



Refill.Me

No Waste, No Haste - Package-Free

Prototype Demo #2

By Team Iron
Old Dominion University
CS 411W
03/17/2023
Spring 2023

Image source:

<https://www.pexels.com/photo/person-holding-orange-fruits-in-white-net-3737624/>





At a Glance

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Image source:
<https://pixnio.com/food-and-drink/ingredients-market-boxes-colours-foodfruit-vegetable-grocery#>

Meet the Team



Judit Chang
Project Manager /
Database Developer



Abdullah Pathan
Front end developer /
Webmaster



Katelynn Hull
Database developer /
Document specialist



Gavin Rios
Front end developer



Michael Colombini
Back end developer



Kira Maximova
Back end developer / Tester



John Wasikye
Back end developer



Andrew Miller
Mentor

Sprint Breakdown

*Each sprint represent 2 weeks

01/07 - 02/01

Sprint 0: Setup & Configure

- Setup the development environment
- Configure Trello board
- Setup GitHub
- Automated Database Backup

02/17 - 03/03

Sprint 2: User Interfaces

- UI basic functionality
- Integrate frontend and backend
 - User profiles/logins
 - Define user roles

02/01 - 02/17

Sprint 1: Framework

- Build Container Guide (mock data)
- Build Advocacy and Petition site
- Automated Frontend and Backend Backup

03/03 - 03/17

Sprint 3: Major Features I.

- Product search Functionality
 - Enter product's name

Sprint Breakdown

*Each sprint represent 2 weeks

03/17 - 03/31

Sprint 4: Feature Expansion I.

- Shopping List
- Customized Container Recommendation
- Store search

04/14 - 04/28

Sprint 6: Wrap up Features

- Reward System - Collecting reward points (if time permits)
- Improve/polish UI
- Performance testing

03/31 - 04/14

Sprint 5: Feature Expansion II.

- Crowdsourcing: 'Suggested Edits' feature
- Product and Price dashboard
- Integrate data analytics

Optional

Sprint 7: Polish and Release

- Automated recovery
- Automated Unit / System tests
- Automated CI/CD pipelines

How We Work

- ❖ GitHub
 - version control
 - tracking commits and pushes
- ❖ GitHub Issues
 - issue tracker
 - keeping track of tasks based on Sprint plan
 - assigning members to issues
 - providing updates
- ❖ Trello
 - keeping track of administrative tasks like deadlines of weekly dev reports, labs, demo presentations, tasks related to the poster project, etc.
- ❖ Weekly Team Meetings
 - discussing our progress, sprint plan, next tasks to complete, issues, concerns, etc.
 - troubleshooting

Team Roles and Responsibilities

Front End
React Native

Abdullah Pathan
Gavin Rios

Back End
Django

Michael Colombini
Kira Maximova
John Wasikye

Database
MySQL

Katelynn Hull
Judit Chang

Project management

Judit Chang

Real World Product vs Prototype

Features for Shoppers

| Feature | Real World Product | CS411W Prototype |
|--------------------------|---------------------|------------------------|
| Account Creation | Full implementation | In Progress |
| Store Search | Full implementation | In Progress |
| Product Search | | |
| Search by Icon | Full implementation | Partial implementation |
| Scan product's barcode | Full implementation | |
| Enter product's name | Full implementation | In Progress |
| Container Guide | Full implementation | In Progress |
| Container Recommendation | Full implementation | Full implementation |

Real World Product vs Prototype Features for Shoppers (contd.)

| Feature | Real World Product | CS411W Prototype |
|--|---------------------|------------------------|
| Shopping List | Full implementation | In Progress |
| Reward.Me | | |
| Collect reward points | Full implementation | Full implementation |
| Receive coupons | Full implementation | |
| Crowdsourcing | | |
| Suggested edits for products and prices | Full implementation | Full implementation |
| Store rating | Full implementation | Partial implementation |
| Connect shoppers to advocacy and petition sites | Full implementation | In Progress |

