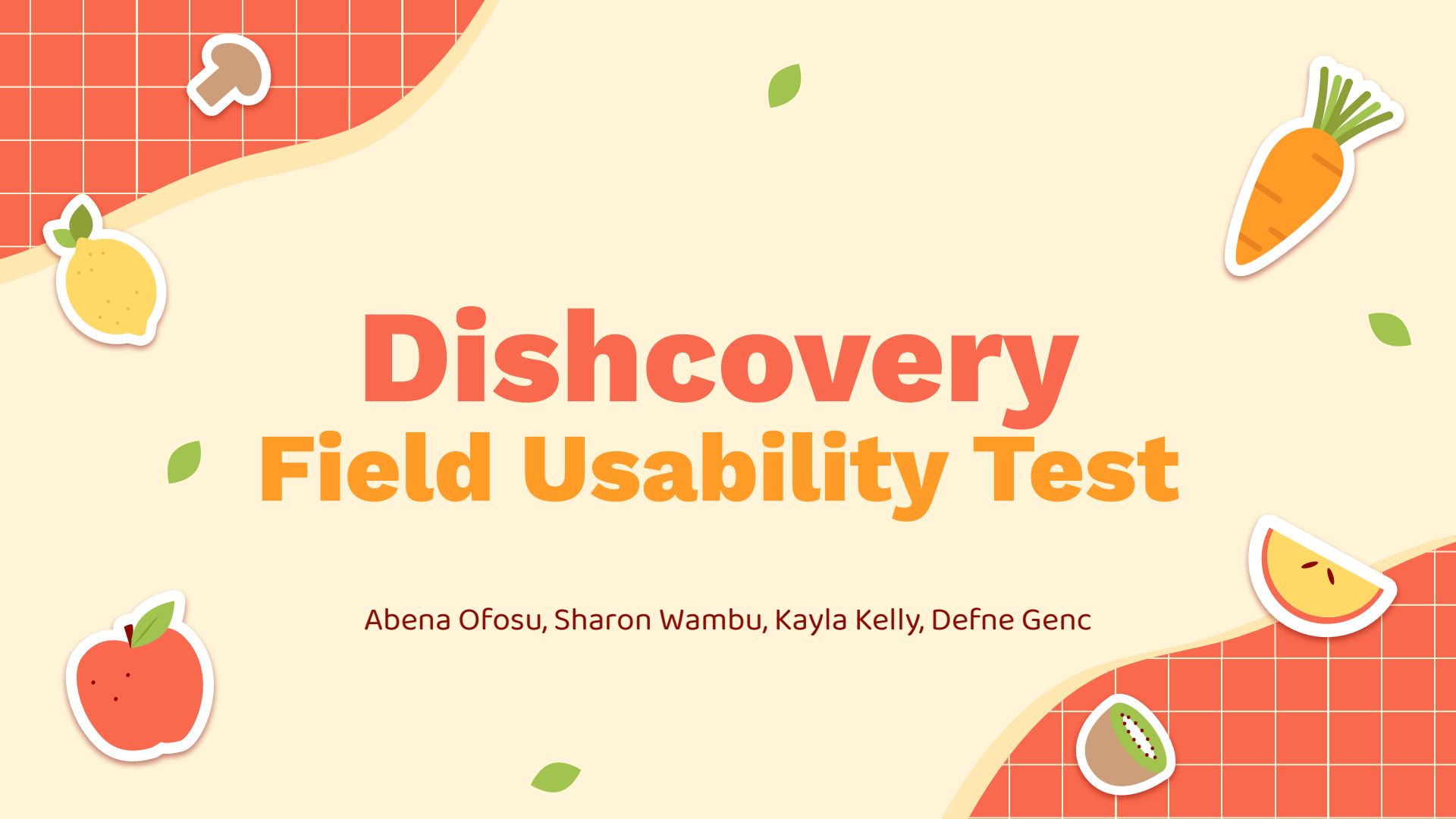


The background is a light yellow color with a red grid pattern in the top-left and bottom-right corners. Various food items are scattered around: a brown mushroom in the top-left, a yellow lemon with a green leaf on the left, a whole red apple with a green leaf in the bottom-left, a slice of orange in the bottom-right, and a kiwi slice in the bottom-right. There are also several small green leaves floating in the center.

Dishcovery **Field Usability Test**

Abena Ofosu, Sharon Wambu, Kayla Kelly, Defne Genc

Our Dishcoverers

Defne



Dish of choice:



Sharon



Dish of choice:



Abena



Dish of choice:



Kayla



Dish of choice:





Presentation Outline

01

Introduction

Purpose of experiment and evaluation

02

Methodology

How we conducted our tests.

03

Results

The data we collected.

04

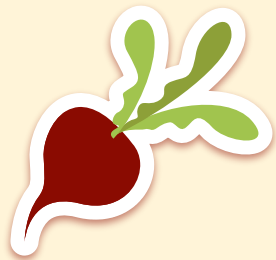
Discussion

Making sense of our results.

05

Future Trajectory

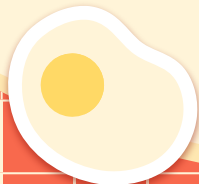
What we want to improve and implement.

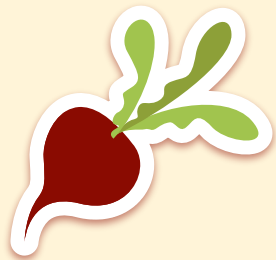


01

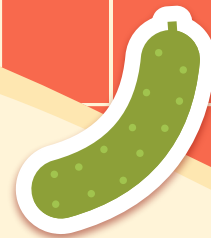


Introduction





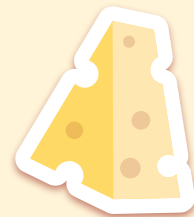
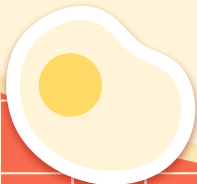
Our System



Dishcovery provided one authentic recipe, making it easier for our users to actually start cooking.

In this experiment, we evaluated the ease of performing our complex task since we were unable to measure in our lab usability.

We also measured the effectiveness of the onboarding in setting the user up to use our app.





Implementation changes



Onboarding

Making sure that users know the purpose of the app and can create an account.



Recipe cards

Altered the look of the discard to have a shadow overlay for better readability



Database

Made a Firebase and populated with authentic recipes that fit our new design specifications.

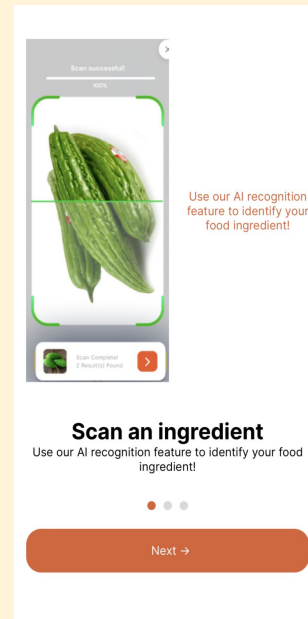
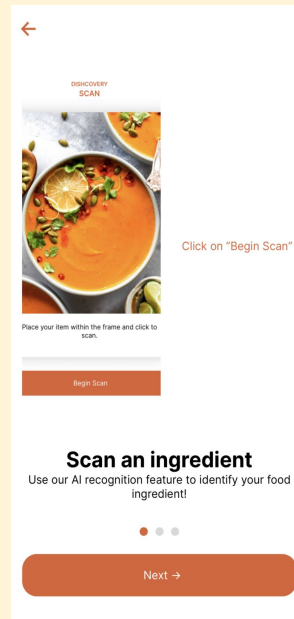


Implementation changes



Onboarding

Making sure that users know the purpose of the app and can create an account.





Implementation changes



Onboarding

Making sure that users know the purpose of the app and can create an account.

The image displays three sequential mobile app screens for account creation, each with a back arrow in the top left corner.

- Screen 1: Account Information**
Subtitle: Let's create your unique login.
Fields:
 - Username: E.g. dishlover123...
 - Email: E.g. dishlover@dish.com
 - Password: Enter your password here.
 - Confirm Password: Enter your password here.Bottom button: Next →
- Screen 2: Account Information**
Subtitle: Let's create your unique login.
Field: Upload profile picture (button)
Bottom button: Next →
- Screen 3: Account Information**
Subtitle: Let's create your unique login.
Field: Profile picture (image of purple flowers)
Field: Edit profile picture (button)
Field: Your name: E.g. James
Bottom button: Next →



Implementation changes



Onboarding

Including clickable dietary preferences

Looking Good !



