

IT 2143 Visual Computing  
Group Project

GROUP B1

# HAPPY BITES

ENJOY YOUR FOOD AT YOUR PLACE

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# 1. Introduction

In today's fast-paced lifestyle, managing meals efficiently and preparing nutritious recipes is a priority for many individuals. Happy Bites is designed to streamline the meal preparation process, making it easier for users to organize, discover, and plan their daily or weekly meals.

The application provides a comprehensive recipe database where users can add, edit, and delete their favorite recipes. Each recipe entry includes details such as ingredients, cooking instructions. Users can add their opinion in the special notes section.

Users can plan their meals effortlessly by selecting recipes from the database. The application offers a user-friendly grid interface for organizing breakfast, lunch, dinner. This feature facilitates a systematic approach to meal planning, helping users maintain a balanced and varied diet.

One of the standout features is the ability to generate a shopping list based on selected recipes. The application analyzes the ingredients required for chosen recipes and compiles a comprehensive grocery list. This not only saves time but also ensures users have all the necessary items on hand.

The application includes a powerful search functionality allowing users to find recipes based on ingredients, cuisine, or dietary preferences. Filters for vegetarian, vegan, snacks, or other dietary options make it easy for users to discover recipes that align with their preferences.

With an intuitive and visually appealing user interface, the application is accessible to users of all technical backgrounds. The navigation is designed to be straightforward, ensuring a seamless user experience

## 2. Objectives

### **User-Friendly Interface:**

- Design a user-friendly interface that allows users to easily navigate through recipes, search for specific recipes, and add new recipes.

### **Recipe Management:**

- Provide a platform for users to manage their recipes efficiently, including adding new recipes, editing existing ones, and deleting recipes.

### **Categorization and Organization:**

- Implement a system for categorizing recipes, allowing users to organize recipes according to their favorability.

### **Search and Filter Functionality:**

- Enable users to search for recipes based on ingredients, cuisine, cooking time, or other criteria. Implement filters to make it easy for users to find specific recipes.

### **Ingredient Tracking:**

- Include features that help users manage their ingredients, such as a shopping list generator or the ability to check ingredient availability for a specific recipe.

### **Meal Planning:**

- Integrate features for meal planning, allowing users to schedule recipes for specific dates, create weekly meal plans, and generate shopping lists based on planned meals.

### **Feedback and Ratings:**

- Incorporate a system for users to leave feedback or ratings on recipes. This can help others gauge the popularity and quality of a recipe.

### **Accessibility and Responsiveness:**

- Ensure that the application is accessible to users with different abilities. Design a responsive interface that works well on various screen sizes and resolutions.

### **Database Integration:**

- Implement a database to store recipe data, allowing for scalability, data persistence, and efficient retrieval.

### **Offline Mode:**

- Include functionality that allows users to access and use the application even when offline, ensuring a seamless experience regardless of internet connectivity.

## 3. Methodology

### 3. a Requirements Gathering

To attain the target we used following methodologies to gather requirements.

1. Observations
2. Interface Analysis
3. Prototyping

#### Observations

We spend time with people to see how they perform their tasks in a real-life job setting. So it helped us to address the requirements specifically those who will benefit from them.

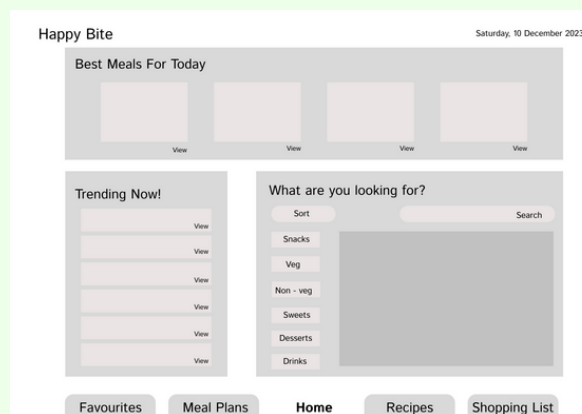
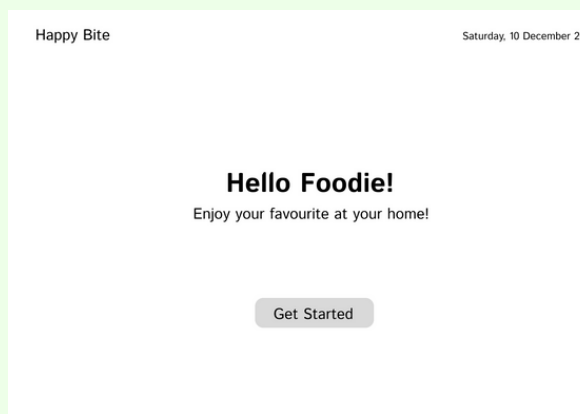
#### Interface Analysis

