

PROCESS DOCUMENT

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Coconut System

Interactive App

Physical Product

PROJECT OVERVIEW

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PROBLEM STATEMENT

In the age of global resources crisis, we are striving for a smarter consumption of food, which means utilizing existing produce without delving into extraneous resources.

However, as the amount of food waste is incredibly large among consumers in developed countries, this has a tremendous effect on the environment and wastes large amount of money on a consumer level. Unorganized lifestyle, limited knowledge and impulsive in-store decisions lead to more food waste, especially in one and two people households.

By providing financially beneficial and natural habits to be adopted by consumers, they can develop more sustainable food habits; driving a more sustainable food system.

The team further defined the design problem within and developed design statement.

DESIGN STATEMENT

Confusing information about freshness of produce and unawareness of inventory often cause food waste and unpleasant culinary experience at a consumer-level.

An engaging, easy-to-use solution that provides users with accessible information about freshness and quantity will enhance the personal experience of shopping and cooking. This will eventually have positive impact on lifestyles, economics, environmental sustainability and the food system as a whole.

VALUE PROPOSITION

communicate GS1 Databar™ to consumers

display and remind freshness information in an accessible way

keep track of inventory and quantity

a kitchen companion

RESEARCH

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SECONDARY RESEARCH

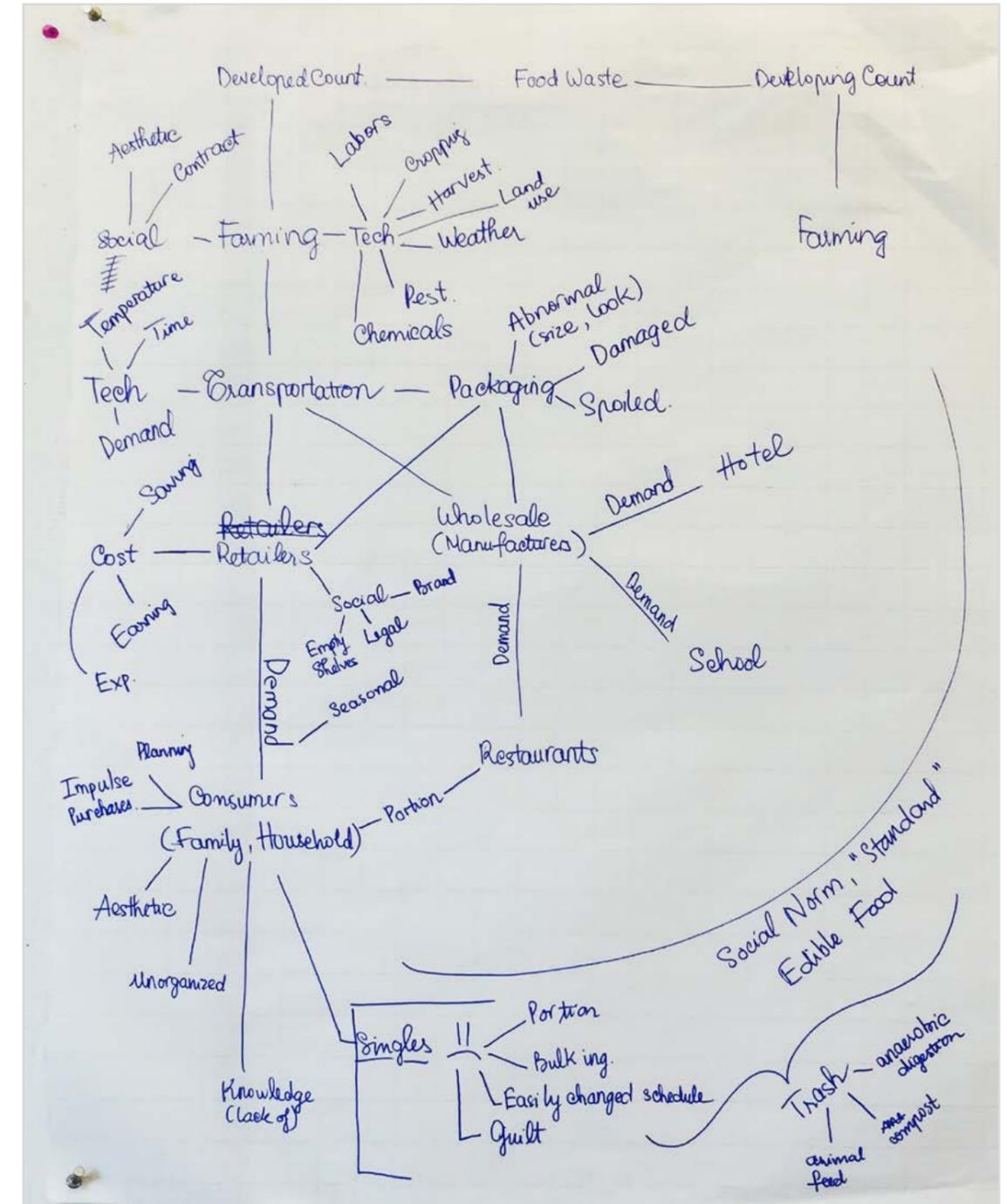
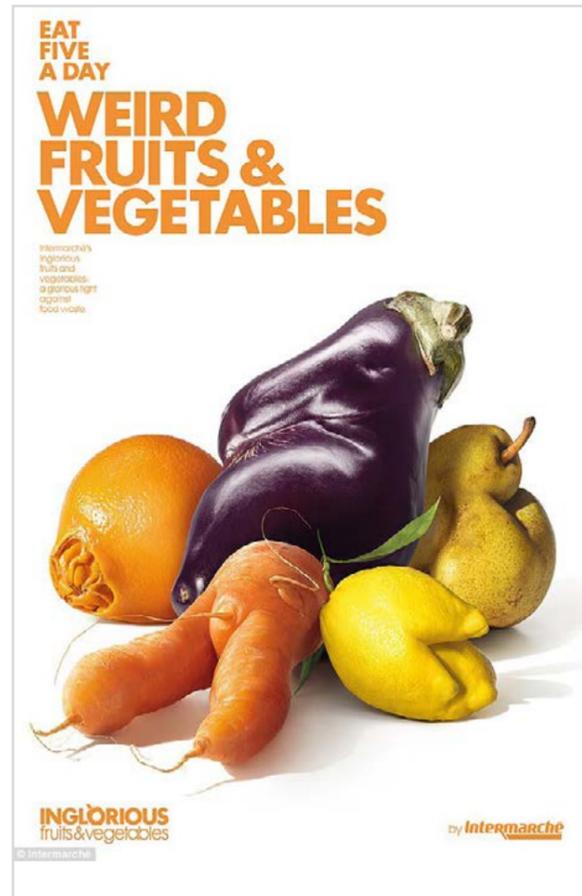
SECONDARY RESEARCH

We looked into industrial leads and various campaigns on the topic food waste.

MIND MAPPING

We did a mind map based on the landscape of current food system, trying to find out A) what are the problems that arise in each part of the system, and B) what is a appropriate problem area for the team to focus on.

We decided to focus on consumer for they are the biggest source of food waste, especially one and two people households.



SECONDARY RESEARCH

BENCHMARKING

We looked for existing solutions that address the problem of food waste.

Currently, there is not a satisfiable solution that solve the food waste problem from the consumer level. Our hope is to avoid food waste from the very beginning, compared with some campaigns/projects that donate food.



Spoil Alert

Spoiler Alert is an online platform that connects people who have available food with qualified nonprofits.

Strengths: It reduces the amount of food waste, and allows more people to have access to food. It also connects the community.

Weaknesses: It doesn't change the consumer buying behaviors. It is also not very economically efficient.



Blue Apron

Blue Apron provides original recipes weekly that allows you to choose, then delivers the exact amount of ingredients needed for family of 2, or more than 4 people. The service also gives subscribers cooking directions, as well as tips and techniques.

Strengths: It minimizes grocery shopping for subscribers, as well as the amount of ingredients wasted after each meal.

Weaknesses: It doesn't have an option for one person household, and it's not very personalized. It's also very expensive (about \$10 per meal).

WeCook



WeCook is a Chinese app that generates recipes based on user's available ingredients and cookware. It recommends nearby events and cooking meetups. It also offers delivery ingredients for specific dishes from nearby restaurants.

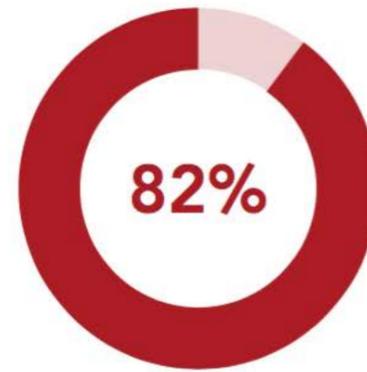
Strengths: It allows users to take use of anything they have left.

Weaknesses: It's too scattered. The app also doesn't provide the user with expiration information or knowledge.

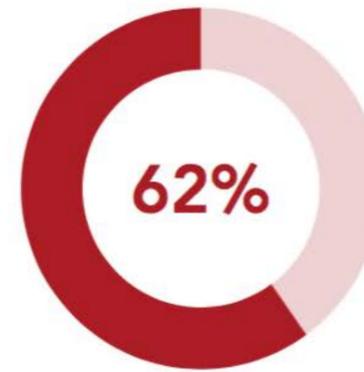
PRIMARY RESEARCH

IN-DEPTH INTERVIEW (N=11) and ONLINE SURVEY (N=72)

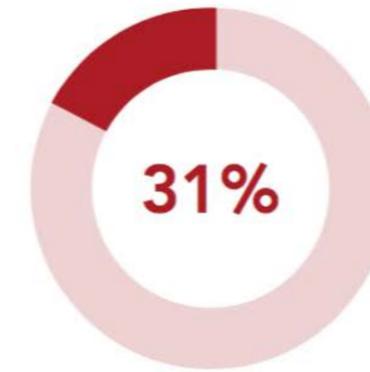
By conducting in-depth interview and online survey, the team is able to learn the real problem areas for the targeted group, as well as their cooking and grocery shopping habits.



82% says they threw out
food because it pasts
expiration date



62% says because it
smells/tastes weird



31% says they cooked
too much

IN-DEPTH INTERVIEW

PROBLEM AREAS

Limited Cooking Knowledge

Some dishes are hard to cook
Don't know how to cook
Don't have time to cook
Don't know how to portion food

Low Life Efficiency

Cook for multiple days and keep them in containers so food goes bad
Limited time (for both cooking and shopping)

