



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SECV2223 Web Programming

Section 05

GROUP PROJECT

HEALTHY RECIPE MANAGEMENT SYSTEM

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PROJECT OVERVIEW

BACKGROUND

For many, the joy of cooking comes with the frustration of messy recipe collections. Recipes scattered across different platforms and formats make it hard to find inspiration and prepare meals efficiently. Here comes *HealthyBite*!

INTRODUCTION

HealthyBite is a secure web platform for users to manage healthy recipes. Users can create, view, edit, and delete recipes with ingredients, steps, and categories. Sorting, filtering, and responsive design ensure easy organization and access across devices. SQL database stores data securely with validation and error handling.

TARGET AUDIENCE

Our project is for people from all walks of life who love cooking and want an easier way to manage their recipes. Whether you're a busy parent planning meals, an aspiring chef trying new dishes, or just someone who wants to organize your cooking ideas, our platform is perfect for enthusiasts at any skill level.

This project not only promotes healthy eating but also enhances user experience through intuitive design and reliable data management practices.

PROJECT METHODOLOGY

Our project utilizes a strong blend of web development tools and technologies to ensure a smooth user experience and secure data management.

TOOLS & TECHNOLOGIES

1. **HTML:** For structuring content.
2. **CSS:** For styling and creating a user-friendly interface.
3. **JavaScript:** Adds interactivity, with dynamic elements and client-side features.
4. **PHP:** Runs the backend, managing server-side logic and generating dynamic content.
5. **MySQL:** Responsible for securely storing and retrieving recipe data.
6. **XAMPP:** For local development and testing, a full web server solution.

DEVELOPMENT ENVIRONMENT

The development environment of the project centered around writing code/commands using a text-editor, Testing with the support of XAMPP and Developer Tools available in modern browsers via inspect.

SYSTEM MODULE

Describe the different modules of the system and their functionalities

Should include:

Overview of the system architecture

Description of each module

Module functionalities and interactions

Flow of data between modules

USER INTERFACE (UI) MODULE

The UI Module provides an interactive interface for users to register, log in, and manage their recipes. Ensuring a responsive and accessible web-page across various devices.

The UI Module works with the Authentication Module to handle user login and registration, giving real-time feedback. It also connects with the Recipe Management Module to show, add, edit, and delete recipes, using JavaScript for dynamic updates and user interactions.

The UI Module Includes the following files:

1. Index.html
2. login.html
3. Register.html
4. add_recipe.html
5. edit_recipe.html
6. My_recipes.html
7. favourite.html

AUTHENTICATION MODULE

The Authentication Module manages user registration and login, creating and validating sessions to ensure secure access.

It works with the Database Module to store new user registrations and verify existing user credentials during login, making sure only authenticated users can access the recipe management features.

The Authentication Module Includes the following files:

1. register.php
2. login.php

RECIPE MANAGEMENT MODULE

The Recipe Management Module lets users create, edit, view, and delete recipes. It includes features for sorting and filtering recipes by criteria like date created, title, and category.

This module handles user actions from the UI Module, such as adding, editing, and deleting recipes. It works with the Database Module to perform these operations, making sure all changes are saved. It also updates the UI in real-time to show these changes.

The Recipe Management Module Includes the following files:

1. add_recipe.html
2. edit_recipe.html
3. my_recipes.php
4. Delete_recipe.php.
5. Favourite_recipe.php

And there are some other additional supporting files

DATABASE (DB) MODULE

The Database Module manages the MySQL database, securely storing user information and recipe data. It handles data storage, retrieval, and manipulation, ensuring everything is safe and consistent.

This module supports both the Authentication and Recipe Management Modules by taking care of all database operations. It securely stores user credentials and recipe data, retrieves information when needed, and ensures data consistency and integrity throughout the system.

DATABASE DESIGN

Entity Relationship Diagram (ERD)

