

**A FIELD PROJECT REPORT ON**  
**FOOD PROCESSING AND ITS MEASUREMENTS**

Submitted in partial fulfilment of the requirements for the award of the degree

**BACHELOR OF TECHNOLOGY**  
**in**  
**COMPUTER SCIENCE AND ENGINEERING**

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## **CERTIFICATE**

This is to certify that the field project entitled “**FOOD PROCESSING AND ITS MEASUREMENTS**” being submitted by (231FA04296),(231FA04309), (231FA04361) and (231FA04G17) in partial fulfilment of Bachelor of Technology in the Department of computer science and engineering, Vignan’s Foundation For Science Technology & Research (Deemed to be University), Vadlamudi, Guntur District, Andhra Pradesh, India, is a bonafide work carried out by them under my guidance and supervision.

Head of the Department

Guide

## **DECLARATION**

We hereby declare that our project work described in the field project titled **“FOOD PROCESSING AND ITS MEASUREMENTS”** which is being submitted by us for the partial fulfilment in the department of Computer science and engineering, Vignan’s Foundation for Science, Technology and Research (Deemed to be University), Vadlamudi, Guntur, Andhra Pradesh, and the result of investigations are carried out by us under the guidance of the Dr. O.BHASKAR

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# CHAPTER 1

## INTRODUCTION

# 1. INTRODUCTION

## 1.1 problem definition

Cooking is an essential part of daily life, but it often comes with challenges such as determining ingredient quantities, meal planning, and ensuring efficiency in the kitchen. Traditional methods of calculating ingredient amounts require manual effort, which can be time-consuming and prone to errors. Additionally, searching for recipes and following instructions can be overwhelming, especially for beginners.

To address these challenges, this project introduces an AI-powered food quantity calculator integrated into a user-friendly webpage. By leveraging speech recognition technology and automated calculations, the system enhances the cooking experience by simplifying ingredient measurement, reducing food waste, and providing interactive guidance. This innovation ensures that users can prepare meals with ease, whether they are experienced chefs or cooking for the first time.

This project is designed to assist users in managing recipe calculations efficiently using an AI-driven food quantity calculator. The system features:

## 1.2 existing system

**Dynamic Ingredient Calculation:** Users can select a dish and specify the number of people, and the system will automatically adjust the ingredient quantities accordingly

**AI Voice Assistance:** Hands-free operation allows users to verbally request a dish, and the system responds with ingredient details and instructional videos.

**Recipe Video Integration:** Users can access instructional videos for step-by-step cooking guidance.

**Real-Time Adjustments:** The system suggests alternative ingredients based on availability and dietary preferences.

**Smart Meal Planning:** An integrated recommendation engine suggests complementary dishes to create balanced meals.

**Cooking Time Optimization:** AI-driven recommendations streamline meal preparation steps, ensuring efficient time management in the kitchen.

**User-Friendly Interface:** Designed for easy navigation, the system provides clear instructions and real-time assistance.

**Nutritional Analysis:** The system provides insights into the nutritional content of meals, helping users make informed dietary choices.

**Multilingual Support:** The AI assistant can interact in multiple languages, making it accessible to a diverse audience.

**Cloud-Based Recipe Storage:** Users can save and access their favorite recipes anytime, ensuring a personalized experience.

**Real-Time Troubleshooting:** AI assistance helps users troubleshoot cooking issues instantly, ensuring a seamless cooking experience.

**Grocery List Generation:** The system automatically generates a shopping list based on selected recipes, streamlining the shopping process.

**Community Interaction:** Users can share their cooking experiences, exchange tips, and review recipes, fostering an interactive cooking environment.

## **1.3 proposed system**

### **Time-Consuming Ingredient Calculation**

- Manual calculations take time and effort, leading to potential measurement errors.
- The system automates ingredient scaling based on user input, saving time and improving accuracy.
- Reducing time spent in ingredient preparation allows for faster cooking and meal readiness.

### **Lack of Hands-Free Operation**

- Traditional recipe-following methods require users to manually search and read instructions.
- AI-driven voice commands enable hands-free navigation, making the cooking process smoother.
- Users can cook while receiving verbal instructions, reducing distractions and multitasking inefficiencies.

### **Difficulty in Finding the Right Recipe**

- Users often struggle to find reliable recipes with accurate measurements.
- The system provides structured recipe data, ensuring consistency in ingredient proportions.
- Personalized recommendations help users discover new recipes based on dietary preferences and past selections.

### **Food Waste Due to Incorrect Measurements**

- Overestimating or underestimating ingredient quantities can lead to waste.
- The system precisely calculates ingredient amounts, minimizing waste and optimizing food usage.

- Smart portioning ensures that ingredients are used efficiently, reducing overall kitchen waste.

### **Need for Adaptive Recipe Customization**

- Some users have dietary restrictions or ingredient unavailability.
- The AI suggests alternative ingredients, making recipes more adaptable and inclusive.
- Real-time ingredient substitution helps users continue cooking without needing last-minute grocery runs.

### **Lack of Interactive Cooking Assistance**

- Users may find text-based instructions difficult to follow.
- The system integrates instructional videos and AI guidance for an interactive cooking experience.
- Step-by-step video demonstrations ensure clarity in preparation techniques, reducing mistakes and enhancing learning.

### **Difficulty in Managing Cooking Time Efficiently**

- Without proper planning, users may struggle with timing multiple cooking steps.
- The system provides estimated cooking times and sequence recommendations for optimal workflow.
- AI-driven timers and reminders help users stay on track, preventing overcooking or undercooking dishes.
- The streamlined cooking process allows users to focus on meal quality rather than time constraints.

### **Challenges in Multi-Meal Planning**

- Planning for multiple dishes simultaneously can be complex and overwhelming.
- The AI can generate a meal plan that optimizes ingredient usage across different recipes.
- Batch cooking recommendations help users save time by preparing ingredients efficiently for multiple meals.
- The system ensures proper coordination between dishes, making the cooking process seamless and organized.

### **Lack of Nutritional Awareness**

- Users may not be aware of the nutritional content of their meals.
- The AI provides real-time nutritional analysis, helping users maintain a balanced diet.
- Custom dietary plans can be suggested based on user health preferences.



## **Complexity in Scaling Recipes for Different Group Sizes**

- Adjusting recipes for varying group sizes is challenging.
- The system scales ingredient quantities accurately, ensuring consistency in taste and texture.

