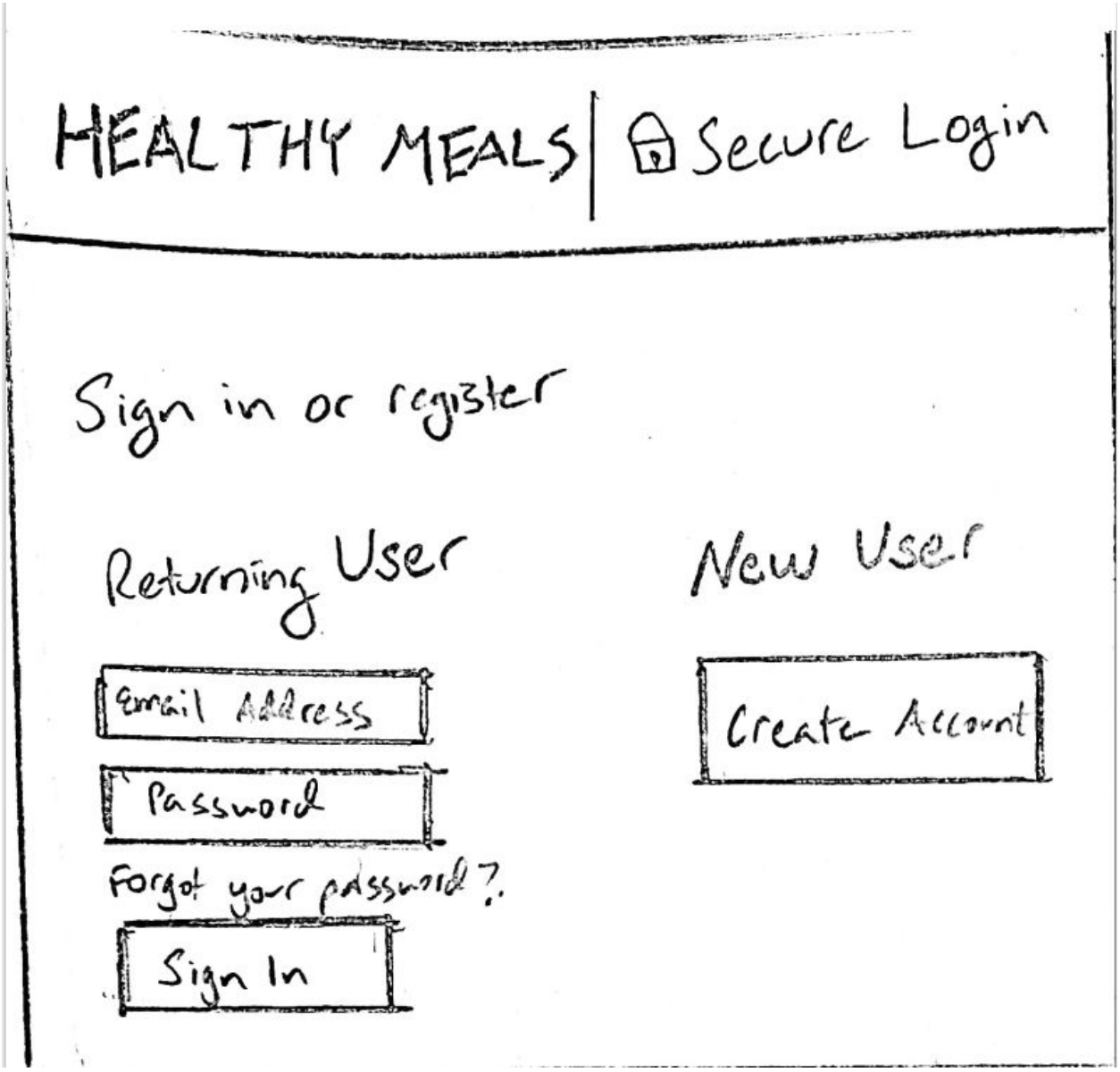
# Paper Prototypes

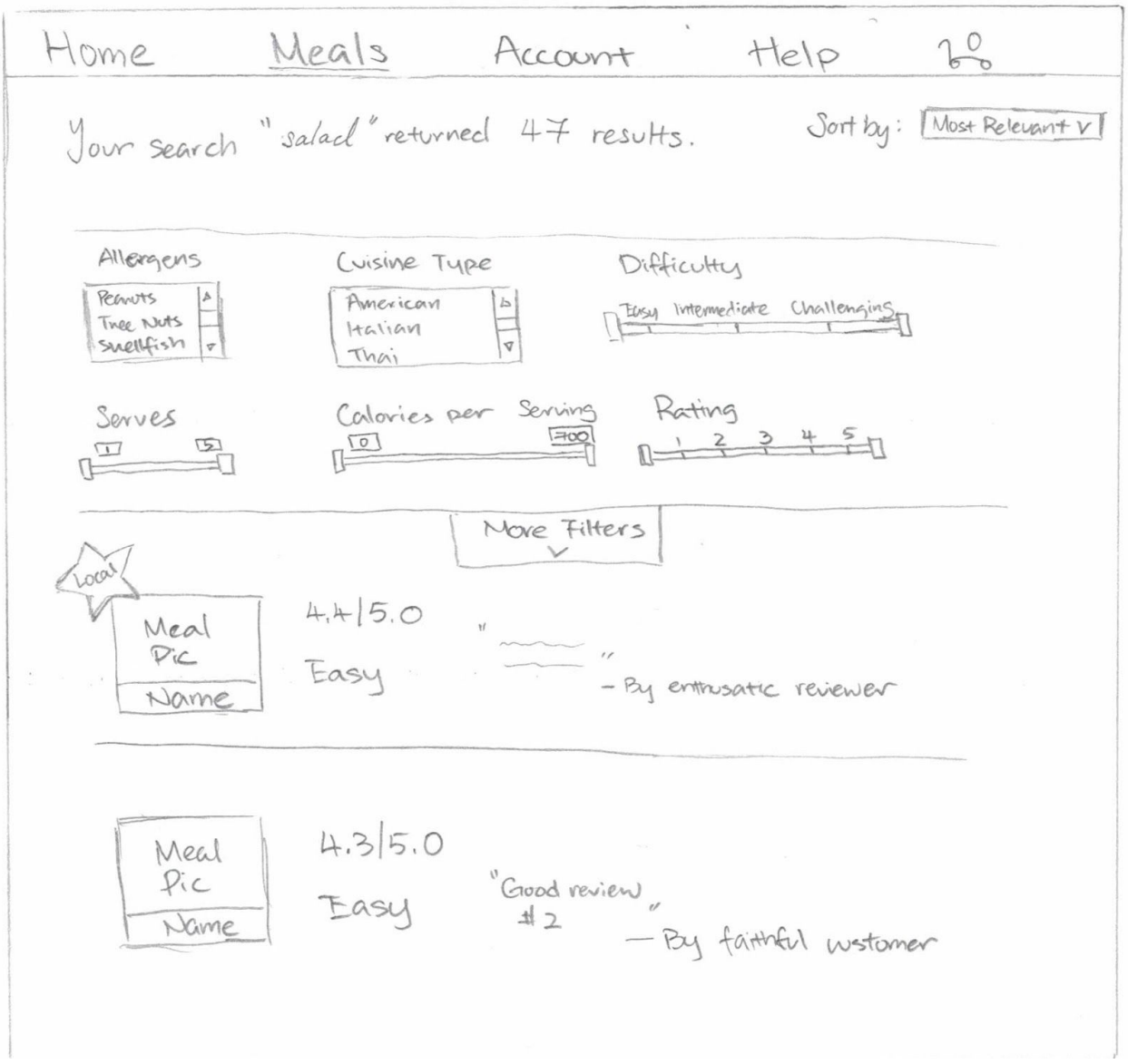
## Login Page



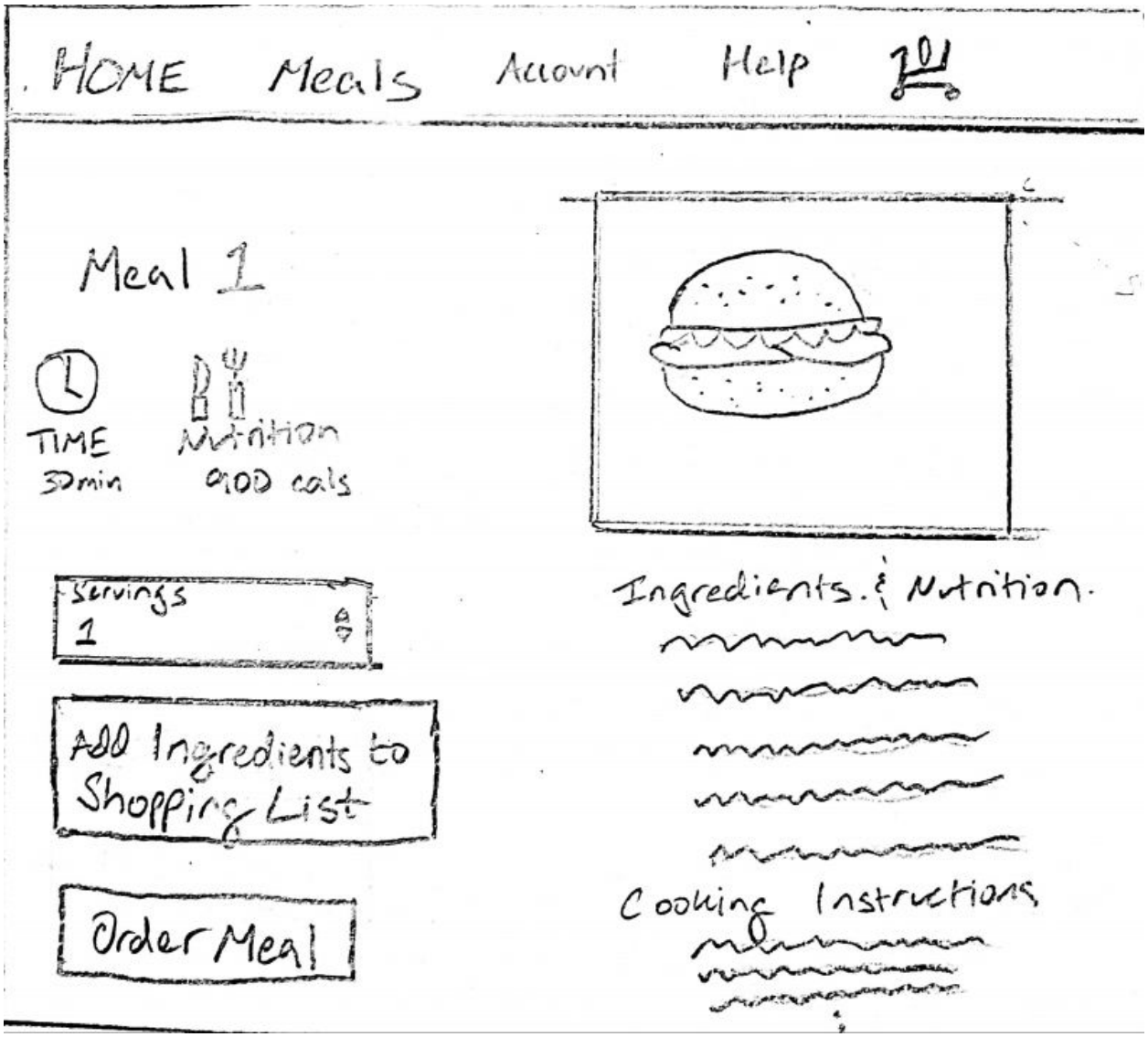
# Meals Page


Home
Meals
Account
Help
Browse
Type to search . . .
Featured Meals of the Week
Local
Meal Name
Low Carb
Meal Name
Has Nuts
Meal Name
Featured Snack of the Week
Non-Dairy
Snack Name
Local
Snack Name
Low Carbs
Snack Name
Most Popular
Gluten Free
Local
High Fibre