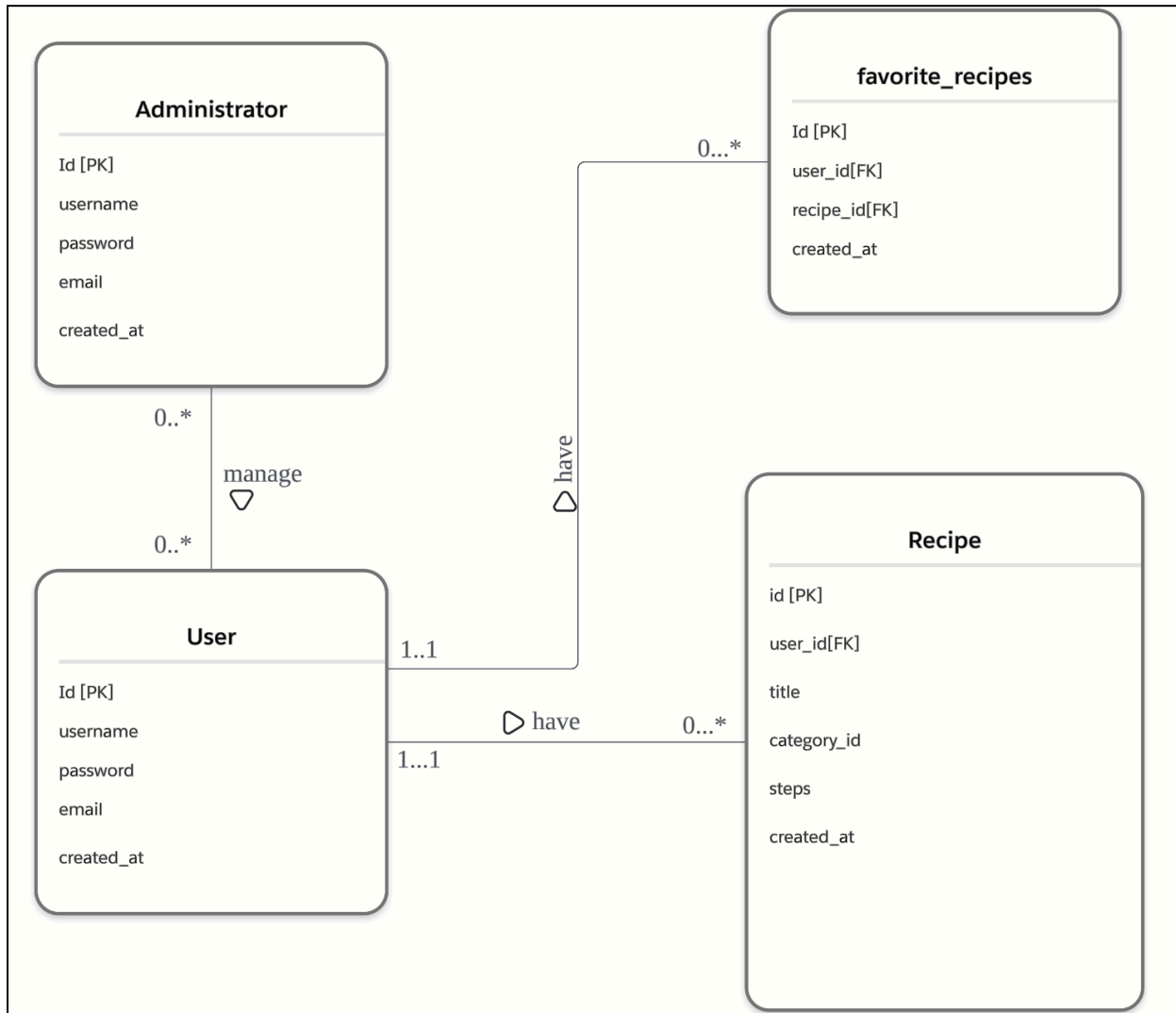


Figure 1: Entity Relationship Diagram

Database Schema with Tables and Relationships

The database consists of four main tables: users, administrator, recipes, and favorite_recipes.

Users Table

Field	Type	Constraints
id	INT	PRIMARY KEY, AUTO_INCREMENT
username	VARCHAR(50)	NOT NULL, UNIQUE
password	VARCHAR(255)	NOT NULL
email	VARCHAR(100)	NOT NULL, UNIQUE
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP

Administrator Table

Field	Type	Constraints
id	INT	PRIMARY KEY, AUTO_INCREMENT
username	VARCHAR(50)	NOT NULL, UNIQUE
password	VARCHAR(255)	NOT NULL
email	VARCHAR(100)	NOT NULL, UNIQUE
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP

Recipes Table

Field	Type	Constraints
id	INT	PRIMARY KEY, AUTO_INCREMENT

user_id	INT	NOT NULL, FOREIGN KEY (users.id) ON DELETE CASCADE
title	VARCHAR(100)	NOT NULL
category	VARCHAR(50)	NOT NULL
ingredients	TEXT	NOT NULL
steps	TEXT	NOT NULL
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP

favorites Table

Field	Type	Constraints
id	INT	PRIMARY KEY, AUTO_INCREMENT
user_id	VARCHAR(50)	FOREIGN KEY (users.id) ON DELETE CASCADE
recipe_id	VARCHAR(50)	FOREIGN KEY (recipe.id) ON DELETE CASCADE
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP

Explanation of Each Table and Its Fields

Users Table: This table stores information about users who register on the platform.

id: A unique identifier for each user.

username: The username chosen by the user, which must be unique.

password: The hashed password for the user.

email: The user's email address, which must be unique.

created_at: The timestamp when the user account was created.