## **Difficulty in Tracking Ingredients and Grocery Lists**

- Users often forget ingredients or miscalculate their grocery needs.
- The AI can generate an automatic shopping list based on selected recipes.

## **Lack of Accessibility for Non-English Speakers**

- Many users struggle with recipes due to language barriers.
- The system provides multilingual support, making it more inclusive.

## **Challenges in Following New or Complex Recipes**

- Some recipes require advanced techniques unfamiliar to users.
- The AI provides step-by-step video guidance to simplify learning.

## **Issues with Cooking Precision**

- Some dishes require exact temperatures and cooking times.
- The system provides real-time temperature monitoring and reminders.

## **Lack of Cooking Community Interaction**

- Users may want to share their experiences or get feedback.
- The system allows for user reviews and recipe sharing.

## **Difficulty in Organizing Frequently Used Recipes**

- Users may have trouble keeping track of their favorite recipes.
- A cloud-based system saves and categorizes frequently used recipes.

## **Ingredient Spoilage Due to Poor Planning**

- Users may buy more ingredients than needed, leading to spoilage.
- AI-driven meal planning optimizes ingredient use to minimize spoilage.

## **Lack of Customizable Cooking Preferences**

- Some users prefer specific cooking techniques or flavor profiles.
- The system adapts recipes to match user preferences.

## **1.4 literature review**

Cooking is an essential aspect of daily life, but it often presents challenges such as measuring ingredient quantities, planning meals, and optimizing kitchen efficiency. Traditional methods of calculating ingredient amounts rely on manual effort, which can be time-consuming and error-prone. This can lead to frustrating experiences, wasted ingredients, and disappointing meal outcomes.

Moreover, meal planning and grocery shopping can be overwhelming tasks, especially for individuals with busy lifestyles or those who are new to cooking. The process of scaling recipes up or down to accommodate different numbers of people or dietary requirements can be particularly daunting.

In addition, kitchen efficiency is often compromised by manual calculations, leading to unnecessary time spent on meal preparation and cleanup. This can result in a negative cooking experience, causing individuals to rely on convenience foods or dining out, rather than exploring the joys of home cooking.

# CHAPTER 2

## SYSTEM REQUIRMENTS

## **2.SYSTEM REQUIRMENTS**

Several studies and applications have explored the integration of AI in cooking and food management. Research shows that AI-based meal planners significantly reduce food waste and improve cooking efficiency. Existing applications such as Yummy and Tasty use AI to recommend recipes based on preferences, but they lack precise ingredient scaling and real-time voice assistance.

Moreover, studies indicate that smart kitchen assistants can reduce cooking time by up to 30% by optimizing ingredient preparation and cooking sequences. AI-based speech recognition also enhances user interaction, providing hands-free convenience while following recipes. This project builds upon these advancements by offering a comprehensive solution that combines ingredient calculation, voice assistance, and meal planning in a single platform.

### **System Requirements**

To implement the AI-powered food quantity calculator, the following system requirements must be met:

#### **2.1 Hardware Requirements:**

- A computer or mobile device with internet connectivity
- A microphone for voice command functionality
- A camera (optional) for ingredient recognition
- Minimum 4GB RAM and 2.5GHz processor for smooth performance

#### **Software Requirements:**

- Web development framework (ReactJS, Angular, or Vue.js)
- AI and Machine Learning libraries (TensorFlow, PyTorch, or OpenAI API)
- API for voice recognition (Google Speech-to-Text, AWS Alexa, or IBM Watson)
- Cloud storage for saving user preferences and recipes

#### **2.2 Software Requirements Specification (SRS)**

##### **1. Functional Requirements**

- Users can select a recipe and specify the number of servings.
- The system calculates and displays the required ingredient quantities.
- Users can input voice commands to navigate the platform.
- AI provides cooking time estimations and step-by-step instructions.
- The system suggests alternative ingredients based on availability.
- Users can save and retrieve personalized recipes.
- Nutritional analysis and grocery list generation features.

##### **2. Non-Functional Requirements**

- The system must be user-friendly and accessible on different devices.

# CHAPTER 3

## SYSTEM DESIGN

## **3.SYSTEM DESIGN**

The architecture of a **Food Processing and Measurement System** is designed to facilitate the organization, planning, and execution of meal preparation. This architecture comprises several layers and components that work together to ensure efficient management and user engagement.

### **3.1 MODULE SYSTE**

#### **Recipe Input and Processing**

Collect recipes from various sources (e.g., cookbooks, websites, user input)

Parse and standardize recipe data into a consistent format

Extract and normalize ingredients from recipes

#### **Ingredient Quantity Calculation**

User Input Processing Process user input (e.g., number of servings, dietary restrictions)

Ingredient Quantity Calculation Calculate ingredient quantities based on user input and recipe data

Perform unit conversions and scaling as needed

#### **Meal Planning and Grocery List Generation**

Develop an algorithm to suggest meal plans based on user preferences and dietary needs

Generate grocery lists based on meal plans and ingredient quantities

#### **AI-Powered Cooking Assistance**

Integrate with voice assistants (e.g., Alexa, Google Assistant) for hands-free operation

Provide real-time cooking guidance and instructions

Detect and correct errors in cooking techniques or ingredient quantities

#### **User Interface and Experience**

Design a user-friendly interface for inputting recipes, selecting meal plans, and accessing cooking guidance

