

# Smart Fridge Tracker

MET CS 633 FALL24 Team 2

# Our Team

**SK**

**Sergio  
Khalil**  
Backend Developer,  
Frontend Lead

**SW**

**Sonny  
Wibisono**  
Project Manager,  
Front End Developer

**CG**

**Chaojin  
Guo**  
UI Designer &  
Front End developer

**ZW**

**Zi  
Wang**  
Backend Developer

**ND**

**Nidhi Desai**  
QA Lead, Frontend  
Lead

**PT**

**Paridhi Talwar**  
Requirement Lead,  
QA Lead

# Team Policy



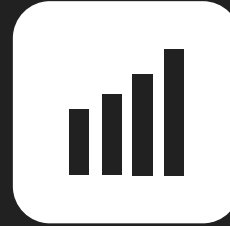
## Meeting Time

Every Wednesday around 1 pm  
on Discord or Mugar Library



## Technology

Pivotal Tracker, Github, Google  
Drive, Discord, Figma



## Attendance Policy

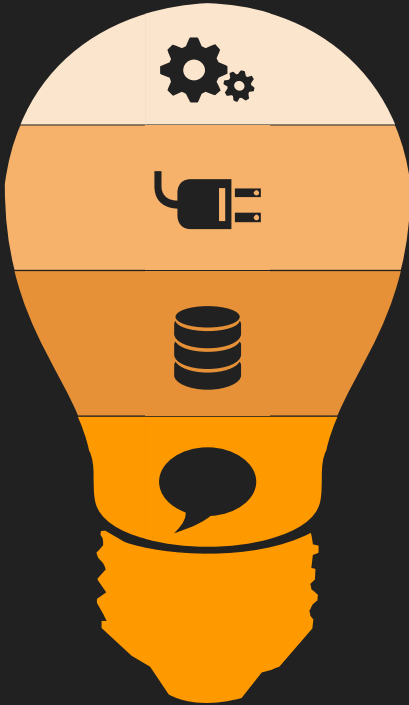
All members should be present  
in team meetings.



## Grading Policy

Until the professor communicates  
a change, all team members will  
receive the same grade.

# Project Scope



In today's fast-paced world, managing groceries, meal planning, and maintaining a healthy diet can be overwhelming. "Smart Fridge Tracker" is an innovative app designed to simplify your kitchen management while promoting healthier eating habits. By tracking ingredients in your fridge, providing personalized recipes with calorie counts, and offering a weekly meal planner, the app helps users reduce food waste, stay organized, and achieve nutritional goals effortlessly.

# Persona

1. Students
2. Health Enthusiast
3. Professionals
4. Parents
5. Chef



# Persona 1

## 1. Student Persona

**Name :** Andy (22), BU Student

### **Description:**

Andy often lead busy lives with fluctuating schedules, leaving little time for regular meal planning or grocery shopping. He lives in shared apartments or dorms, which adds complexity to managing fridge space and food inventory. A smart fridge tracker can help students stay on top of food freshness, avoid waste, and provide meal suggestions based on what's available. With his tech-savvy nature, he can appreciate features that integrate with mobile devices, and streamline shopping lists to save time and money.

### **Needs:**

- Track food inventory
- Minimize food waste
- Manage healthier life
- Simplify meal planning and grocery shopping



# Persona 2

## 2. Health Enthusiast Persona

**Name :** Olivia (23),

**Description:**

**As Health Enthusiast**, Olivia prioritize their diet and often follow specific meal plans or dietary guidelines. She focused on consuming fresh, nutritious food and may need to monitor calories or nutrients. A smart fridge tracker can help health enthusiasts track the freshness of their food, ensure they are using high-quality ingredients, and provide recipe suggestions that align with their dietary goals. They value tools that support their active lifestyle and make it easier to stick to their health and fitness routines

**Needs:**

- Align food choices with health and fitness goals
- Receive tailored recipe suggestions
- Monitor nutrient intake



# Persona 3

## 3. Professional Persona

**Name :** Michael (27),

**Description:**

Michael typically have busy work schedules, leaving limited time for meal preparation. He value convenience, efficiency, and anything that can simplify daily routines. A smart fridge tracker can help professionals keep track of groceries, and suggest quick and easy recipes.

