



SECD2613 : System Analysis and Design

Project 3 : Analysis and Design

Project Title :

Dap Recipe

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1.0 Overview of the Project

The Dap Recipe System is designed to manage a wide array of recipes sourced from around the world, offering users the ability to search, upload, edit, store, and delete recipes. This functionalities ensures that users can not only find recipes that suit their tastes and preferences but also contribute their own culinary creations to the platform. By facilitating such a wide range of interactions with recipes, the system provides dynamic and enhanced platform for the user to use.

The Dap Recipe System is the creation of a large, engaged community of users who can easily access and share recipes they can implement in their daily lives. This community aspect is enhanced by the system's forum-style platform, which allows users to communicate with one another, discuss their culinary interests, and exchange tips and recommendations. By implementing such interactions, the Dap Recipe System not only serves as a recipe database but also as a social platform where users can build connections based on their shared passion for cooking.

By implementing these features, the Dap Recipe System helps people from multiple backgrounds and various cultures to share and discover recipes. This system ensures that users can find recipes that are relevant to their cultural and dietary preferences, while also exploring new and exciting culinary traditions. Thus, the Dap Recipe System enhances the cooking experiences of its users by providing a versatile, user-friendly platform that supports an improving community of cooking enthusiasts.

2.0 Problem Statement

1. Inefficient Functions Management

Inefficient Functions Management refers to the poor management of the recipes that are being used in the current system. The current system which is the manual system, requires that the user to manually search and delete the recipes that they wanted. This provides a huge time wastage and high cost are being used. The users need to manually search the recipes that they wanted, either by asking friends or local community. This provide little coverage of searching. They also need to manually write the recipe and delete the recipes manually by tearing up the paper that are used when writing the recipes. This cost the user a high usage of paper and the errors that could occur in this process lead to the inefficiency of this manual system.

2. Poor Storing Management

Due to the manually system that are used, the storing of the recipes are easily lost due to the fact that it is manually stored. Manually stored in this case refers to the recipes are stored in a file or document in hardcopy in the physical world. This can lead to the lost of the recipes or data if any unexpected circumstances occur or the human error happens.

3. Poor Communication Platforms

The use of various communication tools, like separate mailing and chatting apps, often means these systems are developed independently and lack integration with task management systems. This lack of integrated communication hinders real-time collaboration and instant feedback. Thus, the delayed responses from team members slow down project progress, resulting in missed deadlines.

3.0 Proposed Solutions

DapRecipe

The solution that we have come up with is DapRecipe, a online library full of recipes that can be added by the users that want to add their recipes and can share it with everyone using the platform with dynamic features that enhances users experience creating an enjoyable and organized experience for the users.

Key Features

- Scalable: Optimized for large numbers of users at a time.
- User Friendly Interface : Conveniently stores and organizes recipes in personalized categories.
- Multi-Device Support: Access the app on phones, laptops, or tablets for convenience.
- Interactive Forum: A forum for users to share opinions, culinary tips, and tricks.
- Recipe Uploads : Users can upload their own recipes to share with the community.
- Profile Customization: Allow users to create and customize their profiles.
- Recipe Alterations: Modify and improve existing recipes with new ingredients or methods.
- Organize Recipes : Create folders and tags for better recipe organization.
- Search Functionality: Search recipes by ingredients, categories, or names.

4.0 Current Business Process/Workflow

4.1 Current Business Process

In the current system that are being used :

- The recipes are hard to find, as the user need to go through the internet to find recipes that are aligned with their cooking.
- The recipes that are found are hard to be stored, as they are no proper place to store the recipes.
- The current system provides a hard way on how to communicate between people who cooks, as they are no proper platform to be used for them to communicate

4.2 Functional Requirements

- Input : User Informations, Recipes, Ingredients to the recipe, Texts for Forums
- Process : Uploading Recipes, Typing for Forums, Store Recipes, Edit Recipes, Delete Recipes
- Output : Recipes, Texts in Forums, User Interface

4.3 Non-Functional Requirements

Performance :

- The system should support a wide range of users, regardless of the specifications of their devices.
- The system should support a huge number of users

Control :

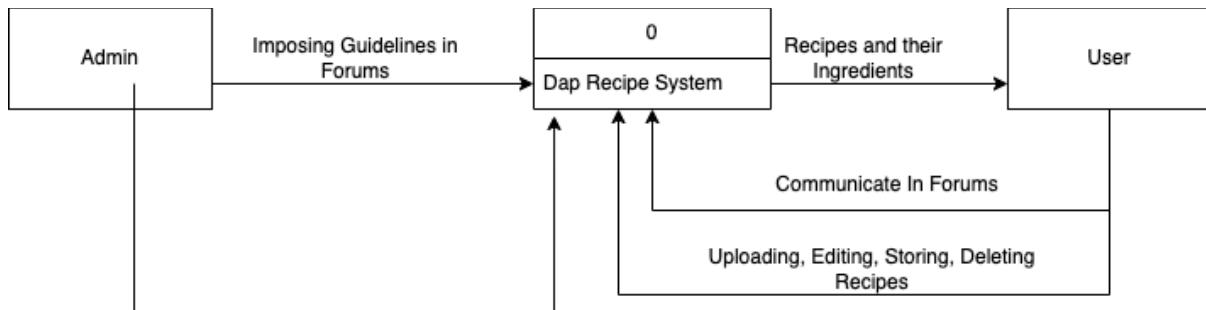
- The system should ensure data security and privacy especially for the user credentials that are being inputted in

The system should implement cyber ethics and guidelines in the forum that are used

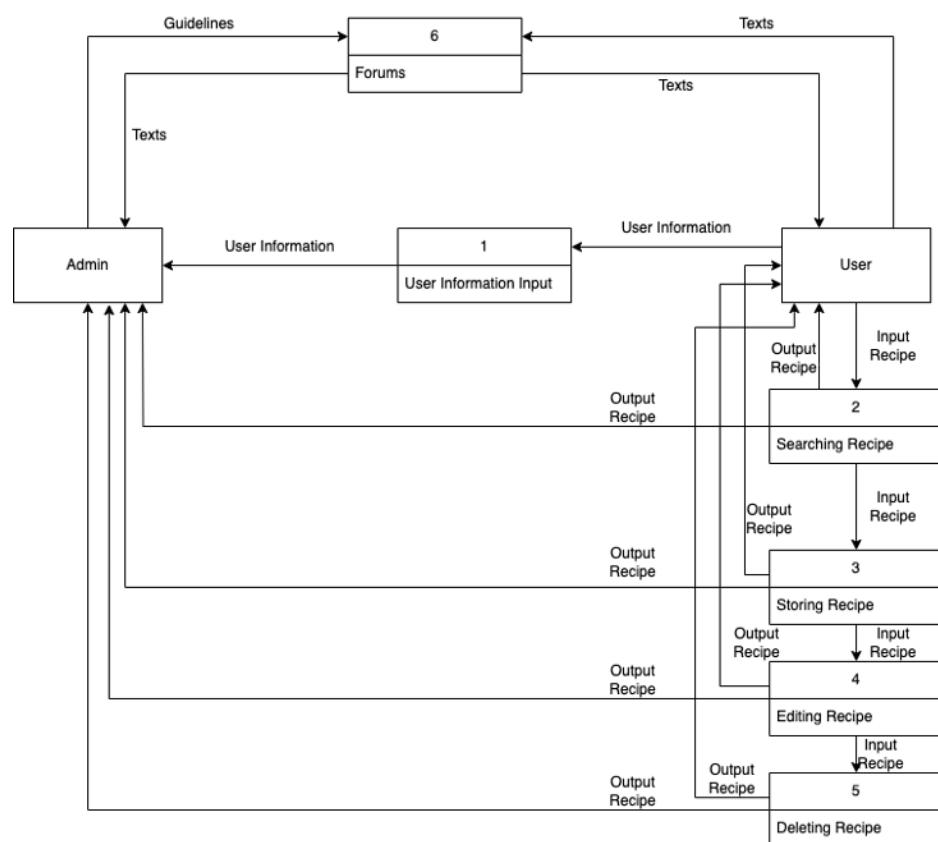
5.0 Logical DFD (AS-IS)

Based on the AS-IS analysis, we have managed to come up with a DFD Diagram that represents the situation of the system now. The system, currently operates based on this DFD diagram may be applied to any improvement and modifications after it being tested. The improvement will be shown on the Logical DFD TO-BE diagram system. Below are the Logical DFD AS-IS,

5.1. Context Diagram :

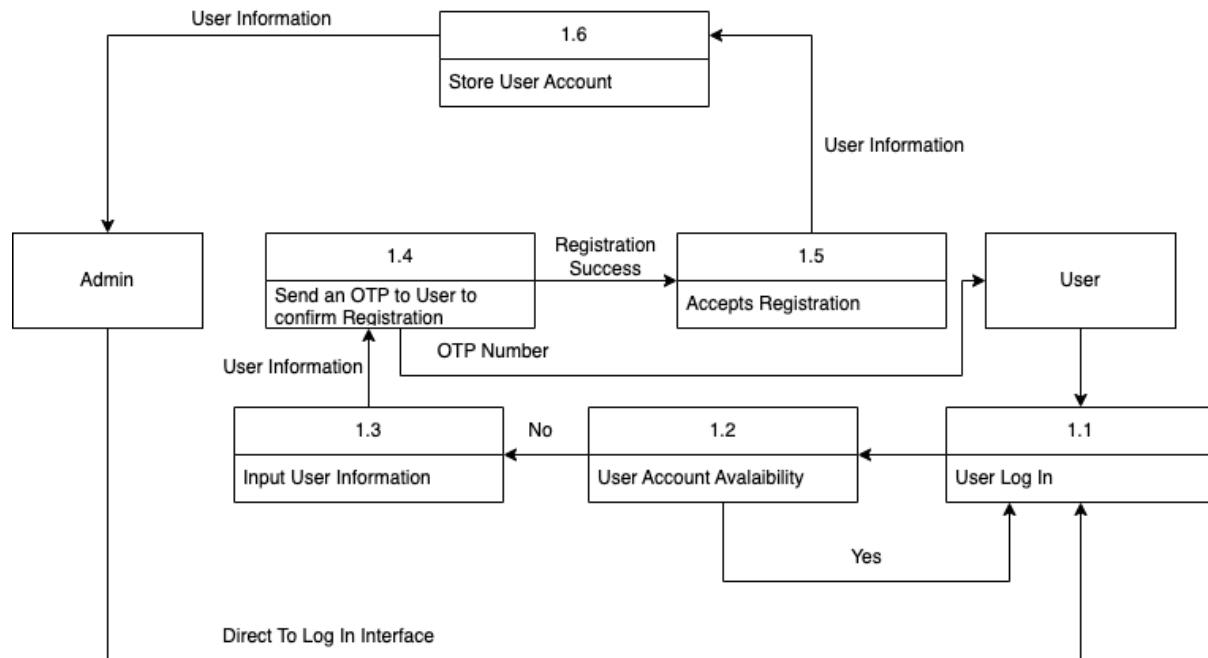


5.2. 0 Diagram :