Real World Product vs Prototype

Features for Store owners

| Feature | Real World Product | CS411W Prototype |
|-----------------------------------|---------------------|------------------------|
| Product and Price Dashboard | Full implementation | Full implementation |
| Reward Point Conversion Dashboard | Full implementation | Full implementation |
| Coupon Dashboard | Full implementation | |
| Store Rating Dashboard | Full implementation | Partial implementation |
| Search Information Dashboard | Full implementation | Partial implementation |

User Stories Status

| Feature | User Story | User Type | Status |
|-----------------------------|---|---|-------------|
| Login / Authentication | I want to be able to sign in to my account so that I can use all features of the app. | Shopper Store owner Administrator | In Progress |
| Location usage | I want to be able to decide whether I would like to share my location data so that I can find nearby stores. | Shopper Store owner | Backlog |
| Account Creation / Deletion | I want to be able to create an account or delete my account so that I can use or stop using the app. | Shopper Store owner | In Progress |
| | I want to be able to create an account for a registered shopper or store owner so that I can check whether the account is properly created. | Tester | In Progress |
| Search by Store | I want to find nearby package-free stores so that I can do package-free shopping. | Shopper | In Progress |
| | I want to be able to search for stores so that I can check the offerings and prices of other stores. | Store owner | In Progress |
| | I want to search for stores so that I can test whether the search is working. | Tester | In Progress |
| Search by Product | I want to search for specific package-free products near me in a quick and efficient way so that I will know what products are available package-free in my area. | Shopper | In Progress |
| | I want to type in a product's name and search for it so that I will know what products are available package-free in my area. | Store owner | In Progress |
| | I want to search for products so that I can test whether products are listed properly. | Tester | In Progress |

User Stories Status

| Feature | User Story | User Type | Status |
|--|---|-----------|-------------|
| Container Guide | I want to learn about containers that I could use for package-free shopping so that I will know about the containers that I can use for package-free shopping. | Shopper | In Progress |
| Container Recommendation | I want to know what type of containers I will need to bring with me so that I will know what kind of containers I should bring with me when doing package-free shopping. | Shopper | Backlog |
| | I want to know how many containers I will need to bring with me so that I can do package-free shopping. | Shopper | Backlog |
| | I want to get the list of recommended containers so that I can test whether the app returns the needed number and types of containers. | Tester | Backlog |
| Shopping List | I want to create a shopping list so that I will not forget anything that I would like to buy. | Shopper | In Progress |
| | I want to create a shopping list so that I can test whether store names and products are shown accurately. | Tester | In Progress |
| Reward.Me | I want to have an overview of my reward points. | Shopper | Backlog |
| Suggested Edits | I want to report new / closed stores, new products, or products that are not available anymore, or prices that changed so that I can help others with up-to-date information. | Shopper | Backlog |
| Store rating | I want to rate stores so that I can provide some feedback about their services. | Shopper | Backlog |
| Connect to advocacy and petition sites | I want to get information about advocacy and petition sites so that I can take action in case there are only limited package-free options in my area. | Shopper | In Progress |

User Stories Status

| Feature | User Story | User Type | Status |
|-----------------------------------|--|---------------|---------|
| Product and Price Dashboard | I want to efficiently edit / add / delete my store information, product listing, and prices so that the shoppers will see only up-to-date information regarding my store and products. | Store owner | Backlog |
| | I want to see a preview of the data that I entered so that I can see what the shoppers will see in the app. | Store owner | Backlog |
| | I want to see the store's site in the app from the user's view so that I can see what the shopper will see in the app. | Store owner | Backlog |
| | I want to be able to add / modify / delete products in the Product & Price Dashboard so that I can test whether store owners will be able to add / modify / delete items. | Tester | Backlog |
| Reward Point Conversion Dashboard | I want to decide what products or services the users will get for a certain amount of reward points so that the shoppers can use their reward points. | Store owner | Backlog |
| | I want to be able to add / modify / delete entries in the Reward Point Conversion Dashboard so that I can test whether store owners will be able to add / modify / delete entries. | Tester | Backlog |
| Store Rating Dashboard | I want to be able to see the rating that my store got. | Store owner | Backlog |
| | I want to be able to respond to store ratings so that I can provide my feedback regarding any comments or questions. | Store owner | Backlog |
| Control User Accounts | I want to be able to add / update / delete accounts so that I can make changes if needed. | Administrator | Backlog |
| Dashboards | I want to have access to all dashboards and user profiles so that I can make changes if needed. | Administrator | Backlog |