**Needs:**

- Save time with meal planning and grocery tracking
- Reduce food waste
- Access quick, healthy recipe records





# Persona 4

## 4. Parent Persona

**Name :** Elena (29),

**Description:**

**Elenas as parent** is responsible for managing household food needs, often catering to multiple dietary preferences and restrictions. She need tools to simplify grocery shopping, track food inventory, and plan family meals. A smart fridge tracker helps her stay organized by automatically updating shopping lists and suggesting family-friendly meals. It can also help them minimize food waste, which is a concern for families with children. The focus is on convenience, time-saving, and ensuring nutritious meals for the whole family.

**Needs:**

- Manage food preferences and dietary restrictions
- Reduce food waste
- Ensure balanced, family-friendly meals



# Persona 5

## 5. Chef Persona

**Name:** Emma (35), Professional Chef

**Description:**


Emma is a professional chef managing a busy restaurant kitchen while exploring new recipes at home. Balancing her creative pursuits and inventory management can be time-consuming. She relies on tools to organize her ingredients and plan meals effectively. A smart fridge tracker with a recipe section allows her to experiment with new recipes while keeping track of what's available in her inventory. Being tech-savvy, she values features that simplify her workflow and keep her inspired in the kitchen.



**Needs:**


- Organize ingredient inventory efficiently.
- Plan meals with a weekly meal planner.
- Track and explore new recipes through the recipe section.
- Simplify ingredient management (view, add, update, remove).
- Access a user-friendly and efficient app to streamline her kitchen management.





# Pivotal Tracker

Current Iteration/Backlog  10

+ Add Story  

 21 of 21 points

1 • 2 - 8 Dec •  100%

Hide 7 accepted stories 

★	☰	Recipe Page (GR, SO)	<input type="checkbox"/>
★	☰	Login Page (SE, NI)	<input type="checkbox"/>
		✓ Test (QA) (PT)	
★	☰	Register Now Page (SE, NI)	<input type="checkbox"/>
		✓ Test (QA) (SO)	
★	☰	Homepage (NI)	<input type="checkbox"/>
		✓ Test (QA) (PT)	
★	☰	Create a weekly meal plan (PT, SO, SE)	<input type="checkbox"/>
★	☰	Add ingredients to fridge or pantry (NI, PT)	<input type="checkbox"/>
		✓ Test (QA) (NI)	
★	☰	Calorie Count (ZZ, GR)	<input type="checkbox"/>

#### TASKS (0/7)

- ☐ T1: Create a page for Meal Plans
- ☐ T2: Create a calendar view for the meal plans page.
- ☐ T3: Create an add button to add meals for breakfast, lunch and dinner for the week.
- ☐ T4: Create a remove button to remove the meals.
- ☐ T5: Create a drop down button to search for suggestions.
- ☐ T6: Add unit tests for T1, T2, T3, T4 and T5.
- ☐ T7: Add UI tests for T1, T2, T3, T4 and T5.

+ Add a task

# Requirements

## Functional Requirements:

- Ingredient Management:
  - View, add, update, or remove ingredients from your fridge and pantry.
- Weekly Meal Planner:
  - Create personalized meal plans based on your favorite foods.
  - Save meal plans to your history with a calendar view.
- Calorie Tracking:
  - Get calorie counts based on recipes and servings.
- Recipes : Add new recipes and save your favourite recipes

## Non Functional Requirements:

- Performance:
  - Handle multiple users and inventory updates without significant delays.
- Usability:
  - Intuitive interface for managing inventory, meals, and recipes, suitable for all users.
- Security:
  - Securely store user data with measures to prevent unauthorized access and ensure privacy.
- Data Synchronization:
  - Real-time synchronization across devices for consistent access and updates.

