

Dishcovery Lab Usability Test

Abena Ofosu, Sharon Wambu, Kayla Kelly, Defne Genc

Our Dishcoverers

Defne



Dish of choice:



Sharon



Dish of choice:



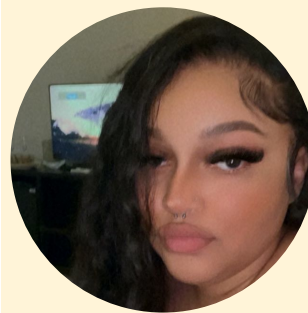
Abena



Dish of choice:



Kayla



Dish of choice:





Presentation Outline

01

Prototype Changes

Improvements to our interface.

02

Methodology

How we conducted our tests.

03

Results

The data we collected.

04

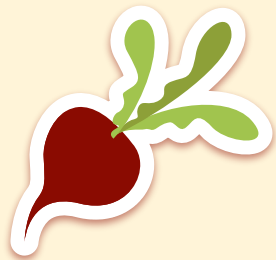
Analysis

Making sense of our results.

05

Future Trajectory

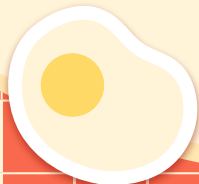
What we want to improve and implement.

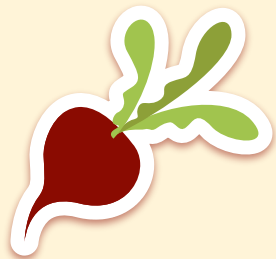


01



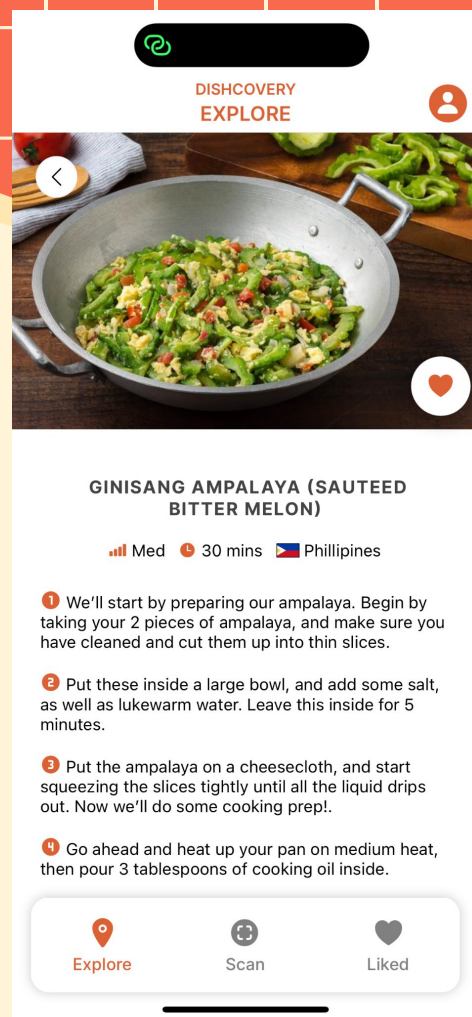
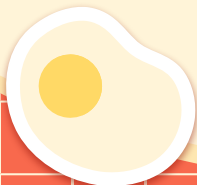
Initial Prototype Changes

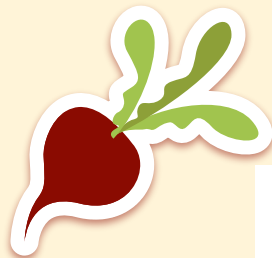




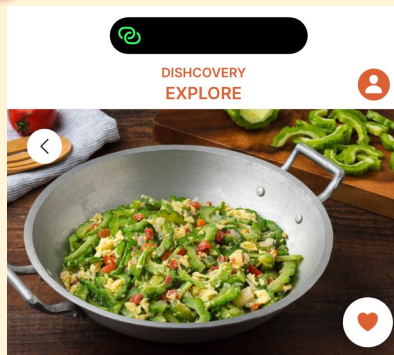
Content changes

Our updated prototype included a **new hard-coded recipe** for our participant, Jerri, who cooked with the bitter melon. Her **ginisang ampalaya** dish is now one of the **two** recipes currently readily available on the app.





Before



CONTEXT INGREDIENTS RECIPE

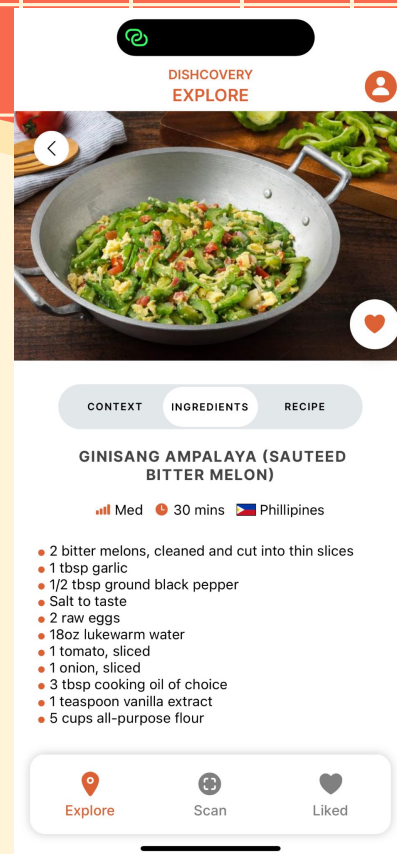
GINISANG AMPALAYA (SAUTEED BITTER MELON)

