

RESTAURANT MANAGEMENT SYSTEM

A MINI PROJECT REPORT

Submitted by

MYTHREIY ANAND -2116220701177

In partial fulfillment for the award of the degree of

**BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE AND ENGINEERING**



**RAJALAKSHMI
ENGINEERING COLLEGE**
An AUTONOMOUS Institution
Affiliated to ANNA UNIVERSITY, Chennai

**RAJALAKSHMI ENGINEERING COLLEGE
AUTONOMOUS,**

THANDALAM CHENNAI-602105

Nov-Dec 2024

ACKNOWLEDGEMENT

I express my sincere thanks to my beloved and honorable chairman **MR.S.MEGANATHAN** and the chairperson **DR.M.THANGAM MEGANATHAN** for their timely support and encouragement.

I am greatly indebted to my respected and honorable principal **Dr.S.N.MURUGESAN** for his able support and guidance.

No words of gratitude will suffice for the unquestioning support extended to us by my head of the department **Dr. P. KUMAR**, and my Academic Head **Dr.R.SABITHA**, for being ever supporting force during my project work.

I also extend my sincere and hearty thanks to my internal guide **Mrs. JANANEE V** for her valuable guidance and motivation during the completion of this project.

My sincere thanks to my family members, friends and other staff members of Computer Science and Engineering.

BONAFIDE CERTIFICATE

Certified that this project report "**RESTAURANT MANAGEMENT SYSTEM**" is the bonafide work of "**MYTHREIY ANAND -(220701177)**, " who carried out the project work under my supervision.

Submitted for the Practical Examination held on _____

SIGNATURE

Ms.V.JANANEE
Assistant Professor (SG),
Computer Science & Engineering,
Rajalakshmi Engineering College,
Thandalam, Chennai - 602 105

INTERNAL EXAMINER

EXTERNAL EXAMINER

ABSTRACT

The RESTAURANT MANAGEMENT SYSTEM of "My Cafe" project is a web-based application designed to streamline restaurant management and enhance customer experience. The platform offers a user-friendly interface for managing various cafe operations, including a dynamic waitlist system that tracks customer details and provides real-time estimated wait times. Additionally, it supports user authentication, enabling customers to log in, make reservations, browse the menu, and place orders seamlessly.

The system integrates form submissions to capture customer preferences and feedback, ensuring a personalized experience. The project is built with modern web development technologies like HTML, CSS, JavaScript, and backend integration, offering both restaurant staff and customers a smooth and efficient interaction with the cafe's services. The goal is to create an engaging and organized platform that meets the needs of both cafe owners and their clientele, enhancing the overall dining experience.

CHAPTER 1

INTRODUCTION

1. INTRODUCTION

"My Cafe" is an innovative web-based platform designed to modernize and streamline the daily operations of a cafe, while offering an enhanced customer experience. This system serves as a comprehensive solution for managing essential tasks, including customer waitlists, reservations, and menu browsing. With an intuitive user interface, the platform enables cafe staff to efficiently handle customer flow, while providing real-time updates on estimated wait times. At the same time, customers can conveniently log in, reserve tables, or place orders, all from a seamless online interface. By integrating core features like user authentication and form submissions, "My Cafe" ensures a personalized and efficient interaction between customers and the cafe. This project harnesses modern web technologies to deliver a solution that improves the overall dining experience and operational efficiency for cafes.

1.2 SCOPE OF THE WORK

The scope of the "My Cafe" project is to develop a comprehensive web-based platform aimed at streamlining cafe operations and enhancing the customer experience. The project will cover the development of both frontend and backend functionalities. On the frontend, users will be able to log in, browse menus, place orders, and make reservations via a responsive, user-friendly interface. On the backend, the system will feature a real-time waitlist and reservation system, secure user authentication, and form submissions for customer data collection and feedback. Additionally, a robust database will be integrated to store and manage customer information, orders, and preferences.

1.3 AIM AND OBJECTIVES OF THE PROJECT

Streamline Cafe Operations: To develop an efficient web-based system that allows cafe staff to manage customer flow, including reservations, waitlists, and order tracking, in a seamless and organized manner.

Enhance Customer Experience: To provide customers with an intuitive interface where they can log in, browse the menu, place orders, and make reservations, ensuring convenience and satisfaction.

Real-Time Waitlist Management: To implement a dynamic waitlist system that tracks customer details and provides real-time estimated wait times, improving customer engagement and reducing uncertainty.

Improve Operational Efficiency: To automate essential tasks like customer data collection, waitlist updates, and order management, reducing manual effort and allowing staff to focus on delivering high-quality service.

Offer Personalized Interactions: To capture and utilize customer preferences and feedback through form submissions, ensuring a personalized and tailored cafe experience.

Leverage Modern Web Technologies: To build a robust and scalable platform using HTML, CSS, JavaScript, and backend technologies, ensuring a smooth, secure, and responsive user experience.

Facilitate Secure User Authentication: To ensure that customers can create accounts, log in securely, and manage their reservations and orders in a protected environment.

CHAPTER 2

SYSTEM SPECIFICATIONS

1. HARDWARE SPECIFICATIONS

Processor : Pentium IV Or Higher

Memory Size : 128 GB(Minimum)

HDD : 40 GB (Minimum)

