

## Capstone Proposal

**Name:** Haoxian Liu

**Project Title:** Recipe Finder Web App

### Paragraph Description:

This Web App aims to simplify the cooking experience by providing users with personalized recipe recommendations based on their dietary preferences and available ingredients. Users can explore, save favorites, and rate recipes, while contributors can share their culinary creations. The platform will serve as a collaborative space for home cooks, enhancing the overall cooking journey.

### Project Scope:

### Problem the Application Solves and Who Will Use It:

The proposed web app aims to streamline meal planning and cooking for individuals with diverse dietary preferences and time constraints. The primary users include home cooks seeking personalized recipe recommendations based on available ingredients and specific dietary requirements.

### Similar Web Apps for Inspiration:

1. [Yummly](#)
2. [AllRecipes](#)

### Sample Data for Recipe Collection:

- Recipes
- Title, Ingredients, Instructions, Dietary Tags, Cooking Time, Rating
- User
- Food Lover, Recipe Contributors, Cooking Experts, and Community Moderators.

**Core Functionality:** Main Collection - CRUD for recipes.

**E-commerce Functionality:**

Customers can access their recipe history, and sellers (contributors) can view reports for recipes shared, filtered by date and popularity.

**Extended Functionality:**

1. Discussion Forums

**AI or ML:**

None for the prototype; potential future integration may include personalized recipe recommendations based on user preferences.

**Users:**

1. **User Role:**

- CRUD over recipes: Yes
- Functionality: Browse, Search, Save Favorites, Rate Recipes, User Profile (editable).

2. **Admin Role:**

- CRUD over recipes: Yes
- Admin Functionality: Generate reports on popular recipes, Charts on recipe engagement, User Profile (editable), Site-level content management.

**Additional Required Functionality:**

Base collection navigation/search/filter designed for scalability.

- Search on any field
- Search on ranges where applicable
- Display search results as a table/grid
- Pagination
- Multiple filters

**Functionality Chart:**

<b>Feature</b>	<b>User (Role 1)</b>	<b>Contributor/Admin (Role 2)</b>
CRUD on recipes	x	x
Search/filters on recipes	x	x
Save favorite recipes	x	x
Rate and review recipes	x	x
User profile (editable)	x	
Contributor/Admin profile (editable)		x
Messaging system (user-to-user)	x	x
Submit new recipes		x
Edit/Delete own recipes	x	x
Admin dashboard for reports and filters		x
Edit main site banner, news items		x
Community forums	x	x