Unorganized Fridge Storage

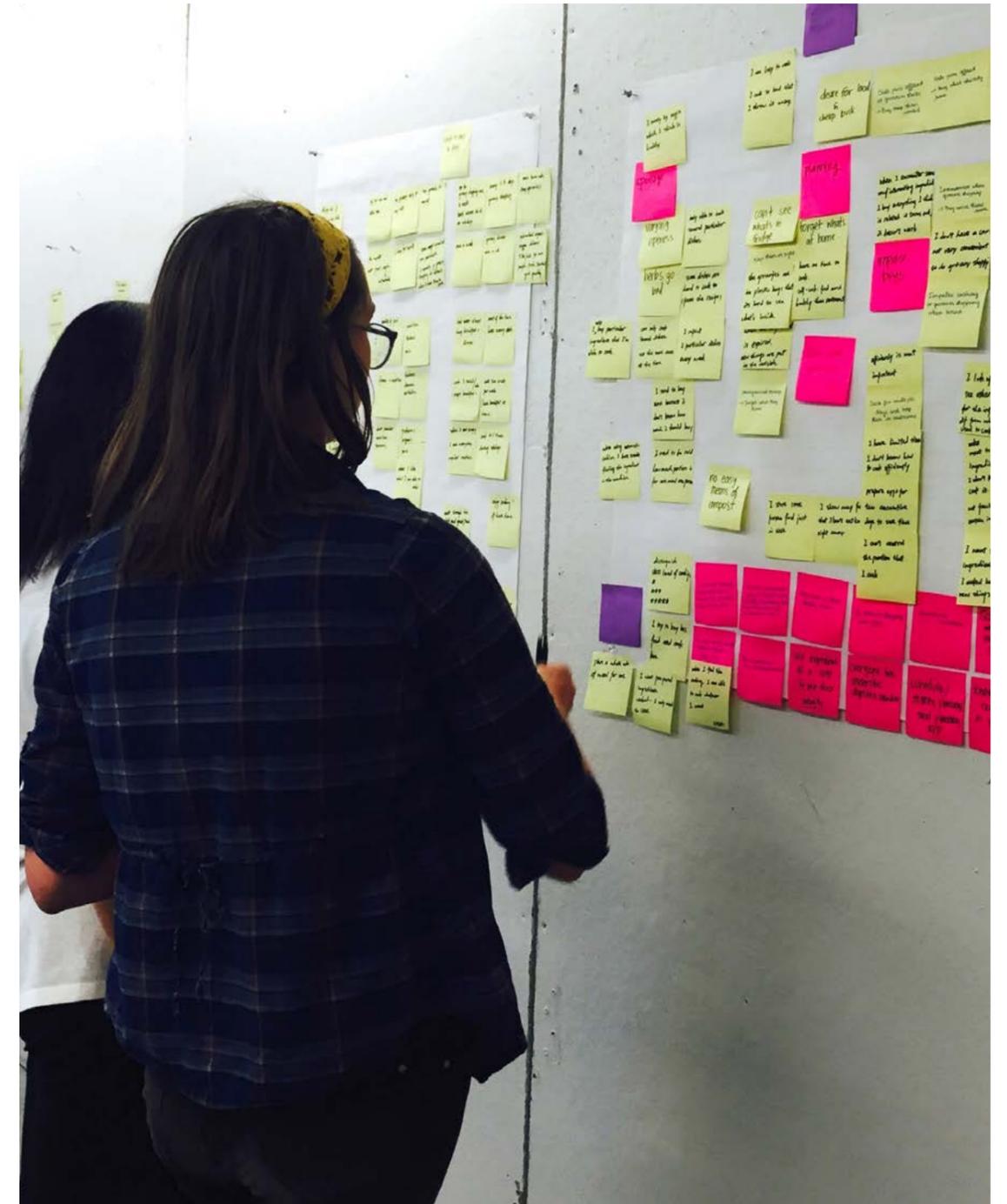
groceries are in plastic bags that its hard to see what's inside
I don't notice when the ingredients go bad. new things are put in the outside
unorganized storage so forget what I have

Inability to Purchase in Bulk

Sale price offered for a larger amount
Buy a whole bag of produce

Impulse Buying

Inconvenience while groceries shopping
Groceries shopping/cooking when bored
Don't have shopping list Buy what's discounted Buy what's interesting



After we interviewed the potential users, we set up personas to help users better relate to themselves.

We specifically want to focus on one- and two-people households. By setting up a college student and a newly-married wife, we hope to represent the daily routine and address some problem that are found in the interviews.

THOMAS

About Thomas

College student, living with three roommates

Busy social and student life, often eats out with friends

Cooking habits

Goes grocery shopping every two weeks

Cooks once a week, saves leftovers

Only knows a few recipes, gets boring

4 people's food in fridge makes it hard to see what's there

"It seems like every time I try to plan to cook more, I end up having a crazy busy week and all my ingredients go bad because I don't have time to use them."



JESSICA

About Jessica

Newlywed, no children

Lives in a downtown apartment

Cooking habits

Loves cooking, cooks everyday

Goes grocery shopping every couple of days

Chooses groceries in store based on sales

Rather not have leftovers

Throws out food before expiration

Interested in composting, no time or place

Busy social and student life, often eats out with friends

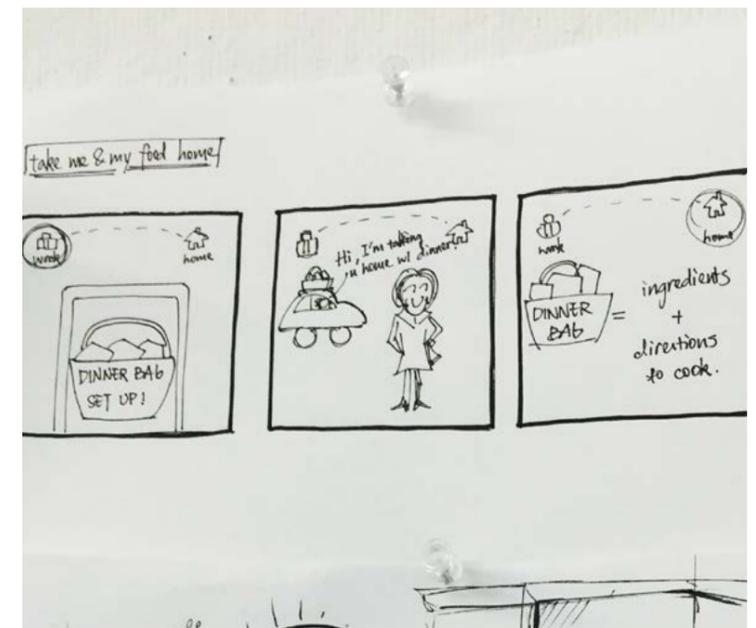
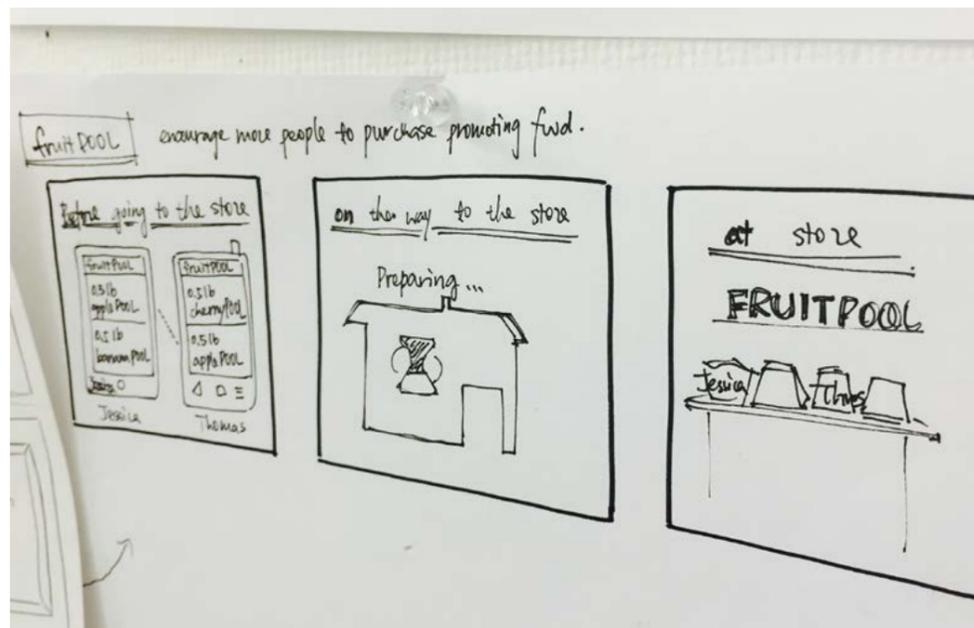
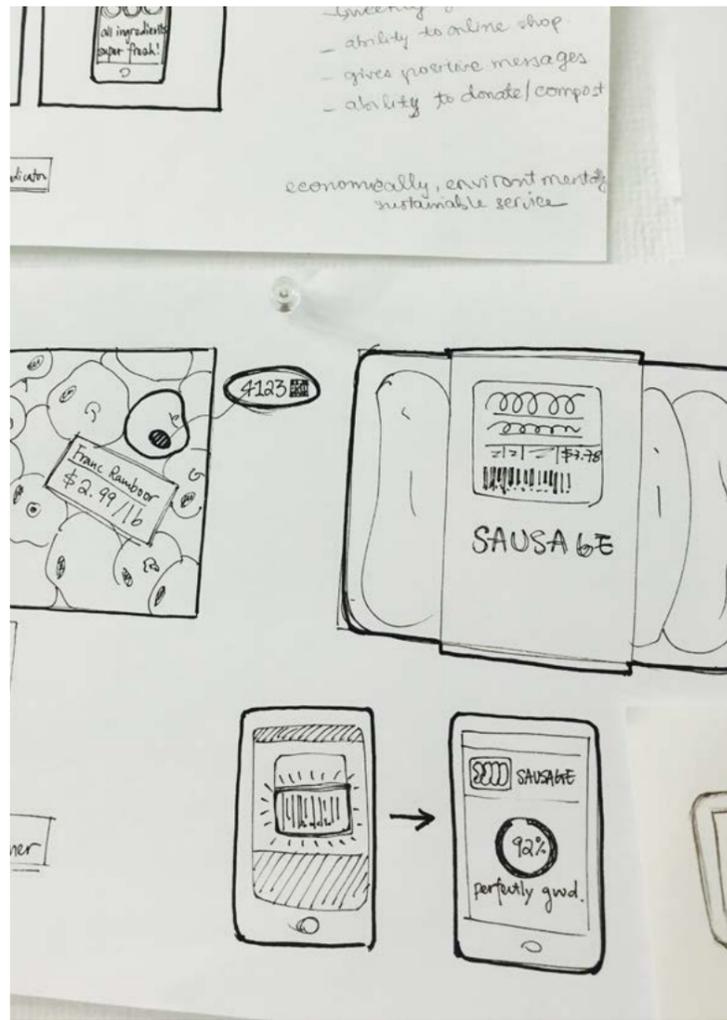
"I'll get a craving for something during the day, and it's the only thing I want to eat. I'll end up stopping at the local market to buy the recipe. I try not to throw out food, but if something smells weird, I don't want to risk eating it."



IDEATION

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FIRST ROUND IDEATION



FIRST ROUND IDEATION

CURRENT SOLUTION

take advantage of information stored in GS1 code

DEVICE FEATURES

motion sensor to track **when** you use something
weight sensor to track **how much** you take out
barcode sensor to track **what** you take out/put in
tracks amount and freshness information on a **precise** level

APP FEATURES

sync information from device
fridge interface/display shows information on the surface level
reminder features
recipe suggestions based on what user has left
knows what you're out of to restock

FEEDBACK

too many sensors would make solution economic problematic
technology does not fully allow solution to happen

create some ambient level of information to grab user's attention (such as light)

NEXT STEP

consolidate the use of GS1 code on all produces

simplify the sensor system
create a smart device that acts as a companion rather than an intrusive technology

create different levels of information – peripheral information display
apply a more natural interaction – voice activation
think about how much and how detail user should know about their purchase

SECOND ROUND IDEATION



SECOND ROUND IDEATION

CURRENT SOLUTION

consolidate GS1 code into one barcode on receipt

DEVICE FEATURES

voice activated by pressing button

has lights to show it's **recording command**

sends commands to app

receive overall fridge freshness from app

three lights (initially red - orange - green) to show overall freshness of the whole fridge

APP FEATURES

scans barcode on receipt

keeps track of shopping lists in **categories**

shows **overall freshness** of fridge

shows fridge in categories (meat, dairy, veg., etc.)

reminds users of nearly expired ingredients with suggested recipes

allows user to **go through fridge inventory** once a week

keeps track of **amount relatively** (high, low, gone)

smart shopping list features (restock)

hinders user from overbuying the same ingredients.

