A First Project Final Report on

Cafe Reservation System

Submitted in Partial Fulfillment of the Requirements for the

Degree of **Bachelor of IT Engineering**

Under Pokhara University

Submitted by:

Prakash Mahara, 211527

Shushil Mishra, 211440

Date:

15 Falgun 2080

Department of IT Engineering

NEPAL COLLEGE OF INFORMATION TECHNOLOGY

Balkumari, Lalitpur, Nepal

ACKNOWLEDGEMENT

ABSTRACT

Cafe Reservation System is a computerized cafe reservation system that is designed to provide Cafe to perform operations of reservations. The manual process of waiting tables for customers is extremely tedious. Keeping track of large customer bases and their order details is complicated and time consuming since managing the cafe work and taking their order is required.

Developed using PHP for server-side scripting and MYSQL as the database, this project focuses on providing a seamless reservation experience for both customers and cafe staff. The system allows the receptionist to effortlessly record customer details, search for unoccupied tables based on specific criteria, and reserve suitable locations.

The Cafe Reservation System is made to improve how a particular cafe works, making reservations smoother and more organized for that specific cafe.

Keywords: *online café reservation system, web-app, specific café, reserve table*

Table of Contents

List of Figures

Abbreviations

CSS   : Cascading Style Sheet

ER   : Entity Relationship

HTML   : Hypertext Markup Language

IDE   : Integrated Development Environment

LMS   : Learning Management System

MySQL   : My Structured Query Language

NCIT   : Nepal College of Information Technology

PHP   : Personal Home Page (Hypertext Preprocessor)

VS-Code   : Visual Studio Code

1. Introduction

The purpose of this document is to propose a computerized cafe reservation system. Nepal is a growing tourist destination and there has been a good rise in the number of café since the past. Information and Communication Technologies (ICTs) has been rapidly developing and commercializing for the cafe industry. This has prompted cafe and other enterprises in this sector to adopt these technologies.

Cafe Reservation System has all the dynamic versatile features required to smoothly run a Cafe. This project deals with reservation inquiry, single reservation, and group reservation, cancel reservation and recall reservation. During reservation, the details of the customers, type of table required and number of table required are fed in to the system. Once these in formations are entered, the system searches for the unoccupied tables and displays the result. In reservation inquiry, customer can get the information such as price of table and details of tables available.

Café operation will be easy for the receptionist since all data and information will store in the database and it can access anytime.

1.1 Problem Statement

- Service Delays:
  Customers face delays in booking table and getting a menu.
- Extended Wait Times:
  Customers may have to wait until cafe's table available for booking.

Digital Solution:

- Project introduces a digital menu and booking system to eliminate these delays.
- Project introduces online reservation platform where customers can book tables in advance, reducing the wait time.

1.2 Project Objectives

The main objectives of this project are:

- To provide the customer instant access to the Café table and menu.

- To provide customers options to choose their seats.

1.3 Significance of the Study

The motivation for designing this application came because my family is involved in the cafe business and I personally do not like waiting for long in the cafe or to have to call staff to place an order especially during the peak hours. Moreover, I value recent learning about the HTML, CSS, and JavaScript as well as seeing how powerful and dynamic they are when it comes to web designing and applications. The languages used to build this application are JavaScript, HTML and CSS at client facing whereas MySQL database at the back-end because I found them to be extremely useful while working on the technologies.

1.4 Scope and Limitations

Scope:

- Enable users to browse available tables.
- Allow customers to reserve specific tables.
- Ensure the system is accessible and user-friendly on mobile browser.

Limitations:

- Reliance on internet connectivity and technology may pose challenges, especially in areas with poor connectivity.
- Some customers, particularly older demographics, may not be comfortable or familiar with using online reservation systems.
- Technical issues or system downtime can disrupt the reservation process and affect customer satisfaction.

1.5 Software Requirements

- Frontend Development: HTML, CSS, JavaScript
- Backend Development: PHP
- Database: MySQL
- IDE: VS-Code

Here's a brief introduction to HTML, CSS, JavaScript, MySQL, and PHP:

HTML:

 - HTML is the standard markup language used to create the structure and layout of web pages. It consists of a series of elements represented by tags, defining the various parts of a webpage such as headings, paragraphs, links, and images.

CSS:

 - CSS is a style sheet language used for describing the presentation of a document written in HTML. It enables the separation of content and presentation, allowing developers to style and format HTML elements, including aspects like layout, colors, and fonts.

JavaScript:

 - JavaScript is a versatile scripting language that enables interactive and dynamic content on web pages. It is commonly used for client-side scripting, allowing developers to create responsive and engaging user interfaces.

