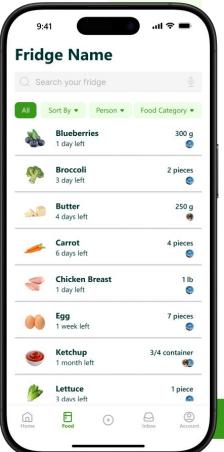
# **Anonymous Chimera**

Kelsie Fung, Yuxi Zhang, Izumi Ando, Wendy Wan, Anastasia Jivalcovschi, David Lee

November 27th, 2024 CSC318: The Design of Interactive Computational Media TA: Ken Christofferson





34% of consumers think about food waste when shopping...







...yet 50 million tonnes of food gets wasted in Canada every year.



Of which 60% is avoidable with better planning.

# 01 Problem

# People need a tool that helps them track what is in their fridge because they don't want to waste food and money.

# **Primary**



# Students living alone or with others, working adults, parents

- has control over what they eat daily
- has primary control over their fridge organization

### Secondary



#### Students living with family

 does not have complete control over what they eat daily but may interact with the fridge occasionally

# **Tertiary**



# Grocery stores, food suppliers and waste management systems

affected by the system's success

#### **Stakeholders**

# 02 Process & Products

### **Studies**



#### **Formative Studies**

→ understand and frame the root of the problem in an addressable manner



#### **Talk Alouds**

→ identify gaps in the designer (us) and the user's understanding of how the app is used to solve the problem



#### **Expert Evaluations**

→ identify glaring design issues in a systematic way



#### **Usability Testing**

→ evaluate the efficacy and efficiency of our prototype in providing a solution the original problem, as well as its user friendliness (satisfaction)

#### **Formative Studies**



#### Who We Recruited

#### Semi-Structured Interview:

- → 5 primary stakeholders
- → 1 secondary stakeholder

#### **Questionnaire:**

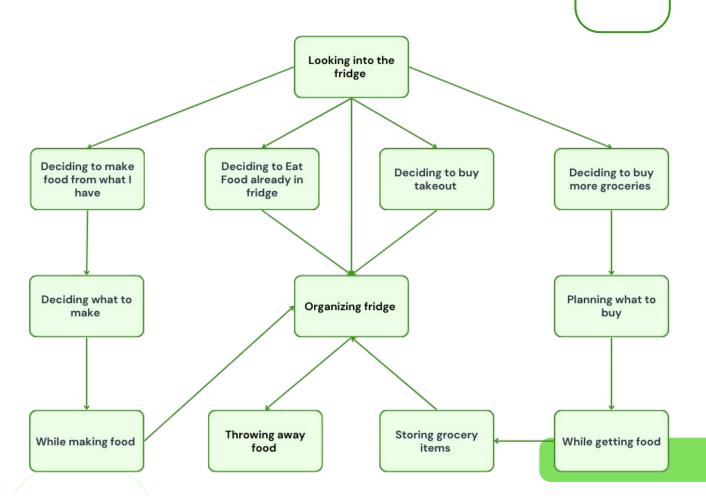
- → 40 primary stakeholders
- → 19 secondary stakeholders