Interface analysis helps us create usable, effective and popular software for the consumer. With interface analysis, we could able to review how a person uses the system and how the system internally works.

For that we used

- Yummly : <https://www.yummly.com/>
- Paprika : <https://www.paprikaapp.com/>
- Kitchen Stories : <https://pages.kitchenstories.com/en/app>

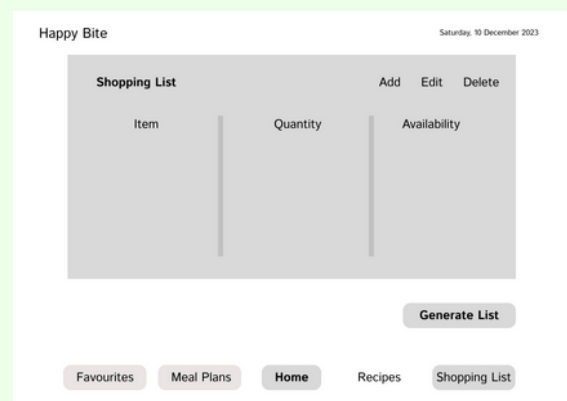
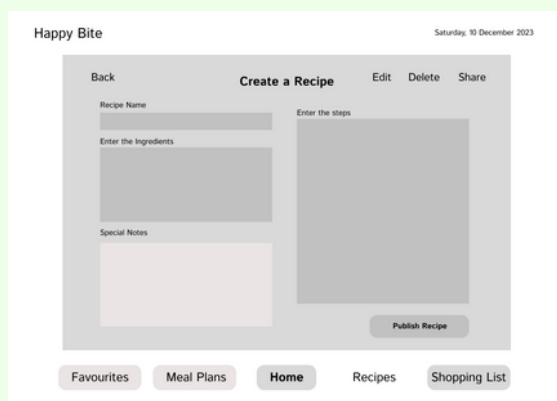
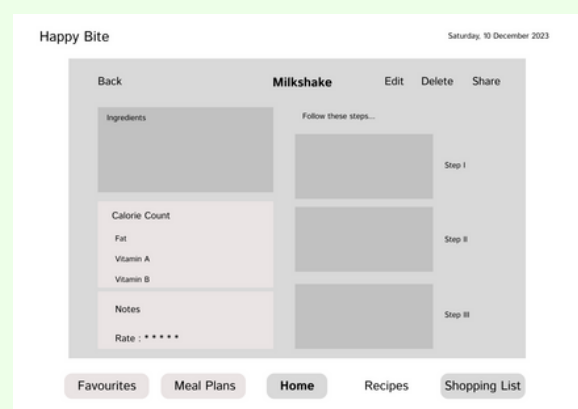
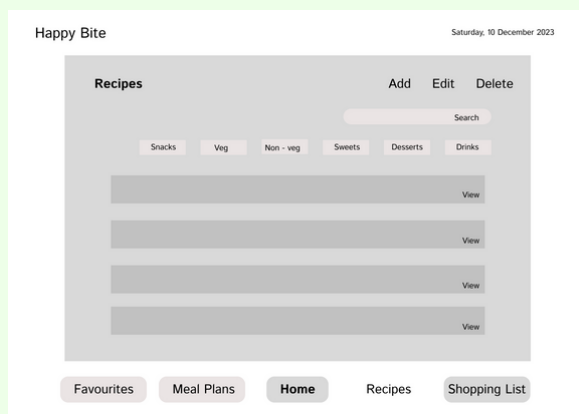
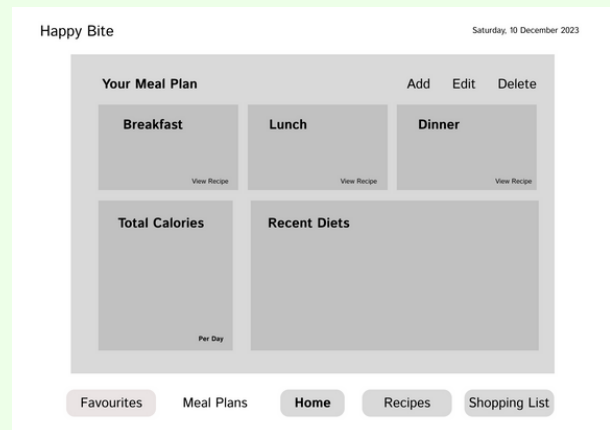
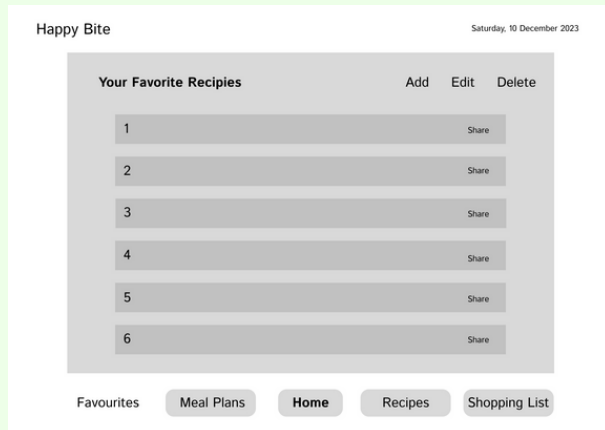
#### Prototyping