MySQL:

 - MySQL is a relational database management system (RDBMS) that stores and retrieves data. It is widely used for managing databases in web applications, providing a robust and scalable solution for storing, querying, and manipulating structured data

PHP:

- PHP is a server-side scripting language designed for web development. It is embedded within HTML code and executed on the server, enabling the creation of dynamic web pages by interacting with databases, handling forms, and performing various server-side tasks.

2. Literature Study/Review

Review:

In the past few years, it is experienced that customers are desirous to find a handy application for reservation of tables and menu or any other services to avoid physical walking to the cafe or contacting by call or reserving through a middle man **[1]**.

In the past years the mobile usage and the computing has also brought a lot of change in the technology and the smartphones have been upgrading day by day **[2]**. Bringing a platform which provides café table booking was encouraged by the customers very much as well as the orders have been increasing day by day when compared to previous years. This platform is helpful not only for the customers but also useful for café receptionist to manage their management.

Domain:

The system is specifically tailored for cafes, focusing on optimizing the reservation process to enhance customer satisfaction.

Existing System:

Currently, cafes typically use manual method for recording customer data. Receptionist manage these details using paperwork stored in physical files, leading to time consuming processes, security concerns, and potential errors.

Comparison with Existing System:

Our system offers significant advantages over traditional methods used in cafes. By eliminating manual processes and paperwork, it enhances efficiency and reduces the risk of errors. Additionally, it provides improved security for customer data and offers the flexibility to accommodate customer preferences regarding table selection. Storing records in a database allows for easy updates, deletions, and additions as needed, further enhancing the system's usability and adaptability.

3. Methodology

For this project, we have used the Waterfall Model of Software Process Model. The Waterfall Model is a traditional and linear approach to software development, comprising distinct phases that are executed sequentially. Each phase builds upon the outcomes of the preceding one, forming a cascade-like structure.
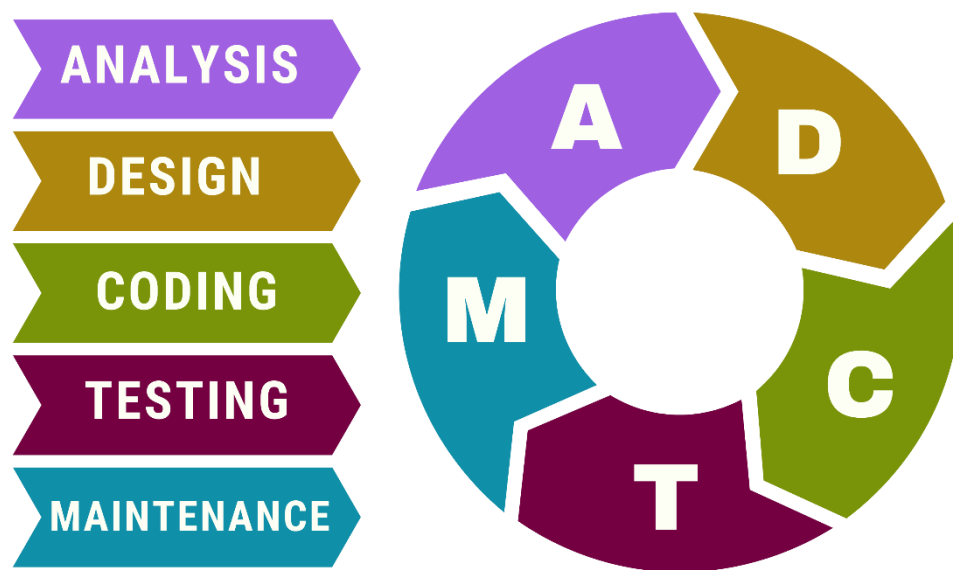

Figure 3: Waterfall Model

Waterfall model includes the following phases:

- Analysis:
  - Gather and document specific requirements for the Cafe Reservation System.
  - Understand cafe needs, user expectations, and unique features.
  - Establish a comprehensive understanding of the project scope.

- Design:
  - Translate requirements into a detailed system architecture.
  - Design user interface, system components, and data structures.
  - Create a blueprint for efficient and user-friendly reservation management.

- Code (Implementation):
  - Write code based on established design guidelines.
  - Bring the Cafe Reservation System to life with functionalities.

- Testing:
  - Conduct rigorous testing, including unit, integration, and system testing.
  - Identify defects to ensure the system meets specified requirements.

- Maintenance:
  - Implement updates, and ensure long-term viability.
  - Providing support in bug fixing and adaptations to evolving user needs.

4. System Design

4.1 Entity Relationship Diagram

This depicts relationship between data objects. The attribute of each data objects noted in the entity- relationship diagram can be described using a data object description. Data flow diagram serves two purposes:

1. To provide an indication of how data are transformed as they move through the system.
2. To depict the functions that transformation the data flow.

