



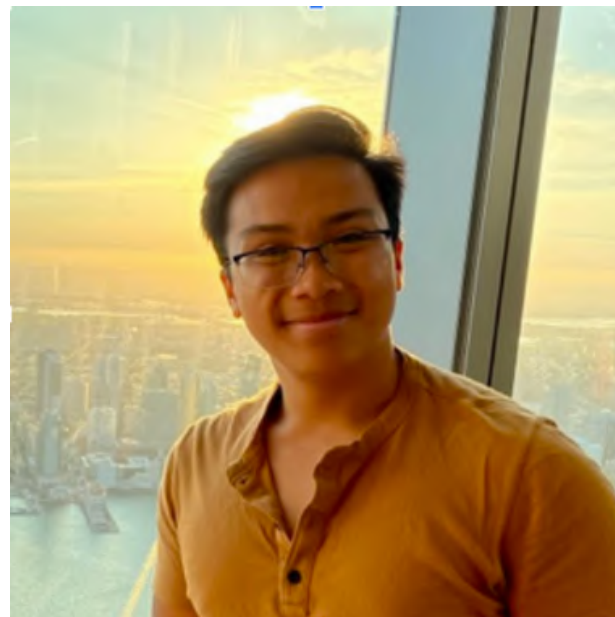
menü

LOW-FI PROTOTYPING

Presented by Melissa Lee
Joseph Ngo, Faith Zhang, Kaitlin Peng



Our Team



Joe Ngo



Faith Zhang



Kaitlin Peng



Melissa Lee

Value proposition

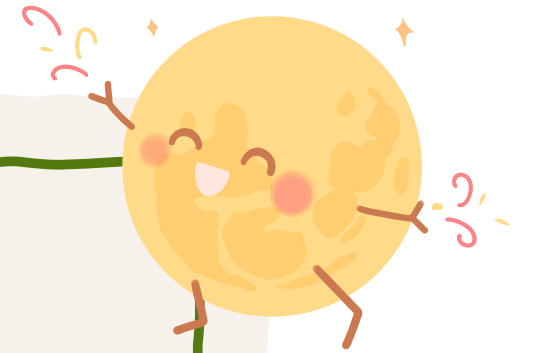
PROBLEM



Customers **struggle to identify** restaurant dishes that both match their **taste preferences** and fit their **dietary needs**



SOLUTION

A one-stop app for customers to **discover** new restaurant dishes and leave helpful **reviews** for others





Today, We'll be Discussing

1

**Exploring Various
Concept Sketches!**

2

**Selected Interface
& Rationale**

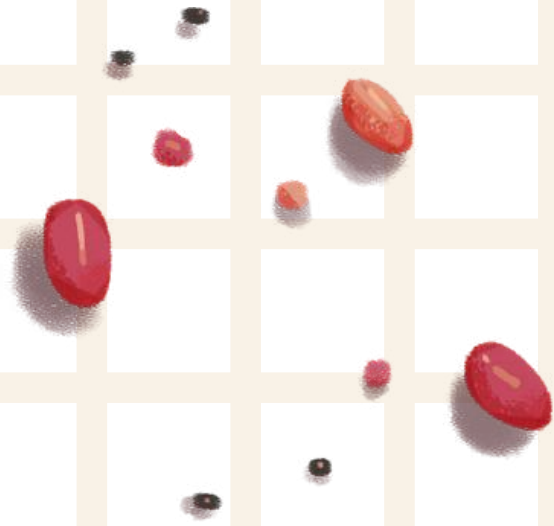
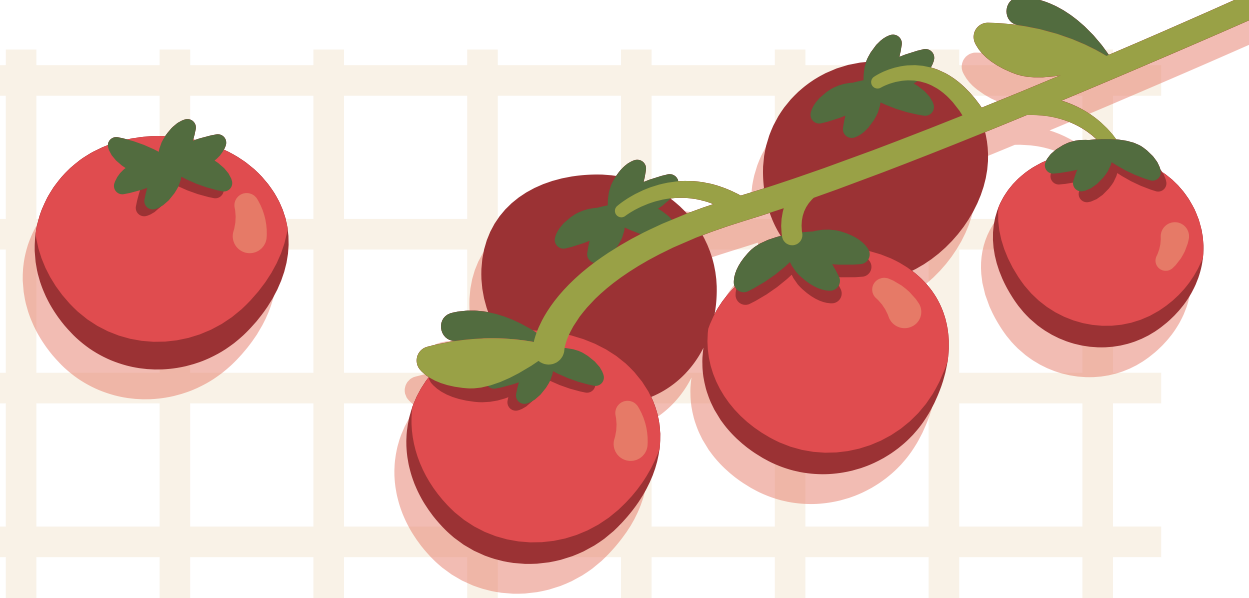
3

**Lo-Fidelity Prototype
& Testing Methodology**

4

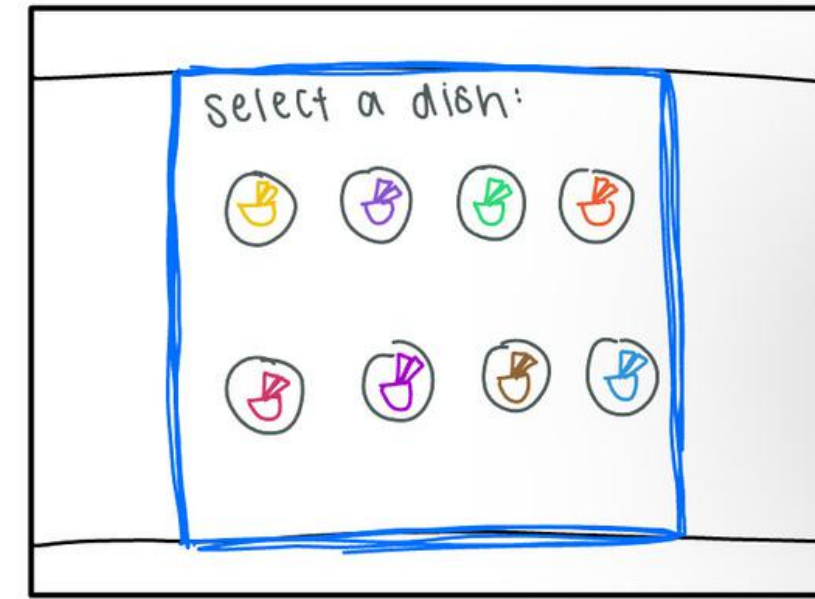
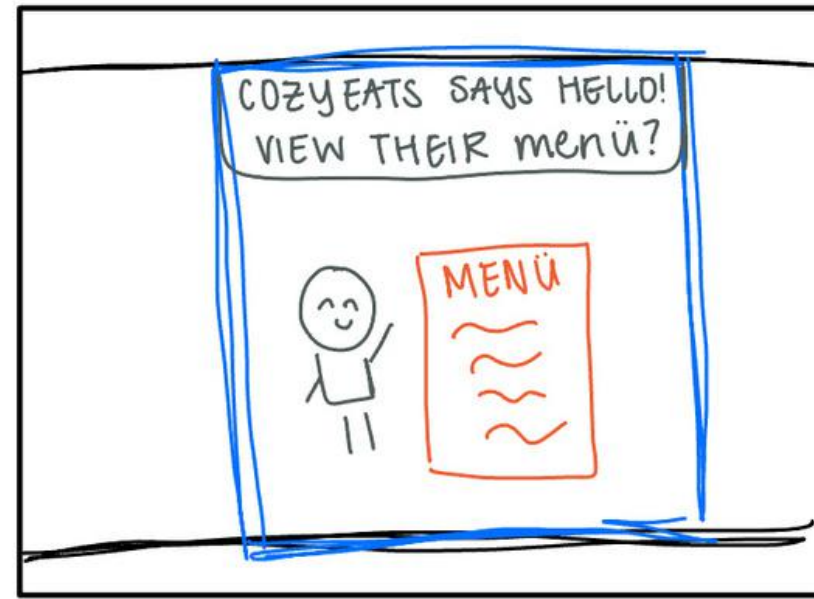
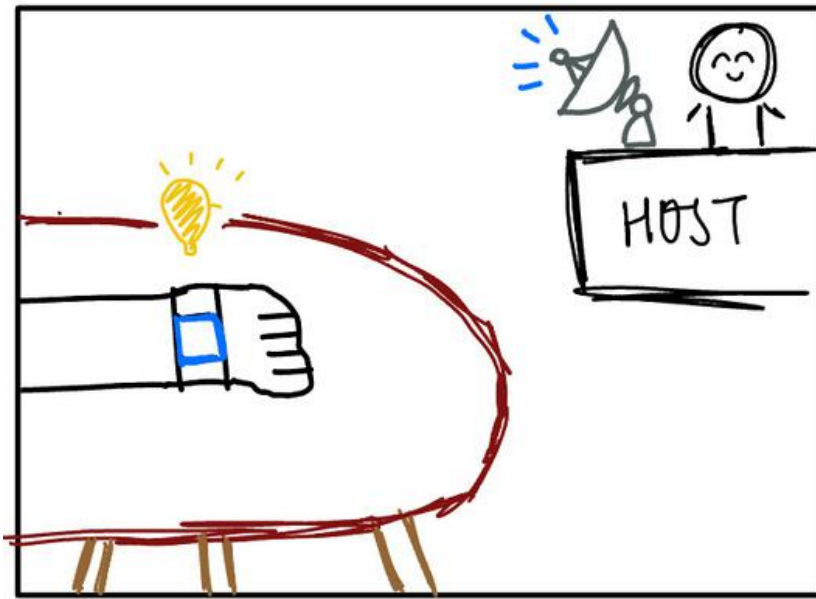
Results & Discussion

Concept Sketches

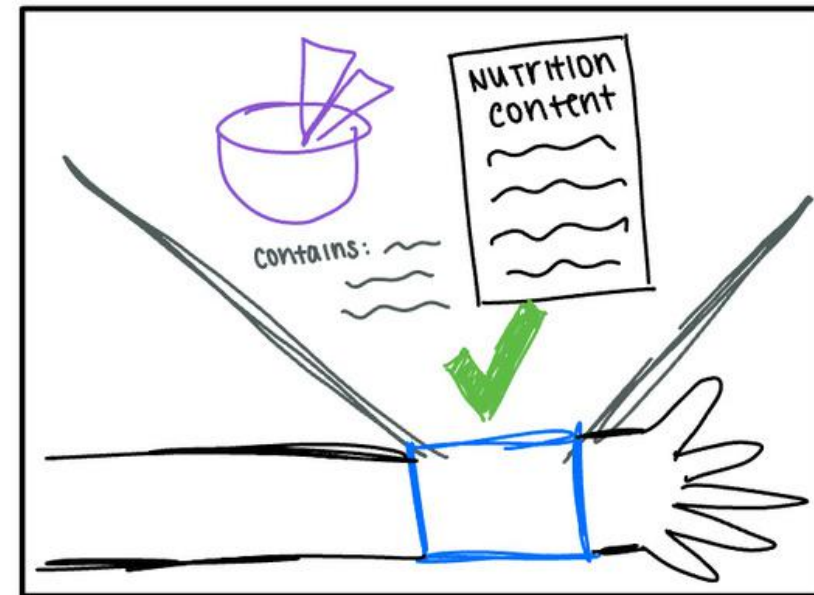
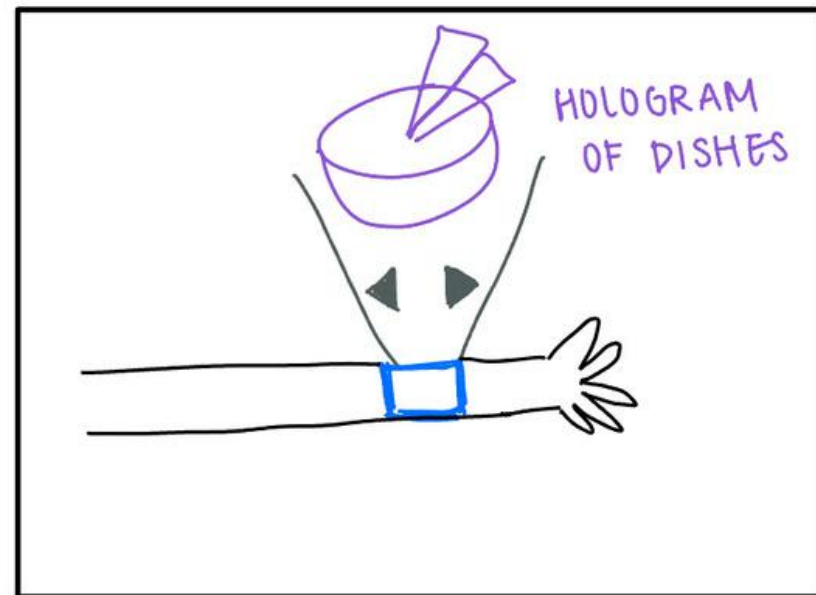


