



# Refill.Me

No Waste, No Haste - Package-Free

## Prototype Demo #3

By Team Iron  
Old Dominion University  
CS 411W  
4/14/2023  
Spring 2023

Image source:

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





# At a Glance

Meet the Team.....	3
Sprint Breakdowns.....	4-5
How We Work.....	6
Team Roles & Responsibilities.....	7
RWP vs Prototype.....	8-10
User Stories to Tasks Status.....	11-17
Features Completed.....	18
Features in Development.....	19-20
Features Roadmaps.....	21-25
Prototype Changes/Adjustments.....	26
Near-Term Priorities.....	27
Concerns.....	28
Appendix A: Database Entities.....	29
Appendix B: Database ER Diagram.....	30
Appendix C: Django Data Tables.....	31

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

# Meet the Team



**Judit Chang-Horvath**  
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: Feature Expansion II.

- Customized Container Recommendation
- Crowdsourcing: Lemme.Know
- Reward System - Collecting reward points
- Product and Price dashboard
- Improve/polish UI
- Performance testing

03/31 - 04/14

## Sprint 5: Feature Enhancements

- Shopping List
- Customized Container Recommendation
- Store search
- 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	Completed
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	Completed
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	Completed

# 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 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	Completed
Implement Sign Up/Register form	I shall be able to access the appropriate registration form.	Shopper Store owner	Completed
Implement login process	I shall be able to log in into the Refill.Me application.	Shopper Store owner	Completed
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"> <li>- Shopper, Store owner: using Home menu key</li> <li>- Shopper: using Store Search menu key</li> </ul>	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	In Progress
Implement Nearby Store functionality with Store Search feature	<p>As a guest and as a registered user,</p> <ul style="list-style-type: none"> <li>- I shall see a list of five (5) nearby stores (with the exception of remote areas)</li> <li>- 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)</li> </ul>	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"> <li>- Name of the store</li> <li>- Full address, selecting the address will give an option to copy</li> <li>- 'Details' button, selecting on it (store hours, contact information)</li> </ul>	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	In Progress
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	In Progress
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	In Progress
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

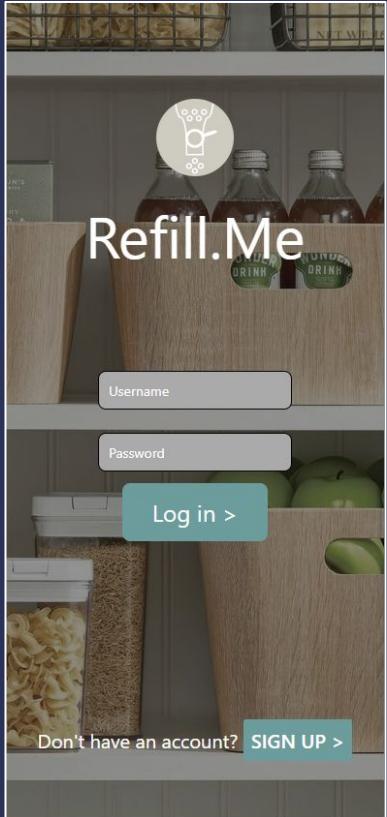
Shopping List / Customized Container Recommendation			
Task	User Story	User Type	Status
Implement button for Shopping List in the Home menu key	I shall be able to navigate to Shopping List (empty or with products in it)	Shopper	Backlog
Ensure that Shopping List page is dynamically responsive	I shall 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