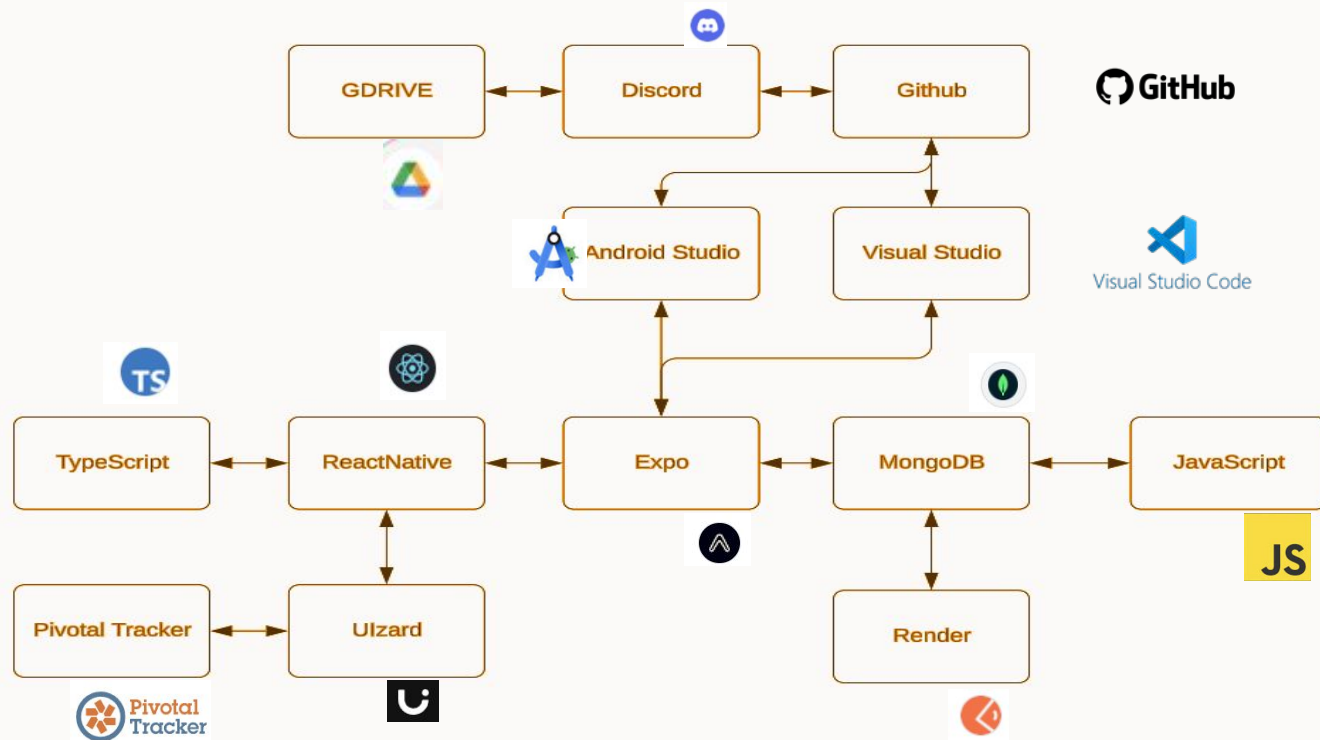
# CI List

MODULE	Configuration Item Name	Version	Date	Owners	Status	Repository
1	Project Scope	1. 0	9/24/2024	ALL	Completed	google drive
1	Personas	1. 0	10/1/2024	Sonny	Completed	google drive
1	Requirements Pivotal Tracker	1. 0	10/1/2024	Paridhi	Completed	Pivotal Tracker
2	Configuration Items List	1. 4	10/16/2024	Chaojin	Completed	google drive
2	Estimation Record	1. 4	10/16/2024	Chaojin	Completed	google drive
3	Tool Connectivity Diagram	1. 0	11/5/2024	Sonny	Completed	google drive
3	Use Cases	1. 0	11/5/2024	Sonny	Completed	google drive
4	Components Interaction Diagram	1. 0	11/5/2024	Zi Wang	Completed	google drive
4	State Transition Diagram	1. 1	11/5/2024	Chaojin	Completed	google drive
4	Wireframes	1. 0	11/15/2024	Nidhi&Paridhi	Completed	google drive
5	Code Development(Back-end)	1. 0	12/5/2024	Sergio	Completed	github
5	Code Development(Front-end)	1. 0	12/5/2024	ALL	Completed	github
5	Data Driven Combination	1. 0	12/5/2024	Zi Wang	Completed	google drive
6	Test Cases & Repository	1. 0	12/5/2024	Nidhi,Sergio&Paridhi	Completed	github
6	Defects Tracker	1. 0	12/5/2024	ALL	Completed	google drive
6	Final Report	1. 2	12/5/2024	ALL	Completed	google drive