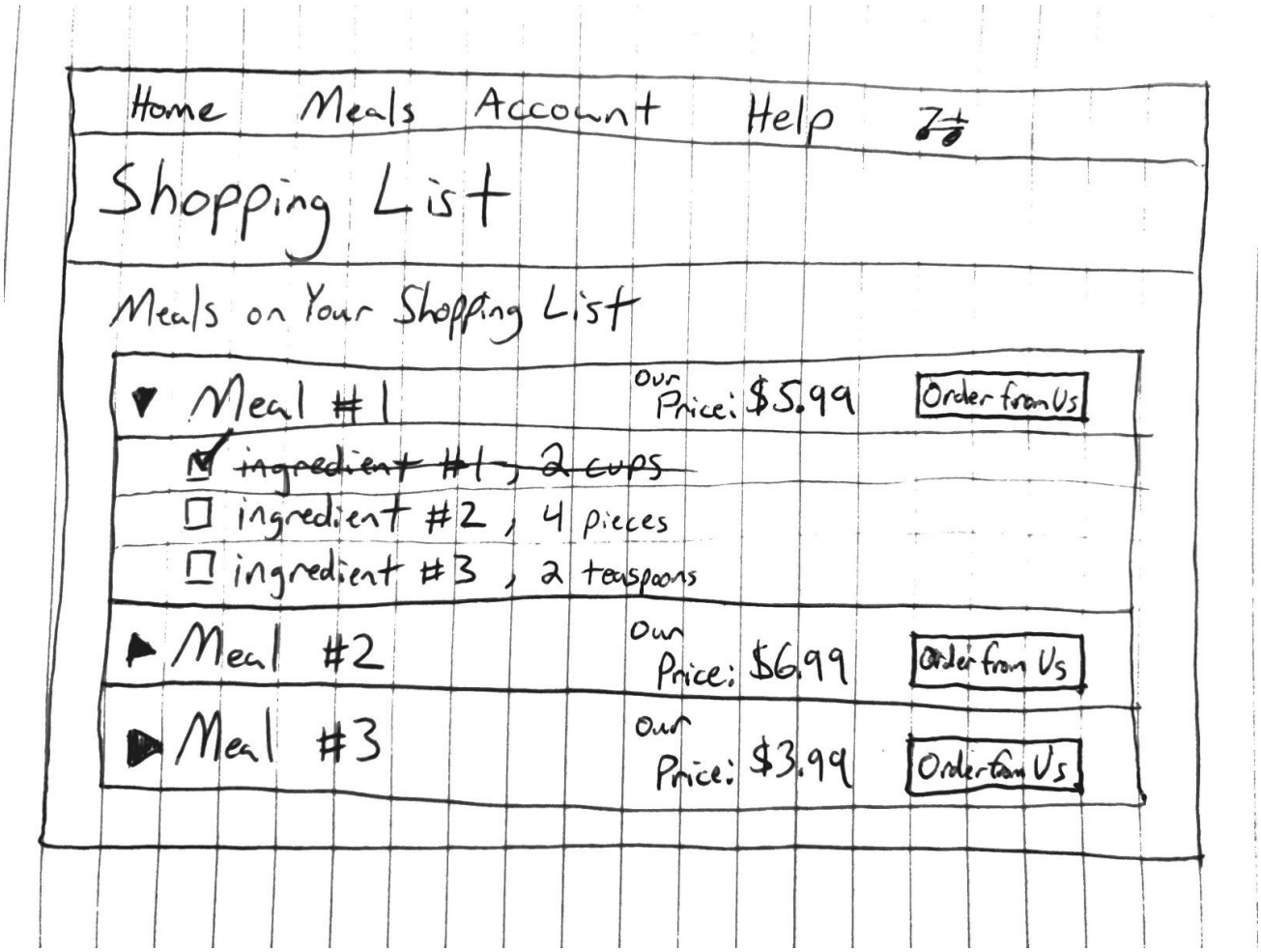
# Meal Search Results Page



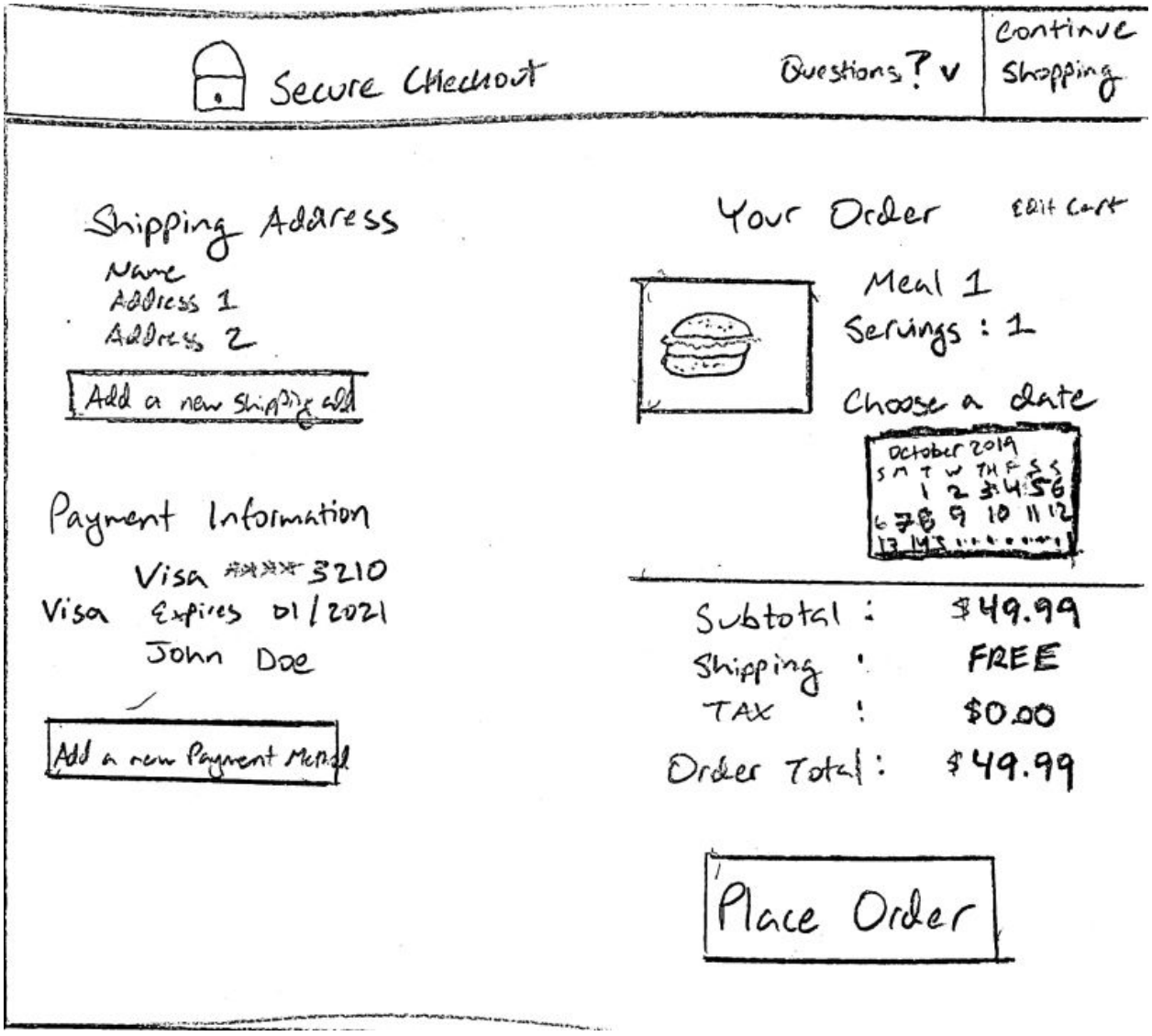
# Meal Info


HOME
Meals
Account
Help
Meal 1
TIME
30min
Nutrition
900 cals
Servings
1
Add Ingredients to Shopping List
Order Meal
Ingredients & Nutrition.
Cooking Instructions