Do you have any dietary preferences?

Animal Products

☒ Vegan ☐ Vegetarian ☐ Pescetarian ☐ Flexitarian

☐ No Red Meat ☐ Dairy Free

Allergies & Sensitivities

☒ Gluten ☒ Dairy ☒ Lactose ☐ Shellfish ☐ Peanuts

☐ Soy ☐ Fish

Next →

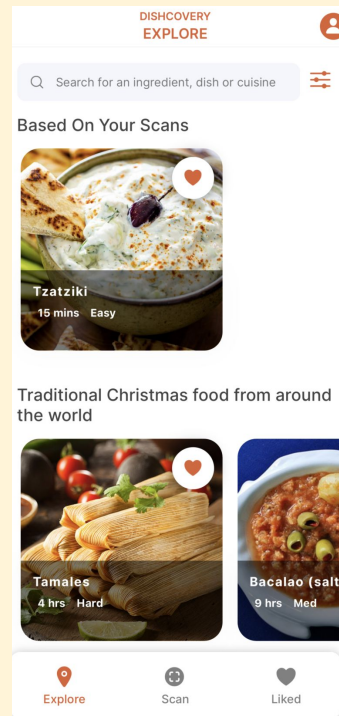


Implementation changes



Recipe cards

Altered the look of the discard to have a shadow overlay for better readability



 **Firebase**

Project Overview

Project shortcuts

Firestore Database

Hosting

Realtime Database

Storage

App Distribution

Authentication

Product categories

Build

Release & Monitor

Analytics

Engage

Spark

No-cost \$0/month

Upgrade

Dishcovery

Authentication

Go to docs

S

testforji@test.com		Feb 21, 2023	Feb 21, 2023	uNn0H6d1vxXGGFdG3gTNUXjnB...
karinakli1023@gmail.com		Feb 21, 2023	Feb 21, 2023	mEynvEPppVMqTYNn3ZdxlY3jTL23
working@working.com		Feb 15, 2023	Feb 15, 2023	MwFMuRYOXVYo8lz6iZV7qgZkL...
testing@123.com		Feb 14, 2023	Feb 14, 2023	Rb19HBWQvHUW3VKWnnWYqJJs...
fix2@test.com		Feb 14, 2023	Feb 14, 2023	imJHQwK8KqflJAv6nRmxt9XQ01q1
fix@test.com		Feb 14, 2023	Feb 14, 2023	LYelHn9X8cMDt1vuNB8tqPDRATd2
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yummyum2@gmail.com		Feb 14, 2023	Feb 14, 2023	TNeH9gBV0RV9QfZO7vgmTtICF0...
dishlover@dish.com		Feb 14, 2023	Feb 14, 2023	xLDpEe6vx5VzkD2AqP2dcP68Dsu1
yipee@yes.com		Feb 14, 2023	Feb 14, 2023	ikZ8pQxcNbe8O9teQbyn6hDdNKG3
yes@yes.com		Feb 14, 2023	Feb 14, 2023	IB5bNiCfaHTflc2oMUGHozbggmc2

Rows per page: 50 1 – 15 of 15

Firestore Authentication

Dishcovery Recipes Pre-Firebase ☆ 📌 ☁

File Edit View Insert Format Tools Extensions Help Last edit was yesterday at 4:31 PM

100% Heading 3 Space Grot... - 10 + B I U A

←

Labbouien

Mtabbal Batenjen

Syrian Hummus

Warak Enab

Koussa w Batenjen

Dum Aloo

Greek Salad

Tom Yum Soup

Katsu Curry

Melomakarona

Kisir

Sakizli Muhallebi

Turkish Coffee

Mapo Tofu

Lamb Gyro

(Here I have what categories it's in)
Region: Mediterranean

(This is displayed on the Dishcard but not the actual recipe page)
Country/Region: Greece
Time: 40 min

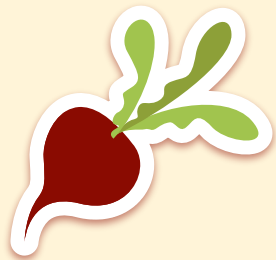
Ingredients:

2 lbs. lamb leg, trimmed of excess fat and sliced into thin strips
1/4 cup olive oil
1/4 cup red wine vinegar
3 cloves garlic, minced
1 tbsp dried oregano
Salt and pepper to taste
Pita bread
Tzatziki sauce (store-bought or homemade)
Sliced tomatoes and onions for serving

Instructions:

In a large bowl, whisk together the olive oil, red wine vinegar, garlic, oregano, salt, and pepper.
Add the sliced lamb to the bowl and toss to coat in the marinade. Cover and refrigerate for at least 2 hours, or overnight for best results.
Preheat your oven to 375°F. Line a baking sheet with parchment paper or aluminum foil.
Remove the lamb from the marinade and place the slices on the prepared baking sheet. Roast in

Curating recipes pre-Firebase

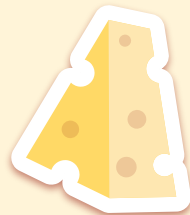
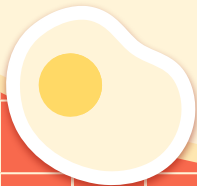


Curating recipes with Firebase



We crowdsourced authentic recipes through a Google form.

The crowdsourced recipes were added to our collections on Firebase.



dishcovery-c3a94

+ Start collection

Chiles en Nogada

Accounts

Defne

Recipes



UserAccounts

users

Recipes



+ Add document

Bacalao (Salted Fish)

Bitter Gourd Sambol

Canh Kho Qua (Bitter Melon Soup)

Chiles en Nogada



Ginisang Ampalaya (Sauteed Bitter Melon)

Gutti Kakarakaya (Stuffed Bitter Melon)

Japanese Christmas KFC

Melomakarona

Tamales

wIrBRGDwaP8HQE0zI628

Chiles en Nogada



+ Start collection

+ Add field

Context: "(example from New York times) Considered by many to be the national dish of Mexico, chiles en nogada showcases the colors of the country's flag: green, white and red. Created by nuns in Puebla in 1821, the dish was presented to the general of the Mexican Army, Agustín de Iturbide, after he signed the treaty that recognized Mexico's independence from Spain. The nuns used the best of the late-season harvest in the dish, including poblano chiles, peaches, pears, apples and walnuts grown in farms near Puebla. The original dish was stuffed, battered and fried, and significantly heartier than this version. Here, fresh poblanos are fried until lightly cooked, peeled, stuffed, topped with creamy walnut sauce, then eaten at room temperature. It's served throughout the country every September, in honor of Mexico's Independence Day."

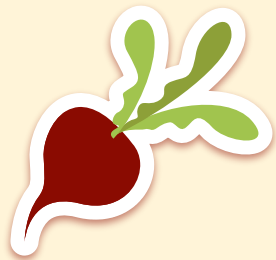
Difficulty: "Med"

Ingredients: "For the Picadillo 2 tablespoons olive oil 1 pound ground pork, preferably not lean 1 medium white onion, chopped ½ sweet, tart apple (such as Winesap or Pink Lady), peeled, cored and chopped ¼ firm sweet pear (such as

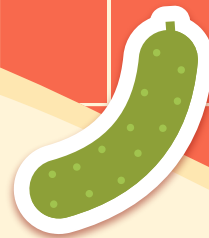


 dishcovery-c3a94	 Defne  	 Regions 
+ Start collection	+ Add document	+ Start collection
Accounts	Events	American
Defne >	Regions >	Caribbean
Recipes		Central America
UserAccounts		Central Asia
users		+ Add field
		<i>This document has no data</i>

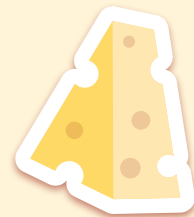
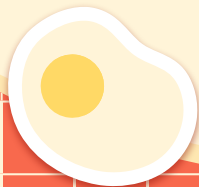
Next steps



02

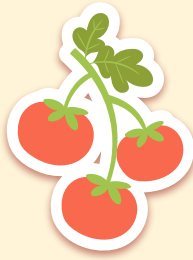


Methodology





We interviewed participants who varied in...



