CSCI 5448: Object-Oriented Analysis & Design

Team members: Saumya Bansal & Mehmood Ali

Project 6: Semester Project – First Development Pass, Interim Report

1. Status Summary

Title: Recipe Recommender

Team Members: Saumya Bansal & Mehmood Ali

Work Done:

Saumya Bansal:

- User Authentication: The application should allow users to create an account, log in, and log out securely. User data should be stored safely in the database.

- User Profile Page: Users should be able to view and manage their profile information, including their favorite recipes, on their profile page.

- User History Page: Users should have access to a history page that displays previously viewed recipes, allowing them to easily revisit recipes of interest.

Mehmood Ali:

- Ingredient Management: The application should provide a system for users to input and manage the ingredients they have on hand. This information will be used to suggest recipes that match their available ingredients.

- Recipe Recommendation Engine: A recommendation engine should be developed to provide real-time updates on recipe recommendations based on the available ingredients input by the user.

- The complete application has been developed using MVC Framework.

Changes or Issues Encountered:

Yes, there have been changes in our approach to the project from the initial design in Project 5. One of the main changes was the realization that we had initially planned to implement the MVC framework in the application but started working on the code without implementing it. This resulted in the need for a complete code refactoring later to align with the MVC architecture, which required significant effort and time.
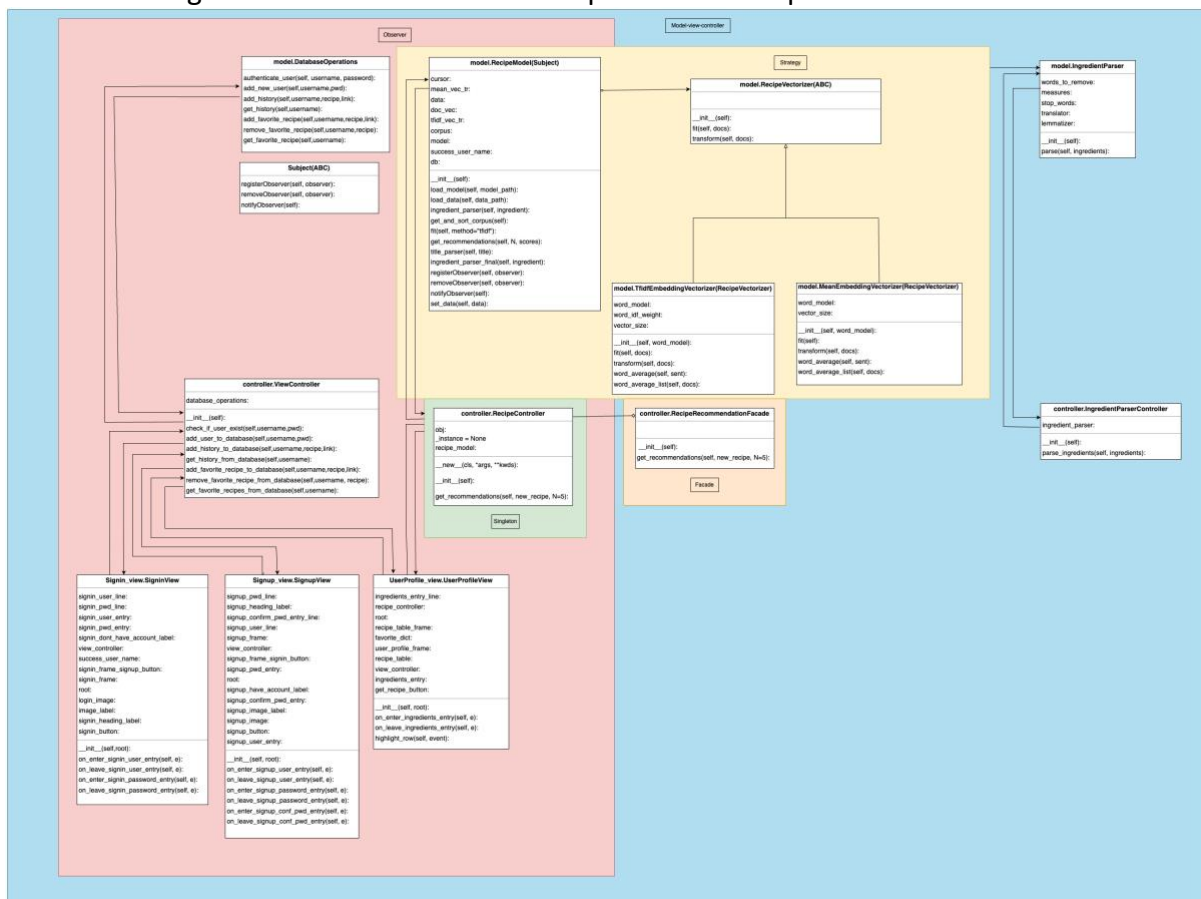
During the initial stages of development, we encountered challenges with web scraping and dimension errors during the training of the Machine Learning model. We also faced difficulties with implementing the favorite recipe feature in the database, as well as resolving some error messages that required troubleshooting and fixing.

Patterns:

In our current prototype, we have implemented the Model-View-Controller (MVC) pattern to improve the organization, efficiency, and user experience of our desktop recipe recommendation application. The MVC pattern allows us to separate the different components of our application, with the Model handling the data, the View managing the user interface, and the Controller managing the interactions between the Model and View. This separation of concerns has greatly helped us to organize our code, improve maintainability, and ensure a clear separation of responsibilities among different components, leading to a more robust and user-friendly application.

2. Class Diagram

How Class Diagram will look like after all the patterns are implemented

How Class Diagram looks like right now

3. Plan for Next Iteration

Based on our current progress, we have implemented the Model-View-Controller (MVC) pattern in our prototype. However, there are still other design patterns left to be implemented, including Singleton, Factory, Observer, and Facade, as outlined in our original project plan. We are also left with implementing the Dietary Preference Management feature, which will allow users to input and manage their dietary preferences, such as vegetarian, vegan, gluten-free, etc.

Our plans for the final iteration, leading up to the Project 7 delivery, include implementing the remaining design patterns to enhance the functionality and user experience of our application. Specifically, we will focus on implementing the Singleton pattern to ensure that only one user object is created at a time, the Factory pattern to embed vectorizers, the Observer pattern to update recipe recommendations based on user preferences and available ingredients, and the Facade pattern to simplify the user interface for the recommendation system.

Additionally, we plan to implement the Dietary Preference Management feature, which will allow users to input and manage their dietary preferences, such as vegetarian, vegan, gluten-free, etc. This feature will enhance the recommendation engine to suggest recipes that fit the users' dietary criteria.

By the due date of 5/3 for the overall project, we aim to have completed the implementation of the remaining design patterns and the Dietary Preference Management feature. We will conduct thorough testing, bug fixing, and user feedback iterations to ensure the stability and usability of our application before the final delivery.