# 3. Methodology

## 3. a Requirements Gathering

### Prototyping



## **3. Methodology**

### **3. b. Tools and Technologies**

#### **UI/UX Design**

- Figma

#### **Development Platform**

- Visual Studio

#### **Database Management System**

- SQL Server Data Tools (SSDT)
- SQL Server Management System (SSMS)

#### **Version Control**

- Git (Github)

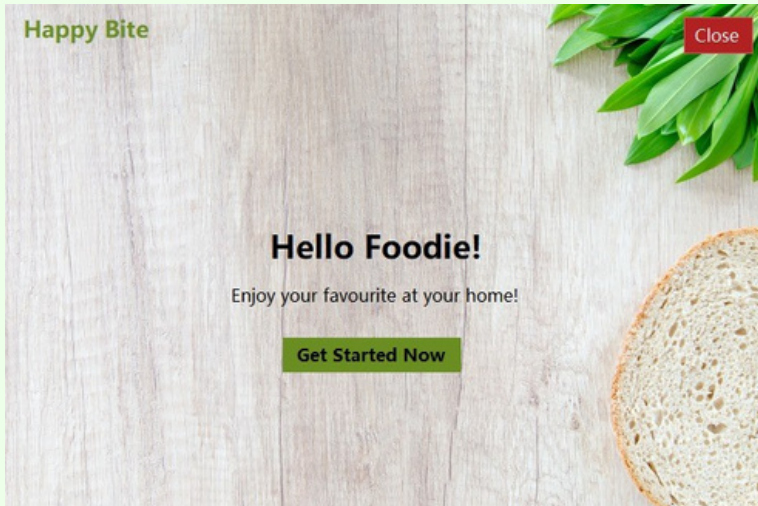
## 4. Implementation

- Clearly define the purpose and goals of our Happy Bites.
- Identify the core functionalities we want to implement, such as adding, editing, and deleting recipes, meal planning, and generating grocery lists.
- Create user stories and use cases that outline how different types of users will interact with our application.
- Design the database schema to store recipe data. Consider tables for recipes, ingredients, categories, and user information.
