



**SE 463: Software Requirements: Specification & Analysis:**

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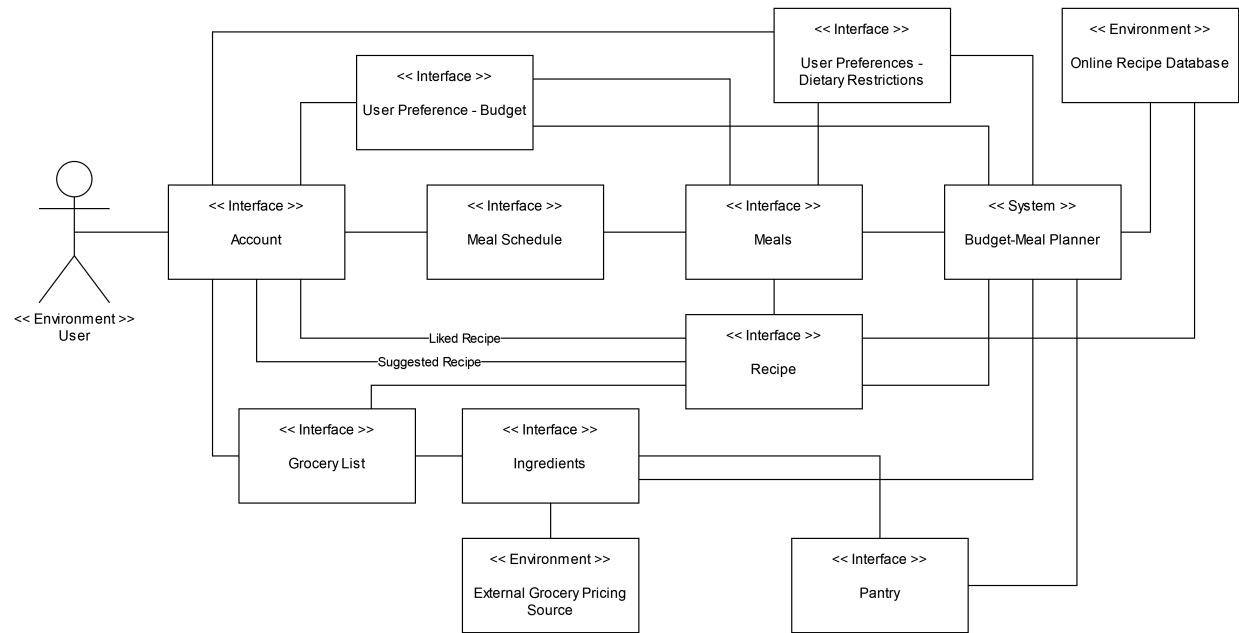
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# Abstract

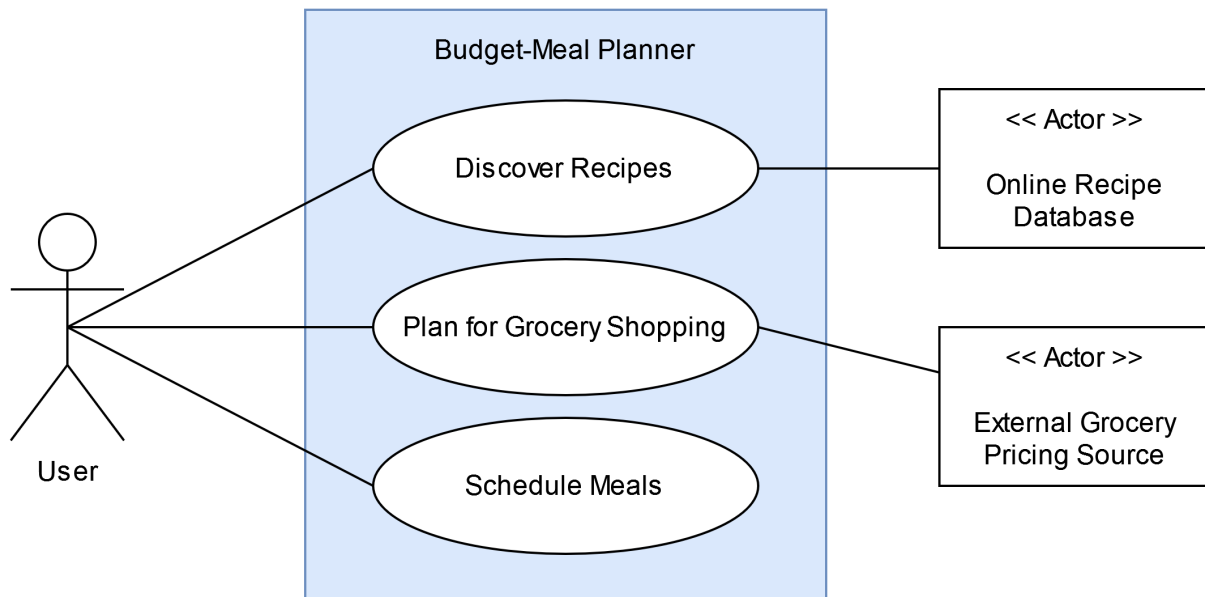
A tool that aids a user in maintaining their budget by scheduling their weekly meals through suggesting recipes sourced from an online recipe database, that are suitable for their budget and align with their dietary restrictions. Following a personalization process, the users can expect to be presented with recipes that they might like to eat, made using ingredients that fit their budget, with prices from their local grocery store. To aid the grocery shopping process, any missing ingredients for the recipes in their planned meals would be added to a grocery list for the user to follow while shopping.