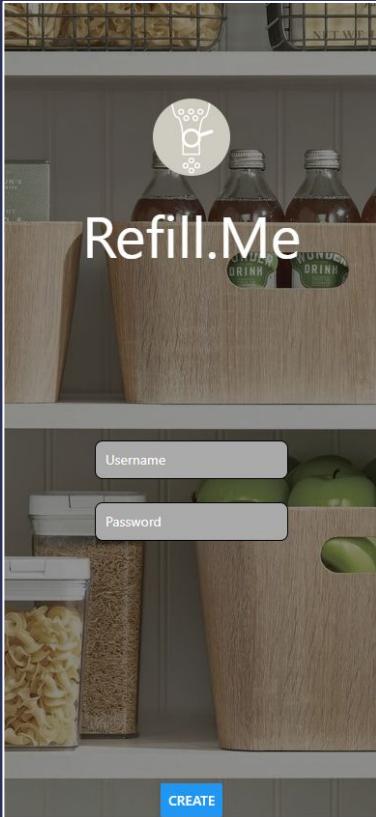
Profile			
Task	User Story	User Type	Status
Implement button for Profile in the Home menu key	I shall be able to navigate to the Profile menu key.	Shopper Store owner	Backlog
Implement the log out functionality	I shall see a 'Log out' button to log out of my account.	Shopper Store owner	Backlog
Implement 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 Completed

User Login



User Registration



Container Guide

## 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

Advocacy and Petition sites

## Advocacy and Petition Sites

Are you ready to take action?  
Here are some useful links:

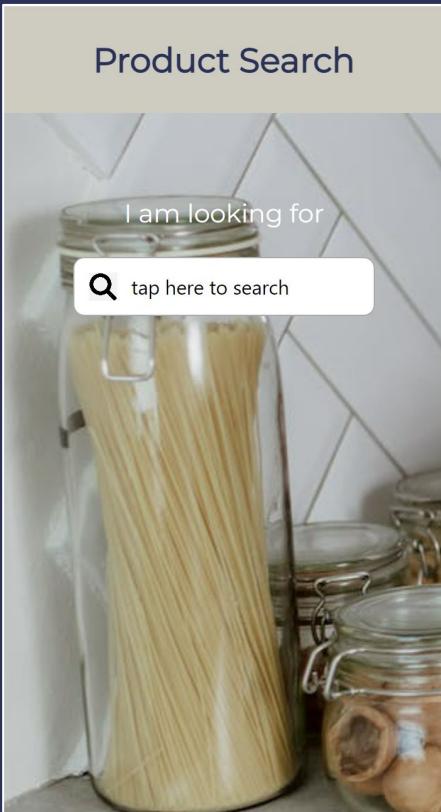
- WWF
- Beyond Plastics
- Going Zero Waste
- Polly Barks
- Canopy
- Change.org
- Greenpeace
- Plastic Pollution Control
- Aim Plastic Free

# Features in Development

- ❖ Store Search
- ❖ Product Search
- ❖ Shopping List
- ❖ Customized Container Recommendation

# Features in Development

## Product Search



## Product Listing

Results for: Walnuts			
Trace - Vienna, VA			
Walnuts, type	\$0.00/lb		
MOM's Organic - Merrifield, VA			
Walnuts, type	\$0.00/lb		
Walnuts, type	\$0.00/lb		
Safeway - Fairfax, VA			
Walnuts, type	\$0.00/lb		
New Search			

# Features Roadmap

## Sprint 6 - Feature Expansion II.

### Login & Main navigation

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8

● Implement user login process #13

● Design Shopper Menu component #27

● Design Store Owner Menu component #28

● Implement main menu for Shopper #73

● Implement main menu for Store Owner #74

# Features Roadmap

## Sprint 6 - Feature Expansion II.

### Store Search

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10
<span style="color: green;">●</span> Implement Store Search pages & Check responsiveness #22 																								

# Features Roadmap

## Sprint 6 - Feature Expansion II.

### Product Search

18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12
<span style="color: green;">●</span> Implement Product Search user interface design #37 																								

● Implement Product Search user interface design #37 

● Test created product search page #40 

● Implement the design of the two 'Product Search' actions: 'Search by Icon' and 'Enter Product Name' #44 

● Implement the user interface for the product listing #45 

● Implement the user interface where the message "No product found" is displayed #46 

# Features Roadmap

## Sprint 6 - Feature Expansion II.

### Shopping List

20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<span style="color: green;">●</span> Ensure that Shopping List page is dynamically responsive #53 																								

The table displays a roadmap for the Shopping List feature across 14 sprints. The tasks listed are:

