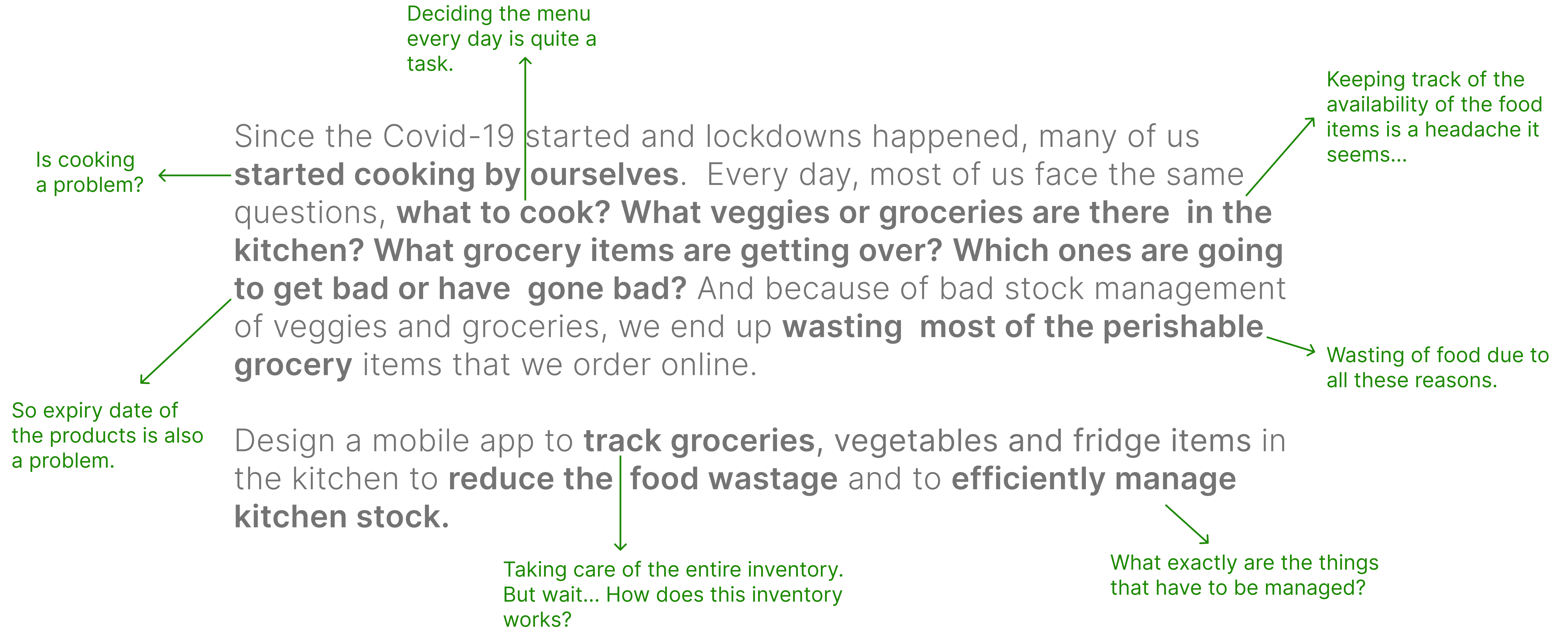


A collage of five screenshots from the FoodDiary mobile application, showing various features:

- Shop:** A screen titled 'Shop' with a green header. It features a 'Create your shopping list using AI' section, a 'Finishing soon' section with items like Rice (500 gm left), Coffee (50 gm left), and Butter (2 cubes left), and a 'My list' section with items like Milk (500 ml), Bread (packet), Cheese (250 gm), Tea (500 gm), and Corn flour (1 kg). A '+ Add item' button is at the bottom.
- Home:** A screen with a green header and a search bar. It features a 'Culinary clarity starts here!' banner with a chef illustration. Below are 'Expiring soon' items (Beans 1.5 kg, Cheese 250 gm, Ketchup 1 bottle) and 'Finishing soon' items (Rice 500 gm left, Coffee 50 gm left, Butter 2 cubes left). A bottom navigation bar includes Home, Recipes, Shop, and Pantry.
- Recipes:** A screen with a green header and a search bar. It features 'No waste meals' (Cheese potatoes, Paneer butter ma., Mix veg) and 'From the kitchen' (Rajma chawal, Bhindi fry, Egg rice). A bottom navigation bar includes Home, Recipes, Shop, and Pantry.
- Pantry:** A screen with a green header and a search bar. It features a 'Current stock' list with items like Rice (500 gm), Coffee (50 gm), Butter (2 cubes), Eggs (1 piece), Tomato (3 pieces), Capsicum (1 piece), Turmeric (50 gm), and Bread (1 packet). A bottom navigation bar includes Home, Recipes, Shop, and Pantry.
- Scan any item:** A screen with a green header and a camera view of an ASBIRIN hot sauce bottle.

Breaking it down



Who are we making it for?

Have a busy work life and lives alone in a big city.

They often buy the groceries online as and when required.

Flat mates struggle to track purchased items and plan daily menus.



Varun — A bachelor living in a shared flat.

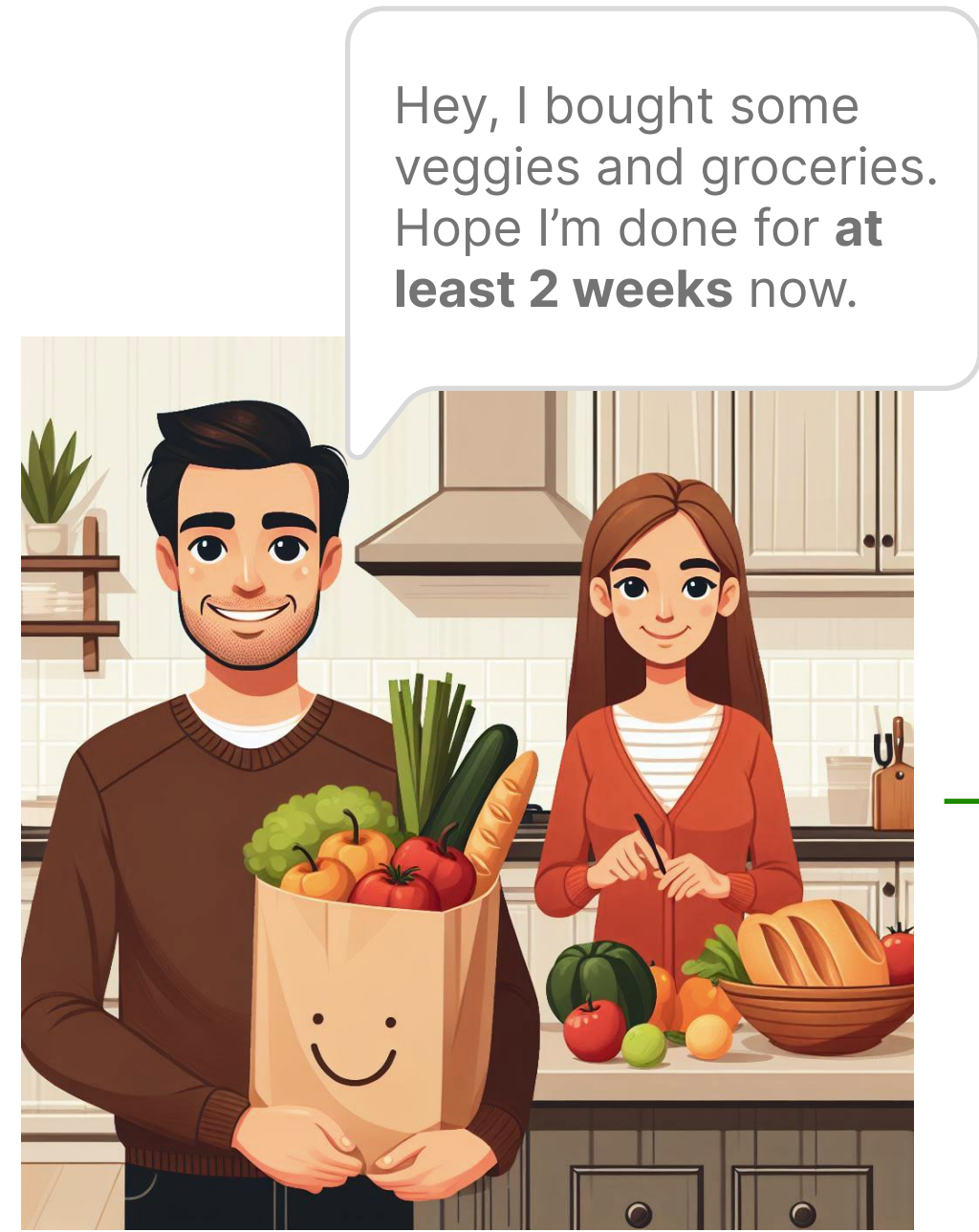


Vineet and Tanu — A couple living with their children

They have to take care of their busy work life as well as their little children.

They stock their groceries and veggies in bulk since they plan the entire month.