# Domain Model



**Figure 2.1.** Domain Model with World Diagram Superimposed

# Use Case Model



**Figure 3.1.** Use Case Model

## 3.1 Discover Recipes

- Accept the users' login credentials and open their account.
- Ask the user some questions to gather their preferences.
- Present the user with a list of recipes recommended for them.
- Accept a new recipe from the user and save it.
- Suggest alternative recipes, similar to the current recipe displayed.
- Hide a recipe from the user if they dislike it.
- Save a recipe to a "liked" collection for the user if they like it.

### Domain Assumptions

- The user has an account.
- Online Recipe Database is available.
- External Grocery Pricing Source is available.

- Recipe is valid, and can be cooked.
- The ingredients in the recipe are available in the External Grocery Pricing Source or the user's pantry.

### **3.2 Plan for Grocery Shopping**

- Display the user's current ingredient quantities in the pantry.
- Display the user's grocery list.
- Add all ingredients from a recipe to the grocery list.
- Move ingredients from grocery list to pantry based on what the user bought from the grocery store.

#### **Domain Assumptions**

- The user has an account.
- External Grocery Pricing Source is available.
- The currency of the External Grocery Pricing Source is the same as the user's currency.
- The prices are up to date, and representative of the real world.
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### **3.3 Schedule Meals**

- Assign a recipe to a meal on a user's schedule.
- Display a user's meal plan (schedule).

#### **Domain Assumptions**

- The user has an account.
- Recipes are accessible.
- There are enough recipes available to fill the user's schedule.
- The ingredients for the meals are available in the user's pantry, or can be procured.

# Scenarios

## 4.1 UC 1: Discover Recipes

User	Budget-Meal Planner	Online Recipe Database
1. Opens the Budget-Meal Planner  3. Types in their username and password  6. Clicks the "Discover Recipes" button  8. Clicks on a recipe  10. Clicks the "Like" button  12. Clicks the "Back" button  14. Clicks the search box  16. Types in a search query	2. Displays the login screen  4. The user is logged in to the account with matching credentials 5. The "Home" screen is displayed  7. Displays a page with a search box at the top and a scrollable collection of the top 15 recipes related to the user's preferences, which have not been saved by the user  9. Displays the recipe's details  11. Saves the recipe to the user's account, in the "Liked Recipes" section  13. Displays the collection of recipes again  15. Displays a search bar with a "Search" button  17. Forwards the search query to the Online Recipe Database	



<p>21. Go To 8</p> <p>22. Clicks the "Home" button to return to the Home page</p>	<p>19. Compares the collection of recipes returned by the on-line recipe database with the collection of recipes already saved to the user's account</p> <p>20. Removes any recipes already saved to the user's account from the collection and displays the remaining collection of recipes</p>	<p>18. Returns a collection of recipes related to the search query</p>
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Exception 1: The user enters an incorrect username or password		
User	Budget-Meal Planner	Online Recipe Database
E1.5. Go To 3	<p>E1.4. Checks the database for a matching username, if user does not exist, displays an error message, "Incorrect username or password. Try again."</p>	

Exception 2: The online recipe database is unavailable		
User	Budget-Meal Planner	Online Recipe Database
<p>E2.23. Acknowledges the error message</p>	<p>E2.18. Attempts to connect to the online recipe database source</p> <p>E2.20. Retries the connection 3 times</p> <p>E2.22. Displays an error message, "Unable to retrieve search results. Please try again later."</p> <p>E2.24. Go To 7</p>	<p>E2.19. No response or connection refused</p> <p>E2.21. No response or connection refused after 3 retries</p>