2. SOFTWARE SPECIFICATIONS

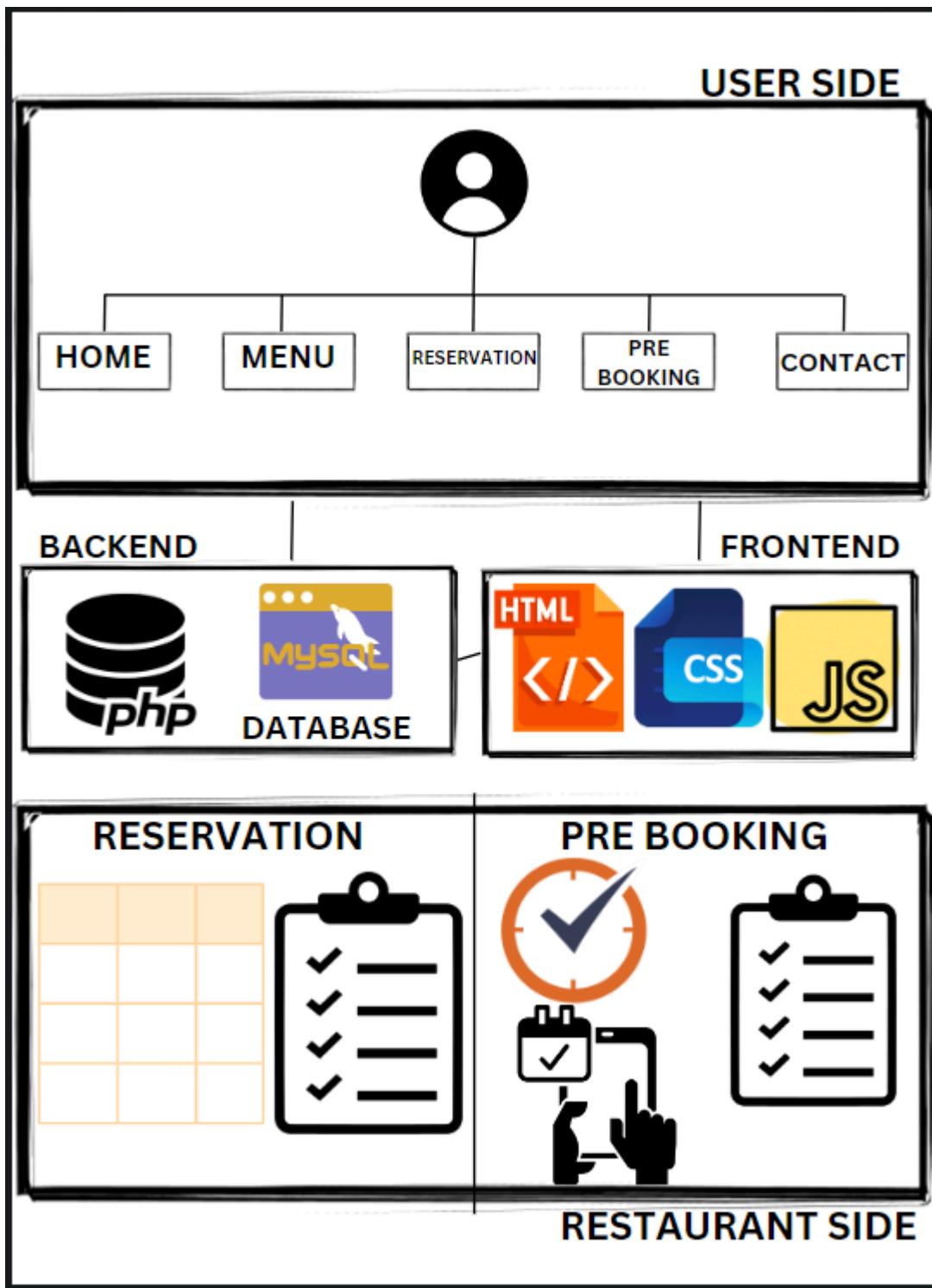
Operating System : WINDOWS 7 AND PLUS

Front – End : HTML, CSS, JAVASCRIPT

Back – End : PHP, MYSQL

CHAPTER 3

ARCHITECTURE DIAGRAM



CHAPTER 4

MODULE DESCRIPTION

1. Reservation Management

This module streamlines table booking for both customers and staff. It allows customers to reserve tables online or in-person, view available slots in real-time, and receive confirmation notifications. The system integrates with calendars to manage schedules and sends reminders for upcoming reservations. For staff, it simplifies managing bookings and minimizes overbooking risks.

2. Order Management

The order management module facilitates seamless order-taking and processing for dine-in, takeaway, or delivery services. Customers can browse menus with detailed descriptions and pricing, place orders, and track their status. Integration with a kitchen display system ensures that the kitchen staff gets real-time updates about new orders, improving service efficiency.

3. Inventory Management

This module helps in tracking and managing the restaurant's stock of ingredients and supplies. It provides real-time updates on inventory levels, sends alerts when stocks are low, and automates supplier order placements. By linking inventory usage with order data, it ensures accurate stock adjustments and minimizes wastage.

4. Staff Management

Managing employees becomes easier with this module, which handles staff schedules, shift assignments, and attendance tracking. It also includes payroll management and tools to assess employee performance. By ensuring optimal staff utilization, this module boosts productivity and enhances workplace satisfaction.

5. Billing and Payment Management

This module ensures a smooth billing process with options to generate customized invoices. It supports multiple payment methods, including cash, credit/debit cards, mobile wallets, and online payments. Additionally, it integrates with accounting systems for financial tracking and reporting, helping maintain accurate records.

