SDL Project Report

Project title:

CookBook

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Course Title: Software Development Lab III

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Introduction

Recipe Sharing Website is a comprehensive site that allows users to share and handle cooking recipes among themselves. The website with a simple interface where users are able to create, read, update, and delete recipes in a community-based process of sharing recipes. The website employs the most recent web technologies like HTML5, CSS3, JavaScript, and PHP with MySQL database support to provide a friendly environment for users. The website is answering the growing need for online recipe management and social cooking websites where users can store family recipes, discover new recipes, and share their expertise with others. With responsive design ideas in mind, the website makes it simple to access on any device or screen size, making it easy and simple to share recipes.

Background Study

Sharing recipes has entirely evolved from traditional cookbooks to web-based services in recent times. The increasing popularity of cooking TV shows, food on social media, and the necessity to preserve family traditions have contributed towards the demand for easy-to-use recipe management systems. The development of this website was motivated by the need for a simple, user-friendly platform allowing users to maintain personal sets of recipes while sharing them with a wider audience. User experience design principles, database administration best practices, and security considerations for the web motivated studies that shaped the development approach. The website uses proven technologies and follows accepted web development strategies to remain reliable and maintainable.

Objective

The primary objectives of the Recipe Sharing Web Application are:

1. Create a User-Friendly Recipe System: Create a user-friendly system where the user can easily enter, edit, and organize their recipes with limited technical expertise.

2. Offer Community-Based Recipe Sharing: Offer a platform through which users can access other contributors' recipes, building a collective cooking community.

3. Use Strong Data Management: Design a strong database schema that efficiently stores recipe data like ingredients, instructions, images, and metadata.

4. Provide Cross-Platform Compatibility: Design a website that is mobile-friendly and operates efficiently on numerous devices and web browsers to provide maximum usability.

5. Provide Full CRUD Operations: Design full Create, Read, Update, and Delete operations for recipe management with valid data validation and error handling.

Design

System Architecture

The Recipe Sharing website follows a three-tier architecture:

Presentation Layer (Frontend):

- HTML5 pages for user interface
- CSS3 for styling and responsive design
- JavaScript for client-side interactions

Application Layer (Backend):

- PHP scripts for server-side processing
- Business logic implementation
- File upload handling

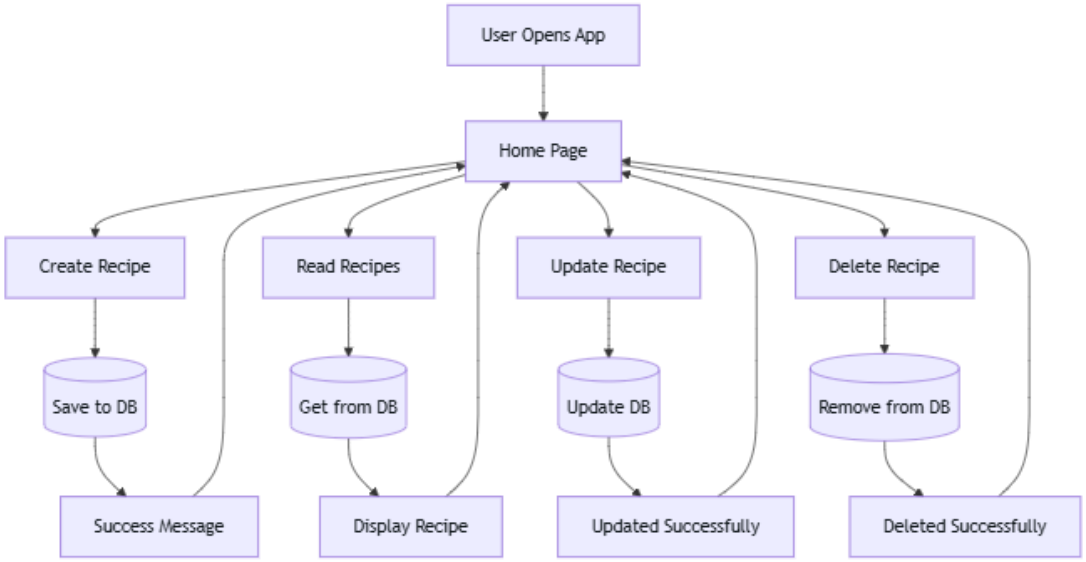
Data Layer:

- MySQL database for data persistence
- Image storage in file system

Flow Chart

Level 1 Flow Chart:

Level 2 Flow Chart:



Database Design

Table: recipes

- id (Primary Key, Auto Increment)
- title (VARCHAR 255)
- ingredients (TEXT)
- instructions (TEXT)
- author (VARCHAR 100)
- image_path (VARCHAR 255)
- created_at (TIMESTAMP)

Application Flow

1. **Home Page**: Displays all recipes with navigation options
2. **Add Recipe**: Form submission with validation and file upload
3. **View Recipe**: Detailed recipe display with action buttons
4. **Edit Recipe**: Pre-populated form for recipe modifications
5. **Delete Recipe**: Confirmation dialog with data removal

Features & Results

Core Features Implemented:

1. Recipe Creation

- User-friendly form interface for adding new recipes
- File upload functionality for recipe images
- Input validation for required fields
- Automatic generation of timestamps

2. Recipe Browsing

- Home page displaying all recipes in card view format
- Clean, structured layout with recipe titles and authors
- Quick access to individual recipe details

3. Recipe Viewing

- Detailed recipe display with formatted ingredients list
- Step-by-step instructions presentation
- Image display for visual appeal
- Author attribution and metadata

4. Recipe Management

- Edit functionality with pre-filled forms
- Delete feature with confirmation dialogs
- Image replacement options during editing
- Data validation and error handling

5. Responsive Design

- Mobile-friendly interface
- Consistent styling across all pages
- Intuitive navigation structure
- Professional appearance with Varendra University branding

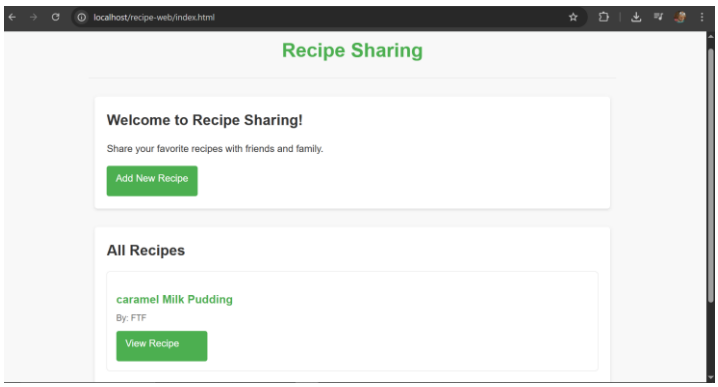
Technical Implementation Results:

- **Database Integration**: Successfully implemented MySQL database with automatic table creation
- **File Upload System**: Secure image upload with unique filename generation
- **AJAX Communication**: Seamless data exchange between frontend and backend
- **Error Handling**: Comprehensive error management for database operations

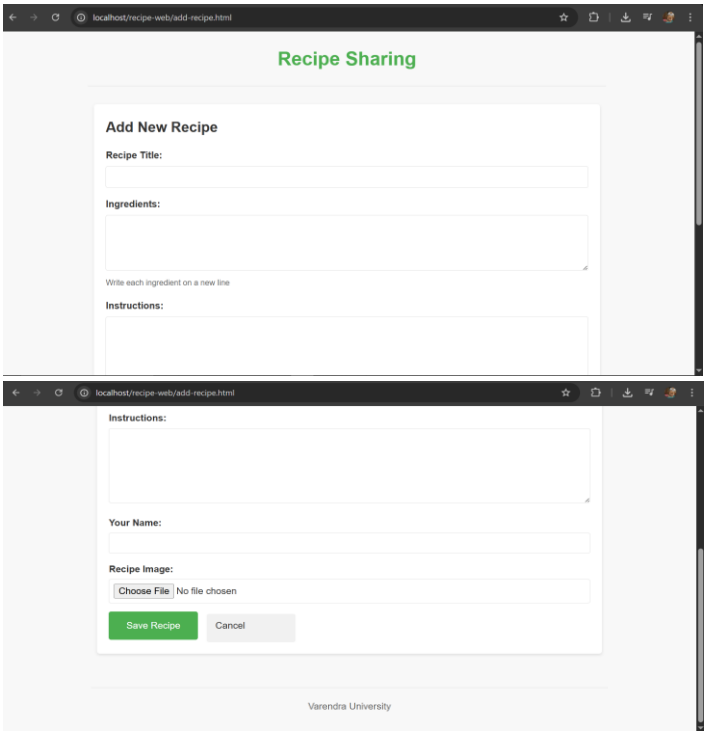
- **Security Measures**: SQL injection prevention through prepared statements

