



UE22CS352B - Object Oriented Analysis & Design

Mini Project Report

Title : The Nibble Notebook

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
FACULTY OF ENGINEERING
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Problem Statement:

In modern hectic life, people are finding it difficult to plan meals, prepare ingredients, and follow a healthy and balanced diet. This is compounded by the absence of a personalized web source that considers the users taste, pantry inventory, and ahead-of-time planning.

The purpose of this project is to develop an intelligent and centralized Recipe, Pantry, and Meal Planning Application that can allow users to:

- Search and store recipes by name, filter, and cuisine.
- Keep a personal store of ingredients to automatically adjust shopping lists.
- Customize individual meals and create 7-day meal plans.
- Receive cuisine-specific recommendations and coordinate their dietary flow effectively with built-in shopping assistance.

Key Features:

1. Recipe Management:

- View, create, edit, and delete recipes.
- View detailed recipe pages.
- Filter and search recipes by name, ingredient, or selected cuisine.

2. Pantry System:

- Maintain a list of ingredients already available (User Pantry).
- Automatically adjust the shopping list by subtracting pantry items from recipe needs.

3. Shopping List Generation:

- Generate a dynamic shopping list based on selected recipes and existing pantry ingredients.
- Update the list as users add/remove recipes or update pantry items.

4. Meal vs Meal Plan:

- Meal Management: Choose meals (breakfast, lunch, dinner, snacks) from recipes.
- Meal Planning: Plan meals across 7 days, selecting recipes for each day and meal slot.
- Add/remove meals to/from the meal plan with ease.
- View and update current 7-day meal plans.

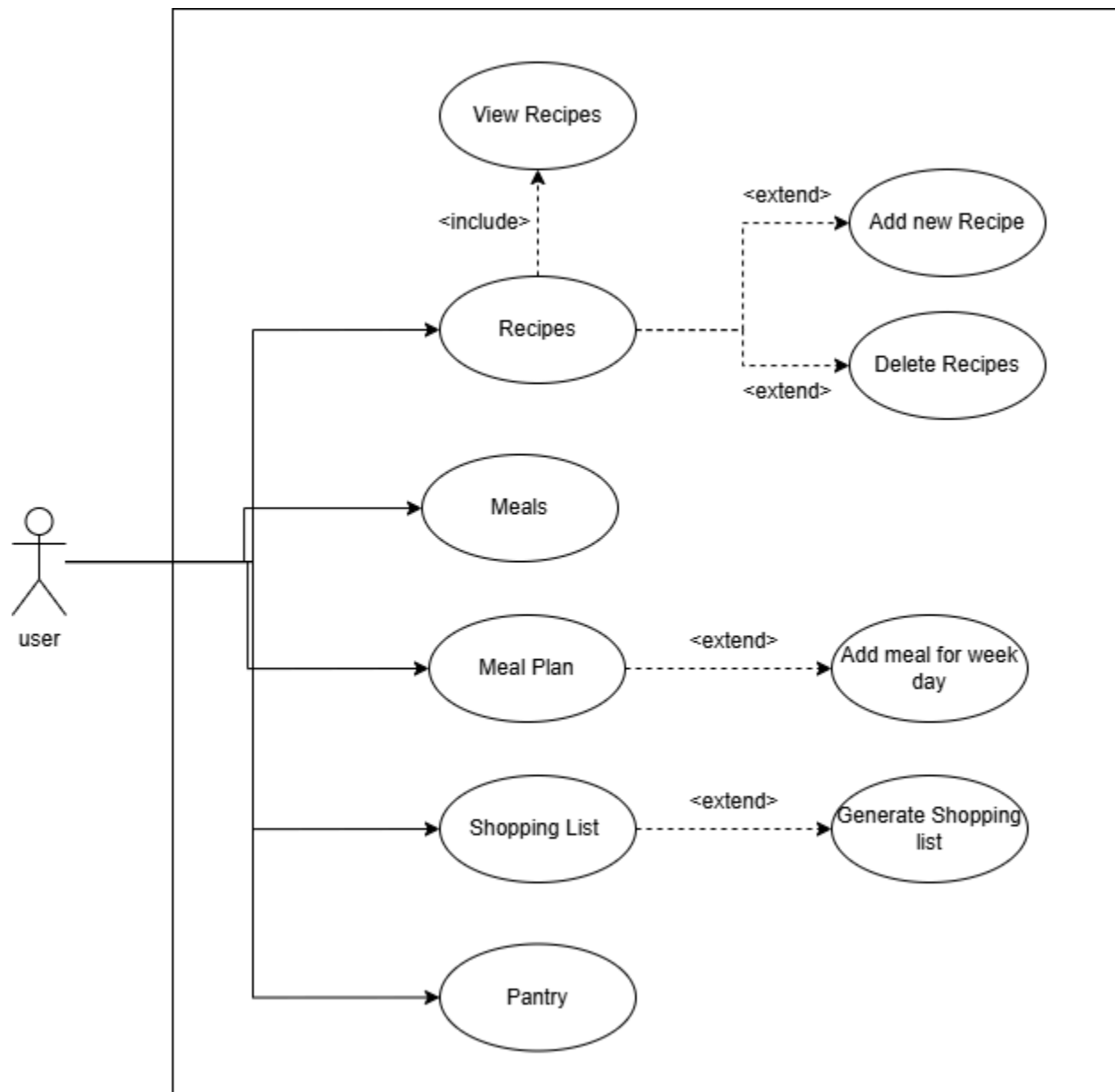
5. User Navigation Flow:

- Smooth navigation from homepage to recipes, search, pantry, shopping list, and meal planning.
- Support for intuitive user actions (e.g., search by filter/cuisine, add meal, generate shopping list)

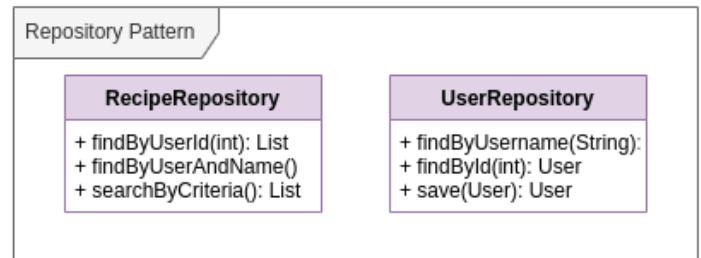
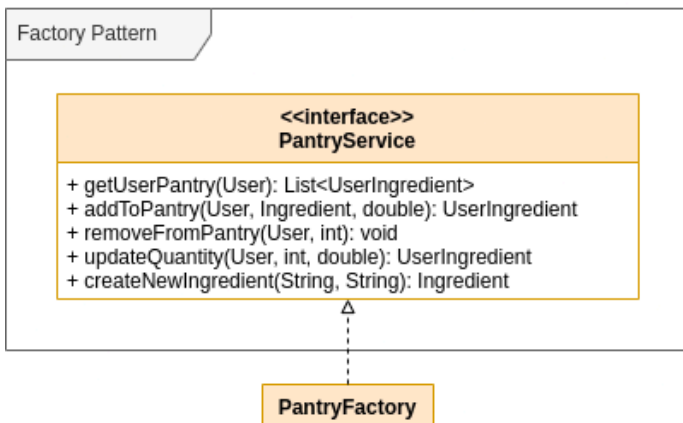
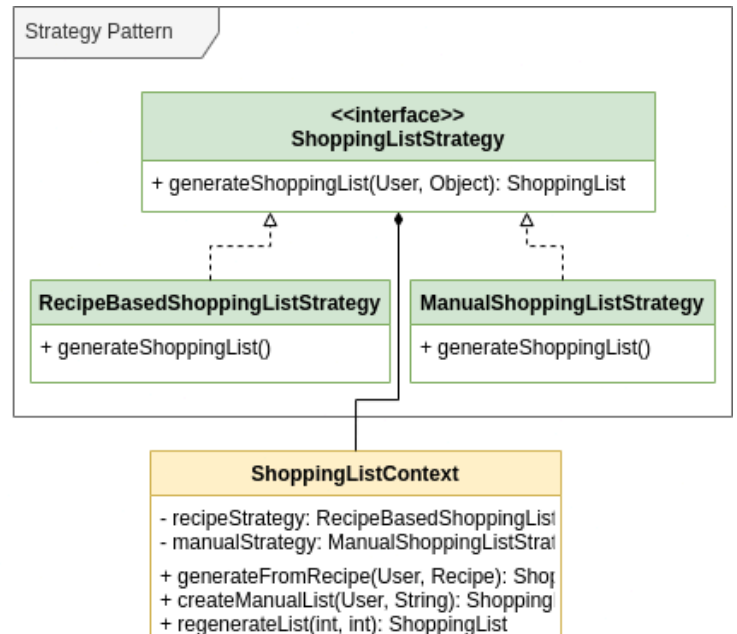
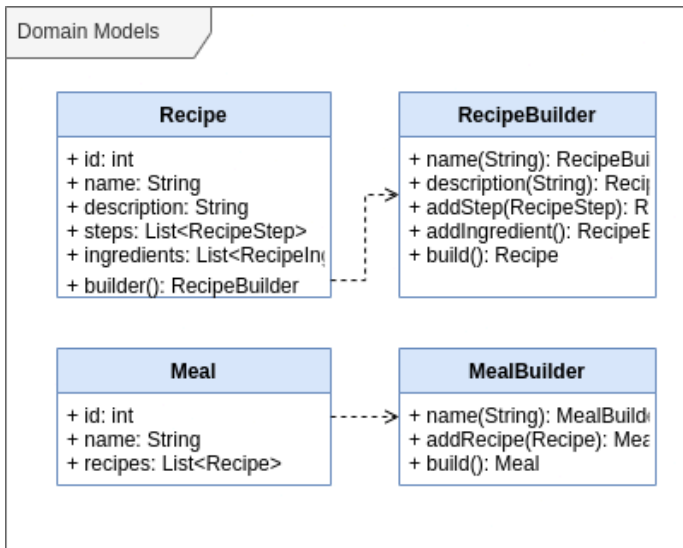
Models:

- **Ingredients.java**
- **Meal.java**
- **MealBuilder.java**
- **MealPlan.java**
- **Recipe.java**
- **RecipeBuilder.java**
- **RecipeIngredient.java**
- **RecipeStep.java**
- **ShoppingItem.java**
- **ShoppingList.java**
- **ShoppingListItem.java**
- **User.java**
- **UserIngredient.java**

Use Case Diagram:



Class Diagram:



Builder Pattern

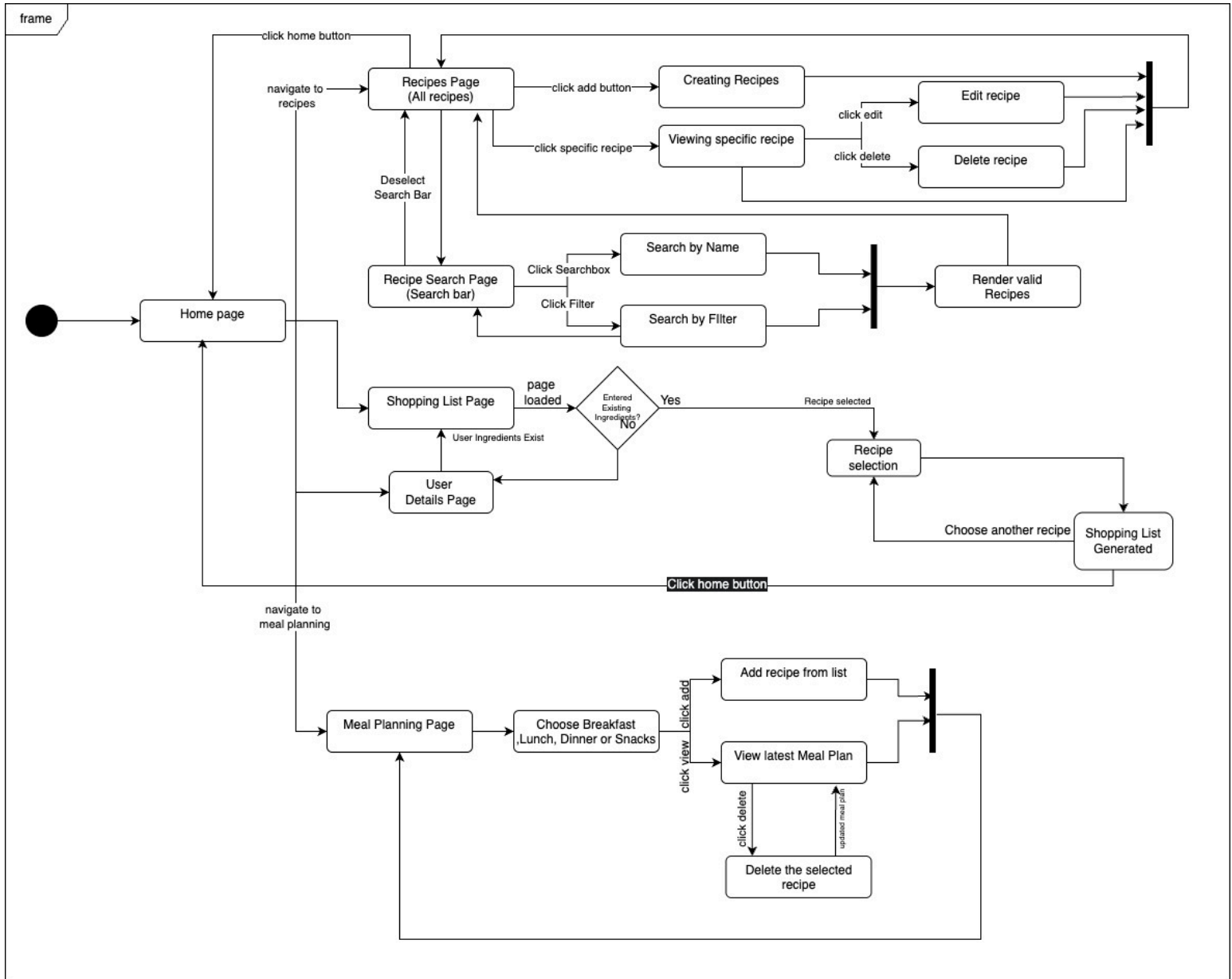
Strategy Pattern

Factory Pattern