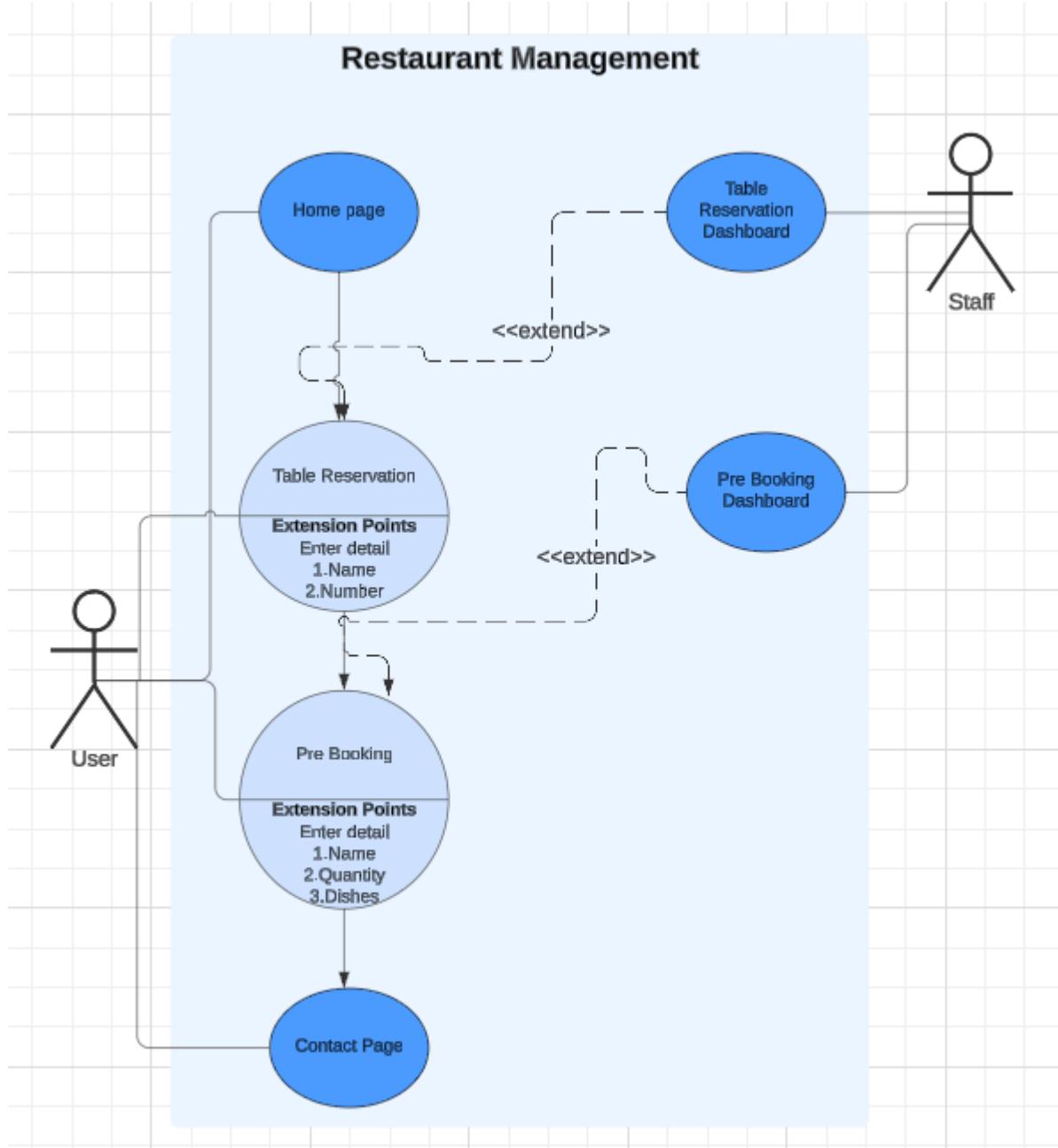
6. Analytics and Reporting

A crucial module for decision-making, it provides detailed insights into restaurant operations. It tracks metrics like sales, customer preferences, and employee performance. The system generates reports and visual dashboards, enabling the management to identify trends, optimize resources, and make data-driven decisions.