FEEDBACK

Look more into forms of device

Voice activation must be natural

May consider ways to display information on the surface level

Look more into information display

Design has to be cohesive with device form

NEXT STEP

VISUAL EXPLORATION

VISUAL STYLE

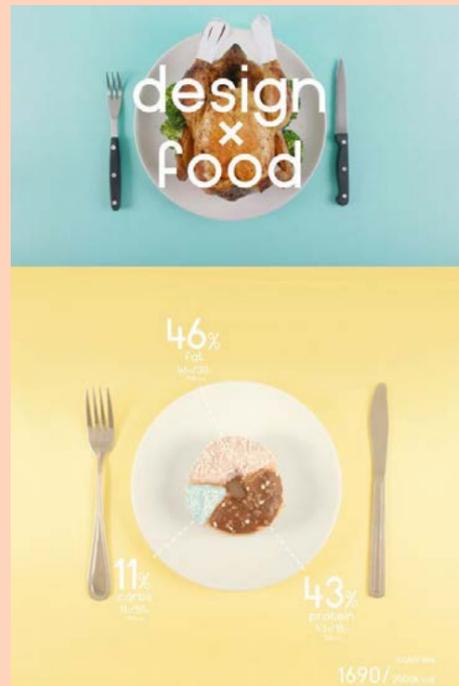


Delicious & Authentic

Images of fresh ingredients on dark, warm background (wood, gray stone bar, etc.). White types and lines on top of pictures to point out information.

Monotone & Modern

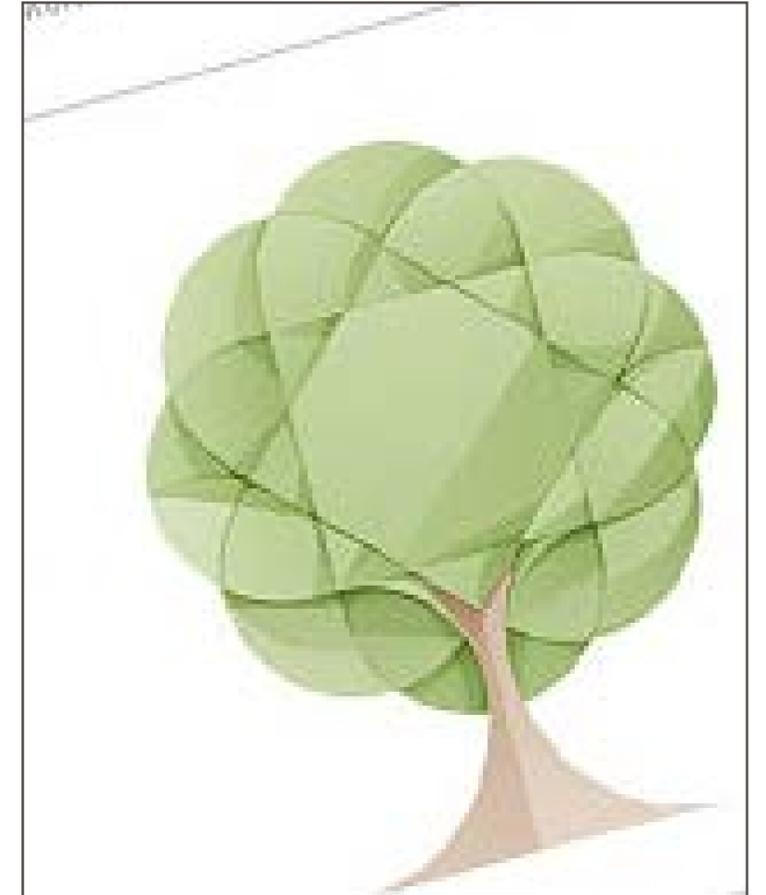
Use of black and white with color ingredients to enhance the freshness. Color use on each ingredient will also put the ingredient itself into different categories (veg., meat, mushroom, etc.)



Soft & Playful

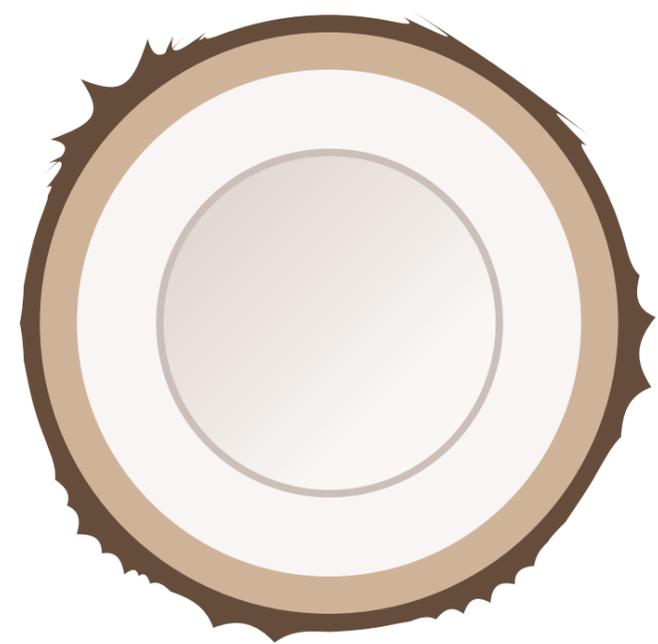
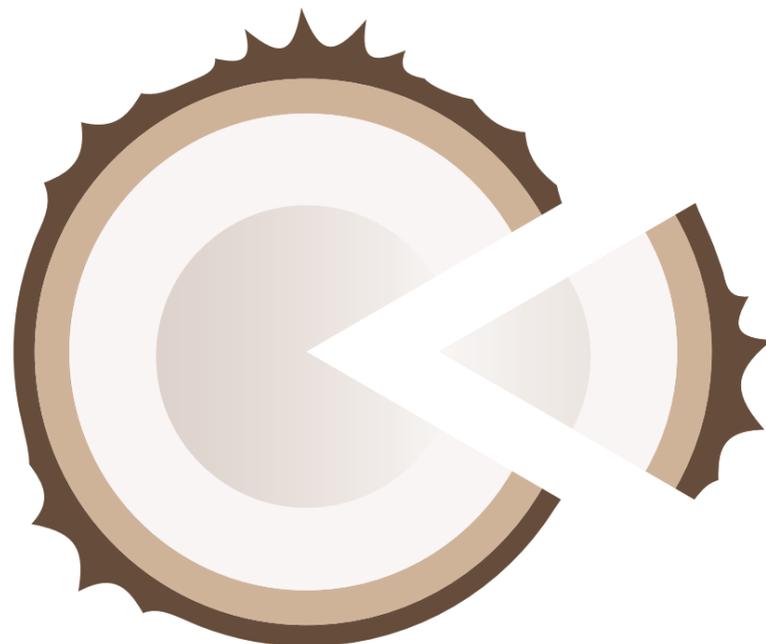
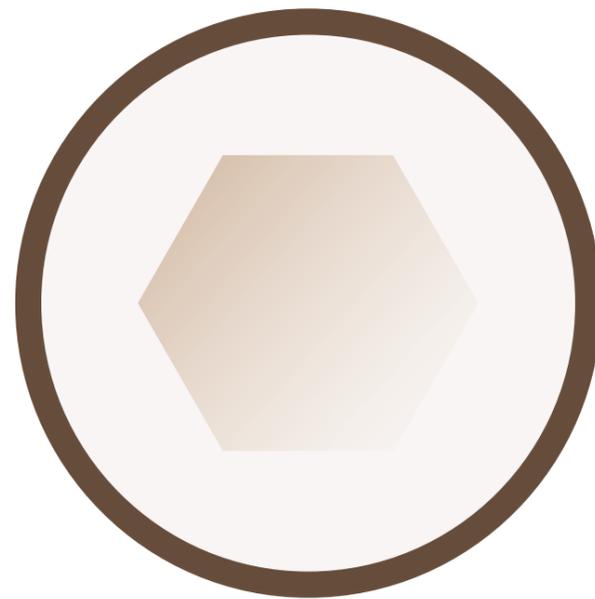
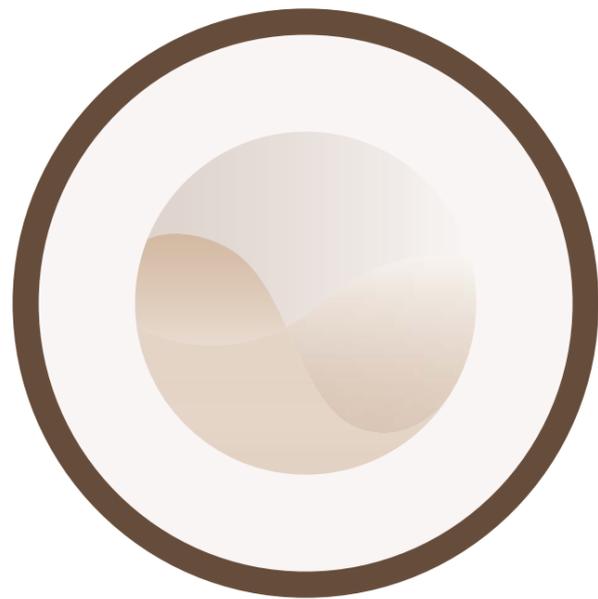
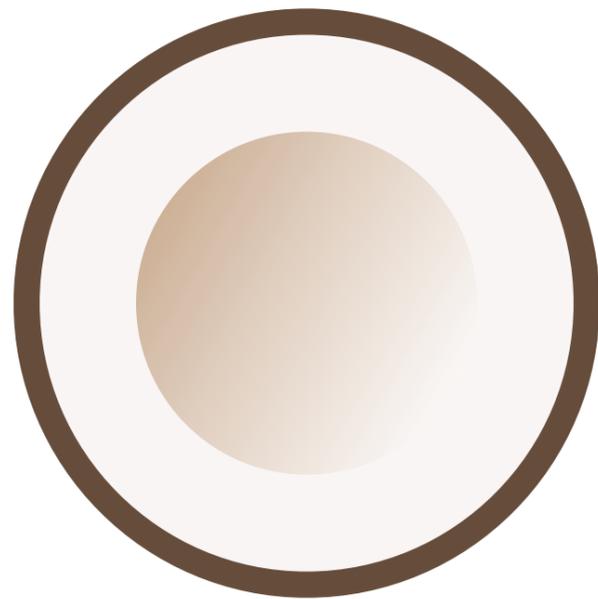
This theme provides a delightful feeling, which may eventually inspire people to cook more. Pictures of fresh ingredients, with a touch of playful illustration, on light background. This theme is chosen to be the style of our whole system.



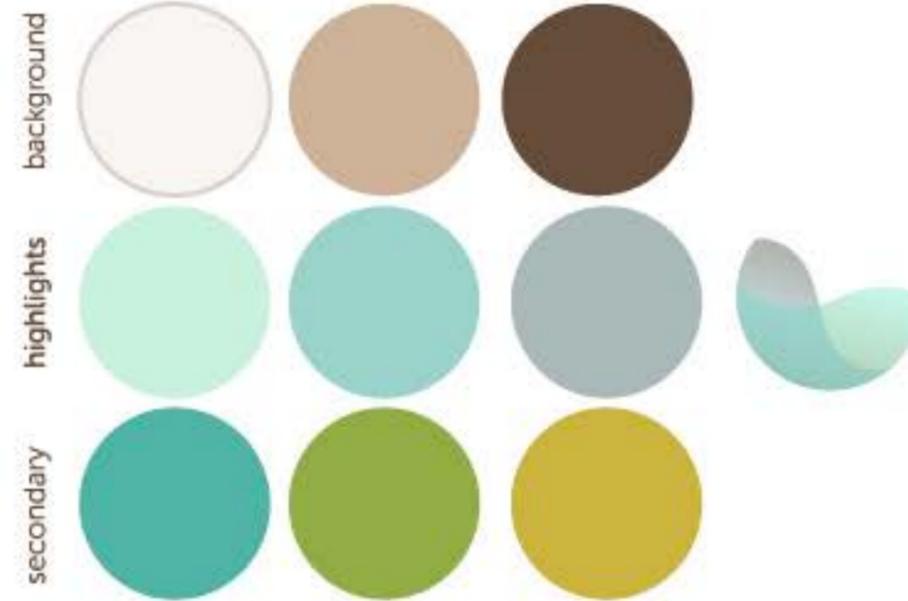




cocconot







MUSEO SANS ROUNDED
700 48PT
HEADER

museo sans rounded
 700 30pt
body
 museo sans rounded
 500 24pt
 caption

coconut

Coconut is the app that lets you keep track of your food inventory, and beyond that, all the expiration dates. With smart learning features, the app will help you generate recipes based on taste, quantity, and freshness of your ingredients.