- Sprint 20: Ensure that Shopping List page is dynamically responsive #53 (Priority 1)
- Sprint 21: Ensure that products from the product listing can be added to the Shopping List #54 (Priority 1)
- Sprint 22: Ensure that products are grouped by store in the Shopping List #55 (Priority 1)
- Sprint 23: Implement buttons for increasing/decreasing the quantity of products in the Shopping List #56 (Priority 1)
- Sprint 24: Implement a button for item removal from the Shopping List #57 (Priority 1)
- Sprint 25: Create a 'Container Recommendation' button in the Shopping List #58 (Priority 1)
- Sprint 26: Implement Shopping List user interface #61 (Priority 1)

# Features Roadmap

## Sprint 6 - Feature Expansion II.

### Customized Container Recommendation

22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

● Implement the Customized Container Recommendation user interface #59 

● Implement the algorithm for Customized Container Recommendation #60 

● Implement the interface for displaying the listing of each product with the corresponding container #62 

● Implement the interface for displaying total number of containers needed for a specific shopping #63 

### Lemme.Know

● Implement Lemme.Know (earlier called Suggested Edits) feature #75 																								
---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

### Reward.Me

● Implement Reward.Me feature #76 																								
---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

# Prototype Changes / Adjustments

- ❖ Some updates on database design:
  - normalized *product* table by splitting it into 2 tables:
    - a new *product* table - not containing *store\_id*
    - a *product\_offering* table - to link products to stores
  - updated *shopping\_list* table - to hold *store\_id*
- ❖ Customized Container Recommendations page will group products by store
  - similar to Shopping List page
- ❖ Suggested Edits was renamed into *Lemme.Know*

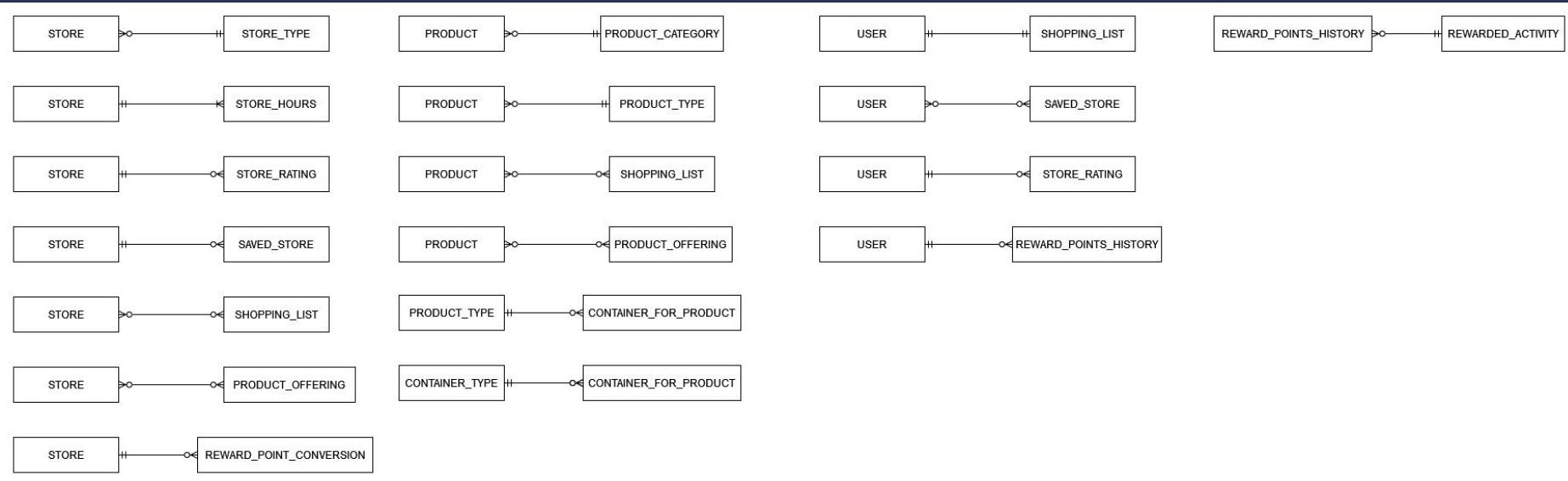
# Near-Term Priorities (next 3 weeks)