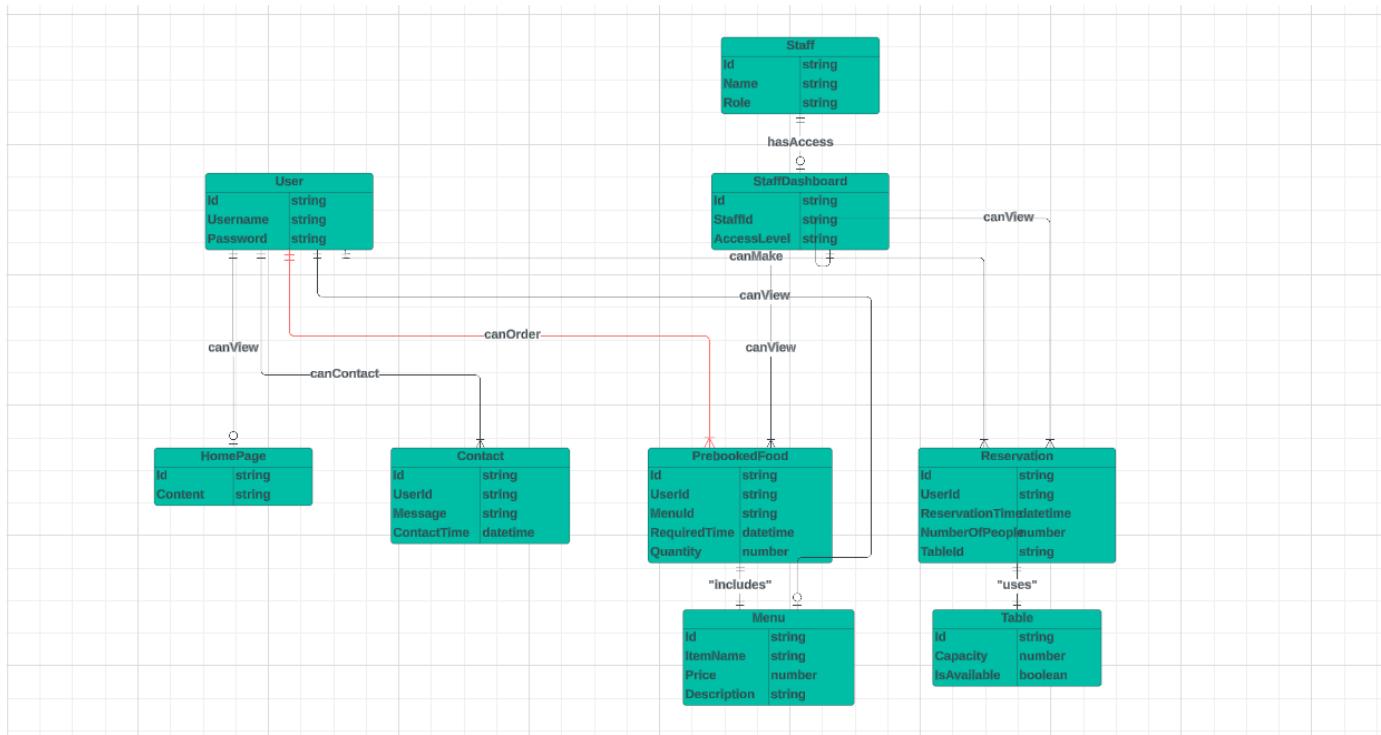
CHAPTER 5

SYSTEM DESIGN

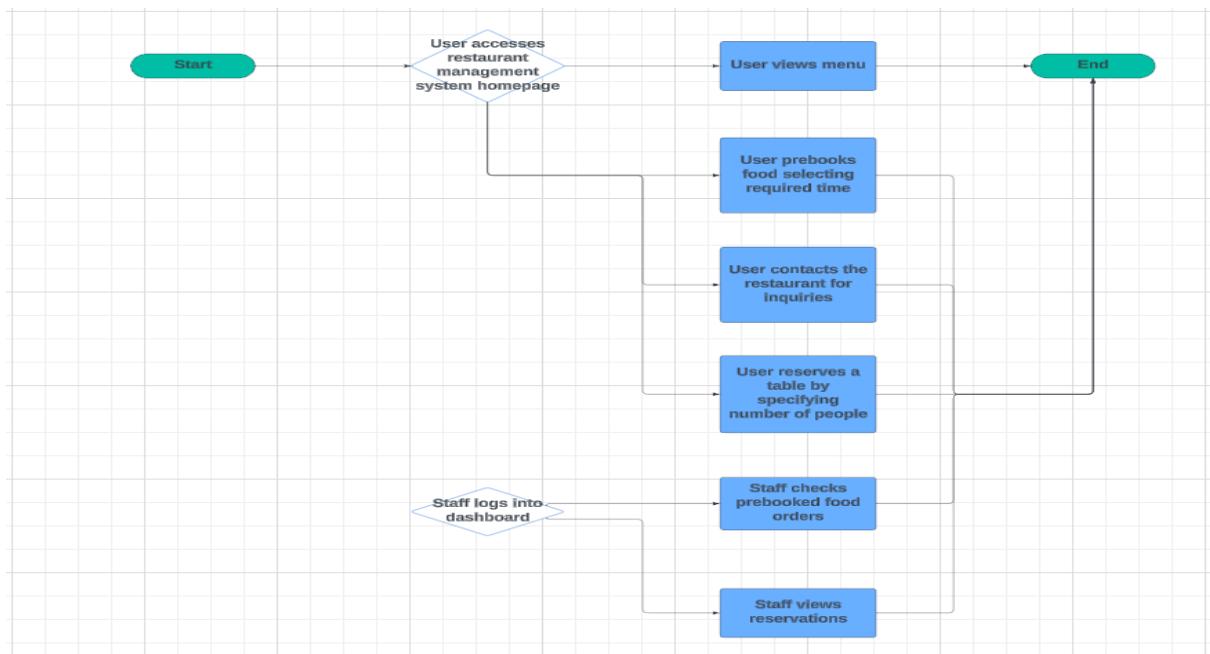
5. USE CASE DIAGRAM



5.2 ER DIAGRAM



5.3 ACTIVITY DIAGRAM



CHAPTER 6

SAMPLE CODING

```
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>MYCAFÉ - Pre-book Food</title>

<link rel="stylesheet" href="stylee.css">

<style>

body {

background-image:url('https://img.freepik.com/premium-photo/night-scene-empty-table-with-restaurant-background-ads_31965-623916.jpg?ga=GA1.1.165203865.1726297893&semt=ais_hybrid');

background-size: cover; /* Ensures the image covers the entire page */

background-repeat: no-repeat; /* Prevents the image from repeating */

background-position: center center; /* Centers the image */

background-attachment: fixed; /* Makes the background stay in place when scrolling */

height: 100%; /* Ensures that the image fills the page */

margin: 0;

padding: 0;
```

```
min-height: 100vh; /* Ensures full viewport height coverage */  
}  
  
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<header>
```

```
<h1>Pre-book Food at MYCAFÉ</h1>
```

```
<nav>
```

```
<ul>
```

```
<li><a href="index.html">Home</a></li>
```

```
<li><a href="menu.html">Menu</a></li>
```

```
<li><a href="reservation.html">Table Reservation</a></li>
```

```
<li><a href="prebooking.html">Pre-book Food</a></li>
```

```
<li><a href="contact.html">Location & Contact</a></li>
```

```
</ul>
```

```
</nav>
```

```
</header>
```

```
<main>
```

<h2>Select Your Dish and Quantity</h2>

```
<form action="prebooking.php" method="post" id="prebook-form">

<div class="customer-info-container">

    <label for="customer-name">Your Name:</label>

    <input type="text" id="customer-name" name="customer-name" placeholder="Enter your name"
required>
```

<label for="ready-time">At what time should your food be ready?</label>

```
<input type="time" id="ready-time" name="ready-time" required>
```

</div>

<h2>Appetizers</h2>

<div class="Menu-item">

```
<input type="checkbox" id="garlic-bread" name="garlic-bread" value="Garlic Bread">
```

```
<label for="garlic-bread">Garlic Bread <br>250 Rs</label><br>
```

```
<input type="number" id="qty-garlic-bread" name="qty-garlic-bread" min="1" placeholder="Qty">
```

```

```

</div>

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

<input type="checkbox" id="caesar-salad" name="caesar-salad" value="Caesar Salad">

<label for="caesar-salad">Caesar Salad<br>200 Rs</label><br>

<input type="number" id="qty-caesar-salad" name="qty-caesar-salad" min="1" placeholder="Qty">



</div>
```

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

<input type="checkbox" id="canapes" name="canapes" value="Canapés">

<label for="canapes">Canapés<br>300 Rs</label><br>

<input type="number" id="qty-canapes" name="qty-canapes" min="1" placeholder="Qty">



</div>
```

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

<input type="checkbox" id="bruschetta" name="bruschetta" value="Bruschetta">
```

```
<label for="bruschetta">Bruschetta<br>275 Rs</label><br>

<input type="number" id="qty-bruschetta" name="qty-bruschetta" min="1" placeholder="Qty">

<img
src=https://img.freepik.com/free-photo/italian-sandwiches-bruschetta-with-cheese-dry-tomatoes-basil_114
579-19398.jpg?ga=GA1.1.165203865.1726297893&semt=ais_hybrid" alt="Bruschetta">

</div>
```

Main Course

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

<input type="checkbox" id="penne-alfredo" name="penne-alfredo" value="Penne Alfredo">

<label for="penne-alfredo">Penne Alfredo<br>375 Rs</label><br>

<input type="number" id="qty-penne-alfredo" name="qty-penne-alfredo" min="1"
placeholder="Qty">



</div>
```

Main Course

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

<input type="checkbox" id="pink-sauce-pasta" name="pink-sauce-pasta" value="Pink Sauce Pasta">

<label for="pink-sauce-pasta">Pink Sauce Pasta<br>350 Rs</label><br>

<input type="number" id="qty-pink-sauce-pasta" name="qty-pink-sauce-pasta" min="1"
placeholder="Qty">
```

