

Allergen Menu Filtering

Intern Capstone 2022

Olo's 2022 Intern Graduation

August, 2022



INTRODUCTION

Today's Agenda

1. The Problem
2. Our Discovery
3. Design
4. Implementation
5. Next Steps
6. Overall Impact
7. Reflections

The Problem



Background: Questions & Struggles

- Brands don't specify dietary restrictions
- Restaurants lack control to ensure customers safety
- Brands risk liability from inaccurate allergen information
- Guest users with food allergies often find it difficult or impossible to find safe menu options without thorough and accurate labeling

Current Solutions

P.F. Chang's

FAMILY MEALS LUNCH BOWLS APPETIZERS DIM SUM SALADS & SOUPS SUSHI MAIN ENTRÉES NOODLES & RICE GLUTEN FREE DESSERT BEVERAGES KIDS EXTRAS

Sign In/Join Cart

GLUTEN FREE

GF Chang's Chicken Lettuce Wraps GF Egg Drop Soup GF Chang's Spicy Chicken

Nutrition & Allergen Information

FIVE GUYS

NUTRITION		ALLERGENS																			
	Serving Size (g)	Calories	Calories from Fat	Total Fat (g)	Saturated Fat (g)	Trans Fat (g)	Cholesterol (mg)	Sodium (mg)	Carbs (g)	Fiber (g)	Sugars (g)	Protein (g)	Peanut / Peanut Oil	Gluten/Wheat	Soy	Milk	Eggs	Fish/Shellfish	Corn (or corn derivatives)	High Fructose Corn Syrup	Sesame
MEAT																					
Bacon (2 pieces)	14	88	88	7	3	0	15	280	0	0	0	4									
Hamburger Patty	94	292	180	17	8	1	60	50	0	0	0	16									
Hot Dog	88	280	225	28	12	1	50	800	1	0	0	11									
BUN																					
Bun	77	240	80	8	3.5	0	5	280	38	2	0	7									
FRIES - COOKED IN 100% PEANUT OIL																					
Little	227	525	204	23	4	0	0	531	72	8	2	8									

Our Discovery



The Market

25 mil+

US Adults with Food Allergies

Not including the 5.6 million children with food allergies under the age 18.

85 mil+

Shoppers avoiding major food allergens

The group of people in the United States who avoid major allergens in food is much larger than just those who are allergic.

66%

Shoppers who repurchase from the same brand

Consumers of allergy-friendly food products are extremely loyal, presenting opportunities for brands looking to win large share of high value consumers.



User Persona

Allergic Ashley

Role: End User

Bio: I was born allergic to nuts and I need to be careful to avoid them. I want to be able to easily identify what menu items contain nuts while still enjoying ordering from my favorite restaurants.

Needs: To avoid things they are allergic to

Desires: An efficient way to know if foods contain allergens

Struggles: Asking about allergens and ordering the wrong things by accident



User Persona

Busy Brad

Role: Brand Menu Representative

Bio: I'm the menu rep for a national restaurant chain and I need to label allergens for my products. I want to be able to easily tag my menu items on a category level and product level.

Needs: Quick way to designate certain allergens of a product

Desires: Happy, healthy customers that trust the menus to support their dietary needs

Struggles: Operational overhead and time spent on managing their menu

Consumer Usertesting Surveys

65%

Stopped an Order due to lack of information

Customers want as much information about what ingredients their order consists of as possible.

80%

Spend “a lot of time” looking at ingredients

Customers on average spend between 5 and 10 minutes looking at ingredients in the menu items.

90%

Had ordered something that didn't meet their needs

Most customers have at some point mistakenly ordered something that they could not eat.

“

Finding food that fits to my dietary needs can be very hard. I usually have to call the restaurant and ask if it's safe.

Survey Respondent

Brand Interviews

- **2 brand interviews**
 - Graeter
 - Amy's
- Brands are generally **very interested** in a menu filtering feature
 - Brands gave a 4 and a 5 out of 5 for their level of interest
- Online menus do offer customization options
 - Different versions of menu items based on dietary restrictions
 - Harder to communicate customization options being online

Desired filters:

Allergy: Gluten, Dairy, Nuts

Dietary: Vegetarian, Vegan

Our Hypothesis

We believe if Serve brands use an allergen tagging/filtering feature, they will achieve an **increase of revenue and sustainable growth** with brands and customers that often struggle with specific dietary restrictions.