Med 30 mins Philippines

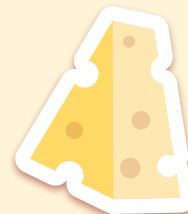
- 1 cup vegetable oil
- 1 cup sugar
- 1 cup orange juice
- 1 cup honey
- 1 tablespoon baking powder
- 1 teaspoon baking soda
- 1 teaspoon ground cinnamon
- 1 teaspoon ground cloves
- 1 teaspoon ground nutmeg
- 1 teaspoon vanilla extract
- 5 cups all-purpose flour

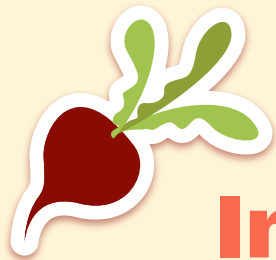
For the svrup:

Explore Scan Liked

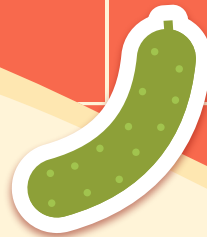


After



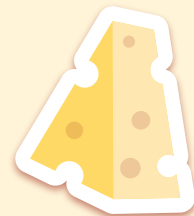
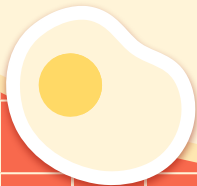


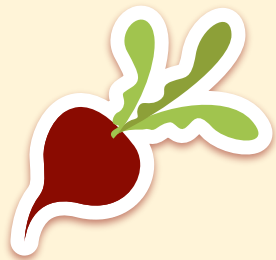
Implementation changes



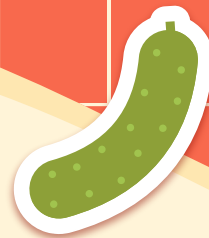
We needed to renew our **Clarifai API** to be able to keep scanning, and in some cases, Expo had trouble resolving dependencies.

To troubleshoot this, some of our participants used the offline version, but all but one of our tests were able to use the online version.

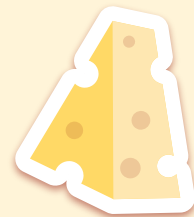
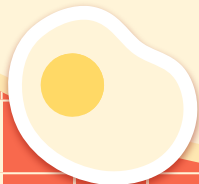




02

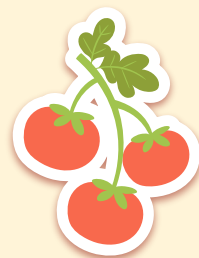


Methodology





We interviewed participants who varied in...



**Experience
cooking food.**



**Cultural
background.**

**Age and
occupation.**



**Comfort levels
with cultural
cooking.**

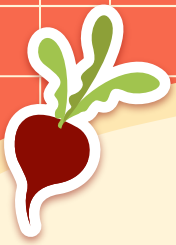


Recruitment

Word of mouth

We made use of our social networks to recruit participants.





Overview of participant profiles

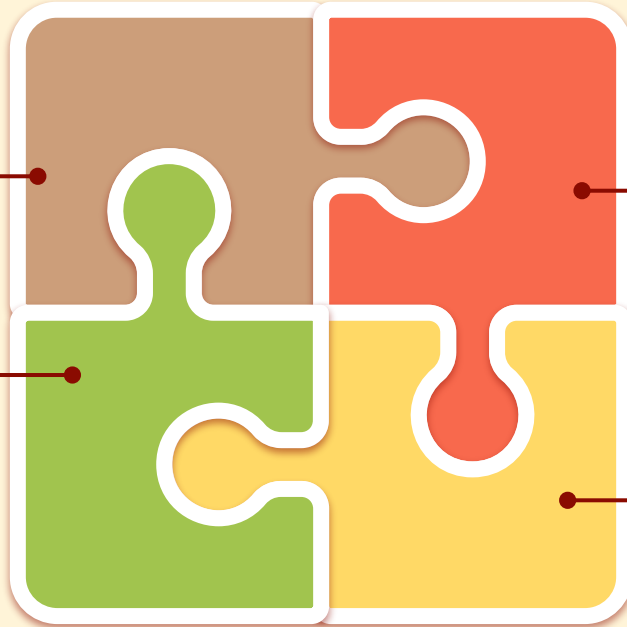


Software Engineer

Who loves to cook dishes from home.

Undergraduate

Who enjoys cultural cooking but has never travelled or tasted authentic food outside of a restaurant.



Undergraduate

International student from Uganda who yearns for food from their cultural background

Undergraduate

Who enjoys trying new cultural recipes but has trouble finding ones that fit with her dietary restrictions



Testing methods.



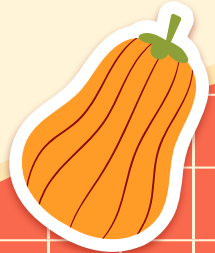
1. Pantomime Test.

Some of our participants were asked to interact with the UI and imagine that they were cooking (or go through the movements) with it while providing us feedback.



2. Cooking test.

One participant actually had the chance to cook using Dishcovery (and bitter melon)!



Methods of compensation



Food/Ingredients

Premium Ghanaian chocolate, bitter melon, kombucha.