**Experience
cooking food.**



**Cultural
background.**



**Comfort levels
with cultural
cooking.**



Recruitment

Word of mouth

We made use of our social networks to recruit participants.





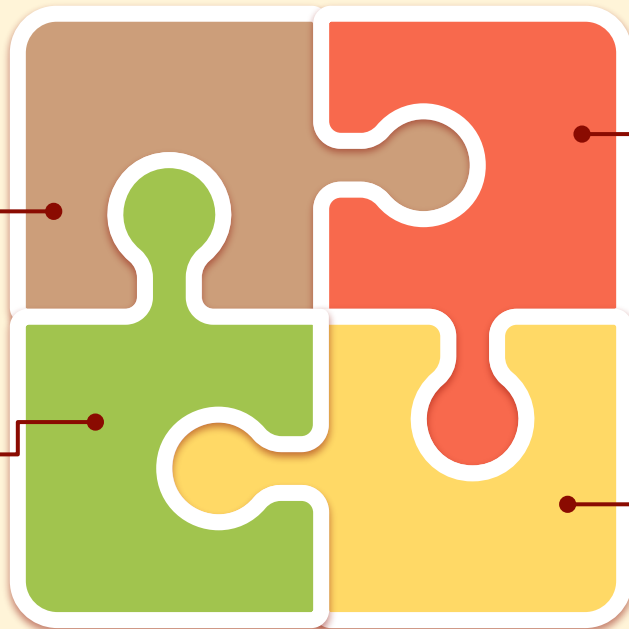
Overview of participant profiles

Non-student

"Regular Joe" that mostly eats out/ uses delivery services but sometimes cooks for themselves

Undergraduate

Who doesn't cook often but wants to try more recipes. Who enjoys cultural cooking.



Undergraduate

International student from Greece who cooks for himself in his co-op.

PhD/Instructor

A Pittsburgh local, Caitlin cooks for herself every day in EVGR-B.

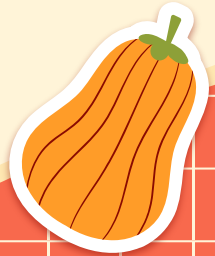
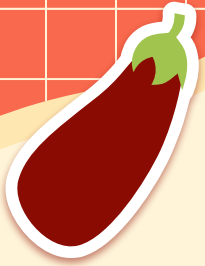


Testing methods.



Cooking test in the field

All of our participants had the chance to cook using Dishcovery!



Testing method.

We used a single recipe and the same onboarding process, introducing more **uniformity** to this testing process.

We had participants go through the onboarding process before cooking using the recipe on the explore page.

We had all participants prepare **tzatziki**, a dish so common and popular in Greece that Greeks describe it as “their ketchup”.



Methods of compensation



Food/Ingredients

Providing ingredients for them to cook with.

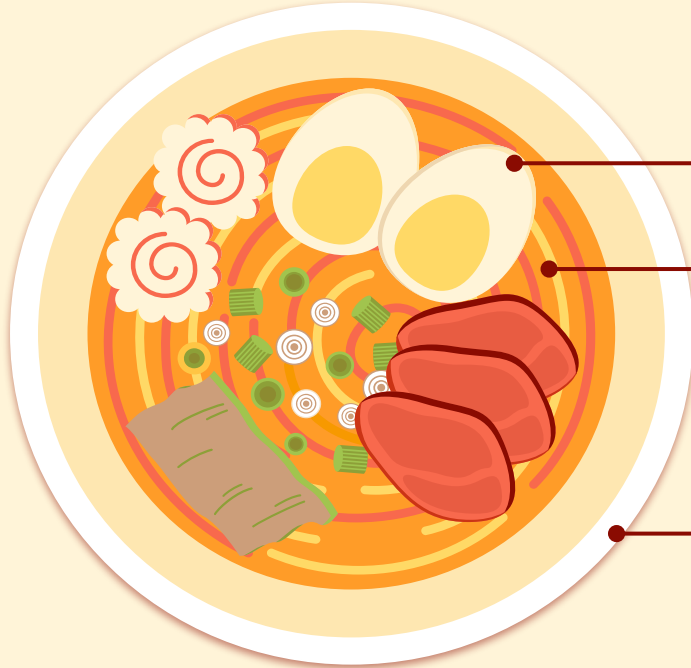


Gift cards.

To incentivise those who wouldn't be as encouraged with only ingredients.



Recap of our Task Flows



1

Search

For an unfamiliar food item through scanning.

2

Contextualise

Using the information provided in the app.

3

Authentic Cooking

Through recipes the user finds and/or saves.



Focus of this experiment

Since we're doing a field test and previously focused on the scanning aspect, in this test, we mainly focused on:

1. Task 3: **Culturally authentic cooking**
 - a. Viewing recipe
 - b. Going back and forth between context, ingredients, and instructions
 - c. Finding the recipe from the explore page.
2. New task flow! **Onboarding**
 - a. Choosing dietary preferences
 - b. Creating an account
 - c. Uploading a profile picture
 - d. Viewing the app tutorial

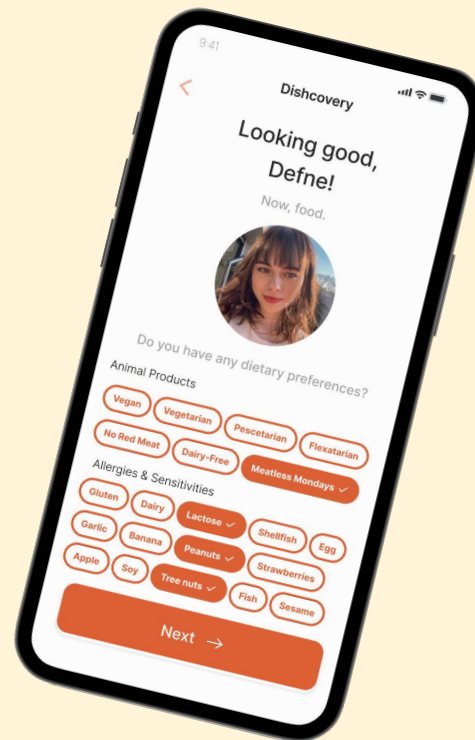
Onboarding

We were looking to learn:

1. Is the onboarding process intuitive?
2. Are users confused by any of the information asked of them?
3. Do they interact with the UI easily and complete onboarding quickly?

We measured:

1. How long onboarding took from start to finish.
2. # of questions or mistakes



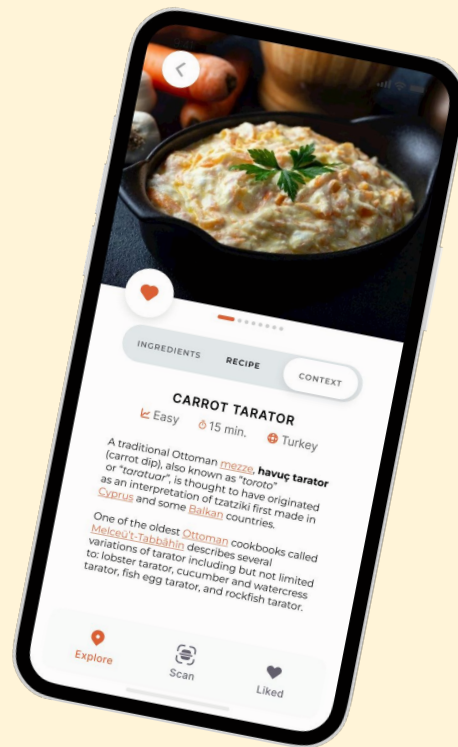
Cooking using the app.

We were looking to learn:

1. What part of the cooking process is difficult or intuitive?
2. Do users have trouble navigating the recipe pages?
3. Do they seem curious about the information presented to them?