## 4.2 UC 2: Plan for Grocery Shopping

User	Budget-Meal Planner	External Grocery Pricing Source
1. Clicks the "Grocery List" button  3. Clicks the "Add ingredients" button  5. Types in the search bar  7. Clicks on an ingredient  9. Enters the quantity of the ingredient to add to the grocery list  11. Clicks the "Yes" button	2. Displays the user's empty grocery list with the message, "Add something to the list!", and a button to add ingredients  4. Displays a search bar and a list of common ingredients  6. Displays a list of ingredients matching the search query  8. Displays a prompt, "How much ingredient name do you want to add?" and a number input field, along with the options "Yes" and "No"  10. Updates the number input field with the quantity entered by the user  12. Returns to the grocery list, with the ingredient added to the list with the quantity entered by the user 13. Requests for the latest prices of ingredients in the grocery list from the external grocery pricing source. Rate limited to once per day.	14. Returns the latest prices of ingredients in the grocery list

16. Clicks the checkbox next to the ingredient	15. Displays the user's grocery list with the latest prices	
18. Clicks the "Yes" button	17. Displays a confirmation message, "Add ingredient to pantry?" with the options "Yes", "No", and "Modify Quantity"	
21. Clicks the "Home" button to return to the Home page	19. Moves the ingredient to the pantry, adds the quantity in the grocery list to what was already in the pantry 20. Displays the user's pantry, containing a scrollable list of ingredients and their quantities	

Exception 1: The user's search query does not match any ingredients				
User	Budget-Meal Planner	External Source	Grocery	Pricing
E1.7. Go To 5	E1.6. Displays a message, "No results found..."			

Exception 2: The external grocery pricing source is unavailable				
User	Budget-Meal Planner	External Source	Grocery	Pricing
	E2.14. Attempts to connect to the external grocery pricing source  E2.16. Retries the connection 3 times  E2.18. Displays an error message, "Unable to retrieve latest prices. Please try again later."	E2.15. No response or connection refused  E2.17. No response or connection refused after 3 retries		

E2.19. Acknowledges the error message	E2.20. Displays the user's grocery list with the latest prices from the last successful request	
E2.21. Go To 5		

### 4.3 UC 3: Schedule Meals

User	Budget-Meal Planner
1. Clicks the "Schedule" button	2. Prompts the user with a message, "Schedule meals for the week?"
3. Clicks the "Yes" button	4. Selects recipes from the app's local recipe database, and assigns them to every meal slot for the week
	5. Displays the user's weekly meal plan schedule
6. Clicks on a day of the week	7. Displays the user's meal plan for that day
8. Clicks on a time slot for a meal	9. Displays the meal details page
10. Clicks on a recipe	11. Displays the recipe's details
12. Clicks the "Add ingredients to Grocery List" button	13. Displays a confirmation message, "Add all ingredients to Grocery List?" with the options "Yes" and "No"
14. Clicks the "Yes" button	15. Adds all ingredients in the recipe to the user's grocery list, adding quantities wherever possible
16. Clicks the "Home" button to return to the Home page	

Exception 1: The app is unable to find recipes for a meal slot	
User	Budget-Meal Planner
E1.5. Acknowledges the error message	E1.4. Displays an error message, "Unable to find recipes to schedule. Please try again later."

	E1.6. Go To UC1.5
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Exception 2: Fails to add ingredients to grocery list	
User	Budget-Meal Planner
E2.15. Acknowledges the error message	<p>E2.14. Displays an error message, "Unable to add ingredients to grocery list. Please try again."</p> <p>E2.16. Go To 11</p>

# User Stories

## 5.1 Discover Recipes

### 5.1.1 User Story 1

As a user, I want to be able to login so that I can access my personalized recipe recommendations.

#### Test Case 1.1

Check if the user can enter their login credentials.

#### Test Case 1.2

Check if the user can access their account after providing valid credentials.

### 5.1.2 User Story 2

As a user, I want to receive personalized recipe recommendations so that I can discover new recipes that align with my preferences.

#### Test Case 2.1

Check if the user receives recipe recommendations based on their preferences after logging in.

#### Test Case 2.2

Check if the recipe recommendations update when the user's preferences change.

### 5.1.3 User Story 3

As a user, I want to be able to add new recipes so that I can expand my collection of potential meals.

#### Test Case 3.1

Check if the user can add a new recipe.

#### Test Case 3.2

Check if the added recipe appears in the user's recipe list.

### 5.1.4 User Story 4

As a user, I want to be able to hide recipes I dislike so that they don't appear in my future recommendations.

**Test Case 4.1**

Check if the user can hide a recipe.

**Test Case 4.2**

Check if the hidden recipe no longer appears in the recommendation list.

**5.1.5 User Story 5**

As a user, I want to be able to save recipes I like so that I can easily find them later.