The series of events



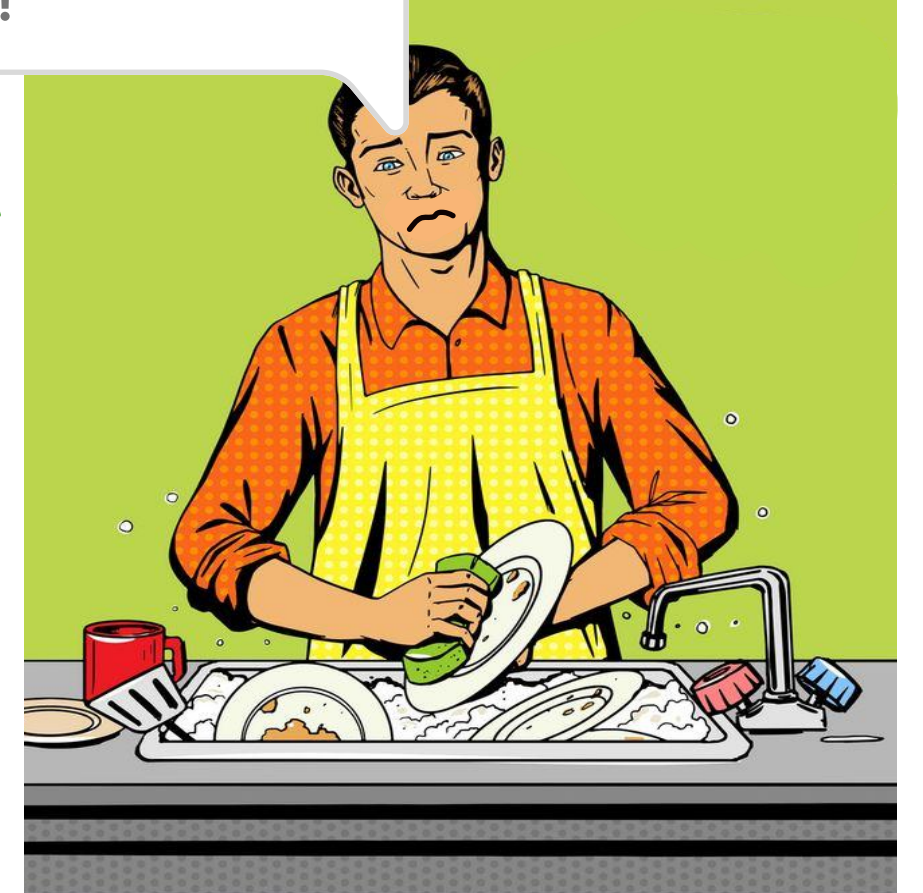
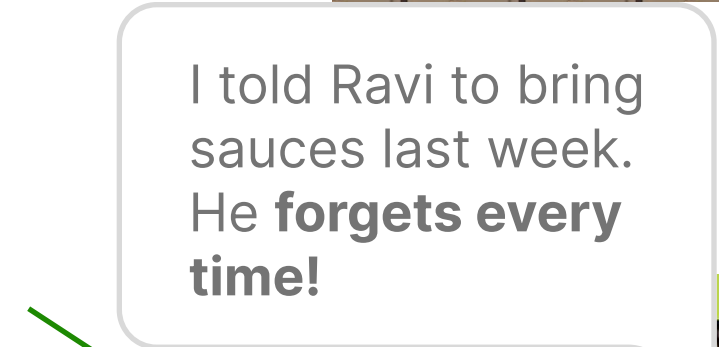
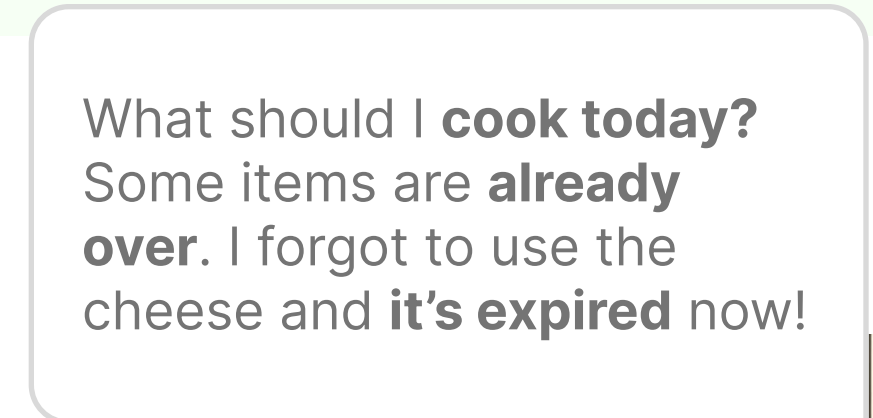
Family buys grocery for a certain number of days/weeks.



Choosing a daily menu is tough with so many ingredients and options.



Boom! Some groceries and veggies run out quickly while others expire unused.



All this could have been avoided by a good management system!

Current scenario

🍲 Difficulty in meal planning

Many people struggle with deciding what to cook for their meals and **may not utilize available ingredients efficiently.**

📦 Poor stock management

Inefficient management of perishable items, such as veggies and dairy products, often results in food spoilage and waste.

🕒 Time and energy loss



💔 Expiry date oversight

Failure to track expiry dates can lead to consuming expired food, which could lead to health concerns.

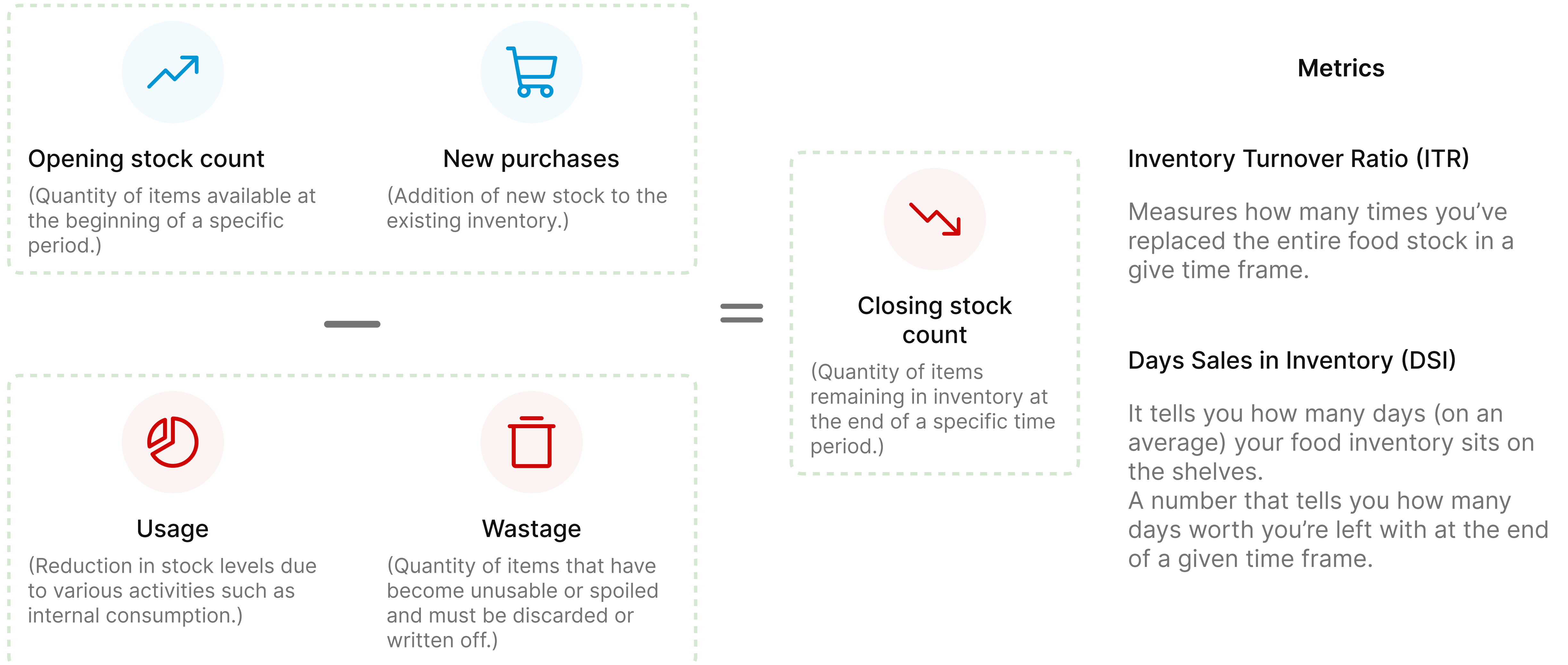
🌿 Wastage of food

Poor management causes **wastage of food** and resources which could have been used if taken care of.

💰 Financial losses

Components of an Inventory

Before diving into the solution, we need to understand how exactly the food inventory works in the households.




Solution ideation

Recipe suggestion? ←  Difficulty in meal planning

 Expiry date oversight

Provide details about the inventory? ←  Poor stock management

 Wastage of food

If the above problems are solved, isn't this one automatically solved? ←  Time, energy and financial loss

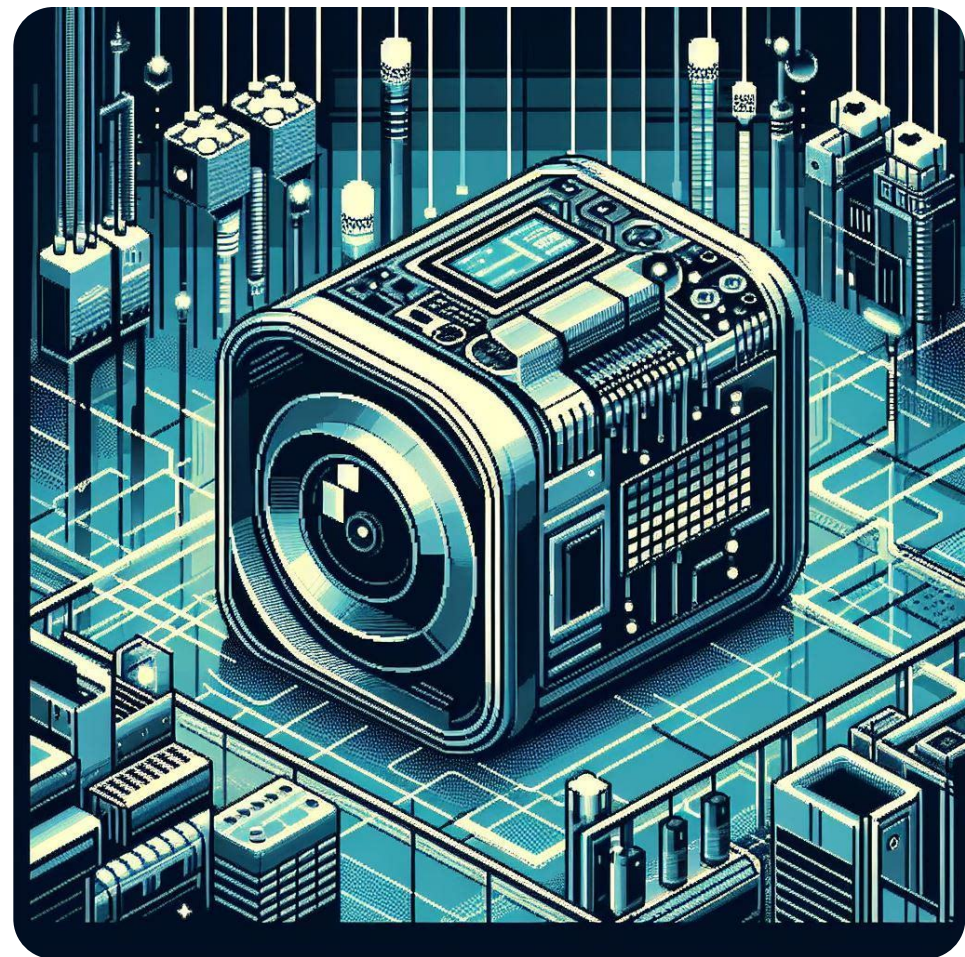
Keep a check on the shelf life of the product?