- ❖ Finishing all in-progress features
- ❖ Store Search: Integrating Google Maps API
- ❖ Product Search
- ❖ Shopping List
- ❖ Customized Container Recommendation (based on the data in the Shopping List)
  - Algorithms for determining the types of containers needed and for calculating the number of containers needed are completed
- ❖ Lemme.Know
- ❖ Reward.Me

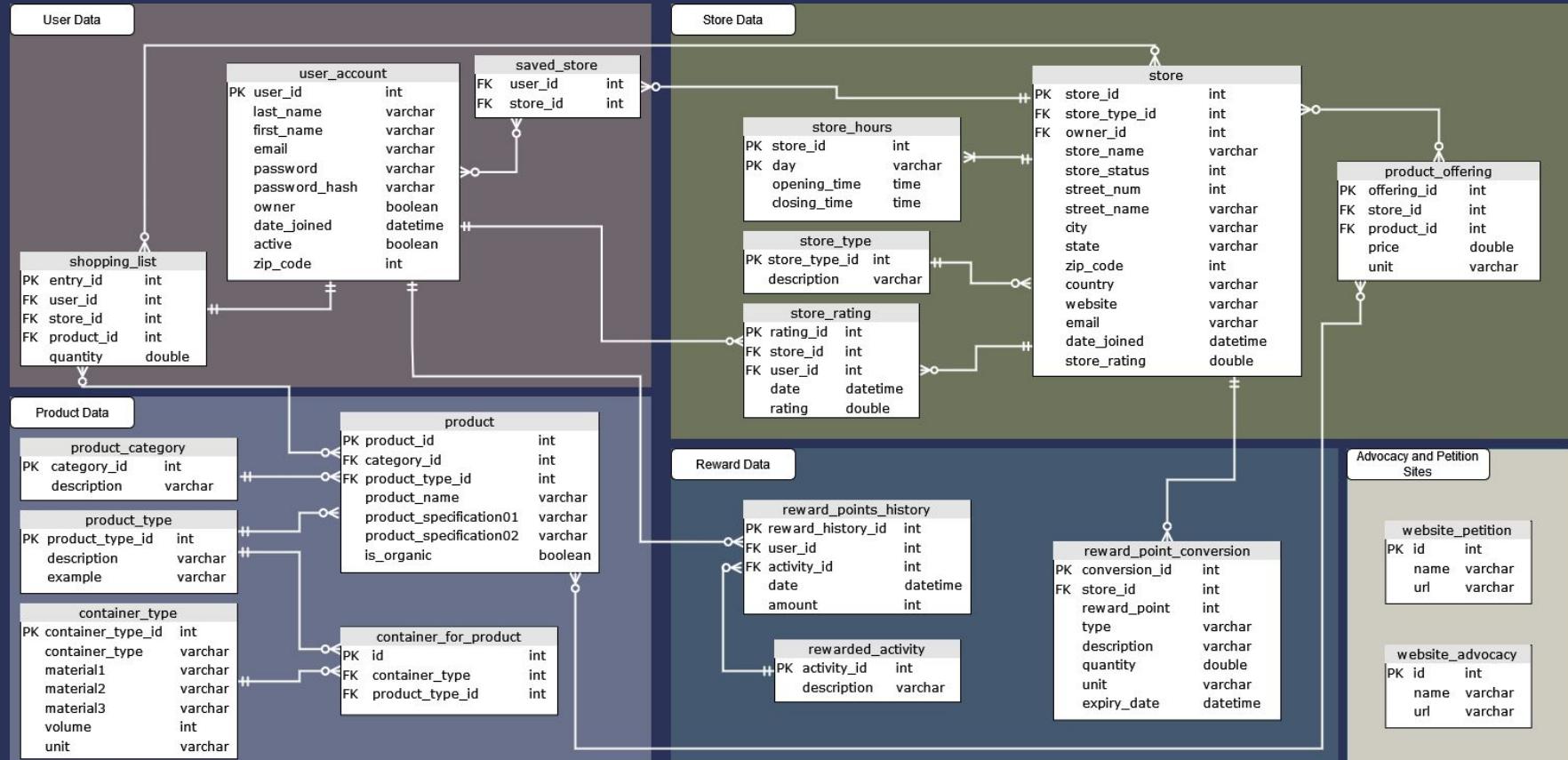