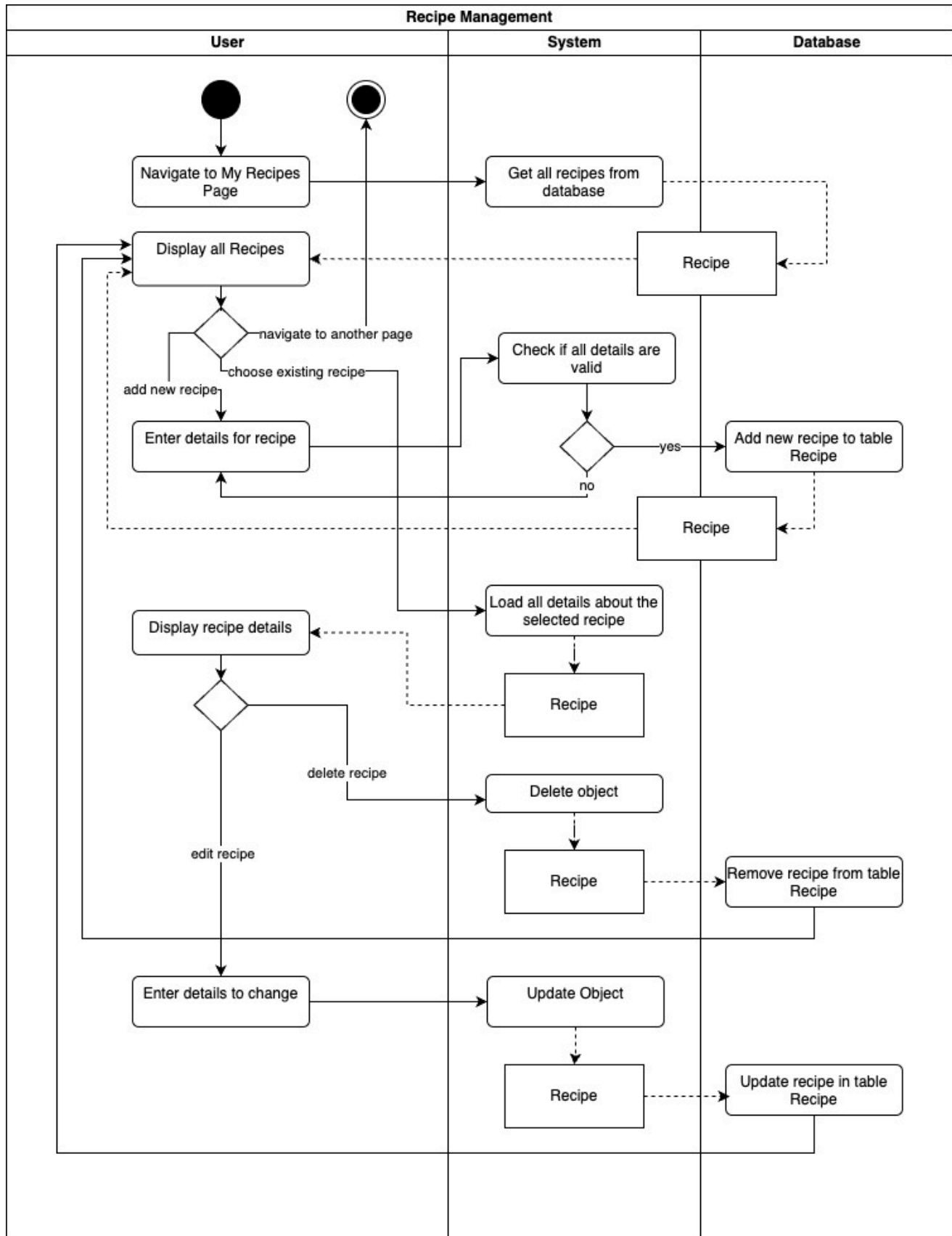
Repository Pattern

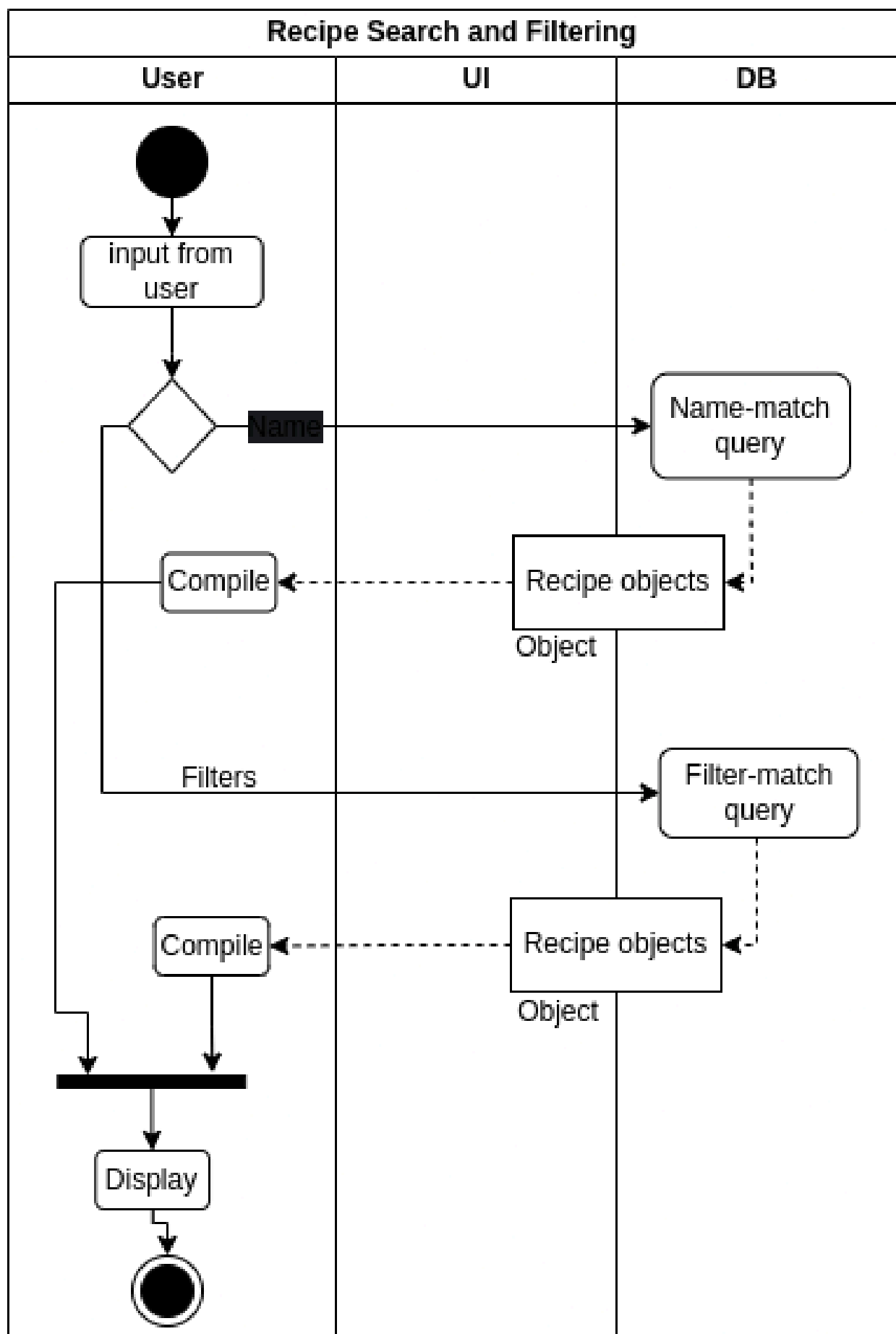