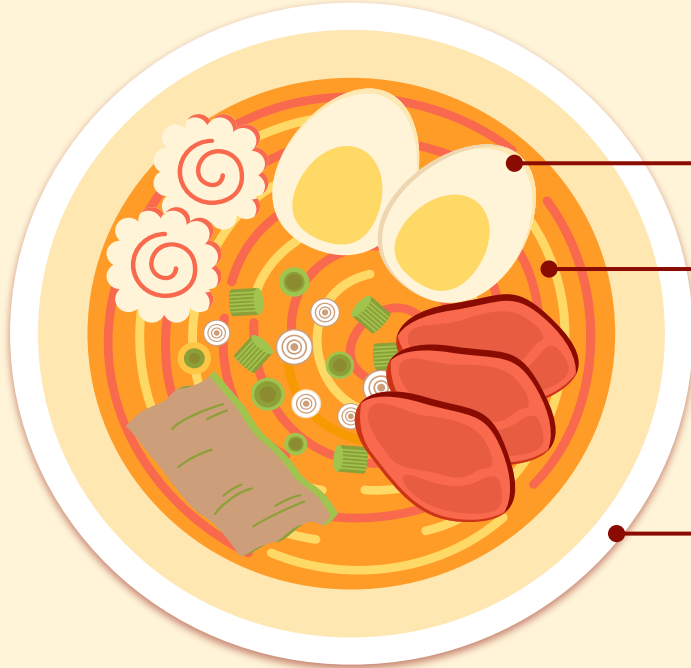


Asking nicely.

So that we have more of our resources to use in the next iteration of testing.



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.



Scanning an ingredient.



We were looking to learn:

1. Is the scanning feature intuitive? Can users tell that this is the central functionality of the app?
2. Are users able to successfully scan and navigate the scanning task flow?
3. Where do users get stuck?

We measured:

1. How long it took for them to scan.
2. How many times they made mistakes in the scanning process and how.



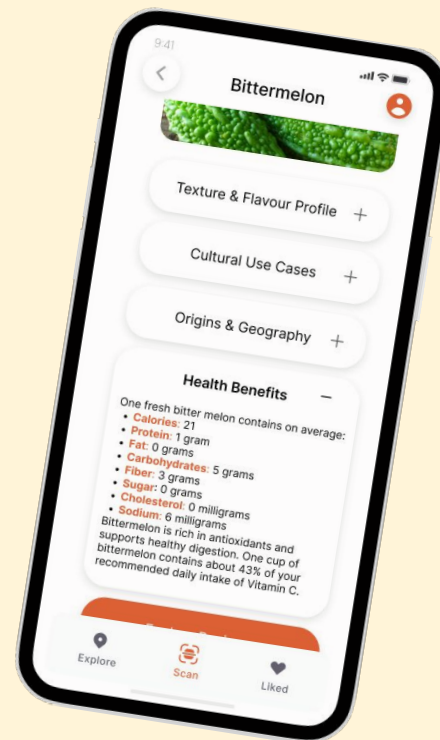
Ingredient context.

We were looking to learn:

1. Did the UI support the task of learning about a new ingredient?
2. What information is the most relevant to include?

We measured:

1. How long they took to read over the context.
2. Which information they showed more interest in.





Cooking with that ingredient.



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?

We measured:

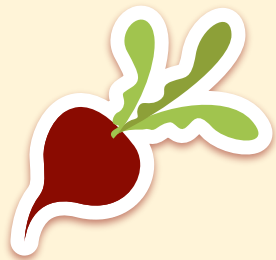
1. How long the task of reading through the recipe took.
2. How many times they made mistakes in the process.





Procedure

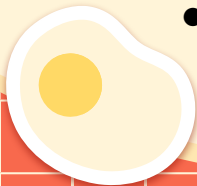
1. When on the home page (starting screen) of the app, ask them:
 - a. **Based on your initial reactions (on the home screen), what do you think you're able to do on the app?**
2. Allow users to scan an ingredient, or a picture of that ingredient.
3. Allow them to read the context while keeping in mind the questions they have about the ingredient or related recipes.
4. Have the participant cook with or act as if they were cooking with the ingredient. They walk us through how they think they would use it.
5. Time how long each task took as well as how many mistakes participants made, and in which task.
6. Ask our questions and allow them to ask us more about the app.



Materials & Apparatus



- Bitter melon, onions, and tomatoes purchased as ingredients(Jerri, Kwame, Kai, Azana).
- Jerri's cooking utensils and kitchen in Mirrielees House.
- VSCode to hard-code new recipe.
- iPhone timer to measure the length of each task.
- Otter.ai(for transcription)
- Expo Go.



Location



Residence of participants

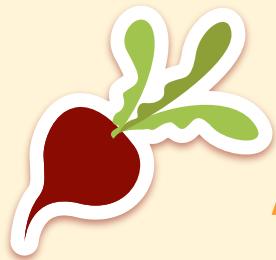
The Dishcovery team traveled to each participant's place of residence for the study.



Cooking test with Jerri.

Our first time experimenting with Dishcovery on the field.

