

## **1. Solution Overview**

Smart Pantry is a mobile-based intelligent food management application designed to help users track their food inventory, identify items nearing expiration, and reduce household food waste through real-time insights and reminders.

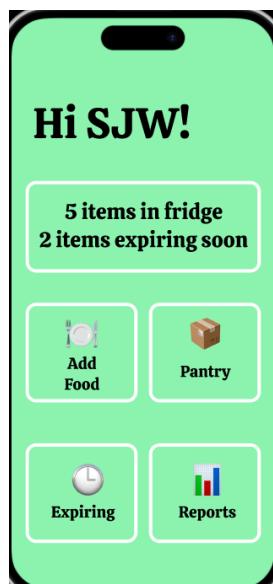
The solution is presented as a **mobile-first high-fidelity prototype built in Figma**, which simulates key user flows and interactive design components. The mobile format was chosen because the target users—young professionals, environmentally conscious individuals, and busy families—prefer quick access and real-time updates via smartphones while cooking or shopping. A mobile interface supports on-the-go actions and offers an intuitive experience.

## **2. High-Fidelity Prototype Designs and Features**

The high-fidelity prototype includes five main pages, each reflecting a specific functional area of the app. The design uses a consistent light green theme to represent freshness and sustainability, paired with clear typography and intuitive icons to improve usability.

## Home Page

- Greetings users by name ("Hi SJW ").
- Shows a summary of current inventory (e.g., "5 items in fridge", "2 items expiring soon").
- Features quick access buttons: Add Food, Pantry, Expiring Soon, and Reports.



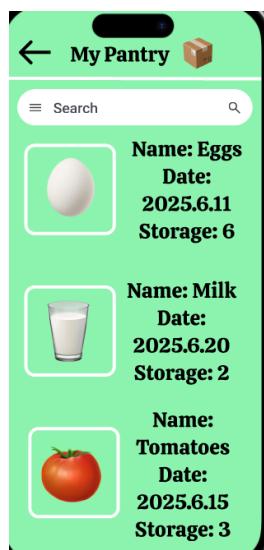
## Add Food Page

- Allows users to manually add new items.
- Inputs include food image, name, expiration date, category (e.g., Drinks), and quantity.
- The SAVE button commits the data to the pantry tracking system.



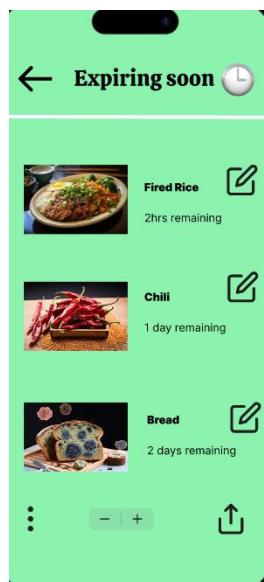
## My Pantry Page

- Displays categorized food items in a vertical list with photos, names, expiry dates, and quantities.
- Includes a search bar for fast lookup.
- Icons like 🥛, 🍅, 🥔 visually enhance user recognition.



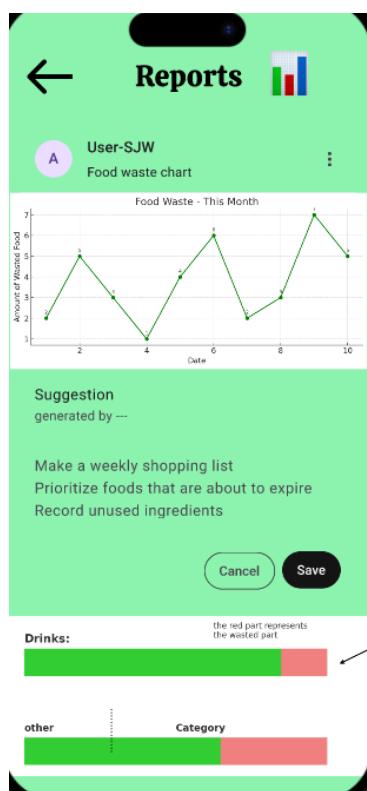
## Expiring Soon Page

- Shows a sorted list of foods close to expiration, with time remaining.
- Each item includes a photo and label (e.g., "Fried Rice – 2 hrs remaining").
- Action icons (edit/delete) allow users to manage these items proactively.