Personalize the interface and adapt to user preferences and cooking habits

Implement a feedback mechanism to collect user feedback and improve the system

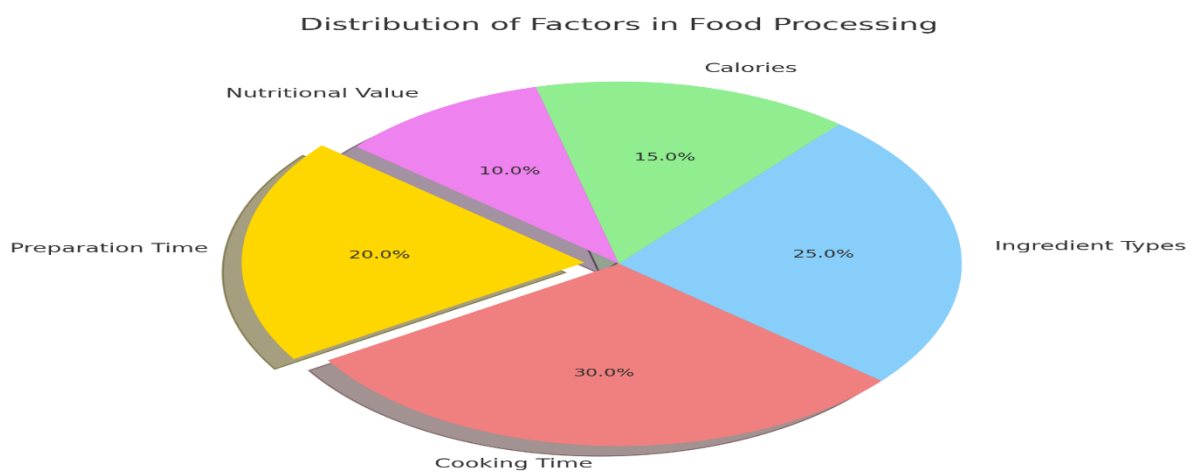
## Data Storage and Management

Design a database to store and manage recipes, ingredient quantities, and meal plans

Manage user data, including preferences, cooking habits, and feedback

Ensure data security and implement regular backups

### 3.2 UML DIAGRAM



# CHAPTER-4

## IMPLEMENTATION



## 4.1 SAMPLE CODE

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <meta name="description" content="A simple food website showcasing delicious recipes
with detailed instructions and videos">

  <title>Delicious Food Recipes</title>

  <style>

    body {

      font-family: Arial, sans-serif;

      margin: 0;

      padding: 0;

      background-color: #f8f8f8;

    }

    header {

      background-color: #ff6347;

      color: white;

      padding: 20px;

      text-align: center;

    }

    header h1 {

      margin: 0;

    }

  }

</style>

</head>

<body>

  <div>

    <h1>Delicious Food Recipes</h1>

    <p>A simple food website showcasing delicious recipes with detailed instructions and videos</p>

  </div>

</body>

</html>
```

```

nav {

    text-align: center;

    background-color: #333;

    padding: 10px 0;

}

nav a {

    color: white;

    padding: 14px 20px;

    text-decoration: none;

    display: inline-block;

}

nav a:hover {

    background-color: #575757;

}

.main-content {

    display: flex;

    justify-content: space-between; /* Distributes items evenly */

    gap: 20px; /* Space between frames */

    padding: 20px;

}

.food-item {

    background-color: white;

    padding: 20px;

    width: 30%; /* 3 items per row */

```

```

    text-align: center;

    border-radius: 8px;

    box-shadow: 0 4px 6px rgba(0, 0, 0, 0.1);

}

.food-item img {

    width: 100%;

    height: 200px; /* Set a fixed height */

    object-fit: cover; /* Ensures proper image fit */

    border-radius: 8px;

}

.recipe-details {

    margin-top: 10px;

    text-align: center;

}

.video-container {

    margin-top: 10px;

    text-align: center;

}

footer {

    background-color: #333;

    color: white;

    text-align: center;

    padding: 10px;

    position: fixed;

```

```

width: 100%;

bottom: 0;

}

</style>

</head>

<body>

  <!-- Header Section -->

  <header>

    <h1>Delicious Food Recipes</h1>

    <p>Explore the world of amazing recipes!</p>

  </header>

  <!-- Navigation Bar -->

  <nav>

    <a href="#home">Home</a>

    <a href="#recipes">Recipes</a>

    <a href="#contact">Contact</a>

  </nav>

  <div class="container">

    <h2>Food Quantity Calculator</h2>

    <label for="foodItem">Choose a dish:</label>

    <select id="foodItem">

      <option value="pastaPrimavera">Pasta Primavera</option>

      <option value="chocolateCake">Chocolate Cake</option>

      <option value="caesarSalad">Caesar Salad</option>

```

```

    <option value="biryani">Biryani</option>

    <option value="juices">Juices</option>

    <option value="pavBhaji">Pav Bhaji</option>

    <option value="manchurian">Manchurian</option>

    <option value="tacos">Tacos</option>

    <option value="semiyaPayasam">Semiya Payasam</option>

</select>

    <script>

function welcomeMessage() {

    let speech = new SpeechSynthesisUtterance();

    speech.text = "Welcome to the food processing website. Explore delicious recipes and
calculate your food ingredients easily.";

    speech.volume = 1; // Volume: 0 to 1

    speech.rate = 1; // Speed of speech

    speech.pitch = 1; // Pitch of speech

    window.speechSynthesis.speak(speech);

}

// Trigger voice welcome message when the page loads

window.onload = function() {

    setTimeout(welcomeMessage, 1000); // Delay to ensure it starts smoothly

};

</script>

    <label for="people">Number of people:</label>

    <input type="number" id="people" value="1" min="1">

    <button onclick="calculateIngredients()">Calculate</button>

```

```

<div id="result"></div>

</div>

<script>

const ingredients = {

  pastaPrimavera: { "Pasta (grams)": 100, "Vegetables (grams)": 50, "Olive Oil (tbsp)":
1 },

  chocolateCake: { "Flour (grams)": 200, "Sugar (grams)": 150, "Cocoa Powder
(grams)": 50 },

  caesarSalad: { "Lettuce (grams)": 100, "Croutons (grams)": 50, "Dressing (tbsp)": 2 },

  biriyani: { "Rice (grams)": 150, "Chicken (grams)": 200, "Spices (tsp)": 2 },

  juices: { "Fruit (pieces)": 2, "Sugar (tsp)": 2, "Water (ml)": 200 },

  pavBhaji: { "Pav (pieces)": 2, "Mashed Vegetables (grams)": 100, "Butter (tbsp)": 1 },

  manchurian: { "Vegetables (grams)": 100, "Cornflour (tbsp)": 2, "Soy Sauce (tsp)": 1
},

  tacos: { "Tortillas (pieces)": 2, "Meat (grams)": 150, "Cheese (grams)": 50 },

  semiyaPayasam: { "Vermicelli (grams)": 50, "Milk (ml)": 200, "Sugar (grams)": 50 },

};

function calculateIngredients() {

  let food = document.getElementById("foodItem").value;

  let people = parseInt(document.getElementById("people").value);

  let resultDiv = document.getElementById("result");

  let selectedIngredients = ingredients[food];

  let output = `<h3>Ingredients for ${people} people:</h3><ul>`;

  for (let item in selectedIngredients) {

    output += `<li>${item}: ${selectedIngredients[item] * people}</li>`;
  }
}

```

```

    }

    output += `</ul>`;

    resultDiv.innerHTML = output;