COMMAND

Voice recording/activating

Cancel

INVENTORY

Scan receipt to get ingre. bought + amount

Ingre. in categories

Ingre. amount relatively

Ingre. freshness

Checks off (done/finish partially/throw away)

Fresh ingredients list

About-to-go-bad ingre. list

FRESHNESS

The amount of days left

Visual scale of freshness

Reminders

RECIPES

Suggested recipes based on preference, amount, freshness

Links to other sources

SHOPPING LIST

List of ingredients

Add to shopping list features

Reminders/Double-check

Voice recording/activating
Cancel

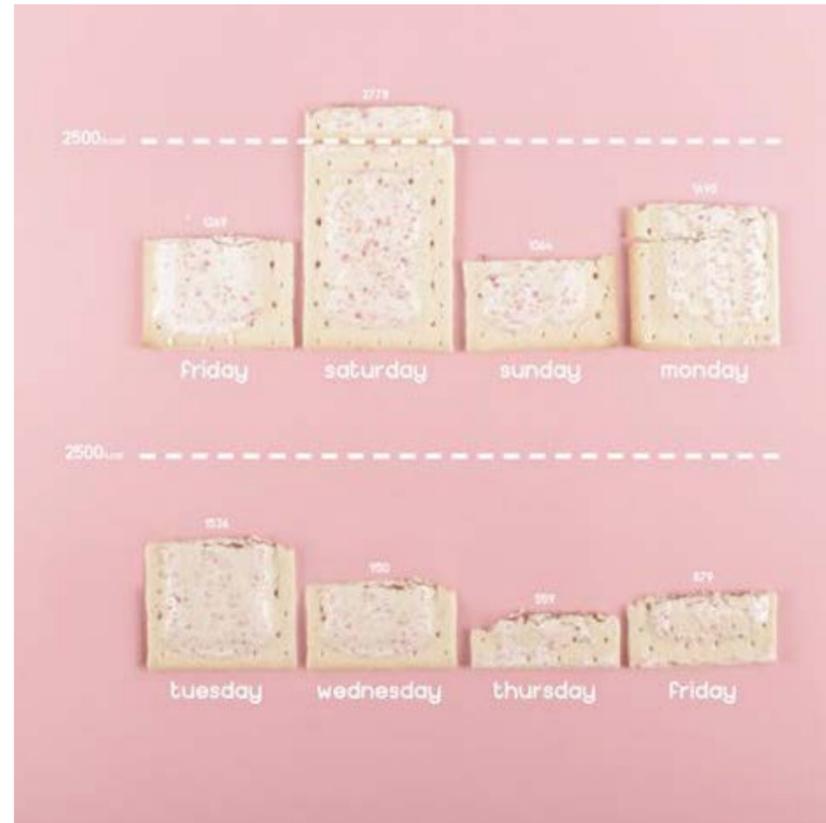
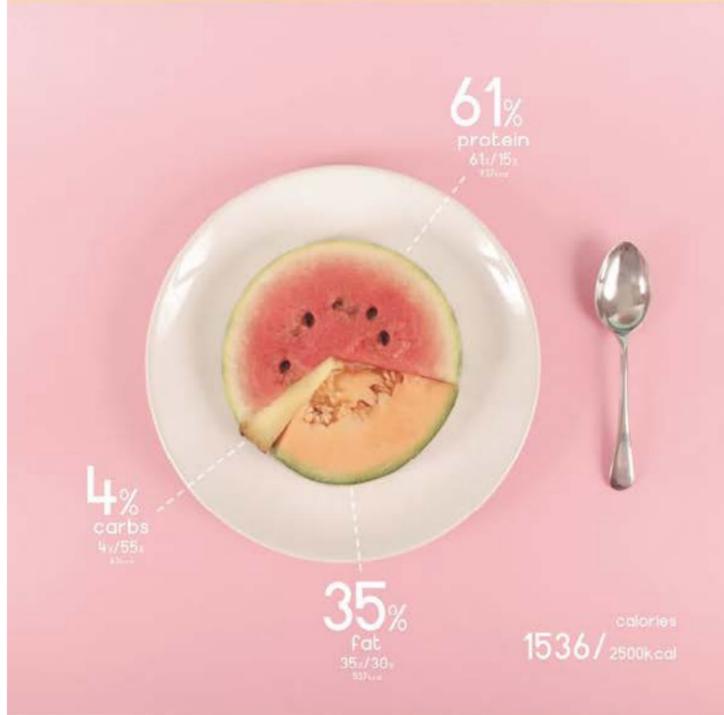
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Reminders

Suggested recipes based on preference, amount, freshness
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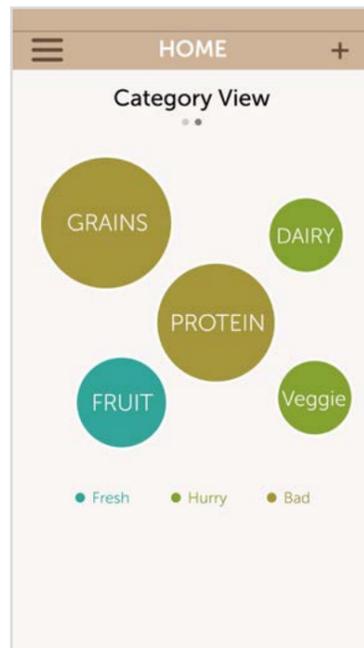
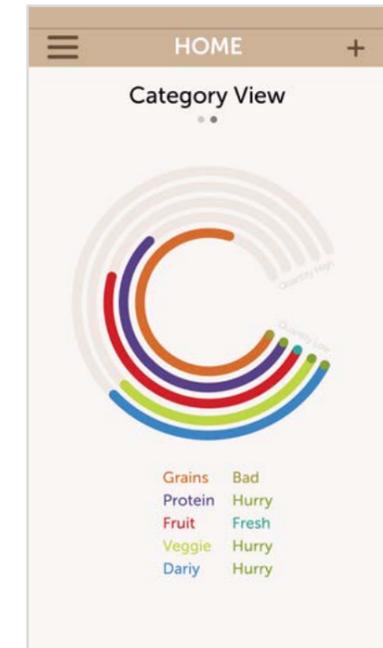
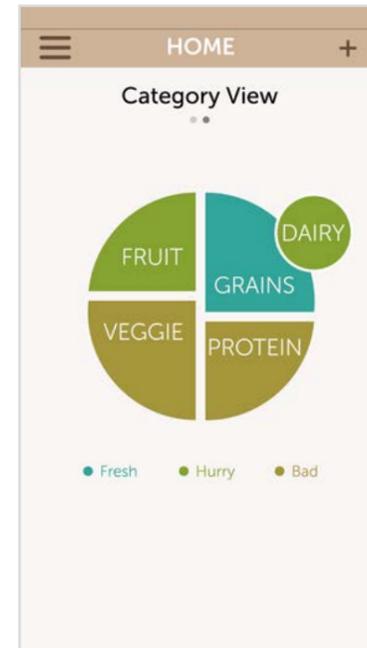
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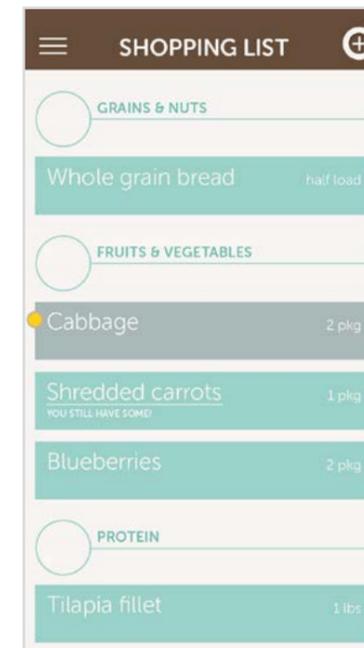
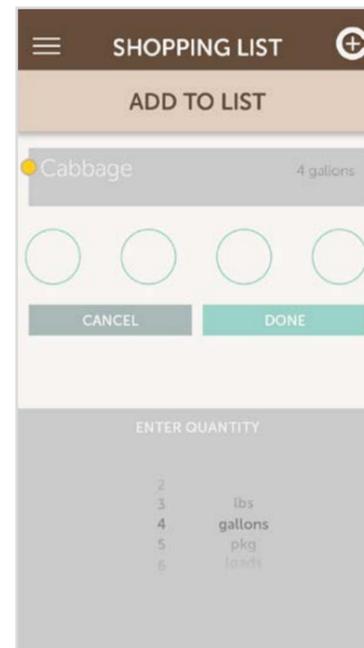
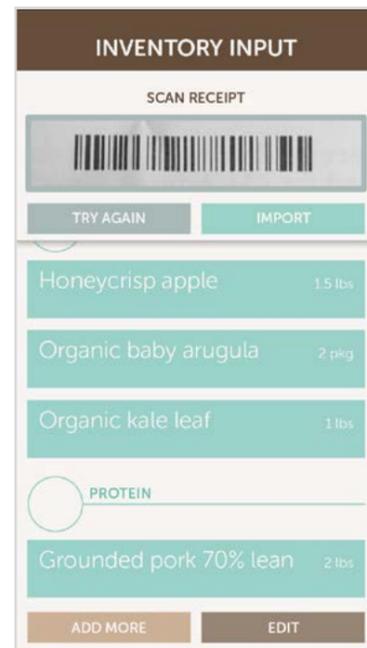
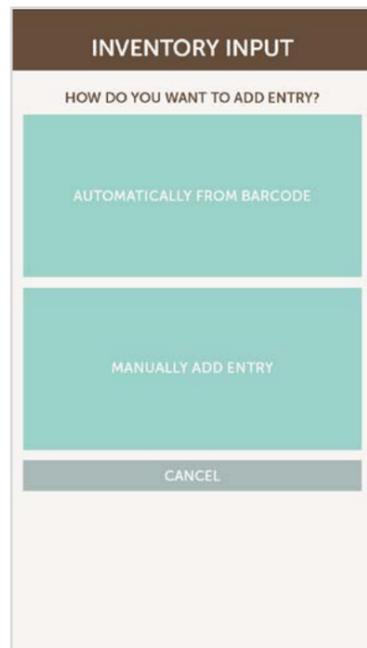
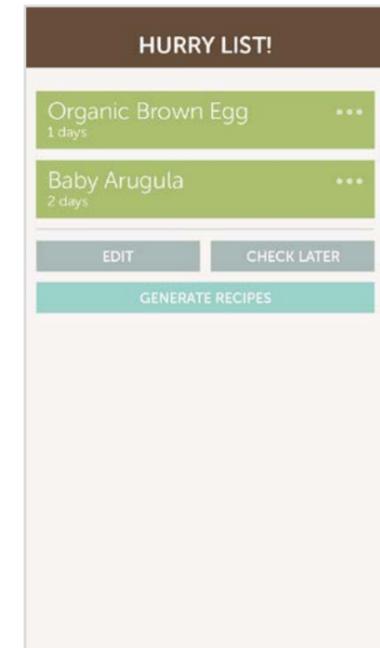
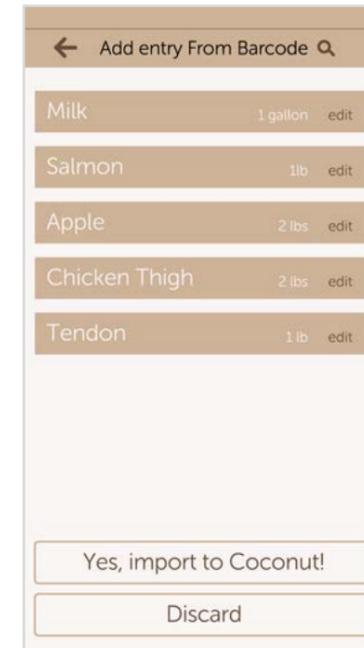
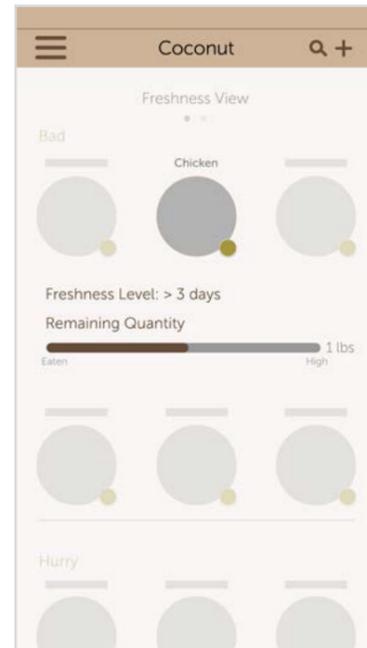
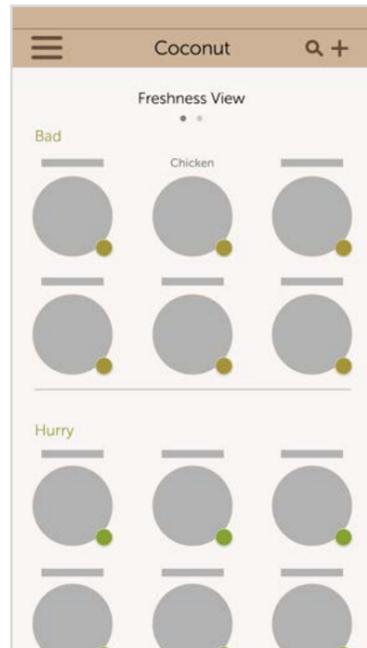
VISUAL EXPLORATION