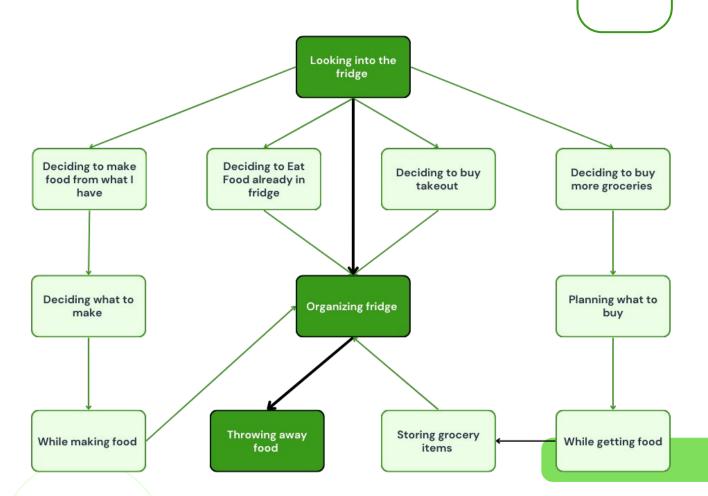
#### What We Learned

- People feel "frustrating", "awful" and "terrible" when they create food waste.
- The main cause of food waste is users forgetting what food they have in their fridges, often due to disorganization.
- Running out of space is the most frustrating fridge related issue for users.
- Produce and leftovers are wasted the most.

# Experience Map



# Experience Map



#### THINKING

**FEELING** 

What items do I have and what do I lack? What do I want to eat? Which items are mine? Should I get more food or use the food I have or eat out? How do I keep the fridge clean, my items easy to find? How do I remember which foods I should consume first?



"Produce, veggies, and fruits are somewhere visible, and all the jars and the sauces are put away in the drawers because they're less used." What can I no longer eat to ensure food safety and what do I no longer want to eat? What is taking up space that should be discarded?

Not knowing what items are old enough to be thrown away.

"So where it is in the fridge, doesn't tell you how old it is, just because it's in the back, it doesn't mean it's the oldest."

# Experience Map

It's difficult to see what I have at first glance. I have to go through the fridge, which takes time and effort.

"Items are stacked on top of each other and hidden from view, which causes me to forget about items I have purchased." Frustration from the messiness.

"I hate when I forget about certain foods that are hidden/moved, and they start to go bad."

' people moving stuff around... and then you lose track of where you put it."

"A big challenge for me is keeping the food organized and keeping track of what's in the fridge... it's really easy to forget... if the fridge is not organized." Guilt from having to throw away food.

"It's frustrating when I have to throw away food because I hate wasting both money and resources."

"it's awful... because monetary waste... Then you always think about the bigger picture of the world, right?"



#### **Job Stories**







When shopping for groceries, I want to know what and how many items I need to buy so that I don't purchase anything unnecessary.

When food in the fridge are nearing their expiration dates, I want to receive a reminder, so I can consume or freeze it before they spoil.

When sharing a fridge with other people, I want to know what foods are being used up, so I don't run out of an item unexpectedly.





When meal prepping for the week, I want to easily know what ingredients are in abundance so I can plan out my meals without letting any ingredients go to waste.

When taking food out of the fridge, I want to easily know what food I have and where to find it, so that I can remember what food I still have to eat.

#### **Job Stories**







When shopping for groceries, I want to know what and how many items I need to buy so that I don't purchase anything unnecessary.

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# **Design Requirements**

01

Track what users have in their fridge

04

Suggest how to deal with expired/expiring food in their fridge

02

Track how much space users have left in their fridge

05

Assist users in organizing food placement in the fridge

03

Remind users of which foods are going to expire/go bad soon

# **Design Requirements**

01

Track what users have in their fridge

04

Determine which food belongs to each user

02

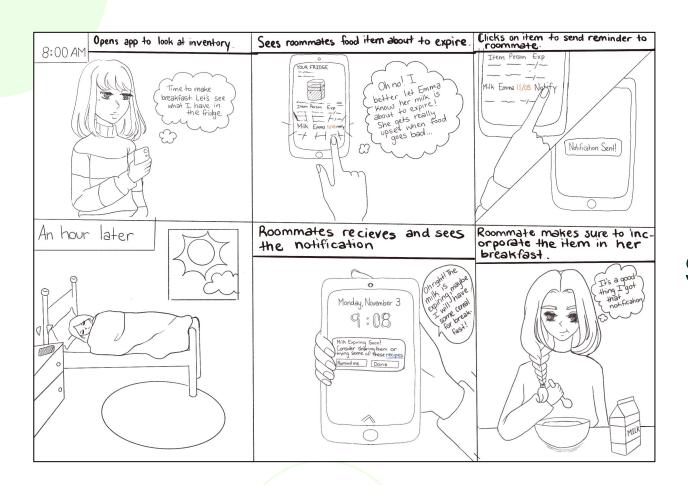
Track how much space users have left in their fridge