User Stories to Tasks - Status

| Login/Sign up | | | |
|---|--|------------------------|-------------|
| Task | User Story | User Type | Status |
| Implement Sign Up/Register user interface design | As a guest, I shall be able to see the Sign Up/Register screen to create an account. | Shopper Store owner | Completed |
| Ensure that Sign Up/Register page is dynamically responsive | As a guest and a registered user, I shall be able to access this page on smartphone and tablet (dynamically responsive). | Shopper | Completed |
| Implement Sign Up/Register functionality | I shall be able to successfully create an account to use the app. | Shopper Store owner | In Progress |
| Implement Sign Up/Register form | I shall be able to access the appropriate registration form. | Shopper Store owner | In Progress |
| Implement login process | I shall be able to log in into the Refill.Me application. | Shopper Store owner | In Progress |
| Implement password recovery process | I shall be able to recover the account credentials by recovering the lost password. | Shopper Store owner | Backlog |
| Design Login Page form | I shall see the Login screen display two text fields with prefilled text: 'Email' and 'Password' | Shopper Store owner | Completed |
| Develop user authentication error process | Upon entering the wrong user credentials, I shall see an error message that propels me to try again. | Shopper Store owner | Backlog |
| Design Shopper Menu component | The menu shall have: Home, Store Search, Product Search, Shopping List, Profile | Shopper | Backlog |
| Design Store Owner Menu component | The menu shall have: Home, Product & Prices, Rewards Points Conversion, Store Analytics, Profile | Store Owner | Backlog |

User Stories to Tasks - Status

| Home | | | |
|---|--|------------------------|---------|
| Task | User Story | User Type | Status |
| Implement mobile responsive Home Menu | I shall be able to access the Home menu key on both smartphone and tablet devices. | Shopper Store Owner | Backlog |
| Implement Shopper Home Menu interface | I shall see 6 selectable sub categories, upon selecting the following would open: Store Search, Product Search, Container Guide, Shopping List, Reward.Me, Contact Us | Shopper | Backlog |
| Implement Store Owner Home Menu interface | I shall see 6 selectable sub categories, upon selecting the following would open: Product & Prices, Reward Point Conversion, Store Rating, Store Search, Product Search, Profile | Store owner | Backlog |

User Stories to Tasks - Status

| Store Search | | | |
|--|---|------------------------|-----------|
| Task | User Story | User Type | Status |
| Implement Store Search feature as mobile responsive | <p>As a guest and as a registered user, I shall be able to access Store Search page on smartphone and tablet</p> <ul style="list-style-type: none"> - Shopper, Store owner: using Home menu key - Shopper: using Store Search menu key | Shopper Store Owner | Backlog |
| Integrate Google Maps API with Store Search functionality | As a guest and as a registered user, I shall see a map with nearby stores if I enabled location services. | Shopper Store Owner | Backlog |
| Implement Nearby Store functionality with Store Search feature | <p>As a guest and as a registered user,</p> <ul style="list-style-type: none"> - I shall see a list of five (5) nearby stores (with the exception of remote areas) - I shall see a list of nearby stores with information regarding the name of the store, address, and a button for further information (store hours, contact information) | Shopper Store Owner | Backlog |
| Design store listing form for Store Search feature | <p>As a guest and as a registered user, I shall see nearby stores on the map listing:</p> <ul style="list-style-type: none"> - Name of the store - Full address, selecting the address will give an option to copy - 'Details' button, selecting on it (store hours, contact information) | Shopper Store Owner | Backlog |
| Implement Zip Code search functionality for Store Search feature | As a guest and as a registered user, I shall be prompted to enter a ZIP code if I did not allow location sharing. | Shopper Store Owner | Backlog |
| Implement the user interface where the message "No store found" is displayed | I shall be able to see a message stating that no nearby store was found. | Shopper Store owner | Backlog |
| Implement the button for the 'Advocacy and Petition sites' | I shall be able to see a button for 'Advocacy and Petition sites'. | Shopper | Backlog |
| Implement the user interface for the 'Advocacy and Petition sites' | I shall be able to get information about advocacy and petition websites. | Shopper | Completed |