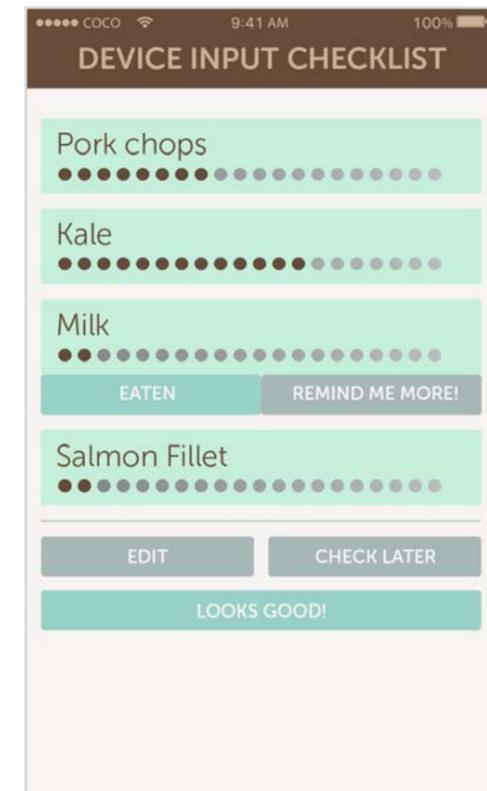
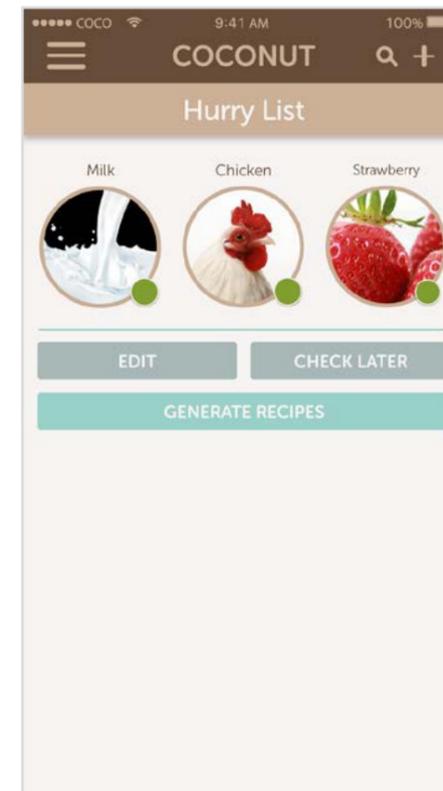
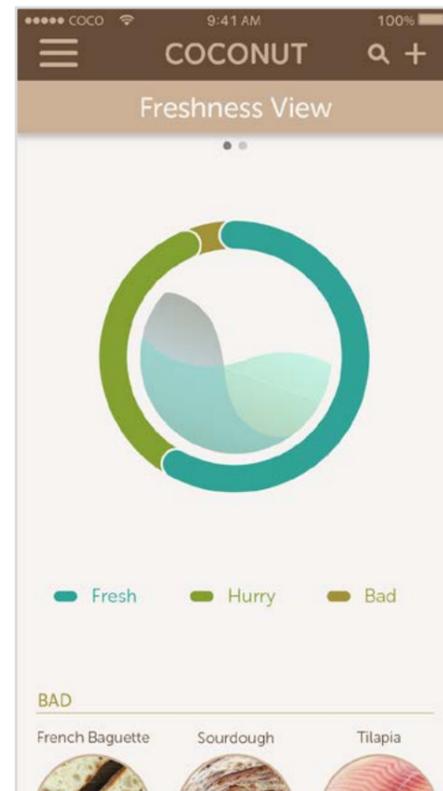


VISUAL INSPIRATIONS





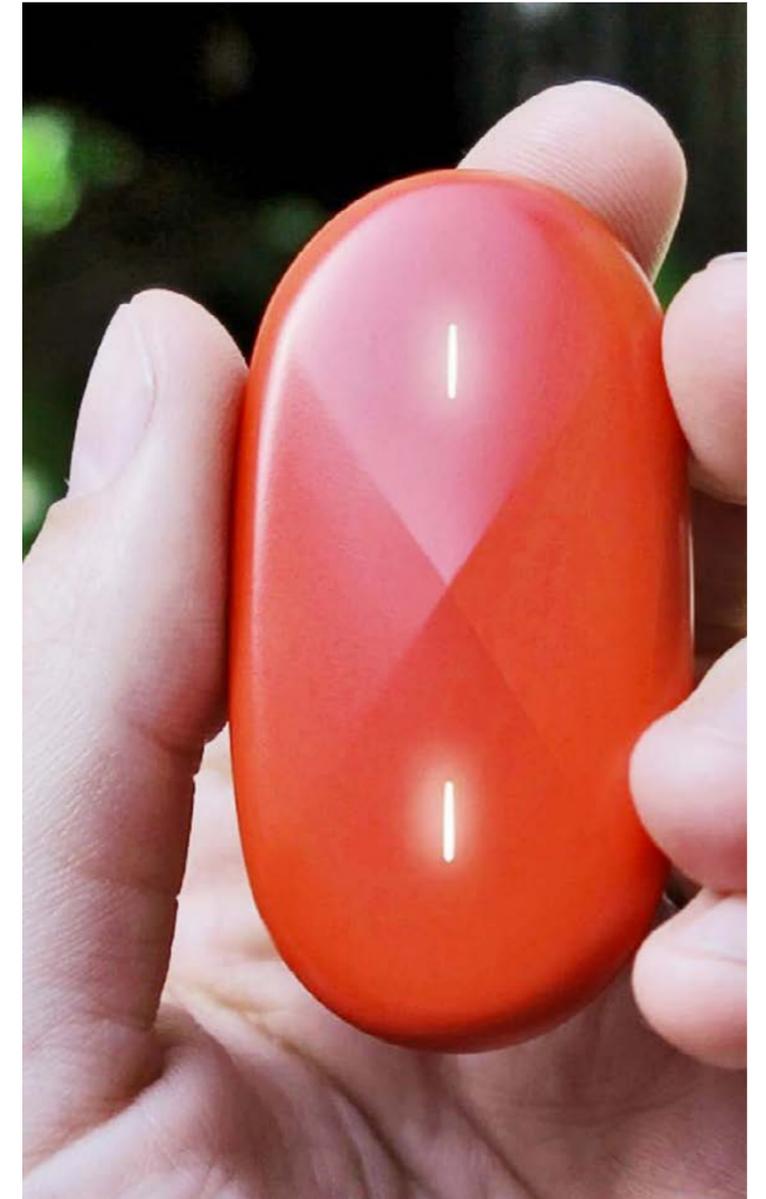


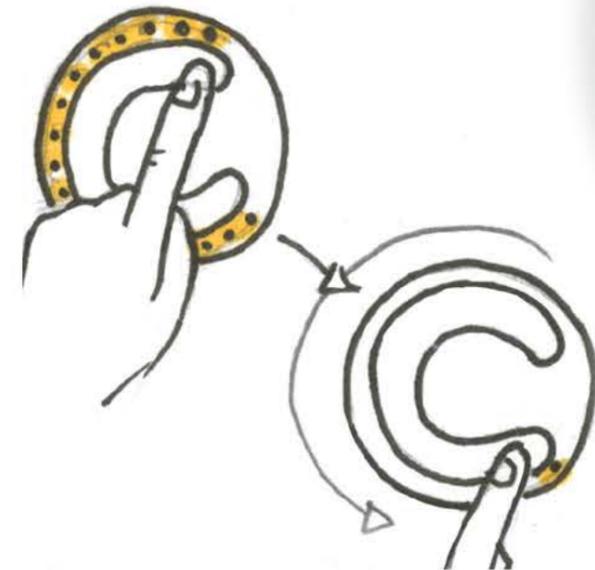
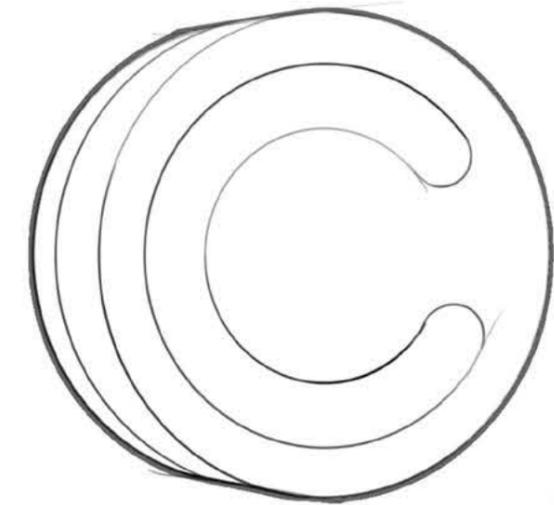
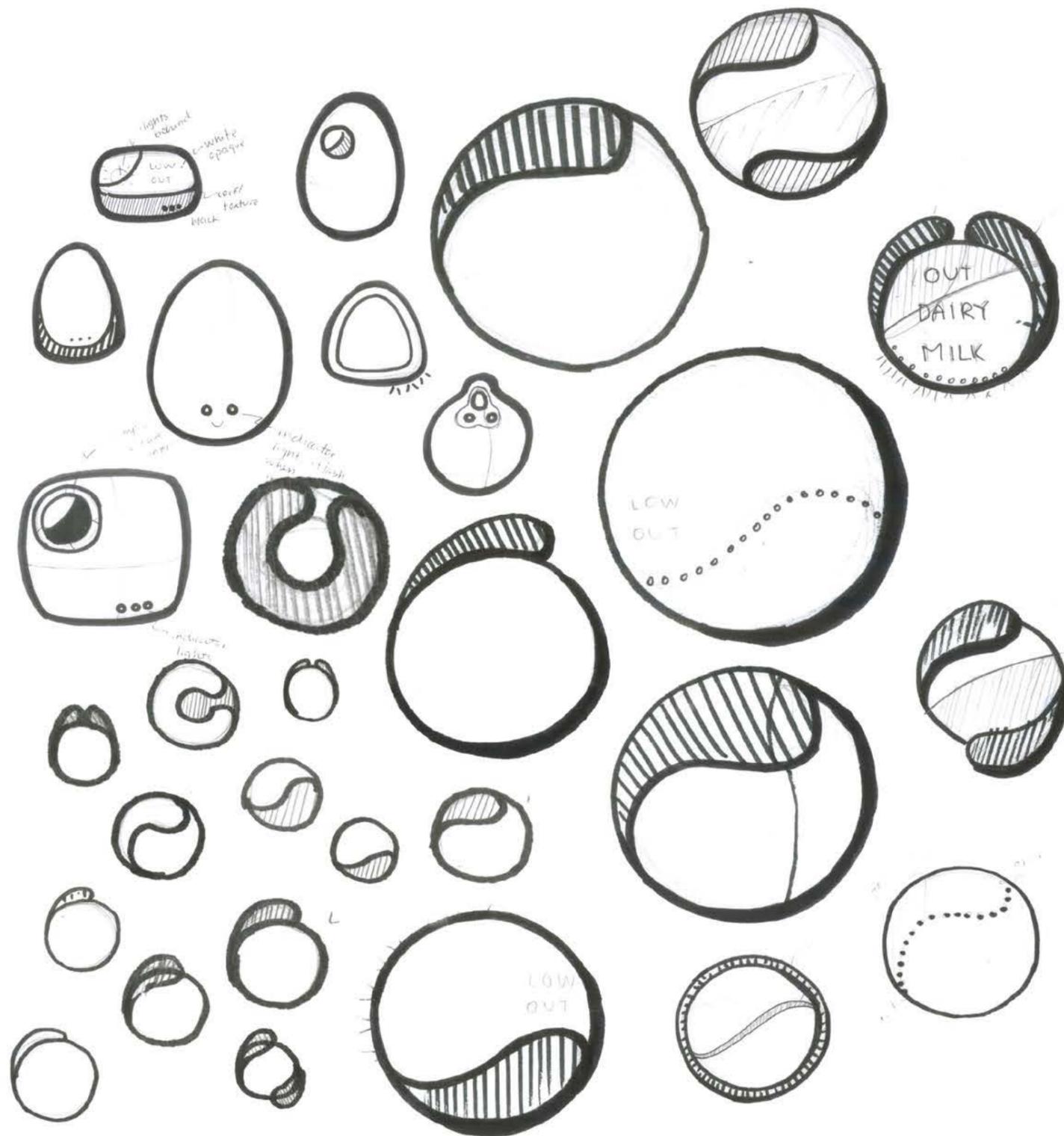