05

Communicate with other users about food inquiries

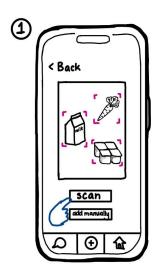
03

Remind users of which foods are going to expire/go bad soon



# High-Level Storyboard

# Low-Level Storyboard



scans all the items



list of scanned items & their details are shown for confirmation.

user clicks add to fridge right away by accident.



taken to the list view of the fridge items.

user searches for the recently added item to edit & clicks on it.



taken to the edit page for the item.

User edits the field that needs to be fixed & clicks update.



automatically taken back to the list view & sees the change is reflected

# **Paper Prototype**



# **Talk Alouds & Expert Evaluations**





<u>Talk Alouds</u> 4 primary stakeholders

Expert Evaluations
6 experts consisting of University
Students



#### What We Studied

How users approach the core tasks the low-fidelity prototype was designed to achieve.

How users perceived the different UI elements and whether they aligned with the developer's intention.



#### What We Learned

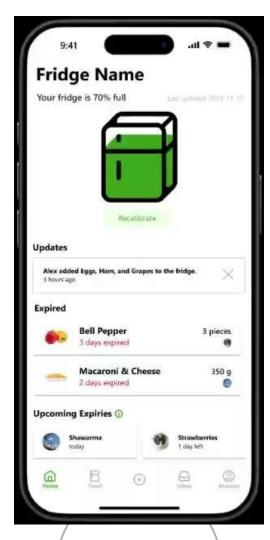
Consistency and Standards: Interaction & Navigation Inconsistency

Visibility of System Status: Lack of "Fridge Fullness" Feature Clarity

Recognition Rather than Recall: lcon Inconsistency

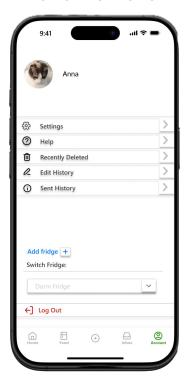
Help and Documentation:
Better documentation and Feedback

# O3 High Fidelity Prototype



### **Additional Features**

#### **Profile Information**



#### **Invite People to the Fridge**

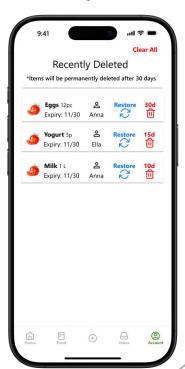


#### **Welcoming Tutorial**



### **Additional Features**

#### **Recently Deleted**



#### **Edit History**



# **Usability Testing**

#### Who We Recruited:

10 Participants in Total (2 being pilot testers)

- 5 Full-Time Students
- 4 Part-Time Workers
- 1 Full-Time Worker

#### Why:

Two pilot tests allowed us to identify initial errors to address.

Eight end target users allowed us to identify approx. 85% of usability issues for analysis.

# **Usability Testing**

#### What We Learned:

- Importance of Clarity in Text Descriptions
- 2. Inconsistencies Cause Confusion
- 3. Benefits of Flexibility In Different App Features
- 4. Error Prevention and Recovery is Necessary

<sup>\*</sup> Many usability issues were impacted by limitations in the development of our high-fidelity prototype too.

# **Expectations Met**

"[The] home page **tells you what has expired or is about to expire** because it's easily identifiable. The app just tells you instead of you having to find out or go looking for something yourself."

"Allows to act beforehand"

"Yes it did, as I now have access to all the stuff that my roommate also bought and we can share stuff and reduce buying thing we don't need/already have."

# Thank you!

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