We measured:

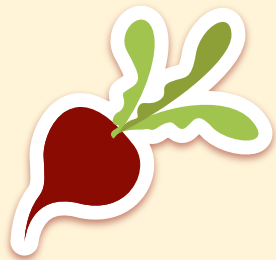
1. How long the task of reading through the recipe took.
2. How many times they made mistakes in the process.
3. % match between stated recipe time and how long it took them to prepare



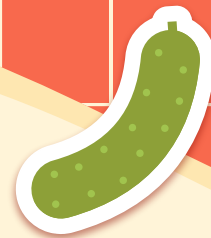


Procedure

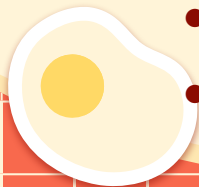
1. Have users complete their onboarding.
2. When on the recipe screen of the app, ask them:
 - a. **Based on your initial reactions, what do you think you're able to do on with the recipe?**
3. Time how long each task took as well as how many mistakes participants made, and in which task.
4. Ask our questions and allow them to ask us more about the app.
 - a. E.g. what information did you enjoy seeing? What else would you like to see?



Materials & Apparatus



- Tzatziki ingredients: cucumber, garlic, olive oil, red wine vinegar, dill, salt, pepper, Greek yoghurt.
- Cooking utensils.
- VSCode for implementation updates.
- iPhone timer to measure the length of each task.
- Otter.ai(for transcription) and Apple VoiceNotes
- Firebase for populating the backend.
- Expo Go.



Location



Residence of participants

The Dishcovery team traveled to each participant's place of residence for the study.

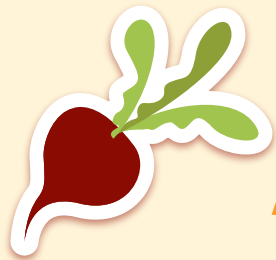


Cooking test with Terrence.

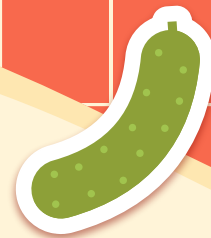
A working class man who doesn't like to cook for himself unless he is tired of/burned out with the local options.

Terrence wants to cook more at home to save money but only knows basic recipes which leads to him ordering out.

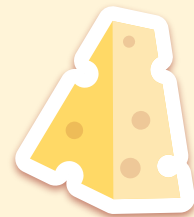
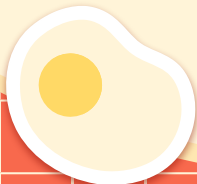




About Terrence



- 24 years old
- Lives alone, where he cooks for himself periodically
- Rates his cooking skills a 6/10
- "Average home cook, but rarely tries new things."



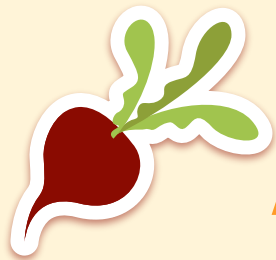


Cooking test with Caitlin.

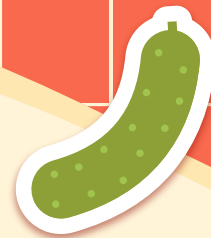
Works at the Stanford Philosophy Dept & GSE, enjoys cooking herself comfort meals.

Caitlin cares a lot about uniting friends and family through cooking, and prides herself on her vegetarian chili.

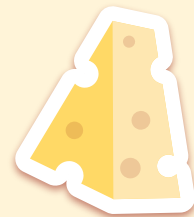
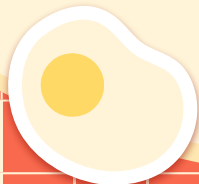




About Caitlin



- 30 years old
- Works in the Philosophy department and the Graduate School of Education.
- Lives in EVGR-B, where she cooks for herself in her studio.
- Rates her cooking skills a 7.5/10
- "Above average home cook, but I struggle to try new things."





Cooking test with Constantinos.

Testing a Greek recipe on a real Athenian.

*We want to advertise Dishcovery's authenticity, so Constantinos' advice and feedback on our Greek recipe will become very valuable.



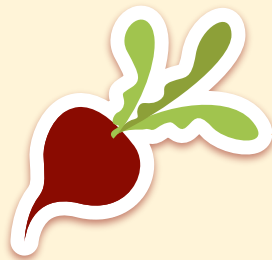


Constantinos



Acropolis

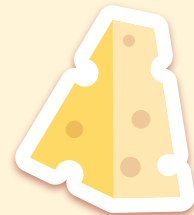
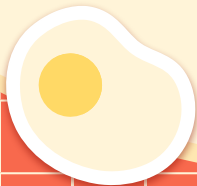
Me



About Constantinos



- Greek, grew up in Athens
- Cooks for himself weekly now, used to cook for himself every day during the pandemic.
- Relatively confident in his cooking skills, rates himself a 6/10.
- Loves Greek food.
- Says that since some Greek food is originally Ottoman/Turkish/Arab/Balkan, he likes learning about how they do it differently elsewhere.

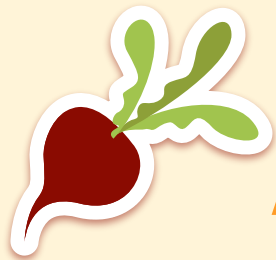




"I can't overstate the importance of this dish and how common it is everywhere— it's rare to go somewhere in Greece and not be able to find it. I'd like to see even more done to emphasise this on the app somehow."

—Constantinos Gallis

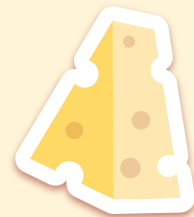
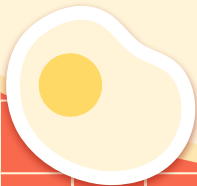




About Clinton



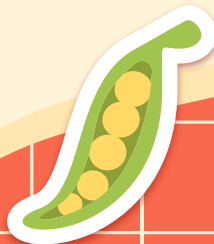
- Cooks monthly; weekly during the breaks
- Very confident in his cooking skills, rates himself a 15/10.
- Loves familiar food.
- Says that familiarity is important - having a set recipe took that away but then having an ingredient to scan narrows down the choice.

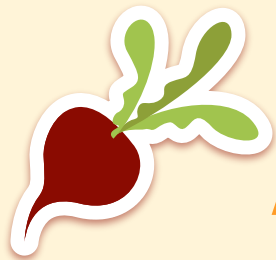




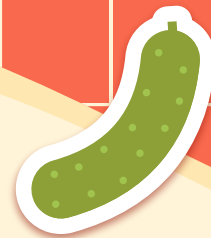
"I would not want to try a random dish I know nothing about."

—**Clinton Kwarteng**

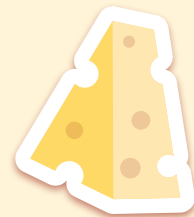
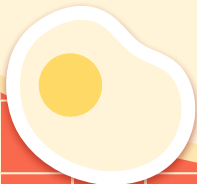




About Justin



- Doesn't cook on campus, but helps with cooking at home, especially for special occasions
- Not very confident in his cooking skills, rates himself at a 4
- Finds it easier to cook with a set of instructions to follow
- Wants to cook more often

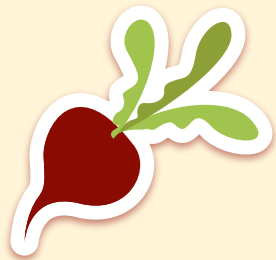




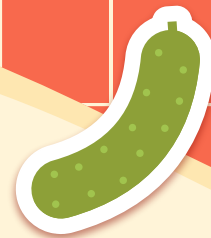
"I just haven't cooked very much. If I do, it's something really simple like mashed potatoes. But I'd like to cook more, especially because of all the cooking videos I see on social media.

—Justin Lim

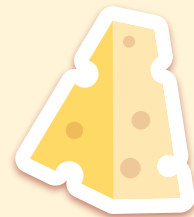
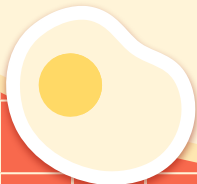




About Bless



- Undergrad, worked at a sushi restaurant in Germany for almost a year
- Freshman - lives in Florence Moore
- Cooking rating = 10/10 if he is familiar with the recipe ; 4/10 if not
- Cooks once a week, loves something simple.





"I feel like giving credit to the origins of the dish is very important. Although not Greek, I appreciate that this is a part of your app."