CONCEPT 1: APPLE WATCH X HOLOGRAM

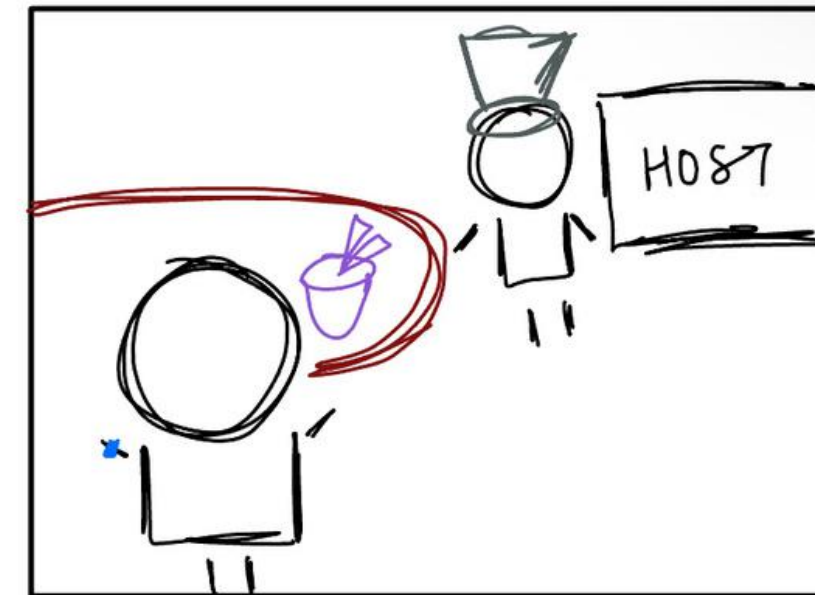
Users receive a ping on the Apple watch from nearby restaurants



A hologram of popular dishes appears and users can swipe through choices

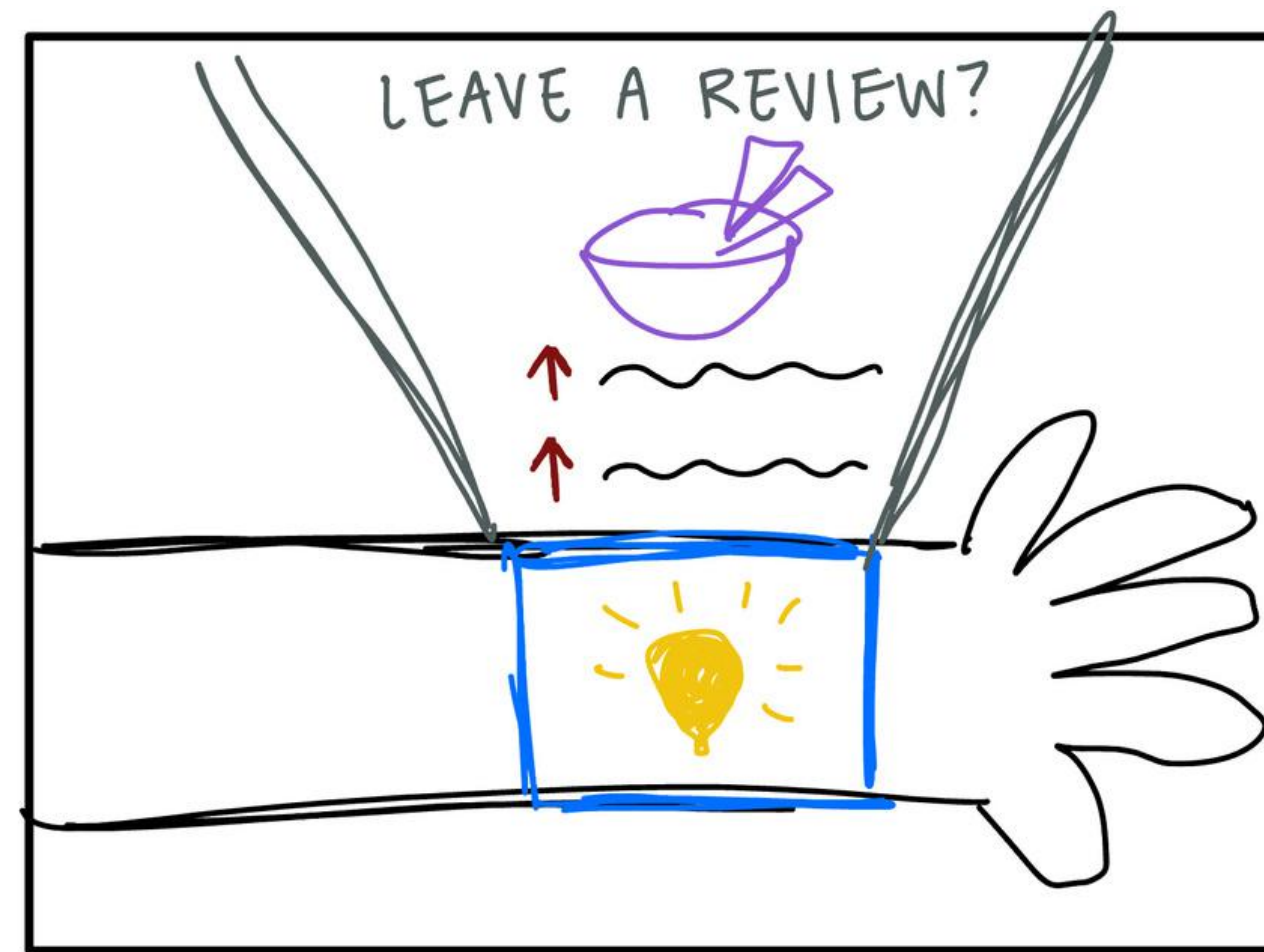


Users review the nutritional content of dishes



Restaurant is notified of customer order

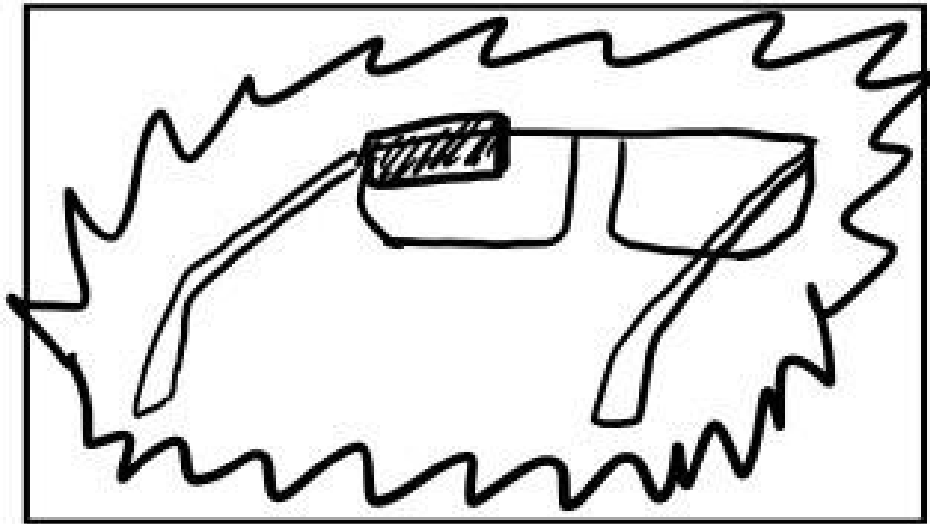
CONCEPT 1: APPLE WATCH X HOLOGRAM



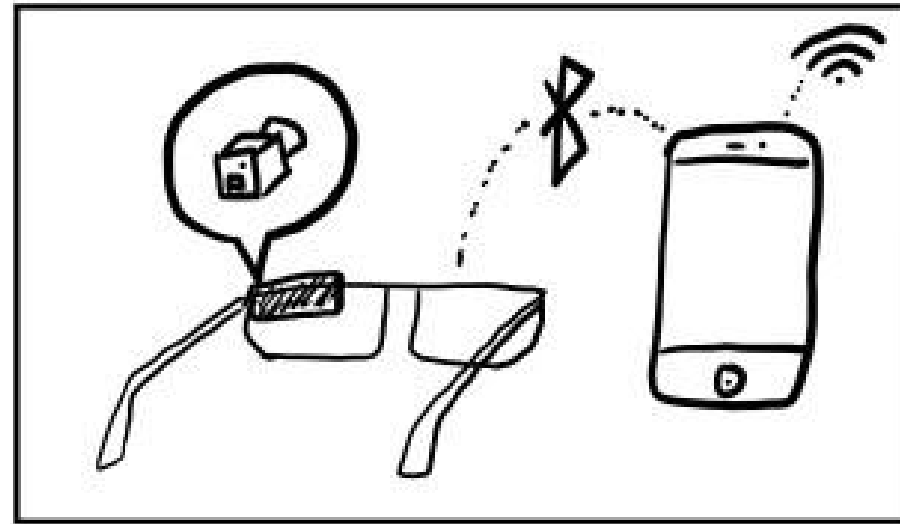
Customers are invited to
leave a review after
dining