How do we define success?

OKRs

Objective:

- Create a MVP version of allergen filtering and tagging for Serve brands

Key Results:

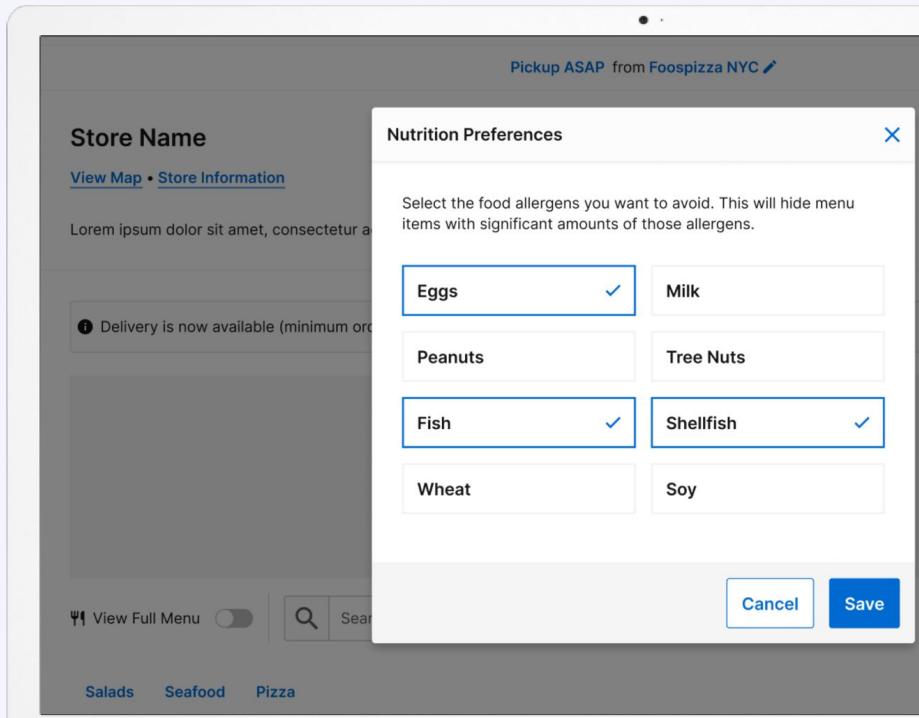
- Present Demo to the Olo team
- Improve online ordering for users with the food allergies/dietary specifications
- Improve time spent on managing menus

Metrics

- **20%** increase of brand managers interacting with new allergy tagging in menu admin
- **.5%** increase in conversion rates for brands with products using allergy tagging
- **30%** of brands adopt the feature within 6 months of launch
- **Corporate Brands** and **Olo Staff** can measure how this functionality is being used

Design

- Filter out menu items
- Adhere to current designs
- Future-proofing



LoFi Concept (Menu Admin)

Chips, Dips & Sides

Drinks

Desserts

Add a Donation

Utensils

TEST Category

TEST Category

Edit Category

Chicken Queso Bowl Signature Deal (choice)
Aloha none

Create-Your-Own Burrito
Aloha none

Chicken Queso Burrito (Signature Deal)
Aloha none

Complete Your Meal with Bottled Drink
Aloha item 208302

Complete Your Meal with Regular Fountain Drink
Aloha item 208301

Complete Your Meal with Large Fountain Drink
Aloha item 208303

3-Cheese Nachos
Aloha none

(Previous) Breakfast

(Previous) New & Seasonal

(Previous) Great For Groups

(Previous) Signature Eats

(Previous) Create Your Own Entrée

Public Name: (Required)

Internal Name: (Optional)

Description:

Allergens: Select all

All products contain:

Eggs Shellfish
 Fish Soy
 Milk Tree nuts
 Peanuts Wheat

Alcohol Status:

Make Time Calculation:

Prep Time Needed to Make (Minutes):