Context Pattern

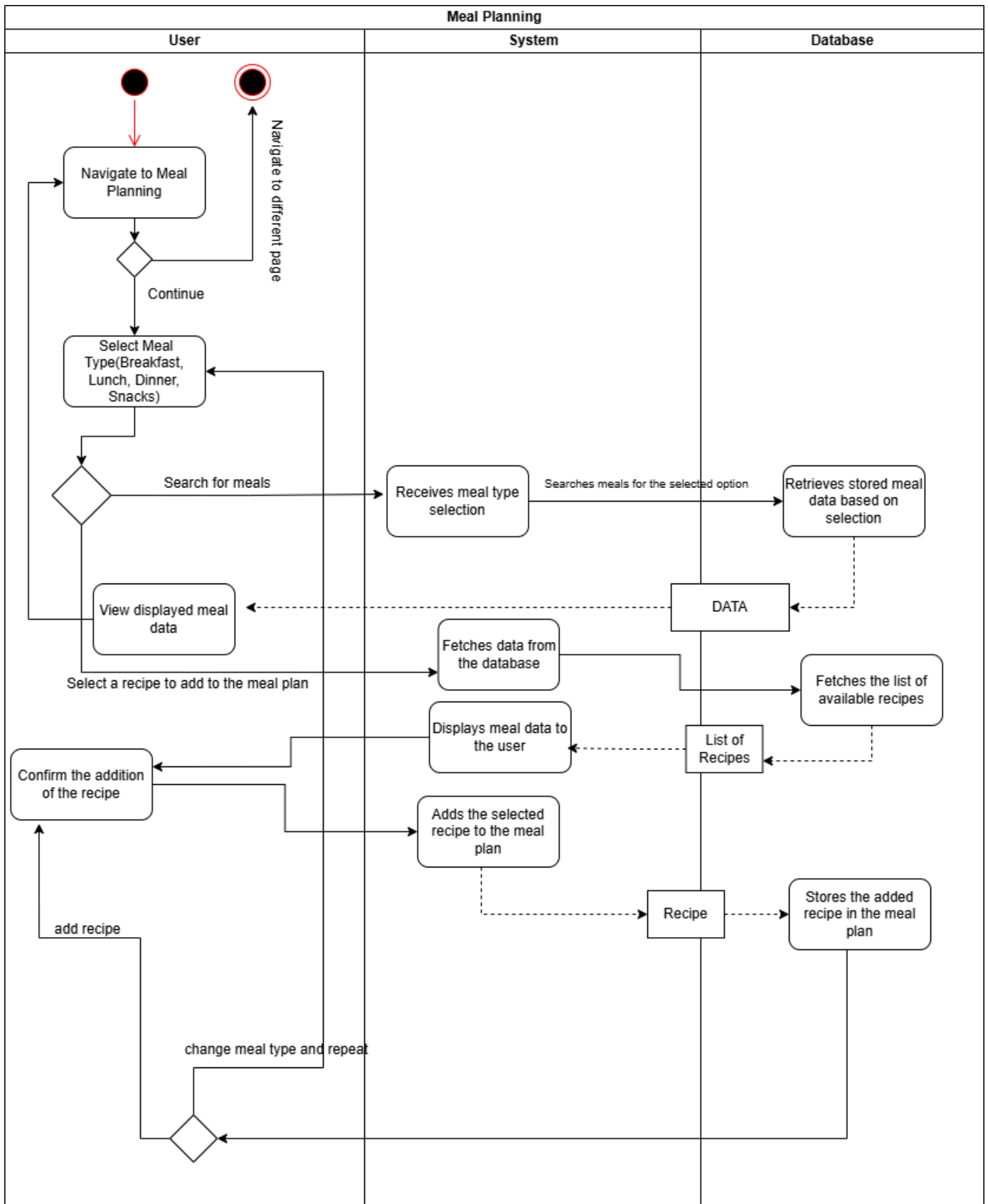
State Diagram:



Activity Diagrams:





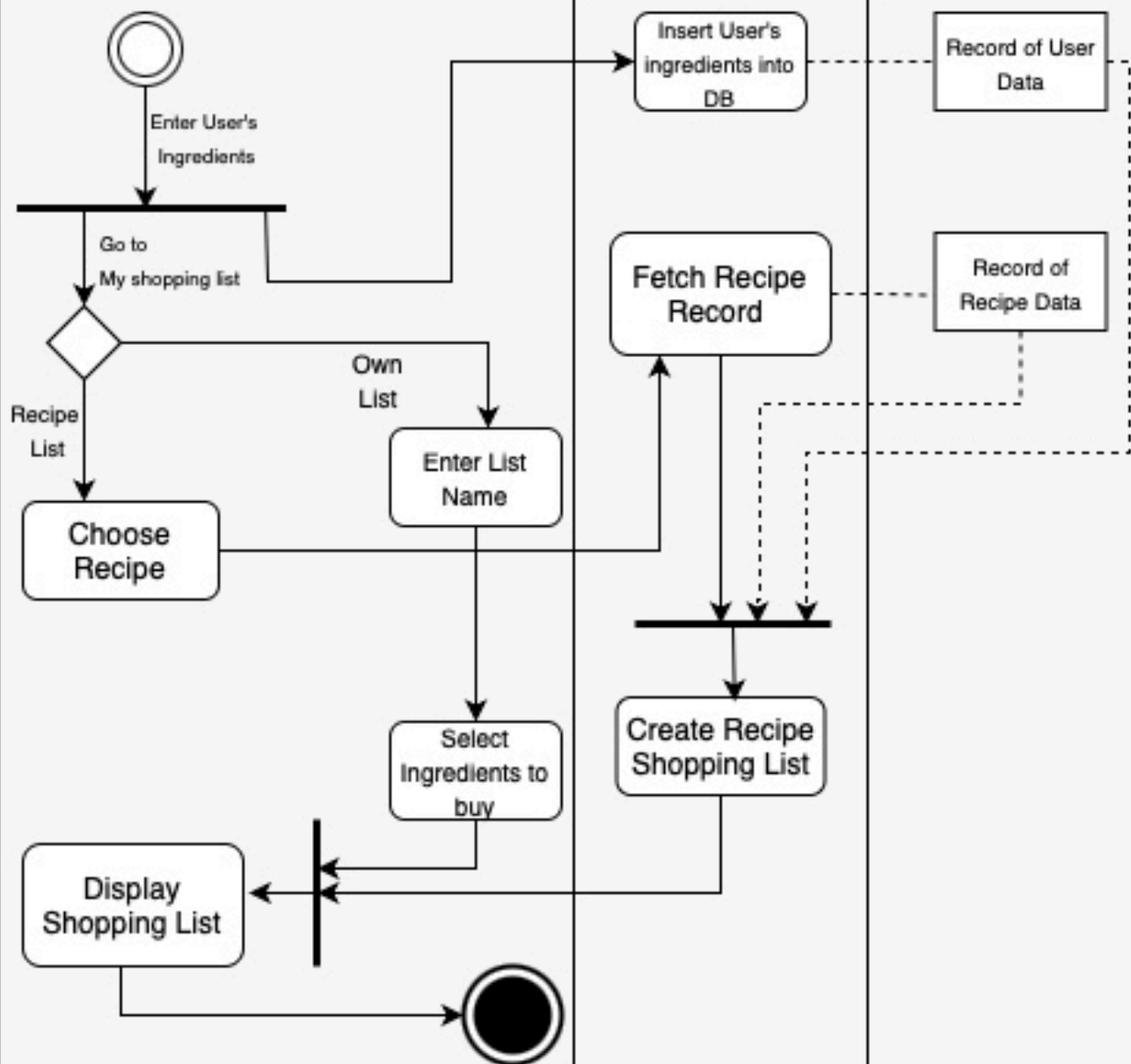


Ingredient Tracking and Shopping List

User

System

DB



1. Major Use case

- a. Recipe Management
- b. Meal Creation
- c. Meal Planning
- d. Shopping List Generator

2. Minor Use case

- a. Recipe Search and Filtering
- b. Recipe Blog
- c. View Meals
- d. Tracking of Ingredients

Architecture Patterns, Design Principles, and Design Patterns:

Architecture Patterns

Model – View – Controller Pattern (MVC)

Design Principles

Single Responsibility

Design Patterns

- Builder Pattern
- Factory Pattern
- Strategy Pattern

Github link to the Codebase:

<https://github.com/NB1223/NibbleNotebook>

Screenshots

UI:

Register

The screenshot shows the 'Create Your Account' registration page for Nibble Notebook. On the left, a dark blue sidebar contains the logo and a welcome message. The main white area has a title, three input fields for Username, Password, and Full Name, a blue Register button, and a link to login if the user already has an account.

Nibble Notebook

Join our community of food enthusiasts! Register to start creating, saving, and sharing your favorite recipes.

Create Your Account

Username:

Password:

Full Name:

[Register](#)

Already have an account? [Login here](#)

Login

The screenshot shows the 'Login' page for Nibble Notebook. It features a dark blue sidebar with the logo and a welcome message. The main white area has a title, two input fields for Username and Password, a blue Login button, and a link to register if the user doesn't have an account.

Nibble Notebook

Welcome back! Log in to access your recipes, meal plans, and cooking inspiration.

Login

Username:

Password:

[Login](#)

Don't have an account? [Register here](#)

Home

Nibble Notebook

Home

Search Recipes

My Recipes

Add New Recipe

My Meals

Meal Plan

Meal Shopping List

My Shopping List

My Pantry

Logout

Welcome, John Smith!

Manage your recipes, meals and meal plans

All Recipes

Classic Pancakes

American

30 mins

Fluffy homemade pancakes perfect for weekend breakfast

[View Recipe](#)

Chocolate Chip Cookies

American

45 mins

Chewy cookies with melty chocolate chips

[View Recipe](#)

Grilled Chicken Salad

Mediterranean

25 mins

Healthy salad with grilled chicken and fresh veggies

[View Recipe](#)

Spaghetti Bolognese

Italian

60 mins

Classic Italian pasta dish with rich meat sauce

[View Recipe](#)

Vegetable Stir Fry

Asian

20 mins

Quick and healthy vegetable stir fry with rice

[View Recipe](#)

Mashed Potatoes

American

40 mins

Creamy homemade mashed potatoes

[View Recipe](#)

Search Recipe

Nibble Notebook

Home

Search Recipes

My Recipes

My Meals

Meal Plan

Shopping List

My Pantry

Logout

Welcome, John Smith!