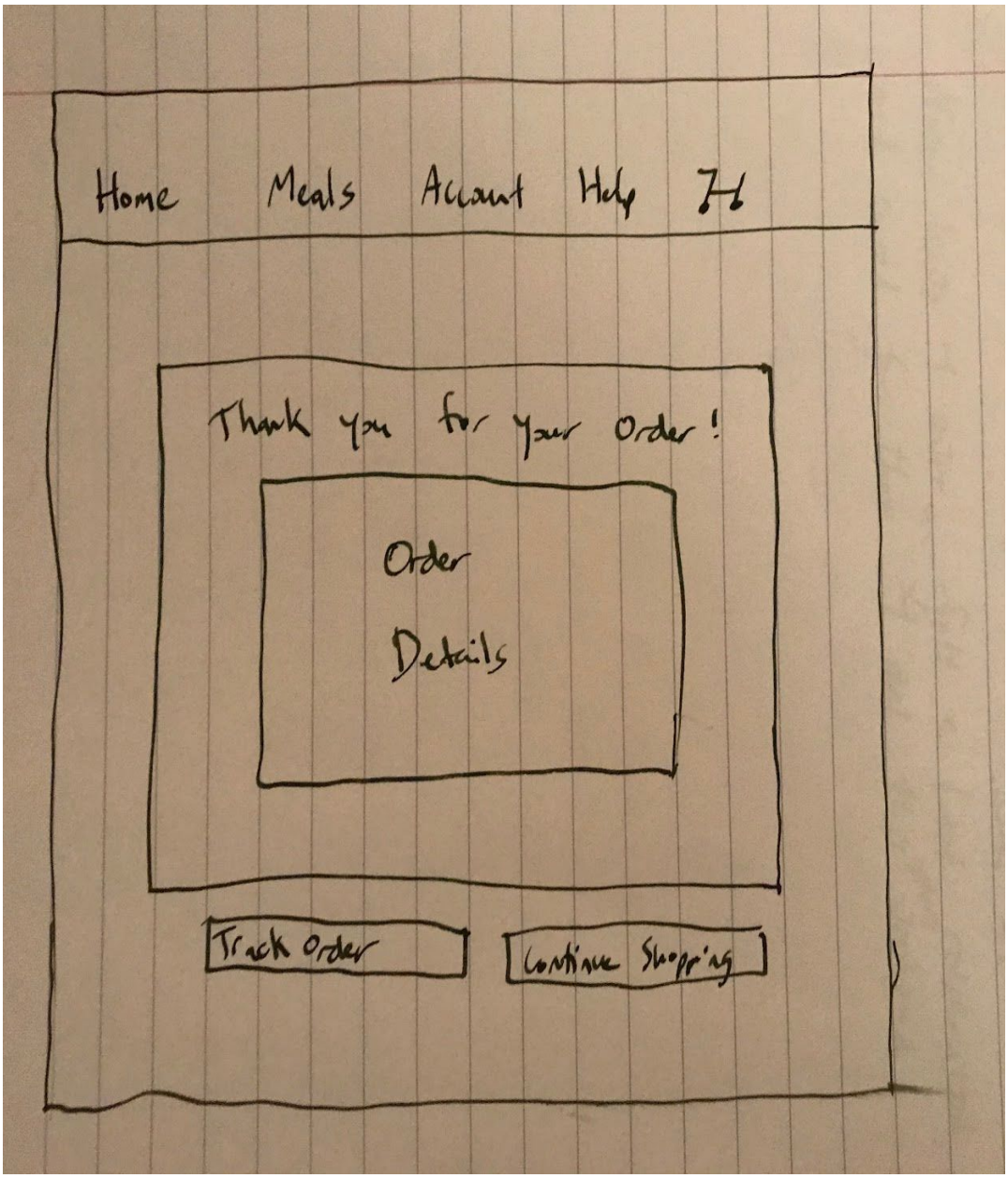
# Shopping List



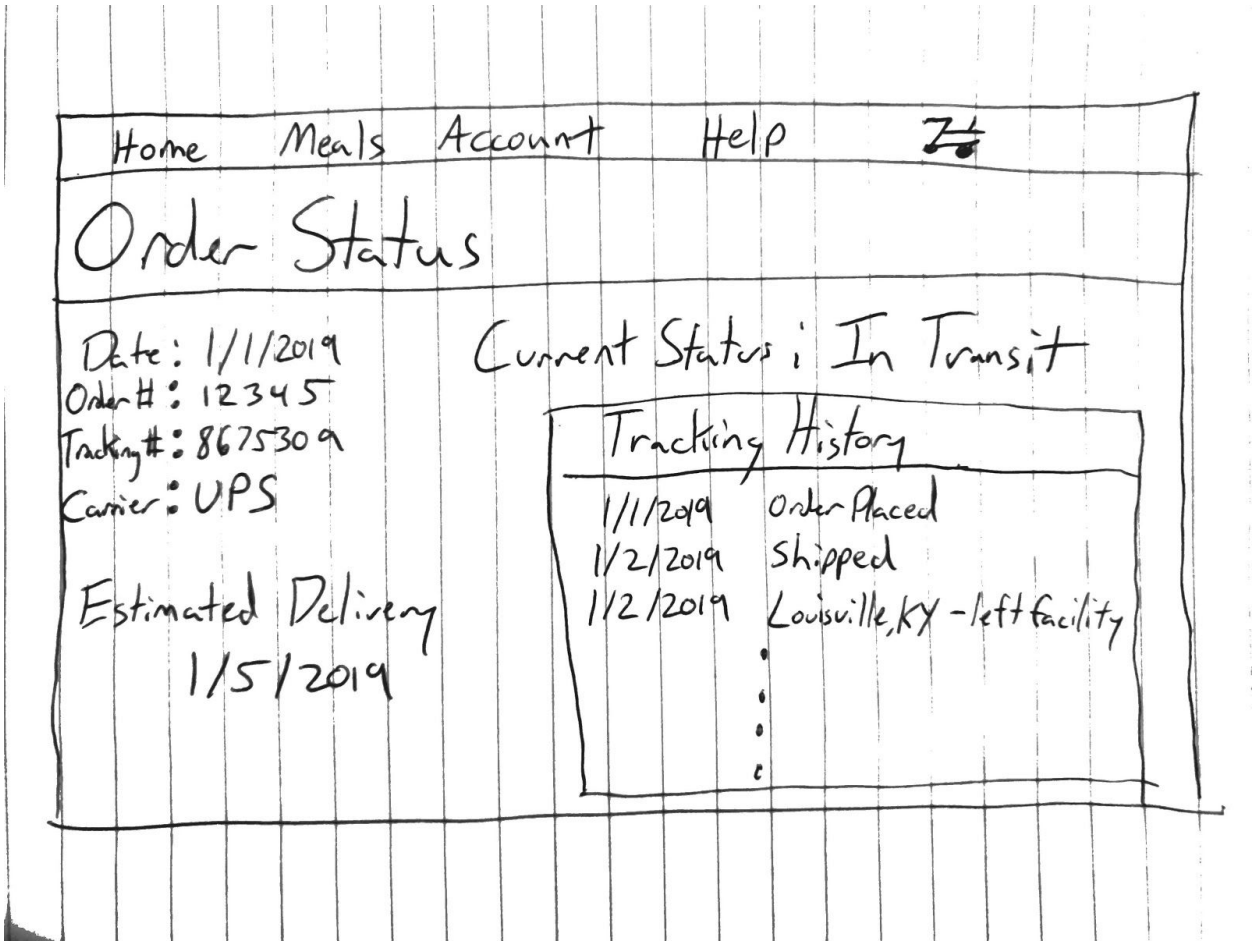
# Order Completion



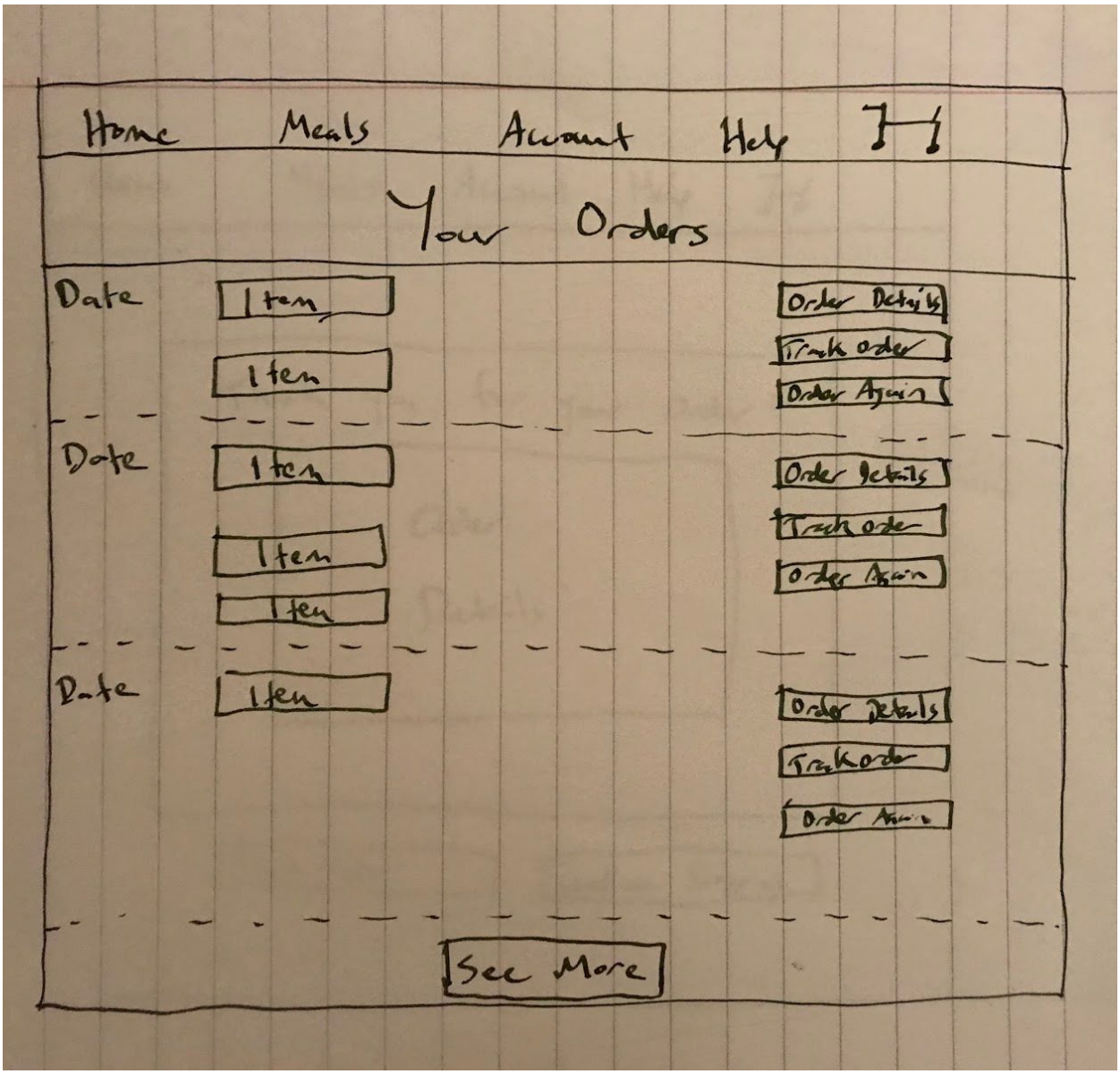
# Order Details



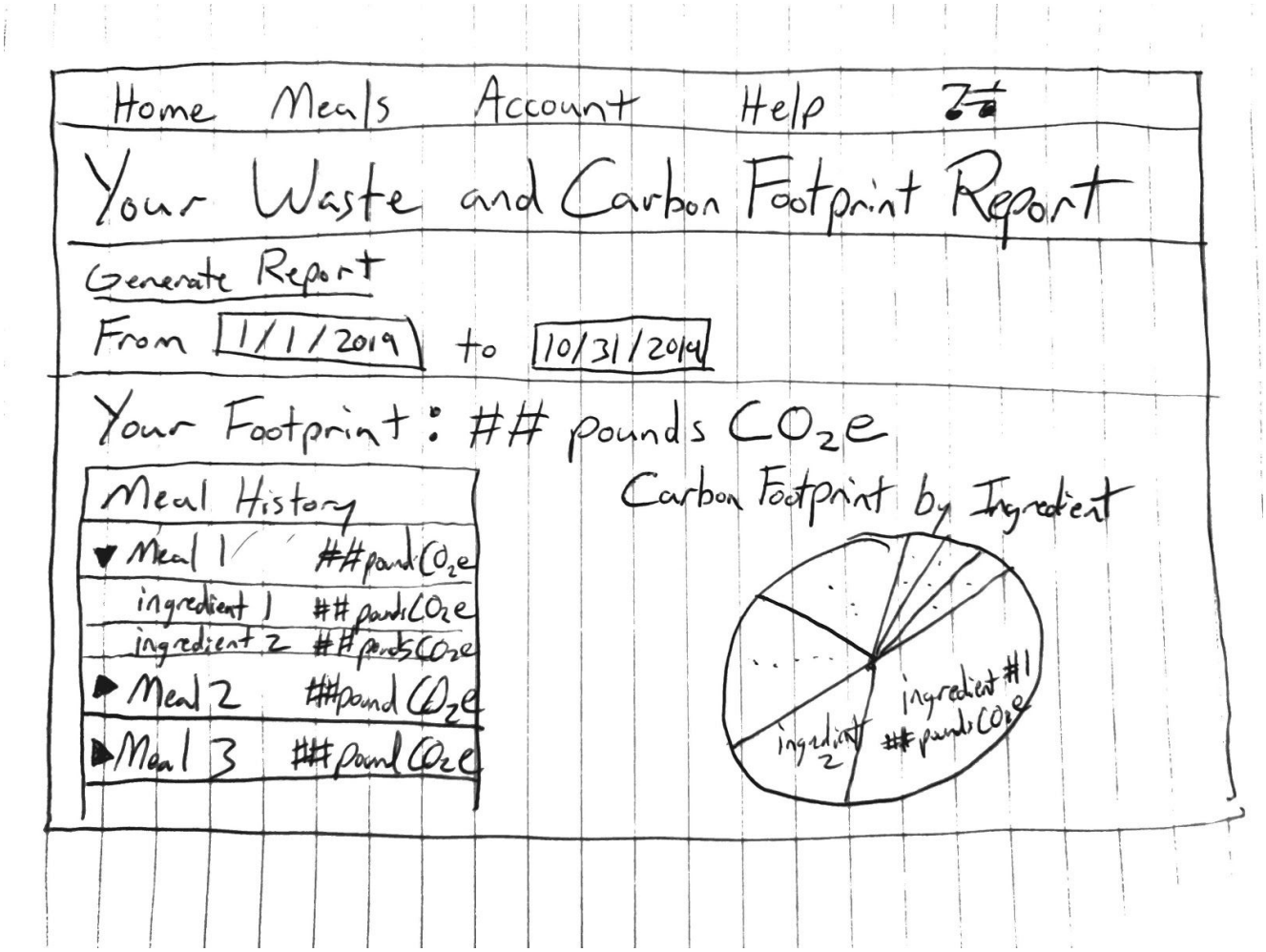
# Order Status



# Order History



# Food Waste and Carbon Footprint Report



# Requirements Definition

## Functional Requirement

- The system shall authenticate the user's credentials before use.
- The system shall allow users to create an account.
- The system shall allow users to cancel an order.
- The system shall display curated meals and snacks that are healthy, inexpensive, and easy to prepare.
- The system shall display the ingredients to meals and snacks.
- The system shall display the cooking instructions for meals and snacks.
- The system shall display the nutritional information for meals and snacks.
- The system shall report any allergens associated with a meal or snack.
- The system shall allow users to order ingredients from the curated meals and snacks library.
- The system shall allow users to add ingredients from meals and snacks to a shopping list.
- The system shall group ingredients by meal or snack in the shopping list.
- The shopping list will display this service's price for the respective meal or snack, and display a button for the user to order the meal instead if desired.
- Users will be able to mark ingredients as "purchased" on their shopping list.
- The system shall allow users to provide payment for their order.
- The system shall allow users to track their order.
- The system shall allow users to view their order history.
- The system shall allow users to add meals and snacks to their favorites list.
- The system shall allow users to review purchased meals and snacks.
- The system shall allow users to filter or sort meals and snacks such as by cooking difficulty, types of cuisine (Italian, Mexican, etc.), serving size, allergens, and rating, calorie range, total order number from all users.
- The system shall send notifications to users reminding them of healthy options, order status, etc.