- Install and configure your chosen development tools, including the IDE (e.g., Visual Studio Code), version control (Git), and a database management system.
- Implement backend services to handle:
  - User authentication and authorization.
  - Recipe management (CRUD operations).
  - Meal planning logic (CRUD operations).
  - Grocery list generation.
- Set up user registration, login, and logout functionalities.
- Implement security measures to protect user data.
- Conduct unit testing for individual components.
- Configure our database in a production environment.
- Implement monitoring tools to track application performance.
- Document our code, APIs, and database schema.



## 4. Implementation

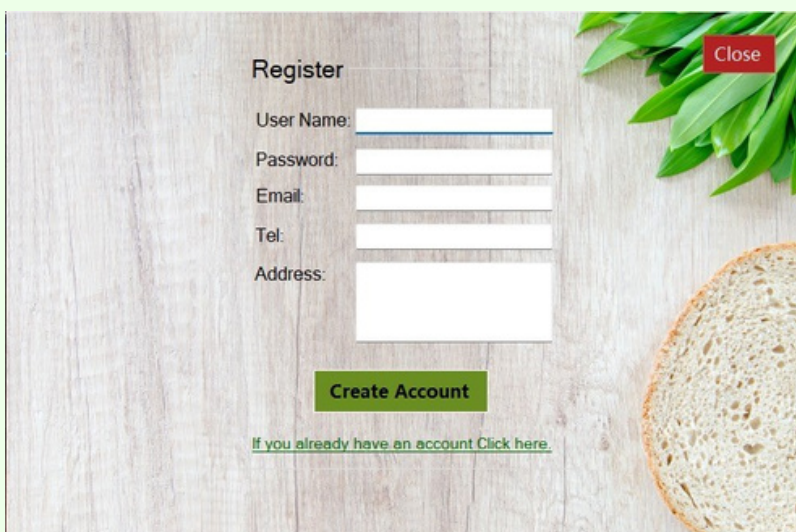
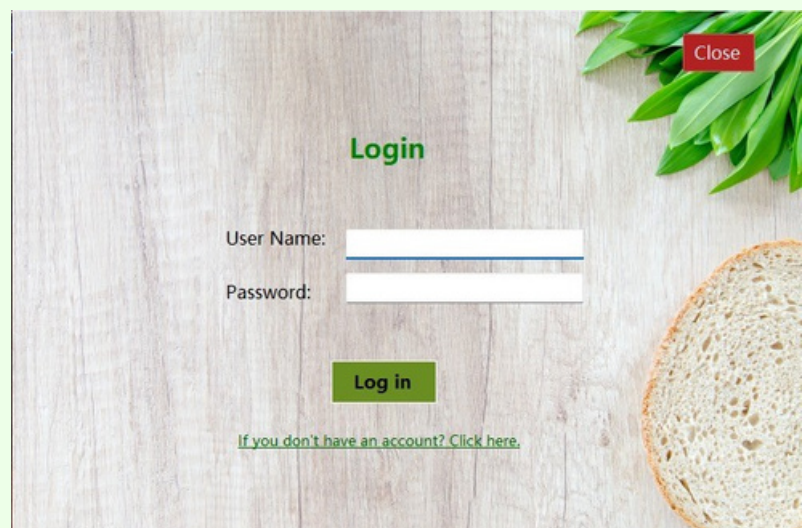
### 4. a. Interfaces



**Welcome Window**  
**Get Start Now** will take to the login page directly.

### **Login Window**

This let existing users to log in to the system. Successful login takes to the Home Window.