Assumptions

Here I have taken some assumptions to collect real time data of groceries and products and automatic Inventory updates

External device used



A smart device with sensor and camera.

- This smart device would be **attached to the refrigerator.**
- The **app retrieves real-time data from this smart device**, including information about items stored in the fridge, their quantities, and their expiration dates.

The smart device helps estimate product quality, quantity, and expiration, but **it's not the sole source of information.**

Some other assumptions

- **Packaged goods**
We can capture the details like manufacturing date, expiration date, quantity from the packet.
- **Loose goods**
User would have to enter the shelf life and quantity of the new products manually.

Key features

Inventory Management

- Ability to manually add, edit, and delete items from the inventory.
- Scanning for easy item addition.
- Real-time quantity and quality management of items.
- AI based suggestions on new product shelf life for loose goods.

Expiry Tracking

- Notification alerts for items approaching expiry dates.



Smart recipe Suggestions

- Integration with recipe databases to suggest recipes based on available ingredients.
- Option to input dietary preferences or restrictions.

Shopping List

- AI based editable shopping list based on the inventory data and user preferences.
- Create shopping lists based on recipes or current needs.

Key features

📊 Analytics and Insights

- Tracking of food wastage over time.
- Insights into purchasing patterns and habits.



🗄️ Fridge Organization

- Virtual representation of the fridge layout to help users organize items efficiently.
- Alerts for items pushed to the back and forgotten.



❓ How are we getting the real time data about the items?

- Estimation from data input by the user.

When new items are added, users input data through scanning or manual entry. **After this, the system utilizing ML algorithms, estimates usage duration and quality based on consumption patterns.**

(If a product's pattern isn't established, users manually update quantity temporarily.)

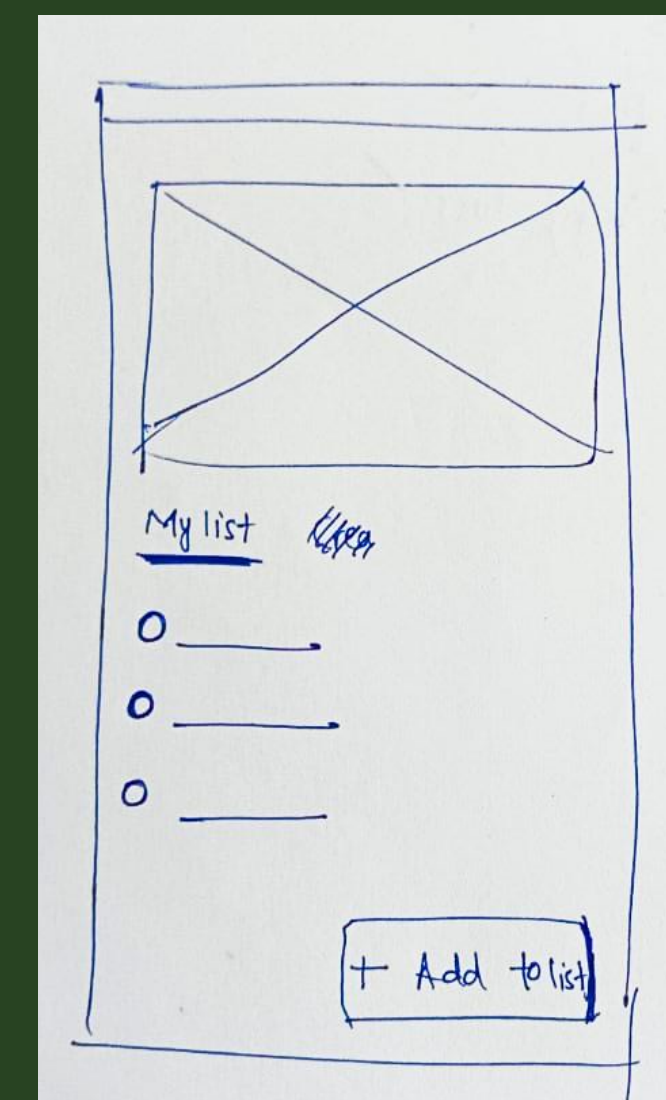
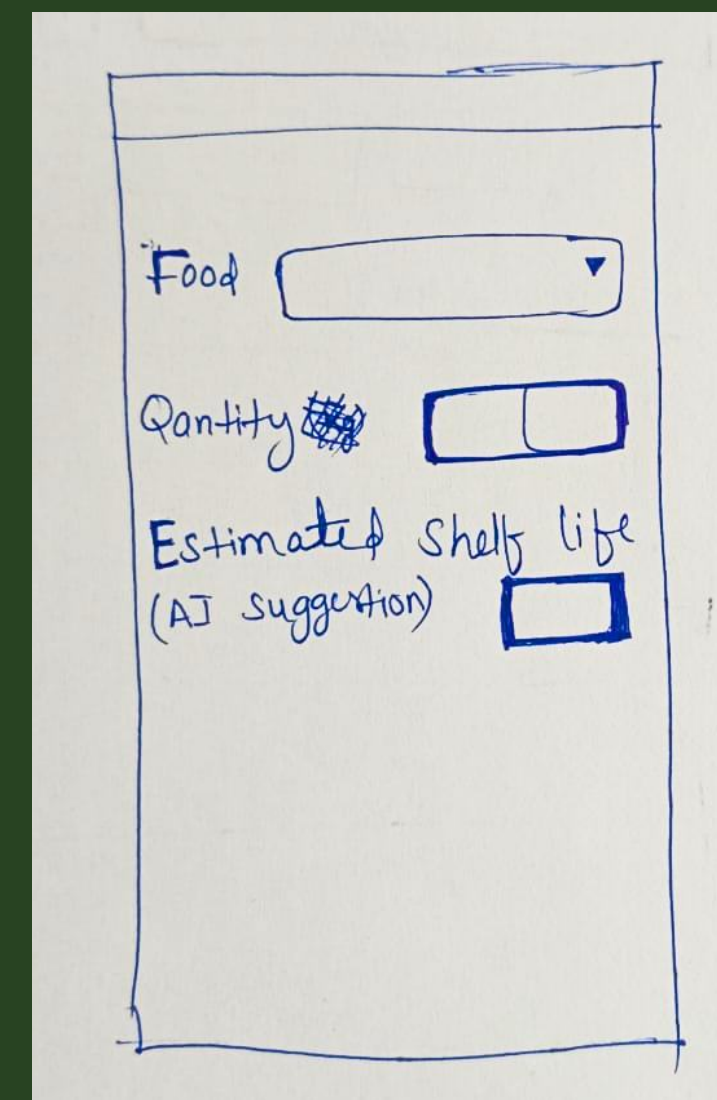
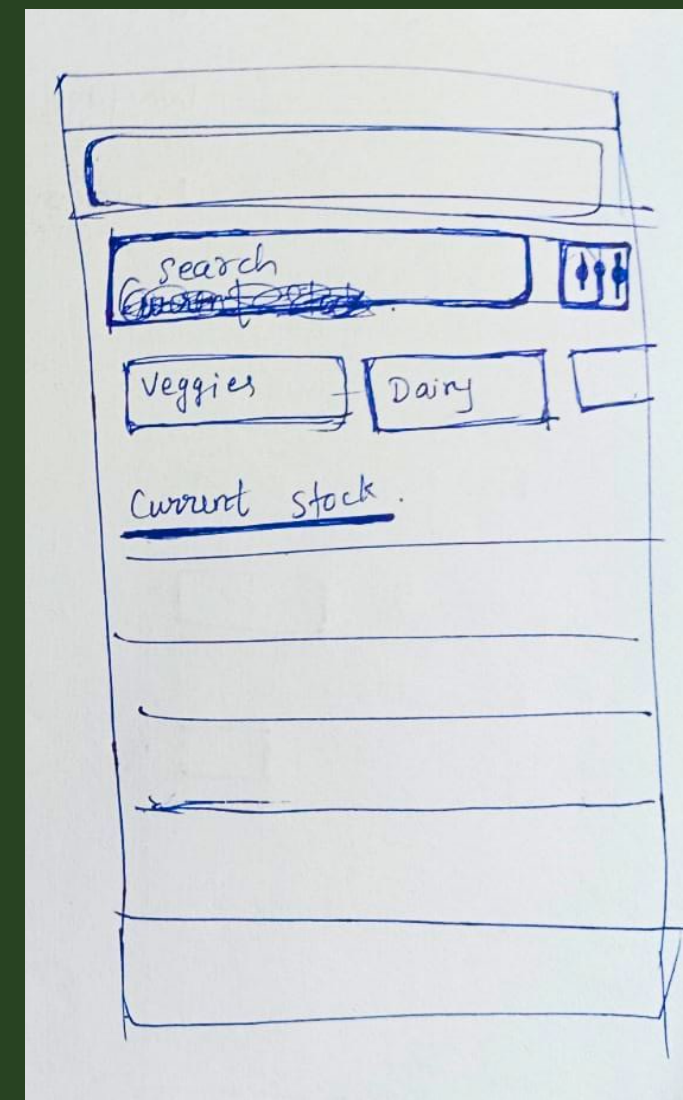
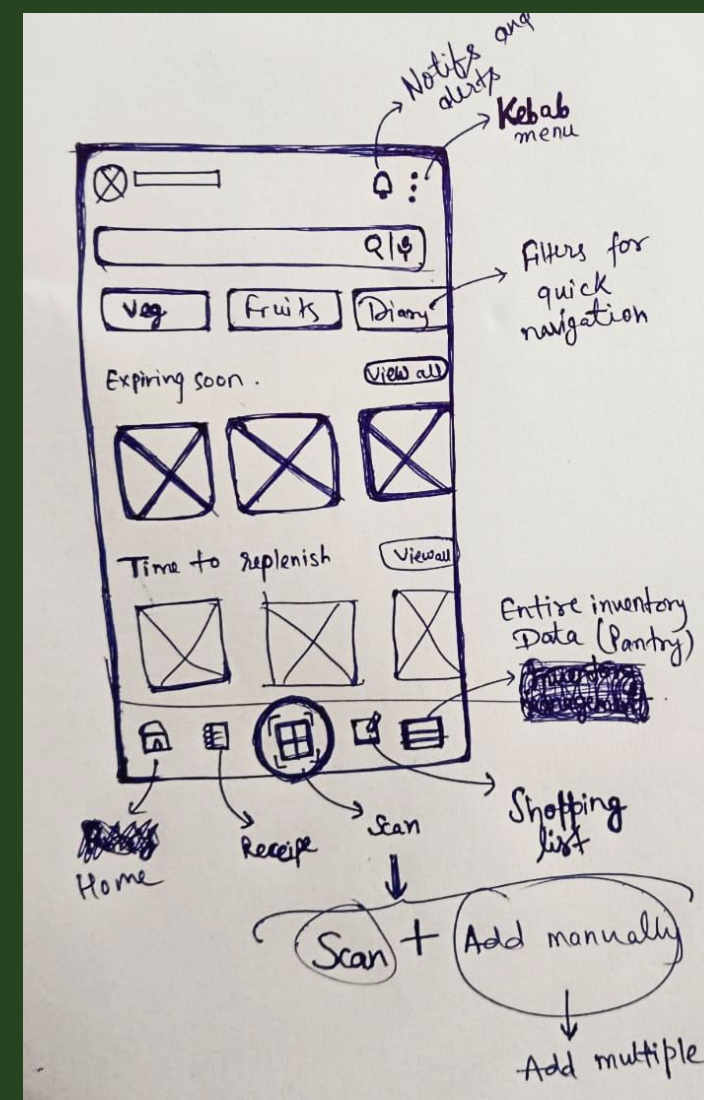
- Estimation from the smart sensor.