- The system shall allow users to opt-in to receive a return label to send compostable items back to the distribution center.
- The system shall track food waste and carbon footprint associated with users' purchases and compost returns.
- The system shall allow users to view a waste and carbon footprint report based on their personal meal and order history.
- The system shall prioritize displaying meals and snacks that utilize local, seasonal and low carbon footprint ingredients whenever possible.

# Non-Functional Requirement

- The system shall authenticate the user within 10 seconds.
- The system shall allow users to create an account within 7 clicks.
- The system shall allow users to cancel an order within five clicks.
- The system shall display curated meals and snacks within 15 seconds.
- The system shall display 9 items per page and load more items as the user scrolls down.
- The system shall display the information about each meal or snack within 10 seconds.
- The system shall allow users to add or remove a meal or snack to their shopping list or cart within 10 seconds and 1 click.
- The system shall display the user's shopping list and the system price of each curated meal and snack in the shopping list within 10 seconds.
- The system will allow users to mark ingredients on their shopping list as "purchased" with one click.
- The system shall allow users to complete their order within 60 seconds and 5 clicks.
- The system shall allow users to cancel an order within 60 seconds and 5 clicks.
- The system shall display tracking information for a user's order within 30 seconds.
- The system shall display a user's order history within 30 seconds.
- The system shall display a user's order history going back to 1 year.
- The system shall allow users to add meals or snacks to their favorites list within 5 seconds.
- The system shall complete a search filter for food items within 15 seconds.
- The system shall send users notifications to browse and/or purchase meals and snacks on a weekly basis.