—Bless Mensah

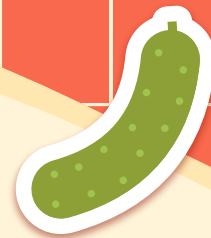
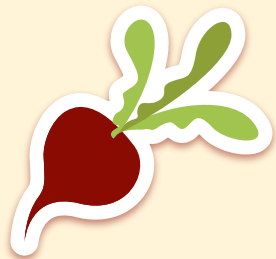




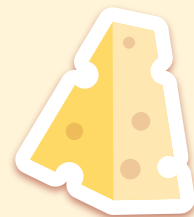
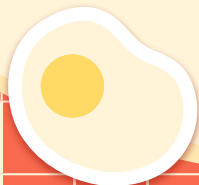
Ending questions



- What did you think about the use of visuals? What would you have liked **more** or **less** of?
- What about the interface made cooking easier? What made it harder?
- Which part made you most excited about this dish?
- What other questions do you have about the ingredient or the dish?
- What other questions do you have about the app?



Results





Quantitative data we measured

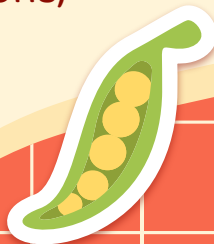
- How long did each task take?
- How many times did they navigate to an **incorrect** page when looking for something else?
- How many seconds, on average, do they spend looking for a page?
- How long did they take to view context?





Summary - Constantinos

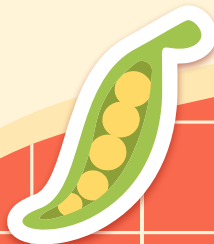
- **# of errors or questions:**
 - 0 errors
 - 1 question during onboarding regarding allergies
- Time taken for each task:
 - **Onboarding:** 2 minutes 5s
 - **Cooking:** 15 minutes 1s
 - **Reading context post-cooking:** 1min 21s
 - Said he really liked learning about the variations, said "I didn't know that" for a lot of it.
- Was satisfied with the recipe.





Summary - Caitlin

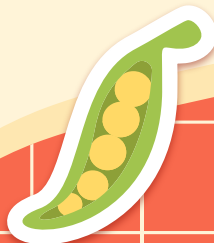
- # of errors: 1, couldn't read instructions
- Time taken for each task:
 - **Onboarding:** 3min
 - **Cooking:** 13min 22s
- Recommendations:
 - Featuring complementary dishes
 - Highlighting context before cooking.





Summary - Terrence

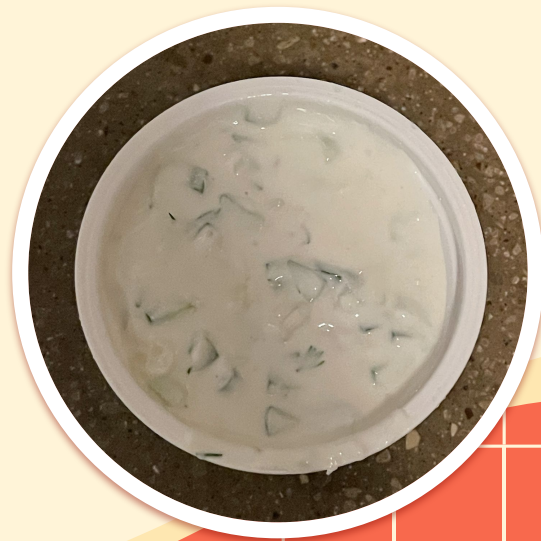
- # of errors: 1, simple typos
- Time taken for each task:
 - **Onboarding:** 2min 12s
 - **Cooking:** 22min 16s
 - **Reading context pre-cooking:** 2min 27s
- Feedback
 - Text alignment not consistent
 - Nice interface
 - Might be fun to have recommendations based on previous dishes & also even just recommendations by ingredient instead of full meals





Summary - Bless

- # of errors or questions:
 - 2
 - Password entry confusion
 - Mistook like button on recipe for a review metric.
- Time taken for each task:
 - **Onboarding:** 1 minutes 23s
 - **Cooking:** 16 minutes 34s (very meticulous)
 - **Reading context pre-cooking:** 36s
 - Feedback
 - User-friendly. Simple enough, but not drab
 - Missing recipe quantity for some of the ingredients
 - Had to navigate back to verify quantity





Summary - Justin

- **# of errors or questions:**
 - 1: Password entry confusion (view blocked by keyboard)
- Time taken for each task:
 - **Onboarding:** 2 minutes 46 s
 - **Cooking:** 12 minutes 22s
 - **Reading context cooking:** 57s
 - Feedback
 - 'very cute' interface; instructions are easy to read
 - keyboard view shifting
 - blocking dietary restrictions
 - Being able to scroll here might be helpful

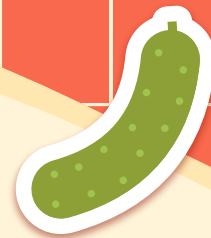
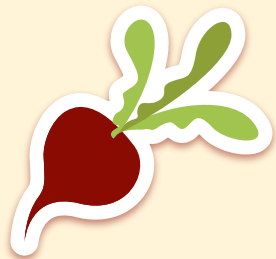




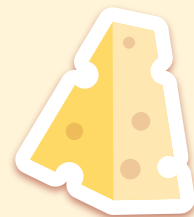
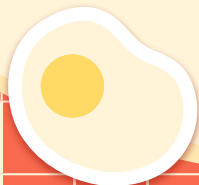
Summary - Clinton

- **# of errors or questions:**
 - 1: Password entry confusion
- Time taken for each task:
 - **Onboarding:** 1 minutes 32s
 - **Cooking:** 6 minutes 47s
 - **Reading context pre-cooking:** 19s
 - Feedback
 - thought that the recipe picture was unrealistic.
 - full page recipe was easier to navigate especially when his hands were occupied

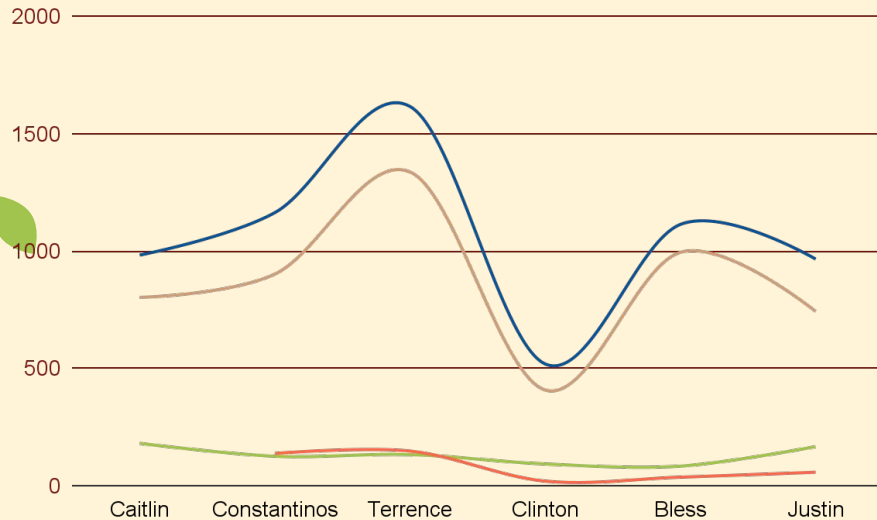




Discussion



Task time graph



Onboarding

Average total time = 2 min 9s

Errors = 2



Context

Average total time = 79.2 s(out of 5)

Errors = 0



Cooking

Average cooking time = 14 mins 27 s

Errors = 0



Total time

Average total time = 31 mins 33 s



Percentage completion of task 3

A large green circle with a white border, containing the text "100%".

100%

Of participants
cooked the dish
successfully!

Takeaways from Pilot run

Onboarding flow

Users found the onboarding very informative but had issues with the password entry

Ingredient quantity

One participant had to estimate vinegar quantity. Might be harder for a total beginner if portion is absent in recipe.

Cultural Contexts

Users were interested in knowing about any special holidays a dish might be prepared for / common other dishes that are paired with it

Recipe steps

Arrangement of content makes it easier to follow than a recipe website.