Additionally, the smart sensor monitors real-time status of refrigerator contents.

I consulted a Data Science expert about the AI solution's feasibility. They confirmed its viability, referencing existing products for estimating food shelf life.

These estimations are done by assuming that the data collected by the AI and the smart sensor are close to accurate.

Wireframes and sketches



Introducing



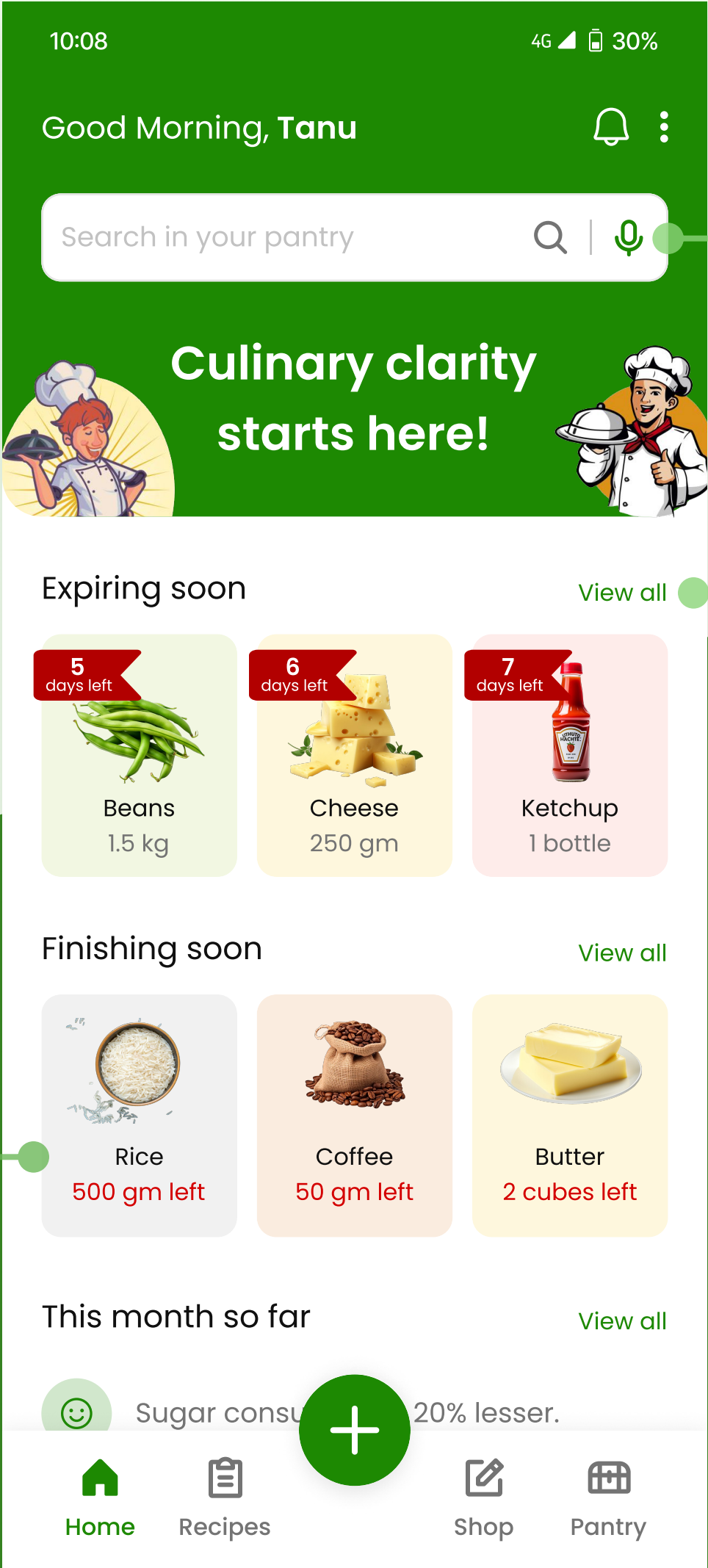
Culinary clarity starts here

HOME



Tanu wants to have a system to manage the grocery stocks, the expiration dates and some highlights of the month so far.

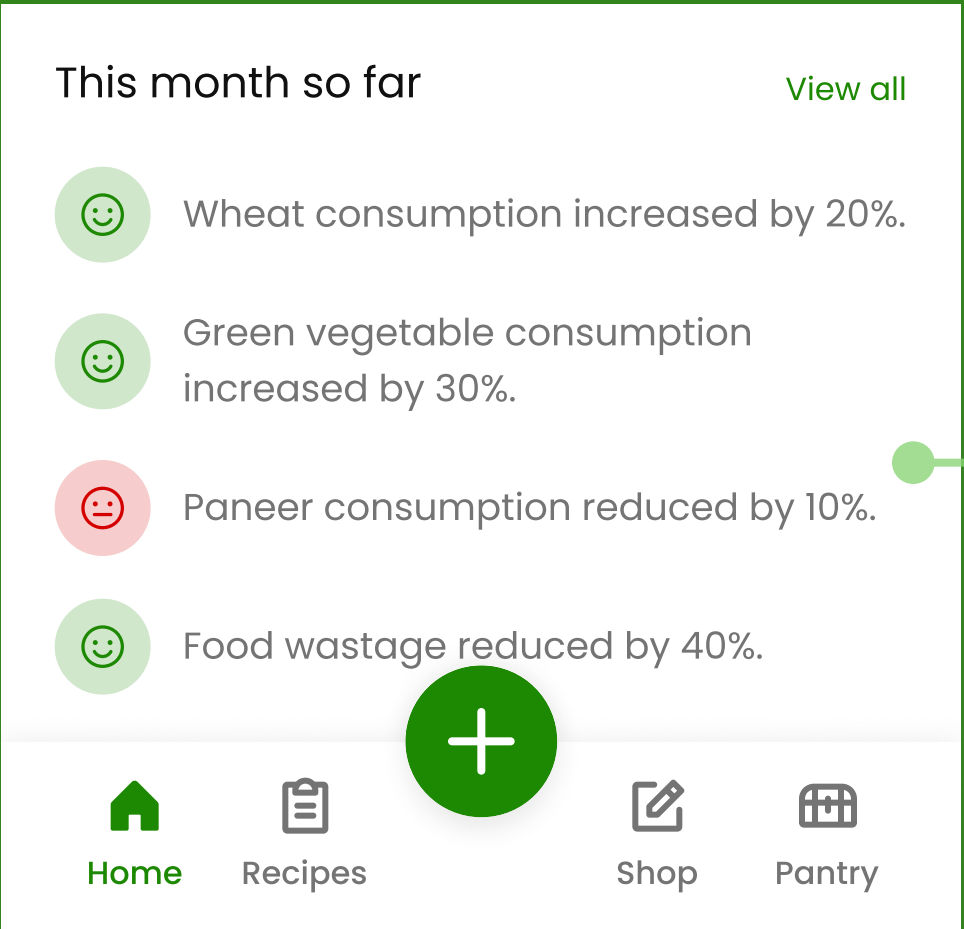
Products that are going to finish soon are shown here.



Search bar to quickly find whatever you need.

Products that are going to expire soon are shown as priority.

(After clicking on any of the cards, recipe suggestions would come to utilize the ingredient.)