## Screen Mockups

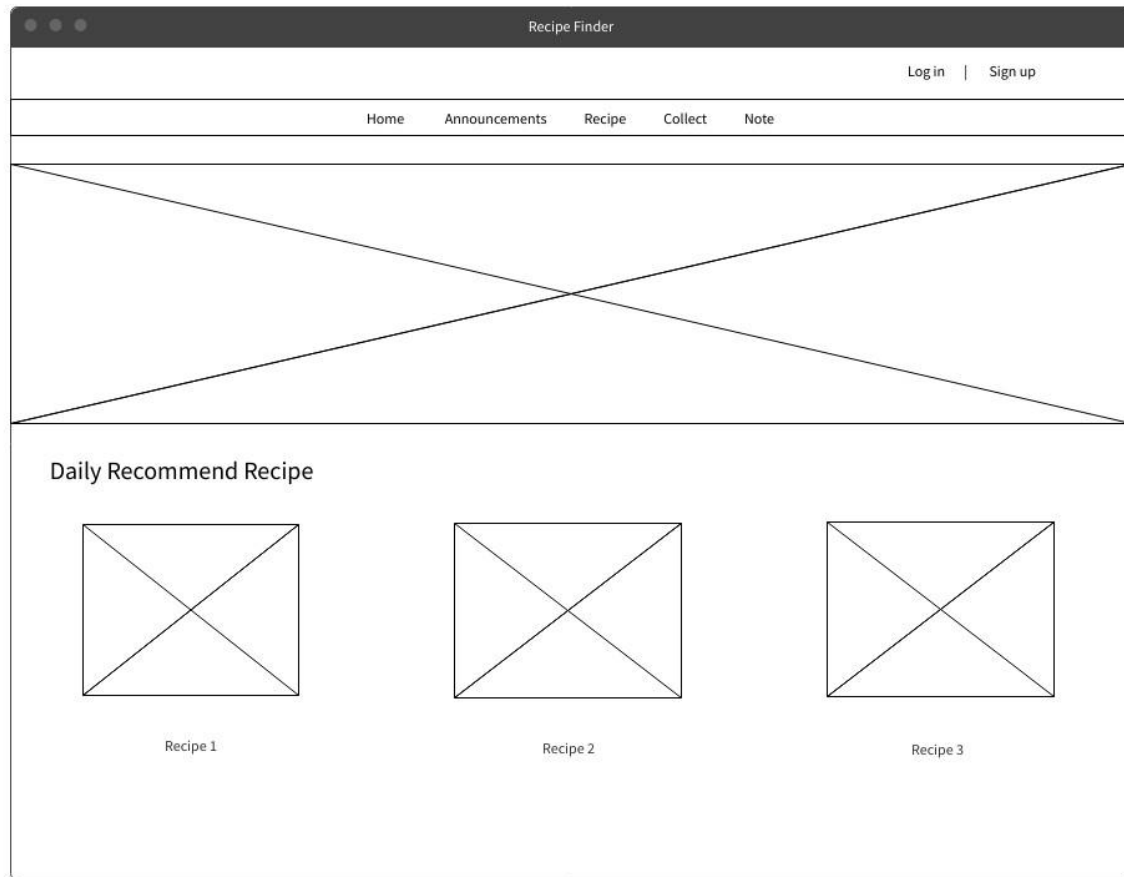



Figure 1 – Home Page


This is the home page of this web, in this page it will show the daily recommend recipe, user can click on it and see more information, it will jump to the recipe page for more details. User also can click the navigation bar to other page or login and signup.

Recipe Finder


Welcome to Sign up



User Name




Password



Confirm Your Password

Please Choose Your Role



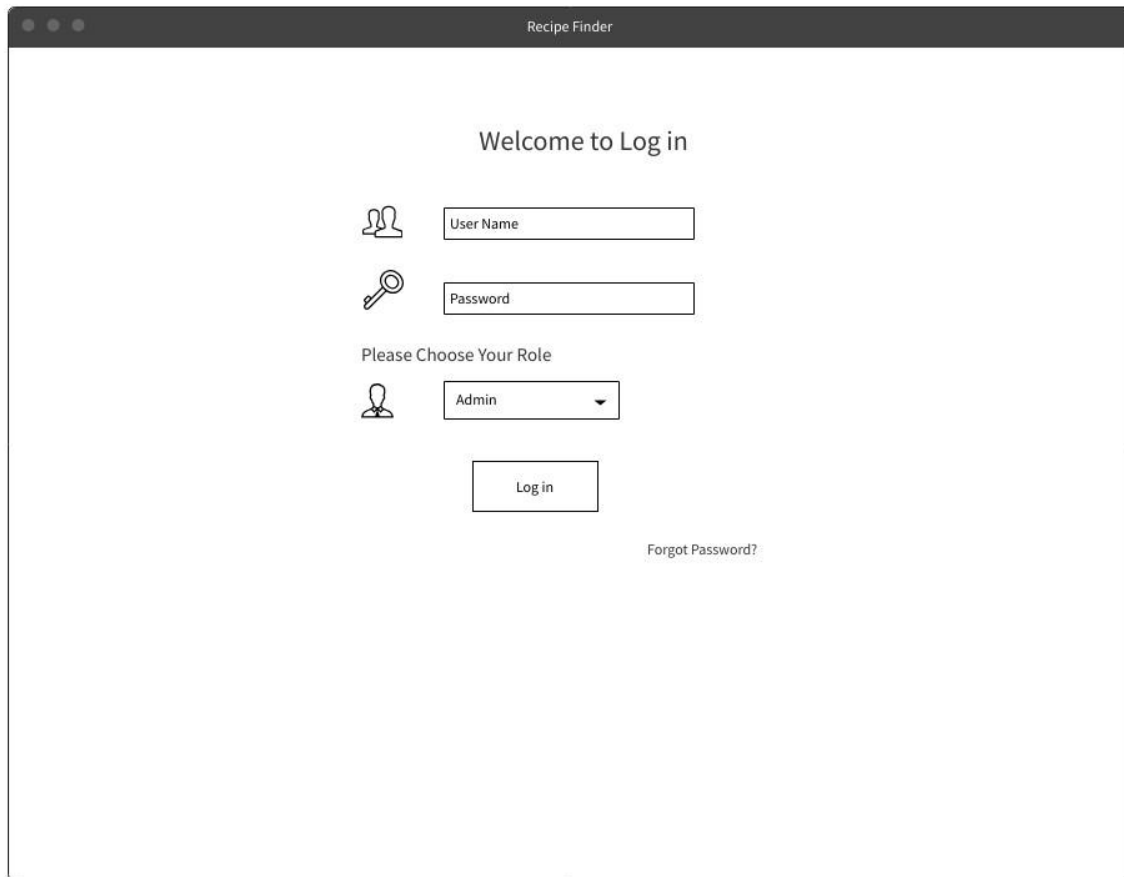
Admin

Sign up

[Already have an account? Log in here](#)