User Stories to Tasks - Status

| Product Search | | | |
|---|--|------------------------|-------------|
| Task | User Story | User Type | Status |
| Implement 'Product Search' user interface design | I shall have an option to select the Product Search functionality. | Shopper Store owner | In Progress |
| Implement the design of the two 'Product Search' actions: 'Search by Icon' and 'Enter Product Name' | I shall see two selectable actions after choosing the Product Search functionality: 'Search by Icon' and 'Enter Product Name' | Shopper Store owner | Backlog |
| Implement the 'Product Search' functionality | I shall be able to enter the product's name for which I am looking for. | Shopper Store owner | In Progress |
| Implement the user interface for the product listing | <p>I shall be able to see a product listing if the product is available in nearby stores.</p> <p>I shall see the store information (name of the store, location (city + 2 letters for the state)) for each listed product.</p> <p>I shall be able to see the unit prices of products.</p> <p>I shall be able to have access to container recommendations for a specific product.</p> <p>I shall be able to get information about the recommended container for a specific product upon selecting the container icon.</p> | Shopper Store owner | Backlog |
| Implement the user interface where the message "No product found" is displayed | I shall be able to see a message stating that no product was found if the product is not available in nearby stores. | Shopper Store owner | Backlog |

User Stories to Tasks - Status

| Container Guide | | | |
|---|---|-----------|-----------|
| Task | User Story | User Type | Status |
| Implement the Container Guide functionality. | I shall be able to get information about container types in the Container Guide. | Shopper | Completed |
| Implement button for Container Guide in the main menu | I shall have the ability to navigate to the Container Guide from the Home menu key. | Shopper | Backlog |
| Implement Container Guide user interface | I shall see a list of five (5) different container types, possible materials that they are made of, and products that can be stored in them. These container types are: Tote bags, Produce bags, Jars, Bottles, Boxes | Shopper | Completed |

User Stories to Tasks - Status

| Shopping List / Customized Container Recommendation | | | |
|---|---|-----------|-------------|
| Task | User Story | User Type | Status |
| Implement button for Shopping List in the Home menu key | I shall be able to navigate to Shopping List (empty or with products in it) | Shopper | Backlog |
| Ensure that Shopping List page is dynamically responsive | I shall be able to access Shopping List on smartphone and tablet devices (dynamically responsive). | Shopper | Backlog |
| Ensure that products from the product listing can be added to the Shopping List | I shall be able to create a shopping list to plan my shopping by adding products to it using the '+' sign on the product listing. | Shopper | Backlog |
| Ensure that products are grouped by store in the Shopping List | I shall see each item in the Shopping List grouped by store for which the city and state is listed. | Shopper | In Progress |
| Implement buttons for increasing/decreasing the quantity of products in the Shopping List | I shall have the ability to modify the quantity of a product or to remove the product from the Shopping List. | Shopper | Backlog |
| Implement a button for item removal from the Shopping List | I shall have the ability to remove products from the Shopping List. | Shopper | Backlog |
| Create a 'Container Recommendation' button in the Shopping List | Once I finish adding products to the Shopping List, I shall be able to select the 'Container Recommendation' button to see a customized container recommendation. | Shopper | Backlog |
| Implement the Customized Container Recommendation user interface | I shall find information about the types of containers that I need for my shopping. I shall find information about how many of each container type I need for my shopping. | Shopper | Backlog |