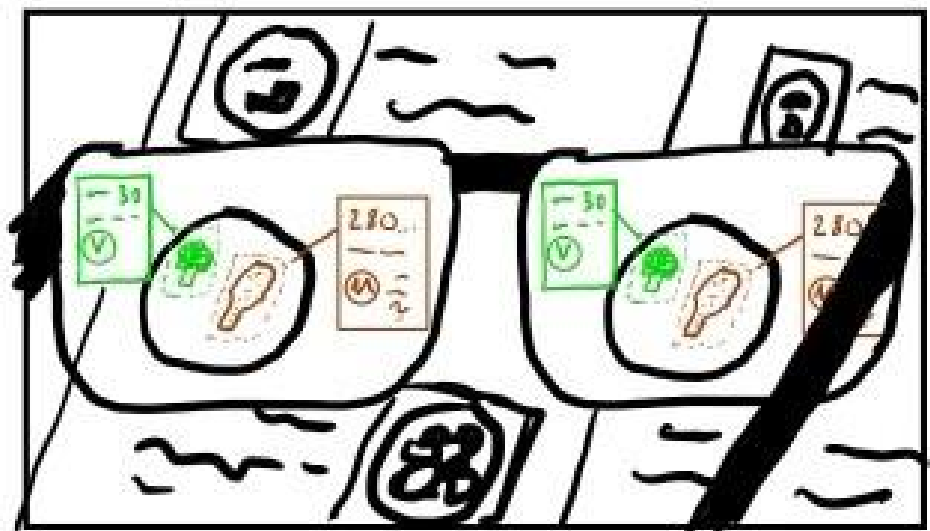
CONCEPT 2: GLASSES + COMPUTER VISION



Glasses with Google Lens



Link the glasses to your mobile device

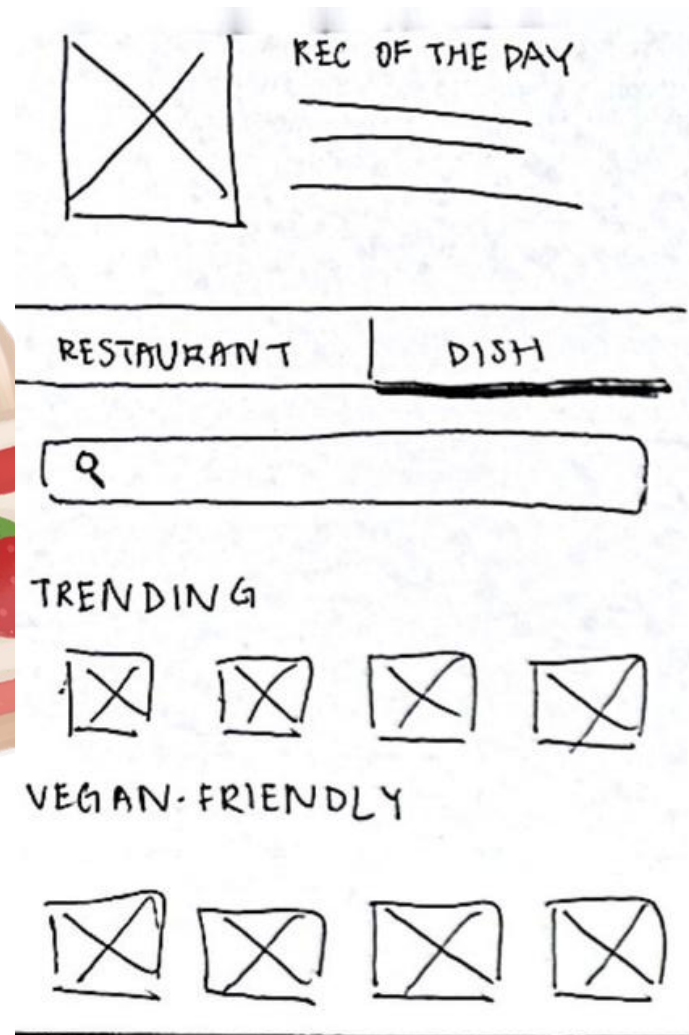


View a physical menu, see the nutrition facts of dishes

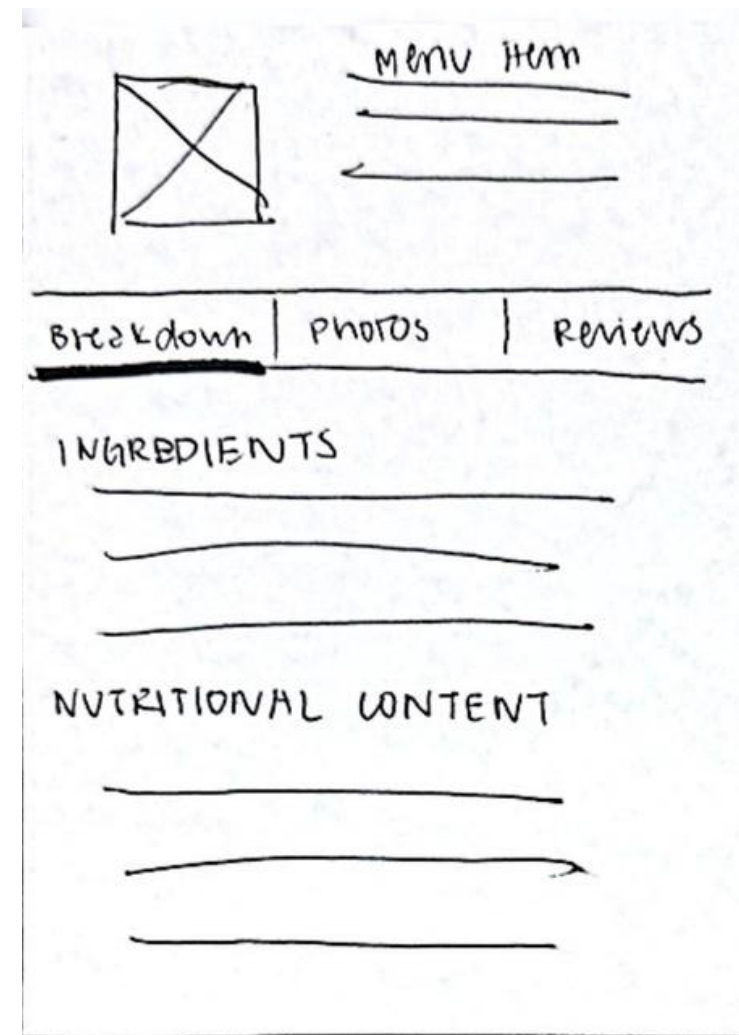


CONCEPT 3: MOBILE PHONE

Default home page + recommendations

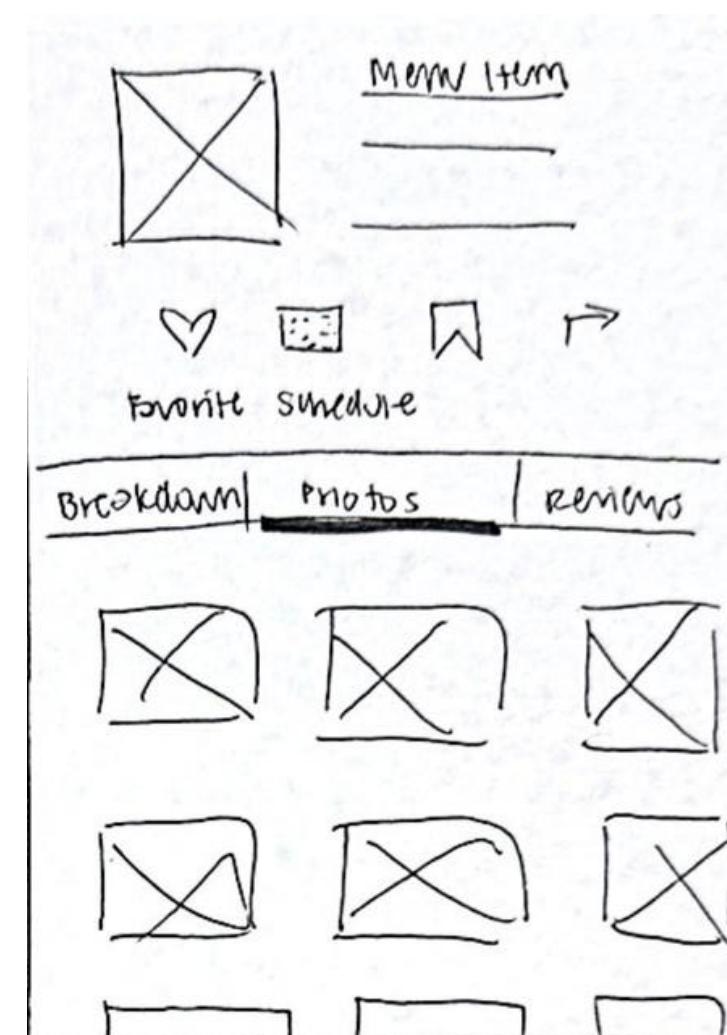


Search by restaurant or dish



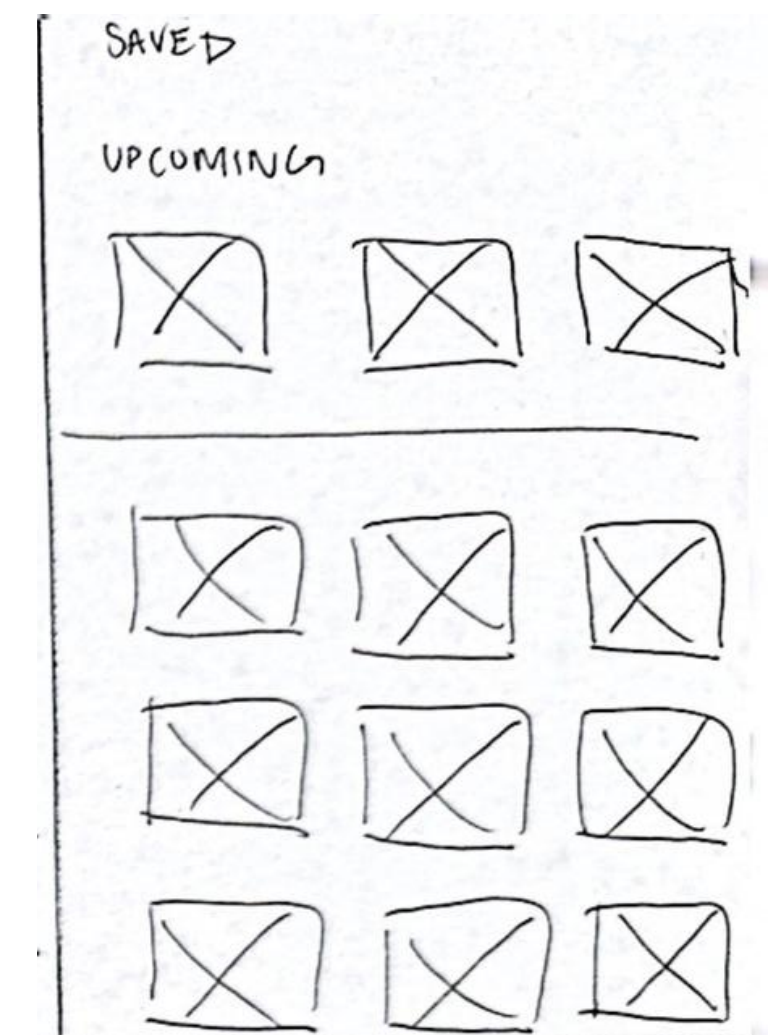
Menu item page with three tabs

Photos reviews page



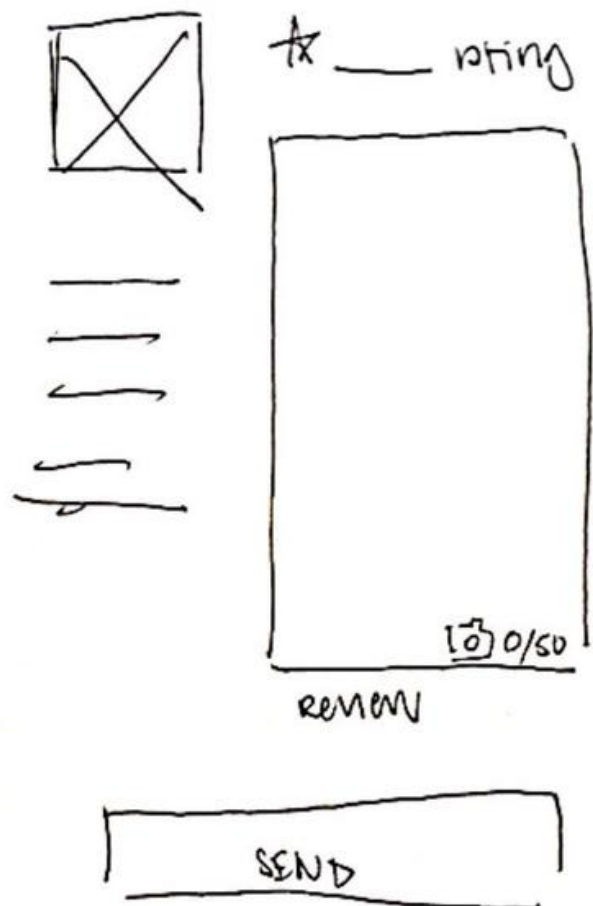
Like, share, save features