Data Objects: A data object is a representation of almost any composite information that must be understood by the software. By composite information, we mean something that has a number of different properties or attributes. A data object encapsulates data only there is no reference within a data object to operations that act on the data.

Attributes: Attributes define the properties of a data object and take on one of three different characteristics. They can be used to:

- Name an instance of data object.
- Describe the instance.
- Make references to another instance in other table.

Relationships: Data objects are connected to one another in a variety of different ways. We can define a set of object relationship pairs that define the relevant relationships
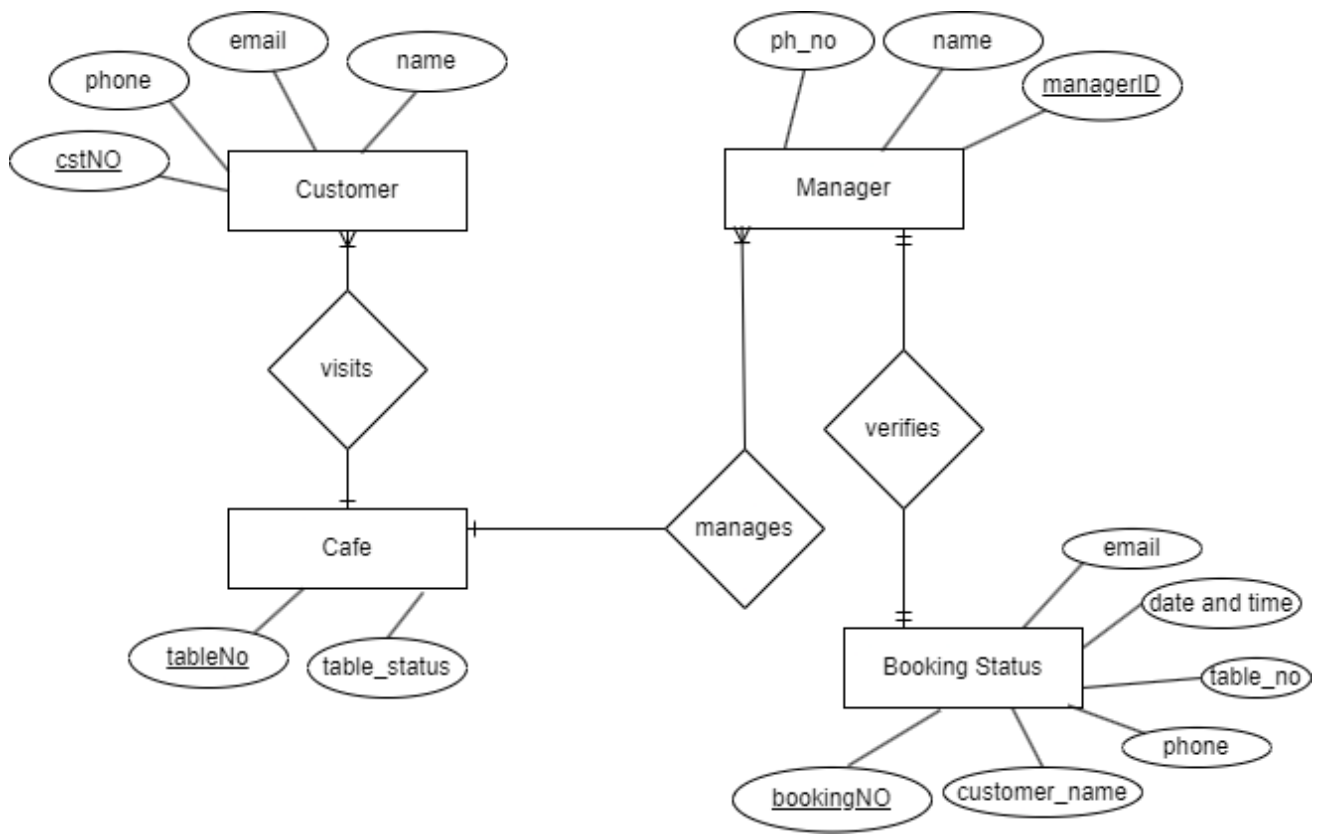
Figure 4.1: ER Diagram

4.2 Use Case Diagram

Use case is a list of steps, typically defining interaction between a role and a system, to achieve a goal.