# Use Cases

## Use Case 1

Viewing and scheduling curated meals and snacks

### Actors

- User

### Preconditions

- User has an account and is logged in
- User has access to the list of curated meals

### Postconditions

- Meals and snacks are scheduled.

- Ingredients are either added to the shopping list or to the order for delivery.

### Flow of Events

- User browses through curated meals and selects the one they would like to schedule.
- User selects quantity of servings they want to schedule.
- User picks the date to schedule the meal.
- User is prompted whether to add the ingredients to the shopping list or add to order for delivery.

## Use Case 2

Ordering ingredients to prepare scheduled meals

### Actors

- User
- Third-party delivery service

### Preconditions

- User has an account and is logged in
- User has scheduled meals and added meals to order

### Postconditions

- Third-party delivery service delivers order to user

### Flow of Events

- User selects delivery dates for each meal in order
- User enters shipping information
- User enter billing and payment information
- User submits order
- Payment information is sent to third-party for processing
- Once payment has been approved, successful response is recorded and completion screen is displayed to user
- Order is added to order history for tracking
- Order information is sent to third-party distribution center
- Order is shipped from distribution center to user
- Tracking update notifications are provided to the user
- Order arrives at user-specified address

## Use Case 3

Track supply chain waste index and carbon footprint

### Actors

- User

### Preconditions

- User has an account and is logged in
- User has scheduled meals through the service

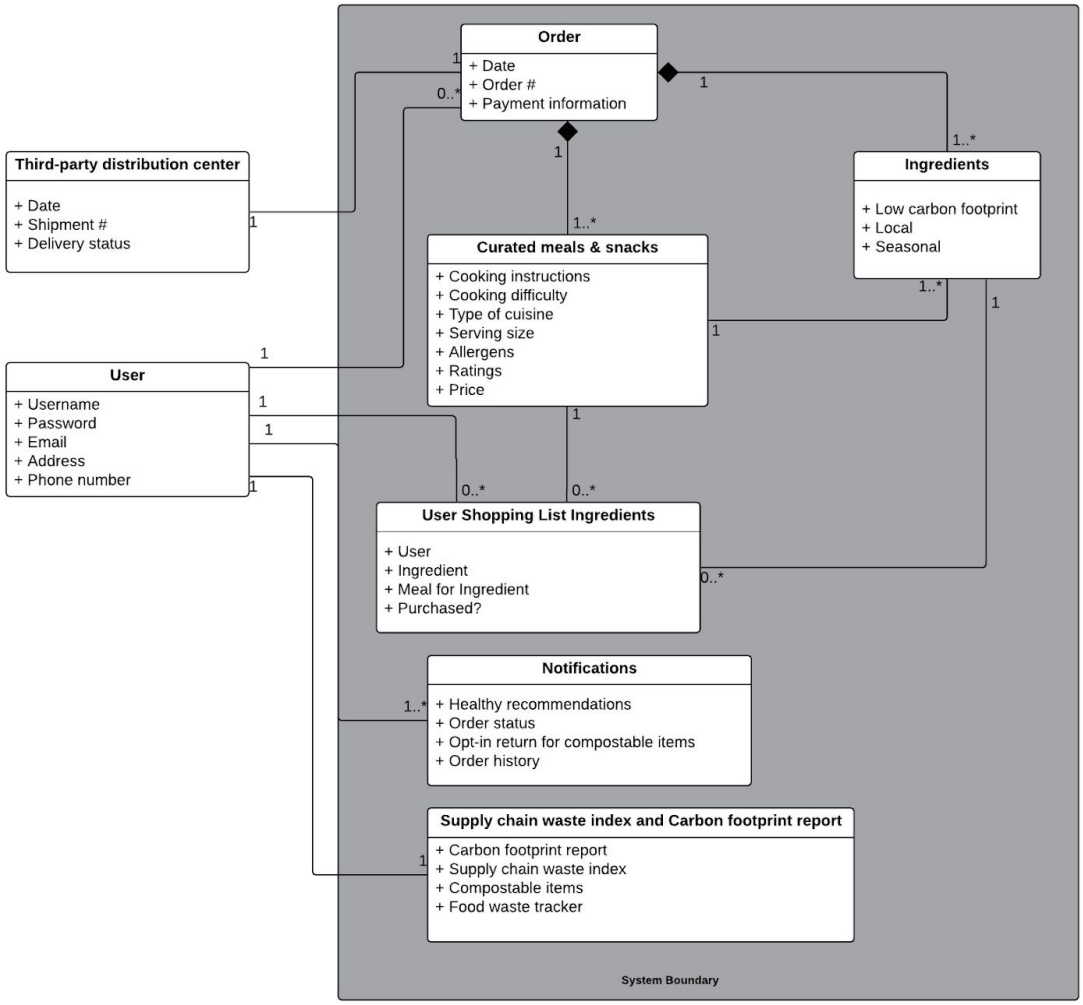
### Postconditions

- User receives a summary of total supply chain waste index and carbon footprint

### Flow of Events

- With each order completion, the system tracks and calculates the user's total supply chain index and carbon footprint from values associated with the ingredients
- User selects to view their personal waste and carbon footprint report
- User specifies the duration from which to generate the report
- Report is displayed on the screen

# UML Class Diagram



# Requirements Specification

## Functional Requirement

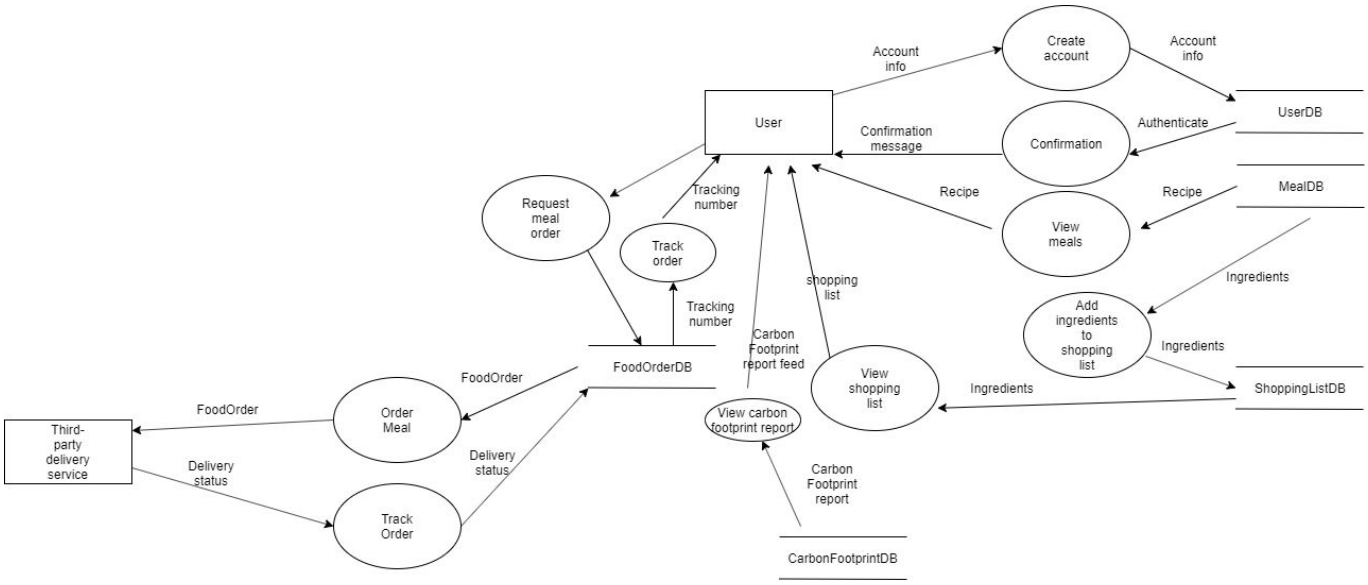
- The system will validate user credentials against credentials stored in the database.
- The system will validate new user accounts against current users in the database to check if user already exists.
- The system will save and store sessions to reduce the number of logins by the same user.
- After login, the system will display recommended meals to users based on previous purchases.
- Upon selecting a meal or snack, the system will gather information about item from database and send that information to display to the user.
- Upon adding a meal or snack to a user's cart or shopping list, meal or snack information will be sent to the system to keep track of.
- Upon viewing the shopping list or cart, the client will send pricing request to the database and the system will display received pricing info to the user.
- During payment, the system will send information to third-party to process payment.
- Upon successful payment, the database will record order information.
- Upon canceling an order, information will be sent to the system and the database will be updated and refund issued via third-party.
- After adding item to favorites list, the client will send item and user information to system's database to record.
- Upon searching with filter, the client will send a request to the database and the system will display result to user.
- The system will maintain carbon footprint and supply chain waste index data in the database for all ingredients to be used in tracking food waste and carbon footprint associated with users' purchases and compost returns.
- Upon order completion, the system will send shipment information to third-party and track delivery status from third-party database.
- Upon selecting track order status, the client will send the request to the system, which in turn, retrieves information from third-party database.
- Upon scrolling through meal and snack list, the client will make additional asynchronous requests to the database to retrieve additional meals and snacks and the system will display results to user.