Saved dishes

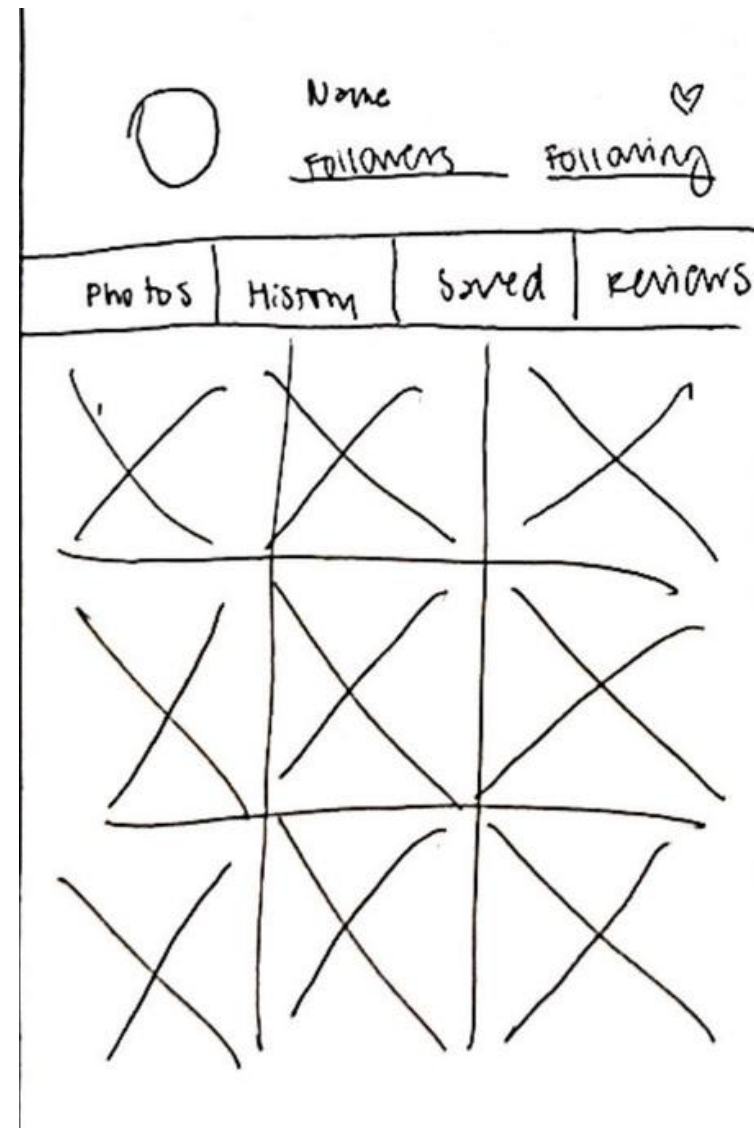


CONCEPT 3: MOBILE PHONE

Leaving a review

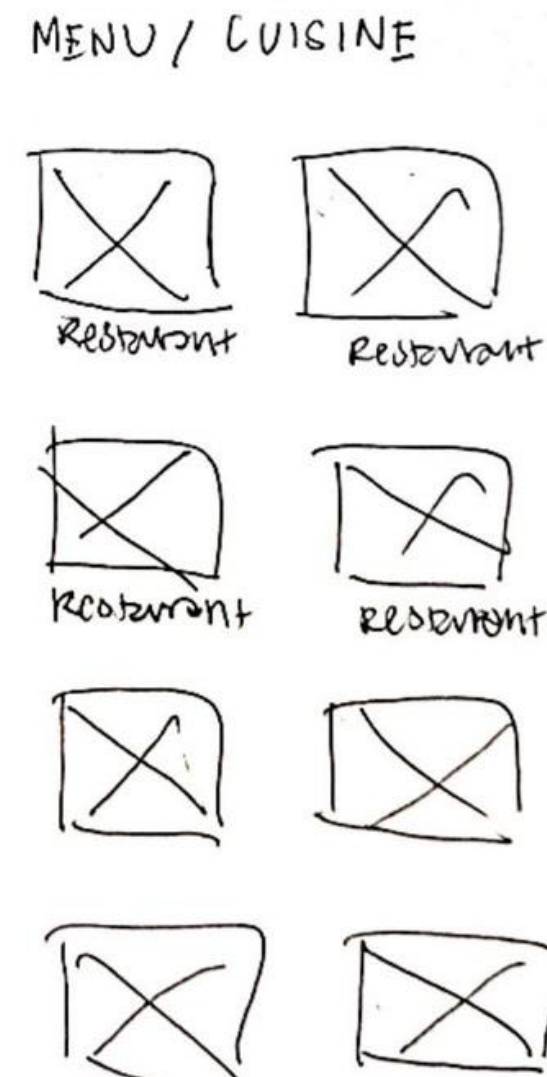


Profile page

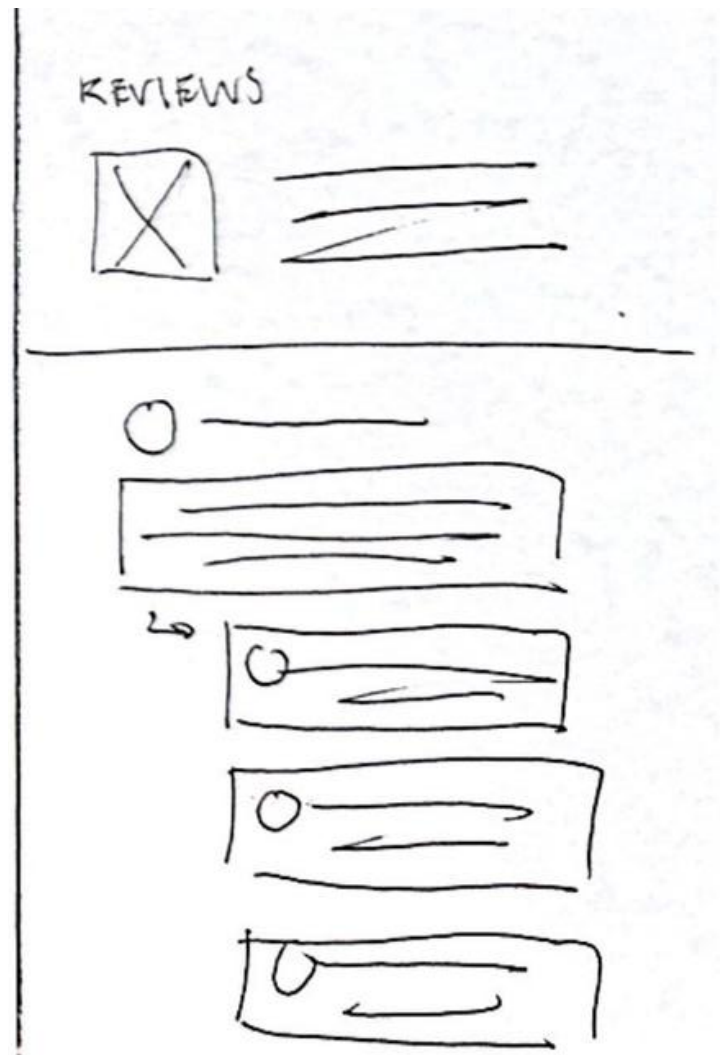


Photos and reviews posted by you

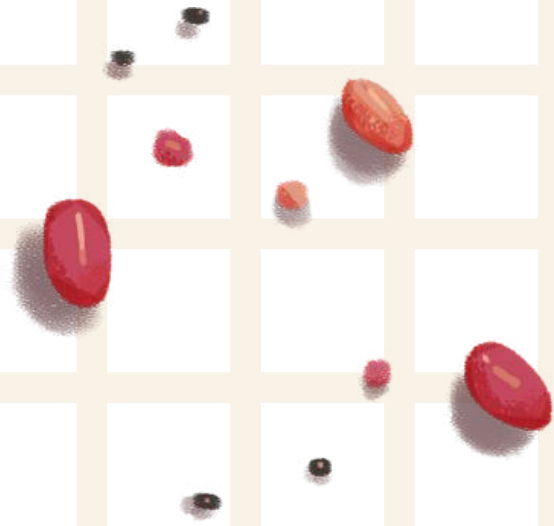
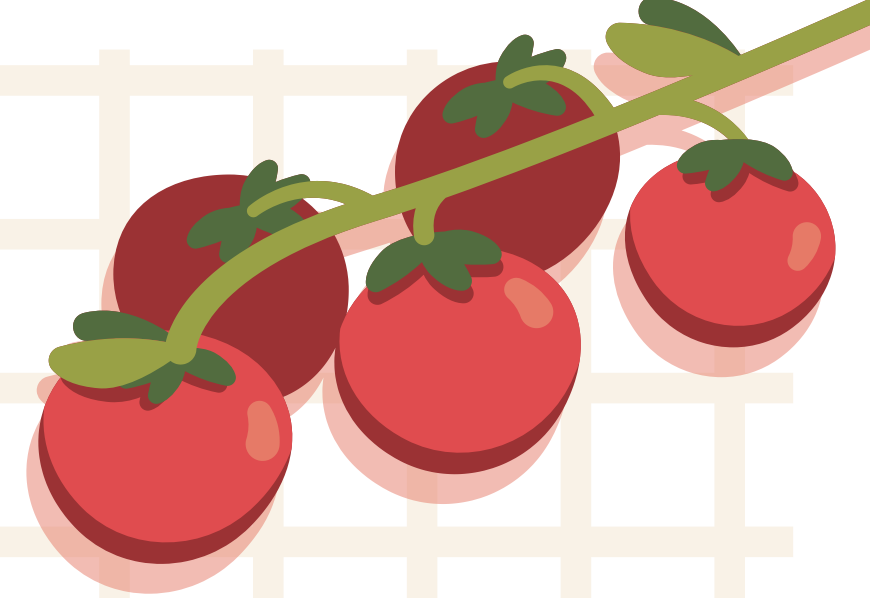
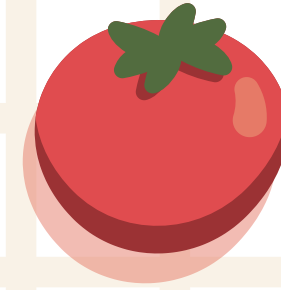
After searching, list of menus with that dish



Threads of reviews for a particular dish

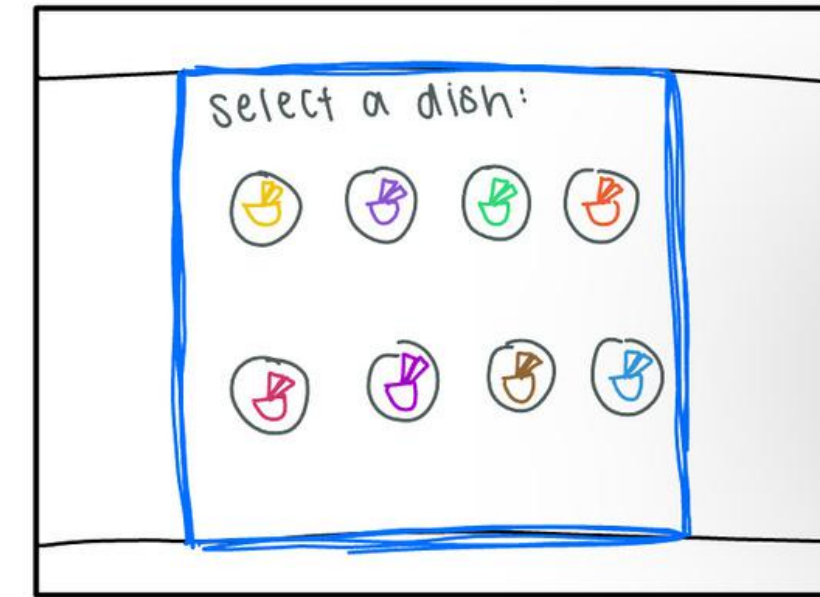
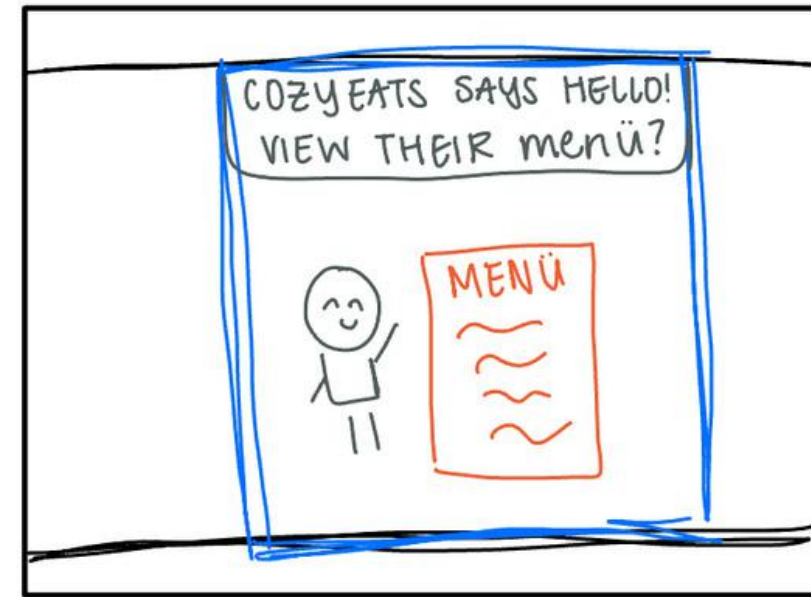
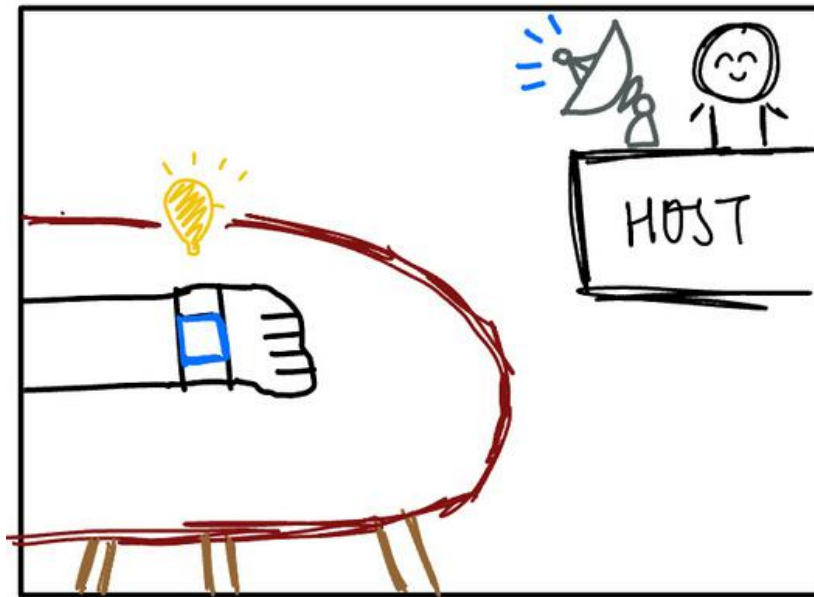