Figure 2 – Signup Page


This is the signup page of this web, in this page user can create their account by username and password, and they can choose their role for admin or normal user.




The image shows a web browser window titled "Recipe Finder". The main heading is "Welcome to Log in". Below this, there are two input fields: "User Name" with a person icon and "Password" with a key icon. Below these fields is the text "Please Choose Your Role". Underneath, there is a dropdown menu with "Admin" selected and a person icon. A "Log in" button is positioned below the dropdown. To the right of the "Log in" button is a link that says "Forgot Password?".


Recipe Finder

## Welcome to Log in

 User Name

 Password

Please Choose Your Role

 Admin

Log in

[Forgot Password?](#)

Figure 3 – Login Page

This is the login page of this web. User can login by their username and password. If they forgot their password, they could click on the "Forgot Password?" link to reset their password.

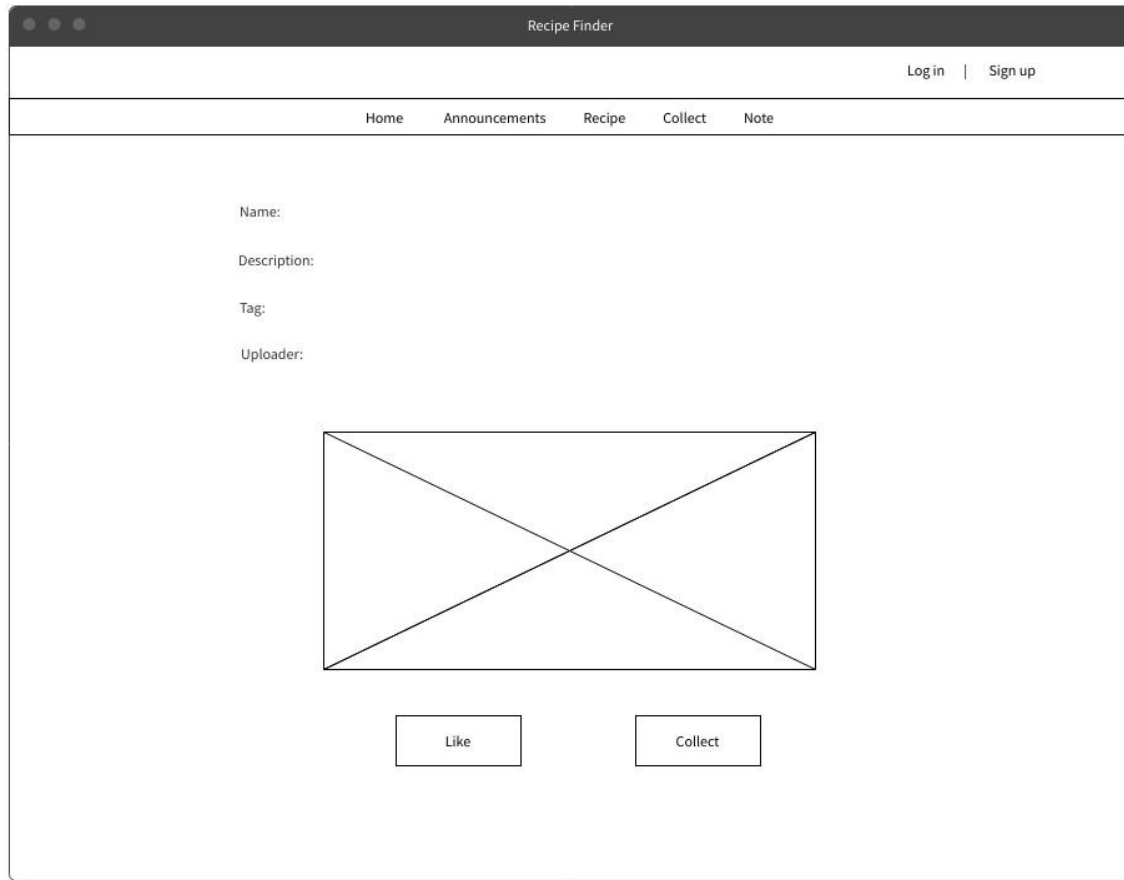


Figure 4 – Recipe Page

This is the recipe page of this web. It shows the details of the recipe. User can see the name, description, tag, uploader, and the image of the recipe. User also can give a like or collect for the recipe.

