Stage 2: User and task analysis

Problem:

Remembering what food is stored in the freezer and tracking expiration dates can be difficult for many people. This often leads to forgotten items, expired food, and unnecessary waste. FreezApp aims to solve this by allowing users to easily manage their freezer inventory, receive notifications about expiring products, and generate shopping lists or meal suggestions based on available ingredients.

Users:

User Class 1: Busy Professionals

- **Description:** People with full-time jobs who cook occasionally but often forget what is stored in the freezer.

- **Characteristics:**
    - Time-constrained
    - Tech-savvy
    - Want quick access to information and reminders

- **Goals:**
    - Avoid wasting food
    - Plan meals efficiently
    - Get automatic notifications about expiring items

User Class 2: Families / Household Managers

- **Description:** Adults managing household meals for multiple family members.

- **Characteristics:**
    - Frequently buy and store large amounts of food
    - Need to coordinate meal planning and shopping
    - Use multiple devices (phones, tablets, computers)

- **Goals:**
    - Keep an up-to-date inventory
    - Create shopping lists based on missing ingredients
    - Plan weekly meals efficiently

User Class 3: Students / Young Adults

- **Description:** Individuals living alone or in shared apartments with limited budgets.

- **Characteristics:**
    - Often inexperienced in food management
    - May share freezer space with roommates
    - Want simple, easy-to-use tools

- **Goals:**
    - Track personal items in shared freezers
    - Avoid buying duplicates
    - Reduce food waste and save money

Tasks:

Task 1: Add a new item to inventory

Objective: Record a new item.
Pre-condition: User has purchased or is freezing food.
Sub-tasks: Open "Add Item," enter details (name, quantity, expiration date, notes), optionally add photo and owner, save.
Exceptions: Invalid date or duplicate entry.
Frequency: Daily or several times per week.
Time constraint: Under 1 minute.

Task 2: Manage freezer inventory

Objective: View, edit, or organize existing items.
Pre-condition: Inventory contains saved items.
Sub-tasks: Open inventory list, filter or sort, edit/delete as needed.
Exceptions: Sync conflicts during simultaneous edits.
Frequency: Several times per week.
Time constraint: Should load and browse quickly.

Task 3: Receive expiration notifications

Objective: Alert users about soon-to-expire items.
Pre-condition: Notifications enabled and items have expiration dates.

Sub-tasks: System checks daily, sends alerts, user reviews and decides action.
Exceptions: Disabled notifications.
Frequency: Daily (automatic).
Time constraint: Notify at least 1–2 days in advance.

Task 4: Generate shopping list

Objective: Suggest items to restock or buy.
Pre-condition: Inventory up to date.
Sub-tasks: Select "Generate List," review system suggestions, edit or add items, save/export.
Exceptions: Outdated or incomplete data.
Frequency: Weekly.

Task 5: Suggest dishes

Objective: Propose recipes using available ingredients.
Pre-condition: Inventory exists.
Sub-tasks: Open "Meal Suggestions," system analyzes items, displays recipes, and marks used ingredients.
Exceptions: Missing ingredients (suggest alternatives).
Frequency: Few times per week.
Time constraint: Quick response expected.

Scenarios:

Scenario 1: Busy professional adding and tracking food

Anna, a 32-year-old software engineer, just came back from grocery shopping. She opens FreezApp on her phone, scans barcodes of frozen vegetables and chicken breasts, and enters expiration dates. Three weeks later, she receives a notification that the chicken will expire in two days. She decides to cook it for dinner that evening.

Scenario 2: Family planning weekly meals

Marta manages meals for her family of four. On Sunday, she opens FreezApp on her tablet to check what's left in the freezer. She filters items by expiration date and sees several products nearing their end. She uses the "Meal Suggestions" feature to plan dishes for the next few days and automatically generates a shopping list for the missing ingredients.

Scenario 3: Student managing shared freezer space

Krzysztof lives with three roommates, and they share a freezer. Each person has their own account in FreezApp. Krzysztof logs in and adds the pizza and ice cream he bought, tagging them with his name. A few days later, when planning a movie night, he checks the shared inventory and sees what everyone already has — avoiding buying duplicates.

Interviews summary:

- All users experience food waste due to forgetting what's in the freezer.
- Expiration tracking is considered the most important feature.
- Automatic reminders and visual cues (color coding for expiration dates) are highly desired.
- Simplicity and speed are critical: users prefer minimal input (barcode scanning or autofill).
- Families and students both want multi-user access or shared inventories.