1 Product (required)

Save

Chips, Dips & Sides

Drinks

Desserts

Add a Donation

Utensils

TEST Category

TEST Category

Edit Category

Chicken Queso Bowl Signature Deal (choice)
Aloha none

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Chicken Queso Burrito (Signature Deal)
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(Previous) Breakfast

(Previous) New & Seasonal

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(Previous) Signature Eats

(Previous) Create Your Own Entrée

Public Name: (Required)

Internal Name: (Optional)

Description:

Allergens: Select all

All products contain:

Eggs Shellfish
 Fish Milk
 Milk Peanuts
 Peanuts Shellfish
 Soy Tree nuts
 Tree nuts Wheat

Alcohol Status:

Make Time Calculation:

Save

LoFi Concept (Serve)

A wireframe of a mobile application interface. At the top is a navigation bar with three icons. Below it is a sidebar menu titled "Nutrition Preferences" with the following items:

- Egg Allergy-Friendly
- Fish Allergy-Friendly
- Milk Allergy-Friendly
- Peanut Allergy-Friendly
- Shellfish Allergy-Friendly
- Soy Allergy-Friendly
- Tree Nut Allergy-Friendly

Below the sidebar is a "View All" button.

The main content area displays a list of food items:

Product Title	Calories
Greek Salad	\$4.99 950 Calories
Product	\$4.99

Each item has a brief description below it.

Allergy-Friendly

Egg Allergy-Friendly

Product Title	Calories
Product Title	\$4.99 950 Calories
Product Title	\$4.99 950 Calories

Nut Allergy-Friendly

Product Title	Calories
Product Title	\$4.99 950 Calories
Product Title	\$4.99 950 Calories

A screenshot of a mobile application's nutrition preferences screen for Portillo's. The header says "Portillo's HOT DOGS-BEER-BURGERS-SALADS". The section title is "Nutritional Preferences" with the subtitle "Select allergens (foods that you do not want to eat)".

The allergen selection list includes:

- Milk (checked)
- Eggs
- Fish (checked)
- Crustacean Shellfish
- Tree Nuts (checked)
- Peanuts
- Wheat
- Soybeans

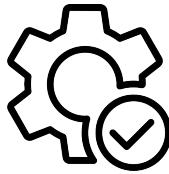
At the bottom right are "Save" and "Double Cheeseburger" buttons.

Implementation

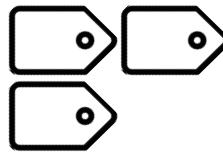


User Flow

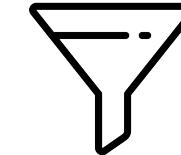
Brand requests feature



Feature is enabled in
Olo Admin



Tags are set in
Menu Admin



Filtering option
becomes visible in
Serve

Enable Dietary Tagging Setting

Admin ↔ Database

dbo.Channel

```
+-- [EnableProductFiltering] [bit] NOT NULL CONSTRAINT [DF_Channel_EnableProductFiltering] DEFAULT ((0))  
• 178 [EnableProductFiltering] [bit] NOT NULL CONSTRAINT [DF_Channel_EnableProductFiltering] DEFAULT ((0))
```

Channel Info Ordering Experience Latest Billing Transactions Latest Loyalty Transactions Data History

Serve Settings

Parent Site URL (Corporate Site)

Linked on Serve header/footer. Example: <https://brand.com>

Default to Guest Ordering

 No

Show Participating Restaurants

 Yes

Show Telephone Numbers

 Yes

Enable Dietary Filtering

 Yes

Show Social Integration

 Yes

Enable Dietary Tagging Setting

Menu Admin

Not Enabled

Edit Product

Food aggregators apps and websites

Enabling this will allow EOPs to display this item on their marketplaces. Changes may not be reflected immediately. For immediate changes, contact your EOP representative.