Interface Changes for Experiment

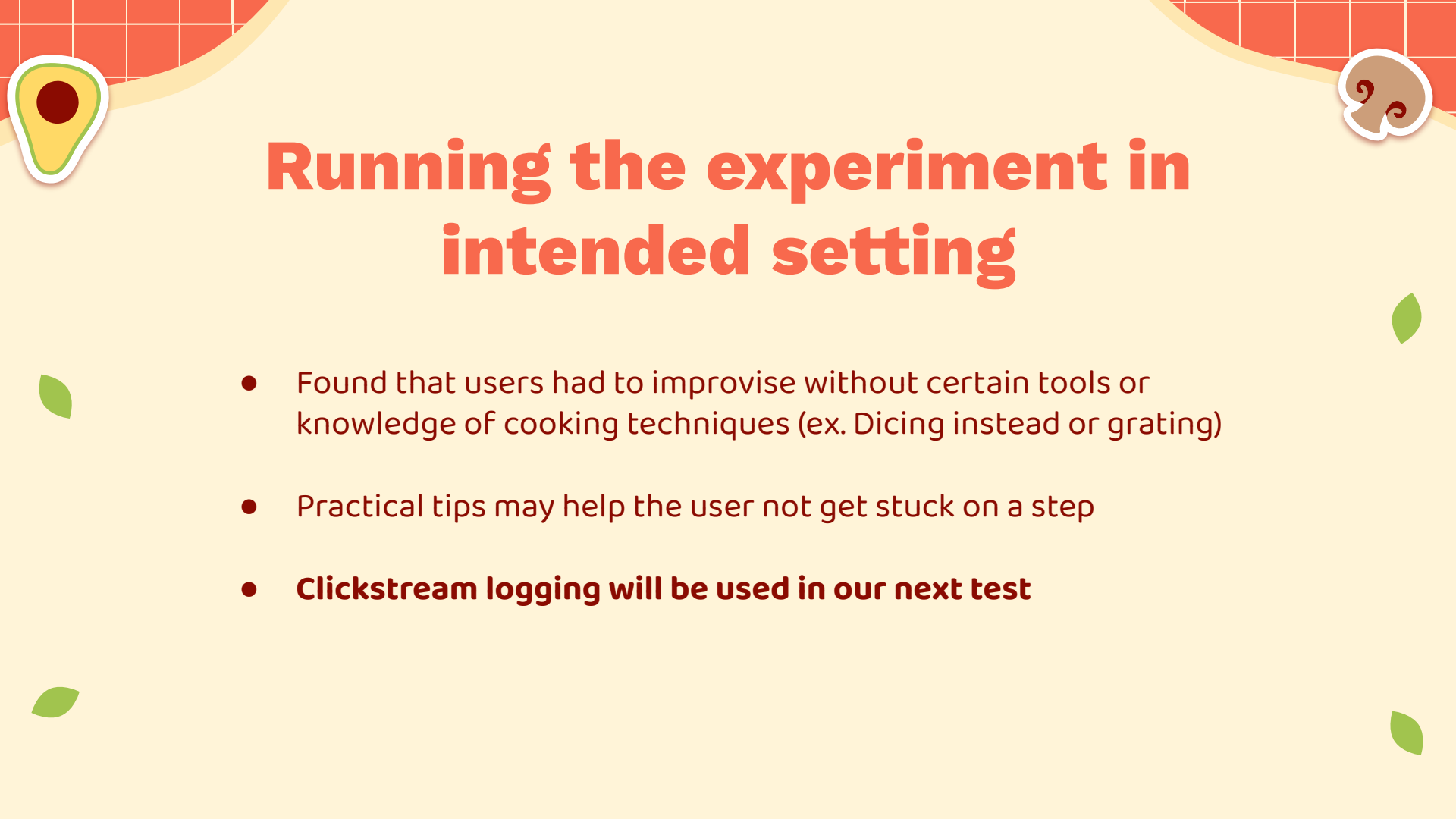
- Users had trouble with the keyboard blocking the view for the Account Information screen
- Dietary restrictions spill into the next view when a user selects too many - to be resolved in onboarding
- Users weren't always interested in seeing the context until after cooking. We are evaluating where this information should be placed.
- The “like” button caused some confusion, with users not being sure whether it was a review.



Interface Changes based on results

- Some Users expressed an interest in seeing videos or pictures of steps along the way. We will consider this
- Toggling between options for card-based recipe viewing (explained further in later slides) vs list based recipe viewing
- Adjust placement of "Strong Password" recommendation for more User Control (sometimes blocked the textbox)





Running the experiment in intended setting

- Found that users had to improvise without certain tools or knowledge of cooking techniques (ex. Dicing instead or grating)
- Practical tips may help the user not get stuck on a step
- **Clickstream logging will be used in our next test**

05

Future Trajectory





Suggestions from participants

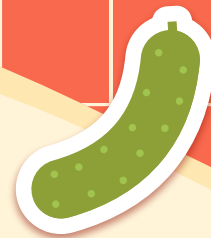
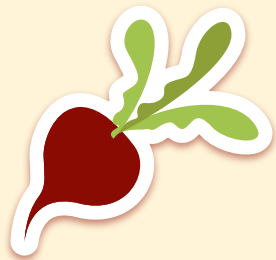


Onboarding

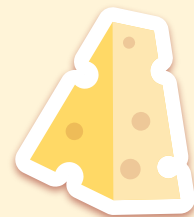
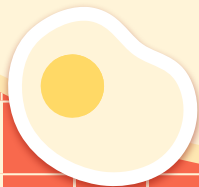
- Tutorial images could be more descriptive.
- Image preview instead of using a button.
- For name field: Name or Full Name?

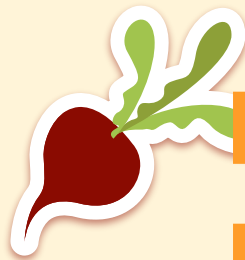
Recipe page

- Align text with itself and make numbers bigger in instructions.
- Have some indicator for when a dish has a “National Dish” level of importance.



Design & Content Changes



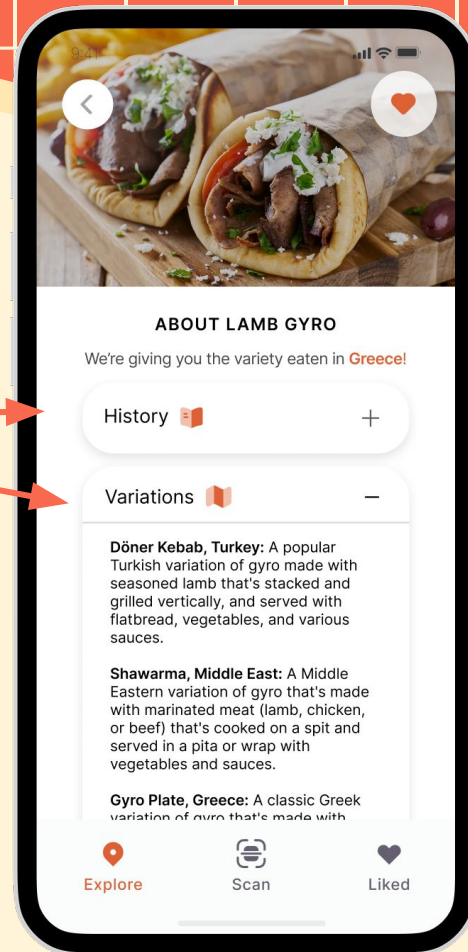


Recipe Presentation

For the future, we've decided to state one variety of a dish, then offer alternatives should users choose to research them separately.

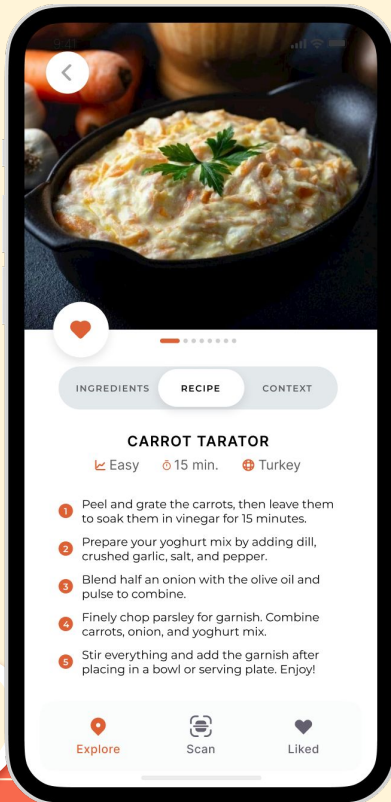
Our main priority will be to have an overall uniform representation of different cultures.