Find recipes that match your preferences

Search Recipes

Cuisine

American



Maximum Time (minutes)

35



Vegetarian Only

Search

Clear Filters

Classic Pancakes

American

30 min

Fluffy homemade pancakes perfect for weekend breakfast

[View Recipe](#)

View Recipe

Nibble Notebook

Home

Search Recipes

My Recipes

Add New Recipe

My Meals

Meal Plan

Shopping List

My Pantry

Logout

Chocolate Chip Cookies

Cuisine: American

Time: 45 mins

Description

Chewy cookies with melty chocolate chips

Ingredients

- Flour - 250.0 grams
- Sugar - 150.0 grams
- Butter - 100.0 grams
- Eggs - 2.0 pieces
- Olive Oil - 5.0 ml
- Garlic - 10.0 cloves
- Chicken Breast - 200.0 grams

Steps

1. Preheat oven to 375°F (190°C)

Add new Recipe

Nibble Notebook

Home

Search Recipes

My Recipes

Add New Recipe

My Meals

Meal Plan

Meal Shopping List

My Shopping List

My Pantry

Logout

Add a New Recipe

Name:

Description:

Cuisine:

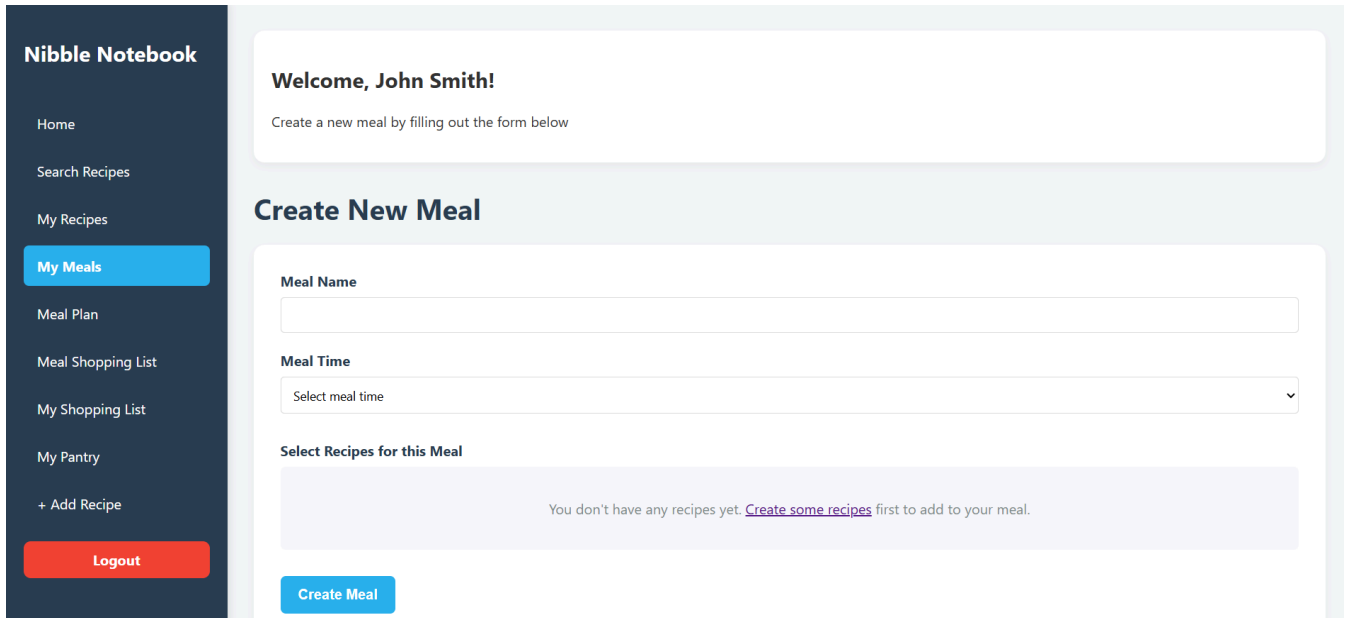
Time (minutes):