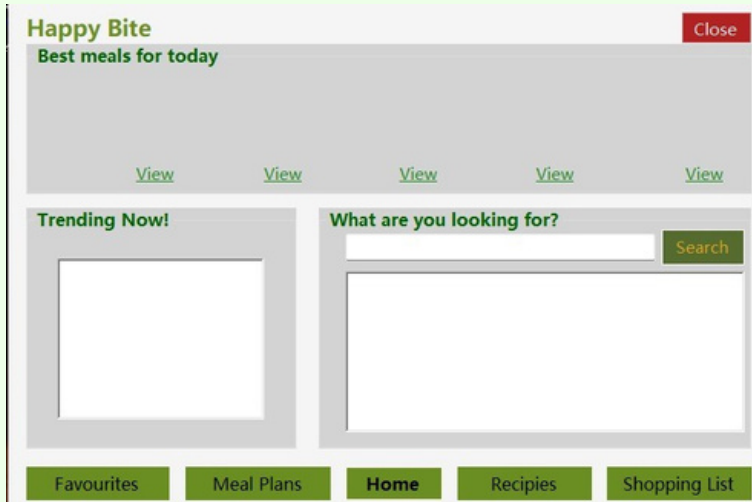


### **Registration Window**

This let new users to register in to the system. Successful registration takes to the Login Window.

## 4. Implementation

### 4. a. Interfaces



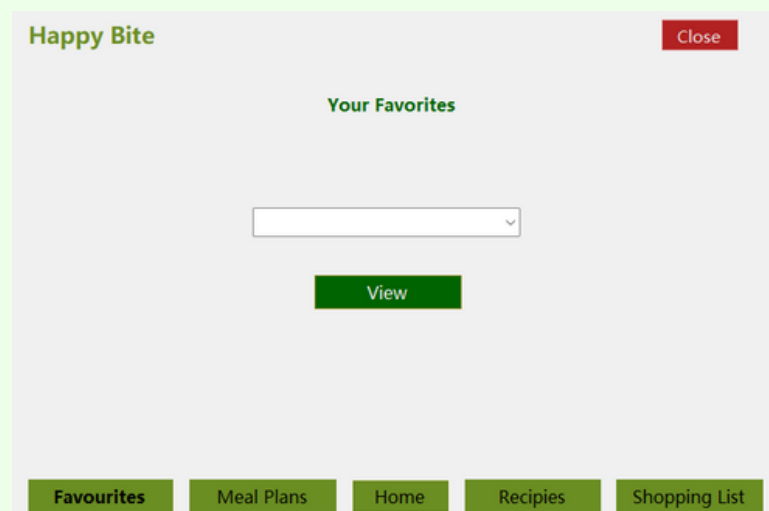
#### Home Window

Suggests the best meals for the day.

Gives the trending meals and Let the user to search the recipe and check it's availability.

#### Favorites Window

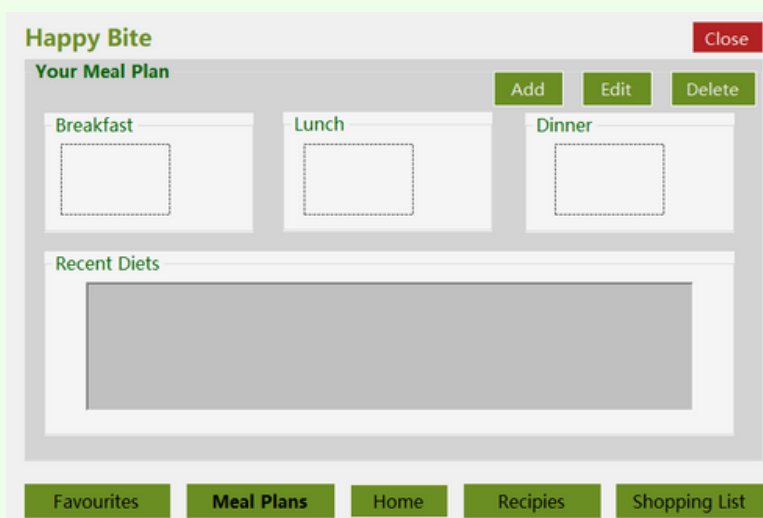
Allows user to select and view their favorite recipes.



#### Meal Plans

Display the current meal plans and display the recent diets.

Add and Edit take you to those windows and user can delete the meal plans.