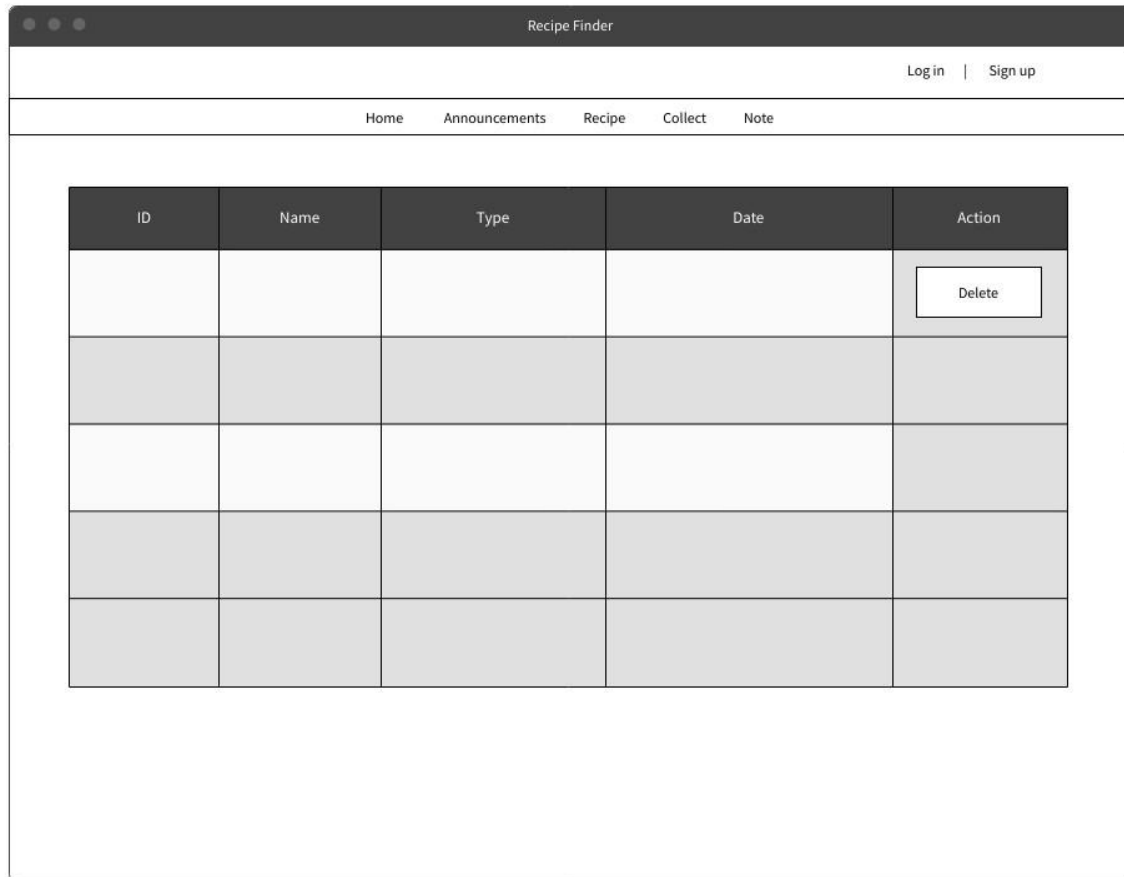


Figure 5 – Collect Page

This is the collect page of this web. User can see what they had collected before, and if they do not want to keep the recipe, they can delete the recipe by the “Delete” button.