FORM EXPLORATION



DEVICE INSPIRATIONS



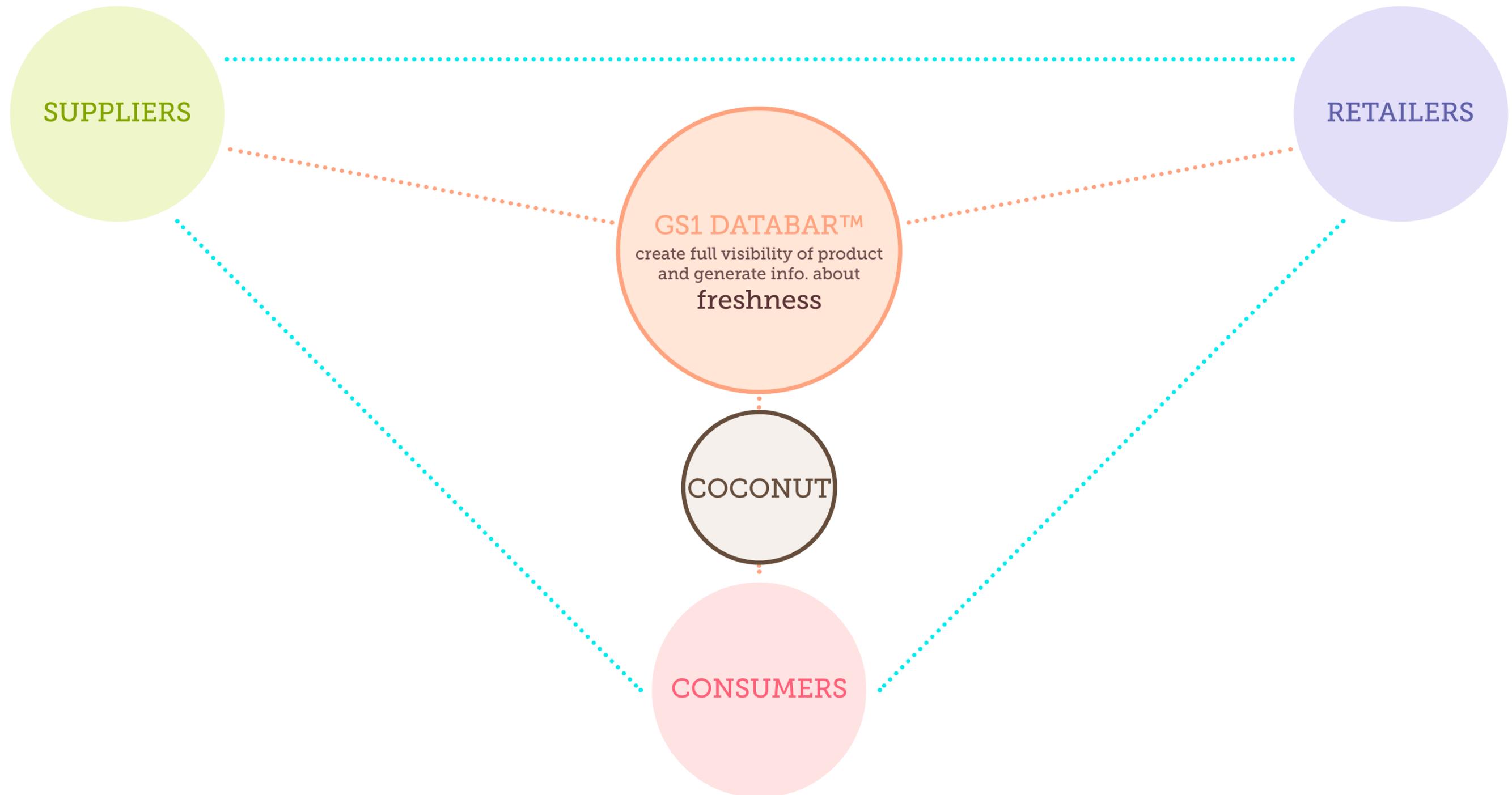


FINAL SOLUTION

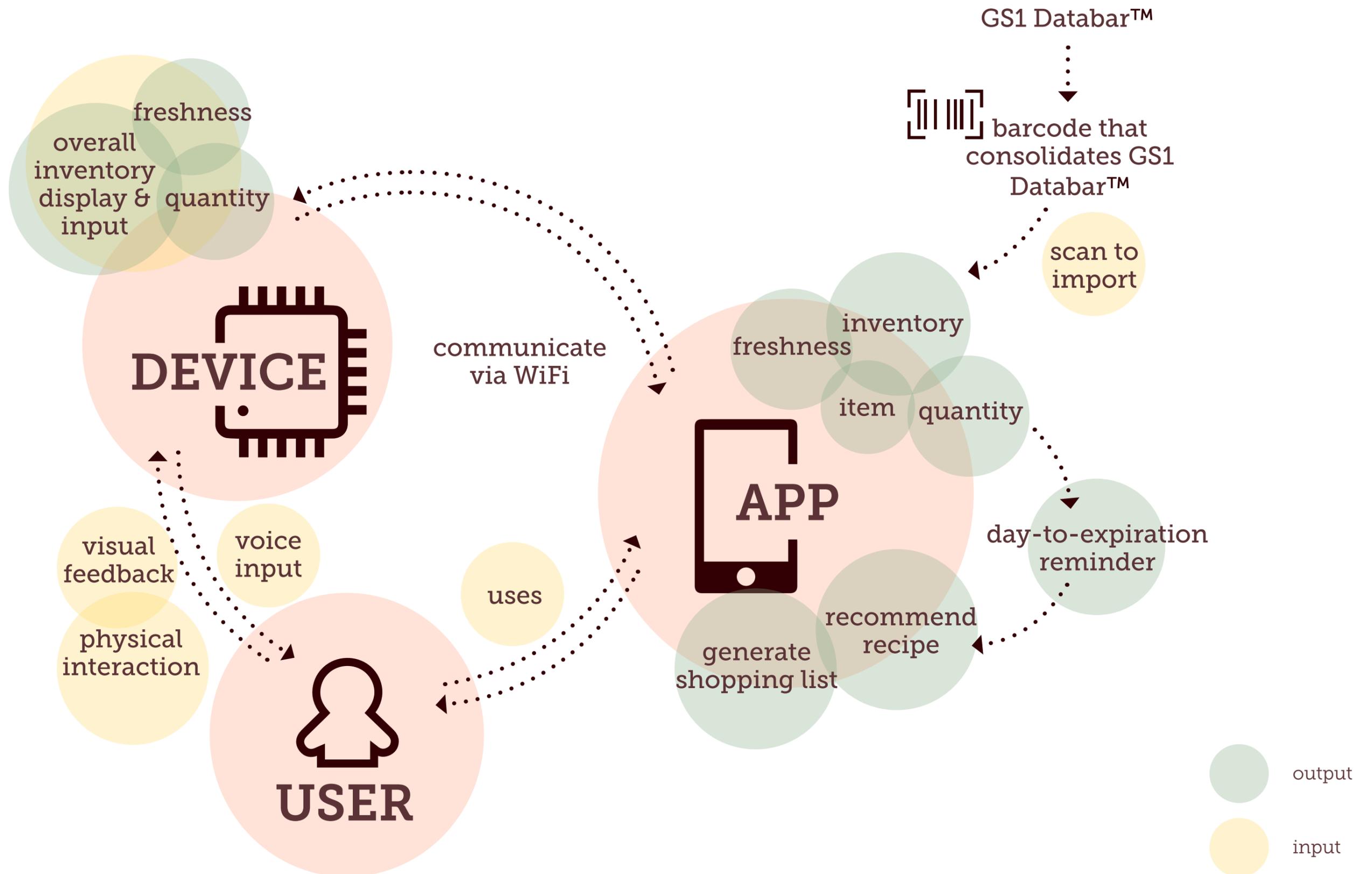
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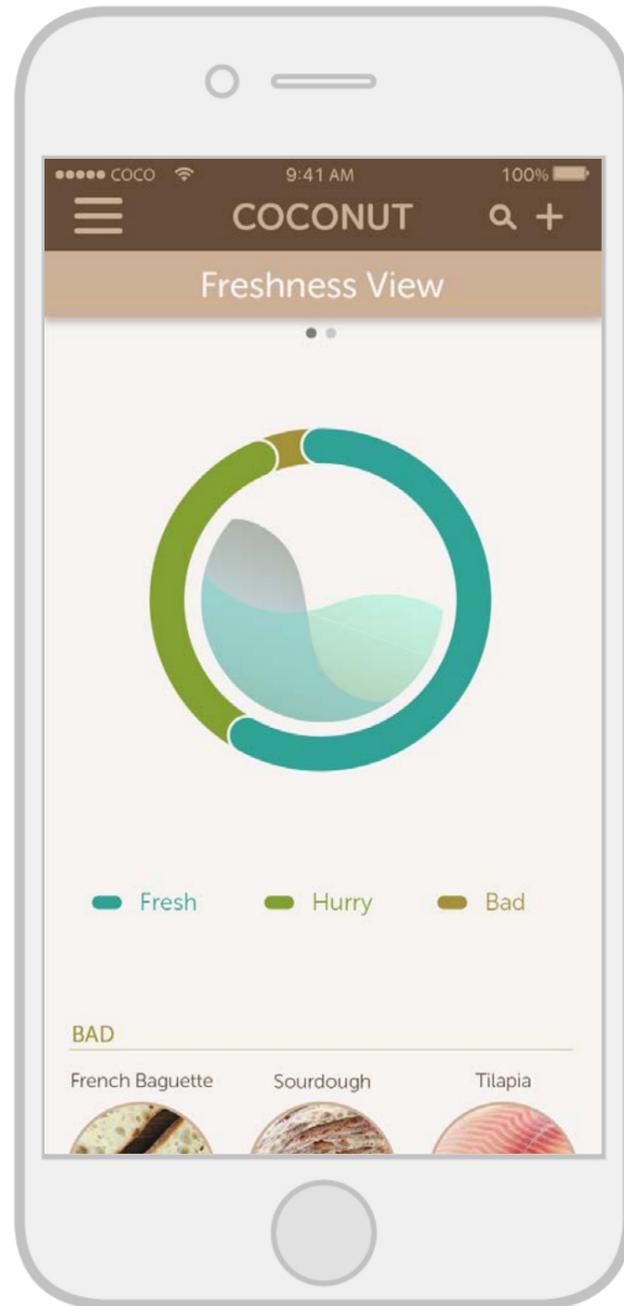
COCONUT SYSTEM