**Test Case 5.1**

Check if the user can save a recipe.

**Test Case 5.2**

Check if the saved recipe appears in the user's saved recipes list.

**5.1.6 User Story 6**

As a user, I want to be able to view the details of a recipe so that I can learn how to prepare it.

**Test Case 6.1**

Check if the user can view the details of a recipe.

**5.1.7 User Story 7**

As a user, I want to be able to search for specific recipes so that I can find something specific I want to cook.

**Test Case 7.1**

Check if the user can search for a specific recipe.

**Test Case 7.2**

Check if the search results are relevant to the search query.

**5.1.8 User Story 8**

As a user, I want to be able to view my liked recipes so I can refer back to them whenever I want.

**Test Case 8.1**

Check if the user can access their list of liked recipes.

**5.1.9 User Story 9**

As a user, I want to be able to remove recipes from my liked list so I can manage the recipes I'm interested in.

### **Test Case 9.1**

Check if the user can remove a recipe from their liked list.

## **5.2 Plan for Grocery Shopping**

### **5.2.1 User Story 10**

As a user, I want to be able to view my grocery list so that I know what I need to buy.

#### **Test Case 10.1**

Check if the user can view their grocery list.

### **5.2.2 User Story 11**

As a user, I want to be able to add ingredients to my grocery list so that I can remember to buy them.

#### **Test Case 11.1**

Check if the user can add ingredients to their grocery list.

### **5.2.3 User Story 12**

As a user, I want to be able to remove ingredients from my grocery list so that I can keep the list updated.

#### **Test Case 12.1**

Check if the user can remove ingredients from their grocery list.

### **5.2.4 User Story 13**

As a user, I want to be able to see the latest prices of the ingredients in my grocery list so that I can budget for my shopping.

#### **Test Case 13.1**

Check if the user can view the latest prices of the ingredients in the grocery list.

### **5.2.5 User Story 14**

As a user, I want to be able to update the quantities of ingredients in my pantry after cooking so that my pantry list remains accurate.

#### **Test Case 14.1**

Check if the user can update the quantities of ingredients in their pantry.



### **5.2.6 User Story 15**

As a user, I want to be able to add all ingredients from a recipe to my grocery list so that I can ensure I have everything I need to cook the meal.

#### **Test Case 15.1**

Check if the user can add all ingredients from a recipe to the grocery list.

### **5.2.7 User Story 16**

As a user, I want to be able to move ingredients from my grocery list to my pantry so that I can keep track of what I have bought.

#### **Test Case 16.1**

Check if the user can move ingredients from the grocery list to the pantry.

#### **Test Case 16.2**

Check if the moved ingredient is removed from the grocery list and added to the pantry.

### **5.2.8 User Story 17**

As a user, I want to be able to modify the quantities of ingredients in my grocery list so that I can adjust based on my needs.

#### **Test Case 17.1**

Check if the user can modify the quantities of ingredients in the grocery list.

### **5.2.9 User Story 18**

As a user, I want to be able to view the current quantities of ingredients in my pantry so that I know what I have on hand.

#### **Test Case 18.1**

Check if the user can view the current quantities of ingredients in the pantry.

## **5.3 Schedule Meals**

### **5.3.1 User Story 19**

As a user, I want to be able to create a meal plan so that I can organize my meals for the week.

#### **Test Case 19.1**

Check if the user can create a meal plan for the week.

### **5.3.2 User Story 10**

As a user, I want to be able to view my meal plan so that I can see what I have planned to eat.

#### **Test Case 20.1**

Check if the user can view their meal plan.

### **5.3.3 User Story 21**

As a user, I want to be able to assign a recipe to a meal on my schedule so that I can plan when to cook and eat each meal.

#### **Test Case 21.1**

Check if the user can assign a recipe to a meal on their schedule.

### **5.3.4 User Story 22**

As a user, I want to be able to view the details of a meal in my schedule so that I can see what I need to prepare.

#### **Test Case 22.1**

Check if the user can view the details of a meal in their schedule.

### **5.3.5 User Story 23**

As a user, I want to be able to add all ingredients from a recipe in my meal plan to my grocery list so that I can make sure I have everything I need.

#### **Test Case 23.1**

Check if the user can add all ingredients from a recipe in their meal plan to their grocery list.

### **5.3.6 User Story 24**

As a user, I want to be able to modify my meal plan so that I can adjust based on changes in my schedule or preferences.

#### **Test Case 24.1**

Check if the user can modify their meal plan.

### **5.3.7 User Story 25**

As a user, I want to be able to remove meals from my meal plan so I can adjust my plan when necessary.

#### **Test Case 25.1**

Check if the user can remove meals from their meal plan.