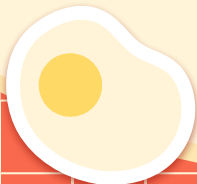




About Jerrianna



- 21 years old, Stanford student
- From the South, has never travelled outside of the U.S.
- Cooks for herself in her residence
- Doesn't pride herself in her cooking skills
- Assumes the recipes she uses aren't very authentic
- Given the chance, loves to experiment with ingredients
- Caveat: Saving money is important so it's less reliable to experiment with a new ingredient then throw it away if it doesn't work out

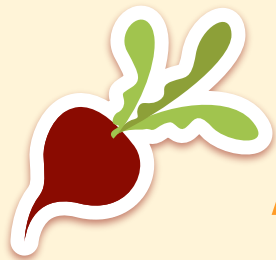




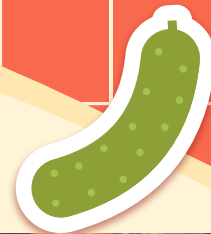
"My favourite dish to cook is alfredo pasta. The recipe definitely isn't authentic, but I don't know anyone Italian or which recipe to trust."

—Jerrianna Roper

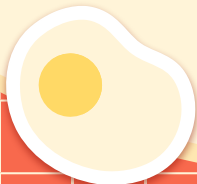




About Azana



- 19 year old Stanford Student
- From Hawaii
- Pescatarian
- Cooks sometimes but doesn't consider herself a good cook
- Likes to try new recipes

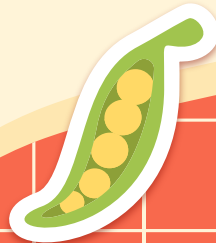


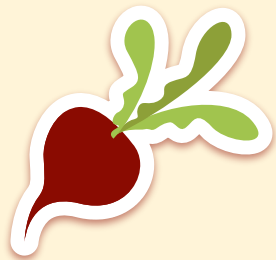
New recipe she's tried recently: Onigiri, a Japanese dish!



"I'm pescatarian and so, that's something else I have to take into account when like looking for recipes. I have to usually look at the ingredient list and be like, oh my, I can't eat this."

—Azana Queen

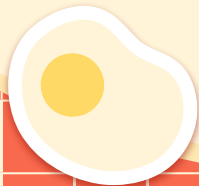




About Kwame



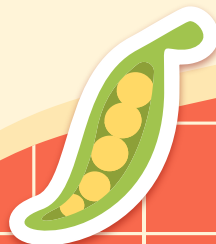
- 24 years old, Software Engineer
- From Ghana, cooks for himself in his residence
- Considers himself an excellent cook
- Caveat: he loves to explore dishes but leans towards ingredients he is fairly familiar with.

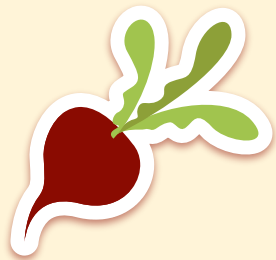




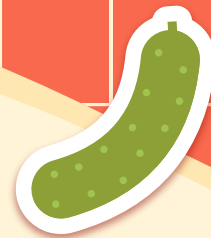
"I feel like if I was a little hungry, i
would have been more hungry.
Looking at it makes you hungry."

—Kwame Mensah

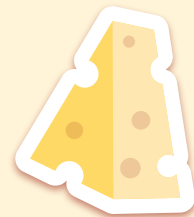
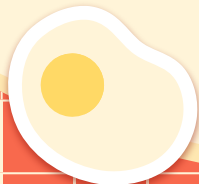




About Kai



- 20 years old, product design major
- From Uganda, novice in the kitchen
- Says he “can’t even boil water”





"I'm always looking to incorporate new ingredients into my meals. Dishcovery makes it so easy for me to find out more about fruits and vegetables I've never tried before and the different recipes I can make with them"

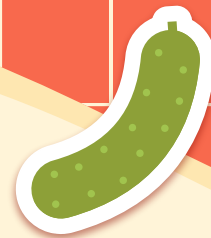
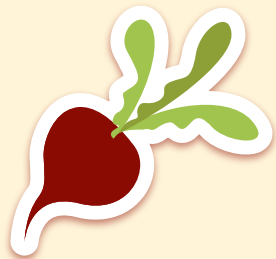
—Kai Ssempe



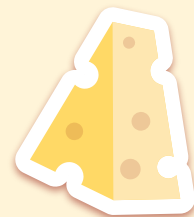
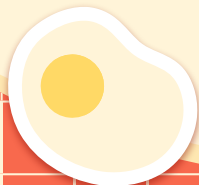


Ending questions

- What did you think about the use of visuals? What would you have liked **more** or **less** of?
- Was the order of tasks obvious to you?
- What about the interface made cooking easier? What made it harder?
- Which part made you most excited to cook with bitter melon?
- What other questions do you have about the ingredient or the dish?
- What other questions do you have about the app?



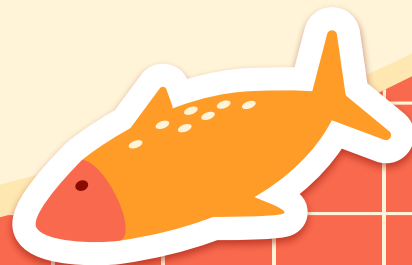
Results





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?