}

</script>

<!-- Main Content Section with Recipe Details -->

<div class="main-content" id="recipes">

    <!-- Recipe 1: Pasta Primavera -->

    <div class="food-item">

        <h2>Pasta Primavera</h2>

        <p>A fresh and vibrant pasta dish with vegetables.</p>

        <a href="#pasta-recipe" style="text-decoration: none; color: #ff6347;">View
Recipe</a>

        <!-- Recipe Details (for Pasta Primavera) -->

        <div class="recipe-details" id="pasta-recipe" style="display:none;">

            <h3>Ingredients:</h3>

            <ul>

                <li>200g pasta</li>

                <li>1 cup mixed vegetables (carrots, bell peppers, broccoli)</li>

                <li>2 tbsp olive oil</li>

                <li>2 cloves garlic, minced</li>

                <li>Salt and pepper to taste</li>

                <li>Parmesan cheese (optional)</li>

```

</ul>

<h3>Instructions:</h3>

<ol>

<li>Boil pasta according to package instructions.</li>

<li>In a large pan, heat olive oil and sauté garlic until fragrant.</li>

<li>Add mixed vegetables and cook until tender.</li>

<li>Mix the cooked pasta with the vegetables.</li>

<li>Season with salt and pepper and top with Parmesan if desired.</li>

</ol>

</div>

<!-- Video Link for Pasta Primavera -->

<div class="video-container">

<h3>Watch the Video Recipe:</h3>

<iframe width="360" height="315"

src="https://www.youtube.com/embed/Up9V3XpXscM" frameborder="0"  
allowfullscreen></iframe>

</div>

</div>

<!-- Recipe 2: Chocolate Cake -->

<div class="food-item">

<h2>Chocolate Cake</h2>



<a href="#chocolate-cake-recipe" style="text-decoration: none; color: #ff6347;">View Recipe</a>



<!-- Recipe Details (for Chocolate Cake) -->

<div class="recipe-details" id="chocolate-cake-recipe" style="display:none;">

<h3>Ingredients:</h3>

<ul>

<li>1 and 1/2 cups all-purpose flour</li>

<li>1 cup cocoa powder</li>

<li>1 cup sugar</li>

<li>2 eggs</li>

<li>1/2 cup milk</li>

<li>1/2 cup vegetable oil</li>

<li>1 tsp baking powder</li>

<li>1 tsp vanilla extract</li>

<li>1/2 cup boiling water</li>

</ul>

<h3>Instructions:</h3>

<ol>

<li>Preheat oven to 350°F (175°C) and grease two 9-inch cake pans.</li>

<li>Mix flour, cocoa powder, sugar, and baking powder in a bowl.</li>

<li>Add eggs, milk, and oil, and mix until smooth.</li>

<li>Stir in boiling water until the batter is thin.</li>

<li>Pour the batter into the prepared pans and bake for 30-35 minutes.</li>

<li>Cool completely before frosting with your favorite icing.</li>

</ol>

</div>

```

<!-- Video Link for Chocolate Cake -->

<div class="video-container">

    <h3>Watch the Video Recipe:</h3>

    <iframe width="360" height="315"
src="https://www.youtube.com/embed/dsJtgmAhFF4" frameborder="0"
allowfullscreen></iframe>

</div>

</div>

<!-- Recipe 3: Caesar Salad -->

<div class="food-item">

    <h2>Caesar Salad</h2>

    <p>A classic salad with crisp lettuce, croutons, and creamy dressing.</p>

    <a href="#caesar-salad-recipe" style="text-decoration: none; color: #ff6347;">View
Recipe</a>

    <!-- Recipe Details (for Caesar Salad) -->

    <div class="recipe-details" id="caesar-salad-recipe" style="display:none;">

        <h3>Ingredients:</h3>

        <ul>

            <li>2 cups Romaine lettuce, chopped</li>

            <li>1/2 cup croutons</li>

            <li>1/4 cup Caesar dressing</li>

            <li>Parmesan cheese, grated</li>

        </ul>

```

```

<h3>Instructions:</h3>

<ol>

  <li>Wash and chop the lettuce.</li>

  <li>Toss the lettuce with Caesar dressing.</li>

  <li>Add croutons and grated Parmesan cheese.</li>

  <li>Serve immediately.</li>

</ol>

</div>

<!-- Video Link for Caesar Salad -->

<div class="video-container">

  <h3>Watch the Video Recipe:</h3>

  <iframe width="360" height="315"
src="https://www.youtube.com/embed/iA7vjDuL1FY" frameborder="0"
allowfullscreen></iframe>