```
  
</div>
```

```
<div class="Menu-item">  
  
<input type="checkbox" id="kung-pao" name="kung-pao" value="Kung Pao">  
  
<label for="kung-pao">Kung Pao<br>390 Rs</label><br>  
  
<input type="number" id="qty-kung-pao" name="qty-kung-pao" min="1" placeholder="Qty">
```

```
  
</div>
```

```
<div class="Menu-item">  
  
<input type="checkbox" id="steak" name="steak" value="Steak">  
  
<label for="steak">Steak<br>445 Rs</label><br>  
  
<input type="number" id="qty-steak" name="qty-steak" min="1" placeholder="Qty">
```

```
  
</div>
```

<h2>Dessert</h2>

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

```
    <input type="checkbox" id="cheesecake" name="cheesecake" value="Cheesecake">
```

```
    <label for="cheesecake">Cheesecake<br>349 Rs</label><br>
```

```
    <input type="number" id="qty-cheesecake" name="qty-cheesecake" min="1" placeholder="Qty">
```

```
    
```

```
</div>
```

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

```
    <input type="checkbox" id="tiramisu" name="tiramisu" value="Tiramisu">
```

```
    <label for="tiramisu">Tiramisu<br>275 Rs</label><br>
```

```
    <input type="number" id="qty-tiramisu" name="qty-tiramisu" min="1" placeholder="Qty">
```

```
    
```

```
</div>
```

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

```
    <input type="checkbox" id="baklava" name="baklava" value="Baklava">
```

```
<label for="baklava">Baklava<br>250 Rs</label><br>

<input type="number" id="qty-baklava" name="qty-baklava" min="1" placeholder="Qty">



</div>
```

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

<input type="checkbox" id="brownie" name="brownie" value="Brownie">

<label for="brownie">Brownie<br>245 Rs</label><br>

<input type="number" id="qty-brownie" name="qty-brownie" min="1" placeholder="Qty">



</div>
```

```
<h2>Beverages</h2>

<div class="Menu-item">

<input type="checkbox" id="cappuccino" name="cappuccino" value="Cappuccino">

<label for="cappuccino">Cappuccino<br>250 Rs</label><br>

<input type="number" id="qty-cappuccino" name="qty-cappuccino" min="1" placeholder="Qty">



</div>

<div class="Menu-item">

<input type="checkbox" id="latte" name="latte" value="Latte">

<label for="latte">Latte<br>265 Rs</label><br>

<input type="number" id="qty-latte" name="qty-latte" min="1" placeholder="Qty">



</div>

<div class="Menu-item">

<input type="checkbox" id="mocktail" name="mocktail" value="Mocktail">

<label for="mocktail">Mocktail<br>345 Rs</label><br>

<input type="number" id="qty-mocktail" name="qty-mocktail" min="1" placeholder="Qty">



</div>

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

<input type="checkbox" id="affogato" name="affogato" value="Affogato">

<label for="affogato">Affogato
365 Rs</label>

<input type="number" id="qty-affogato" name="qty-affogato" min="1" placeholder="Qty">

</div>

<button type="submit">Pre-book Now</button>

</form>

</main>

<footer>

<p>We are waiting for you!</p>

</footer>

<script>

document.getElementById('prebook-form').addEventListener('submit', function(event) {

event.preventDefault(); // Prevent the form from submitting automatically
```

```
// Get all the required fields and their values

const customerName = document.getElementById('customer-name').value.trim();

const readyTime = document.getElementById('ready-time').value;

const checkboxes = document.querySelectorAll('input[type="checkbox"]');

let selectedDishes = [];

let validSubmission = true;

// Ensure customer name and ready time are provided

if (customerName === "") {

 alert("Please enter your name.");

 validSubmission = false;

}

if (readyTime === "") {

 alert("Please select the time when you want your food to be ready.");

 validSubmission = false;

}
```

```
// Loop through all the checkboxes to validate dish selection and quantity

checkboxes.forEach(checkbox => {

 const quantityInput = document.querySelector(`#qty-${checkbox.id}`);

 // If the checkbox is checked, validate quantity

 if (checkbox.checked) {

 const quantity = parseInt(quantityInput.value);

 if (quantity > 0) {

 // Add selected dish and its quantity to the list

 selectedDishes.push({
 dish: checkbox.value,
 quantity: quantity
 });

 } else {

 alert(`Please enter a valid quantity for ${checkbox.value}`);
 validSubmission = false;
 }
 }
});
```

```
// Ensure at least one dish is selected

if (selectedDishes.length === 0) {

 alert("Please select at least one dish.");

 validSubmission = false;

}

// If all fields are valid, proceed with form submission

if (validSubmission) {

 let confirmationMessage = `Your pre-order has been placed for:\n\nName: ${customerName}\nReady
Time: ${readyTime}\n`;

 selectedDishes.forEach(dish => {

 confirmationMessage += `${dish.quantity} x ${dish.dish}\n`;

 });

 alert(confirmationMessage);

}

// Submit the form after the alert

this.submit();

}

});

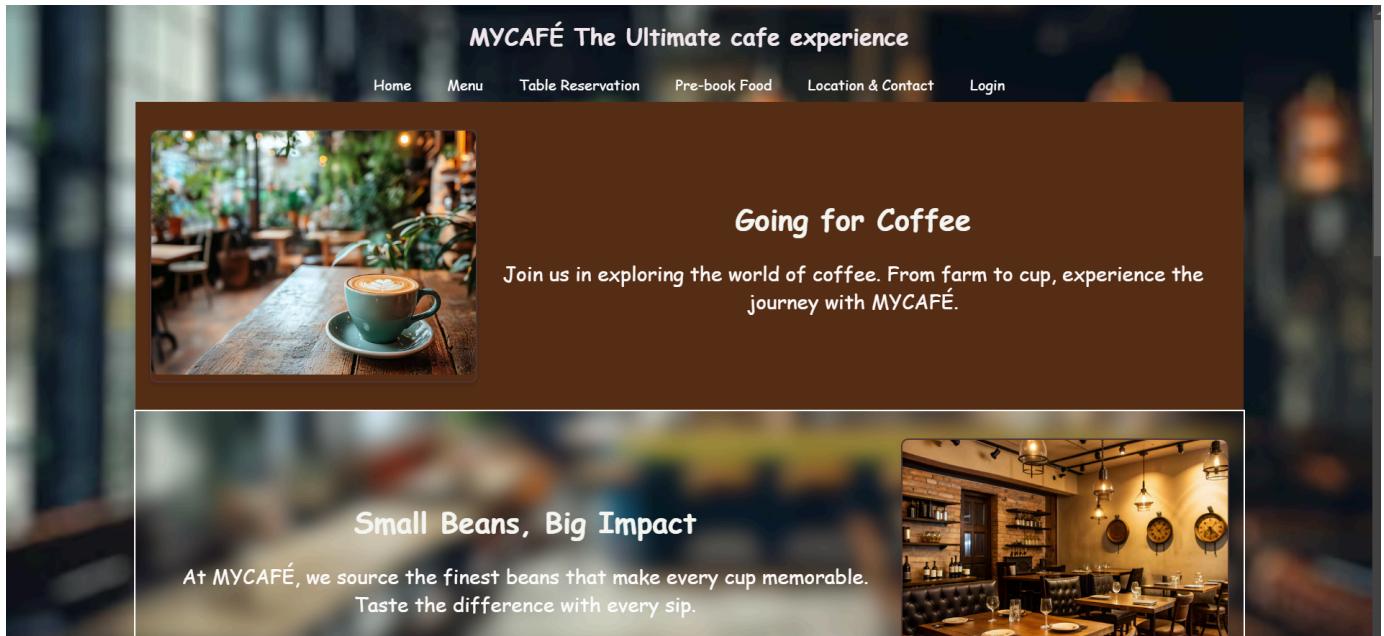
</script>
```