0

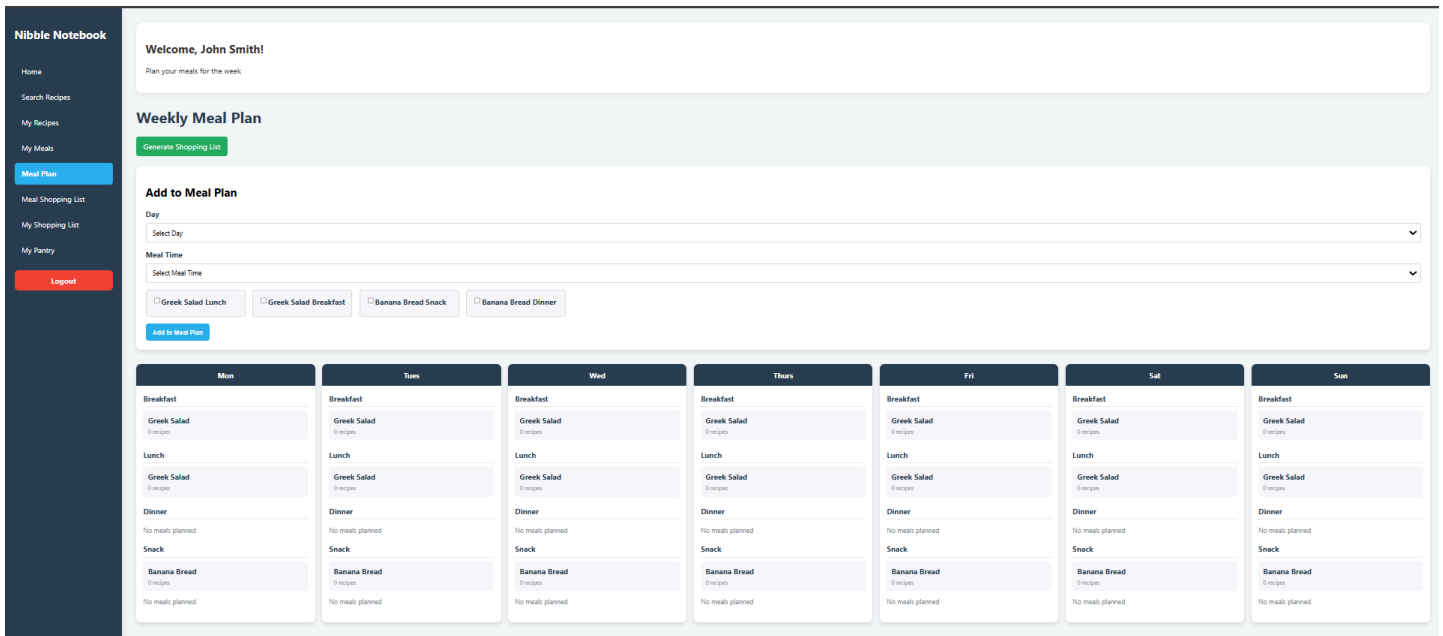
☐ Vegetarian

Add Recipe

Meal



Meal Plan



Meal Shopping List

Nibble Notebook

Home

Search Recipes

My Recipes

My Meals

Meal Plan

Shopping List

My Pantry

Logout

Welcome, John Smith!

Here's what you need to buy for your planned meals

Shopping List

View Meal Plan

Update Pantry

Print List

Your shopping list is empty

Add meals to your meal plan to generate a shopping list based on recipes and your pantry.

Plan Your Meals

My Shopping List

Nibble Notebook

Home

Search Recipes

My Recipes

Add New Recipe

My Meals

Meal Plan

Meal Shopping List

My Shopping List

My Pantry

Logout

Shopping Lists

You don't have any shopping lists yet

Create from Recipe

Select a recipe

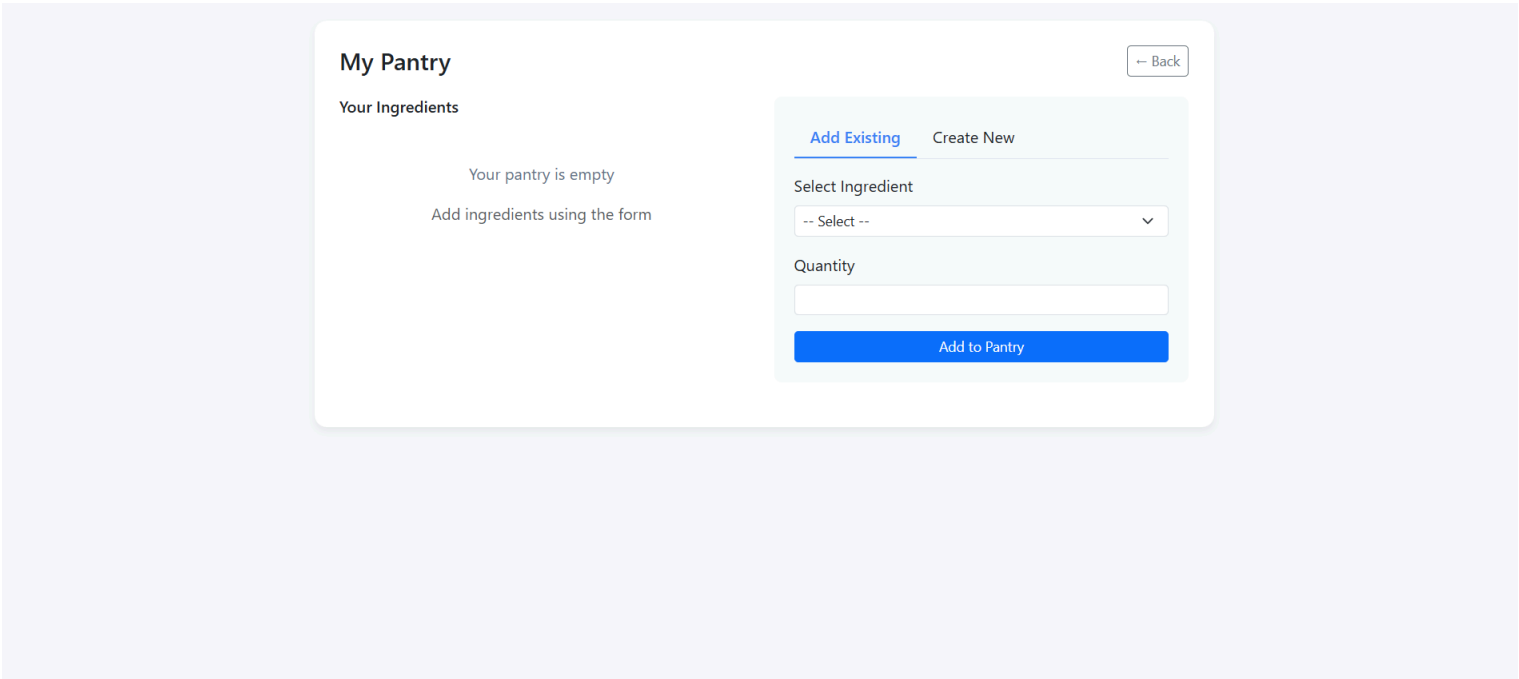
Generate List

Create Manual List

List name

Create List

Pantry



Individual contributions of the team members:

Name	Module worked on
Neha Bhaskar	Shopping List, Pantry
Nikitha Roj	Recipe
Nishta Nahar	Meal, Meal Plan
Prajwal M	Meal, Meal Plan