Handoff Modes: (Required)

- CounterPickup (78/78 enabled vendors)
- CurbsidePickup (78/78 enabled vendors)
- Delivery (78/78 enabled vendors)
- DriveThru (78/78 enabled vendors)
- Dispatch (78/78 enabled vendors)
- DineIn (0/78 enabled vendors)

Base Calories:

Max Calories:

Use '/' instead of '-' for range

Consolidate Modifiers on Quantity

Unit Of Capacity (Number):

- sack
- hackeysack

Cancel **Save**

Enabled

Edit Product

Handoff Modes: (Required) 

- CounterPickup (78/78 enabled vendors)
- CurbsidePickup (78/78 enabled vendors)
- Delivery (78/78 enabled vendors)
- DriveThru (78/78 enabled vendors)
- Dispatch (78/78 enabled vendors)
- DineIn (0/78 enabled vendors)

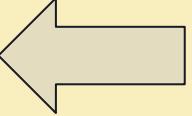
Dietary Filtering:

- Eggs
- Fish
- Milk
- Peanuts
- Shellfish
- Soy
- TreeNuts
- Wheat

Base Calories:

Max Calories:

Cancel **Save**



Serve

Not Enabled

View Rewards

 **View Full Menu** 

 **Search the menu**

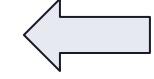
Test Category 0 Test Category 1 Delivery Unavailable

Enabled

View Rewards

 **View Full Menu** 

 **Search the menu**

 **Nutrition Preferences** 

Test Category 0 Test Category 1 Delivery Unavailable

Enable Dietary Tagging Setting - Demo

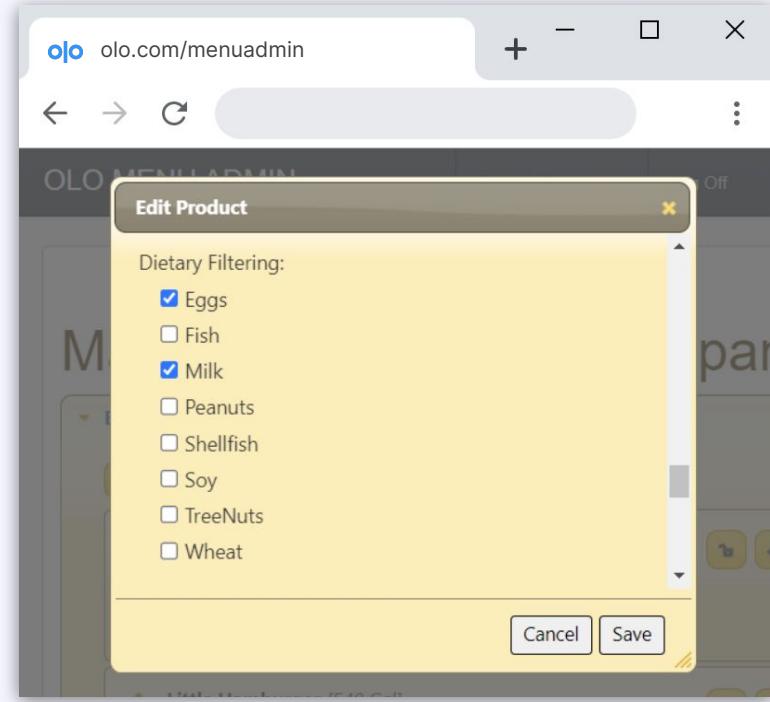


Tags are set in Menu Admin

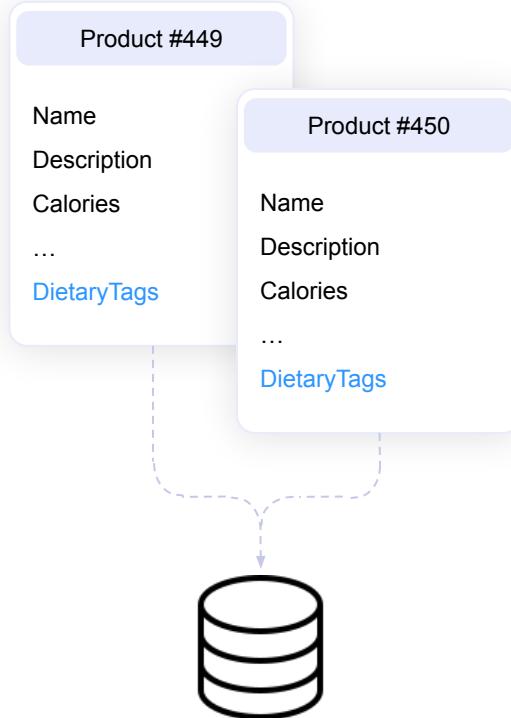


Choosing Tags

The brand's menu administrator goes through each product in Menu Admin and checks off the appropriate tags