</body>

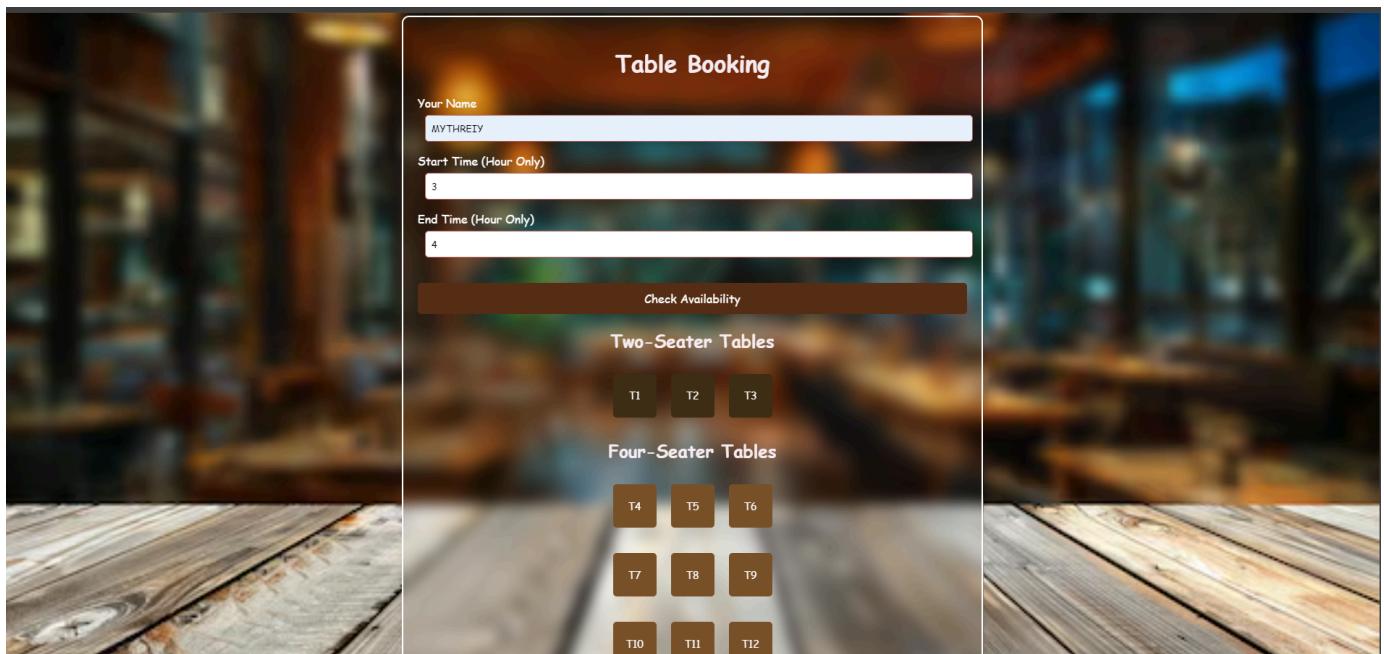
</html>

## CHAPTER 7

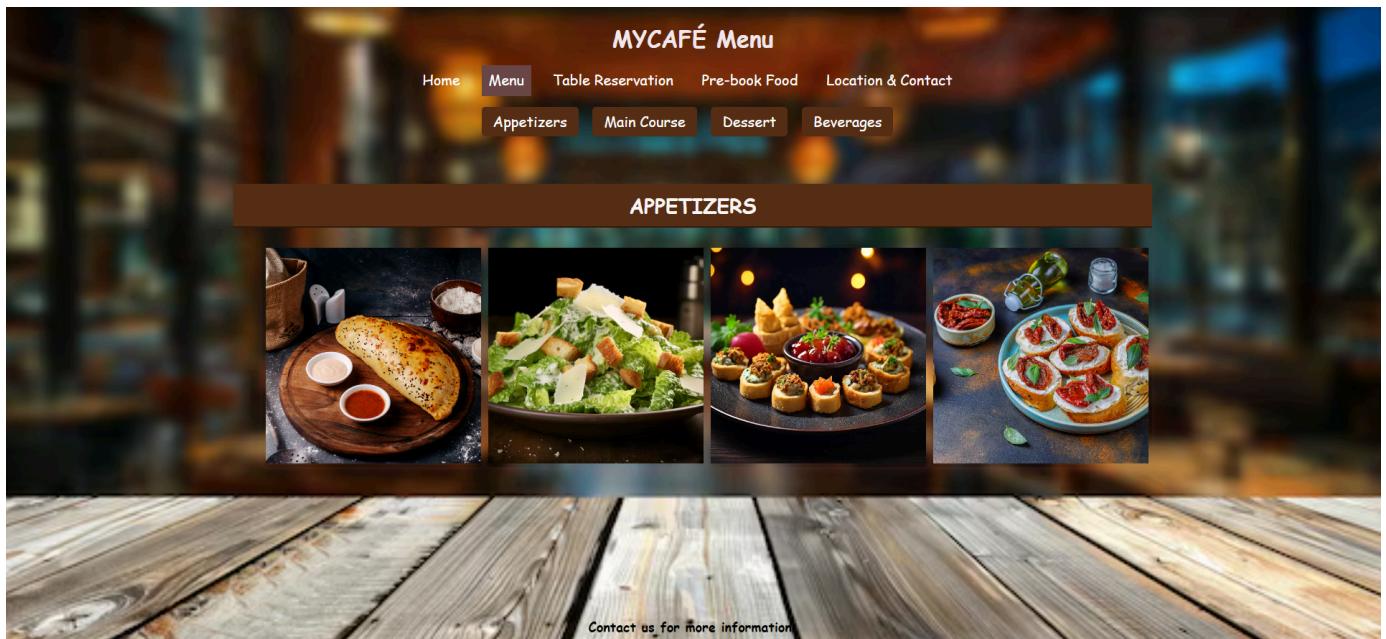
### SCREEN SHOTS



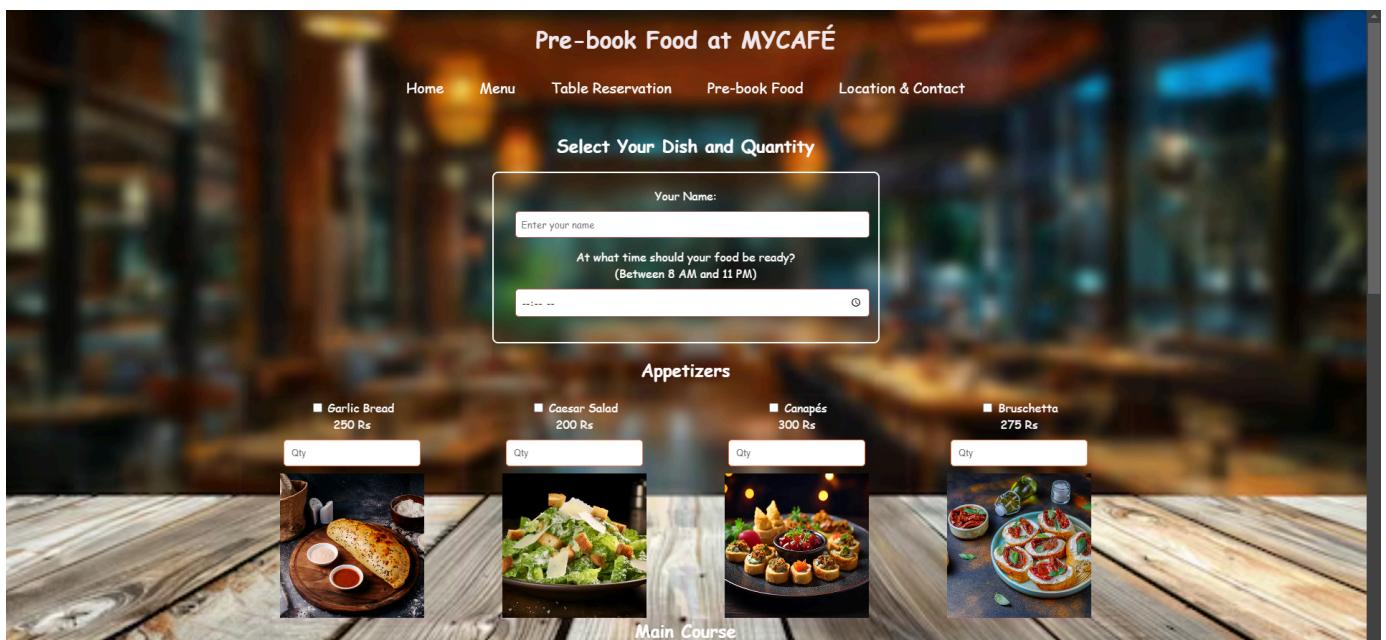
**Fig 7.1 Home**



**Fig 7.2 Table Reservation**



**Fig 7.3 Menu**



**Fig 7.4 Pre Booking**

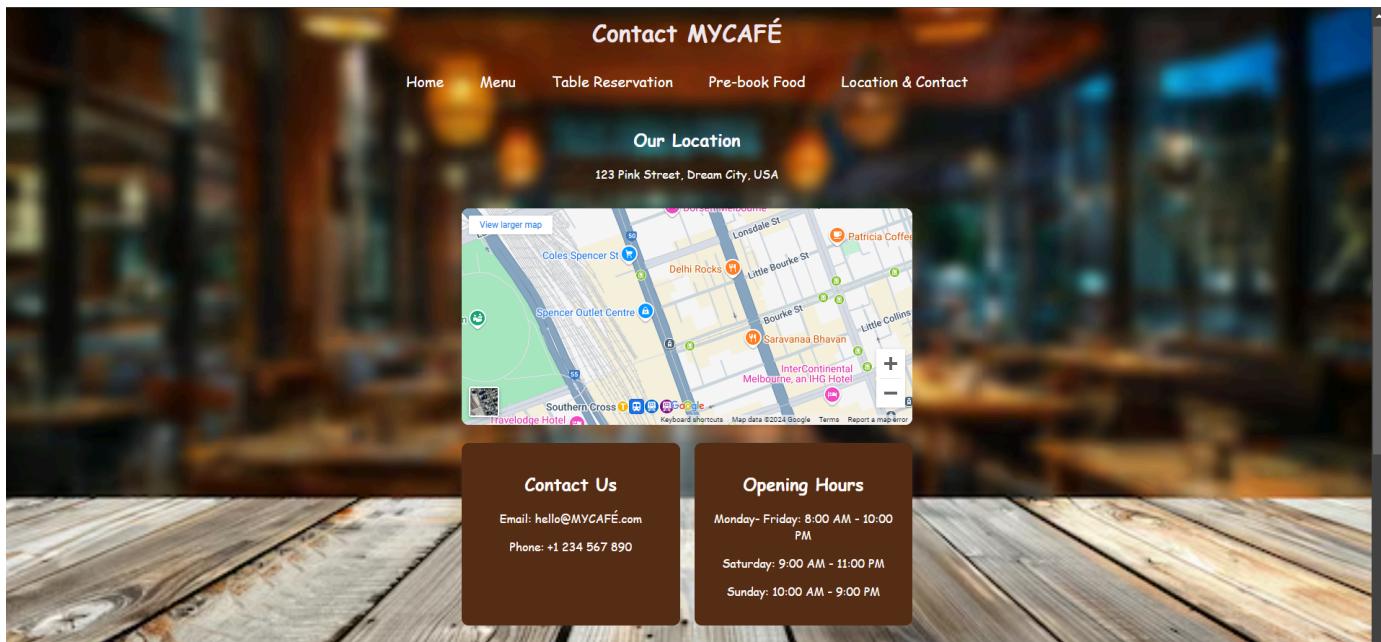


Fig 7.5 Contact

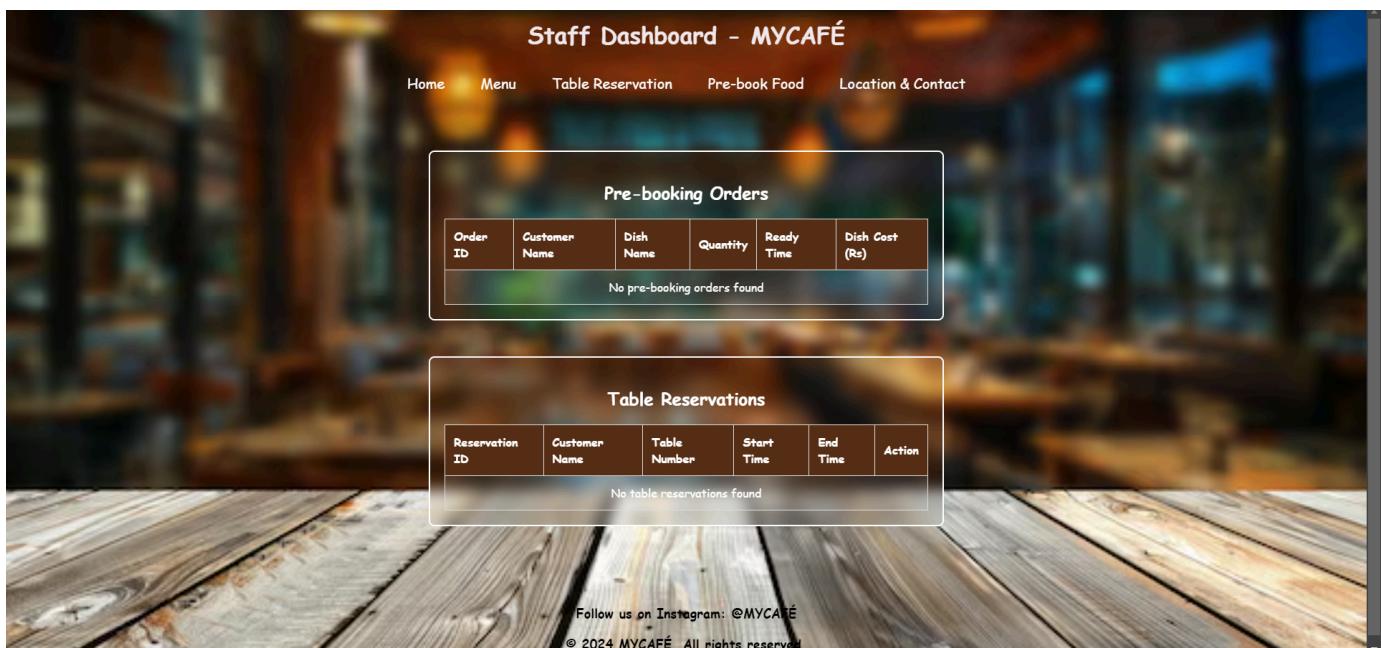


Fig 7.6 Staff Dashboard

## **CHAPTER 8**

### **CONCLUSION**

The "My Cafe" project represents a transformative approach to cafe management and customer interaction, harnessing modern web technologies to create a seamless and efficient experience for both patrons and staff. By incorporating essential modules such as the home page, menu, reservation system, pre-booking functionality, contact page, and staff dashboard, the platform addresses the multifaceted needs of a contemporary cafe environment.

Customers are empowered with the ability to explore the menu, make reservations based on their party size, and pre-order meals for specific times, significantly enhancing convenience and satisfaction. This