Top 2 Diverse Realizations

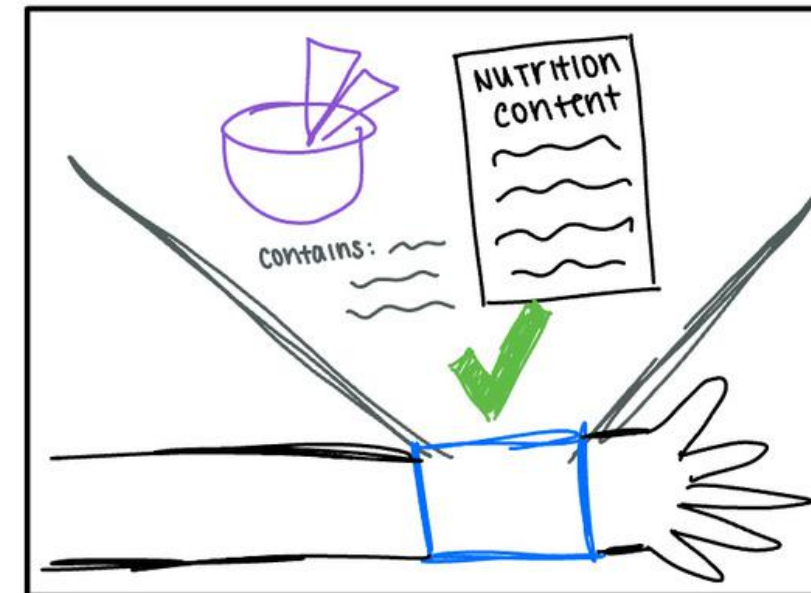
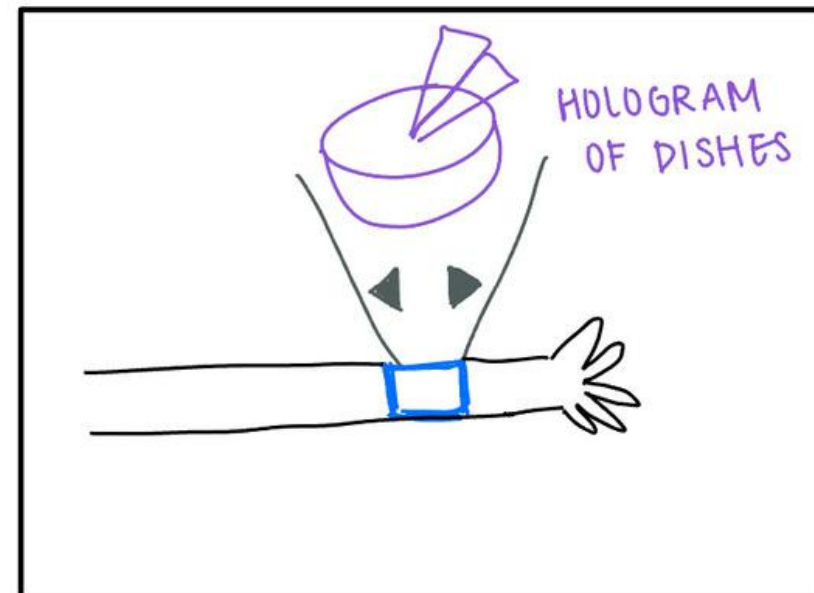


CONCEPT 1: APPLE WATCH X HOLOGRAM

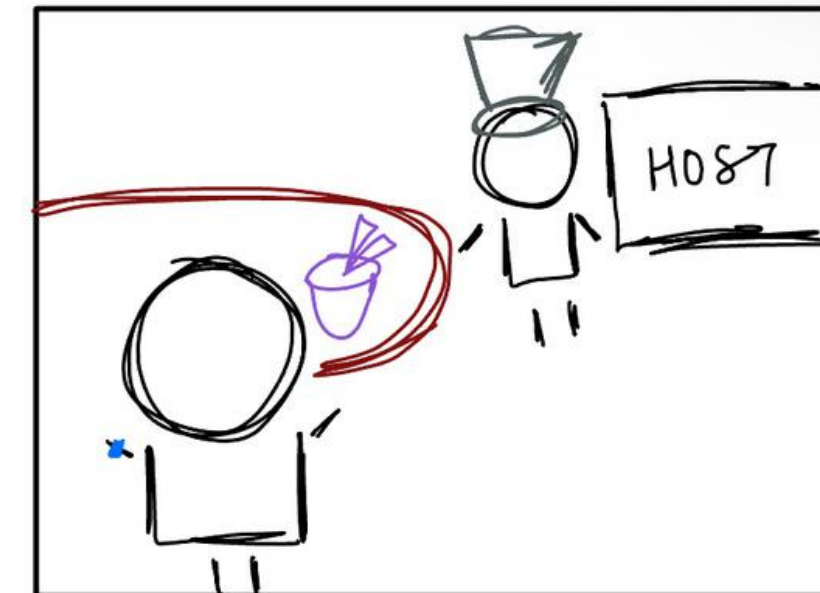
Users receive a ping on the Apple watch from nearby restaurants



A hologram of popular dishes appears and users can swipe through choices



Users review the nutritional content of dishes



Restaurant is notified of customer order

Pros / Cons

PROS

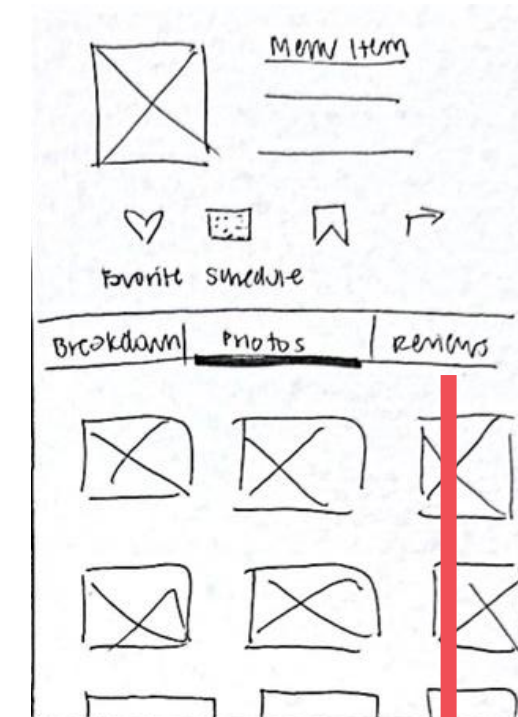
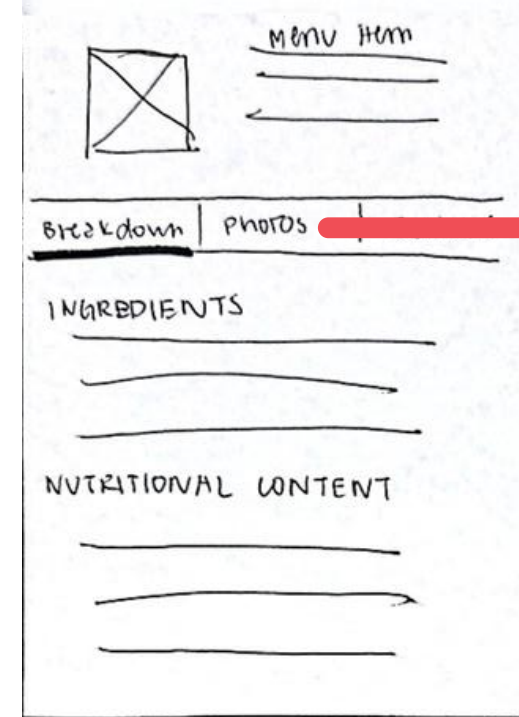
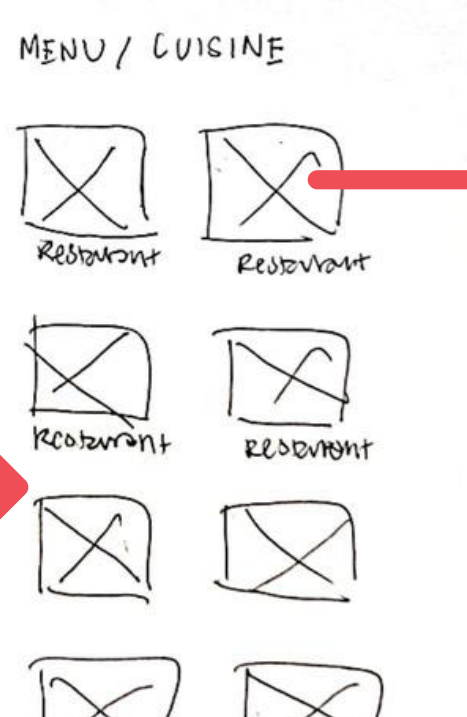
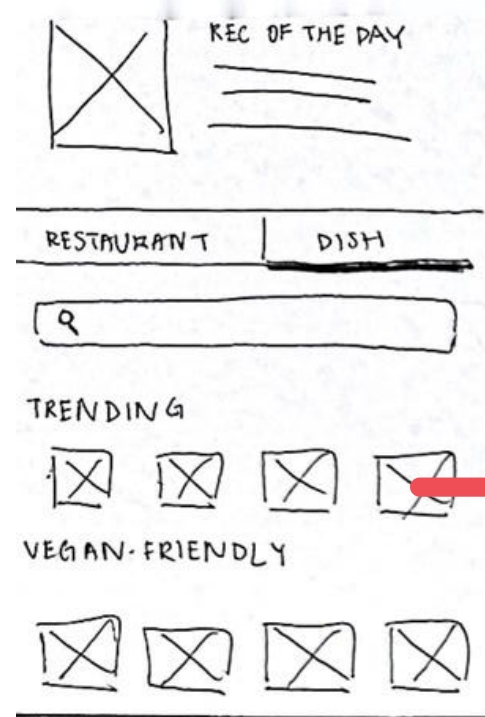
- **Novel medium** that enables 3D representations of dishes, allowing for immersive visuals
- **Convenient wearable device** can be worn at all times, during any occasion
- Restaurant discovery is **location-based**, enabling restaurants to automate communication with users

CONS

- **Requires developing technology** that has not been tried-and-tested in production environments yet
- **Immersive visuals can be distracting** and could cause public safety concerns
- **Content is limited** to what can fit on a watch screen or through a hologram, may be unfriendly towards visually-impaired users

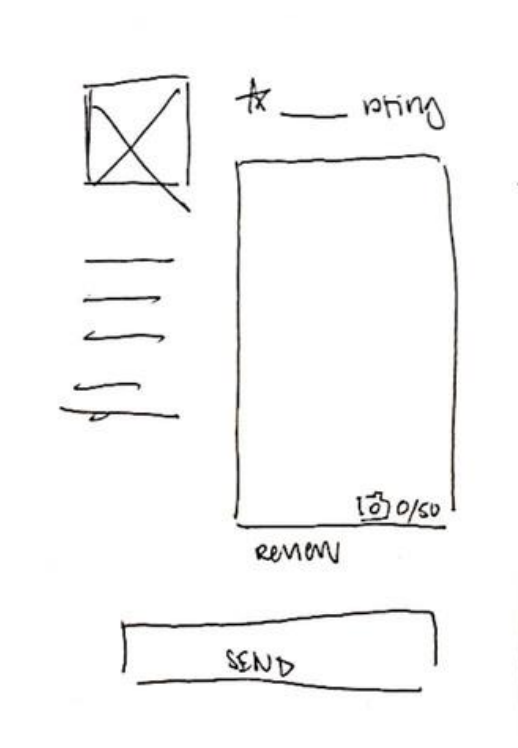
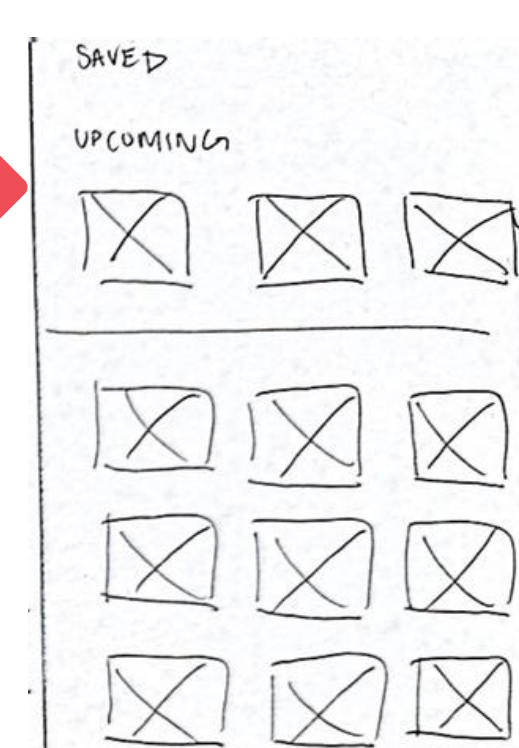
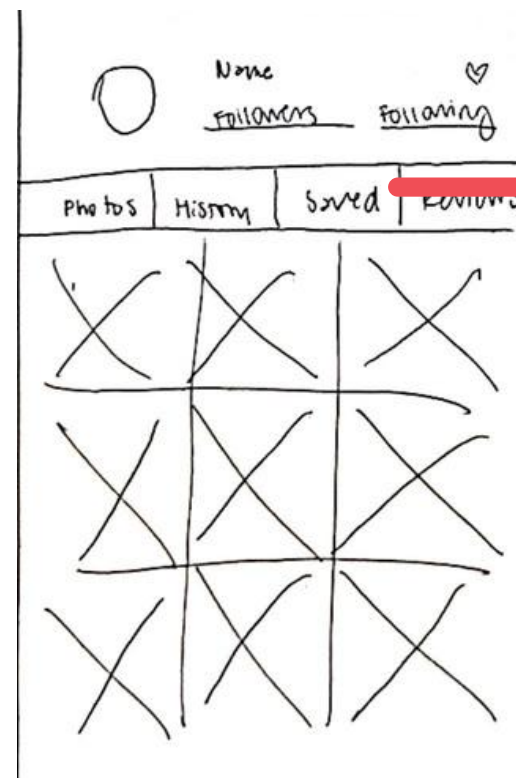
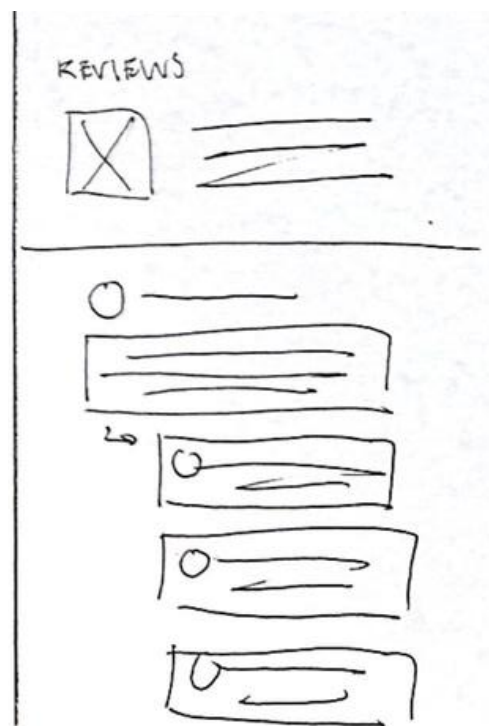
CONCEPT 3: MOBILE PHONE

Users can search by restaurant or by dish



Users click into a menu item and are able to view the ingredient breakdown, photos, and reviews

Users have a profile where they can upload photos of their food, as well as view their history and saved



Upon leaving the restaurant, the user can scan their receipt to view which menu items they can leave reviews for

Pros / Cons

PROS

- **Common device:** almost everyone has a phone
- **UI Familiarity:** users are already accustomed to interfacing with phone screens
- **Camera & Internet:** Phones have a built in camera & internet connections which are crucial to leaving/viewing reviews

CONS

- Users **staring** at their **phones** could **take away** from the dining experience
- **Battery & wifi** dependency
- Many **phone UIs are cluttered**, making it difficult for users to pinpoint important information



Selected Interface



Mobile Phone

Although the Apple Watch with a hologram component would be revolutionary, it is neither **realistic nor safe** given today's current limited knowledge about hologram technology.