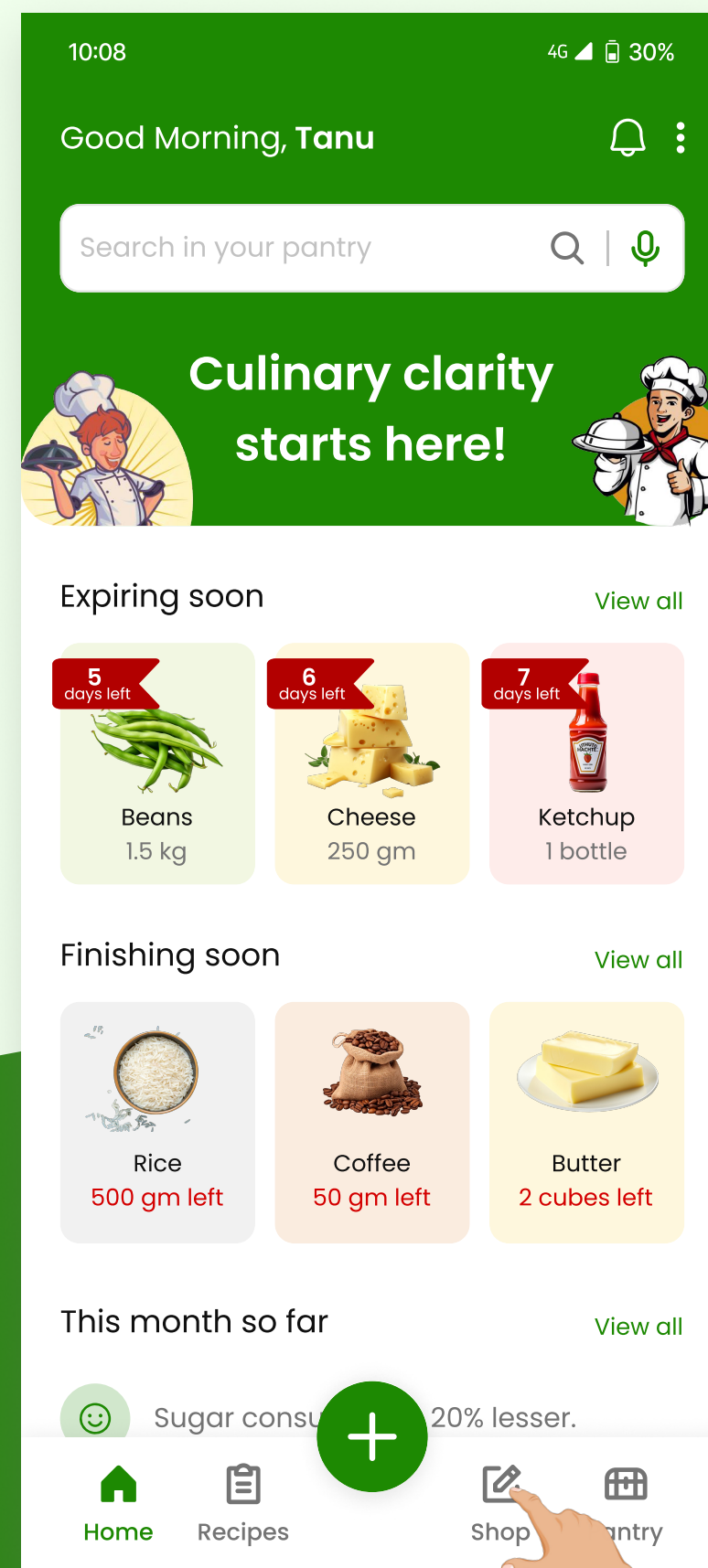
Quick glance about the month so far.

On scrolling

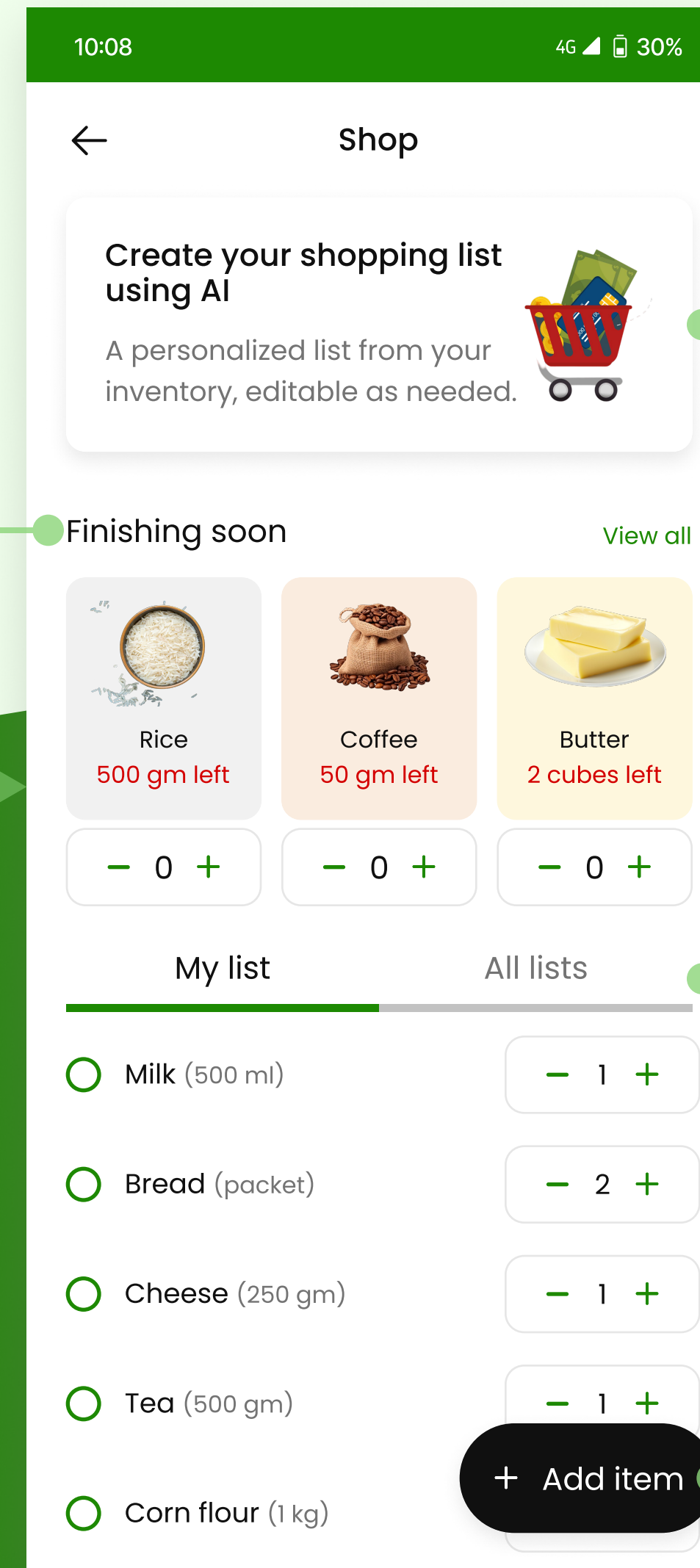
SHOPPING LIST



Time to make the shopping list!
It's been almost a month and
the food stock is almost over.



Suggestion to add
soon to finish items
to the list.



Generate a customizable
shopping list using AI.