capability not only minimizes wait times but also allows for a personalized dining experience tailored to individual preferences. The contact page ensures that communication lines remain open, facilitating quick responses to inquiries or feedback, which is crucial for maintaining customer loyalty.

On the operational side, the staff dashboard serves as a centralized hub for managing reservations, tracking pre-orders, and updating menu offerings. This module enables staff to optimize their workflow, ensuring that each customer receives timely and attentive service. The integration of these functionalities is designed to improve operational efficiency, allowing cafe owners and staff to focus on delivering high-quality service.

Furthermore, the project sets the stage for future enhancements. Potential expansions, such as integrating secure payment processing, advanced analytics for tracking customer behavior, and promotional tools for marketing, could further elevate the platform's capabilities. By adopting a customer-centric approach and leveraging data-driven insights, "My Cafe" aims to foster lasting relationships with patrons, ultimately driving business growth and success in a competitive marketplace.

In summary, "My Cafe" is not just a web application; it is a holistic solution that blends technology with hospitality, paving the way for a new standard in cafe operations. Through continuous improvement and adaptation to customer needs, the project aspires to create an inviting and efficient cafe experience, ensuring that every visit is memorable and rewarding for all.

## **REFERENCES**

- 1 A. Bhargave, N. Jadhav, A.Joshi, P.Oke & Lahane. Digital Ordering System for Restaurant Using Android. International Journal of Scientific and Research Publications, 3(4) (2013).
- 2 R .Adithya, Abhishek Singh, Salma Pathan, & Vaishnav Kanade. International Journal of Computer Applications, 180(6), 22–24 (2017)
- 3 M. Mahaputra Hidayat, M. M. Dimas, R.Adityo & A. Siswanto.Design of Restaurant Billing System (E Bill Resto) by Applying Synchronization of Data Billing in Branch Companies to Main Companies Based on Rest API. IEEE Xplore (2020, February1)