Screenshots:

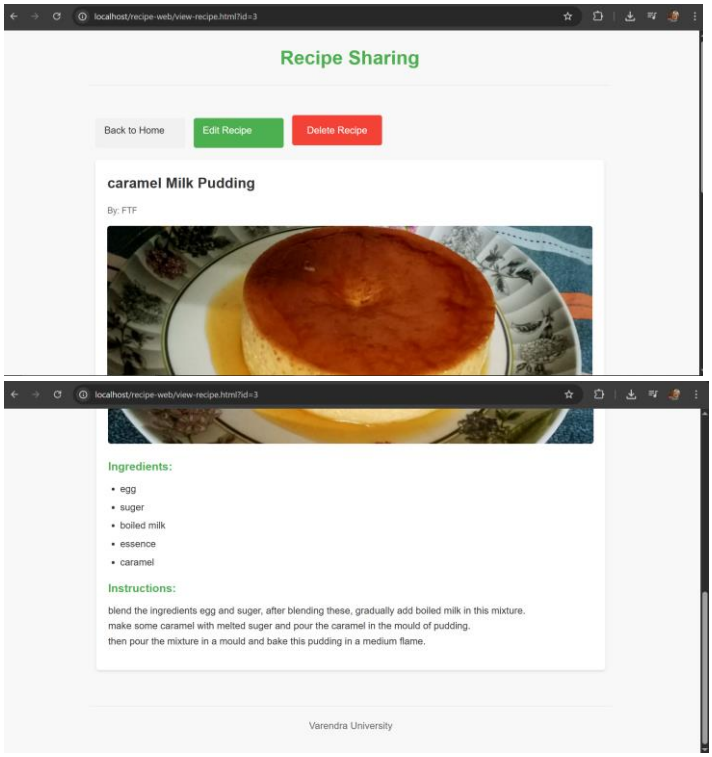
- Home page



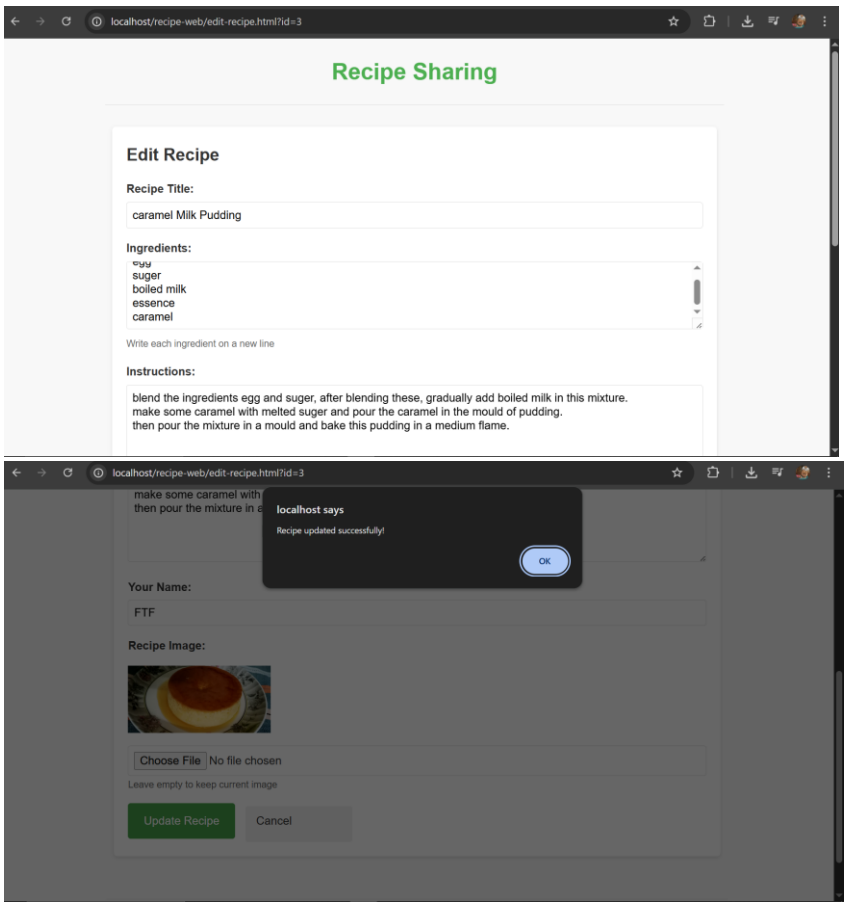
- Add recipe form interface



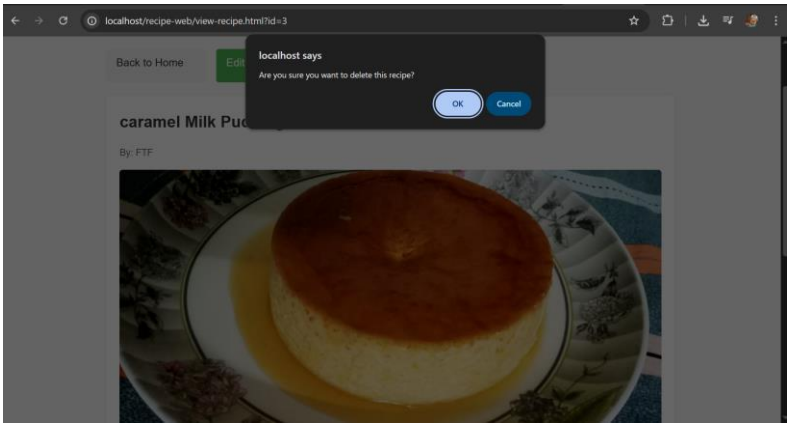
- Recipe detail view

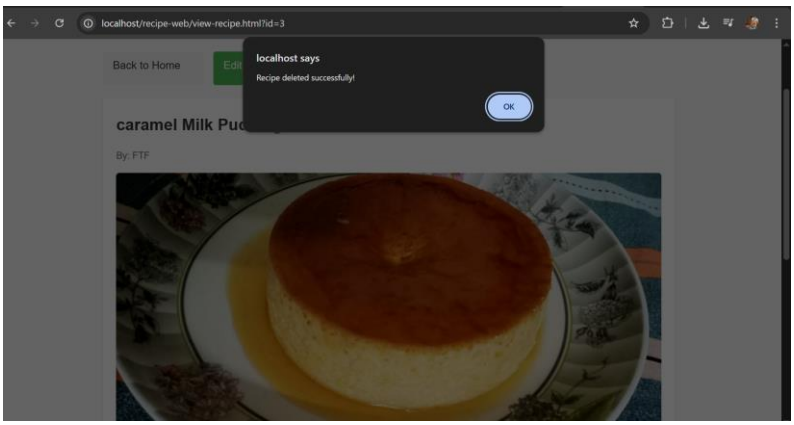


- Edit recipe functionality



- Delete confirmation





Conclusion :

The Recipe Sharing Website is a success in its primary objectives of being an easy-to-use recipe management and sharing system for the community. The implementation is a fine example of how web technologies like HTML5, CSS3, JavaScript, PHP, and MySQL can be used to create a functional and responsive application. The system provides full CRUD operations with proper data validation, secure file handling, and intuitive user interface design. The website makes a solid foundation for recipe sharing websites and demonstrates practical usage of full-stack web development principles.

Limitations & Future Plan

Current Limitations:

- **User Authentication**: No user login system implemented
- **Search Functionality**: Limited recipe discovery options
- **Recipe Rating**: No rating or review system

- **Social Features**: Missing user profiles and social interactions

Future Enhancement Plans:

- **User Management System**: Implement registration, login, and user profiles
- **Advanced Search**: Add search by ingredients, categories, or cooking time
- **Recipe Rating & Reviews**: Enable user feedback and rating system
- **Social Features**: Add recipe favorites, sharing options, and user following
- **Mobile Application**: Develop native mobile apps for iOS and Android
- **Recipe Import**: Allow importing recipes from external sources
- **Nutritional Information**: Integrate nutritional data for recipes

Tools & Technological Stack Used

Frontend Technologies:

- **HTML5**: Structure and semantic markup
- **CSS3**: Styling, responsive design, and visual layout
- **JavaScript**: Client-side interactions and AJAX communication

Backend Technologies:

- **PHP**: Server-side scripting and business logic
- **MySQL**: Relational database management system

Development Tools:

- **Text Editor/IDE**: Visual Studio Code or similar
- **Web Server**: Apache (XAMPP/WAMP/LAMP)
- **Database Management**: phpMyAdmin
- **Browser DevTools**: Chrome/Firefox Developer Tools

Additional Libraries & Features:

- **File Upload Handling**: PHP $_FILES superglobal
- **Form Validation**: Client-side and server-side validation
- **Responsive Design**: CSS media queries
- **Database Security**: Prepared statements for SQL injection prevention