Saving Tags



Saving

On 'Save,' the tags are bundled together as a bit field and saved directly to the product database



Fetching

On subsequent loads, the tags are fetched from the database, unpacked, and displayed as checked or unchecked according to each's current setting

Choosing & Saving Tags - Demo

The screenshot shows the 'OLO MENU ADMIN' interface. At the top, there is a dark header bar with the text 'OLO MENU ADMIN' on the left, and 'Back to Dashboard' and 'Log Off' on the right. Below the header is a white content area titled 'Manage "Five Guys" Company Menu'. At the top of this area are two buttons: a grey 'Notes' button and a yellow 'Add Notes' button with a checkmark icon. A horizontal scroll bar is visible on the right side of the content area. On the left, there is a vertical list of menu categories, each preceded by a blue triangle icon:

- ▶ Burgers
- ▶ Hot Dogs
- ▶ Sandwiches
- ▶ Breakfast
- ▶ Fries (Canada)
- ▶ Fries
- ▶ Drinks (Canada)
- ▶ Drinks
- ▶ Shakes
- ▶ Drinks (Delivery, NY Only)
- ▶ Held Items
- ▶ Disability Options (Test)

Filtering in Serve

Design

The diagram illustrates the 'Nutrition Preferences' modal dialog, which allows users to select food allergens to avoid. The dialog has a header with a close button (X), a descriptive message, a grid of allergen options, and a footer with 'Cancel' and 'Save' buttons.

Initial State: The 'Nutrition Preferences' button is highlighted. The modal shows a grid of eight allergen options: Eggs, Milk, Peanuts, Tree Nuts, Fish, Shellfish, Wheat, and Soy. The 'Save' button is black.

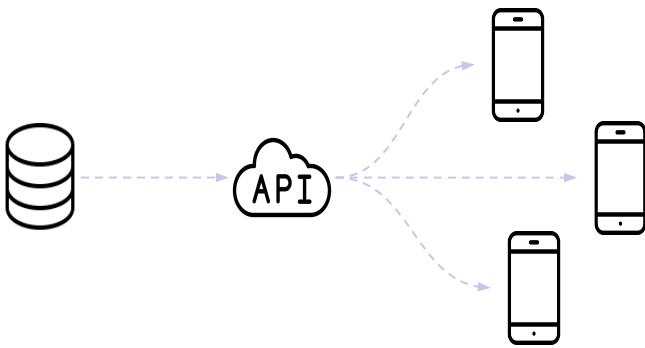
Eggs	Milk
Peanuts	Tree Nuts
Fish	Shellfish
Wheat	Soy

Selected State: The 'Peanuts' and 'Tree Nuts' checkboxes are selected (indicated by a blue border and a checked icon). The 'Save' button is now white with a black outline.

Eggs	Milk ✓
Peanuts ✓	Tree Nuts ✓
Fish	Shellfish
Wheat	Soy

Filtering in Serve

Logic



Screenshot of a browser developer tools Network tab showing a POST request to '/api/orders'. The 'Payload' tab is selected, displaying the following JSON data:

```
name: "Five Guys"
settings: {advanceOrderDays: 7, basicOrderDays: 7, allowUserFeedback: true, enableGooglePlacesApi: false, enableProductFiltering: true, facebookAppId: null, facebookOrderAppId: null}
```

A red arrow points to the 'enableProductFiltering: true' field in the JSON payload.

Burgers (1-4 of 8)

Hamburger

\$9.59 | 840 Calories

Fresh, hand-formed patties hot off the grill and placed on a soft, toa...

Little Hamburger

\$7.59 | 540 Calories

Fresh, hand-formed patty hot off the grill. Add as many toppings as yo...

Cheeseburger

\$10.49 | 980 Calories

American-style cheese melted between fresh patties and placed on a sof...