# Estimation Record

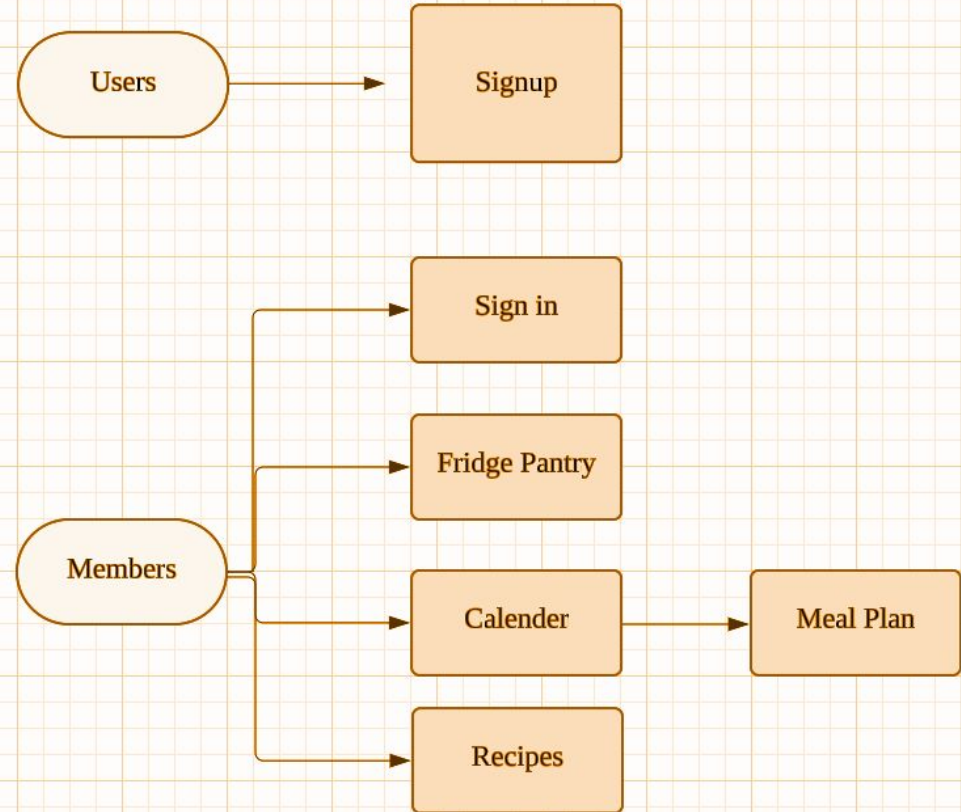
Phase	Task	Size	Size Measure	Effort estimated	Actual effort size
Requirements	Define Scope	1	# of Attributes	4	4
	Define Personas	4	# of Personas	5	5
	Team Composition	1	# of Composition	2	2
Configuration Management	CI List	18	# of CI Items	4	3
Estimation	Estimation Record	15	# of Tasks	4	3
Design	Use Cases	2	# of use cases	4	5
	State Transition Diagram	9	# of states	3	3
	Tool connectivity Diagram	12	# of tools	2	2
Coding	Front-end	42	# of commits	72	180
	Back-end	12	# of commits	72	68
Peer Review	peer review issues	2	# of reviews	3	2
Testing	Unit Testing	1	# of test cases	8	6
	Test cases	2	# of test cases	4	2
Implementation	Final presentation	26	# of slides	8	18