## 4. Implementation

### 4. a. Interfaces

The 'Add Meal Plan' interface features a title bar with 'Happy Bite' and a 'Close' button. Below the title bar is a 'Back' button and the 'Add Meal Plan' title. The main area contains three dropdown menus for 'Breakfast', 'Lunch', and 'Dinner'. At the bottom of the form is an 'Add Meal Plan' button. A navigation bar at the very bottom includes buttons for 'Favourites', 'Meal Plans', 'Home', 'Recipies', and 'Shopping List'.

#### Add Meal Plan

User can separately set their Meals for three main courses.

#### Edit Meal Plan

User can separately update their Meals for three main courses.

The 'Update Meal Plan' interface has a title bar with 'Happy Bite' and a 'Close' button. Below the title bar is a 'Back' button and the 'Update Meal Plan' title. The main area contains three dropdown menus for 'Breakfast', 'Lunch', and 'Dinner'. At the bottom of the form is a 'Save' button. A navigation bar at the very bottom includes buttons for 'Favourites', 'Meal Plans', 'Home', 'Recipies', and 'Shopping'.

#### Recipes

User can search recipes  
Top 5 recipes from the database will be displayed.  
Fast Search is enabled with Desserts, Sweets, Non-veg, Veg and Snacks.  
Can add recipes, view recipes, edit recipes and delete.

The 'Recipies' interface features a title bar with 'Happy Bite' and a 'Close' button. Below the title bar is the 'Recipies' title, a search input field, and 'Search' and 'Add' buttons. Below these are five category buttons: 'Dessert', 'Sweets', 'Non-V', 'Veg', and 'Snacks'. A table displays the top 5 recipes with their names and 'View', 'Edit', and 'Delete' links. A navigation bar at the bottom includes buttons for 'Favourites', 'Meal Plans', 'Home', 'Recipies', and 'Shopping'.

Sponge Roll	<a href="#">View</a>	<a href="#">Edit</a>	<a href="#">Delete</a>
Egg Parota	<a href="#">View</a>	<a href="#">Edit</a>	<a href="#">Delete</a>
Spicy Rice	<a href="#">View</a>	<a href="#">Edit</a>	<a href="#">Delete</a>
Chicken Bistake	<a href="#">View</a>	<a href="#">Edit</a>	<a href="#">Delete</a>
Watermelon Smoothy	<a href="#">View</a>	<a href="#">Edit</a>	<a href="#">Delete</a>

## 4. Implementation

### 4. a. Interfaces

#### View Recipe

Through view recipe from the recipe window will take here.

Recipe name, ingredients, steps, images and if any notes added, will be displayed.

Can add ingredients to the cart.

Can go back to recipe window as well as edit recipe window.

The 'View Recipe' interface shows a recipe card with the following elements: a 'Back' button, a 'Recipe Name' field, an 'Add to Cart' button, an 'Ingredients' list, a 'Steps to follow' section, and a 'Special Notes' area. At the bottom, there is a navigation bar with buttons for 'Favourites', 'Meal Plans', 'Home', 'Recipes', and 'Shopping List'. A 'Close' button is located in the top right corner.

#### Publish Recipe

Through add recipe button the recipe window will take user to here. Recipe name, ingredients, steps and images can be added.

Users can add special notes to the recipes.

The 'Publish Recipe' interface allows users to create a new recipe. It includes a 'Back' button, a 'Recipe Name' field, an 'Ingredients' list, a 'Steps to follow' section, a 'Special Notes' area, and an 'Images' section with an 'Upload' button. A 'Publish Recipe' button is at the bottom right. The bottom navigation bar and a 'Close' button are also present.