Little Cheeseburger

\$8.49 | 610 Calories

Fresh, hand-formed patty hot off the grill with American-style cheese...

[View All](#)

Bacon Burger

\$10.59 | 920 C

Hand-formed p...
the grill, layered...
crispy a...

Nutrition Preferences

Select the food allergens you want to avoid. This will hide menu items with significant amounts of those allergens.

 Eggs Milk Peanuts Tree Nuts

Burgers (1-4 of 4)

Hamburger

\$9.59 | 840 Calories

Fresh, hand-formed patties hot off the grill and placed on a soft, toa...

Little Hamburger

\$7.59 | 540 Calories

Fresh, hand-formed patty hot off the grill. Add as many toppings as yo...

Bacon Burger

\$10.59 | 920 Calories

Hand-formed patties hot off the grill, layered with strips of crispy a...

Little Bacon Burger

\$8.59 | 620 Calories

Fresh, hand-formed patty hot off the grill with strips of crispy apple...

[View All](#)

Serve Filtering Demo

The screenshot shows a user interface for a food service application. At the top, there is a navigation bar with a home icon, a sign-in link, and a shopping cart icon. Below the navigation bar, there are several search and filter options: a "View Full Menu" button with a toggle switch, a search bar with a magnifying glass icon, a "Nutrition Preferences" button with a gear icon, and a category navigation bar with links for Burgers, Hot Dogs, Sandwiches, Fries, Drinks, Shakes, and Special Assistance Required. The "Burgers" link is underlined, indicating it is the active category. Below the category bar, there is a section titled "Burgers (1-4 of 8)" with a "View All" link. Five burger items are listed in a grid:

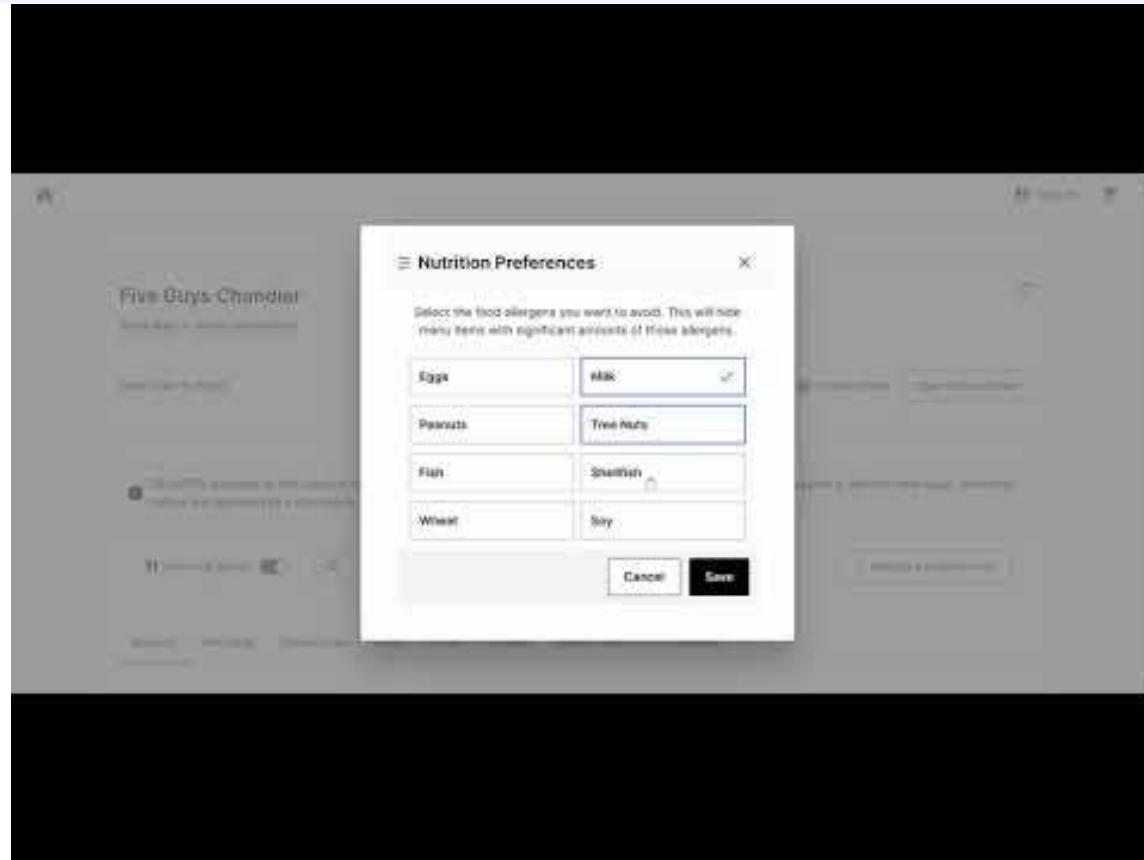
Hamburger	Little Hamburger	Cheeseburger	Little Cheesburger	Bacon Burger
\$9.59 840 Calories Fresh, hand-formed patties hot off the grill and placed on a soft, toa...	\$7.59 540 Calories Fresh, hand-formed patty hot off the grill. Add as many toppings as yo...	\$10.49 980 Calories American-style cheese melted between fresh patties and placed on a sof...	\$8.49 610 Calories Fresh, hand-formed patty hot off the grill with American-style cheese...	\$10.59 920 C Hand-formed p the grill, layere... crispy a...

