

Specification

Recipe Book Management System

The Recipe Book Management System is a user-friendly and efficient tool for managing recipes, ingredients in the depo, and cooking logs. It simplifies the process of meal planning and ensures that users can make the most of their available ingredients while minimizing food waste.

1. System Components:

- Recipe Management: Users can create, and delete recipes. Each recipe includes a unique ID, a name, a list of ingredients, and a description of how to prepare the dish.
- Ingredient Management: Users can add ingredients. Each ingredient includes a unique ID, a amount, a unit, a name, and an expiration date.
- Log Management: The system logs the date, a meal was cooked, a recipe added or deleted and, ingredients added.

2 Features: + the user has to select and cook a recipe somehow

- Add and Delete Recipes: Users can add new recipes to their collection and delete recipes that are no longer needed.
- Add Ingredients: Ingredients can be added to the system, including specifying their weight, unit, name, and expiration date. In the operation description you allow the deletion of an ingredient. And also cooking one. Adding ingredient to the store and adding ingredient to the existing ingredient list are also a different feature.
- Suggest Random Recipes: The system can suggest random recipes based on available ingredients, ensuring that there are enough ingredients to prepare the dish.
- Suggest Recipes Based on Expiration Date: The system suggests recipes that include ingredients **nearing** their expiration date.
- Suggest Recipes from Log: Users can suggest recipes based on their cooking history to revisit dishes prepared in the past.
- Unit Conversion: The system supports different unit types and can perform unit conversions.

Supported units:

Liquids: ml < > dl < > l

Solid ingredients: g < > dkg < > kg

Liquid ingredients: ml,dl,l
Solid ingredients: g, dkg,kg
Conversion is only possible to units within a group

3. Data Storage:

The Recipe Book Management System stores data in CSV (Comma-Separated Values) files to manage recipes, ingredients, storage, connections, and logs. These files are not editable directly by the user. Export and import files are not supported. Here are the details for each CSV file:

- Recipe File (recipes.csv):
 - ID (Primary Key): A unique identifier for each recipe.
 - Name: The name or title of the recipe.
 - Description: How the dish should be cooked. Missing space
- Ingredients File (ingredients.csv):
 - ID (Primary Key): A unique identifier for each ingredient.
 - Name: The name of the ingredient.
 - Unit: The unit of measurement for the ingredient (e.g., kg, g, l).
- Storage of the available ingredients file (storage.csv):
 - ID (Foreign Key): A reference to the corresponding ingredient.
 - Amount: The amount of the ingredient.

This can be ambiguous, between the ingredient unit, and the Storage unit.
 (ex. Amongst the ingredients I store :
 Milk, liter,
 to the store I add:
 Milk, milliliter, 100.
 This means 100 ml or 100 l?)
 You have to perform an extra conversion all the time to calculate the exact amount.
 Obviously this unit is based on a user input, but you could calculate it runtime, and store it in an appropriate form.

- **Unit:** The unit of measurement for the ingredient (e.g., kg, g, l).
- **Expiration Date:** The expiration date of the ingredient.
 In this file, could be the same ingredient multiple times.

- **Connections File (connections.csv):**
 - **Recipe_ID (Foreign Key):** A reference to the corresponding recipe.
 - **Ingredient_ID (Foreign Key):** A reference to the corresponding ingredient.
 - **Amount:** The amount of the ingredient in the recipe.
- **Log File (logs.csv):**
 - **Date:** The date when the log entry was recorded.
 - **ID:** A reference to either a recipe or an ingredient based on the context of the log entry.
 - **Operation Description:** A string describing the operation performed, such as adding, deleting, or updating a recipe or ingredient.

Operations: - A : Add
 - D: Delete
 - C : Cooked

Add recipe OK
 Delete recipe OK
 Cooked recipe OK
 Add ingredient OK
 Delete ingredient OK
 Cooked ingredient Not OK You have to throw and error, if the user would like to do such operation.

The system reads and writes data to these CSV files to manage recipes, ingredients, storage, connections, and logs. The use of primary and foreign keys ensures data integrity and consistency, and the log file records operations performed within the system for tracking and auditing purposes.

Datatypes:

ID: <string>
 Name:<string>
 Unit:<string>
 Amount:<double>
 Date: <struct> → day: <int>, month: <int> , year:<int>
 Recipe_ID: <string>
 Ingredient_ID: <string>
 Operation Description: <char> OK

4. User Interface:

Here's a breakdown of the menu options:

1. View Recipes: Display a list of available recipes.
2. Add Recipe: Add a new recipe to the system.
3. Delete Recipe: Delete an existing recipe.
4. View Ingredients: Display a list of available ingredients.
5. Add Ingredient: Add a new ingredient to the system.
6. View Storage: Display the current ingredient inventory in storage.
7. Add to Storage: Add ingredients to storage.
8. Suggest Random Recipe: Suggest a random recipes based on available ingredients.
9. Suggest Recipe by Ingredients: Suggest recipes based on selected ingredients.
10. Suggest Recipe by Expiry Date: Suggest recipes based on ingredients nearing their expiration dates.
11. Suggest Recipe from Logs: Suggest recipes based on past cooked meals.
12. Exit: Quit the application.

Select a recipe is a must to cook and log that event.
 Search a recipe could be user-friendly.

Can the user see what's inside the store currently?

Based on?

Users can navigate the menu by entering the corresponding number or option. Each option leads to a specific function within the system, allowing users to perform tasks such as managing recipes, ingredients, storage, and generating recipes based on various criteria. The console-based menu provides a user-friendly interface for interacting with the Recipe Book Management System and performing various operations. Users can input their choices to access and utilize the system's features.