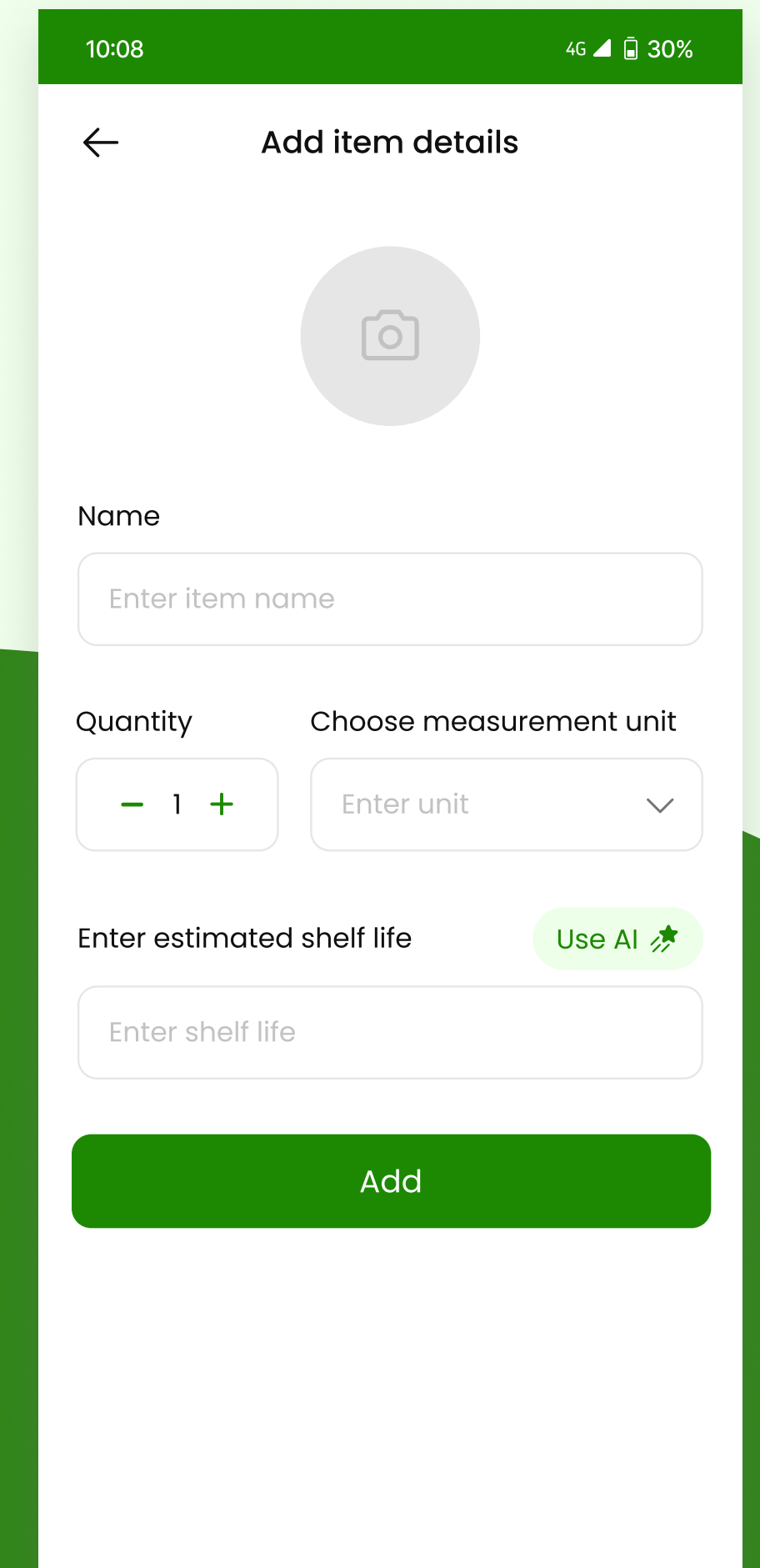
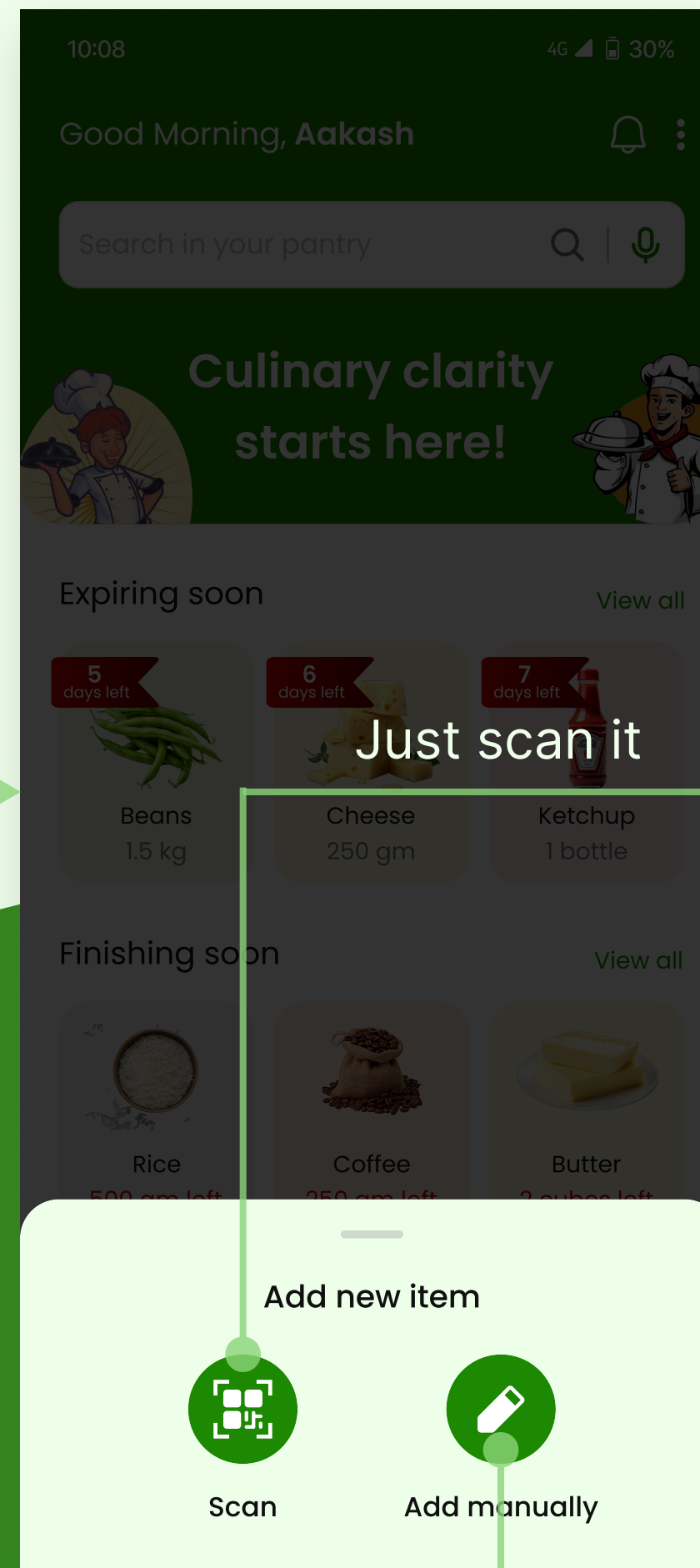
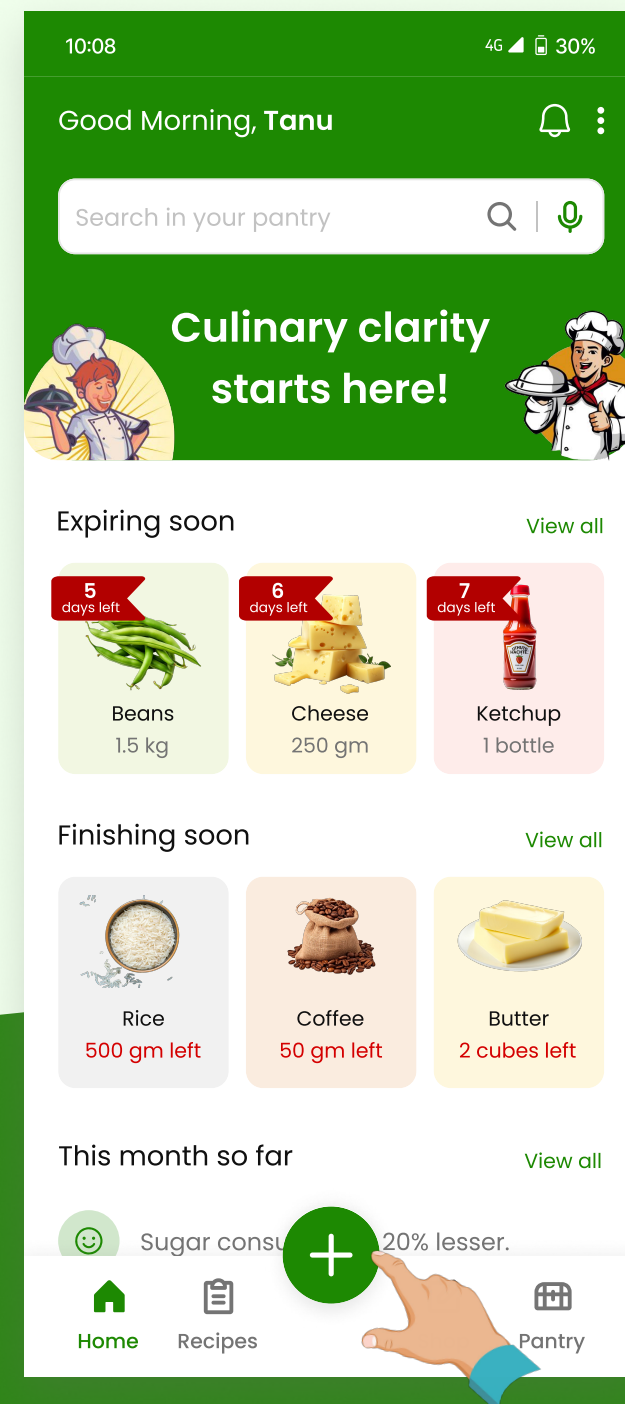
See your list as well as
the lists added by other
members.

Add more items to your
list.

ADD NEW ITEM



Time to restock!
Some new items are being added to the inventory.

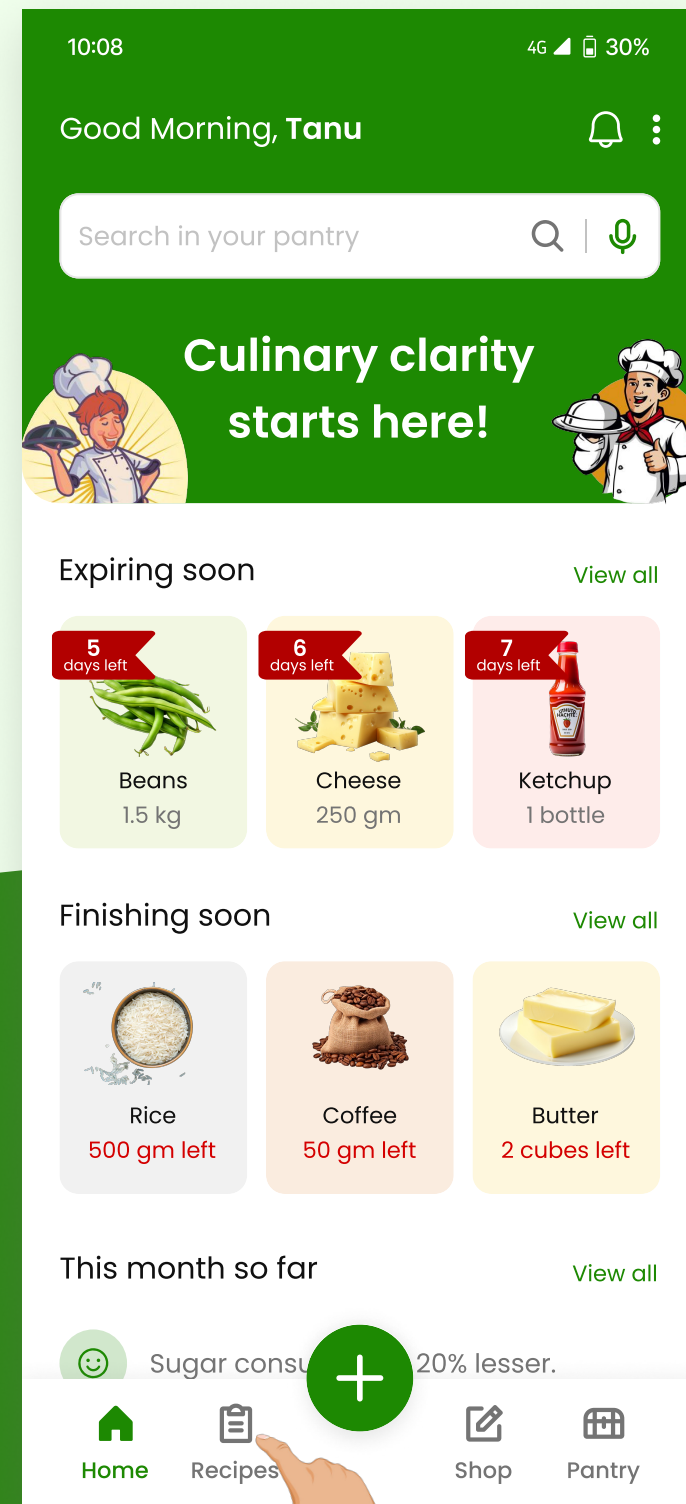


Or input details of the product manually.