Below the burger section, there is another section titled "Hot Dogs (1-4 of 4)" with a "View All" link. Four hot dog items are listed in a grid:

Hot Dog	Bacon Dog	Cheese Dog	Bacon Cheese Dog

Dietary Filtering in Action!

Demo

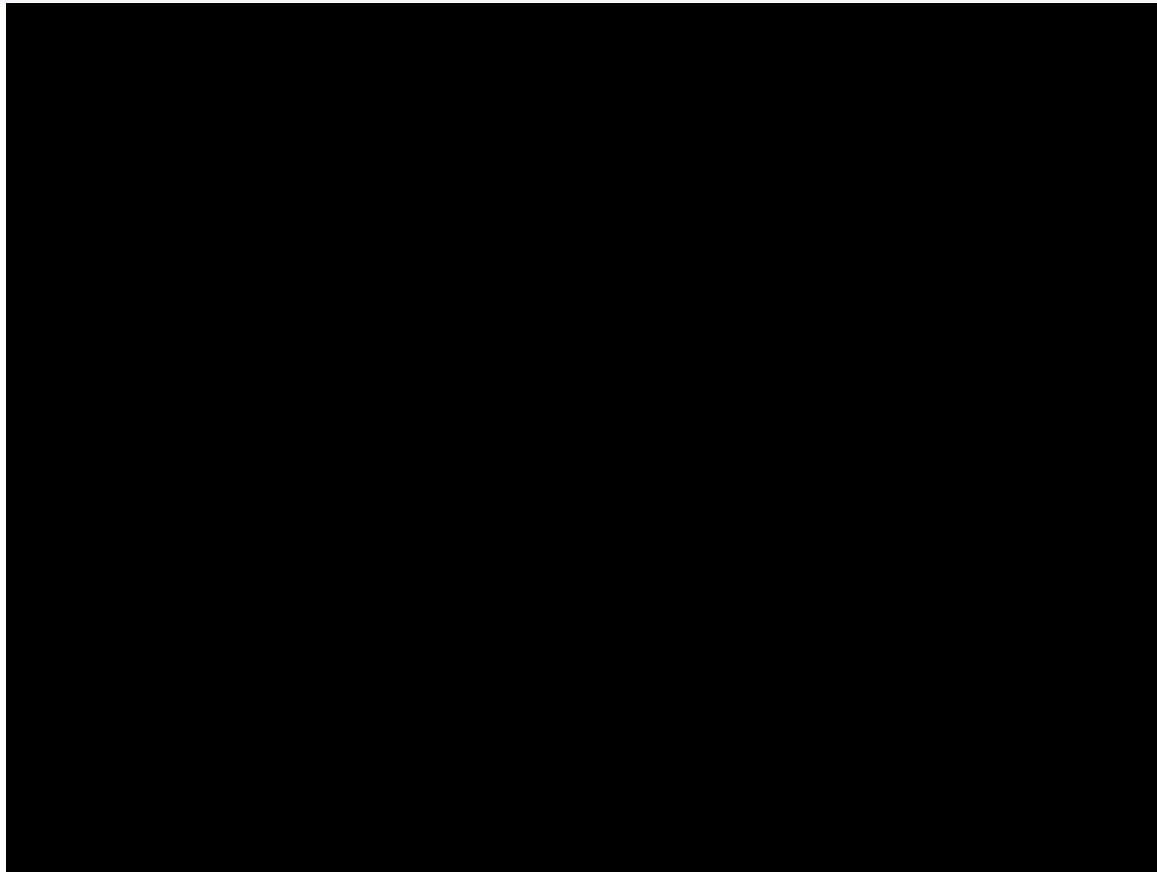


Next Steps



Next Steps

HiFi Design Concept (Menu Admin)



Next Steps

HiFi Design Concept (Serve)

The image shows a wireframe of a mobile application interface. On the left, there is a large black rectangular area, likely representing a placeholder for a main content view or a specific section of the app. To the right of this black area is a white sidebar or header section.

Header: At the top of the white section, it says "from Foospizza NYC" followed by a pencil icon. There is also a heart icon on the far right.

Section Headers: Below the header, there are two main sections: "Store Name" and "View Map • Store Information".

Text Content: A placeholder text "Lorem ipsum dolor sit amet, consectetur adipiscing elit," is displayed below the store name.

Information Box: A box contains a message: "Delivery is now available (minimum order size is \$10). Use code 'SAVE10' for 10% off any order." It includes an information icon (a circle with an 'i') and a toggle switch.

Buttons and Links: There is a "View Full Menu" button with a magnifying glass icon and a search bar labeled "Search the menu". Below these is a "Nutrition Preferences" button with a fork and knife icon.

Category Tabs: At the bottom, there are three tabs: "Salad" (underlined), "Seafood", and "Pizza".

Image Placeholder: At the very bottom, there is a placeholder box containing a small graphic of a mountain and a sun.

Next Steps

Engineering Changes

1. Clean code
2. Design changes
3. Don't go live with modal on serve until tags are added by the brand
4. Enable bulk tagging
 - a. Important for ease of use, especially for initial tagging