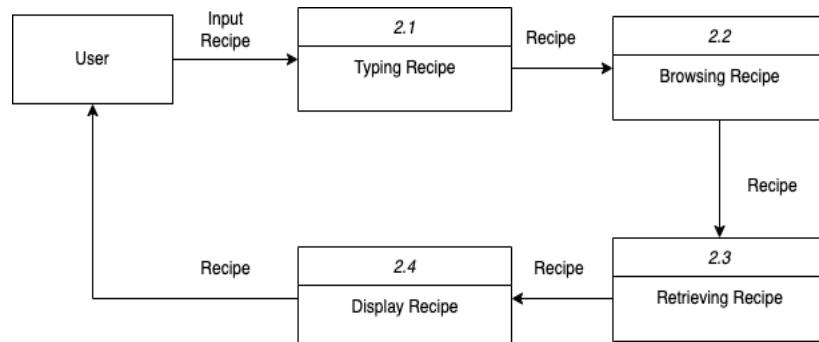


5.3. Child Diagram :

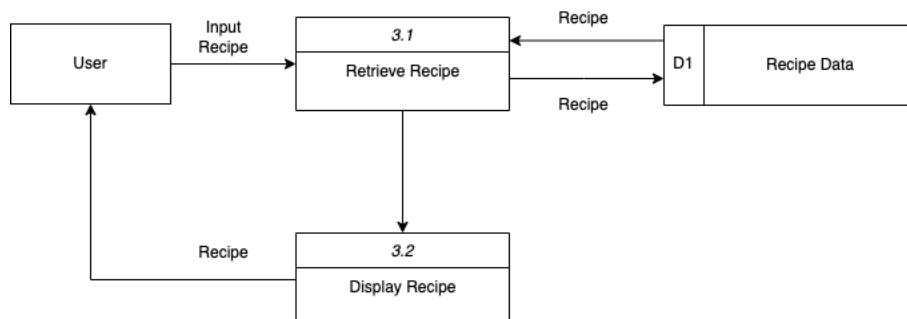
5.3.1. User Information Input



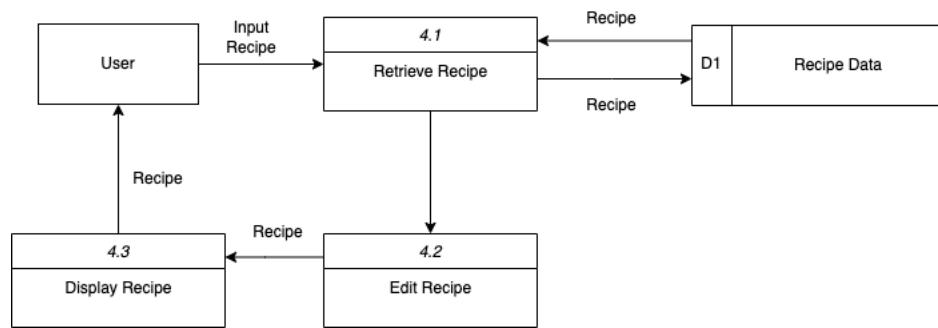
5.3.2. Searching Recipe



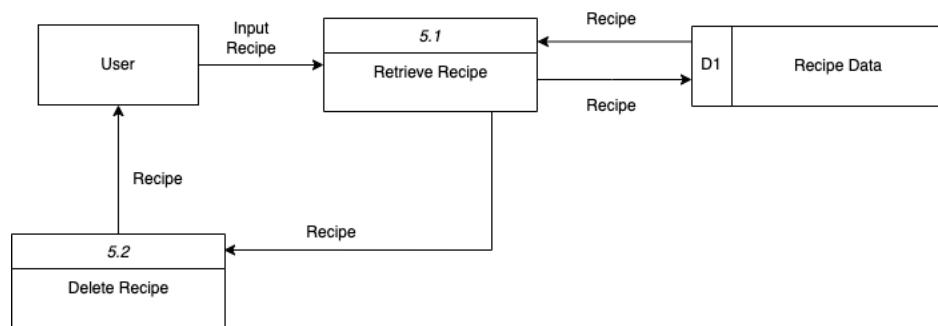
5.3.3. Storing Recipe



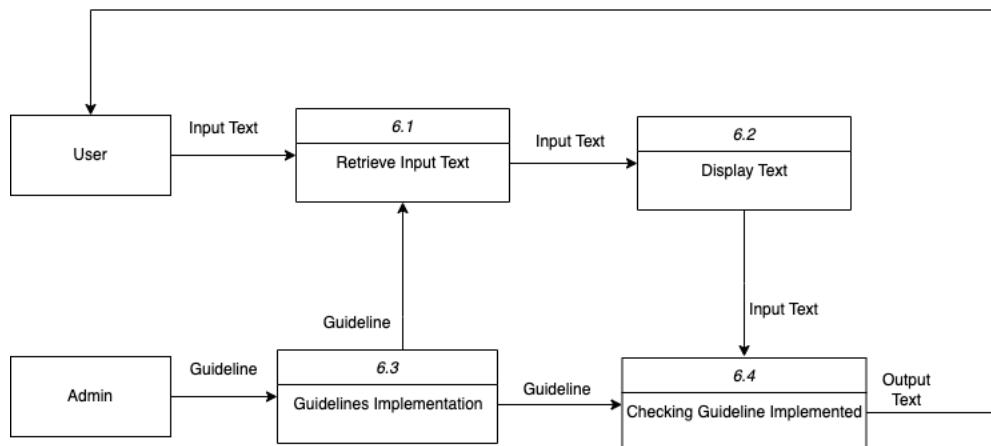
5.3.4. Editing Recipe



5.3.5. Deleting Recipe



5.3.6. Forums

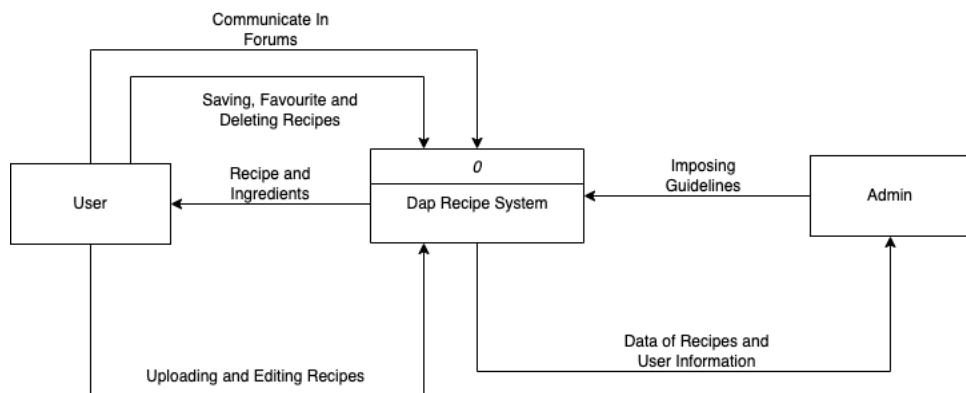


6.0 System Analysis and Specification

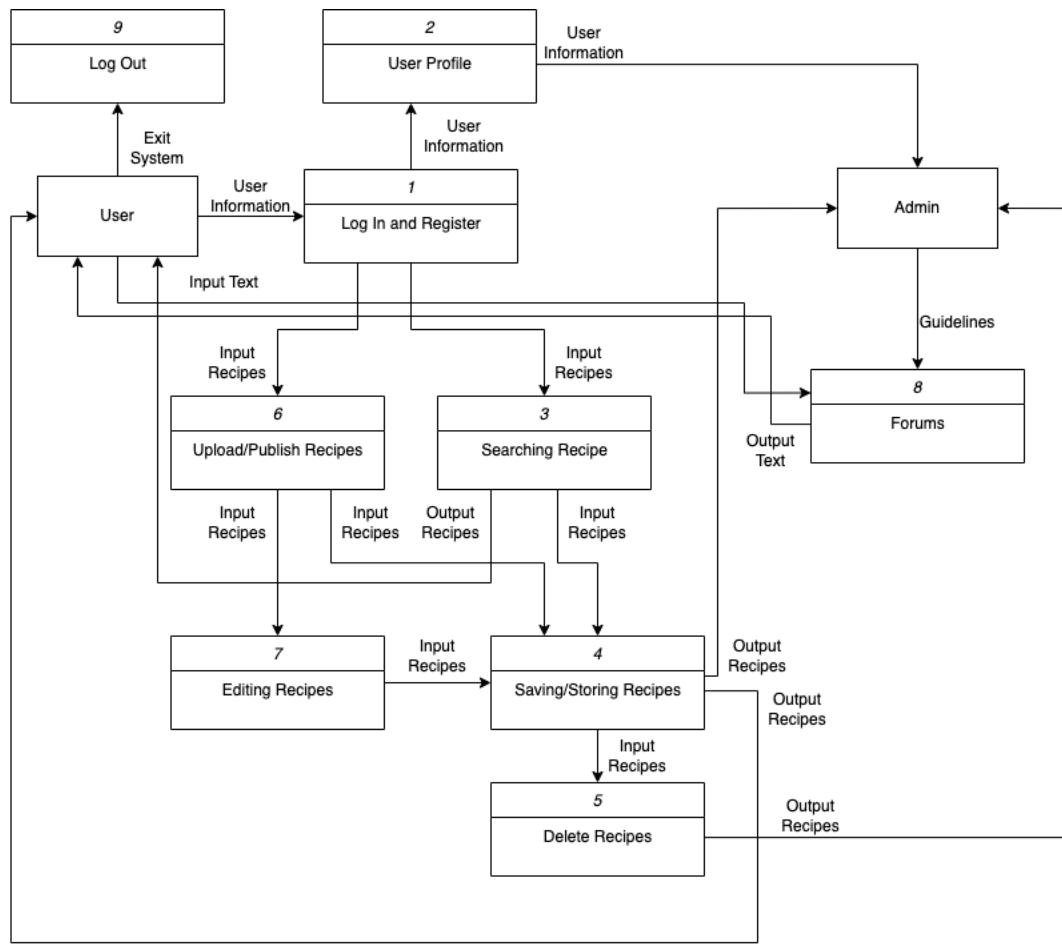
6.1 Logical DFD TO-BE system (Context Diagram, Diagram 0, Child)

Based on the Logical DFD AS-IS that have been developed in 5.0, we have made modifications and improvements to further improve the system that are developed. This is due to the reason to provide simplicity and easiness to the user that are using Dap Recipe Application. Below are the Logical DFD To-Be,

6.1.1. Context Diagram :

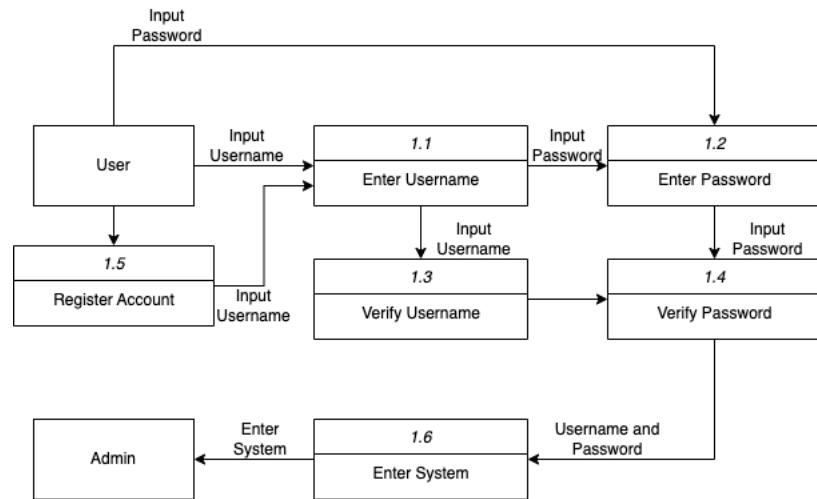


6.1.2. 0 Diagram :