I.e. if we opt for the Lebanese variety of Tabbouleh, we'll maybe present the Palestinian or Syrian variety for Shawarma

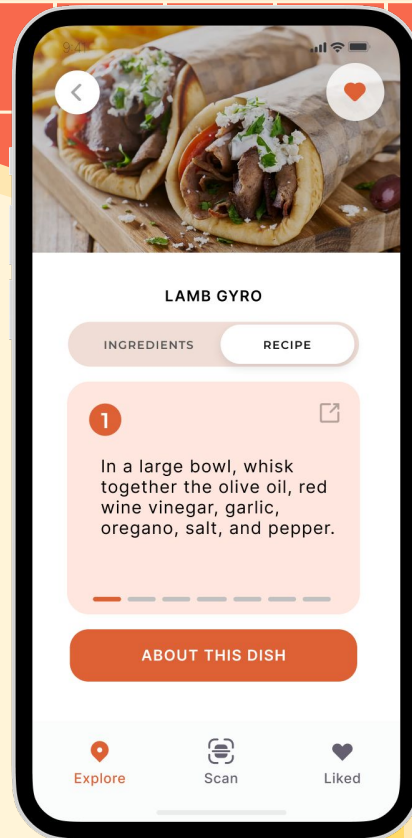




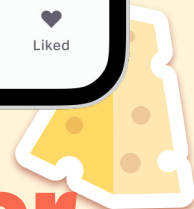
Before

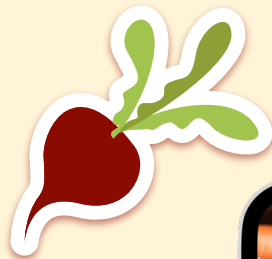


Instructions



After





Before

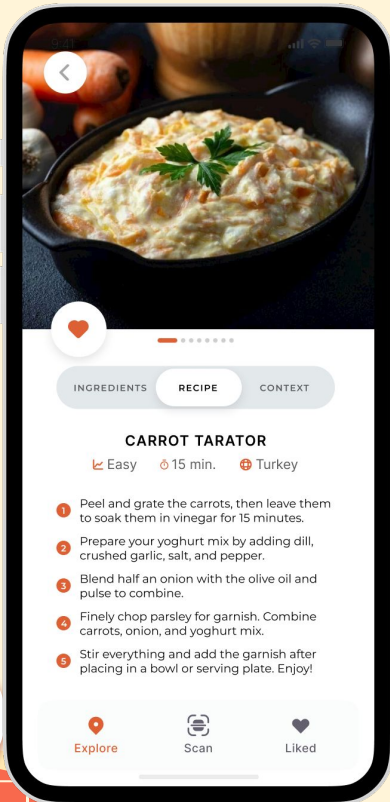
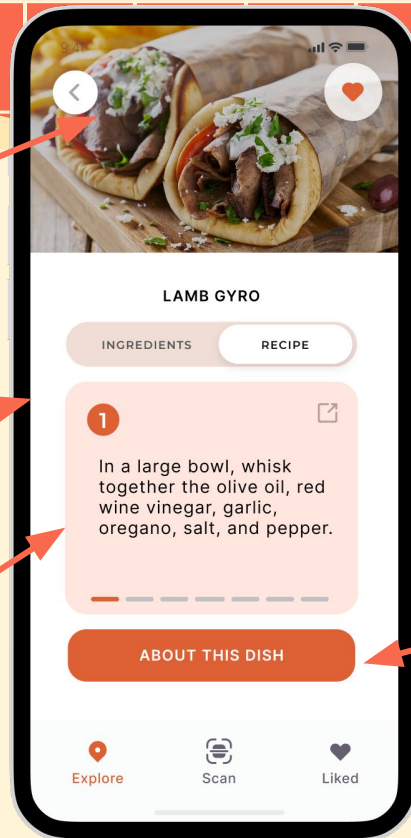
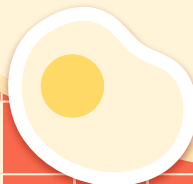