</div>

</div>

</div>

<!-- Main Content Section with Recipe Details -->

<div class="main-content" id="recipes">

  <!--Recipe 4: biriyani -->

  <div class="food-item">

    <h2>biriyani</h2>

    <p>a hot spicy biriyani for non veg lovers.</p>

```

[View Recipe](#biryani-recipe)

<!-- Recipe Details (for biriyani) -->

<div class="recipe-details" id="biryani-recipe" style="display:none;">

<h3>Ingredients:</h3>

<ul>

<li>2 cups Basmati rice</li>

<li>500g Chicken (or mutton, beef, or vegetables)</li>

<li>2 large Onions, thinly sliced</li>

<li>2 Tomatoes, chopped</li>

<li>1/2 cup Yogurt</li>

<li>2 tablespoons Ginger-garlic paste</li>

<li>2 tablespoons Biryani masala</li>

<li>1 teaspoon Red chili powder</li>

<li>1/2 teaspoon Turmeric powder</li>

<li>1 teaspoon Garam masala</li>

<li>1 teaspoon Coriander powder</li>

<li>1-inch Cinnamon stick</li>

<li>4-5 Cloves</li>

<li>3-4 Cardamom pods</li>

<li>1 Bay leaf</li>

<li>Fresh coriander and mint leaves</li>

<li>1 tablespoon Lemon juice</li>

<li>2 tablespoons Ghee (clarified butter)</li>

<li>2 tablespoons Vegetable oil</li>

<li>4 cups Water</li>

<li>Salt, to taste</li>

<li>Optional: Saffron soaked in warm milk</li>

</ul>

<h3>Instructions:</h3>

<ol>

<li>Cook the rice and set it aside.</li>

<li>Prepare the chicken/mutton mixture with spices and yogurt.</li>

<li>Layer rice and meat, then cook on low heat for 15-20 minutes.</li>

<li>Serve with raita or salad.</li>

</ol>

</div>

<!-- Video Link for biriyani -->

<div class="video-container">

<h3>Watch the Video Recipe:</h3>

<iframe width="360" height="315" src="https://encrypted-vtbn0.gstatic.com/video?q=tbn:ANd9GcRuSstWC-CunsY50MCCuPYk-lBnccuJGNhySw" frameborder="0" allow="accelerometer; autoplay; encrypted-media; gyroscope; picture-in-picture" allowfullscreen></iframe>

</div>

</div>

<!--Recipe 5:jucie -->

<div class="food-item">

<h2>juices</h2>



<a href="#juices" style="text-decoration: none; color: #ff6347;">View Recipe</a>

<!-- Recipe Details (for juices) -->

<div class="recipe-details" id="juices" style="display:none;">

<h3>Ingredients:</h3>

<ul>

<li>4 fresh oranges</li>

<li>1 tablespoon of honey (optional)</li>

<li>Ice cubes (optional)</li>

</ul>

<h3>Instructions:</h3>

<ol>

<p>1. Cut the oranges in half and extract the juice using a juicer.</p>

<p>2. Pour the juice into a glass. If you like, add honey to sweeten it and ice cubes for a chilled drink.</p>

<p>3. Stir well and enjoy your fresh orange juice!</p>

</ol>

</div>

<!-- Video Link for juices -->

<div class="video-container">

<h3>Watch the Video Recipe:</h3>

<iframe width="360" height="315" src="https://www.youtube.com/embed/O-JQPIVqH-M" frameborder="0" allowfullscreen></iframe>

</div>

</div>

<!--Recipe 6:pav bhaji -->

<div class="food-item">

<h2>pav bhaji</h2>



<a href="#pav bhaji" style="text-decoration: none; color: #ff6347;">View  
Recipe</a>

<!-- Recipe Details (for pav bhaji) -->

<div class="recipe-details" id="pav bhaji" style="display:none;">

<h3>Ingredients:</h3>

<ul>

<li>2 large potatoes (boiled and mashed)</li>

<li>1 cup cauliflower (finely chopped)</li>

<li>1/2 cup green peas</li>

<li>1/2 cup capsicum (finely chopped)</li>

<li>1 large onion (finely chopped)</li>

<li>2 tomatoes (finely chopped)</li>

<li>1/2 cup butter</li>

<li>1 tsp ginger-garlic paste</li>

<li>1 tsp red chili powder</li>

<li>1 tsp pav bhaji masala</li>

<li>Salt to taste</li>

<li>1 lemon</li>

<li>Fresh coriander leaves for garnish</li>

<li>6 pav (bread rolls)</li>

</ul>

<h2>Instructions:</h2>

<ol>

<li>Heat butter in a pan and sauté onions until translucent.</li>

<li>Add ginger-garlic paste and cook for a minute.</li>

<li>Add chopped tomatoes and cook until soft.</li>

<li>Mix in capsicum, cauliflower, and peas; cook for 5 minutes.</li>

<li>Add mashed potatoes, red chili powder, pav bhaji masala, and salt.</li>

<li>Mash the mixture well and cook for another 5 minutes.</li>

<li>Garnish with fresh coriander and a squeeze of lemon.</li>

<li>Toast the pav with butter on a pan and serve hot with bhaji.</li>

</ol>

</div>

<!-- Video Link for phav bhaji -->

<div class="video-container">

<h3>Watch the Video Recipe:</h3>

<iframe width="360" height="315"

src="https://www.youtube.com/embed/dz6eh3U5zEM" frameborder="0"  
allowfullscreen></iframe>

</div>

</div>

</div>

<!-- Main Content Section with Recipe Details -->



```
<div class="main-content" id="recipes">
```

```
    <!--Recipe 7:manchurian -->
```

```
    <div class="food-item">
```

```
        <h2>manchurian</h2>
```

```
        <br><br>
```

```
        <a href="#manchurian" style="text-decoration: none; color: #ff6347;">View
Recipe</a>
```