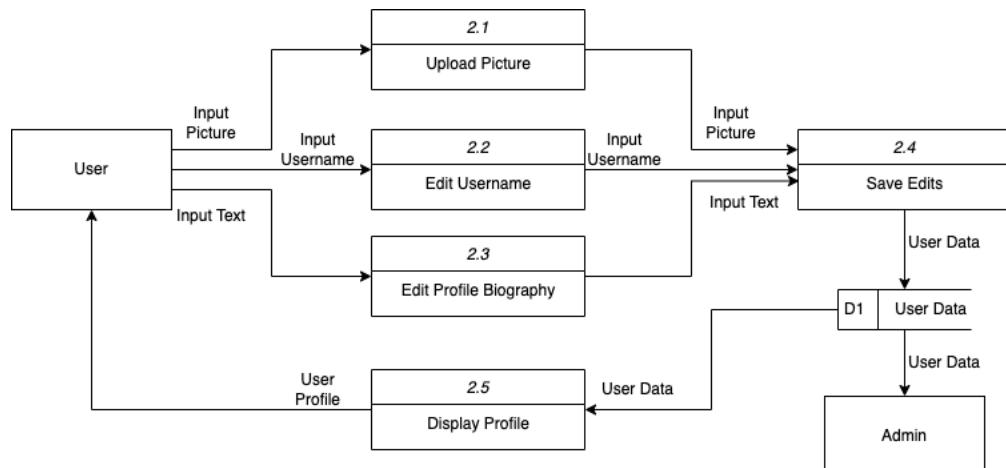


6.1.3. Child Diagram :

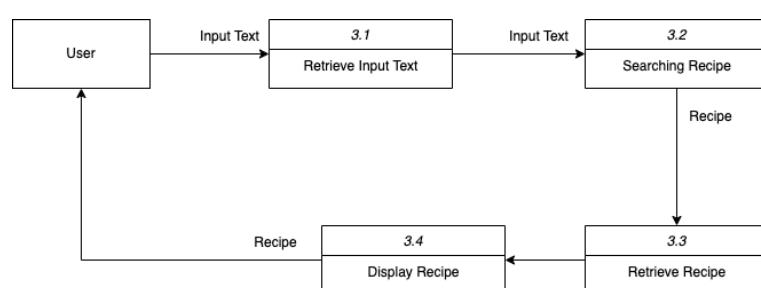
6.1.3.1. Log In and Register Diagram



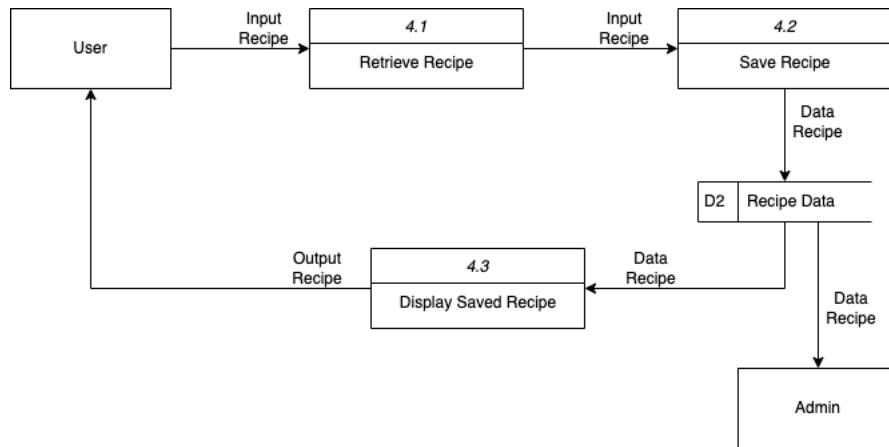
6.1.3.2. User Profile



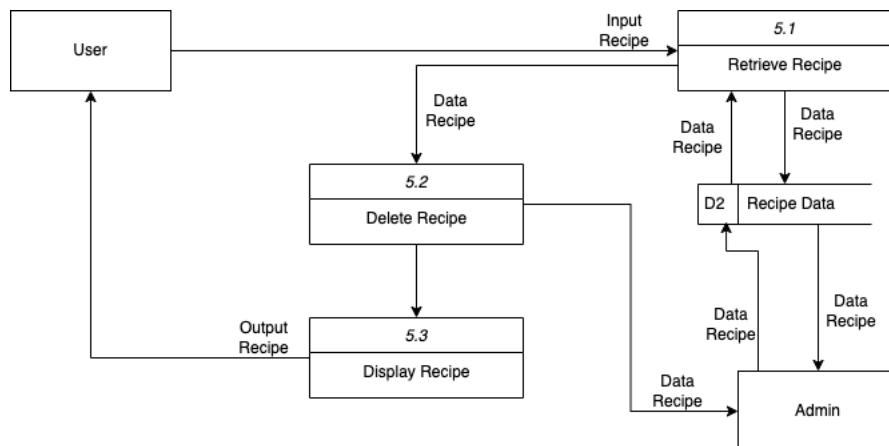
6.1.3.3. Searching Recipe Diagram



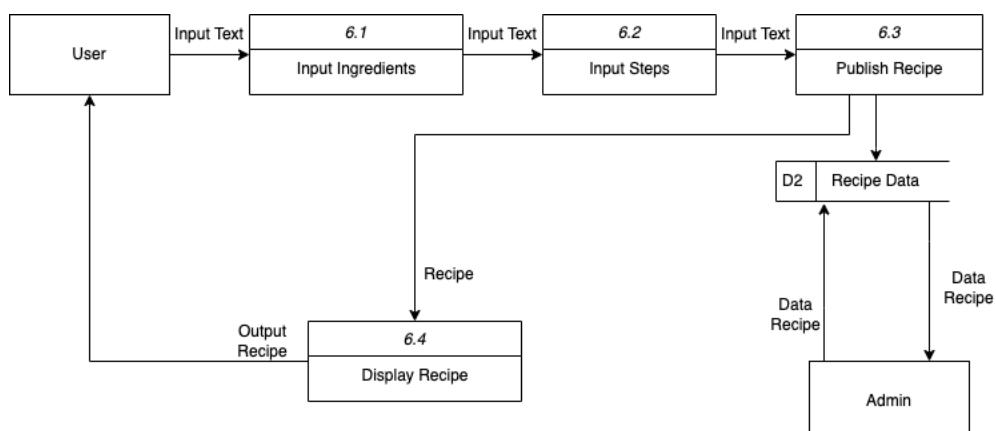
6.1.3.4. Saving/Storing Recipe Diagram



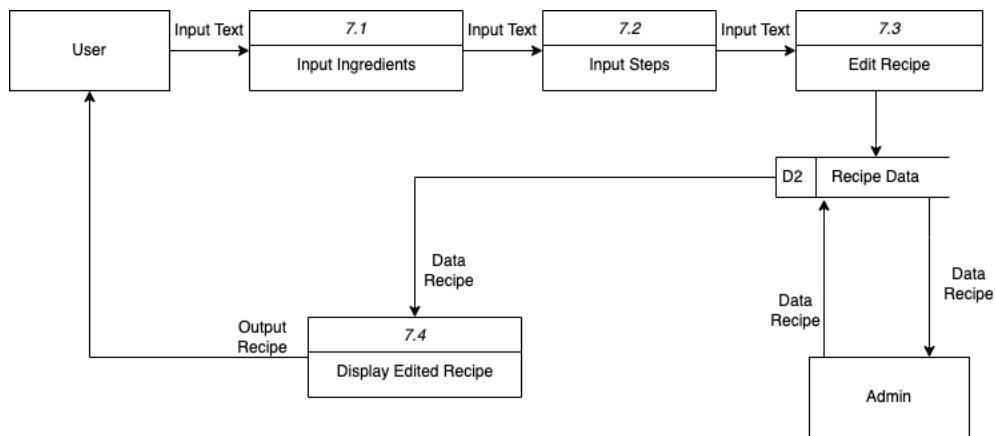
6.1.3.5. Delete Recipes Diagram



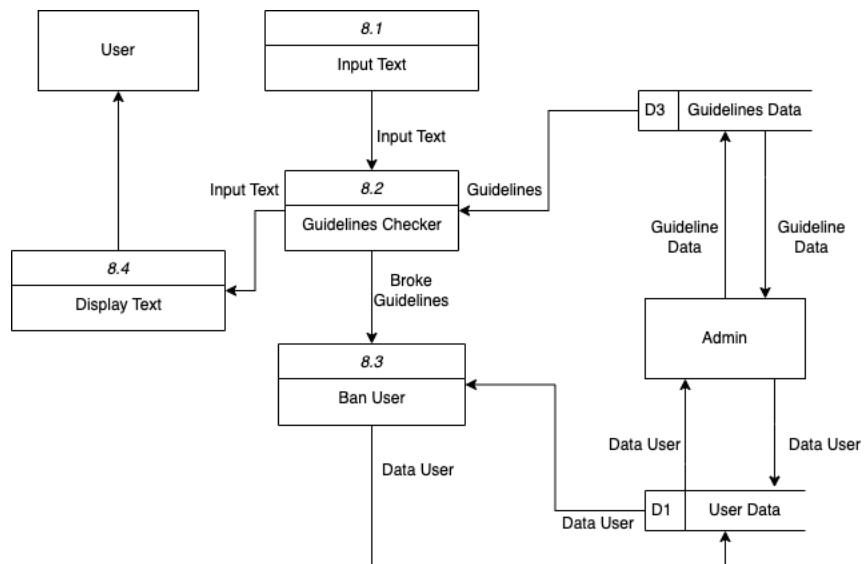
6.1.3.6. Upload/Publish Diagram



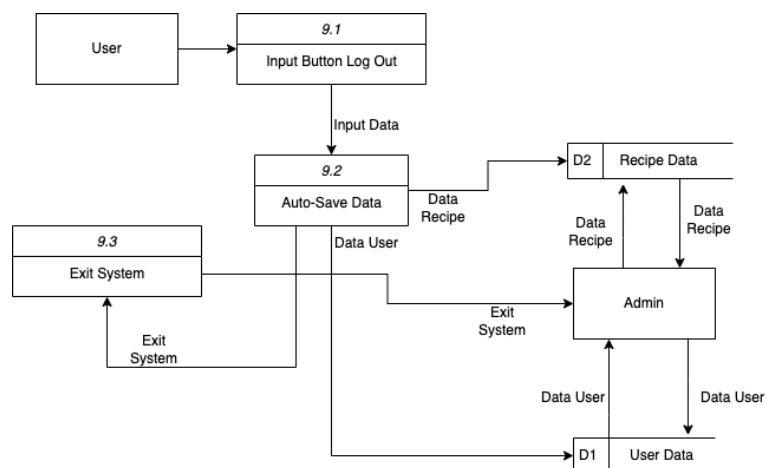
6.1.3.7. Editing Recipes Diagram



6.1.3.8. Forums Diagram



6.1.3.9. Log Out Diagram



6.2 Process Specification (based on Logical DFD TO-BE)

Based on the Logical DFDF TO-BE, a Process Specification will be written. This is to clarify the logic and relationships inside the system, and making the system easier to be taught and understood by the users. In our, process specification, we will be using Structured English, Decision Tables and Decision Trees.

Process Specifications On Every Process :

1.1 Enter Username

Enter Input Text
Receive Input Text
Send Input Text to Admin

1.2 Enter Password

Enter Input Text
Receive Input Text
Send Input Text to Admin

1.3 Verify Username

```
BEGIN IF
IF Username equal to Username in D1, User Data
    Go to 1.6 Enter System
ELSE
    Prompt "Username is incorrect"
END IF
```

1.4 Verify Password

```
BEGIN IF
IF Username equal to Username in D1 USER DATA
    Go to 1.6 Enter System
ELSE Username does not equal to Username in D1 USER DATA
    Prompt "Username is incorrect"
END IF
```

1.5 Register Account

```
BEGIN IF
IF User has an account in D1 USER DATA
    Go to 1.1 Enter Username
ELSE User does not have an account in D1 USER DATA
    Prompt "Register Account"
    Go to 1.1 Enter Username
END IF
```

1.6 Enter System

```
BEGIN IF
IF Log IN is true
    Enter the system
ELSE Log IN is false
    Go to 1.1 Enter Username
END IF
```

2.1 Upload Picture

```
Upload Picture
Receive Picture
Send Picture to Admin
```

2.2 Edit Username

```
Input New Username
Receive New Username
Store New Username in D1 User Data
Send Edited Data to Admin
```

2.3 Edit Profile Biography

```
Input Text
Receive New Profile Biography
Store New Profile Biography in D1 User Data
Send Edited Data to Admin
```

2.4 Display Profile

```
Retrieve User Profile from D1 User Data
Display User Profile
```

2.5 Save Edits

Receive Edited Username
Receive Edited Profile Biography
Store Edited Username in D1 User Data
Store Edited Profile Biography in D1 User Data
Send Saved Edits to Admin

3.1 Retrieve Input Text

Receive Input Text
Send Input Text to 3.2 Searching Recipe

3.2 Searching Recipe

Receive Input Text from 3.1 Retrieve Input Text
Retrieve Recipe Data's from D1 User Data
DO WHILE Recipe Data not equal to Input Text
BEGIN IF
IF Recipe Data equal to Input Text
 Send Recipe to 3.3 Retrieve Recipe
ELSE Recipe Data not equal to Input Text
 Check other Recipe Data with Input Text
END IF
END DO

3.3 Retrieve Recipe

Receive Recipe Data
Send Recipe to 3.4 Display Recipe

3.4 Display Recipe

Retrieve Data Recipe from D2 Recipe Data
Display Recipe

4.1 Retrieve Recipe

Receive Input Text
Send Input Text to 4.2 Save Recipe

4.2 Save Recipe

Receive Input Text from 4.1 Retrieve Recipe
Send Saved Recipe to Save Page
Send Saved Recipe to D2 Recipe Data
Send Saved Recipe to Admin

4.3 Display Saved Recipe

Retrieve Data Recipe from D2 Recipe Data
Display Saved Recipe

5.1 Retrieve Recipe

Receive Input Text
Send Input Text to 5.2 Delete Recipe

5.2 Delete Recipe

Receive Input Text from 5.1 Delete Recipe
Remove Recipe from Save Page
Send Input Deleted Recipe to Admin
Deleted Recipe Removed from D2 Recipe Data

5.3 Display Recipe

Retrieve Data Recipe from D2 Recipe Data
Display Recipe

6.1 Input Ingredients

Input Text
Receive Input Text Ingredients
Store Input Ingredients in D2 Recipe Data
Send Data to Admin

6.2 Input Steps

Input Text
Receive Input Text Steps
Store Input Steps in D2 Recipe Data
Send Data to Admin

6.3 Publish Recipe

Conditions	Rules							
	1	2	3	4	5	6	7	8
Ingredients Of Recipe	Y	Y	Y	Y	N	N	N	N
Steps Of Recipe	Y	Y	N	N	Y	Y	N	N
Picture Of Recipe	Y	N	Y	N	Y	N	Y	N
Action								
Input Ingredients Of Recipe	X	X	X	X				
Input Steps Of Recipe	X	X			X	X		
Upload Picture Of Recipe	X		X		X		X	
Publish Recipe To Application	X	X						