Image takes up less space

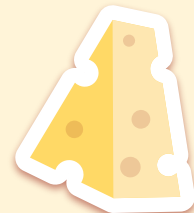
Added muted orange

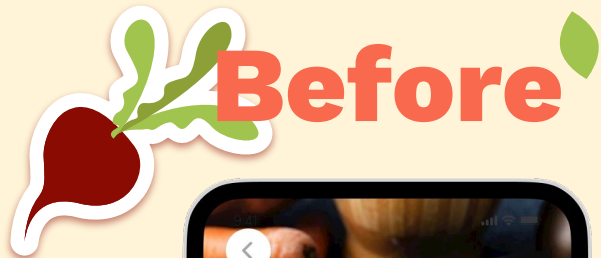
Story-style recipe navigation



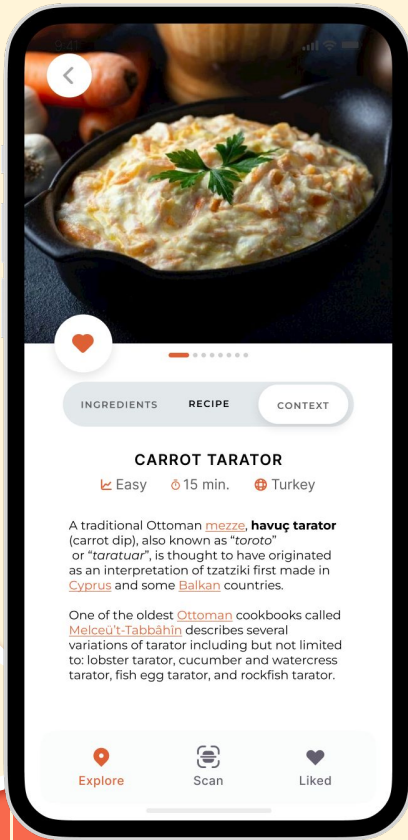
Context centralised

After

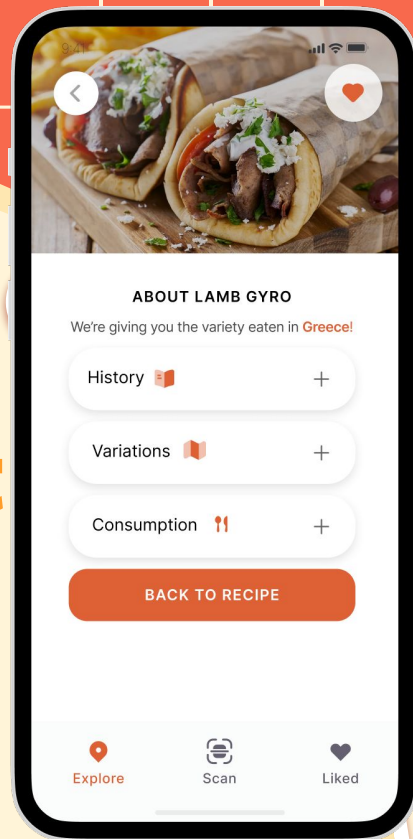




Before

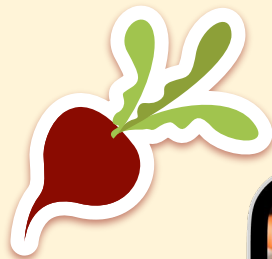


Recipe context

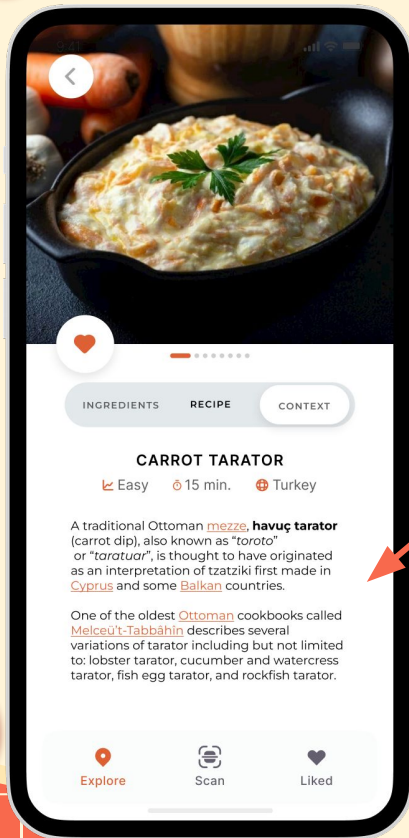


After



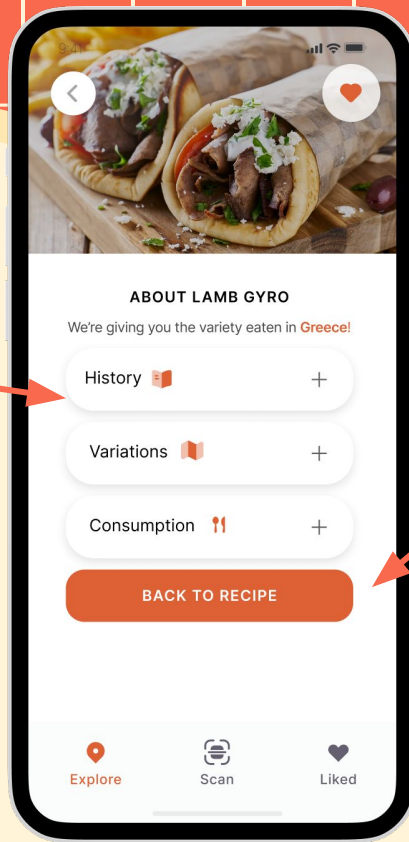


Before



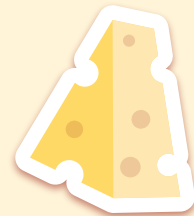
Unified
format with
ingredient
context.

Block of
text, less
readable



Easily switch
back and
forth
between
recipe

After





Our Current Focus

Frontend

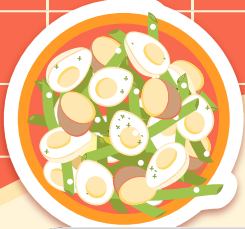
- Code up new recipe interface
- Devise a way to highlight “national” dishes
- Fix scanning API
- Alter margins and spacing to adhere to Figma
- Fixing password field

Backend

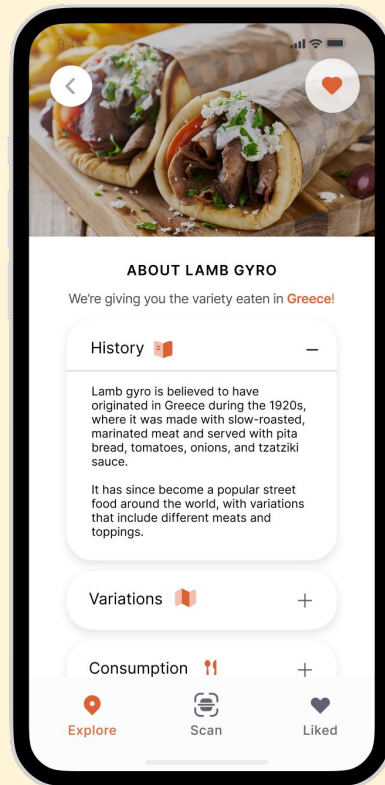
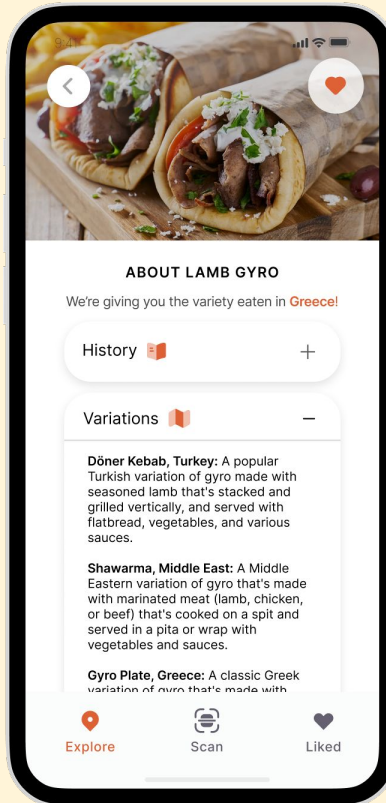
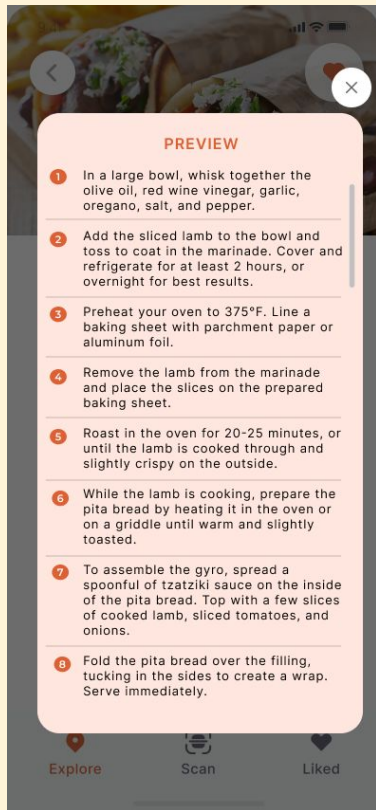
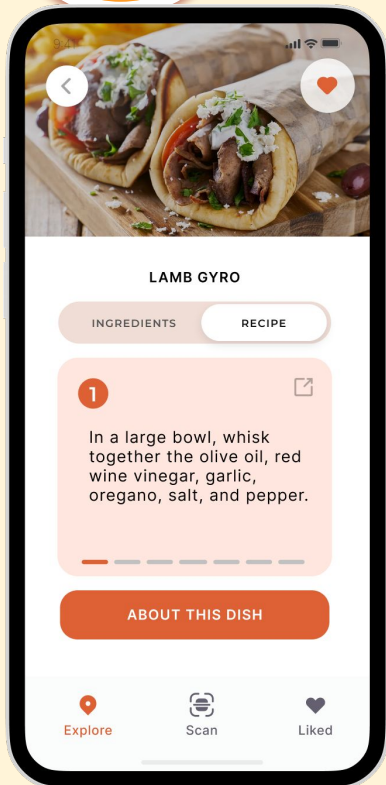
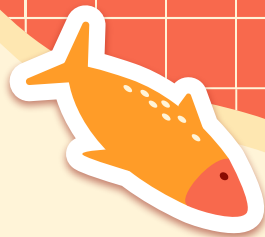
- Complete data fetching
- Populate with even more recipes (have ~30 as of now)

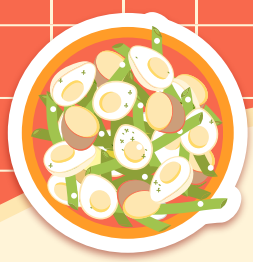
THANK YOU!



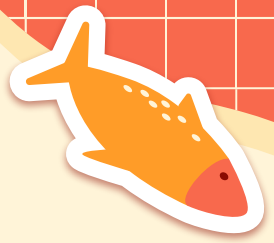


Appen-dish





Appen-dish



Participant notes

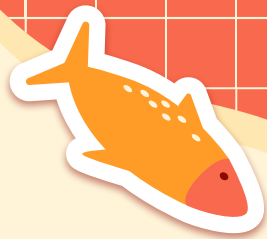
https://docs.google.com/document/d/1ARh323ypYJ2PTDgZY0s4VVFJ4H-Y0Eeh2biSjPwu_zA/edit

Pictures and videos

https://drive.google.com/drive/folders/11o99s44DU4GtTLssILvO9Ho3TqPVfG8?usp=share_link



Appen-dish



What are your initial reactions? What do you think you're able to do?
Confusion with allergies and sensitivities - "are they what I'm allergic to?"
Caps on email?

Time spent reading recipe before cooking: 5 secs (already familiar with recipe)

of mistakes made while

Cooking:

Onboarding: 0

Time spent to complete onboarding: 2:05 minutes

Percent matched from recipe time

Mistakes made during onboarding:

Caps on email?

Confusion with allergies and sensitivities

Onboarding ended at 2:05

Feedback

- when pressing context, tab does not change on the recipe screen
- First word of second line in each step should be aligned
- Numbers - orange tie to the theme well, not super legible as circles
- Would like to have both duration and difficulty
- Idea: have tips for each dish - ex: "cut out the middle of the cucumber for crunchier texture"

Had a greek participant cook greek dish - satisfied with the authenticity of the dish

Cooks for self weekly

6 out of ten on cooking skills (though it depends on the dish)

Relatively confident in cooking skills

Finished cooking at 17:01

Read about context until 18:22

Constantinos's Notes