User Stories to Tasks - Status

| Profile | | | |
|--|--|------------------------|---------|
| Task | User Story | User Type | Status |
| Implement button for Profile in the Home menu key | I shall be able to navigate to the Profile menu key. | Shopper Store owner | Backlog |
| Implement the log out functionality | I shall see a 'Log out' button to log out of my account. | Shopper Store owner | Backlog |
| Implement the delete account functionality | I shall see a 'Delete' button to delete my account. | Shopper Store owner | Backlog |
| Create name and user icon on the top of the Profile page | I shall see my name under a user icon. | Shopper Store owner | Backlog |
| Implement the 'Saved Stores' functionality for shoppers | I shall have the ability to access my saved stores. | Shopper | Backlog |
| Implement the 'Share with friends' functionality for shopper | I shall have the ability to share the app with friends using email or social media tools. | Shopper | Backlog |
| Implement the 'Profile settings' functionality for shoppers | I shall have the ability to access my profile settings to modify my settings. | Shopper | Backlog |
| Implement the 'Profile settings' functionality for store owners | I shall have the ability to access my profile settings to modify my settings. | Store owner | Backlog |
| Implement the 'Notification settings' functionality for store owners | I shall have the ability to access my notification settings to modify my these settings. | Store owner | Backlog |
| Implement the 'Roles & Privileges' functionality for store owners | I shall have the ability to create roles and set permission after choosing the 'Roles & Permissions' button. | Store owner | Backlog |

Features Roadmap

Sprint 3 - Product Search

Features Roadmap

Sprint 4 - Shopping List

March 2023

8 9 10 11 12 13 14 **15** 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5

Filter Markers Start Date Date fields Month Today <

Sprint_4_Feature_Expansion 17

Fri, Mar 17 - Fri, Mar 31

32 Implement Shopping List user interface #61

33 Ensure that Shopping List page is dynamically responsive #53

34 Ensure that products from the product listing can be added to the Shopping List #54

35 Ensure that products are grouped by store in the Shopping List #55

36 Implement buttons for increasing/decreasing the quantity of products in the Shopping List #56

37 Implement a button for item removal from the Shopping List #57

38 Create a 'Container Recommendation' button in the Shopping List #58

Implement Shopping List user interface #61

Ensure that Shopping List page is dynamically responsive #53

Ensure that products from the product listing can be added to the Shopping List #54

Ensure that products are grouped by store in the Shopping List #55

Implement buttons for increasing/decreasing the quantity of products in the Shopping List #56

Implement a button for item removal from the Shopping List #57

Create a 'Container Recommendation' button in the Shopping List #58

Features Roadmap

Sprint 4 - Customized Container Recommendation

| March 2023 | | | | | | | | | | | | Filter | Markers | Start Date | Date fields | Month | Today | < | | | | | | | | | | |
|------------|----|---|-----|----|----|----|----|----|----|----|----|--------|---------|------------|-------------|-------|-------|----|----|---|---|---|---|---|---|---|---|---|
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 39 | ● | Implement the Customized Container Rec... | #59 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | ● | Implement the algorithm for Customized ... | #60 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | ● | Implement the interface for displaying the... | #62 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | ● | Implement the interface for displaying tot... | #63 | | | | | | | | | | | | | | | | | | | | | | | | | |