6.4 Display Recipe

Retrieve Data Recipe from D2 Recipe Data
Display Recipe

7.1 Input Ingredients

Input Text
Receive Input Text Ingredients
Store Input Ingredients in D2 Recipe Data
Send Edited Data to Admin

7.2 Input Steps

Input Text
Receive Input Text Steps
Store Input Steps in D2 Recipe Data
Send Edited Data to Admin

7.3 Edit Recipe

Receive Edited Ingredients
Receive Edited Steps
Store New Ingredients in D2 Recipe Data
Store New Steps in D2 Recipe Data
Send Edited Data to Admin

7.4 Display Edited Recipe

Retrieve Data Recipe from D2 Recipe Data
Display Edited Recipe

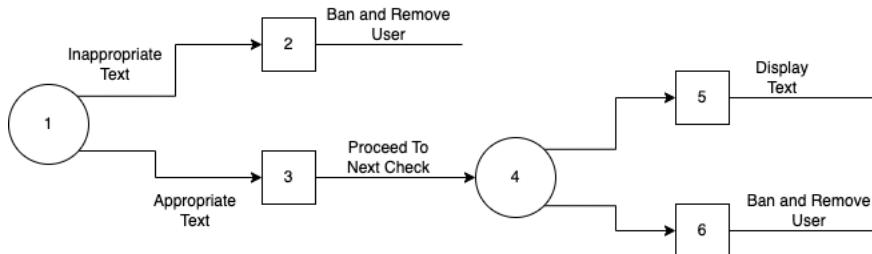
8.1 Input Text

Receive Input Text
Send Input Text to 8.2 Guidelines Checker

8.2 Guidelines Checker

Conditions	Guidelines			
	1	2	3	4
Inappropriate Text	Y	Y	N	N
Inappropriate Pictures	Y	N	Y	N
Action				
Input Texts	X	X		
Input Pictures	X		X	
Published Recipes	X	X	X	

8.3 Ban User



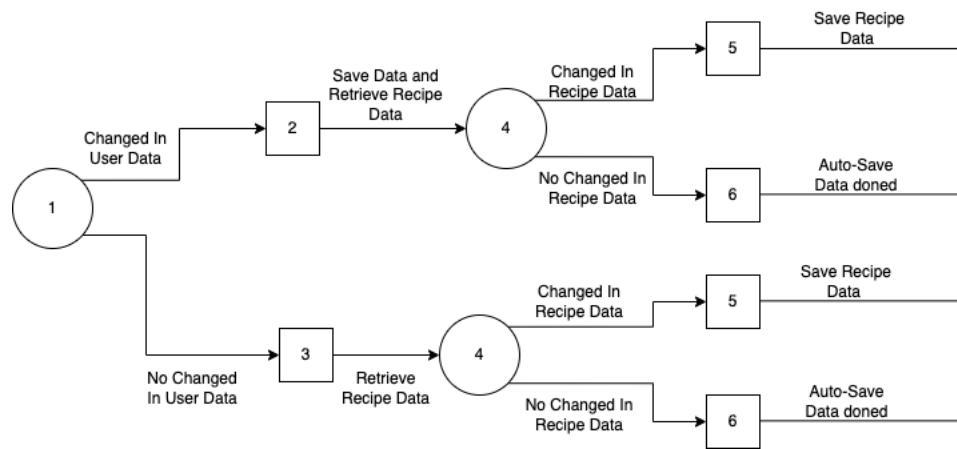
8.4 Display Text

Retrieve Input Text from 8.1 Input Text
Display Text

9.1 Input Button Log Out

Receive Input Text
Send Input to 9.2 Auto-Save Data

9.2 Auto-Save Data



9.3 Exit System

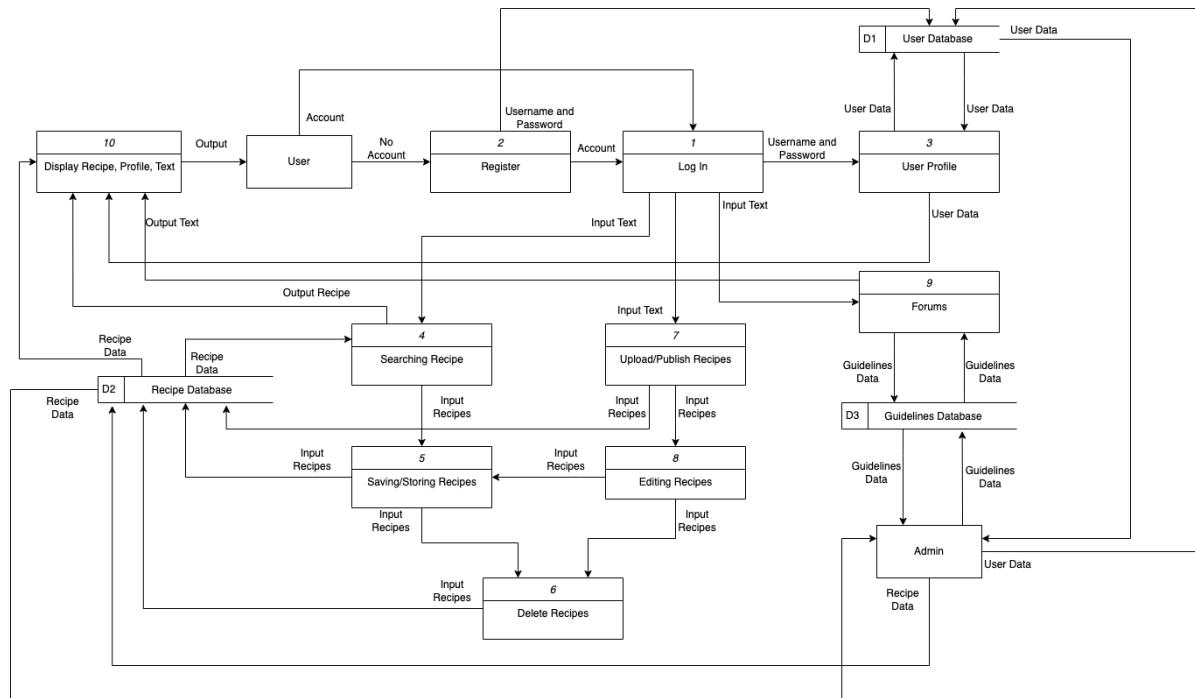
```
BEGIN IF  
IF 9.2 Auto-Save Data is true  
    Exit the system  
ELSE 9.2 Auto-Save Data is false  
    Prompt "Please Log Out again"  
    Go to 9.1 Input Button Log Out  
END IF
```

7.0 Physical System Design

7.1 Physical DFD TO-BE system (Diagram 0, Child, Partitioning, CRUD Matrix, Event Response Table, Structure Chart, System Architecture)

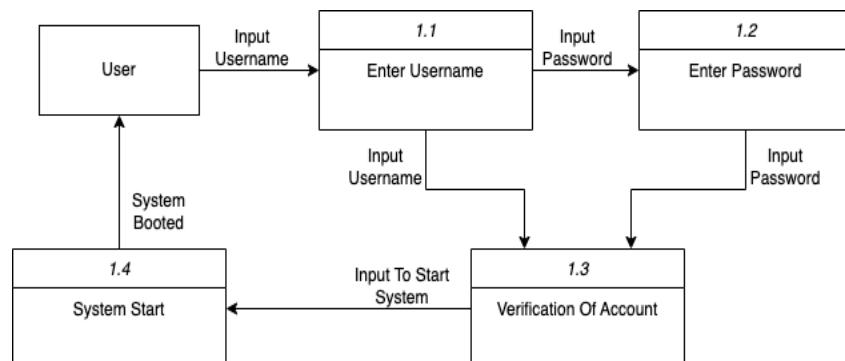
To ensure the readability of this system design to the development team, specifically the programmers that will be creating this system. We have created a physical DFD to-be diagram consisting of Physical 0-diagram and Physical child diagram. This is to make sure that what we are designing are readable and easy to be understand by the development team that will be building this system.