 - b. Via category level tags, spreadsheet-style interface
5. Enable brands to choose tags
6. Filter product modifiers

Next Steps

Testing

- New tag of Serve users who have dietary preferences
- Use Mixpanel to help identify regular consumers from users with allergies

Feature Flag: "A/B Test for Allergen Tagging/Filtering Concept"

Variation 1: Experiment

- a. Concept displays nutritional preferences button and all menu items are filtered for a user's allergies.

Variation 2: Control

- b. Concept displays all menu items and filtering capabilities are not displayed.

Deployment plan:

- On serve, 50% Experiment, 50% Control

Getting Results:

- LaunchDarkly experiments for "Conversion rates" and "# of filtered menu items clicked"

Overall Impact

Overall Impact

- Olo
 - Drawing in brands that want to better support customers with dietary restrictions
- Restaurants/Brands
 - Decrease liability issues and gain loyalty from customers with allergies.
- Customers
 - Safety and efficiency with ordering is a priority for customers with dietary restrictions

Reflections

What we learned

Collaborating as a team
Collaborating cross-functionally
Learning new tools and experiences

Communication
Team building skills
Working with constraints, especially time

Engineering a feature across the ecosystem

Challenges

Localdev setup
not enough time to put more features
Blockers

Not a huge understanding of the Olo code base
ODE not behaving
Time conflicts

Changing scope
Amount of time to work on the project
Time constraints meant dropping a number of best practices

Shout outs!

Anna Ferrato for menu feedback
Designers - Tino, Jing, Swathi, Sarah
Ted and Evelyn from the menus team

Our intern Sol and eng-menu-help
Nix may
COIN team (for their ODE)

All the interns for working so hard
Tamar Kornblum
Our PM intern Yadira!

Wallace, Nate, and Max
The amazing capstone engineering team



Thank you!