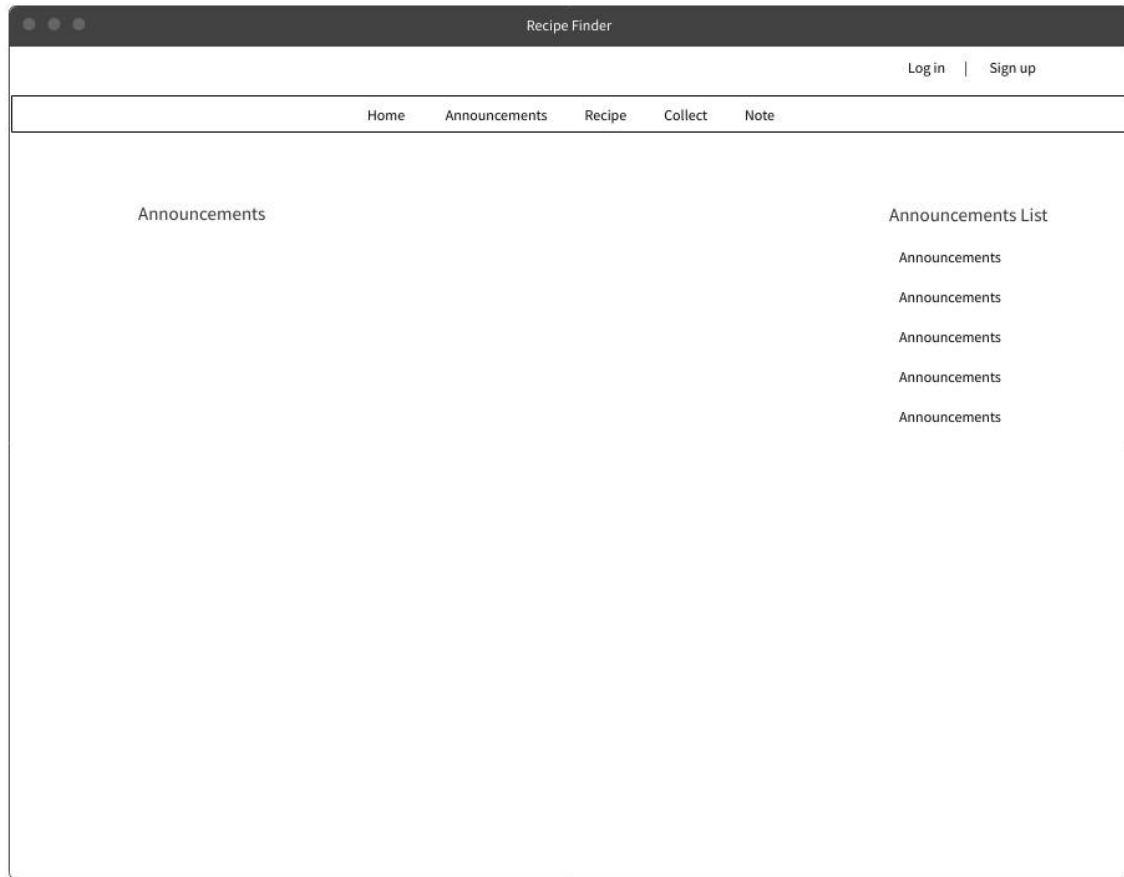


Figure 6 – Announcements Page

This is the announcement page of this web. It shows the recent announcement from this web application. User can click on it and see the details of the announcement.

Recipe Finder

Log in

Sign up

Home

Announcements

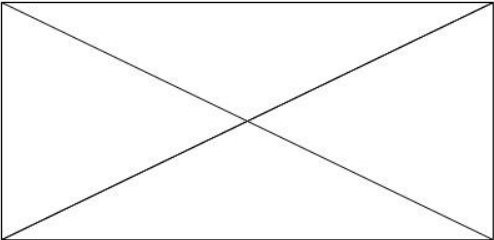
Recipe

Collect

Note

Name:

Upload Date:



Like

Collect

Comments:

Submit

Figure 7 – Note Page

This is the note page of this web. User can see what they had make note on the recipe. It also provides the like and collect function for the recipe. User also can write some comment for the recipe.

Recipe Finder

Log in | Sign up

Home   Announcements   Recipe   Collect   Note   Meal Planner

	Breakfast	Lunch	Dinner	Add
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

Figure 8 – Meal Planner Page

This is the Meal Planner page of this web. User can add the recipes to their weekly meals plan.

## **Test Plan:**

The project will be developed using a progressive method, with testing conducted after each milestone. Unit tests will be employed when necessary, and any test automation will be executed using Selenium. The final testing phase will involve manual testing, encompassing both test-to-pass and test-to-fail cases.

## **Test to Pass:**

### Test General UI:

- Check for spelling mistakes.
- Verify graphics quality.
- Ensure layout correctness.