7.1.1. 0 Diagram

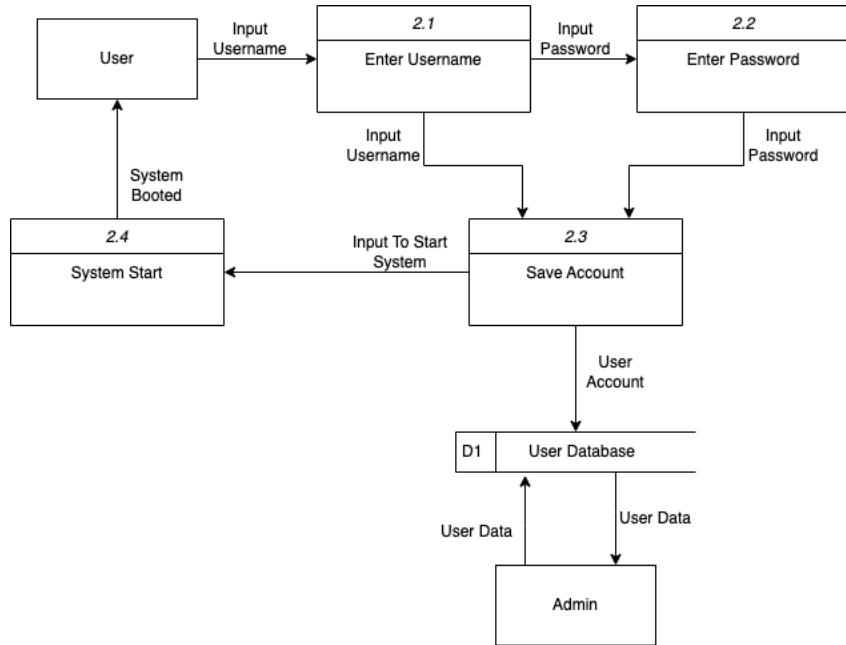


7.1.2. Child Diagram

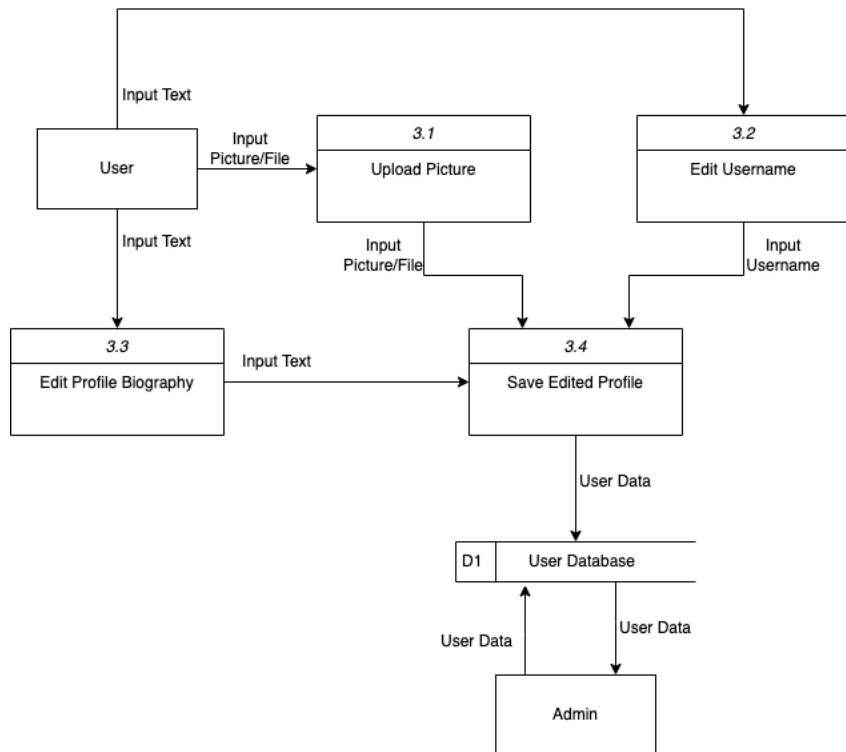
7.1.2.1 Log In Diagram



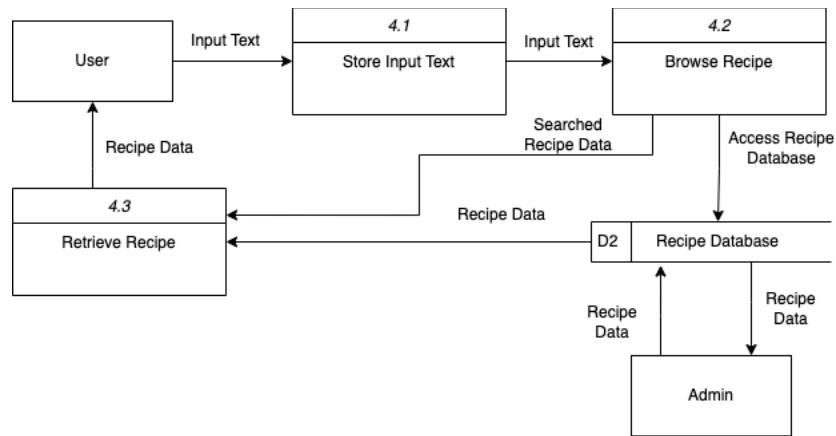
7.1.2.2 Register Diagram



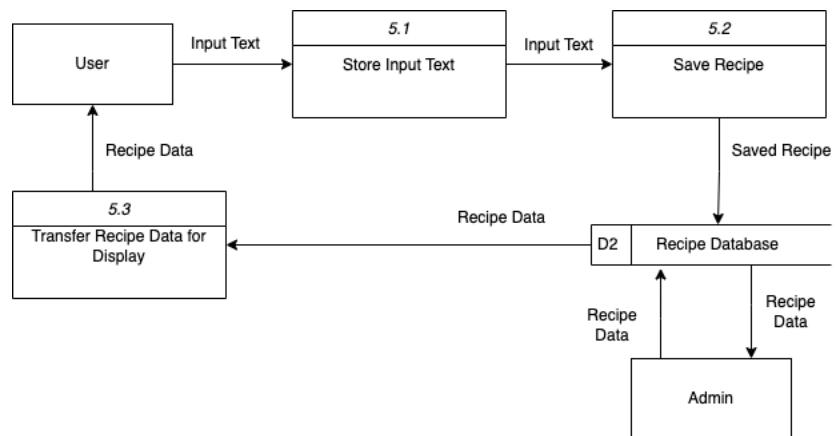
7.1.2.3 User Profile Diagram



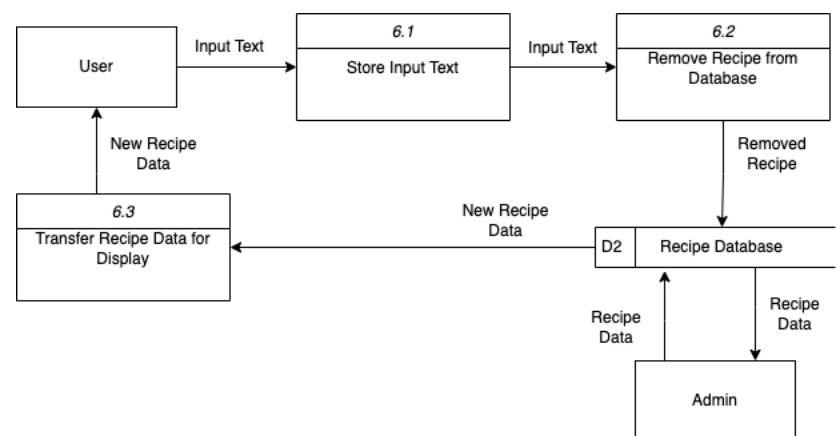
7.1.2.4 Searching Recipe Diagram



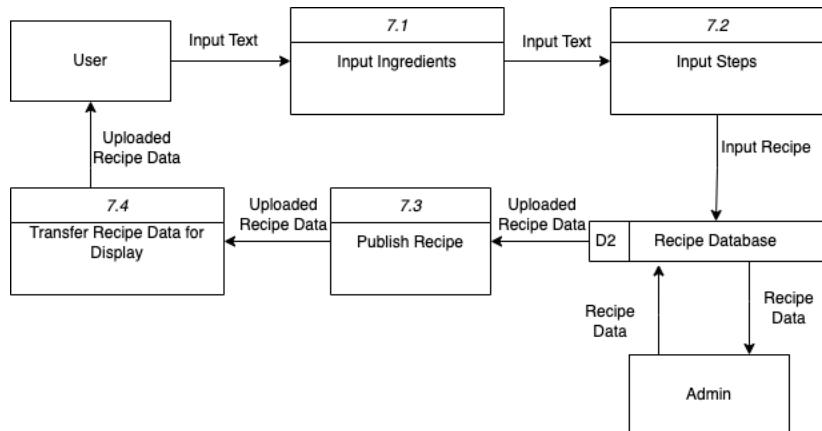
7.1.2.5 Saving/Storing Recipe Diagram



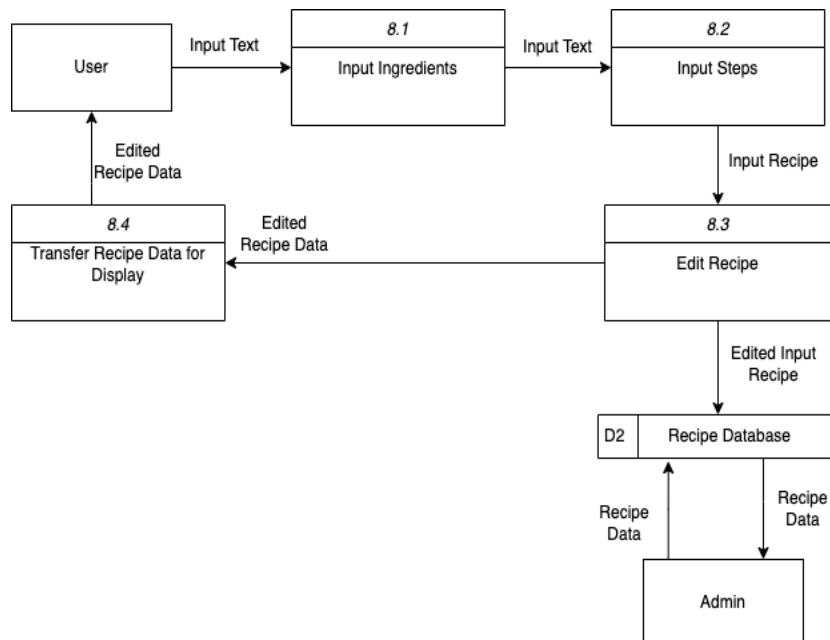
7.1.2.6 Deleting Recipe Diagram



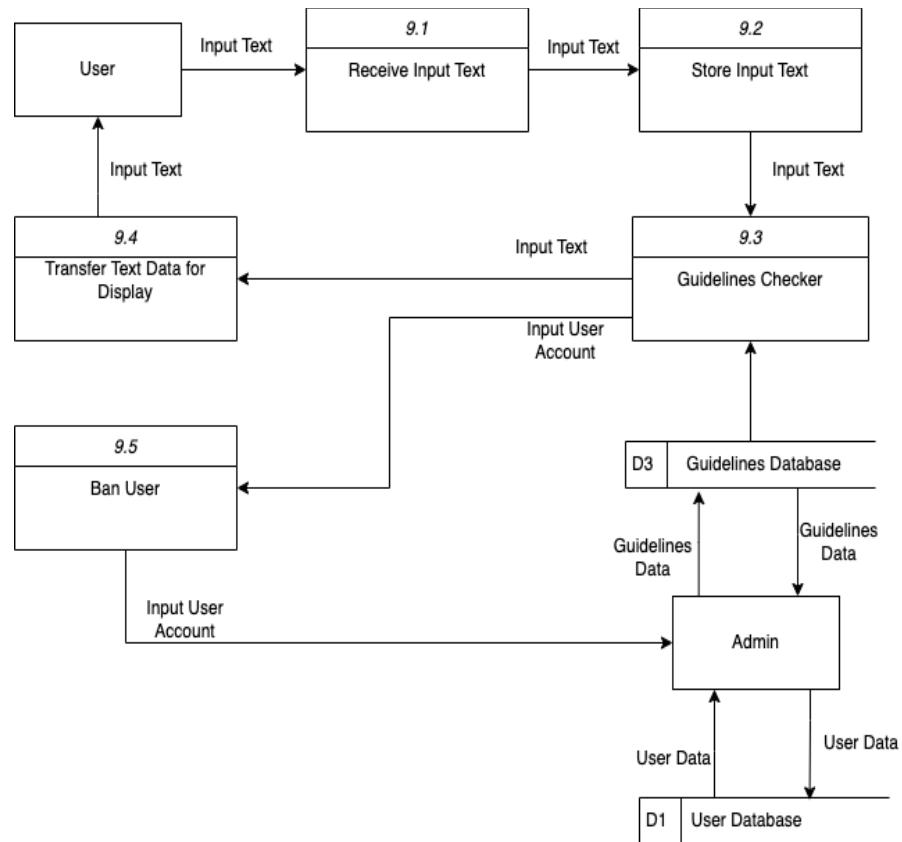
7.1.2.7 Upload/Publish Recipe Diagram



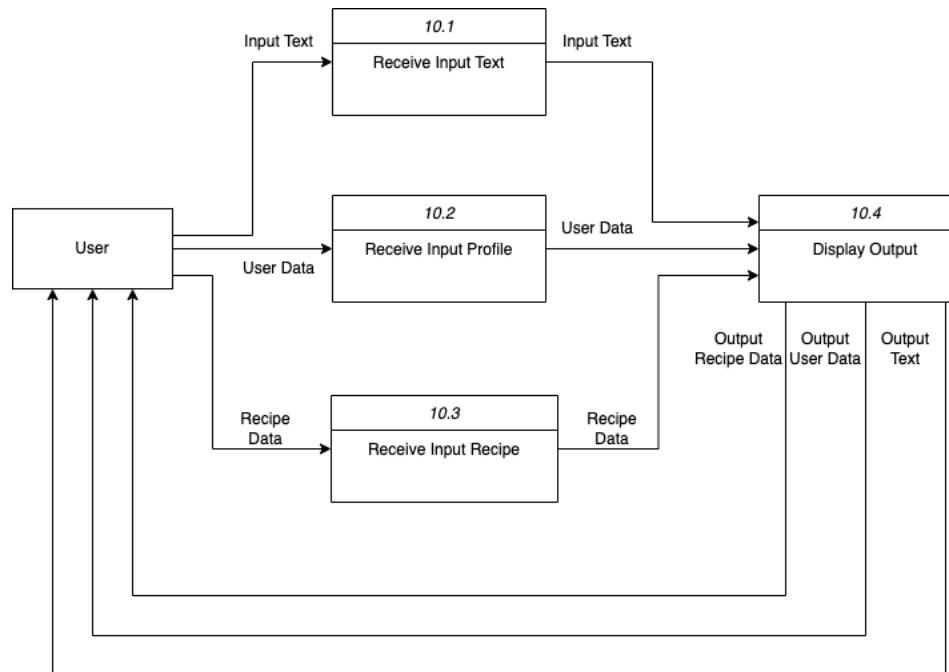
7.1.2.8 Editing Recipe Diagram



7.1.2.9 Forums Diagram

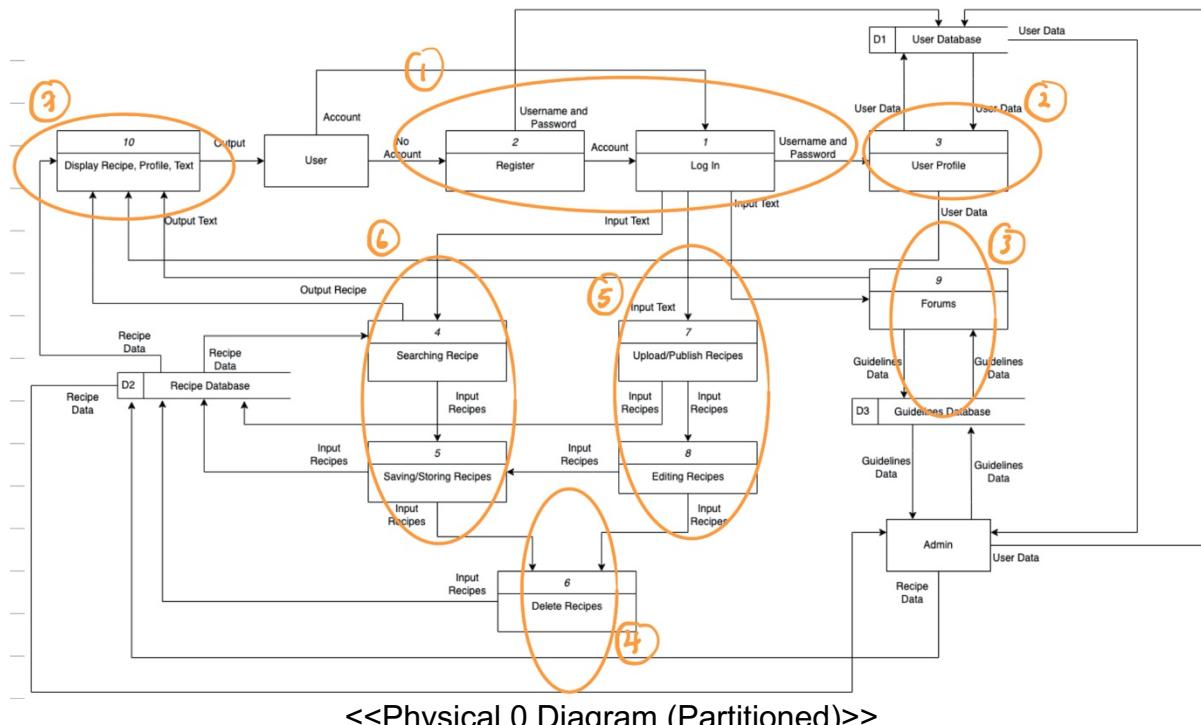


7.1.2.10 Display Recipe, Profile, Text Diagram



7.1.3. Partitioning

Partitioning Of Physical DFD TO-BE Diagram :



1. Indicate the log in process that happens when the user enter the application, the register process may happened if the user does not have an account. This two process may run simultaneously.
2. Indicate that this process will perform any functionalities that involves User Profile. This involves, editing, and saving user username and user profile biography.
3. Indicate that this process uses text-based input to communicate between users in the application. This process will automatically checked the users communication based on the guidelines that have been implement by the Admin.
4. Indicate that this process is used to deleted saved recipes or the recipes that have been uploaded or published.
5. Indicate that this process will help the user to upload their own recipes into the application, while in the same time, let them edit it whenever they like.
6. Indicate that this process will help the user to search the desired recipes and saved them almost instantly.