```
    <!-- Recipe Details (for manchurian) -->
```

```
    <div class="recipe-details" id="manchurian" style="display:none;">
```

```
        <h3>Ingredients:</h3>
```

```
        <ul>
```

```
            <li>1 cup cabbage, finely chopped</li>
```

```
            <li>1/2 cup carrots, finely grated</li>
```

```
            <li>1/4 cup green beans, finely chopped (optional)</li>
```

```
            <li>1/4 cup spring onions, chopped</li>
```

```
            <li>1-2 green chilies, finely chopped</li>
```

```
            <li>2-3 tbsp cornflour</li>
```

```
            <li>2 tbsp all-purpose flour (maida)</li>
```

```
            <li>1 tsp ginger-garlic paste</li>
```

```
            <li>1 tsp soy sauce</li>
```

```
            <li>1 tsp black pepper</li>
```

```
            <li>Salt to taste</li>
```

```
            <li>Oil for frying</li>
```

</ul>

### <h3>For the Manchurian Sauce:</h3>

<ul>

<li>2 tbsp oil</li>

<li>1 tbsp ginger-garlic paste</li>

<li>1 small onion, finely chopped</li>

<li>1/2 bell pepper, finely chopped</li>

<li>2-3 tbsp soy sauce</li>

<li>1 tbsp vinegar</li>

<li>1 tbsp tomato ketchup</li>

<li>1 tbsp chili sauce (or to taste)</li>

<li>1/2 cup water</li>

<li>1 tsp cornflour (mixed in 1/4 cup water to make a slurry)</li>

<li>Salt and pepper to taste</li>

<li>1 tbsp spring onions (for garnish)</li>

</ul>

## <h2>Instructions:</h2>

<ol>

<li><strong>Prepare the vegetables:</strong> Grate or finely chop the cabbage, carrots, and any other vegetables you are using.</li>

<li><strong>Mix ingredients:</strong> In a mixing bowl, add the chopped vegetables, spring onions, green chilies, ginger-garlic paste, soy sauce, black pepper, salt, cornflour, and flour. Mix everything well to form a dough-like consistency.</li>

<li><strong>Shape into balls:</strong> Take small portions of the mixture and roll them into smooth balls (about the size of a walnut).</li>

**Fry the balls:** Heat oil in a pan or deep fryer. Once hot, drop the vegetable balls carefully and fry them until they turn golden brown and crisp. Remove and drain excess oil on a paper towel.

**Prepare the sauce:** In a separate pan, heat oil and sauté the ginger-garlic paste, chopped onions, and bell peppers until they soften.

**Make the sauce:** Add soy sauce, vinegar, tomato ketchup, chili sauce, and water. Stir well and bring it to a simmer.

**Thicken the sauce:** Add the cornflour slurry (cornflour mixed with water) and cook for a few minutes until the sauce thickens to your desired consistency.

**Combine:** Gently add the fried vegetable balls to the sauce and toss them to coat the balls in the sauce.

**Garnish:** Garnish with chopped spring onions and serve hot with rice or noodles.

<!-- Video Link for manchurian -->

<div class="video-container">

<h3>Watch the Video Recipe:</h3>

<iframe width="360" height="315" src="https://www.youtube.com/embed/2-uu7l3Qwuo" frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-picture" allowfullscreen></iframe>

</div>

</div>

<!--Recipe 8:tacos -->

<div class="food-item">

<h2>tacos</h2>



<a href="#tacos" style="text-decoration: none; color: #ff6347;">View Recipe</a>

<!-- Recipe Details (for tacos) -->

<div class="recipe-details" id="tacos" style="display:none;">

<h3>Ingredients:</h3>

<ul>

<li>500g ground beef or chicken (or vegetarian option like beans or tofu)</li>

<li>1 small onion, chopped</li>

<li>2 cloves garlic, minced</li>

<li>1 packet taco seasoning mix (or use homemade mix)</li>

<li>1/2 cup water or broth</li>

<li>1 tbsp olive oil</li>

<li>Salt and pepper to taste</li>

<h3>For the Taco Toppings:</h3>

<ul>

<li>Shredded lettuce</li>

<li>Chopped tomatoes</li>

<li>Shredded cheddar or Mexican cheese</li>

<li>Chopped onions</li>

<li>Sour cream</li>

<li>Salsa</li>

<li>Chopped cilantro (optional)</li>

<li>Guacamole (optional)</li>

</ul>

<h3>For the Taco Shells:</h3>

<ul>

<li>12 soft or hard taco shells (store-bought or homemade)</li>

</ul>

</ul>

<h2>Instructions:</h2>

<ol>

<li><strong>Prepare the taco filling:</strong> In a large pan, heat olive oil over medium heat. Add the chopped onion and garlic, and sauté until softened.</li>

<li><strong>Cook the meat:</strong> Add the ground beef (or chicken/vegetarian option) to the pan. Cook until browned and fully cooked, breaking it apart with a spoon as it cooks.</li>

<li><strong>Add seasoning:</strong> Stir in the taco seasoning mix and water (or broth). Let it simmer for 5-10 minutes until the mixture thickens and is well combined. Season with salt and pepper to taste.</li>

<li><strong>Prepare the taco shells:</strong> Heat the taco shells according to the package instructions (usually by baking or warming in the microwave). If using soft tortillas, simply warm them in a pan or microwave.</li>

<li><strong>Assemble the tacos:</strong> Spoon the taco filling into each shell, then top with shredded lettuce, chopped tomatoes, cheese, onions, and your favorite toppings (sour cream, salsa, guacamole, etc.).</li>

<li><strong>Serve:</strong> Serve the tacos immediately, and enjoy your homemade tacos with your favorite sides!</li>

</ol>

</div>

<!-- Video Link for tacos-->

<div class="video-container">

<h3>Watch the Video Recipe:</h3>

<iframe width="360" height="315"  
src="https://www.youtube.com/embed/7\_UtpAf2Mag" frameborder="0"  
allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-  
picture" allowfullscreen></iframe>

</div>

</div>

<!--Recipe 9:chicken lollipops -->

<div class="food-item">

<h2>chicken lollipops</h2>



<a href="#chicken lollipops" style="text-decoration: none; color: #ff6347;">View  
Recipe</a>

<!-- Recipe Details (for chicken lollipops) -->

<div class="recipe-details" id="chicken lollipops" style="display:none;">

<h2>Ingredients:</h2>

<ul>

<li>10-12 chicken wings (drumette part, with the bone exposed)</li>

<li>1 tbsp ginger-garlic paste</li>

<li>1 tbsp soy sauce</li>

<li>1 tbsp chili sauce</li>

<li>1 tbsp vinegar</li>

<li>1/2 tsp red chili powder (adjust to taste)</li>

<li>1/2 tsp turmeric powder</li>

- <li>1/2 tsp garam masala powder</li>
- <li>1 tbsp cornflour (cornstarch)</li>
- <li>2 tbsp all-purpose flour (maida)</li>
- <li>1 egg</li>
- <li>Salt to taste</li>
- <li>Oil for frying</li>

</ul>

## <h2>Instructions:</h2>

<ol>

<li><strong>Prepare the chicken wings:</strong> Trim the chicken wings by scraping the meat down to the end of the bone, leaving the bone exposed (you can ask your butcher to do this). This is what gives the “lollipop” effect.</li>

<li><strong>Marinate the chicken:</strong> In a large bowl, combine ginger-garlic paste, soy sauce, chili sauce, vinegar, red chili powder, turmeric powder, garam masala, cornflour, all-purpose flour, egg, and salt. Mix well. Add the chicken wings and coat them thoroughly with the marinade. Let it marinate for at least 30 minutes to 1 hour.</li>

<li><strong>Fry the chicken:</strong> Heat oil in a deep pan or wok over medium heat. Once the oil is hot, fry the chicken wings in batches until they are golden brown and crispy on the outside (about 6-8 minutes). Make sure the chicken is cooked through and the batter is crispy.</li>

<li><strong>Serve:</strong> Remove the chicken lollipops from the oil and drain excess oil on paper towels. Serve hot with a side of your favorite dipping sauce or chutney.</li>

</ol>

</div>

<!-- Video Link for chicken lollipops-->

<div class="video-container">

```

    <h3>Watch the Video Recipe:</h3>

    <iframe width="360" height="315"
src="https://www.youtube.com/embed/lXbLQ1CQlxQ" frameborder="0"
allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-
picture" allowfullscreen></iframe>