### Test Links:

- Check for broken links.
- Verify each link redirects to the correct location.

### Test User Inputs:

- Ensure mandatory fields are enforced.
- Validate input lengths (min and max).
- Verify correct formatting for each input.

### Test User Account Management:

- Ensure successful registration.
- Verify the ability to edit accounts.
- Confirm no missing information.
- Prevent duplicates during registration.

### Test Login and Logout Functionality:

- Verify successful login.
- Ensure successful logout.

### Test CRUD Operations for Recipes:

- Confirm successful creation, editing, deletion, and access of recipes.

### Test Managing Pictures in Homepage:

- Ensure pictures can be uploaded to the homepage.
- Verify pictures can be replaced on the homepage.

#### Test Sending Messages Successfully:

- Ensure messages can be sent between users.
- Verify replies can be made within the system.

#### Test Viewing Reports:

- Confirm reports can be generated accurately.
- Ensure reports can be filtered appropriately.

#### **Test to Fail:**

##### Test Incorrect Login

- Attempt login with incorrect credentials.
- Try login with incorrect password.

##### Test Incorrect Information in Form Fields

- Attempt to exceed maximum input values.
- Try leaving fields blank.
- Attempt to input data with incorrect formatting. Test Unauthorized Operations:
- Attempt to edit, create, or delete recipes without appropriate permissions.
- Verify unauthorized access is restricted. Test Accessing Unapproved Pages:
- Attempt to access restricted pages without proper authorization. Test Loading AD Pictures to Homepage:
- Attempt to load pictures onto the homepage without administrator privileges. Test Robustness
- Simulate scenarios such as database disconnection or offline status to verify system resilience.

##### Test Security

- Confirm user roles upon page visit to ensure proper access control.
- Validate against XSS (Cross-Site Scripting) attacks by attempting to inject malicious scripts. □  
Check for SQL injection vulnerabilities by attempting to input SQL commands into form fields.

## Development Plan

Milestone	Start Date	End Date	Tasks Planned
1	2025-09-09	2025-09-13	Implement initial database schema with sample data. Set up Visual Studio project for web application development.
	2025-09-16	2025-09-20	Develop login page for user authentication. Design and implement views for admin and user home pages. Integrate authentication system into the web application.
	2025-9-23	2025-09-27	Create views for member and contributor profile management pages. Implement functionality for user and contributor profile editing. Conduct initial testing on database connectivity and authentication.
2	2025-09-30	2025-10-04	Design views for equipment and recipe management pages. Develop functionalities for adding and editing recipes. Prepare for hosting setup on a live server.
	2025-10-07	2025-10-11	Finalize hosting setup on live server. Implement views and functionalities for adding and editing ingredients. Conduct preliminary testing on hosted environment and database interactions.
	2025-10-21	2025-10-25	Create views for additional recipe management pages. Implement functionalities for deleting recipes and ingredients. Conduct user testing on recipe management functionalities.
3	2025-10-28	2025-11-01	Develop search functionality for quick recipe search page. Implement add and drop recipe functionalities for users. Conduct initial testing on search and add/drop functionalities.
	2025-11-04	2025-11-08	Set up add, edit, and delete functions for user and contributor profiles. Implement add, edit, and delete functions for ingredient categories. Conduct integration testing on profile and category management functionalities.

Milestone	Start Date	End Date	Tasks Planned
	2025-11-11	2025-11-15	<p>Test login and logout functionalities.</p> <p>Verify connections between different pages within the application.</p> <p>Conduct user acceptance testing on basic application navigation.</p>
4	2025-11-18	2025-11-22	<p>Test add, edit, and delete functionalities for recipes and ingredients.</p> <p>Verify add/drop recipe functionality for users.</p> <p>Conduct stress testing on recipe management system.</p>
	2025-11-25	2025-11-29	<p>Follow the defined test plan and test all implemented functionalities.</p> <p>Address any issues identified during testing and debugging process.</p> <p>Prepare for final project presentation.</p>
	2025-12-02	2025-12-06	<p>Conduct final round of testing based on test plan.</p> <p>Finalize documentation for project including user manual and technical specifications.</p> <p>Prepare for final presentation.</p>
	Link To Capstone GitHub Repository: <a href="https://github.com/CarcarDG/Recipe-Finder.git">https://github.com/CarcarDG/Recipe-Finder.git</a>		
	Final Project Report Due December 06, 2025 @ 11:59pm - no extensions.		

## Database Schema