Summary - Jerriana

- # of errors while looking for another screen: 1 (in task 3, Jerri accidentally entered the scan function and had to scan again)
- Time taken for each task:
 - **Task 1:** 28 seconds
 - **Task 2:** 1min 12s
 - **Task 3:** 25min (because we cooked)





Summary - Kwame

- # of errors while looking for another screen: **1** (in task 2, Kwame tried to return to suggested dishes after exploring recipes after scanning)
- Time taken for each task:
 - **Task 1:** 18 seconds
 - **Task 2:** 2 minutes 19 seconds
 - **Task 3:** 0 min





Summary - Kai

- # of errors while looking for another screen: 0
- Time taken for each task:
 - **Task 1:** 23 seconds
 - **Task 2:** 1 min 38 seconds
 - **Task 3:** 0



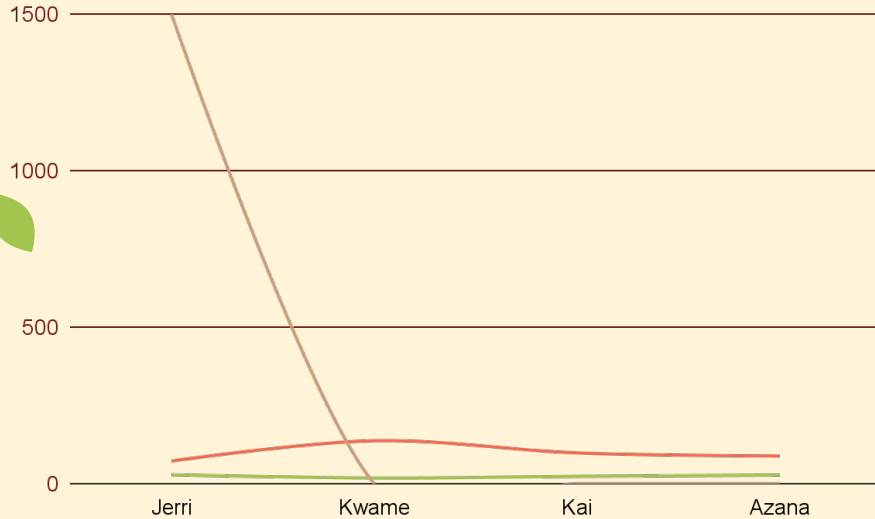


Summary - Azana

- # of errors while looking for another screen: 0
- Time taken for each task:
 - **Task 1:** 27 seconds
 - **Task 2:** 1 min 28 seconds
 - **Task 3:** 0



Task time graph



Task 1

Average total time = 24 s
Errors = 1

Task 2

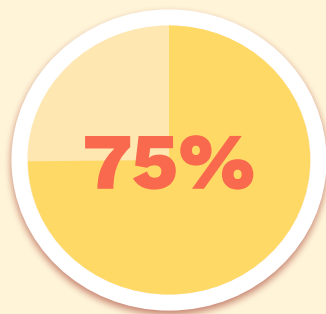
Average total time = 98.75 s
Errors = 1

Task 3

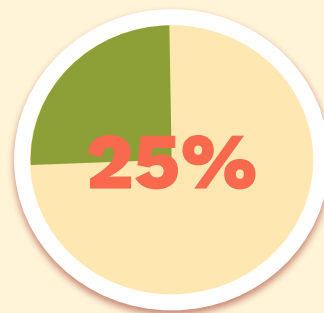
Average total time = 375 s (not
reflective of participant pool since only
one cooked)
Errors = 1



Percentage completion of task 3



Of participants did
not actually cook



Of participants
cooked!

Critical incidents

Cooking new dishes

Users were excited to cook unfamiliar recipes, but were left unsure of whether it tasted authentic

Cultural Contexts

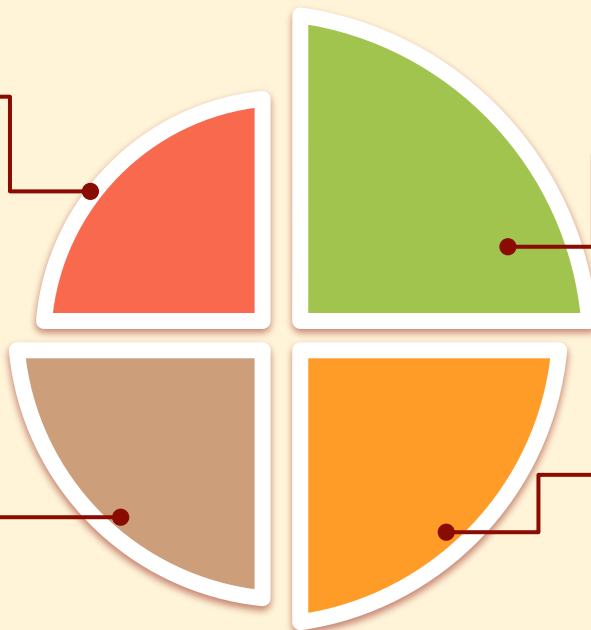
Users were interested in knowing about any special holidays a dish might be prepared for / common other dishes that are paired with it

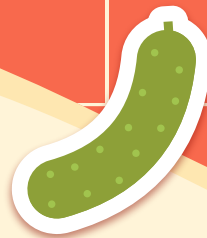
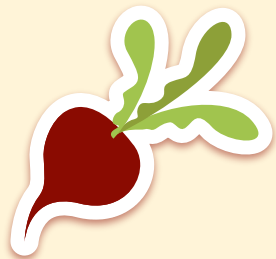
Task flow

One participant went ahead to learn about ingredients after scanning without being told

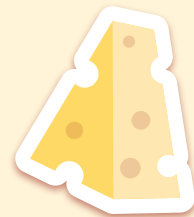
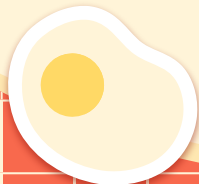
On first glance

One participant thought Dishcovery was a selling app.