Recipes Table: This table stores the recipes created by users.

id: A unique identifier for each recipe.

user_id: The ID of the user who created the recipe, linking to the users table.

title: The title of the recipe.

category: The category to which the recipe belongs (e.g., Breakfast, Lunch, Dinner).

ingredients: The list of ingredients required for the recipe.

steps: The steps to prepare the recipe.

created_at: The timestamp when the recipe was created.

Administrator Table : for admins

Id: Primary Key (PK), unique identifier for each administrator.

username: String, the username of the administrator.

password: String, the password for the administrator's account.

email: String, the email address of the administrator.

created_at: Timestamp, the date and time when the administrator account was created.

recipes Table : for favourite recipes

Id: Primary Key (PK), unique identifier for each favorite recipe entry.

user_id: Foreign Key (FK), references Id in the User table, indicating the user who favorited the recipe.

recipe_id: Foreign Key (FK), references id in the Recipe table, indicating the recipe that is favorited.

created_at: Timestamp, the date and time when the favorite entry was created.

Special Considerations for the Database Design

Indexing:

- Indexes are automatically created for the primary keys (id in both users and recipes tables).
- Additional indexes can be created on username and email in the users table for faster searches and lookups.
- An index on user_id in the recipes table can improve query performance when fetching recipes by user.

Normalization:

The database is designed to be in at least the third normal form (3NF).

- Each table has a primary key.
- All non-key attributes are fully functional dependent on the primary key.
- There are no transitive dependencies.

Foreign Key Constraints:

The user_id in the recipes table is a foreign key referencing the id in the users table.

The ON DELETE CASCADE option ensures that when a user is deleted, all associated recipes are also deleted.

SQL

SQL SCRIPT FOR CREATING TABLES

```
-- Creating the users table
CREATE TABLE users (
    id INT AUTO_INCREMENT PRIMARY KEY,
    username VARCHAR(50) NOT NULL UNIQUE,
    password VARCHAR(255) NOT NULL,
    email VARCHAR(100) NOT NULL UNIQUE,
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);

-- Creating the recipes table
CREATE TABLE recipes (
    id INT AUTO_INCREMENT PRIMARY KEY,
    user_id INT NOT NULL,
    title VARCHAR(100) NOT NULL,
    category VARCHAR(50),
    ingredients TEXT NOT NULL,
    steps TEXT NOT NULL,
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    FOREIGN KEY (user_id) REFERENCES users(id) ON DELETE CASCADE
);

-- Creating the admin account table
CREATE TABLE administrators (
    id INT AUTO_INCREMENT PRIMARY KEY,
    username VARCHAR(50) NOT NULL,
    password VARCHAR(255) NOT NULL,
    email VARCHAR(100) NOT NULL,
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);

-- Creating the favorite recipes table
CREATE TABLE favorites (
    id INT AUTO_INCREMENT PRIMARY KEY,
    user_id INT NOT NULL,
```

```

        recipe_id INT NOT NULL,
        created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
        FOREIGN KEY (user_id) REFERENCES users(id),
        FOREIGN KEY (recipe_id) REFERENCES recipes(id)
    );

```

SAMPLE DATA INSERTION QUERIES

```

-- Inserting sample data into the users table
INSERT INTO users (username, password, email) VALUES
('faris', 'farispass', 'faris123@gmail.com'),
('jane_smith', 'password456', 'jane@example.com');

-- Inserting sample data into the recipes table
INSERT INTO recipes (user_id, title, category, ingredients, steps)
VALUES
(1, 'Healthy Workout Smoothie', 'Fitness', 'Banana, Spinach, Greek
Yogurt, Almond Milk', 'Blend all ingredients until smooth.'),
(2, 'Grilled Chicken Salad', 'Lunch', 'Chicken Breast, Mixed Greens,
Cherry Tomatoes, Olive Oil, Lemon Juice', 'Grill the chicken and mix
with greens and tomatoes. Dress with olive oil and lemon juice.');
```

```

-- Inserting sample data into the administrator table
INSERT INTO administrators (username, password, email) VALUES
('admin1',
'$2y$10$9iQ5tRQ5.X1umWum0I1Pu.bu0QjfVp7E5wJh8y73hU0I5hGVz8q3C',
'admin1@example.com'), -- password: adminpassword1
('admin2',
'$2y$10$Rja.m9C5/MrVrLzDq2g7C.K/C9cStT92xJCB3wbH1TI6FdQ1J7HHK',
'admin2@example.com'); -- password: adminpassword2

-- Inserting sample data into the favorites table
INSERT INTO favorites (user_id, recipe_id) VALUES
(1, 2),
(1, 3),
(2, 1);