## Non-Functional Requirement

- The system shall query the database for user authentication and return result within 10 seconds.

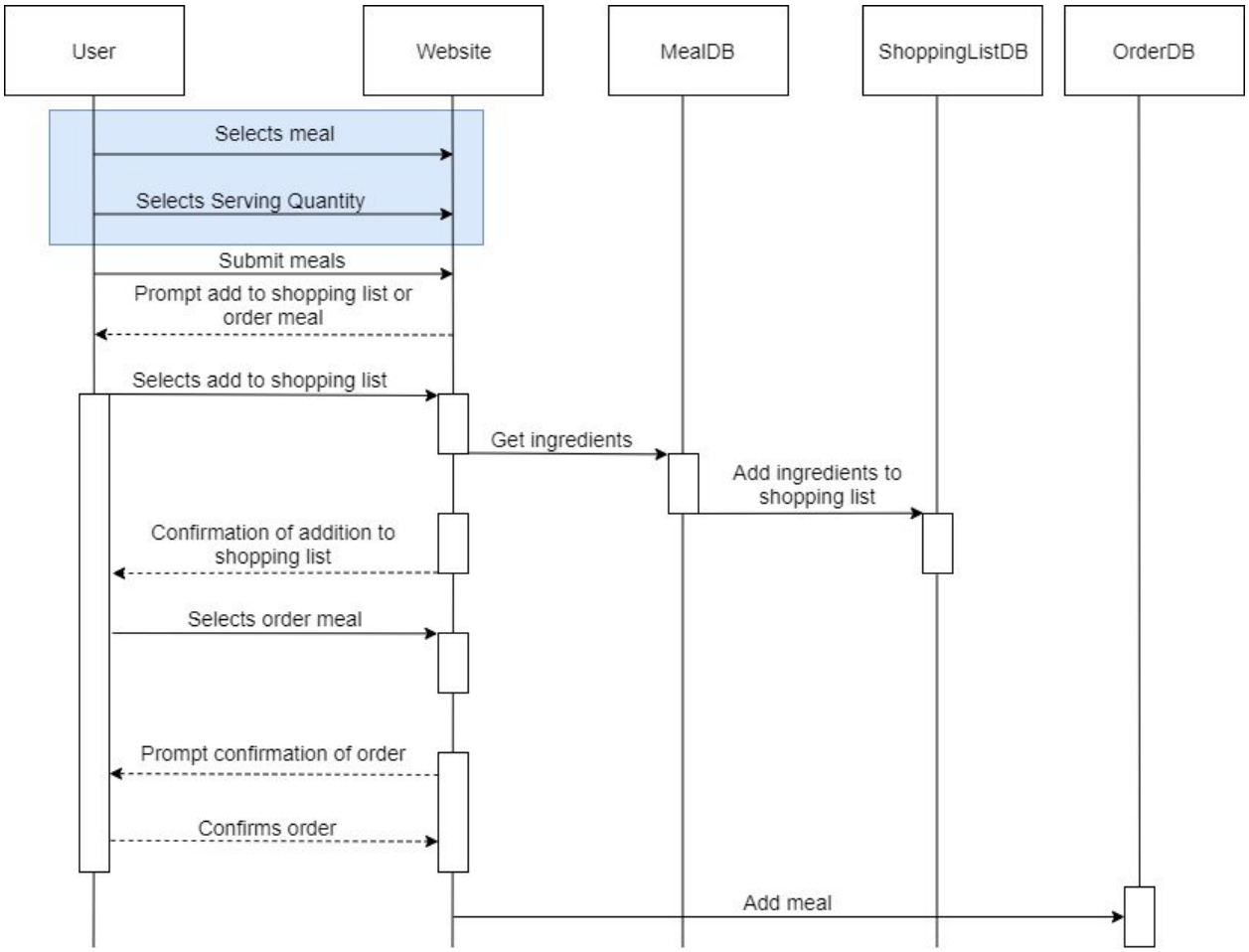
- The system shall query the database for account creation and return result within 60 seconds.
- The system shall query the database for curated meals and return result within 15 seconds.
- The system shall query the database for information about meals or snacks and return result within 10 seconds.
- The system shall allow users to add an item to their cart within 10 seconds.
- The system shall allow users to add a meal or snack's ingredients to their shopping list within 10 seconds.
- The system shall query the database for order completion and payment processing and return result within 60 seconds.
- The system shall query the database for order history and return result within 30 seconds.
- The system shall allow users to add an item to their favorites list within 5 seconds.
- The system shall query the database for information about user favorites and return result within 5 seconds.
- The system shall query the database for filtered meals or snacks and return result within 15 seconds.
- The system shall query third-party database for shipment status and return result within 15 seconds upon receipt of tracking information from third-party.