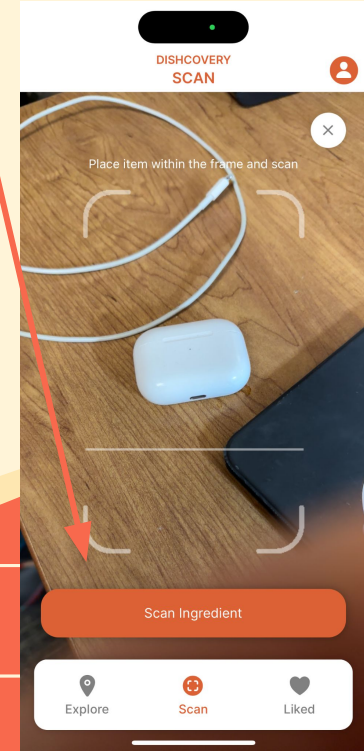
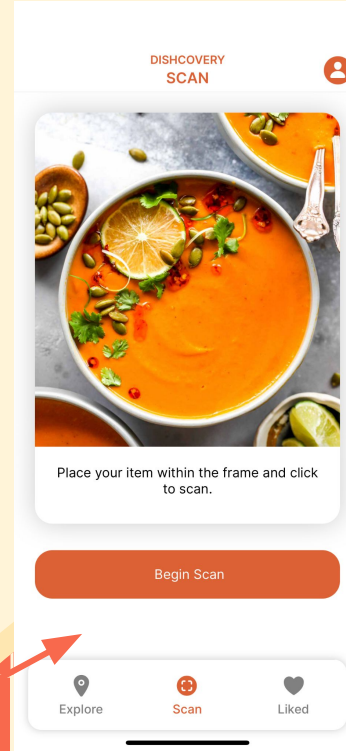
Analysis



Points of hesitation

During our tests, we observed hesitation with the following:

- Had to restart the process of scanning if the user deviates from viewing recipes.
- While scanning, some participants were confused by having to go through two screens and buttons to scan
- There was no way for a user to go back after tapping on one of the specific recipes.



Scanning an ingredient

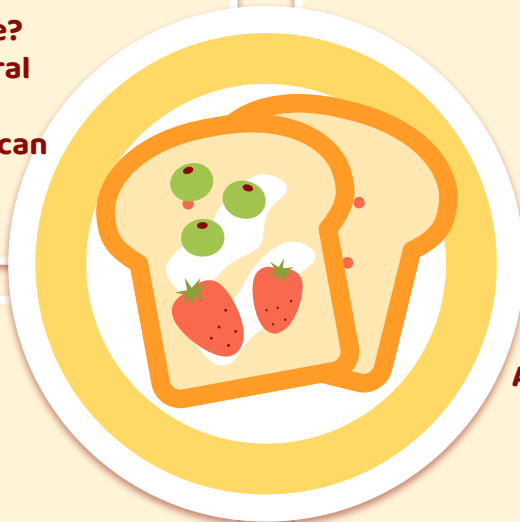
Goal

We were looking to learn:

- Is the scanning feature intuitive? Can users tell that it is the central functionality of the app?
- Are users able to successfully scan and navigate scanning
- Where do users get stuck

We measured:

- How long it took for them to scan
- How many times they made mistakes in the scanning process and how



Result

Meh

Users often found challenge in knowing when their scan was complete as they expected the next page to populate. Also frustration with the many screens before scanning

Potential Solution

As soon as the user presses the scan button in the navigation bar, have the scanning interface populate. When scans are complete, immediately bringing users to the item page.

Ingredient Context

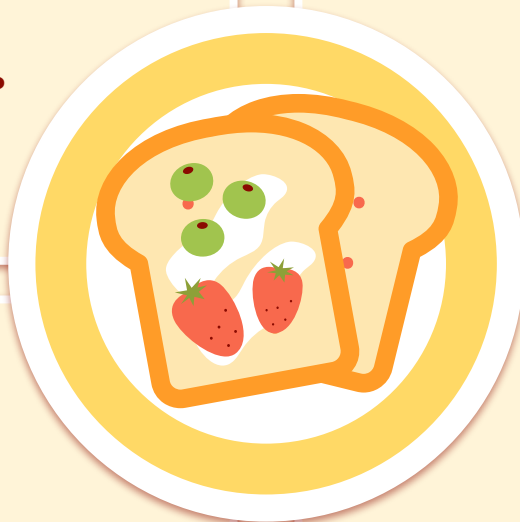
Goal

We were looking to learn:

- Was it easy to read the context?
- What information is the most relevant to include

We measured:

- How long they took to read over the context
- Which information they showed more interest in



Result

Successful

There weren't any conflicts in the material presented and what the user thought was going to happen. Average time spent on this page was in line with the amount of content on the page.

Potential Solution

We could seek to improve the experience by trimming out redundant information

Cooking with ingredient

Goal

We were looking to learn:

- What part of the cooking process is difficult or intuitive?
- Do users have trouble navigating the recipe pages?

We measured:

- How long the task of reading through the recipe took.
- How many times they made mistakes in the process.



Result

Meh

There was not much going on here and users fairly did a good job estimating what the processes would entail.

Potential Solution

Making the cooking process a bit more guided would help keep users on track to the delicious meal!