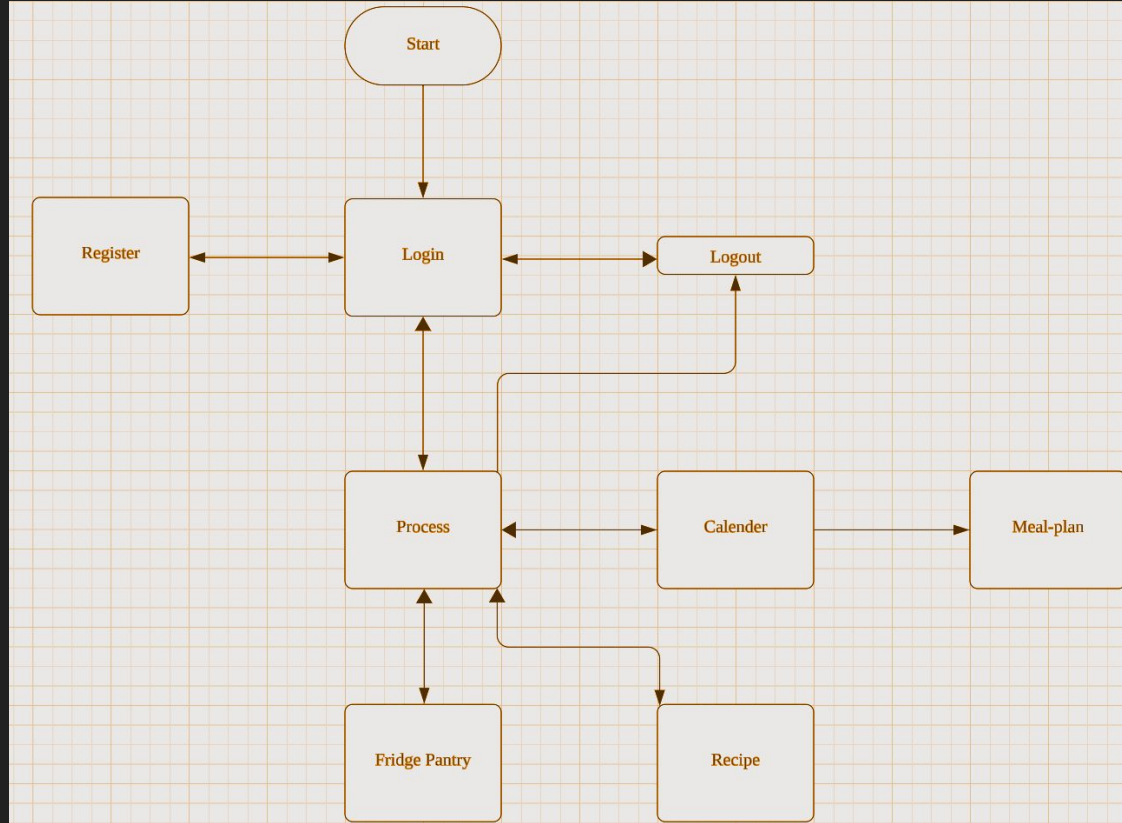
# Tools Connectivity





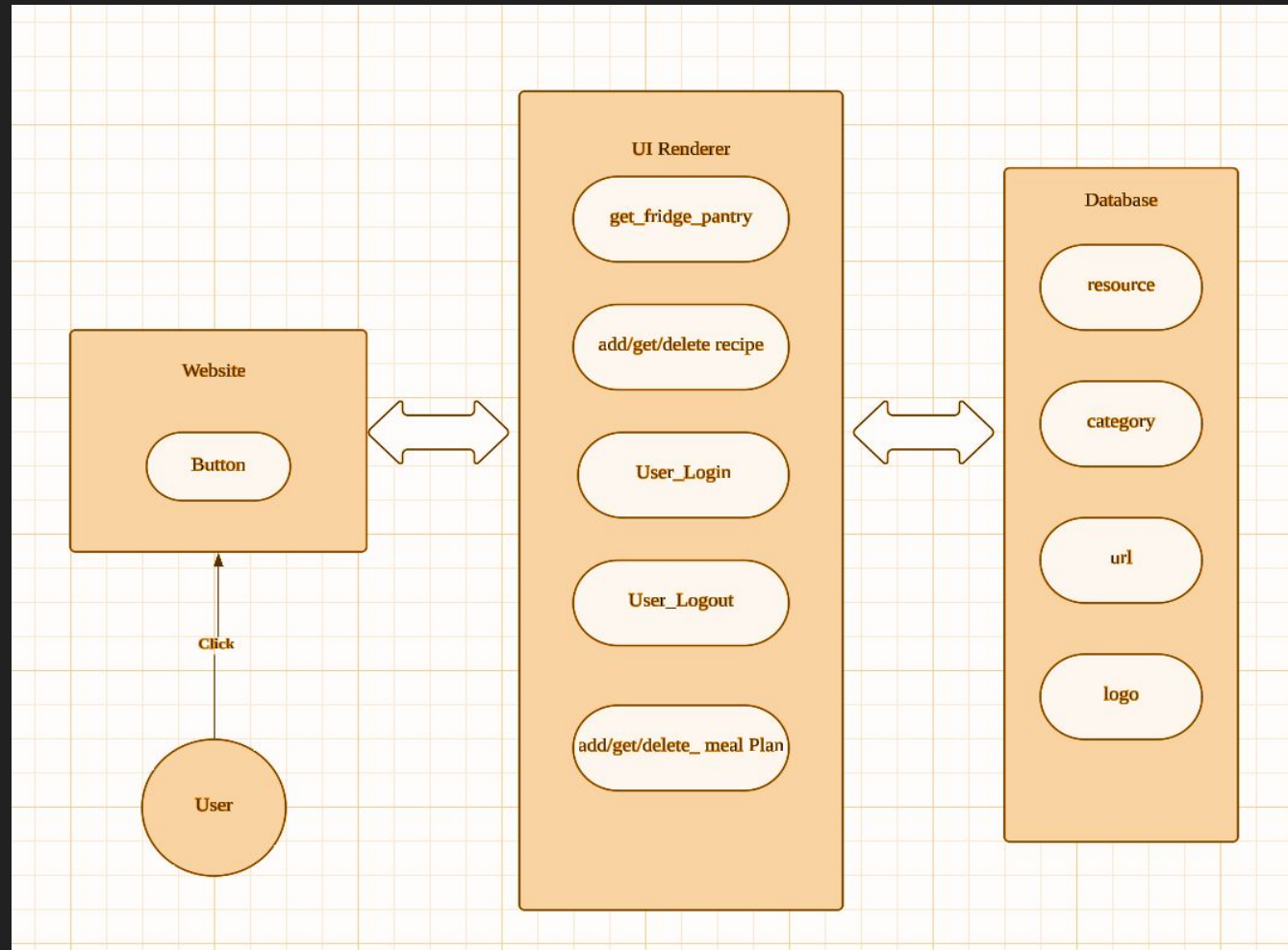
# Use Cases






# State Transition

# Components Interaction Diagram



# Wireframes (1&2)

Signup Page



Register now


First Name

Last Name

Email address \*

Password \*

Login Page



welcome Back !

Email

Enter your email address

Password

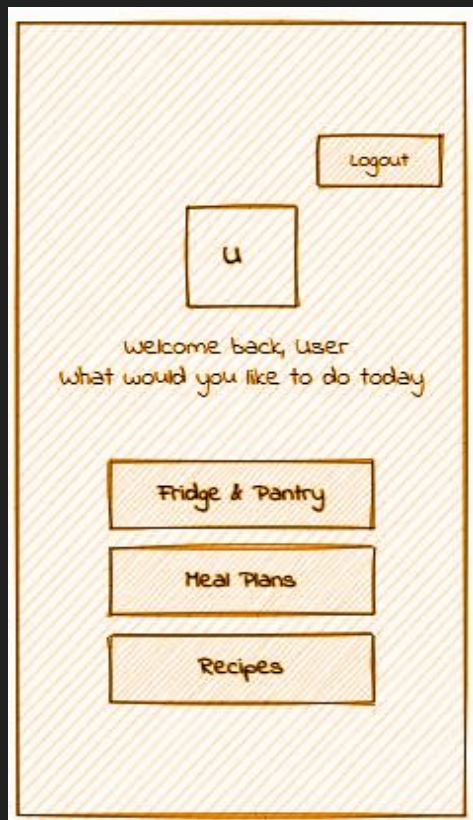
Enter your password

[Forgot your password ?](#)

## Login and Signup Screens:

- Minimal, user-friendly design
- Simple input fields for login/registration

# Wireframes 3



Three core navigation options:

- Fridge & Pantry
- Meal Planner
- Recipes

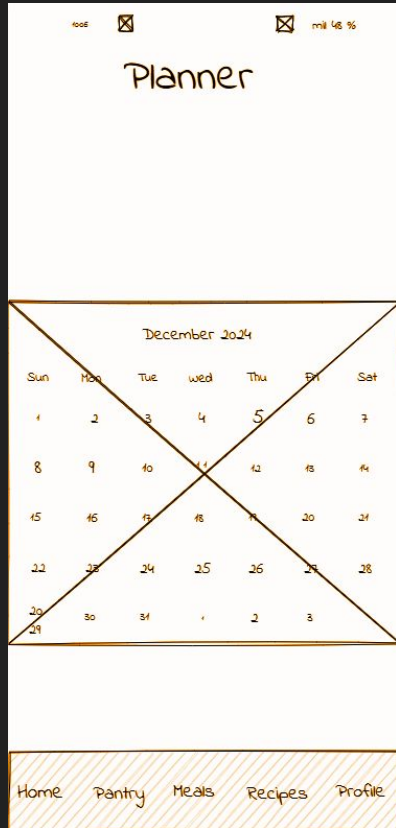
# Wireframes (4)



## Fridge and Pantry Page:

- Displays ingredients in the fridge and pantry
- Users can:
  - Add and remove ingredients
- Displays calorie count per ingredient
- Organized for easy tracking and management

# Wireframes (5&6)



- **Monthly Meal Planner:**
  - Calendar view for meal scheduling
- **Daily Meal Tracker:**
  - Tracks breakfast, lunch, and dinner
  - Add recipes or individual ingredients
  - Calculates total daily calorie count automatically