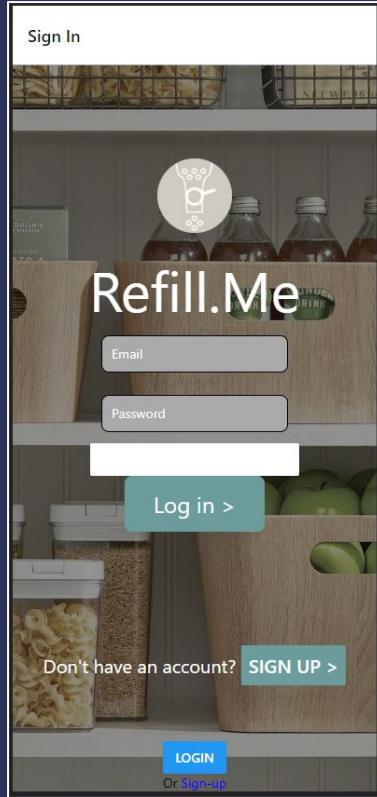
Features Roadmap

Sprint 4 - Store Search

| March 2023 | | | | | | | | | | | | A | Filter | Markers | Start Date | Date fields | Month | Today | < | | | | | | | | | |
|------------|----|--|----|----|----|----|----|----|----|----|--|-------|--------|---------|------------|-------------|-------|-------|---|---|---|---|---|---|---|---|----|----|
| 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 43 | ● | Implement Store Search feature as mobile... #22 | | | | | | | | ● | Implement Store Search feature as mobile responsive #22 | 👤 | | | | | | | | | | | | | | | | |
| 44 | ● | Integrate Google Maps API with Store Sea... #47 | | | | | | | | ● | Integrate Google Maps API with Store Search functionality #47 | gMaps | | | | | | | | | | | | | | | | |
| 45 | ● | Implement Nearby Store functionality with... #48 | | | | | | | | ● | Implement Nearby Store functionality with Store Search feature #48 | gMaps | | | | | | | | | | | | | | | | |
| 46 | ● | Design store listing form for Store Search ... #49 | | | | | | | | ● | Design store listing form for Store Search feature #49 | 👤 | | | | | | | | | | | | | | | | |
| 47 | ● | Implement Zip Code search functionality f... #50 | | | | | | | | ● | Implement Zip Code search functionality for Store Search feature #50 | gMaps | | | | | | | | | | | | | | | | |
| 48 | ● | Implement the user interface where the m... #51 | | | | | | | | ● | Implement the user interface where the message "No store found" is displayed #51 | 👤 | | | | | | | | | | | | | | | | |

Features in Development

- ❖ Container Guide
- ❖ Advocacy and Petition sites
- ❖ User login & Registration
- ❖ Product Search
- ❖ Shopping List
- ❖ Store Search



Container Guide

Get familiar with some of the containers you can use to shop package free!

Tote bag

textile

Great for packing anything, especially fruits and vegetables!
Tap to buy our recommended bag from GreenSky!

Produce bag

textile

Great for packing anything, especially fruits and vegetables!
Tap to buy our recommended bag from GreenSky!

Tote bag

textile

Great for packing anything, especially fruits and vegetables!
Tap to buy our recommended bag from GreenSky!

Produce bag

textile

Great for packing anything, especially fruits

Prototype Changes / Adjustments

- ❖ 'Advocacy and Petition Sites' page is reachable from main menu
 - in addition to being reachable from the 'no store found' or 'no product found' window
- ❖ Usage of Docker only for database, not for Frontend or Backend
- ❖ Not using Amazon RDS, just MySQL
- ❖ Some updates on database design compared to the initial layout of the data tables

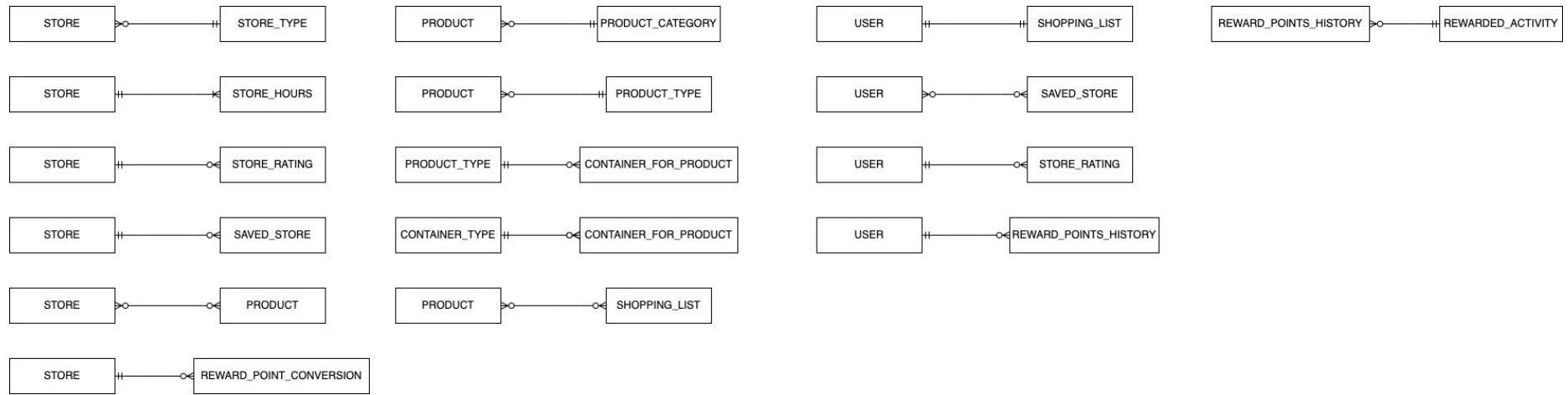
Near-Term Priorities (next 3 weeks)