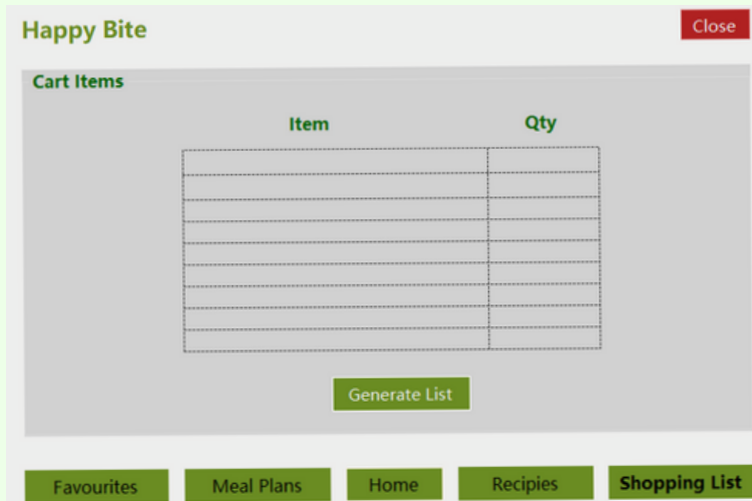
#### Edit Recipe

Recipe name, ingredients, steps, images and special notes to the recipes can be added.

The 'Edit Recipe' interface allows users to modify an existing recipe. It features a 'Back' button, a 'Recipe Name' field, an 'Ingredients' list, a 'Steps to follow' section, a 'Special Notes' area, and an 'Images' section with three placeholder boxes. A 'Save' button is at the bottom right. The bottom navigation bar and a 'Close' button are also present.

## 4. Implementation

### 4. a. Interfaces



### Shopping List

Cart items which was added from recipes will be displayed here. User can generate the Shopping list by this.

### 4. b. Database

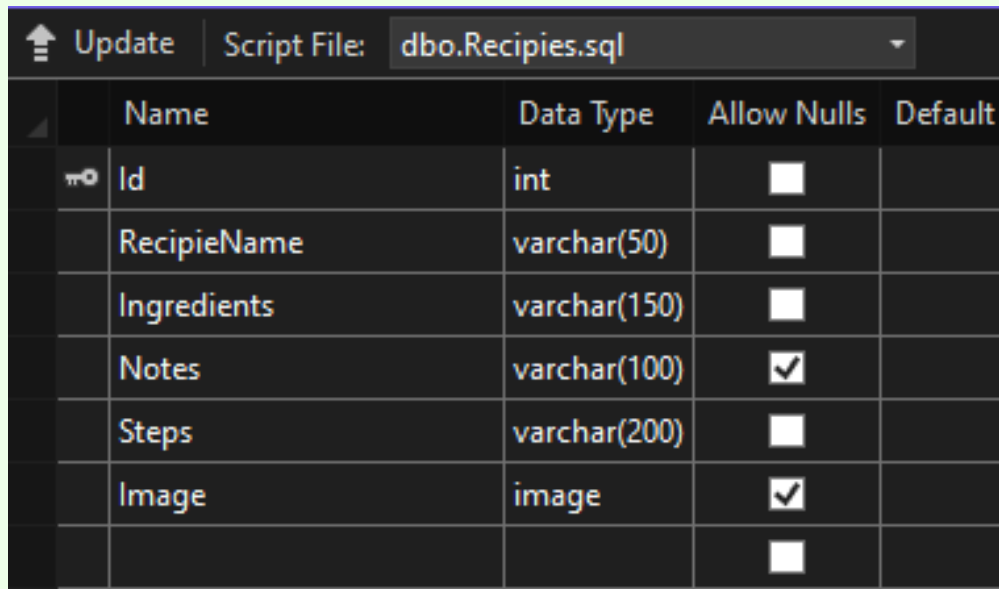
Database Name - Database.mdf

Update    Script File: <code>dbo.Users.sql</code>				
	Name	Data Type	Allow Nulls	Default
PK	Id	int	<input type="checkbox"/>	
	UserName	varchar(50)	<input type="checkbox"/>	
	Password	varchar(50)	<input type="checkbox"/>	
	Email	varchar(50)	<input type="checkbox"/>	
	Tel	int	<input type="checkbox"/>	
	Address	varchar(150)	<input type="checkbox"/>	
			<input type="checkbox"/>	

Users Table stores the Registered users details such as User Name, Password, Email, Tel and Address. Id is the primary key and it is set to 1 by default and it is auto incrementing. All the fields are required and does not allow nulls.