Immersive visualizations may help draw the user in, but **can be dangerous** to nearby civilians.

To **increase the accessibility** of our service, we want to select a medium that most people can easily gain familiarity with. A mobile app is the perfect fit.

3 Task Flows

Simple

Moderate

Complex

SIMPLE

Customers can view more information about a particular dish.

See appendix for more detailed sketches

this is a "click"

COZY EATS
~0.5 miles away
a si-ohuan style restaurant...

Featured Dishes...

- Black Bean Veggies Vegetarian View more
- Mala Hot Pot SPICY View More

...click notifications

home page search profile

Black Bean Veggies Vegetarian

About

Nutrition Facts

Reviews

Images

Black Bean Veggies Vegetarian

About

This dish was inspired by...

Back Button

Black Bean Veggies Vegetarian

Nutrition Facts:

- Calories: 80
- Total Fat: 1g
- Sodium: 60mg
- ...

Back Button

all nutrition facts provided by

Black Bean Veggies Vegetarian

Reviews

- spicier than I thought. ↑ 5
- not enough veggies. ↑ 5
- amazing taste. pls order. ↑ 4
- tastes just like home cooking. ↑ 3

You may also like...

- Lettuce Wrap
- BoK Choy

Vegetarian

Restaurant Definition:

We define vegetarian as...

tap

upvote if you agree

Back Button

Black Bean Veggies Vegetarian

Images

- credit: joe-ngo
- credit: faith-z4
- credit: kait-lin
- credit: mei-lee

scroll

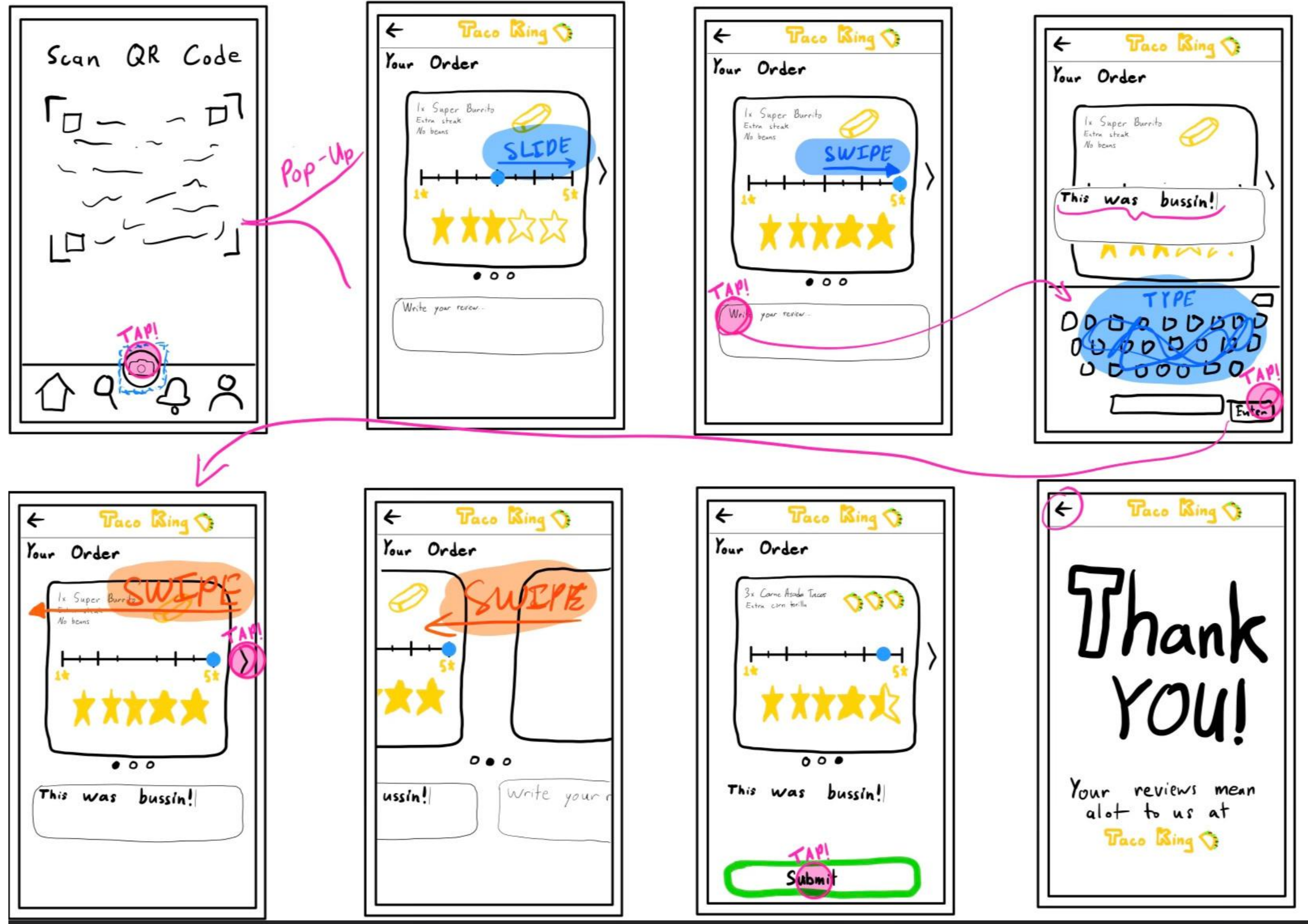
Back Button

scroll through images

MODERATE

Customers can provide feedback to the restaurant.

See appendix for more detailed sketches



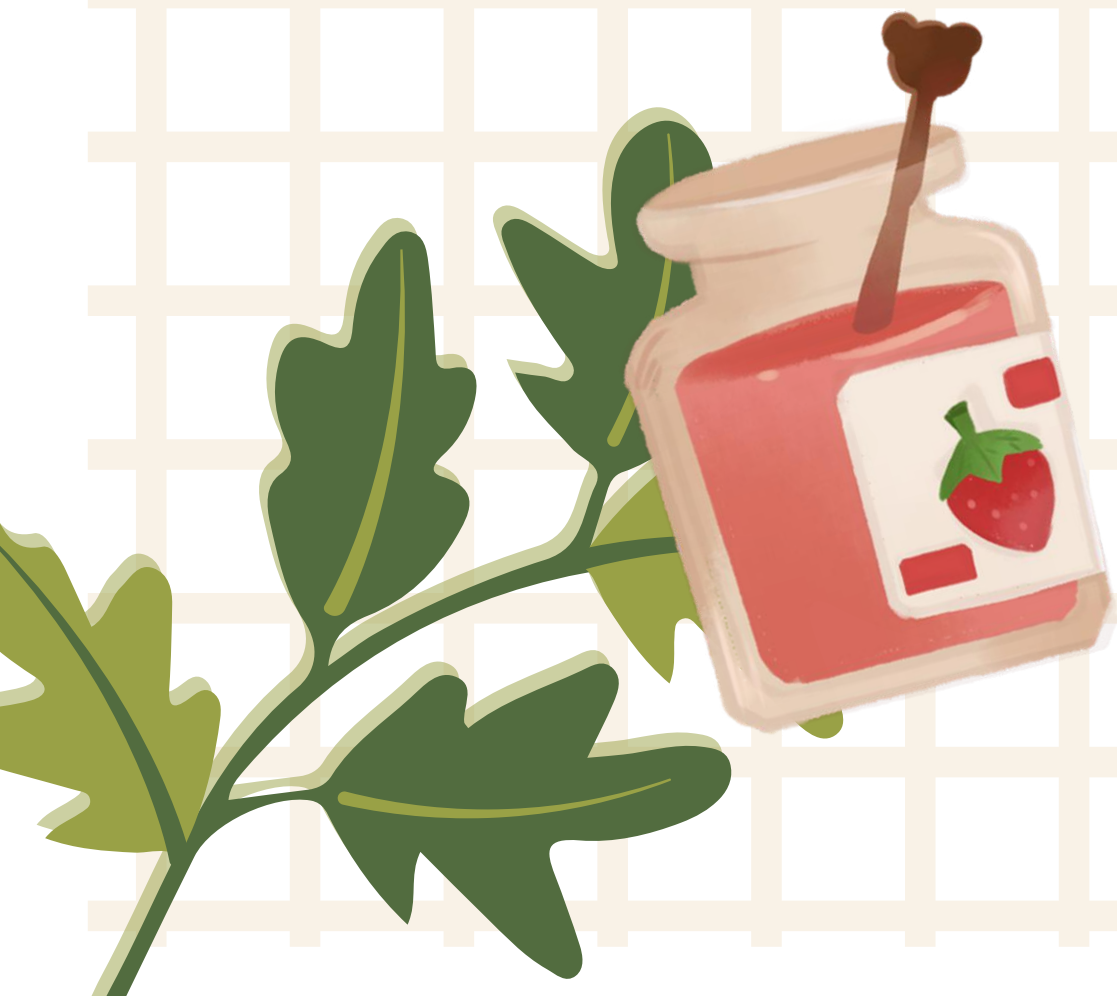
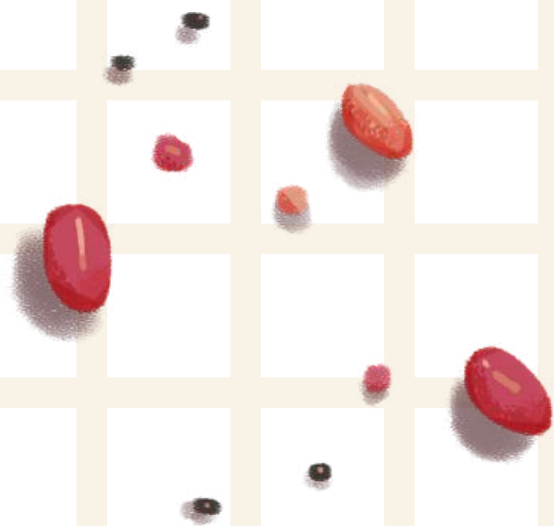
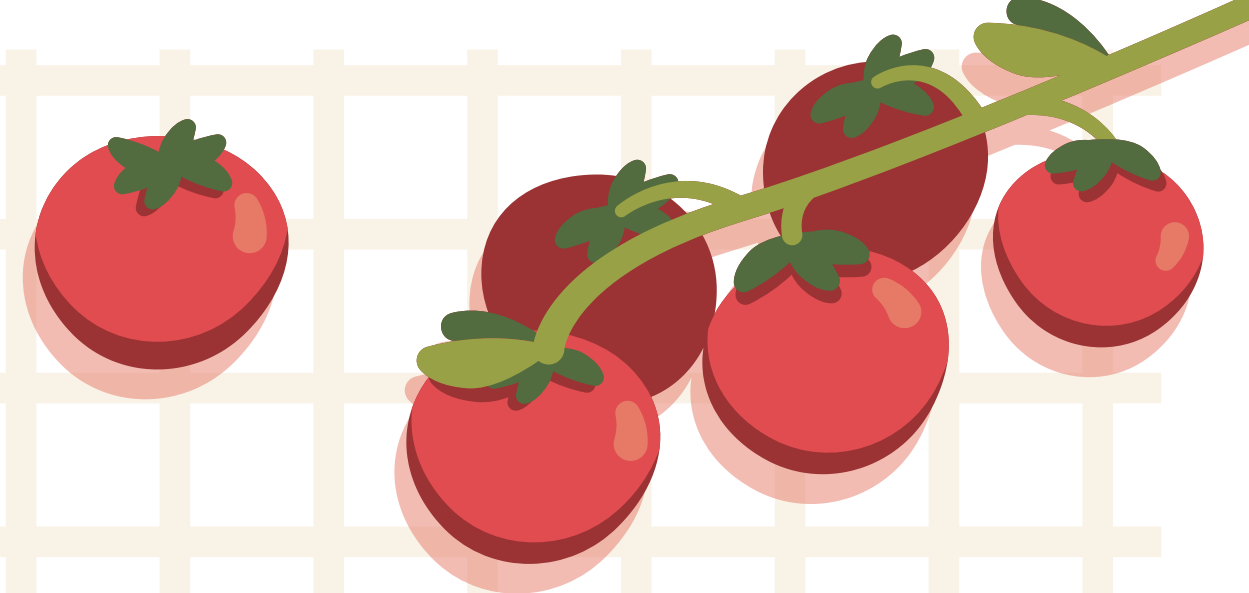


COMPLEX

Customers discover new dishes based on their preferences.