## Page Reports

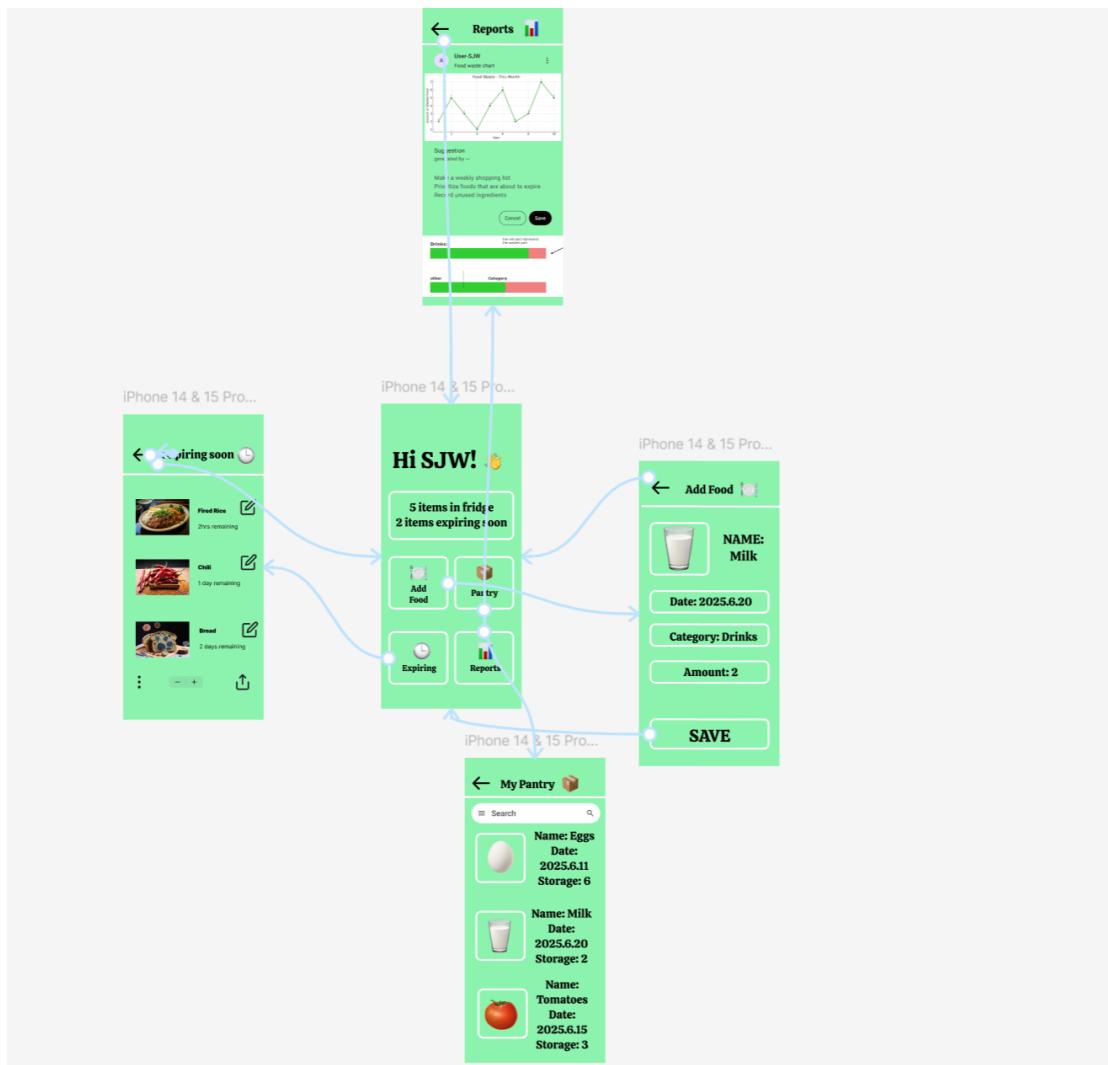
- Provides charts (line and bar graphs) that visualize monthly food waste trends.
- Includes user-specific labels (“User-SJW – Food waste chart”).
- Offers AI-generated suggestions like “Make a shopping list” and “Track unused ingredients”.
- All data is displayed in units to promote better tracking.



## Design rationale:

- All components follow a modular layout for easy scalability.
- Icons are sourced via plugins (or emojis), ensuring visual clarity.
- The layout prioritizes readability and single-hand usability.

## The logic of the app:



### **3. Testing Strategy**

To ensure the Smart Pantry prototype meets usability and functionality goals, the following testing strategy has been developed:

#### **User Testing Plan**

- **Target Group:** 5–7 users, including eco-conscious students, parents, and professionals.
- **Environment:** Testing on smartphone-sized Figma prototype (iPhone 14/15 viewports).
- **Tasks to Perform:**
  1. Add a new food item (e.g., Milk)
  2. Navigate to the Pantry
  3. Identify and act on expiring food
  4. Interpret the Reports screen
- **Observation Focus:** Task completion success, ease of navigation, button discoverability.
- **Feedback Collection:** Post-task survey + short interviews.

#### **Planned Feedback Integration**

If testing is not yet complete, we propose the following actions:

- **Testing Guide:** Provide step-by-step tasks to each participant.
- **Metrics:** Track success rate, time to complete tasks, and confusion points.
- **Response Plan:** Adjust button layout, increase contrast for action labels, or clarify icons based on feedback.