- ❖ Finishing all in-progress features
- ❖ Building the Customized Container Recommendation (based on the data in the Shopping List)
- ❖ Integrating Google Maps API

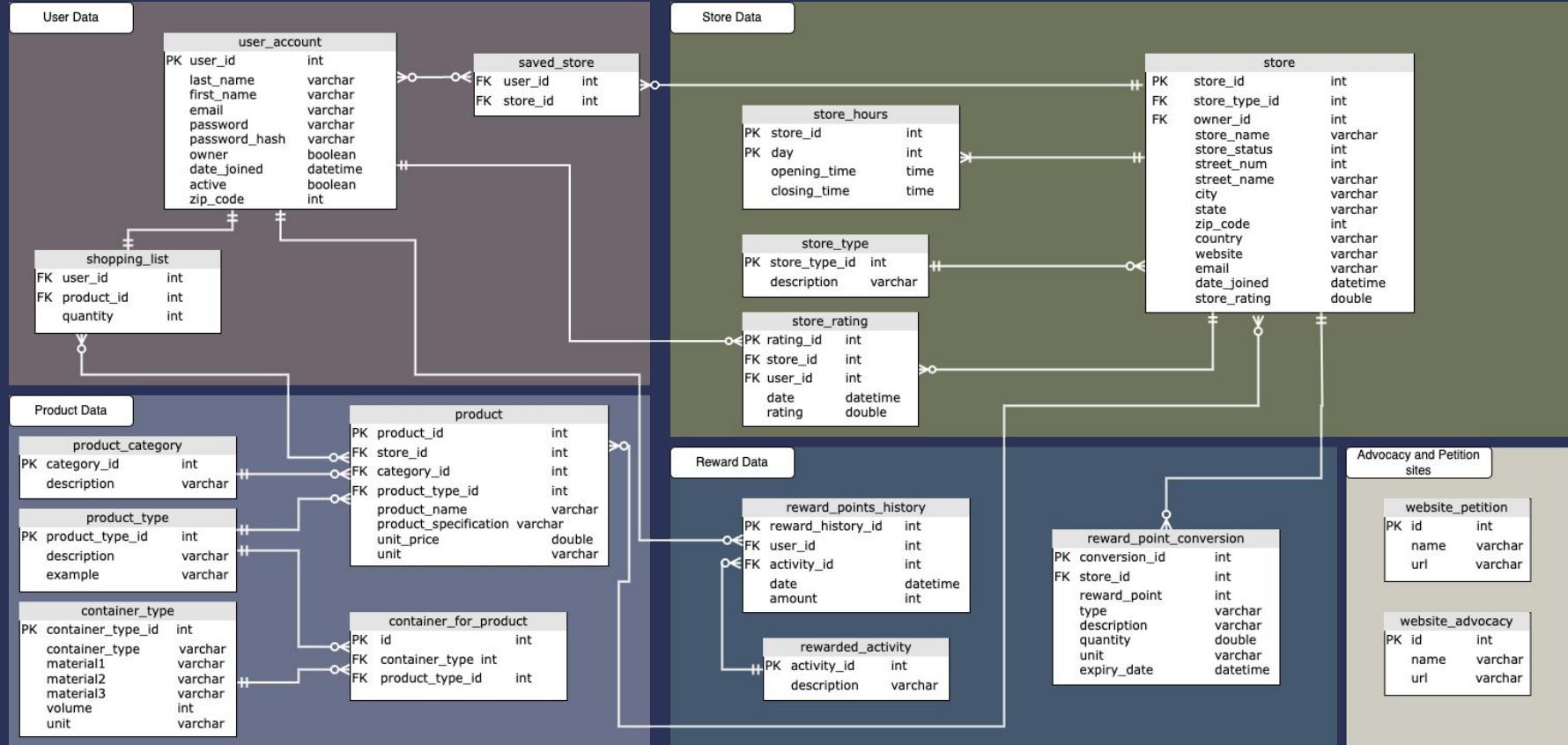
Concerns

- ❖ Integrating Frontend and Backend
- ❖ Integrating third-party APIs
- ❖ Time constraint