See appendix for more detailed sketches

Low-Fi Prototype





MAIN PIECES OF FUNCTIONALITY

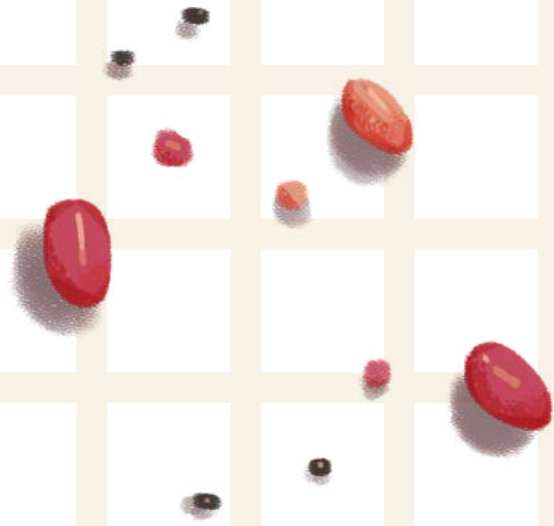
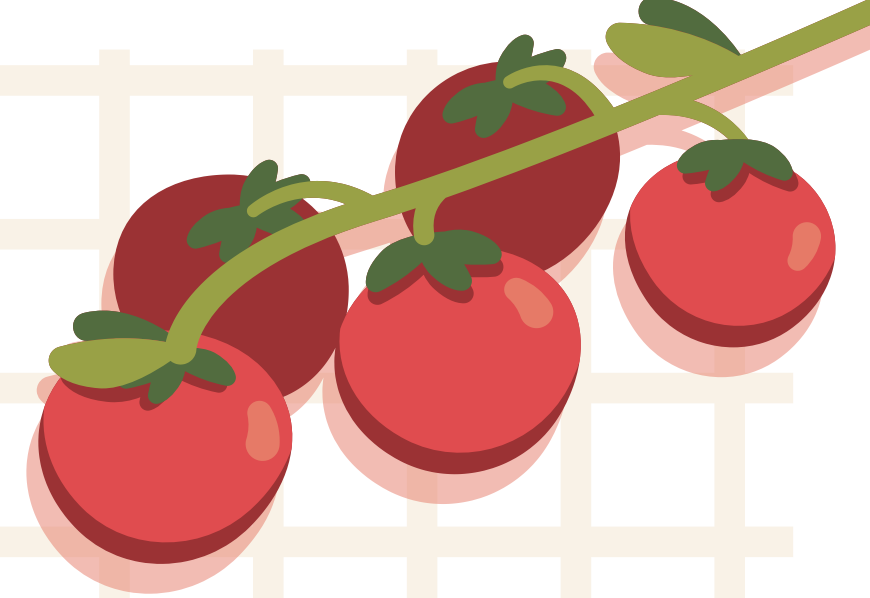
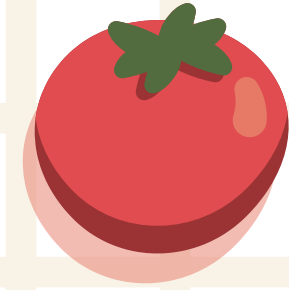
Task 1 (complex) : Onboarding Quiz + Preferences

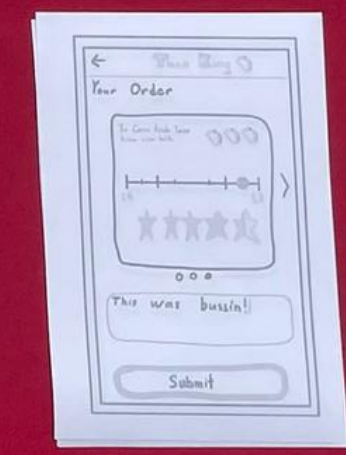
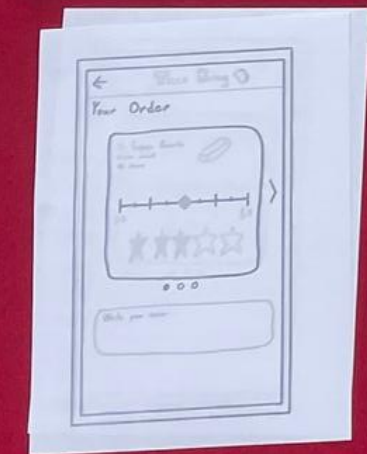
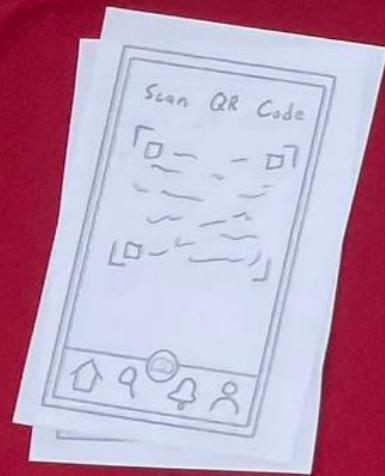
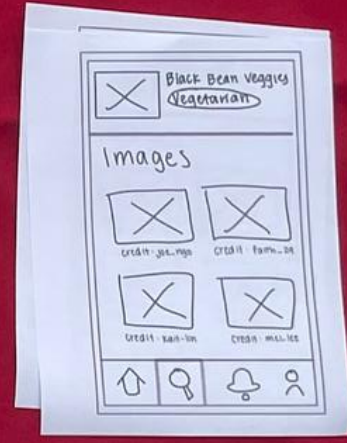
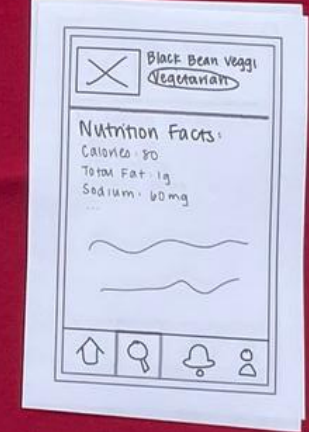
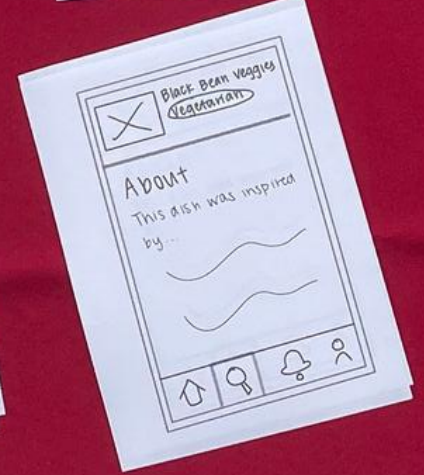
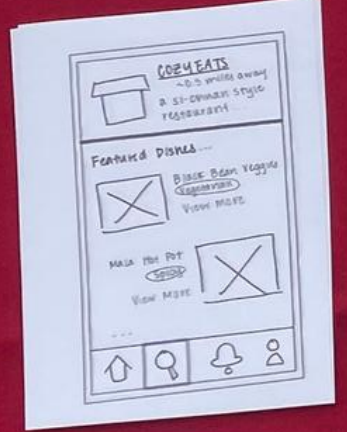
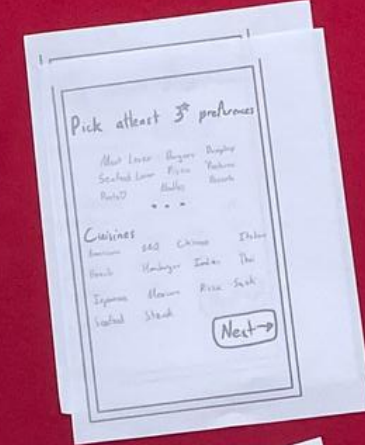
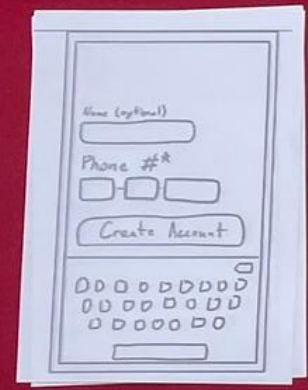
Task 2 (complex) : Search for a Specific Dish or Restaurant

Task 3 (simple) : View Dish Details & Information

Task 4 (moderate) : Scan a Receipt and Leave a Review

Testing Methodology







Procedure

1. Welcome the participant and provide an overview of what the low-fi prototype.
 - a. Emphasize the importance of **thinking aloud**.
2. Prompt participant to complete each of the 4 tasks.
 - a. Observe how many taps, what they are saying, any facial expressions.
3. Ask the user to reflect on the functionality of the app
 - a. Which functions were straight-forward and intuitive



ROLES

- Joe (Facilitator): Conducts the usability test.
- Faith (Computer): Manages the prototype and technical aspects.
- Kaitlin (Observer/Note-taker): Takes notes during the test.
- Melissa (Observer/Note-taker): Takes notes during the test.

PARTICIPANTS



Sarah

- GSB student
- Met through Arbuckle
- No compensation



Alex

- 3rd year Cal student
- Met through Melissa
- No compensation



Vince

- 4th year Stanford student
- Met through Joe
- No compensation



Tracy

- 25 year old
- Met through family friend
- No compensation



ENVIRONMENT & APPARATUS

A quiet environment, like a computer cluster or study room.

Preferably, sitting at a table (like at a restaurant)

We tested with a paper prototype, which was laid out on a table in front of our participants. Interactions were performed manually.



USABILITY GOALS & METRICS

Usability Goals:

- Efficient: user perform & complete tasks quickly
- Pleasing: user has a delightful & enlightening experience

Goals and Metrics:

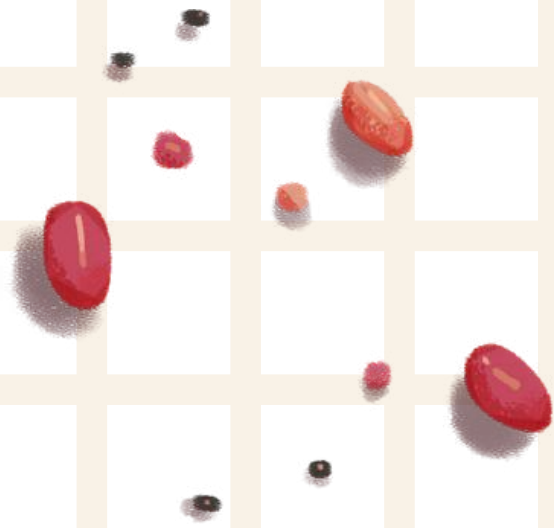
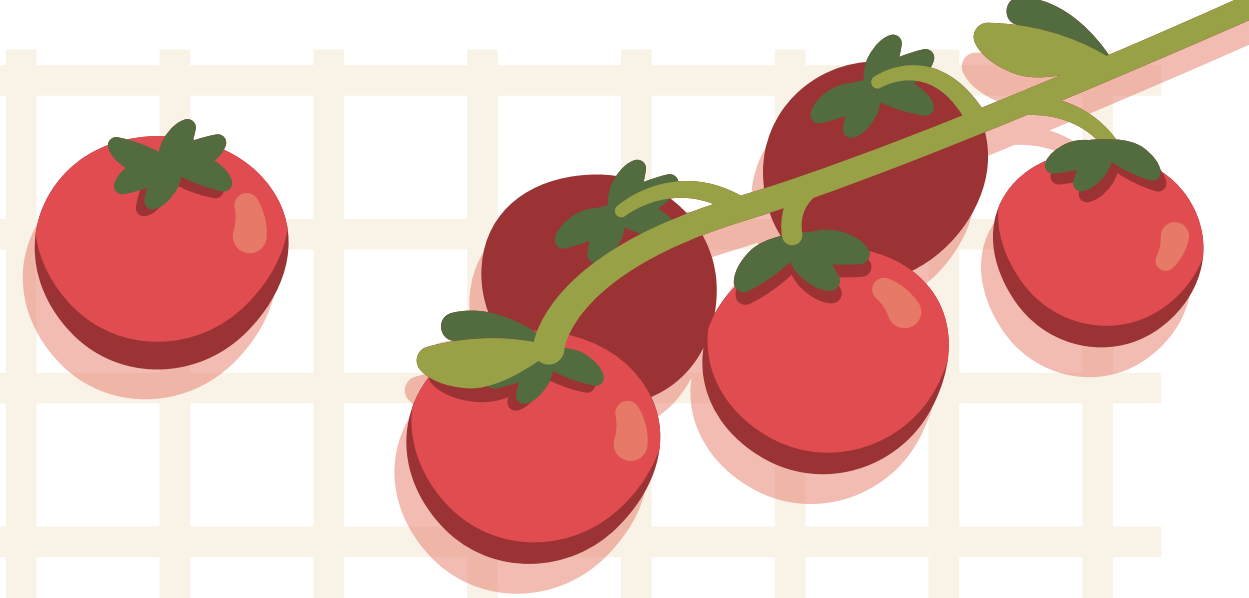
Success:

- User was able to complete a task swiftly and without help
- User finds the interface intuitive, straightforward, and aesthetically designed

Error:

- User got stuck and / or needed to ask for help to complete a task
- User got lost or took an incorrect path when trying to complete a task
- User found the interface unintuitive, misleading, or unaesthetic

Testing Results





PROCESS DATA

All four participants:

- Were confused by the preferences screen and what the options were referring to
- Felt that while navigation was fairly intuitive, they wanted to be able to complete tasks in fewer taps
- Found many of the screens to be dense and overwhelming



PROCESS DATA

At least two participants:

- Were confused by the slider interaction for rating dishes on the reviews screen
- Did not feel that the “Recommended for you” section served any purpose
- Felt the onboarding and login process was too demanding



PROCESS DATA

One participant:

- Mistook the upvote feature for the rating of the dish
- Wished for visual confirmation that the menu items displayed conformed to their dietary restrictions and preferences
- Voiced their appreciation for the breakdown the menu item



OTHER OBSERVATIONS

Task 1 was fairly intuitive with the exception of the preferences page.