# Data Flow Diagram

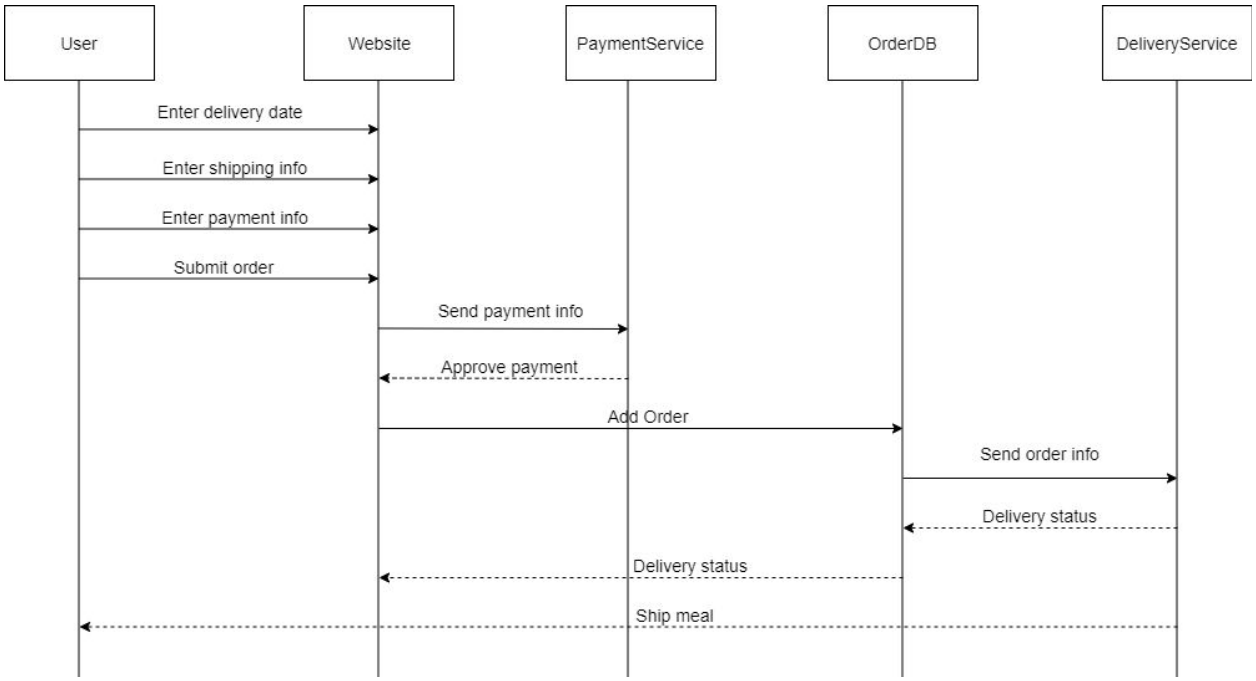


# Message Sequence Charts

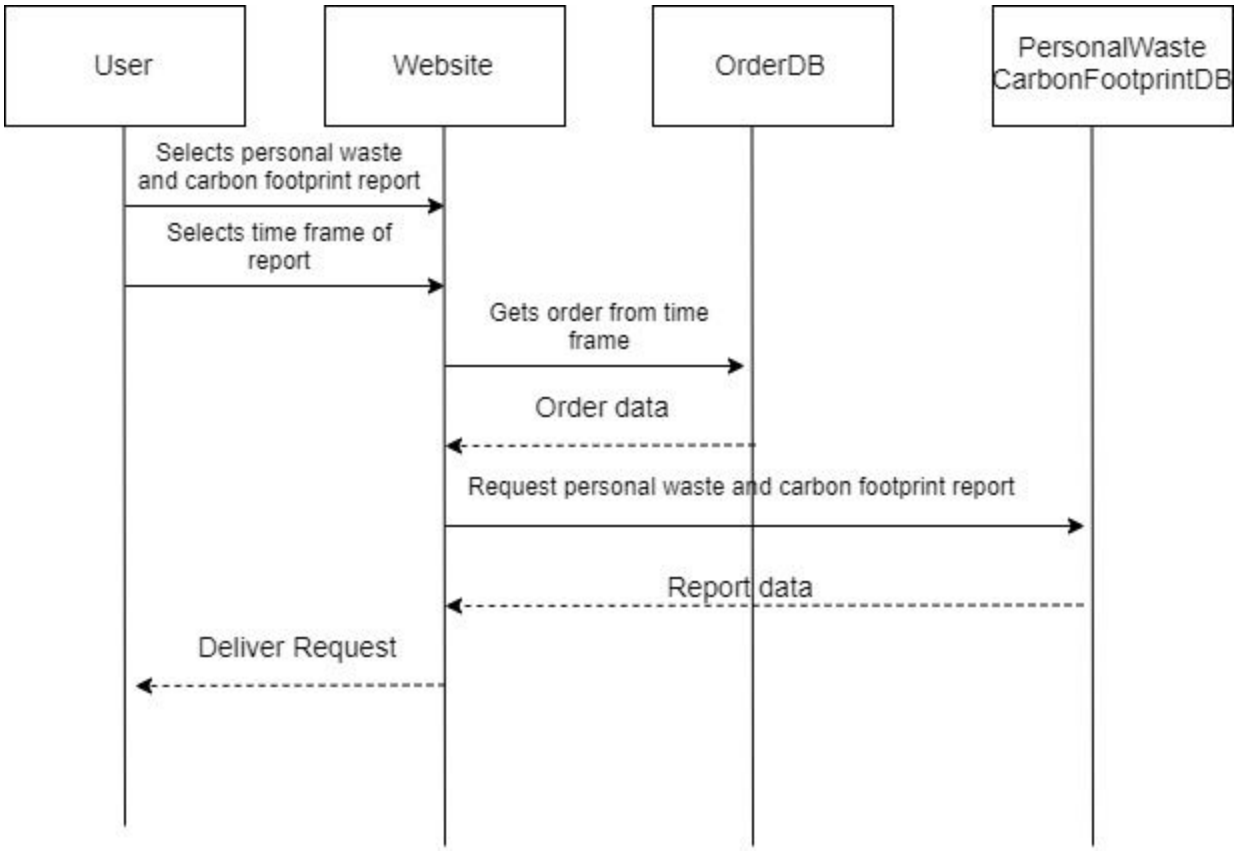
## Use Case 1



## Use Case 2


User
Website
PaymentService
OrderDB
DeliveryService
Enter delivery date
Enter shipping info
Enter payment info
Submit order
Send payment info
Approve payment
Add Order
Send order info
Delivery status
Delivery status
Ship meal

## Use Case 3


User
Website
OrderDB
PersonalWaste CarbonFootprintDB
Selects personal waste and carbon footprint report
Selects time frame of report
Gets order from time frame
Order data
Request personal waste and carbon footprint report
Report data
Deliver Request

# Requirement Definition and Specification Changes

- During our meeting with our customer, we learned the customer's vision of the service is not subscription-based. Instead, the users would only pay when they choose to order the curated meals from the company. Therefore subscription payment requirements were removed from requirements and from the first use case.

- As it was decided we would move away from the subscription model, the only time we will be taking payments is when meals ingredients are ordered through the service. In our talks, we decided that price would be on a per-meal basis rather than per ingredient. To represent this, price was added as an attribute of the "Curated Meals and Snacks" entity in the UML diagram.

- Another vision our customer shared with us was regarding the shopping list. Our customer would like the user to have the ability to shop the meal or snack ingredients on their own by using the shopping list functionality but still would like pricing of the curated meal to be displayed on the list as a move to persuade the user to use the company's paid services. These were added to the requirements.

- Revisions were made to all use case message sequence charts to display in-depth interaction between the user and all systems.

- When reviewing our data flow diagram, we realized that the order process should not be a one-way interaction between the user, the database and third-party delivery service. Changes were made to reflect the dual pathway interaction between the user and the sub-systems.

# Customer Meeting Summary

We scheduled and had a meeting with our customer, Casey Hines on Google Hangouts on Thursday.

# Team Member Contributions

Here is a list of team member contributions for HW1 and HW2:
All - Communicated on Slack throughout the week, added contributions to Google doc and joined the Google Hangout meeting with customer
Brian Shim - Requirements, use case scenarios, UML diagram, login page prototypes, meal info prototype
John Casey III - Order status prototype, shopping list prototype, food waste and carbon footprint report prototype, Coordinated week 2 meeting with customer.
NianJun Shi - Meals page prototype, meal search result page prototype

CS 361 Group 24 HW 1 - John Casey III, Raymond Lieu, Todd Radin, NianJun Shi, Brian Shim

Raymond Lieu - Data flow diagram and all three use case message sequence charts
Todd Radin - Order completion prototype, order history prototype
John, NianJun, Raymond and Todd - Finalized requirements and use cases text during HW 1 group meeting

All group members participated in reviewing and editing of this document.