05

Future Trajectory



Usability Goals

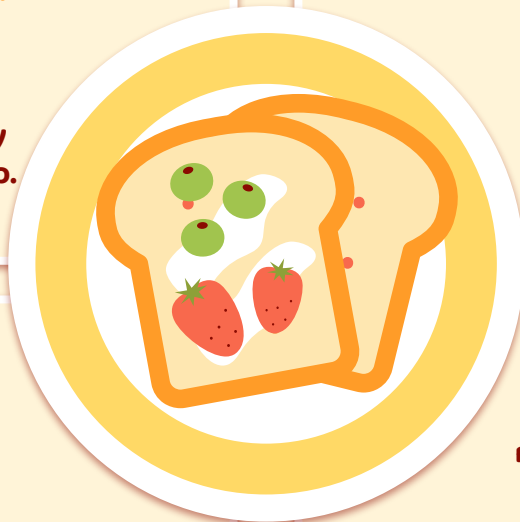
Efficiency

Relevant context and recipes.

We'll be taking into account the information participants said they felt were most valuable on the app.

Discarding unnecessary steps.

Things like double scan confirmation could become more intuitive.



Learnability

Scanning and browsing.

Make sure to include sufficient onboarding to make central functionality (scanning) clear.

Ordering of tasks.

Giving the user the option to see recipes before reading the context, in case they have already or would not prefer to.



Suggestions from participants



Scanning

- When on home page, not immediately obvious that you need to scan.
 - Solution: Onboarding tutorial.
- Health benefits was actually the contextualisation piece that received the most interest.



Major fixes



Scanning

Having a camera preview before "Begin Scan". And allowing users to exit scan without re-starting..



Onboarding

Making sure that users know the purpose of the app and when to use the scan feature.



Re-curating context.

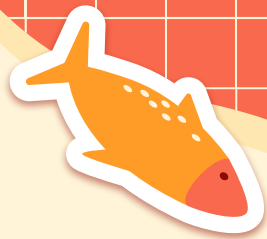
Further investigating what users want to know when learning about an ingredient.

THANK YOU!





Appen-dish



Jerrianna's Usability Test:

Jerri's profile:

- 21 years old, Stanford student
- From the South, has never travelled outside of the U.S.
- Cooks for herself in her residence
- Doesn't pride herself in her cooking skills but loves making alfredo pasta
- Assumes the recipes she uses aren't very authentic
- Given the chance, loves to experiment with ingredients
- Caveat: Saving money is important, so it's less reliable to experiment with a new ingredient then throw it away if it doesn't work out

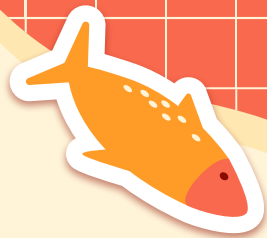
Questions:

- What did you think about the use of visuals? What would you have liked more or less of?
 - Photos along the steps not necessary but helpful
 - Really like the look and functionality of the filters
 - The font is easy to read, and the colors are simple
- Was the order of tasks obvious to you?
 - Amount of time to cook wasn't in the recipe
 - Onboarding: if I just opened the app, wouldn't be super clear that you need to scan an ingredient first
- What about the interface made cooking easier? What made it harder?
 - Likes the facts about the dish
 - If you've never eaten bitter melon before, hard to know when it's "done"
 - That being told in the recipe would be helpful
- Which part made you most excited to cook with bitter melon?
 - The health benefits: "Oh, I'm gonna be eating a healthy meal tonight!"
 - Where it comes from
 - Seeing different cuisines added versatility and appeal to the melon
- After eating the dish, how did the taste match or deviate from your expectations?
 - It's DEFINITELY bitter
 - Complementary dishes could help (e.g. eat it with rice)
 - COULD BE A COOL THING TO IMPLEMENT
 - Like "Eaten with" then links to another recipe
- What other questions do you have about the ingredient or the dish?
 - Different ways of getting rid of the bitterness of the bitter melon, since the recipe only listed one and that didn't seem to work
- What did you like most about your cooking experience?

- Instructions laid out clearly
- Scanning is fun
- "I'd be scanning things left and right if I had it"
- What other questions do you have about the app?
 - Does it give you just ANY recipe with this ingredient, or recipes where it's the star?
 - E.g., if I scanned tomatoes would I just be seeing any recipe that uses tomatoes
- BONUS: what's your favorite southern dish?
 - Biscuits & gravy



Appen-dish



Azana's Usability Test:

Azana's profile:

- Pescatarian
- From Hawaii
- Cooks sometimes but doesn't consider herself a good cook
- Likes to try new recipes

Questions:

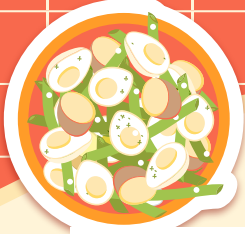
- Based on your initial reactions (on the home screen), what do you think you're able to do on the app?
 - I think I'll see my history of what I've scanned before, and my favorite recipes that I've saved. Search for, like new recipes based on a cuisine or even look for a specific dish or specific ingredients. And then also explore different categories with lists of different recipes.
- What feels natural to do? What do you think the progression of tasks would be?
 - I don't know for me, what feels most natural is just scrolling down on the Explore page and looking through recipes for something that catches my eye. Or if I'm in the mood for a specific dish or like a specific ingredient, do a search and then look for recipes through there. Click on the recipe and then follow the set recipe.
- Tell me how you think you'd use this app.
 - I'm not that great at cooking and I don't know a lot of recipes by heart but I think I'd be able to use it to try out new recipes

because like looking for recipes itself is really hard. So I think I would use it for that.