    </div>

</div>

<!-- Main Content Section with Recipe Details -->

<div class="main-content" id="recipes">

<!--Recipe 10:semiya payasam -->

    <div class="food-item">

        <h2>semiya payasam</h2>

        <a href="#semiya payasam" style="text-decoration: none; color: #ff6347;">View
Recipe</a>

        <!-- Recipe Details (for semiya payasam\ ) -->

        <div class="recipe-details" id="semiya payasam" style="display:none;">

<h2>Ingredients:</h2>

<ul>

    <li>1 cup Semiya (Vermicelli)</li>

    <li>3 cups full-fat milk</li>

    <li>1/2 cup sugar (or to taste)</li>

    <li>1/4 cup ghee (clarified butter)</li>

    <li>10-12 cashews</li>

```



- <li>10-12 almonds (optional)</li>
- <li>5-6 cardamom pods (crushed)</li>
- <li>1/2 cup grated coconut (optional)</li>
- <li>Pinch of saffron strands (optional)</li>
- <li>Water (if needed to adjust consistency)</li>

</ul>

## <h2>Instructions:</h2>

<ol>

<li><strong>Roast the semiya:</strong> In a pan, heat 2 tbsp of ghee. Add the semiya and roast it on low heat for 3-4 minutes until golden brown. Set it aside.</li>

<li><strong>Prepare the milk:</strong> In a separate pan, bring the milk to a boil. Reduce the heat and let it simmer for 5-10 minutes.</li>

<li><strong>Cook the semiya:</strong> In the same pan you used for roasting, add the remaining ghee and sauté the cashews and almonds until golden brown. Then, add the roasted semiya to this pan and mix well.</li>

<li><strong>Add milk and sugar:</strong> Pour the simmered milk into the pan with the semiya and mix. Add sugar and crushed cardamom, and stir well until the sugar dissolves completely. Cook for an additional 5 minutes until the semiya softens.</li>

<li><strong>Final touch:</strong> If using, add grated coconut, saffron, and stir well. Let the payasam simmer for another 2-3 minutes until it reaches a creamy consistency.</li>

<li><strong>Serve:</strong> Once done, remove from heat and serve warm or chilled. Garnish with more cashews and almonds if you like!</li>

</ol>

</div>

<!-- Video Link for semiya payasam-->

<div class="video-container">

<h3>Watch the Video Recipe:</h3>

```
        <iframe width="360" height="315"
src="https://www.youtube.com/embed/5tNKCzy2Ugs" frameborder="0"
allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-
picture" allowfullscreen></iframe>
```

```
    </div>
```

```
</div>
```

```
<!-- Footer Section -->
```

```
<footer>
```

```
    <p>&copy; 2025 Delicious Food Recipes. All rights reserved.</p>
```

```
</footer>
```

```
<script>
```

```
    // Toggle visibility of recipe details when clicked
```

```
    document.querySelectorAll('a').forEach(function(link) {
```

```
        link.addEventListener('click', function(event) {
```

```
            event.preventDefault();
```

```
            const recipeId = link.getAttribute('href').substring(1);
```

```
            const recipeDetails = document.getElementById(recipeId);
```

```
            recipeDetails.style.display = recipeDetails.style.display === 'none' ? 'block' : 'none';
```