# Wireframes (7)

The wireframe illustrates the 'Recipes' page layout. At the top, a header bar contains the text '348 Recipes' on the left and three icons (a square with an 'x', a square with a checkmark, and a square with a plus sign) on the right. The main content area is titled 'Add New Recipe'. It features a text input field with the placeholder 'Fattoush'. Below this, the 'ingredients' section lists 'fish' and 'vries'. Each item has a quantity input field (with values '3' and '2' respectively), a unit dropdown menu (showing 'g' and 'serving large' respectively), and a calorie calculation (e.g., '25600 cal'). A 'Total Calories: 121616' is displayed. A '+ Add Ingredient' button is located below the ingredients list. The 'instructions' section has a text area with the placeholder 'do this anthat'. At the bottom of the form are 'Cancel' and 'Save' buttons. A bottom navigation bar includes links for 'Home', 'Pantry', 'Meals', 'Recipes' (which is highlighted with a red circle), and 'Profile'.

## Recipes Page:

1. Allows users to create and save personalized recipes.
2. Add ingredients, specify quantities, serving sizes, and calculate total calories.
3. Includes a text box for cooking steps.
4. Save recipes or cancel changes.



# Test Case (Positive)

Test Type	Functionality
Test Number	1
Test Case Description	Verify that users can add an ingredient to the fridge, ensuring it is saved and displayed accurately in the Fridge_Pantry list.
Results	Passed
Requirements to be Tested	As a user, I need to add ingredients to my fridge, which includes their name and quantity, and see them listed in the pantry view for easy tracking.
Test Steps	<div>Search for the item (rice) and select the item</div> <div>Input the ingredient details:</div> <ul style="list-style-type: none"><li>• Measure: g</li><li>• Quantity: 1000</li></ul> <div>Tap the Add Item button to save the ingredient.</div> <div>Verify that "rice" appears in the pantry list with the correct details.</div>
Expected result	The ingredient "rice" is successfully displayed in the Fridge_Pantry list with the correct details entered by the user.
Actual Result	Verified that the ingredient was added successfully and displayed in the pantry list with all details correct.
Comments	The test passed successfully. As a potential improvement, a feature to edit the ingredients could enhance the user experience.

# Test Case (Negative)

Test Type	Functionality
Test Number	2
Test Case Description	Verify that adding an ingredient (e.g., "Tofu") that <u>already exists</u> in the fridge updates the quantity of the existing entry instead of creating a duplicate entry.
Results	Failed
Requirements to be Tested	Adding an existing ingredient should update its quantity in the Fridge list. No duplicate entries should appear in the fridge list. Quantity updates should reflect accurately and immediately in the UI.
Test Steps	Search for the item (tofu) Add "Tofu" as an ingredient with the following details: <ul style="list-style-type: none"><li>- Quantity: "200 "</li><li>- Measure: "grams"</li></ul> Navigate to the fridge list and confirm that "Tofu" is added with the specified quantity. Add "Tofu" again with a new quantity: <ul style="list-style-type: none"><li>- Quantity: "100 "</li><li>- Measure: "grams"</li></ul> Navigate back to the fridge list to check the status of "Tofu."
Expected result	The quantity of "Tofu" in the fridge should update to reflect the new total quantity (e.g., "300 g" if previously "200 g" and "100 g" were added). No duplicate entry for "Tofu" should be created.
Actual Result	"Tofu" is added as a new entry in the fridge list instead of updating the existing quantity
Comments	Duplicate entries are created when adding an ingredient like "Tofu" again instead of updating the existing quantity. Edit functionality is required

# TEST-CASES

**PASS** app/\_\_tests\_\_/Fridge.test.tsx

Fridge\_Pantry Component

- ✓ renders the fridge and pantry items (594 ms)
- ✓ searches for items and displays search results (81 ms)
- ✓ opens the modal when an item is selected (85 ms)
- ✓ deletes an item from the fridge (68 ms)
- ✓ navigates to different tabs (58 ms)

Test Suites: 1 passed, 1 total

Tests: 5 passed, 5 total

Snapshots: 0 total

Time: 2.264 s, estimated 4 s

Ran all test suites matching /app\\\_\_tests\_\_\\Fridge.test.tsx/i.