```

EXAMPLE SCENARIOS & CORRESPONDING SQL QUERIES

- 1. Retrieve all recipes for a specific user:**

```
SELECT * FROM recipes WHERE user_id = 1
```

- 2. Find recipes that include "Chicken" in the ingredients:**

```
SELECT * FROM recipes WHERE ingredients LIKE '%Chicken%';
```

- 3. List recipes sorted by the date they were created:**

```
SELECT * FROM recipes ORDER BY created_at DESC;
```

- 4. Update a recipe's category:**

```
UPDATE recipes SET category = 'Dinner' WHERE id = 1;
```

- 5. Delete a recipe:**

```
DELETE FROM recipes WHERE id = 2;
```

- 6. Retrieve all administrators who registered after a specific date**


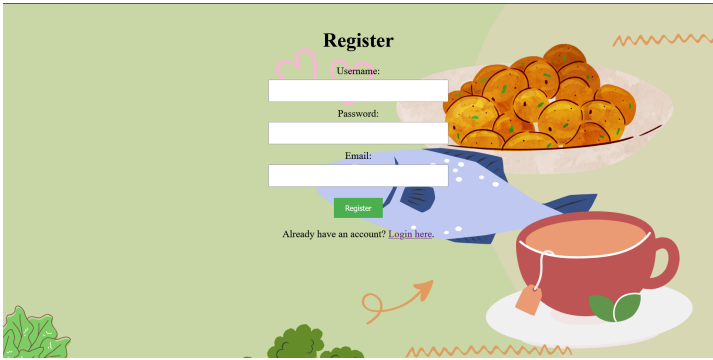
```
SELECT * FROM administrators WHERE created_at >  
'2024-01-01';
```

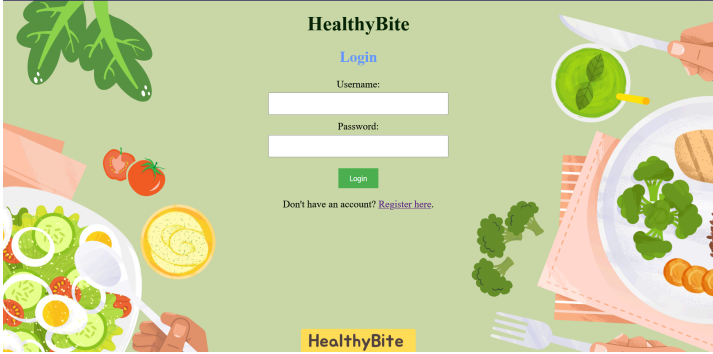

- 7. Find all favorite recipes for a specific user**

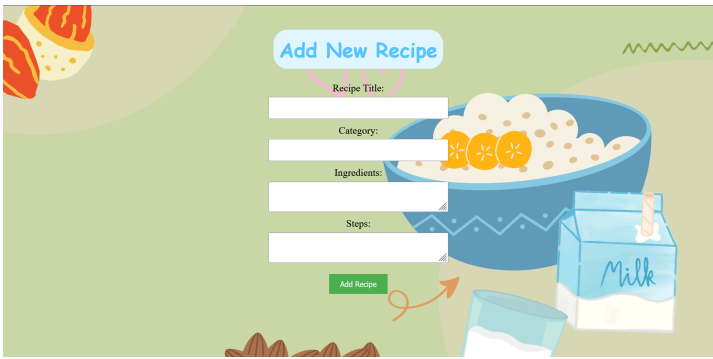
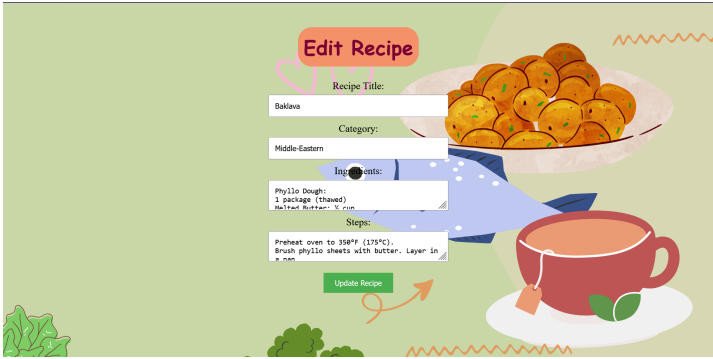

```
SELECT * FROM favorites WHERE user_id = 1;
```