# Concerns

- ❖ Building the algorithms on the backend
- ❖ Integration of backend functionalities with the frontend
- ❖ Time constraint

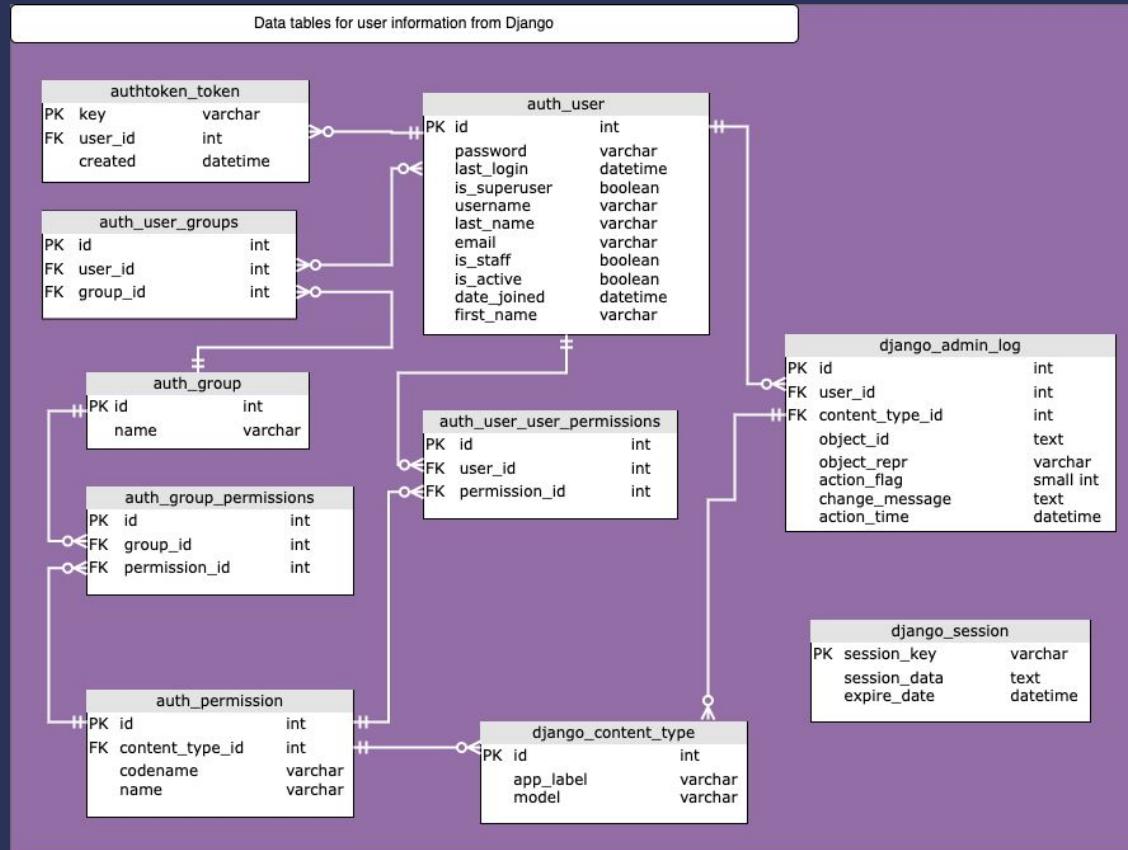
# Appendix A: Database Entities & Relationships



# 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](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](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)