- be able to keep track of expiration date
- save money on wasted food and over-buying
- raise awareness

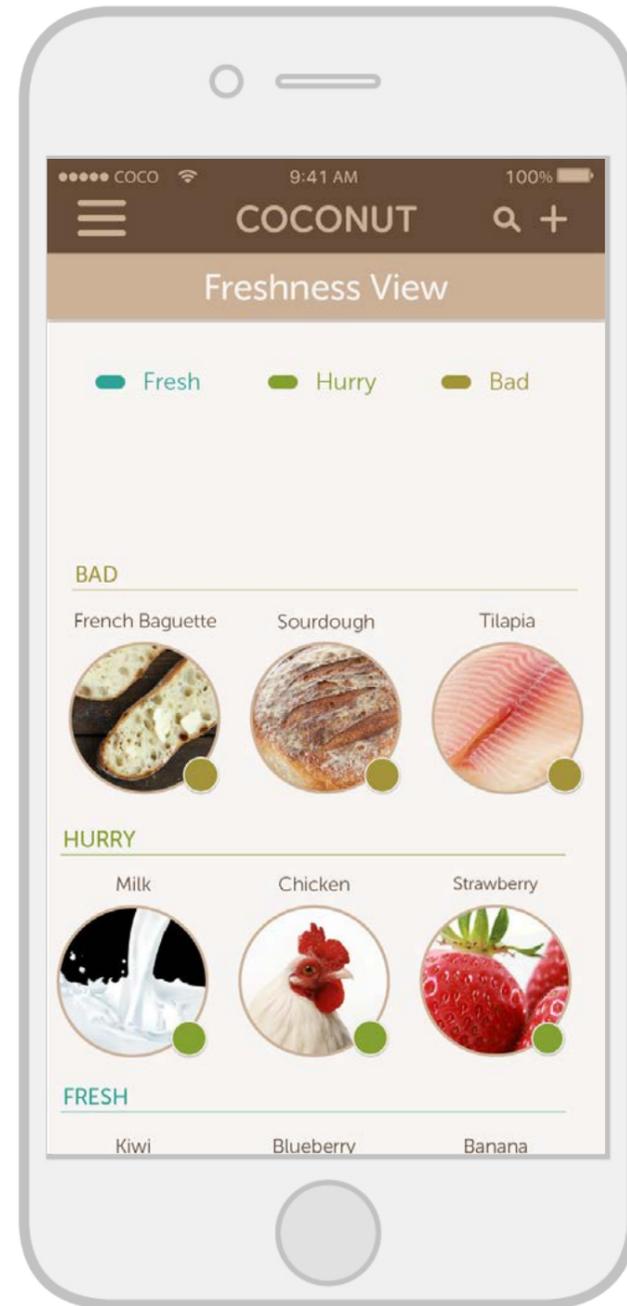


INTERACTIVE APP



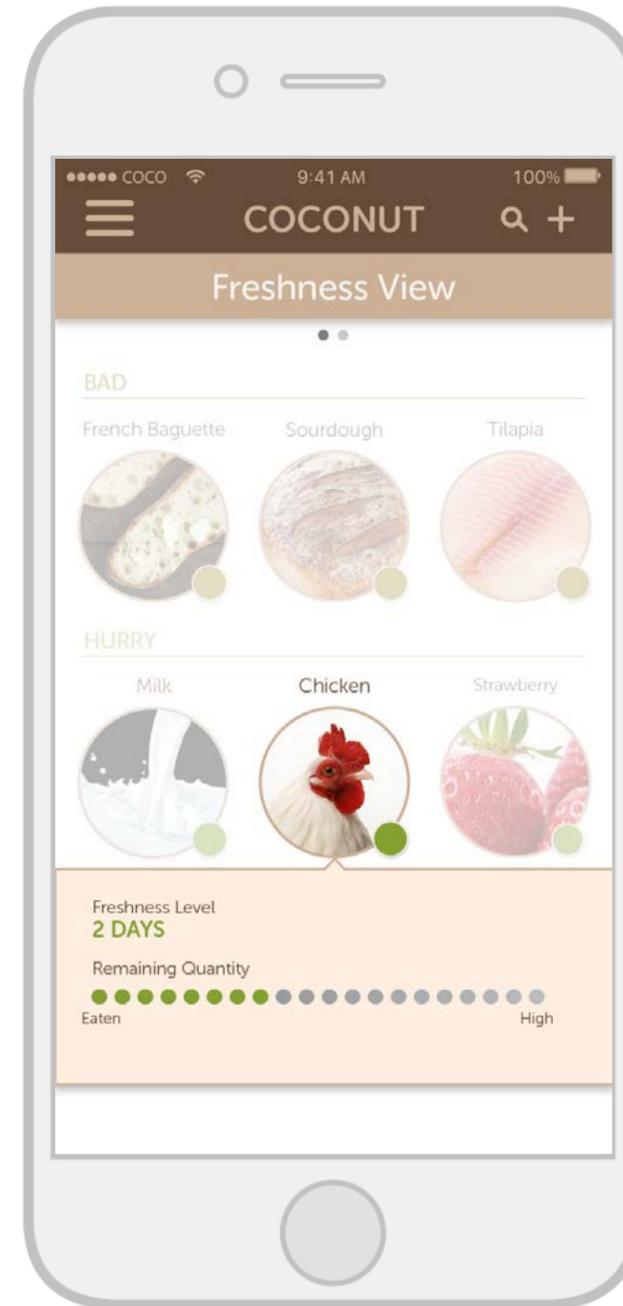
FRESHNESS VIEW

In this view, the user can quickly estimate how much they have is still fresh, in the hurry list, or already goes bad.



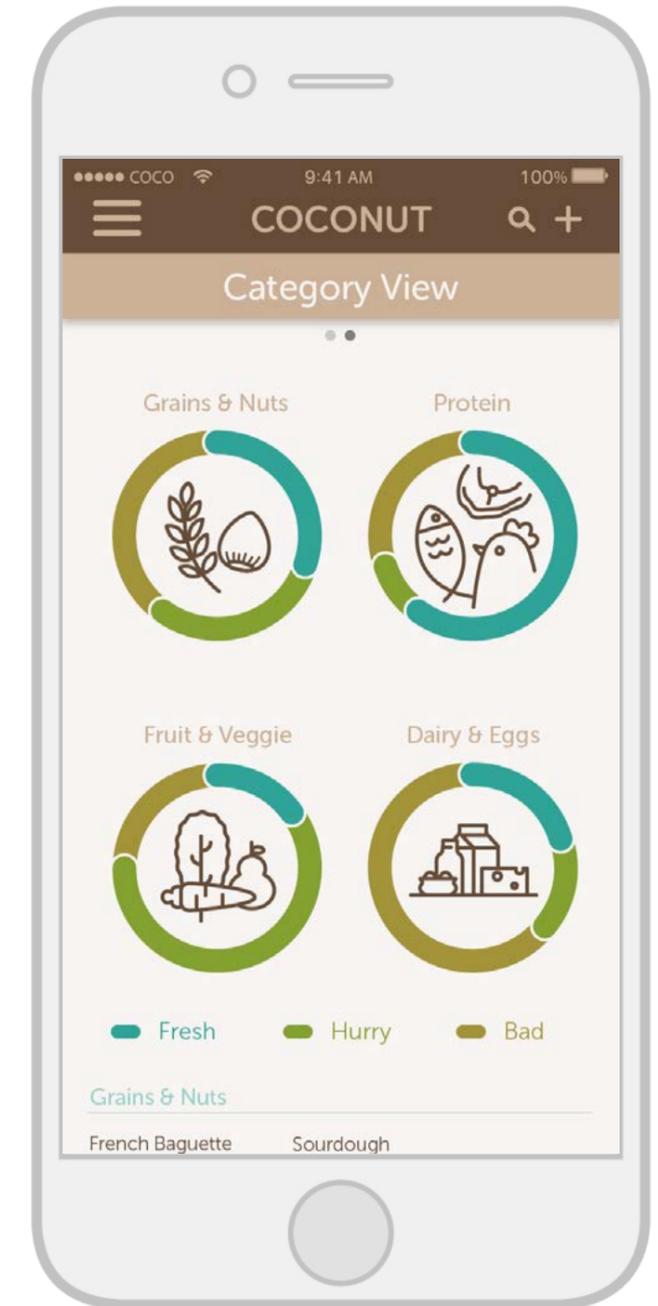
FRESHNESS VIEW

Once scroll down, already gone bad produces will be displayed first, followed with ones in hurry list, then the fresh list.



DETAILS

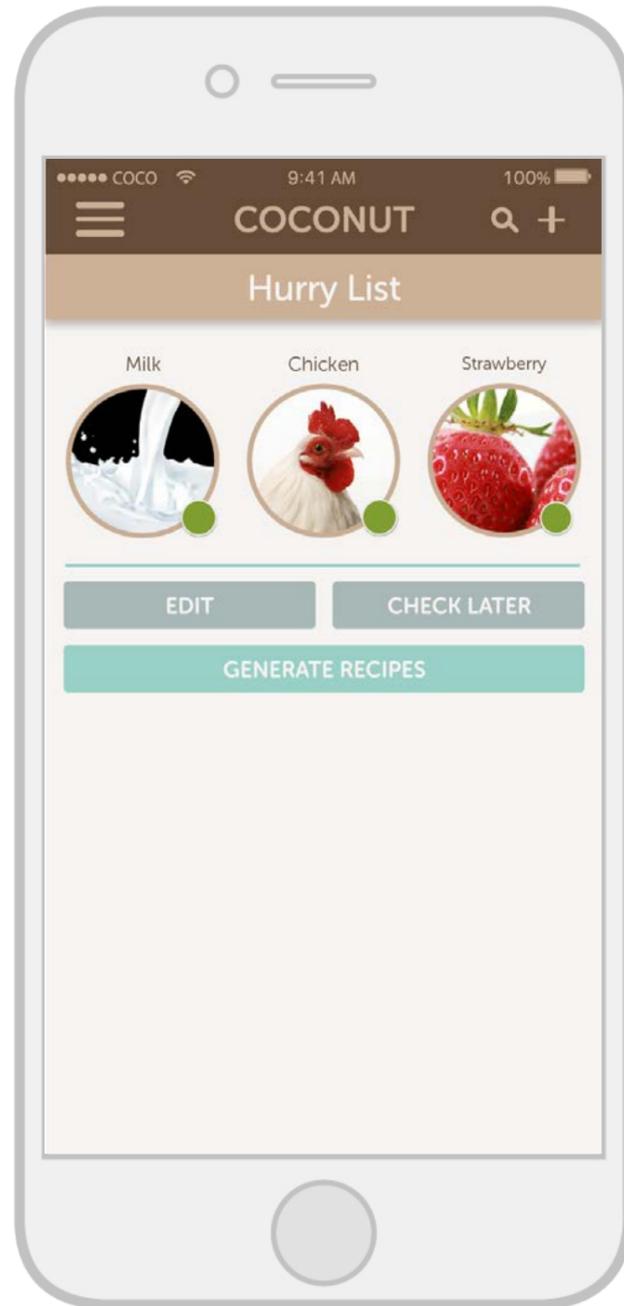
Once tap on a produce, the user will see how many days they have left, as well as the estimate quantity.