Task 2 was straightforward.

Task 3 was overwhelming, with all the information presented.

Task 4 produced mixed feelings in which participants were intrigued by the scan receipt feature but weren't inclined to leave reviews.

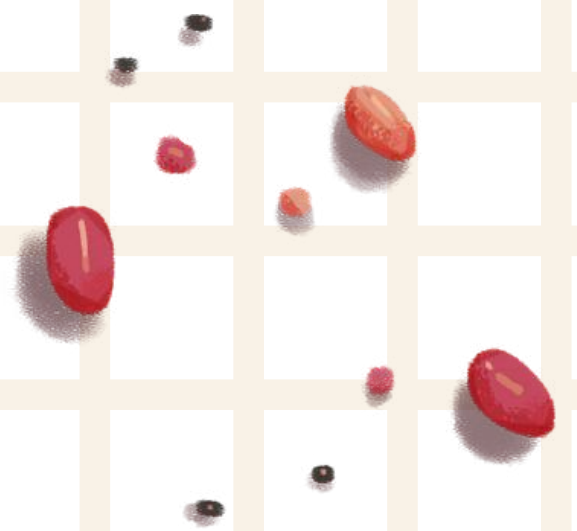
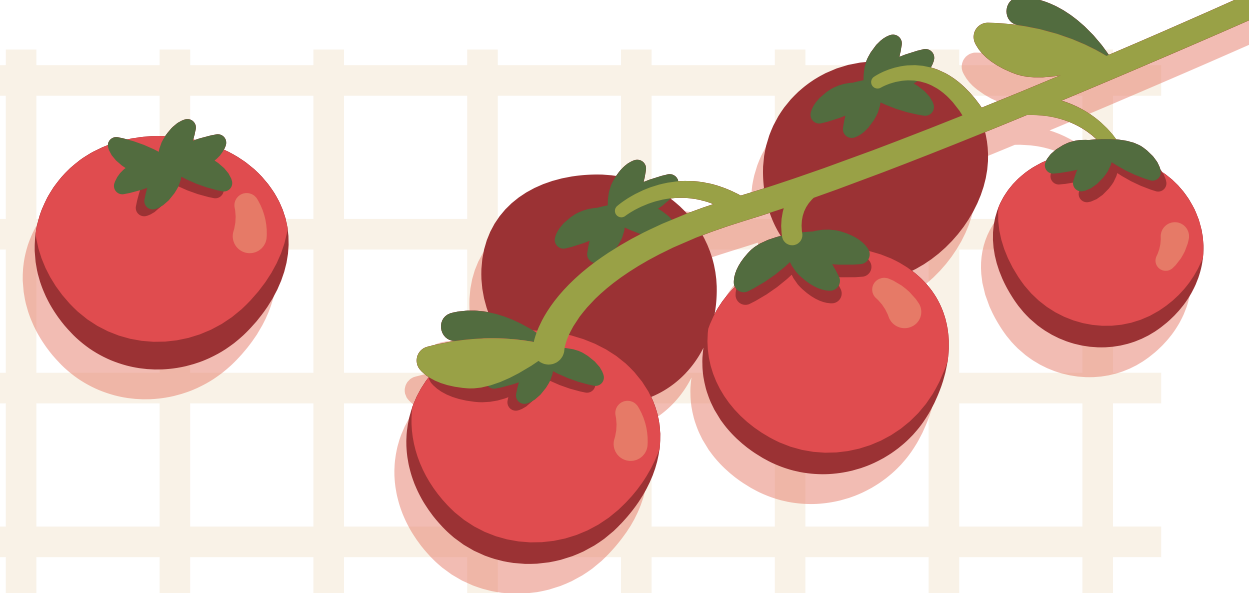


BOTTOM LINE DATA

Overall, we achieved our usability goals reasonably well.

- On preferences page, all participants took over a minute each to evaluate and understand the options
- On dish page, participants had a difficult time knowing where to navigate to next because of the number of options
- On average, participants ranked the prototype 7.5/10 for ease of use

DISCUSSION





IMPLICATIONS

- Having an elaborate preferences page is helpful, but maybe not necessary for onboarding steps
- Images make dish proportions and appearance easier to comprehend
- Providing details about dishes can provide some merit, but having too much can lead to information overload



CHANGES

- Limit preferences page to cuisines and allow users to specify dietary restrictions through filters
- Minimize content and buttons on pages and the number of screens required for each task
- Condense rating feature to a single slider with optional comments
- Prioritize images, reduce amount of text



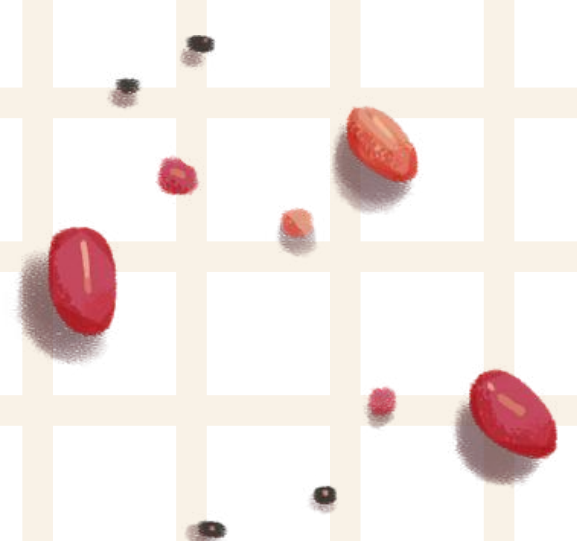
TESTING LIMITATIONS

- No data points tracking likelihood of users to use menü over alternatives like Yelp
- What emotions would users experience if they searched for a restaurant/dish that had zero reviews and images



THANKS!

Questions?



Appendix





Every restaurant has their own home page

Users can scroll here

This is a "click"

COZY EATS
~0.5 miles away
a si-chuan style restaurant...

Featured Dishes...

- Black Bean Veggies **Vegetarian** [View more](#)
- MALA Hot Pot **Spicy** [View More](#)

notifications

home page search profile

Black Bean Veggies **Vegetarian**

Reviews

- spicier than I thought. ↑ 5
- not enough veggies. ↑ 5
- amazing taste. pls order. ↑ 4
- tastes just like home cooking. ↑ 3

You may also like...

- Lettuce Wrap
- BoK Choy

home page search notifications profile

"About" tells you more about the origins of the dish

Black Bean Veggies **Vegetarian**

About

Nutrition Facts

Reviews

Images

home page search notifications profile

Black Bean Veggies **Vegetarian**

About

This dish was inspired by...

home page search notifications profile

Black Bean Veggies **Vegetarian**

Nutrition Facts:

- Calories: 80
- Total Fat: 1g
- Sodium: 60mg
- ...

home page search notifications profile

All nutrition facts provided by the restaurant are listed here

All these screens would have a "back" feature

All images have profiles listed below them. Users can tap into profiles

Vegetarian 🌱

Restaurant Definition:

We define vegetarian as...

home page search notifications profile

Black Bean Veggies **Vegetarian**

Images

- credit: joe.ngo
- credit: faith.24
- credit: kait-lin
- credit: mei-lee

home page search notifications profile



Additional Pros/Cons

Apple Watch x Hologram

Pros:

- All information is readily available with the tap of a screen
- Enjoyable interface for users to play with
- Can capture portion size and proportions accurately
- Users can view visuals in any type of lighting environment

Cons:

- Apple watch technology does not current have the capability to support holograms
- Some users may have difficulty understanding how to scroll
- Visuals can easily be overwhelming/unpleasant for the user



Additional Pros/Cons

Mobile Phone

Pros:

- Most applications are built for mobile phones, we can take inspiration from those we like
- Almost all users carry some form of mobile device
- Building an initial prototype on a phone will allow us to adapt our solution to other mediums in the future

Cons:

- Different brands of mobile phones exist, will need to build consistent interfaces for all
- Phones fit easily in pockets, but not as convenient as wearing a watch on your wrist
- There are many phone apps out there, how do we distinguish ourselves?



Testing Script

Demo the System UI clicks, taps, & scrolls.

Show the participant how to interact with the prototype at a high level (e.g., how to navigate, click buttons, or scroll).

Do not demonstrate specific tasks.

Task 1: Onboarding Quiz & Recommendations

Task Description: You've just downloaded the Menu app. Begin by completing the onboarding quiz to set your preferences & explore the home page.

Ask the participant to think aloud while they complete the quiz.

Ask the participant to think aloud when exploring the homepage, what pops out first.

Note any issues or confusion they encounter.

Task 2: Search for a Specific Dish

Task Description: You want to find a specific dish - "Spaghetti Carbonara." Search for it using the app's search functionality.

Encourage the participant to vocalize their thought process.

Note any challenges they face.



Testing Script

Task 3: View Dish Details

Task Description: Click on the "Spaghetti Carbonara" dish you found. Explore the details, including nutritional information, ratings, comments, and reviews.

Have the participant think aloud.

Document their experience and any issues they encounter.

Task 4: Scan a Receipt and Leave a Review

Task Description: You've just dined at a restaurant and received a receipt. Use the app's receipt scanning feature to get a list of ordered items. After that, leave a review for one of the items you ordered.

Encourage the participant to vocalize their thought process while performing both actions.

Note any challenges they face and their feedback on the process.

1. Thank the participants for their valuable feedback.
2. Ask if they have any final thoughts or suggestions.
3. Answer any questions they might have.

Post-test Procedure:

The observer/note-taker compiles a log of critical incidents, both positive and negative events during the test.

Prioritize incidents by assigning severity ratings (0 = no problem, 1 = cosmetic problem, 2 = minor usability problem, 3 = major usability problem, 4 = usability catastrophe).

Critical Incident Log

INCIDENT	SEVERITY
Took some time to complete preference sheet due to confusion with options	2
Was confused with customization on what three things she was selecting	3
Was able to easily search for a specific dish but found page overwhelming to look at	1
Was able to navigate to more ingredient and nutrition information on a dish but found it overwhelming to look at	1
Didn't notice you could upvote, thought it was their rating	2
Found the scan receipt feature intuitive and unique	0
Took wrong path when viewing dish details. Originally thought bulk of info was in "about" section.	3
Needed help rating the dish on the reviews screen; was confused by the slider interaction	2

Critical Incident Log

INCIDENT	SEVERITY
Took a while viewing food restrictions page	2
Confused by the "Pick 3" instructions on the preferences page on what it was referring to	3
Questioned why there was a search icon and a search bar	1
Wanted to see popular dishes on the home discovery pg but couldn't	1
Wanted to verify if the menu items displayed conformed to his dietary restrictions	1
Tried to downvote but couldn't; thought it would be more useful to categorize reviews as "People found this review helpful"	2
Confused why star rating was adjusted with a slider	1
Didn't understand why the review text box popped up	1

Critical Incident Log - Vince Huang

INCIDENT	SEVERITY
Thought login screen required too much information, should be minimized	2
Was confused about the purpose of preferences page (was this preferences or restrictions?)	4
Thought about page was unnecessary, would rather just see images	2
Didn't want to leave a review, thought review screen was too much	2
Wanted information to be condensed into few pages and fewer taps	3
Was not as interested in food items than the ambiance and vibe	4
Found app to be useful for making informed dining decisions	0

Critical Incident Log - Tracy Ha

INCIDENT	SEVERITY
Thought login screen required too much information, requested to be anonymous	3
Found little purpose for the "Recommended to you" section	2
Search was intuitive but would have liked to see accompany star ratings	1
Disappointed by lack of reward system for leaving reviews	3
Leaving a custom review, star rating, and scale was too much. Just wanted to leave a star review	2
Was overwhelmed by the text, wanted to see more images	1



Testing Notes

<https://docs.google.com/document/d/1USHHtUBO5CeOoXb1SFZWTAo-lebNvuefTQi0dBAV8PI/edit?usp=sharing>