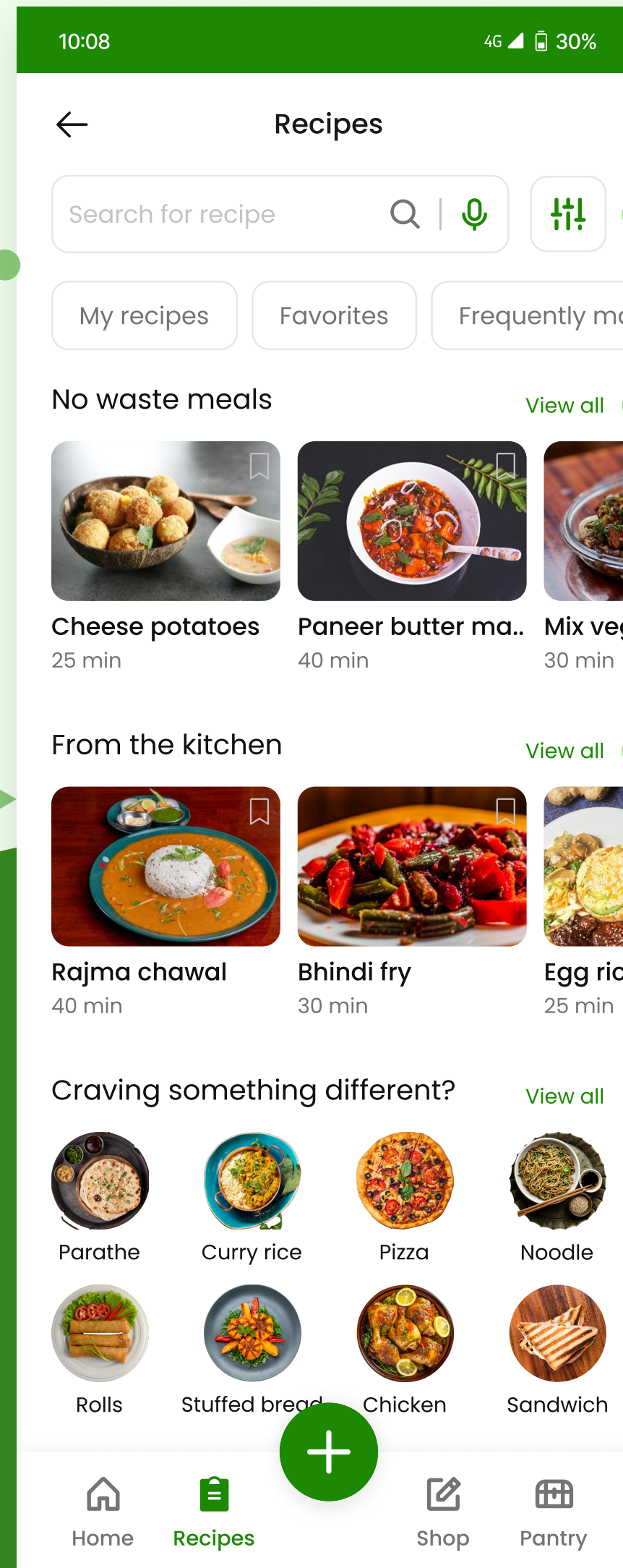
RECIPE



Tanu wants to quickly have some recipes according to the items available in the house.



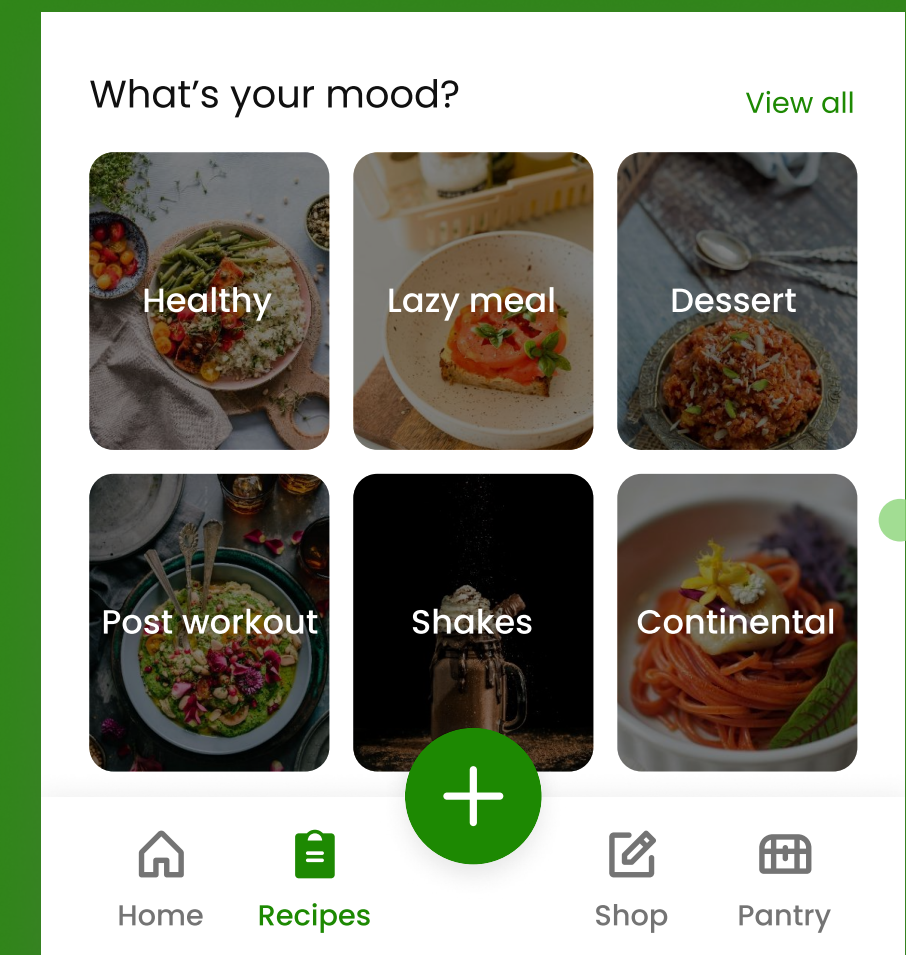
Tags to quickly navigate.



Filters like meal preference, time of preparation etc.

Smartly crafted recipes according to ingredients expiring soon.

Dishes according to the kitchen inventory.