7. Indicate that this process will do the displaying of any output received from Recipes Database, User Database and Forums which is to display searched recipes, any interface on saving, uploading, editing and deleting recipes, also displaying the user profile and text's from the forums.

7.1.4. CRUD Matrix

The CRUD Matrix are developed for the purpose of representing where each of the processes that are happening in our system occurs in our system. All of this are represented as in a data store. Below are the CRUD Matrix that are developed to showcase the processes of what happening in our system in tabular form.

Process	User Database, D1	Recipe Database, D2	Guidelines Database, D3
Log In	R		
Register	C		
User Profile	RU		
Search Recipe		R	
Save/Store Recipe		C	
Upload/Publish Recipe		C	
Edit Recipe		U	
Delete Recipe		D	
Display Recipe, Profile, Text	R	R	
Forums			R
Admin	RUD	RUD	RUD

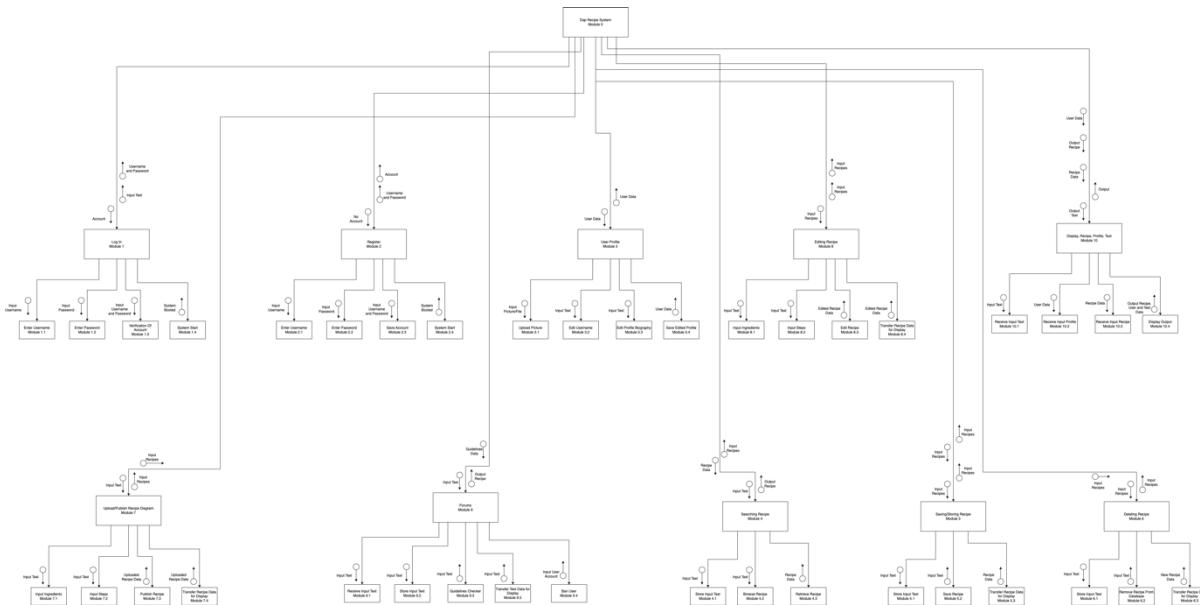
7.1.5. Event Response Table

This event response table are created to create a data flow diagram by analysing each event and the data used and produced by the event. Every row in the table below represents a data flow diagram of our application and used to create a single process on a data flow diagram. The table below are our application Event Response Table that we have came up that specifically created to analyse each event in our application.

Event	Trigger	Source	Process	Response
Users Registers	User submits registration form	User	Register	Create new user account
Users Log In	User submits login form	User	Log In	Authenticate user
User views profile	User requests profile view	User	User Profile	Display user profile data
User searches for a recipe	User inputs search query	User	Searching Recipe	Retrieve recipes from database
User saves a recipe	User saves recipe	User	Saving/Storing Recipes	Store recipe in database
User deletes a recipe	User deletes recipe	User	Delete Recipes	Remove recipe from database
User uploads/publishes a recipe	User submits new recipe	User	Upload/Publish Recipes	Store new recipe in database
User edits a recipe	User edits existing recipe	User	Editing Recipes	Update recipe in database
User participates in forums	User posts or reads forum data	User	Forums	Display forum data
User views recipes/profile/text	User requests data	User	Display Recipe/Profile	Display requested data
Admin manages users	Admin performs user operations	Admin	Admin	Perform CRUD on user data
Admin manages recipes	Admin performs recipe operations	Admin	Admin	Perform CRUD on recipe data
Admin manages guidelines	Admin performs guideline operations	Admin	Admin	Perform CRUD on guidelines data

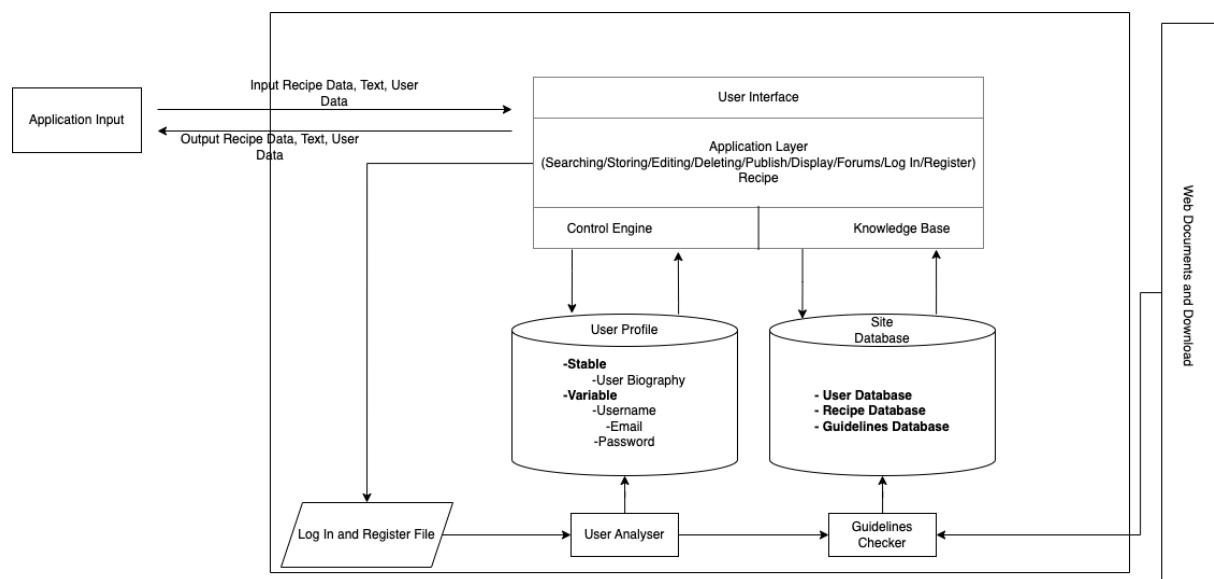
7.1.6. Structure Chart

Below are our Structure Chart that we have created to showcase all of our business functions and processes. The purpose of this chart is to showcase the top-down representation of business functions and processes and to show the program modules and the relationships among them.



7.1.7. System Architecture

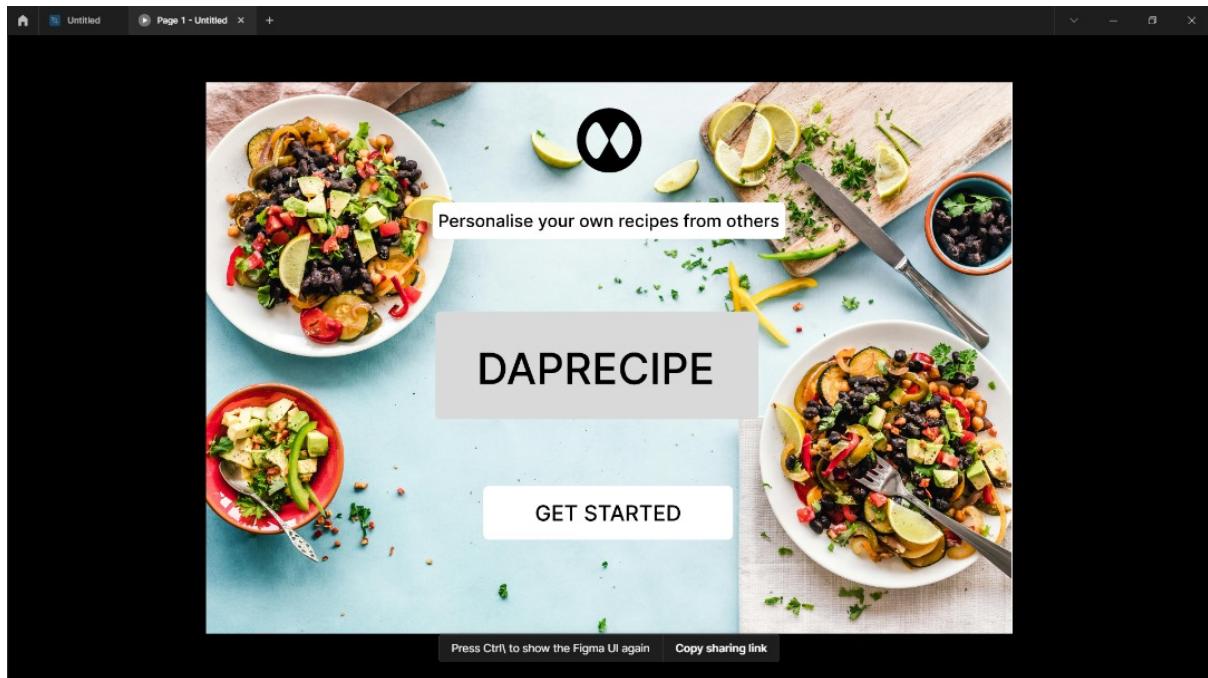
Below are our system architecture which translates the logical design of our application system into a physical blueprint or architecture. We have managed to combine all hardware, software, data, procedures and people to accomplish the specific sets of function needed for our application. This is also includes network support, processing methods and security specifically in our case, data security.