**PASS** app/(Authentication)/\_\_tests\_\_/RegistrationScreen.test.tsx

RegistrationScreen

- ✓ should display validation errors when fields are empty (171 ms)
- ✓ should call registerUser API on valid input (407 ms)

Test Suites: 1 passed, 1 total

Tests: 2 passed, 2 total

Snapshots: 0 total

Time: 3.425 s

Ran all test suites matching /app\\(Authentication)\\\_\_tests\_\_\\

o (base) PS C:\Users\ravir\OneDrive\Desktop\Fridge\CS633-Team-2>

```
1  {}
2  |   "firstName": "Nidhi",
3  |   "lastName": "Desai",
4  |   "email": "nidhird@bu.edu",
5  |   "password": "password123"
6  | }
```

dy Cookies Headers (15) Test Results 200 OK

Pretty Raw Preview Visualize JSON ↕

```
1  {}
2  |   "email": "nidhird@bu.edu",
3  |   "token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJfJfawQioiI2NzVjM2FkZWVjND1jZWw0ODhmNjJhNDIiLCJpYXQiOiJlE3MzQwOTc2MzAsImR0EkwpmQ0o-LW17NDTy6My5y4G0iTF8hKNTfLayrWpwQ"
4  | }
```

DELETE https://cs633-team-2.onrender.com/api/recipe/675c674fb8a0d86f558dc0b6

Params Authorization ● Headers (10) Body ● Scripts Tests Settings

Body Cookies Headers (15) Test Results 200 OK

Pretty Raw Preview Visualize JSON ↕

```
1  {}
2  |   "message": "Recipe deleted successfully"
3  | }
```

	Transition Between States	User	Admin
1	From register to Login	Yes	Yes
2	From Login to Homepage	Yes	Yes
3	From Homepage to Fridge pantry	Yes	Yes
4	From Homepage to Recipes	Yes	Yes
5	From MealPlan to Calender	Yes	Yes
6	From Homepage to User Profile	Yes	Yes
7	From Homepage to Calender	Yes	Yes
8	From User Profile to Homepage	Yes	Yes
9	From Fridge Pantry to Homepage	Yes	Yes
10	From Calender to Homepage	Yes	Yes
11	From Recipes to Homepage	Yes	Yes
12	From register to Login	No	Yes
13	From Login to Homepage	No	Yes
14	From Homepage to Fridge pantry	No	Yes
15	From Homepage to Recipes	No	Yes
16	From MealPlan to Calender	No	Yes
17	From Homepage to User Profile	No	Yes
18	From Homepage to Calender	No	Yes
19	From User Profile to Homepage	No	Yes
20	From Fridge Pantry to Homepage	No	Yes
21	From Calender to Homepage	No	Yes
22	From Recipes to Homepage	No	Yes

# Data-driven Table Combinations

# Allpairs

	Transition Between States	User	Admin
1	From register to Login	Yes	Yes
2	From Login to Homepage	Yes	Yes
3	From Homepage to Fridge pantry	Yes	Yes
4	From Homepage to Recipes	Yes	Yes
5	From MealPlan to Calender	Yes	Yes
6	From Homepage to User Profile	Yes	Yes
7	From Homepage to Calender	Yes	Yes
8	From User Profile to Homepage	Yes	Yes
9	From Fridge Pantry to Homepage	Yes	Yes
11	From Calender to Homepage	Yes	Yes
12	From Recipes to Homepage	Yes	Yes
13	From register to Login	No	Yes
14	From Login to Homepage	NO	Yes

# Conclusion

- Enhances kitchen management with advanced inventory tracking and meal planning.
- Integrates a comprehensive recipe management system for easy access and organization.
- Promotes healthier eating habits and reduces food waste.
- Simplifies meal preparation with a user-friendly interface.
- Designed for scalability and future enhancements to adapt to evolving needs.
- Aims to transform everyday cooking, making it more efficient and enjoyable.

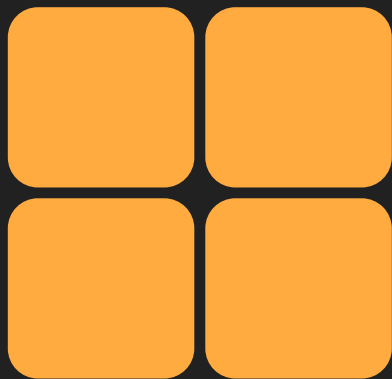
# Links

**Github :**

[Github Link](#)

**Test Report :**

[Software Test Report](#)



**Thanks!**  
**MET CS 633 FALL24**  
**Team 2**