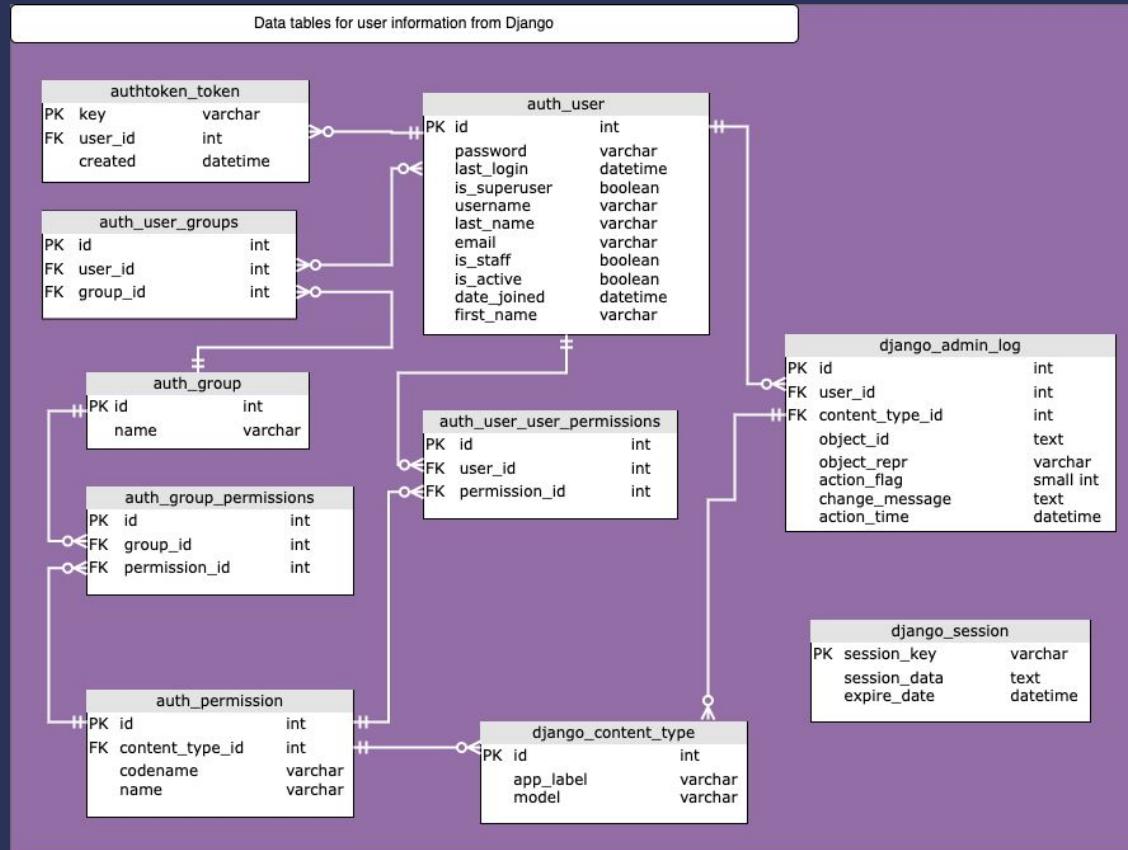
Appendix A: Database Entities & Relationships



Appendix B: Database ER Diagram



Appendix C: Data tables for user information from Django





Thank you

Image source:

https://commons.wikimedia.org/wiki/File:USDA_is_working_hard_to_expand_access_to_farmers_markets_for_those_participating_in_the_Supplemental_Nutrition_Assistance_Program_%28SNAP%29.jpg



Q & A

Any questions?

Image source:

https://commons.wikimedia.org/wiki/File:USDA_is_working_hard_to_expand_access_to_farmers_markets_for_those_participating_in_the_Supplemental_Nutrition_Assistance_Program_%28SNAP%29.jpg