```
        });
```

```
    });
```

```
</script>
```

```
</body>
```

```
</html>
```

## 4.2 TEST CASES

### Test Case 1: Page Load and Welcome Message

Test ID: TC001

Description: Verify that the page loads successfully and the welcome message is spoken.

Preconditions: User has a compatible browser with JavaScript enabled.

Steps:

1. Open the website in a web browser.

Expected Result:

The page should load without errors.

A welcome message should be spoken after a short delay.

### Test Case 2: Food Quantity Calculation

Test ID: TC002

Description: Verify that the ingredients are calculated correctly for a selected dish.

Preconditions: User is on the food quantity calculator section.

Steps:

1. Select "Chocolate Cake" from the dropdown.
2. Enter "2" in the number of people input field.
3. Click the "Calculate" button.

Expected Result:

- The result should display the correct quantities for 2 people:
  - Flour: 400 grams
  - Sugar: 300 grams
  - Cocoa Powder: 100 grams

### Test Case 3: Recipe Details Toggle

Test ID: TC003

Description: Verify that the recipe details can be toggled for visibility.

Preconditions: User is on the main content section with recipes.

Steps:

1. Click on the "View Recipe" link for "Pasta Primavera".

Expected Result:

- The recipe details for "Pasta Primavera" should be displayed.

### Test Case 4: Navigation Links

Test ID: TC004

Description: Verify that navigation links work correctly.

Preconditions: User is on the homepage.

Steps:

1. Click on the "Recipes" link in the navigation bar.

Expected Result:

The page should scroll to the recipes section.

### Test Case 5: Responsive Design

Test ID: TC005

Description: Verify that the website is responsive on different screen sizes.

Preconditions: User is using a device with varying screen sizes (desktop, tablet, mobile).

Steps:

1. Resize the browser window or view the website on different devices.

Expected Result:

The layout should adjust appropriately, maintaining usability and readability.

# CHAPTER

# RESULT

## **RESULT:**

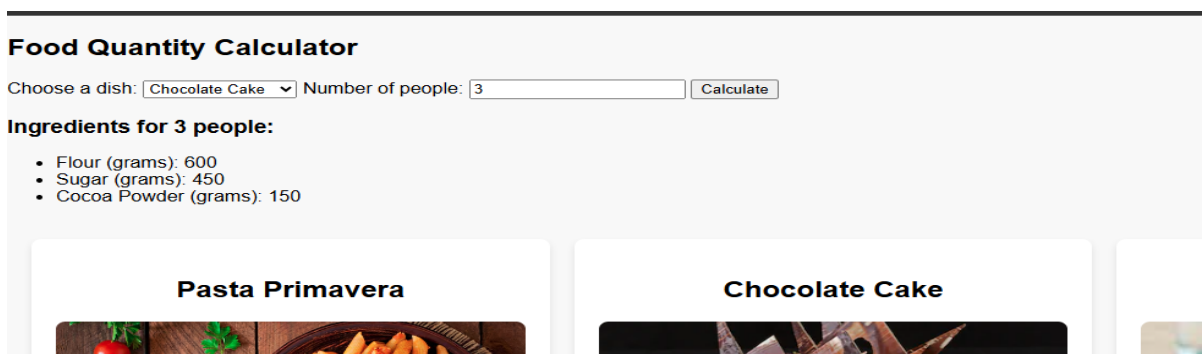
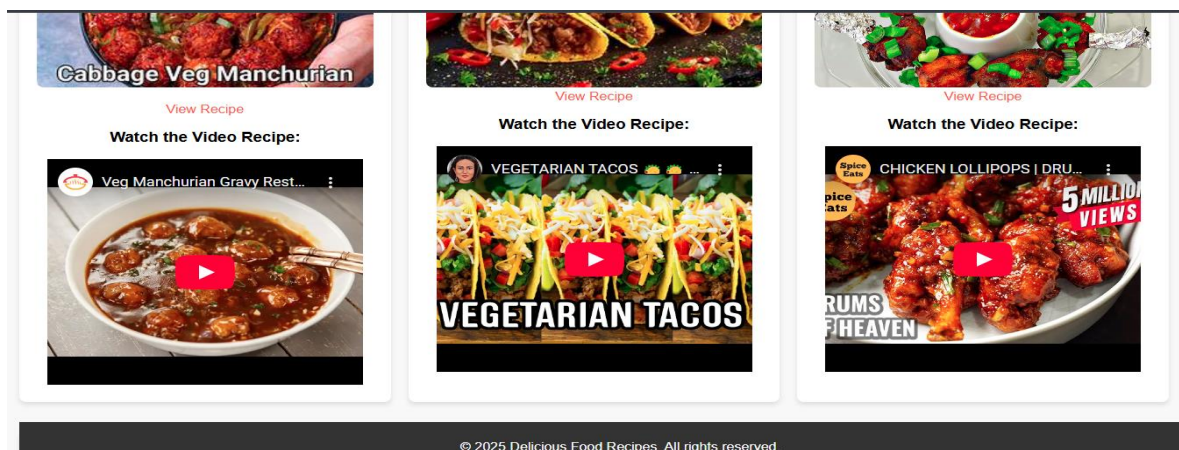
The Delicious Food Recipes website is designed to enhance the culinary experience for users by providing several key functionalities. The Food Quantity Calculator allows users to select a specific dish and input the number of servings required. The system then calculates and displays the necessary ingredient quantities, streamlining meal preparation and ensuring accuracy in ingredient measurements.

Each recipe is accompanied by a toggleable details section that includes a comprehensive list of ingredients and step-by-step cooking instructions. This functionality aids users in following recipes easily, ensuring they have all the information needed to prepare the dish successfully.

The website includes a user-friendly navigation bar that facilitates easy access to various sections, such as Home, Recipes, and Contact. This design enhances user experience by allowing seamless transitions between different parts of the site.

Additionally, the website is built with a responsive layout that adjusts to different screen sizes, ensuring optimal usability on desktops, tablets, and mobile devices. This adaptability is crucial for users who may access the site while cooking or planning meals in various environments.

## 5.1 OUTPUT SCREENS:





# CHAPTER-6

## CONCLUSION

## 6.Conclusion

The **Delicious Food Recipes** webpage is an engaging and interactive platform designed to provide users with a seamless cooking experience. It features a variety of recipes, each accompanied by detailed ingredient lists, cooking instructions, and an instructional video. Additionally, the **Food Quantity Calculator** enhances user convenience by allowing dynamic adjustment of ingredient quantities based on the number of people being served.

From a technical perspective, the webpage is structured using **HTML** for content organization, **CSS** for styling and layout optimization, and **JavaScript** to introduce interactive functionalities like ingredient calculations. The responsive design ensures a smooth browsing experience across different devices, making it accessible to a wide audience. The intuitive navigation and visually appealing elements enhance usability, allowing users to explore recipes effortlessly.

Furthermore, the inclusion of embedded **YouTube video tutorials** provides a multimedia approach to learning, making it easier for users to follow along with cooking demonstrations. The use of **JavaScript object data structures** to store ingredient information and dynamically update values based on user input showcases a practical application of programming in everyday cooking needs.

Overall, this webpage serves as a valuable tool for food enthusiasts, amateur chefs, and home cooks, helping them discover and prepare various dishes efficiently. It effectively integrates technology and culinary knowledge to create an enjoyable and informative cooking experience.

# CHAPTER-7

## REFERENCES

## 7.REFERENCES

1. **HTML & CSS Documentation** – [MDN Web Docs](#)
  - Used for structuring and styling the webpage effectively.
2. **JavaScript Reference** – W3Schools JavaScript Guide
  - Implemented interactive functionalities like ingredient calculation and dynamic content updates.
3. **CSS Flexbox and Grid Layouts** – [CSS Tricks](#)
  - Helped optimize layout responsiveness for various screen sizes.
4. **Responsive Web Design Principles** – Google Developers
  - Ensured proper adaptation across devices (desktop, tablet, mobile).
5. **JavaScript DOM Manipulation** – [Eloquent JavaScript](#)
  - Assisted in handling user input and modifying webpage content dynamically.
6. **Web Accessibility Guidelines (WCAG)** – [WebAIM](#)
  - Followed best practices to enhance accessibility for users with disabilities.

### Culinary & Recipe References

7. **YouTube Cooking Tutorials** – Various culinary channels
  - Embedded video tutorials for step-by-step cooking guidance.
8. **The Food Network** – <https://www.foodnetwork.com/>
  - Verified ingredient lists and cooking techniques.
9. **Serious Eats** – <https://www.seriouseats.com/>
  - Provided insights into ingredient substitutions and cooking tips.
10. **BBC Good Food** – <https://www.bbcgoodfood.com/>
  - Used for reference on recipe structuring and meal portioning.
11. **AllRecipes** – <https://www.allrecipes.com/>
  - Verified standard ingredient measurements and preparation steps.
12. **The Joy of Cooking (Cookbook)** – Irma S. Rombauer
  - A reliable reference for classic cooking techniques and recipes.

### Multimedia & Embedded Content References

13. **YouTube Video Embedding Guide** – YouTube API Documentation
  - Used to embed video tutorials seamlessly.

**Github link:** <https://github.com/231FA04361/batch-10/blob/main/food%20recipe.html>

**Project output link:** <file:///C:/Users/user/Documents/fp.html>