CATEGORY VIEW

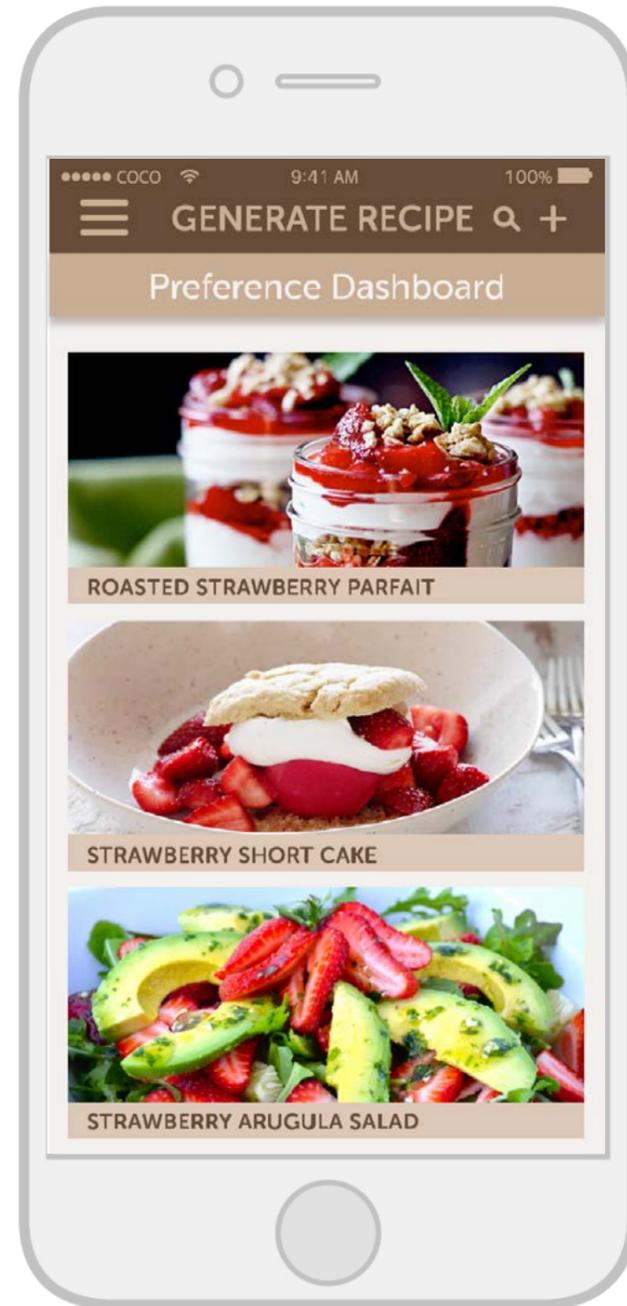
The category view allows user to have a quick glance at how much of each category is fresh, in the hurry list, or already gone bad.

INTERACTIVE APP



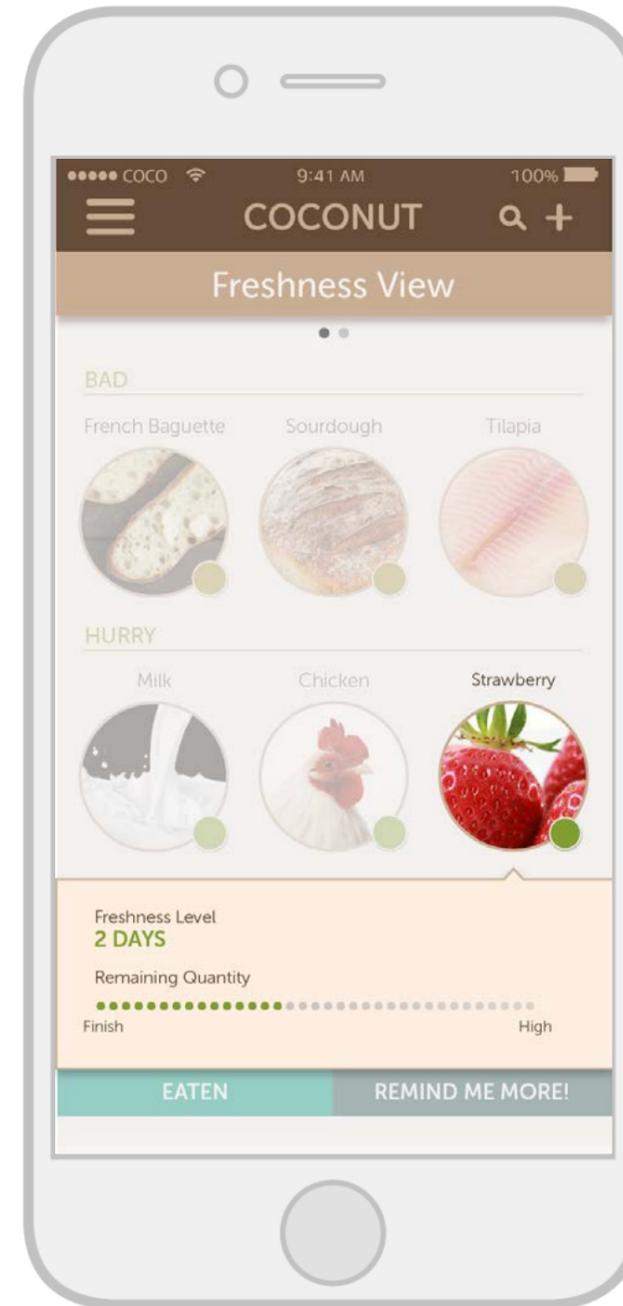
REMINDERS

The app will give user reminders of produces in their Hurry List.



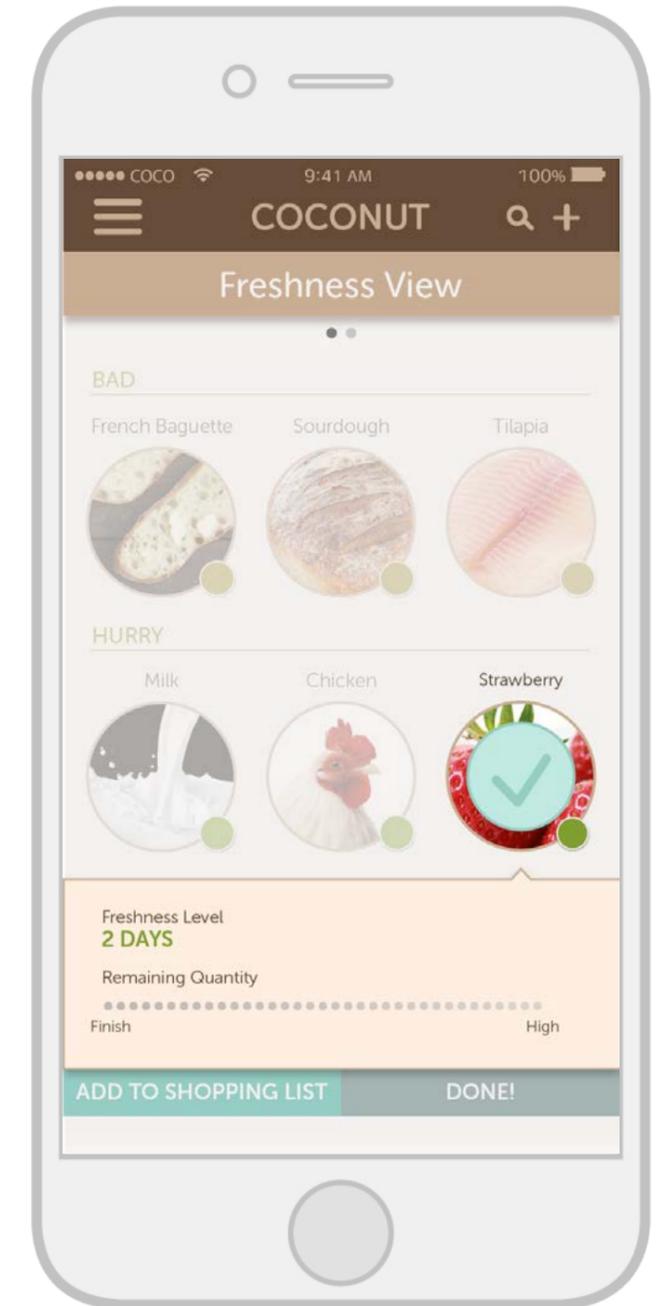
RECIPES

The user can always generate recipes based on what ingredients they have, with priorities go to those that are in the Hurry List.



FINISH OR REMIND MORE

Once finishing, the user can say they eat it. Or if they end up throwing it away, the user has the option to let the app know and it will remind them more in the future.



QUICK SHOPPING LIST

The app also allows user to quickly add the produce back to the shopping list.

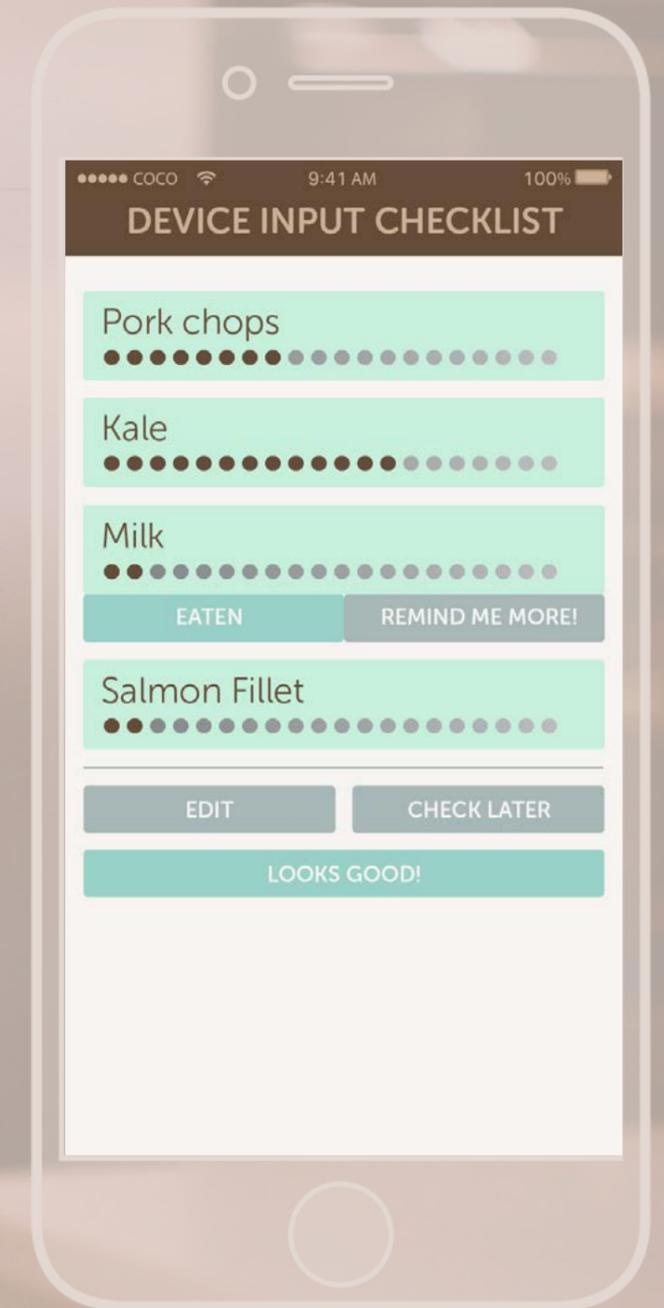


AMBIENT DISPLAY

Without having to open the app, the user will be acknowledged of how much of their inventory is fresh, in the hurry list, or already gone bad.

DIRECT INPUT

The user can input the amount of each produce left by voice activating it, using the code word "coco" and follow with name of produce. (for example, "milk")



DEVICE INPUT CHECKLIST

The next time the user opens up the app, it will prompt them with the checklist to make sure information is recorded accurately.



coconut