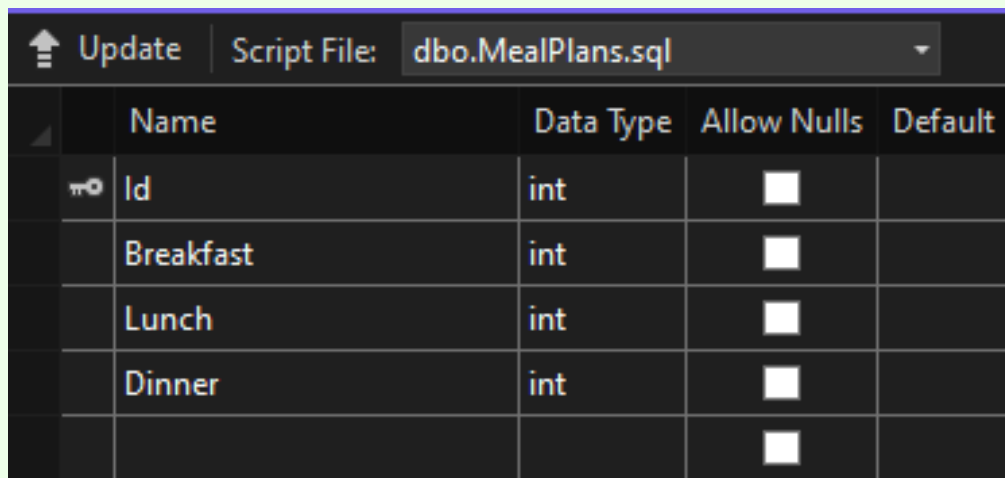
## 4. Implementation

### 4. b. Database



	Name	Data Type	Allow Nulls	Default
PK	Id	int	<input type="checkbox"/>	
	RecipieName	varchar(50)	<input type="checkbox"/>	
	Ingredients	varchar(150)	<input type="checkbox"/>	
	Notes	varchar(100)	<input checked="" type="checkbox"/>	
	Steps	varchar(200)	<input type="checkbox"/>	
	Image	image	<input checked="" type="checkbox"/>	
			<input type="checkbox"/>	

Recipes Table stores the Recipe details such as Recipe Name, Ingredients, Notes, Steps and Image. Id is the primary key and it is set to 1 by default and it is auto incrementing. All the fields are required and does not allow nulls except Notes and Image fields.



	Name	Data Type	Allow Nulls	Default
PK	Id	int	<input type="checkbox"/>	
	Breakfast	int	<input type="checkbox"/>	
	Lunch	int	<input type="checkbox"/>	
	Dinner	int	<input type="checkbox"/>	
			<input type="checkbox"/>	

Meal Plans Table stores the Meals specified for Breakfast, Lunch and Dinner. Id is the primary key and it is set to 1 by default and it is auto incrementing. Breakfast, Lunch, and Dinner stores the Recipe Id which is retrieved from the Recipe table. There fore they have the foreign key reference to Recipe table. All the fields are required and does not allow nulls.



## 4. Implementation

### 4. c. Output

Results		Messages				
	ID	UserName	Password	Email	Tel	Address
1	1	Chamodi	abcd	Chamodi@gmail.com	719852311	Anu

This is the output of Users table.

## 5. Conclusion

Happy Bites offer a holistic solution for individuals seeking a convenient and efficient way to manage their culinary preferences. By combining recipe management, meal planning, and grocery list generation, the application aims to simplify the cooking process and inspire users to explore new culinary horizons. Whether you are a seasoned home cook or just starting on your culinary journey, this application is designed to be your companion in the kitchen.



## 6. References

- <https://www.yummly.com/>
- <https://www.paprikaapp.com/>
- <https://www.indeed.com/career-advice/career-development/requirement-gathering-techniques>
- <https://learn.microsoft.com/en-us/sql/>
- <https://www.youtube.com/>
- <https://stackoverflow.com/>
- <https://www.c-sharpcorner.com/>