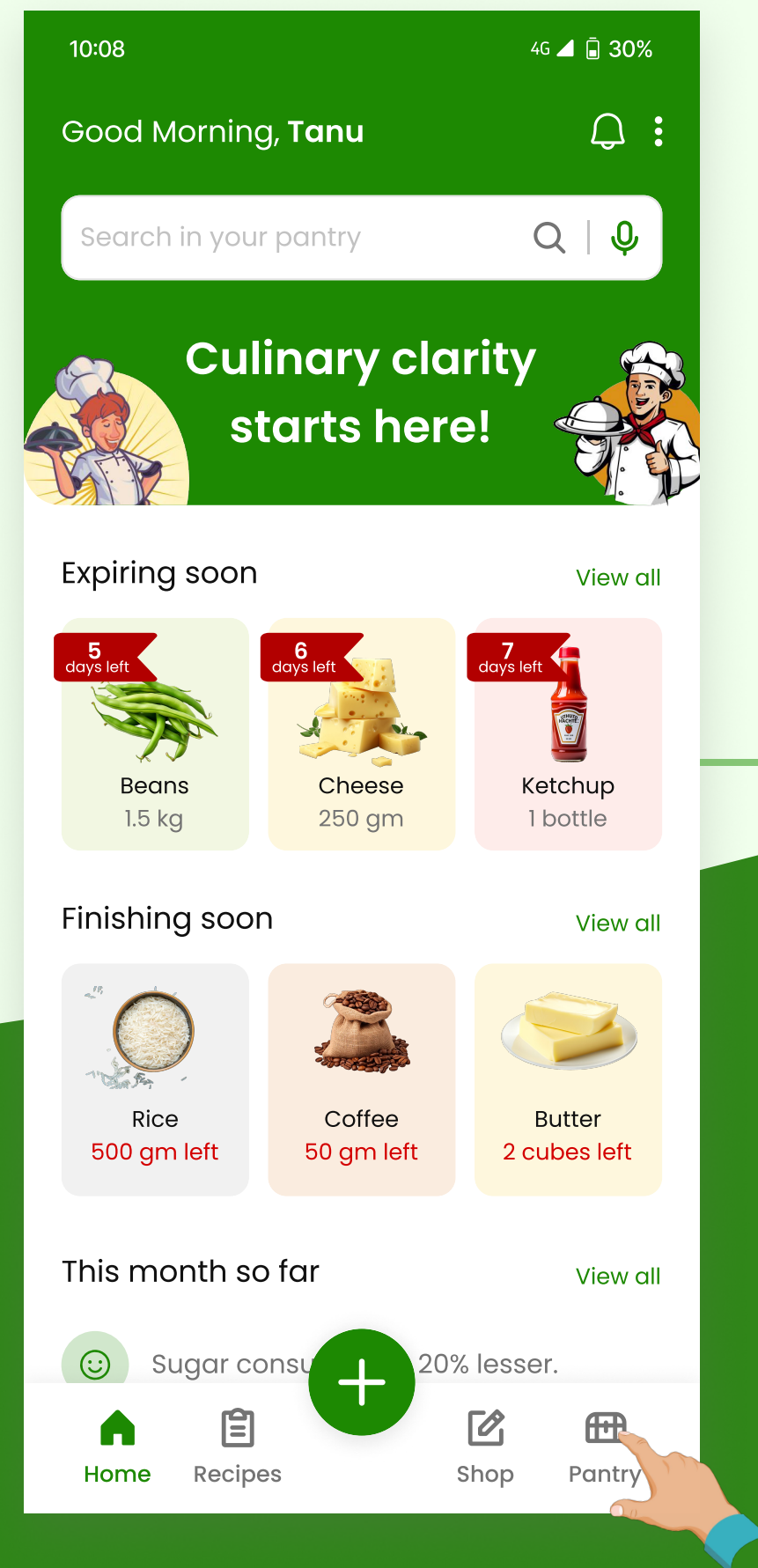
On scrolling

Some more interesting suggestions

PANTRY

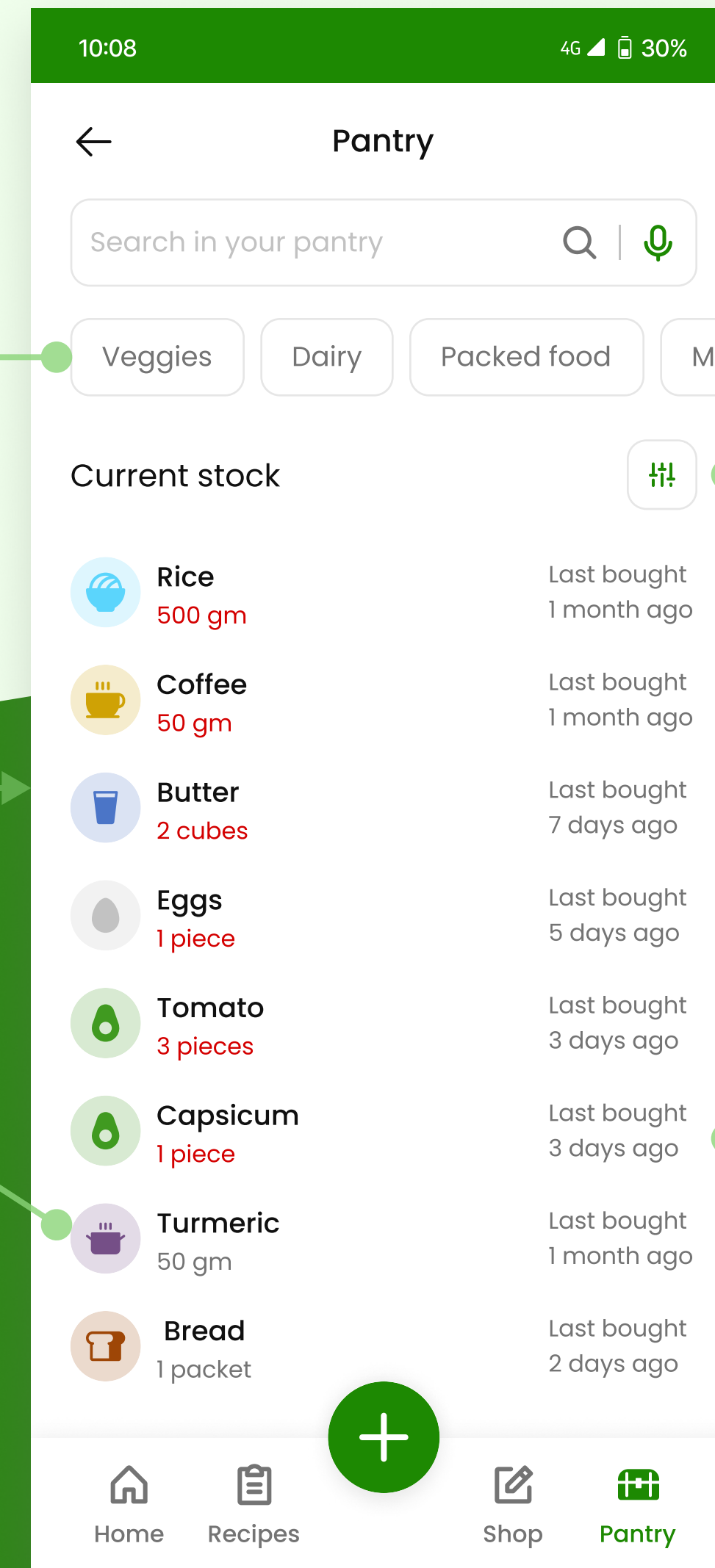


It's been a while since Tanu checked the inventory status. Let's have a look.



Tags to quickly navigate.

Long-pressing the list item selects it and offers the option to add it directly to the shopping list.



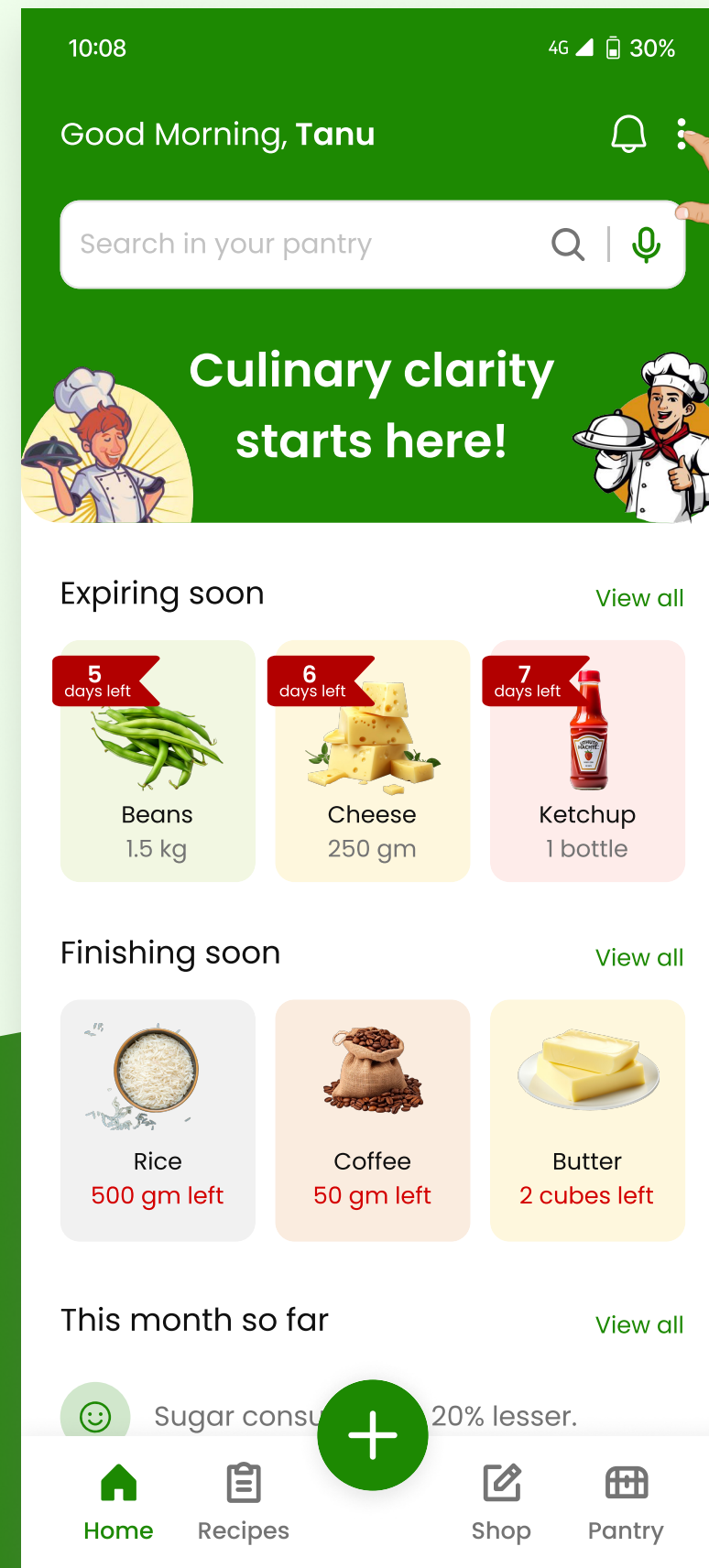
Filter according to expiring soon, quantity left, name, purchase date, etc.

Current stock

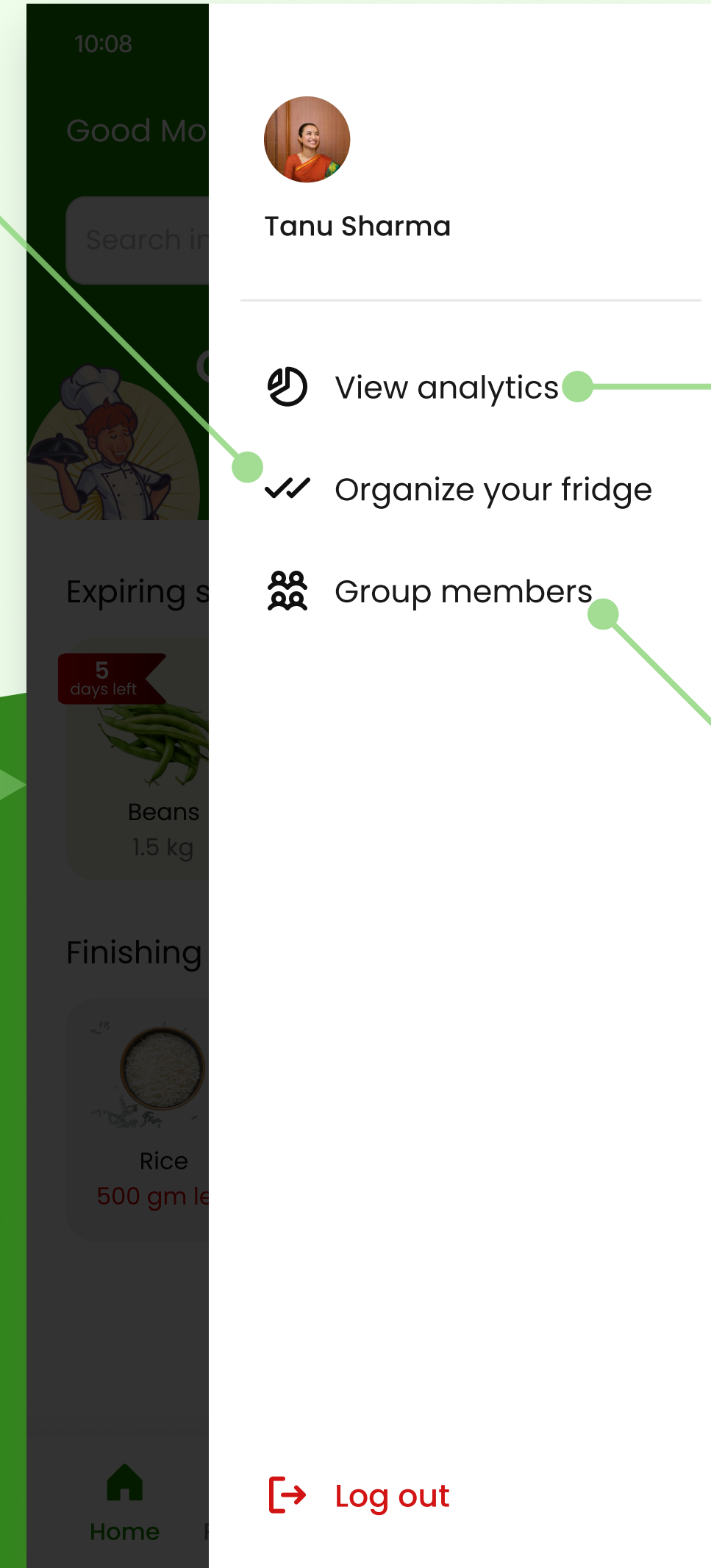
That's not it...



There are some more things to do here!



Have an AI generated image to organize your fridge based on you inventory and usage.



View analytics about purchase, consumption and wastage.

View, add or remove member to the pantry group

Process audit

If provided more time, I would have:

- Done primary research as well.
- Tested the interfaces with the stakeholders involved.
- Made some more screens that I thought of to demonstrate some flows in a more intuitive way.

Future scope

- **Meal Planning and Nutrition Tracking:**
Expand the app's capabilities to include meal planning tools, nutritional analysis, and personalized dietary recommendations based on users' health goals and preferences.
- Considering the other stakeholders as well.

And that's a wrap!

Thank You