USER MANUAL

STEP-BY-STEP GUIDE

Page	Purpose	Usage	Actions
Index Page	The landing page of the system.	<p>The system provides an overview and links to <u>register</u> or <u>log in</u>.</p> 	<p><u>Register</u>: Click the "Register" link to create a new account.</p> <p><u>Login</u>: Click the "Login" link to access your account. If you are admin in the same way use admin login and register</p>
Register Page	To create a new user account.	<p>To register, navigate to the register page from the index page, fill in the required fields: <u>Username</u>, <u>Password</u>, and <u>Email</u>, and click the "Register" button.</p> 	<p>If registration is successful, you will be redirected to the <u>login page</u>. If there are errors, an <u>error message</u> will be displayed.</p>
Login Page	To log in to an existing user account.	<p>To log in, navigate to the login page from the index page, enter your <u>Username</u> and <u>Password</u>, and click the "Login" button.</p>	<p>If login is successful, you will be redirected to the <u>My Recipes page</u>. If there are errors, an <u>error message</u> will be displayed.</p>

			
My Recipes Page	To view, sort, filter, edit, and delete your recipes.	<p>To manage recipes, you can utilize the following features:</p> <p><u>Sort</u> Recipes using the "Sort By" dropdown by date created, title, or category, and use the "Order" dropdown for ascending or descending order.</p> <p><u>Filter</u> Recipes using the "Category" and "Ingredient" filters, and click the "Filter" button to apply.</p> <p><u>Edit</u> a recipe by clicking the "Edit" button on a recipe card.</p> <p><u>Delete</u> a recipe by clicking the "Delete" button on a recipe card and confirming the dialog.</p> <p><u>Add</u> a new recipe by clicking the "Add New Recipe" button.</p> 	Recipes are dynamically loaded and displayed based on sorting and filtering criteria.
Add Recipe Page	To add a new recipe.	<p>To add a new recipe, navigate to the add recipe page from the "My Recipes" page, fill in the required fields: <u>Title</u>, <u>Category</u>, <u>Ingredients</u>, and <u>Steps</u>, and click the "Add Recipe" button.</p>	If the recipe is successfully added, you will be redirected to the <u>My Recipes page</u> . If there are errors, an <u>error message</u> will be

			displayed.
Edit Recipe Page	To edit an existing recipe.	<p>To edit a recipe, navigate to the edit recipe page from the "My Recipes" page by clicking the "Edit" button on a recipe card, modify the fields: <u>Title</u>, <u>Category</u>, <u>Ingredients</u>, and <u>Steps</u>, and click the "Save Changes" button.</p> 	If the recipe is successfully updated, you will be redirected to the <u>My Recipes</u> page. If there are errors, an <u>error message</u> will be displayed.
Favourite Recipe page	To see favourite recipes		User can see the favourite recipes and also can remove from favourites

TROUBLESHOOTING

Issue	Solution
I can't register a new account	Ensure all fields are filled in correctly. Make sure the username and email are unique and not already taken. Check for any error messages and follow the instructions provided.

I can't log in to my account	Ensure you are entering the correct username and password. Check for any error messages and follow the instructions provided. If you forgot your password, there may be a password recovery option (not covered in this manual).
Recipes are not displaying correctly	Ensure you are logged in. Refresh the page to reload the recipes. Check the console for any JavaScript errors that might indicate a problem.
I can't add or edit a recipe	Ensure all required fields are filled in correctly. Check for any error messages and follow the instructions provided.
The confirmation dialog for deleting a recipe doesn't appear	Ensure JavaScript is enabled in your browser. Check the console for any JavaScript errors that might indicate a problem.

FAQs

Question	Answer
How do I register a new account?	Navigate to the index page, click on "Register", fill in the required fields, and submit the form.
How do I log in to my account?	Navigate to the login page, enter your username and password, and click the "Login" button.
How do I add a new recipe?	Navigate to the "Add Recipe" page from the "My Recipes" page, fill in the required fields, and submit the form.
How do I edit an existing recipe?	Click the "Edit" button on a recipe card in the "My Recipes" page, modify the fields, and submit the form.
How do I delete a recipe?	Click the "Delete" button on a recipe card in the "My Recipes" page. Confirm the deletion in the dialog that appears.
Can I sort and filter my recipes?	Yes, use the sort and filter options on the "My Recipes" page to organize and find specific recipes.

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