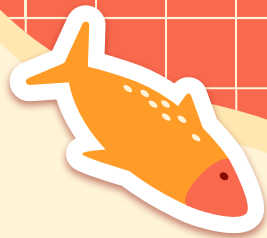
- Carrying out the first task: high interest displayed in a specific bittermelon recipe because it was Sri Lankan and they had never had Sri Lankan food before
- So what was your emotional experience while you see
 - I really liked the layout. It's something about it that just satisfies my soul. And I think it's very easy to use very, like simple, but not too simple that I'm like oh this is boring. I like the layout. I really liked the Explorer page. And you're looking at the lake. Oh, I like how the light dishes you can like sort them by where they're from. That's really nice. As a really like how has the difficulty in time listed like on like before you click the recipe? Yeah, the layout is nice.
- Were there any points of concern or confusion while trying to use it?
 - No. Oh, and there are filters, like a search filter. I just really like how neat and clean it looks.
- What do you think about the use of visual visuals and what would you have liked more or less?
 - I think it has a good use of the visuals. I like that. Like the picture is like on the face card for the recipe. Because like I'm a visual person when it comes to that sort of thing. Um, the only thing I would like to see like maybe more of is when you click on the recipe maybe like more than one picture. Yeah.
- Was the order of the tasks obvious to you?
 - Yeah, I think so.
- What about the interface made cooking easier and what about the interface made it harder
 - The fact that the ingredients and the recipe are listed under separate tabs makes it easier because there is less scrolling. I also like that the steps are numbered. Makes it easier. I think something that could make it even easier for the recipes is if there were different components. Like for example you had

some like make a dough and then make a sauce or something. They were like grouped with like a separation between so it's like I don't know more like separate like grouped? Yeah, I don't know.

- Which part made you most excited to cook with bitter melon?
 - the picture of the recipe
 - where it was from, like where the cuisines are from. Because I've never tried Sri Lankan food, but it looks good. And I like peppers and it has peppers on it.
- What other questions did you have about the ingredient or the dish?
 - I guess maybe like when the dishes are served, like if there's like a specific context in which it is served or if it's just like an everyday dish, because like I know certain dishes are used for certain holidays or celebrations. Yeah.
- What other questions do you have about the app?
 - None. I feel like it's pretty intuitive to use. So I don't really have questions.
- Do you have any final thoughts?
 - I like it. I like it. Yeah. I think it's really well designed. You put a lot of thought into it.
- What's up? What are you excited about?
 - I just noticed that I like dietary preferences and restrictions! That's genius cause
- "I'm pescatarian and so like, that's something else I had to take into account when looking for recipes and I have to like, usually like look at the ingredient list and be like, oh my, I can't eat this. It might have, like chicken stock or and I have to try to figure out substitutions myself. Whereas like with the dietary preferences and allergies...you can't see what I'm doing like that went with like the guy that points to his head and he's like, yeah"
-



Appen-dish



Kwame's Usability Test:

Profile:

- Ghanaian, software engineer
- Lives with friends in Palo Alto
- Loves to cook and enjoy new-familiar dishes

TASK BREAKDOWN

- cool app: discover dishes

TASK 1

- < 1 MINUTE to figure out the scan

- I went ahead to learn about the recipes
- 'Useful'
- He tends to cook things he already knows the recipe for
- Wonders the format for more common items
- Interested in seeing how others use the items
- Location?

TASK 2

About 2 mins

TASK 3

Interested in meat, would be more open to cooking if there's
Tried searching for meat, and it was unclear what it contained
Found meat after looking through the app.
A lot of preference for dishes specific to their preferences
Compared the Nasi Lemak to a dish from home

Tired - So was not able to cook.

Bitter melon does not look like something he wants to cook with

Short time to find a dish, longer time exploring
I think it does its job fairly well.
Fairly intuitive

"If I were a little hungry, I would be more hungry"

Questions:

- Based on your initial reactions (on the home screen), what do you think you're able to do on the app?
 - discover dishes

- It also looks like a selling app for dishes
- What feels natural to do? What do you think the progression of tasks would be?
 - Maybe you scan the ingredient and then find dishes that use the ingredient
- Tell me how you think you'd use this app.
 - I think I would want to see how my friends use the app, what they cook, etc
- Carrying out the first two tasks:
 - He quickly went over and explored the context page for a while right after scanning. Spent a lot of time reading about them and found some dishes interesting, but was asking about meat in the dishes
- So what was your emotional experience while you see
 - Compared Nasi Lemak to a rice dish from Ghana he said it looked like.
 - 'I feel like if I was a little hungry, I would have been more hungry. Looking at it makes you hungry.'
- Were there any points of concern or confusion while trying to use it?
 - Yeah, I think moving back to the recipe page when I tapped on one, like after the scan, was weird. It just took me back and I don't think it is supposed to be that way.
- What do you think about the use of visual visuals and what would you have liked more or less?
 - The visuals look great. I like the colors.
- What about the interface made cooking easier and what about the interface made it harder
 - I think that reading through after a while, I realized the recipes were the same. I think when you guys modify it with the actual recipes, it would be way cooler.
 - Which part made you most excited to cook with bitter melon?

- Not really...I could not find meat on there and I really do like meat. Bitter melon does not look like something I wants to cook with
- And the dishes look very vegetarian, too.
- Do you have any final thoughts?
 - How do you guys plan on monetising it?
 - Is it possible to see what other people are doing?