8.0 System Wireframe (Input Design, Output Design)

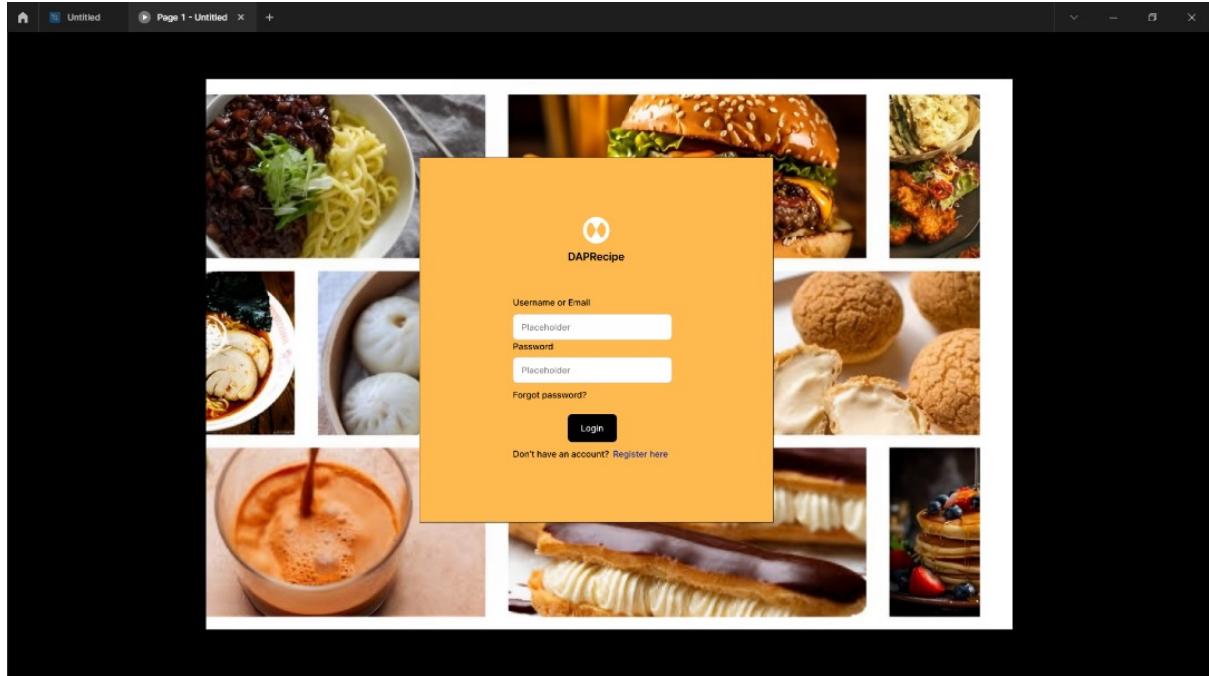
8.1 Welcome Page

This page is the Welcome page or the first page that the user will encounter when opening our application.



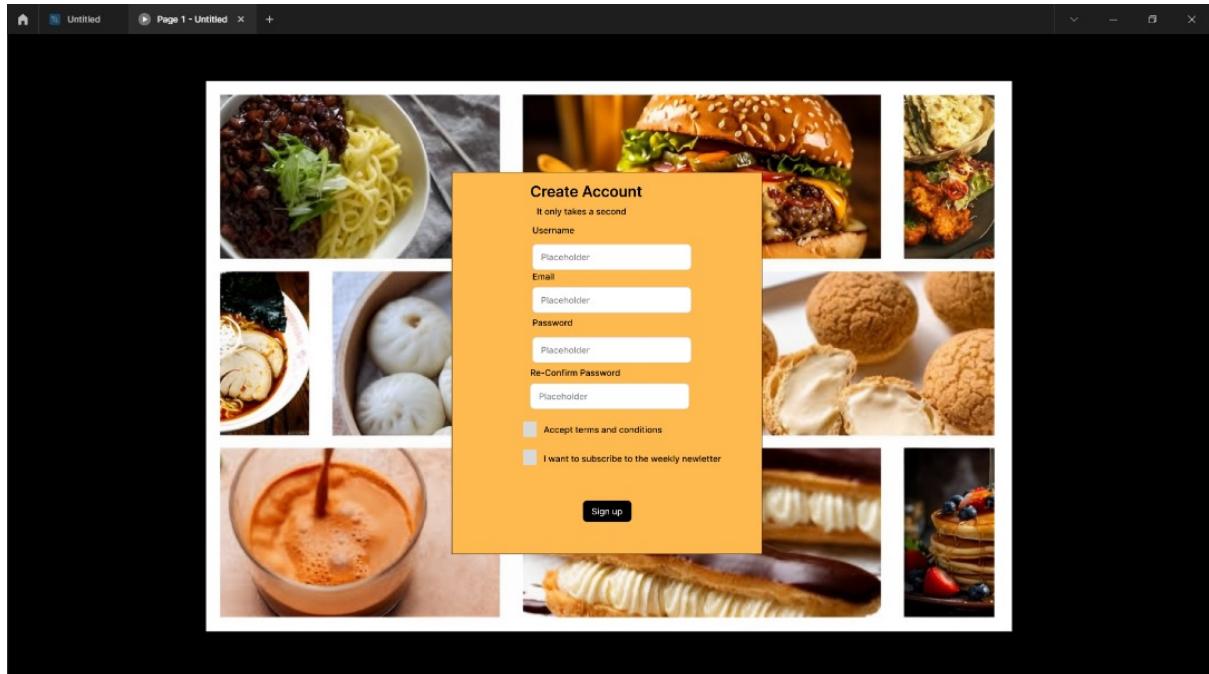
8.2 Log In

To enter the application, the user are needed to enter their username and password that have been created during the creation of account for this application.



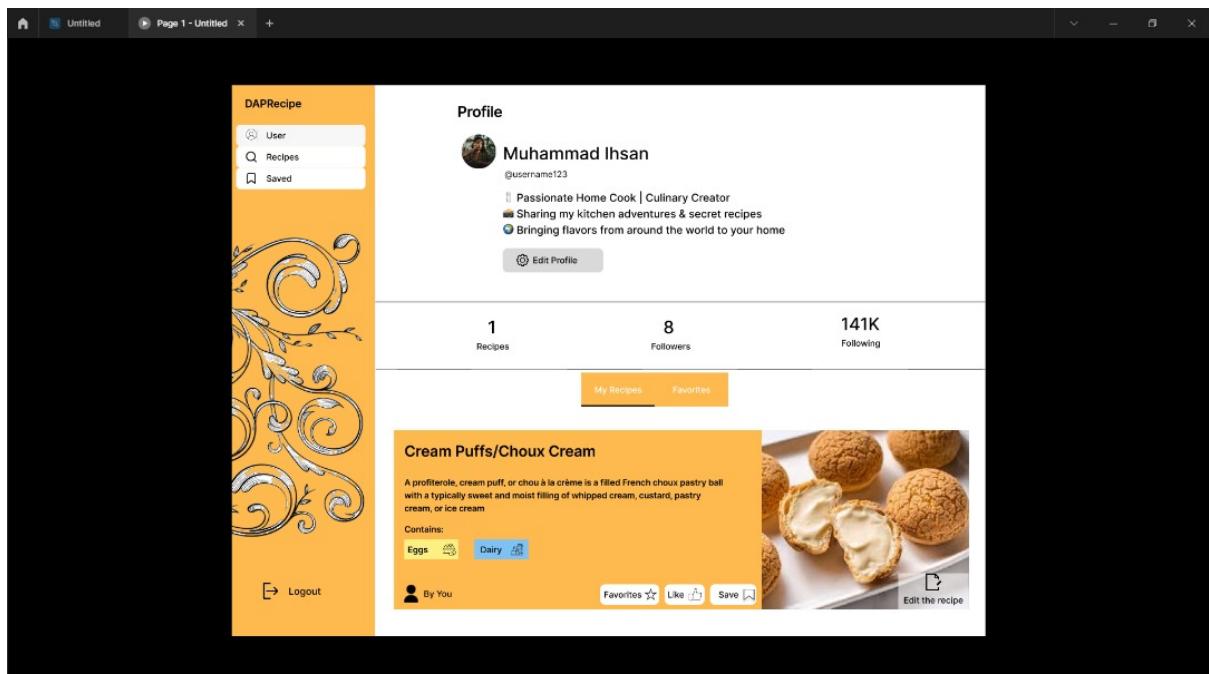
8.3 Register

This are the page if the user have not yet created an account for log in. The user are needed to enter the required fields to sign up.



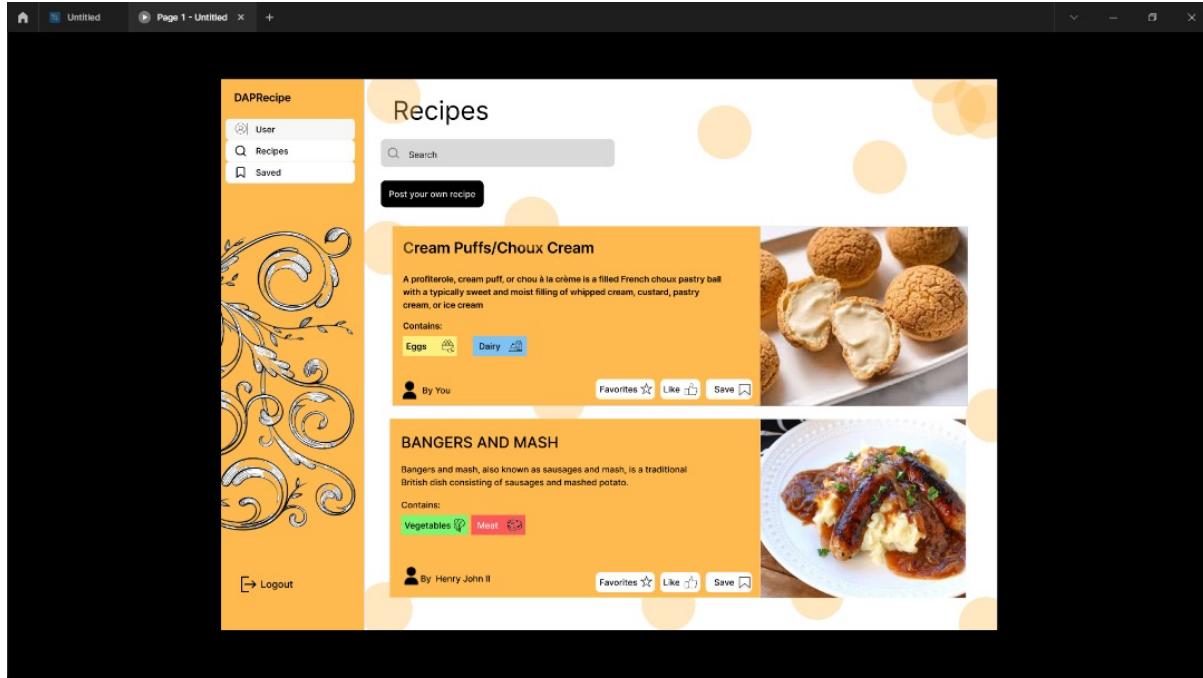
8.4 User Profile

This are the user profile for the user that have created its account. It consist of its username, profile biography, favourites recipes and the user published recipes.



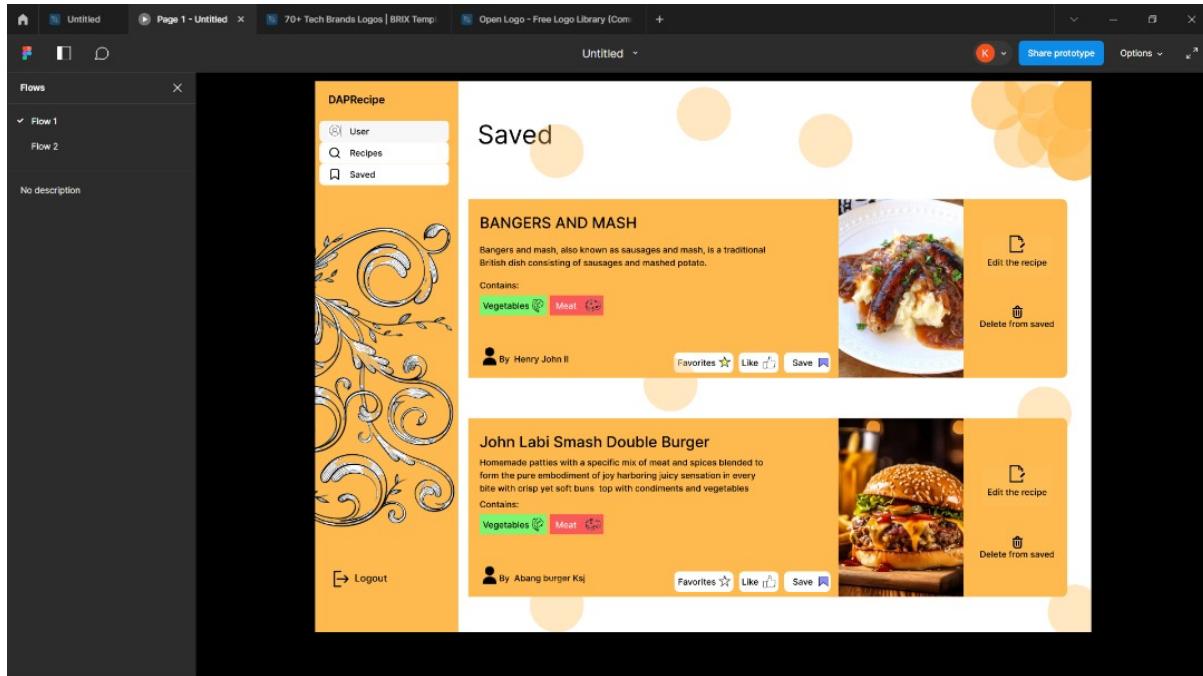
8.5 Searching Recipe

This is the main page where we can search the recipes that we want to find. We can press the search button and type in any recipes we desired.



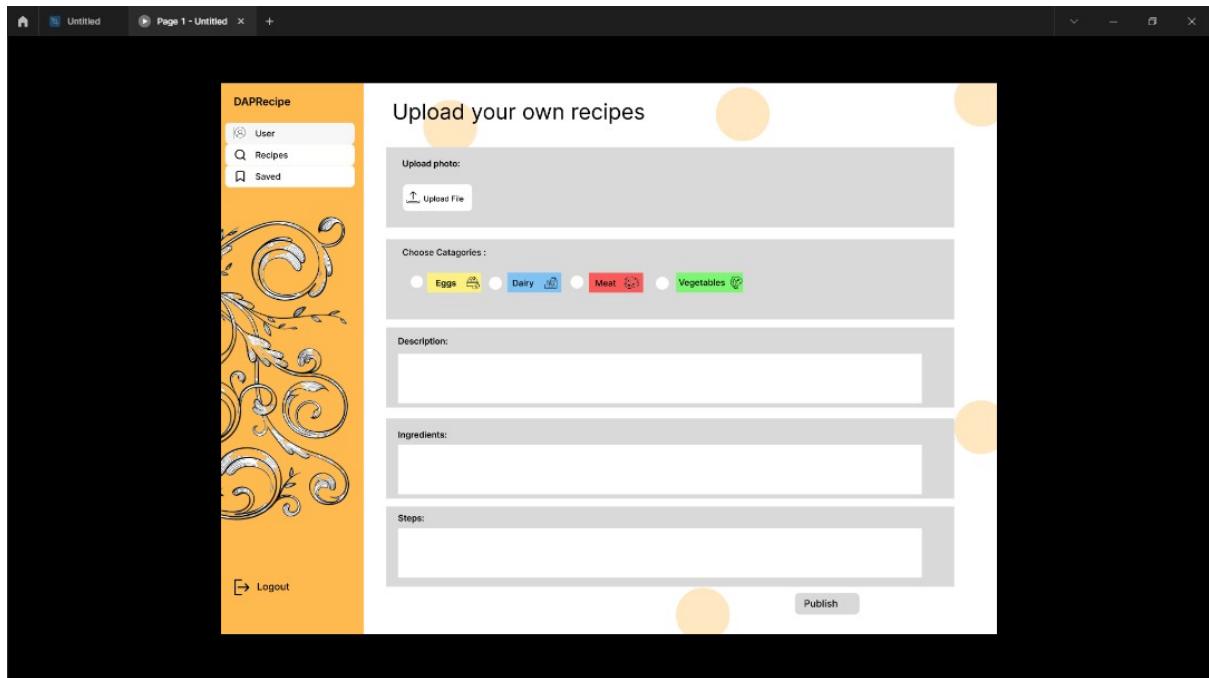
8.6 Save Recipe

This is the saved recipe which is the page where all of our recipe are saved. This is done by pressing the save button during the search of our recipes.



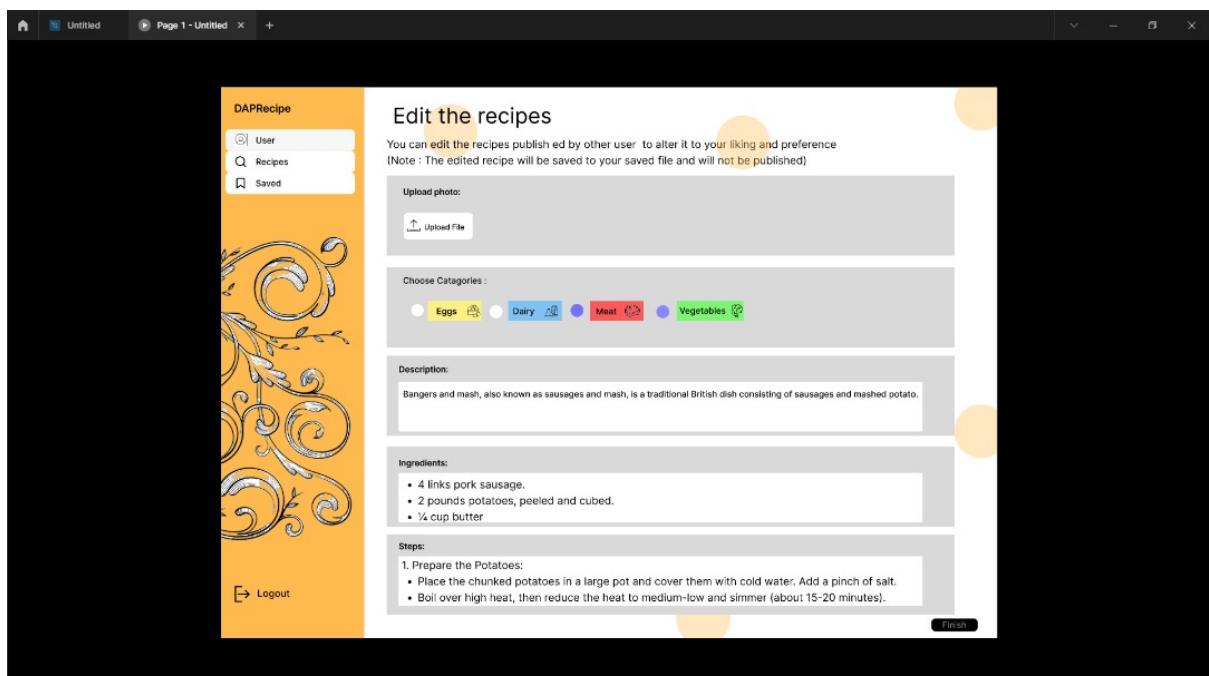
8.7 Publish Recipe

This is page where we can published our own recipe after pressing the “Post Your Own Recipe” in the main recipe page. By filling the necessary pages, we can upload our own recipes.



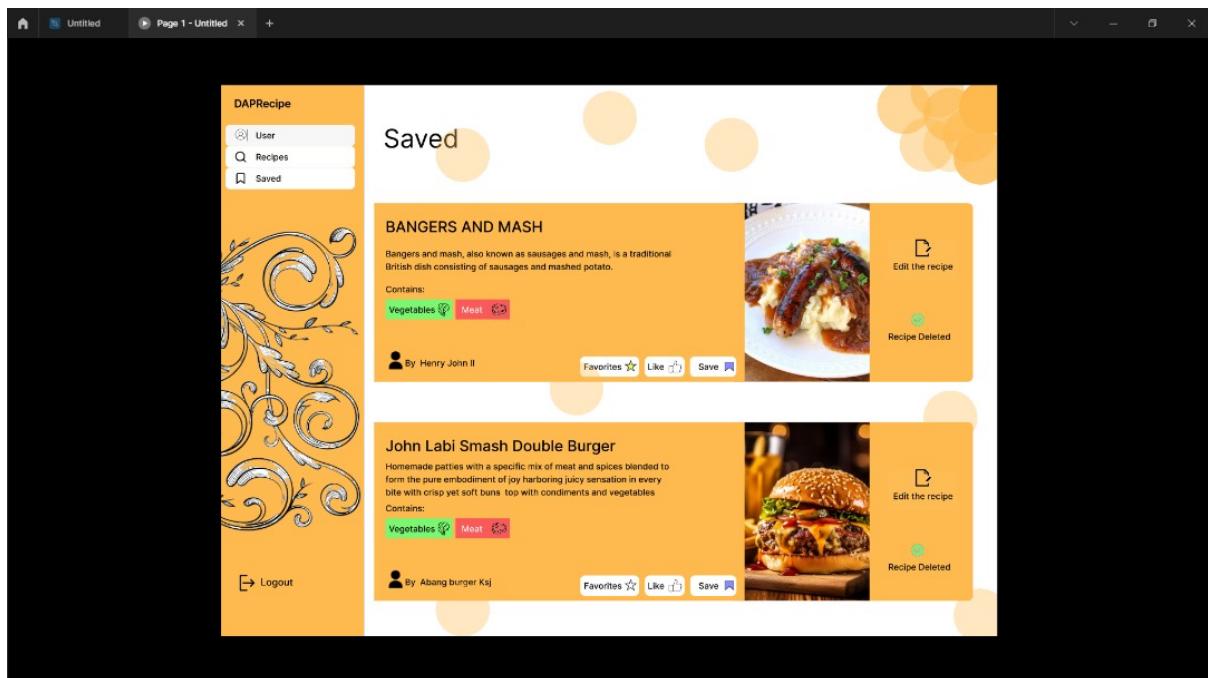
8.8 Edit Recipe

For the recipes that we have uploaded, we may edit it for future improvements.



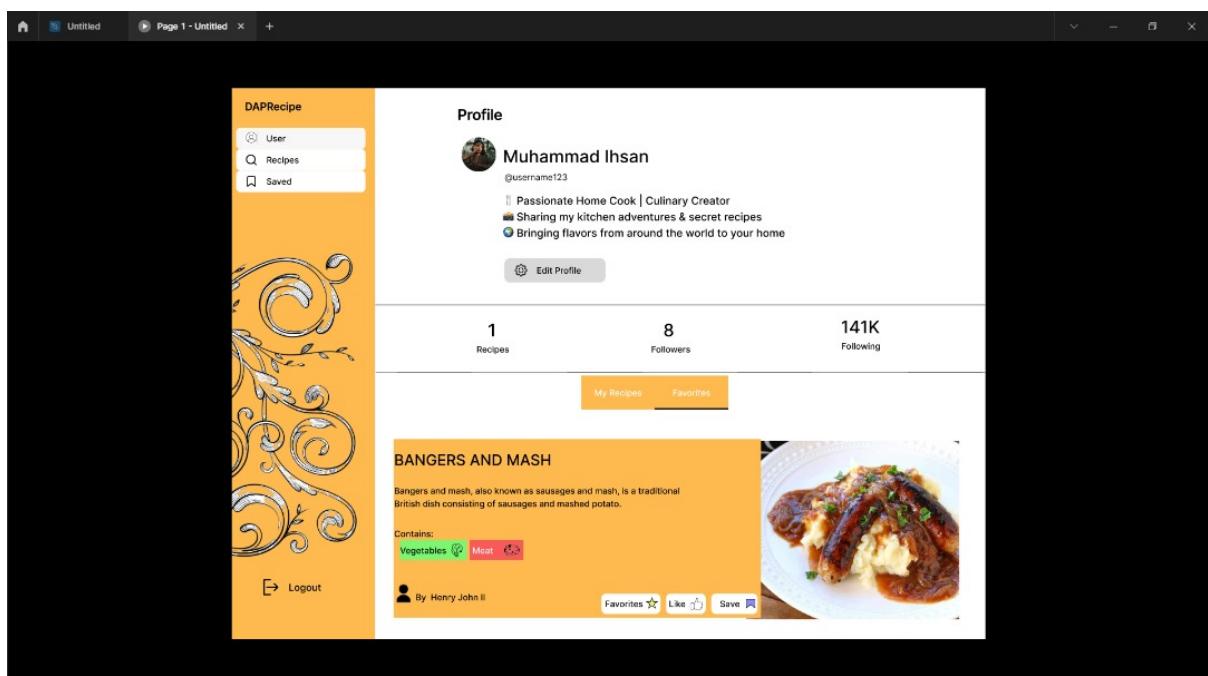
8.9 Delete Recipe

This is the delete page located at the same part where the saved recipes are. We can delete the recipes we no longer want or needed here by pressing the “Delete Recipe” button.



8.10 Favourites Recipe

In the User Profile page, we can find the favourites recipe, where we can save the our favourite recipes.



9.0 Summary of the proposed system.

Our recipe application system offers a powerful platform designed to enhance the culinary journey of its users, allowing them to discover, share, and manage recipes. The application features a recipe database with advanced search and filter options, making it easy for users to find recipes that match their specific needs and preferences. By enabling users to upload their own recipes and share cooking tips, the system creates a community of cooking enthusiasts who can engage with one another through comments, ratings, and reviews. Personalised recommendations, user profiles, and interactive features like step-by-step cooking instructions and video tutorials further enhance the user experience, making the app both enjoyable and practical.

The technical implementation of our system ensures data integrity and security, with great data management and secure authentication protocols safeguarding user information. The cloud infrastructure allows the application to scale very large, accommodating a growing user base and handling high traffic volumes without the decrease of performance. Integrated analytics tools track user behaviour and preferences, providing insights to continuously improve the app's features, while recipe performance metrics help identify trends and enhance recommendations.

Our recipe application not only simplifies the process of finding and managing recipes but also creates an engaging environment where cooking enthusiasts can succeed. It changes the culinary experience by offering magnificent features and create a sense of community among its users. By integrating excellent technology with an understanding of user needs, the system stands as a comprehensive solution that enhances cooking and brings people together through their shared passion for food. This system enhances the culinary experiences of its users and offers a welcoming space for the cooking community to connect and improve.