A use case diagram is a graphic depiction of the interactions among the elements of a system. It is a methodology used in system analysis to identify, clarify, and organize system requirements. In this context, the term "system" refers to something being developed or operated. Use case diagrams are employed in UML (Unified Modeling Language), a standard notation for the modeling of real-world objects and systems.
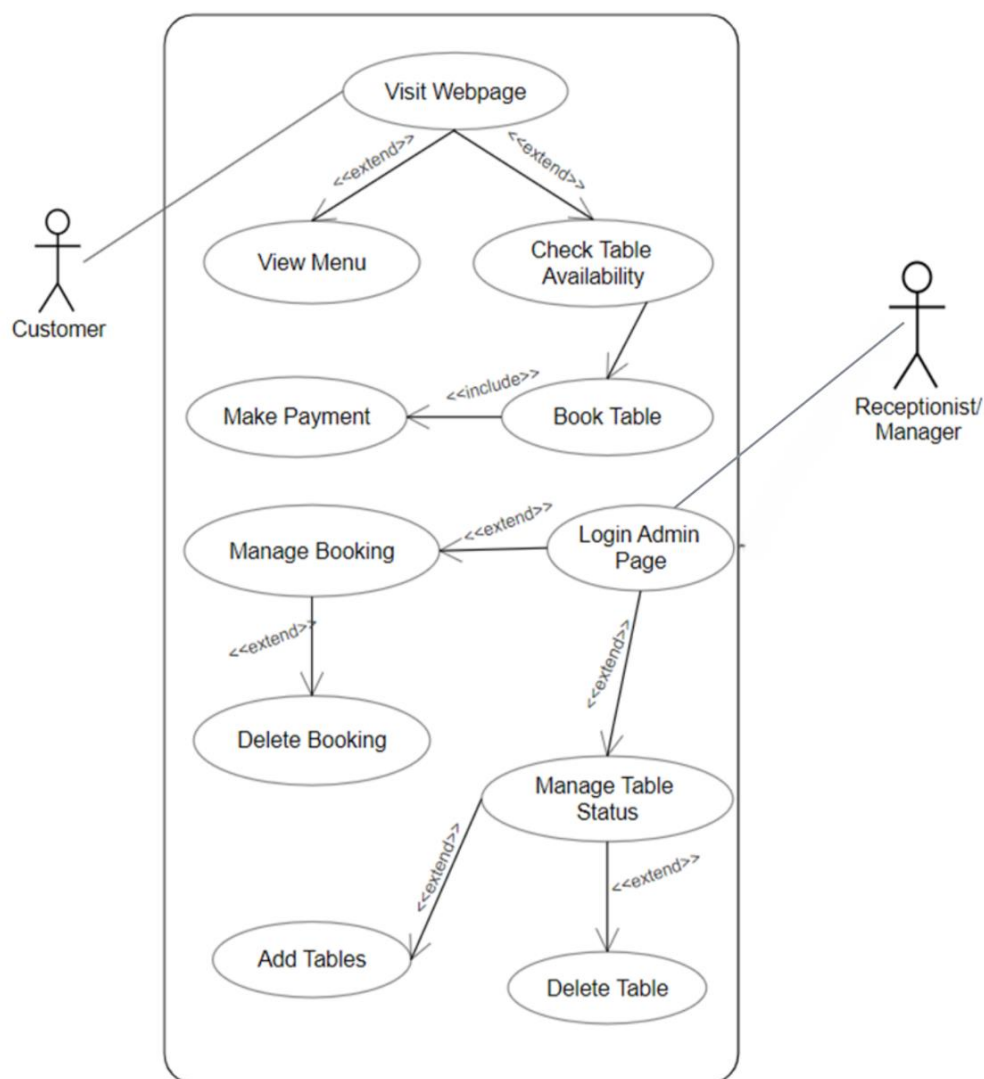
Figure 4.2: Use Case Diagram

4.3 Project Timeline

TASK/PROCESS	Mangsir		Poush				Magh		
	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3
Analysis	██								
Design		██							
Coding			████████						
Testing							██		
Maintenance								██	
Documentation		████████████████							

Figure 4.3: Gantt chart

5. Project Deliverable

- **User-Friendly Platform:**

  Create an intuitive and accessible online platform for customers to easily reserve cafe tables. The system will feature a responsive design for seamless use on various devices.

- **Time-Saving Features:**

  Streamline the reservation process with quick table selection, simplified confirmation, and automated notifications for both customers and cafe managers.

- **Dynamic Table Updates:**

  Provide real-time updates on table availability, ensuring transparency and facilitating prompt reservations for customers.

6. Conclusion and Further Development

6.1 Conclusion

In summary, the Cafe Reservation System project has successfully developed a web-based platform to overcome the limitations of manual table booking processes in cafes. Powered by PHP and MySQL, the system achieves key objectives, including improved efficiency, instant access, enhanced communication, and customer choice.

Beyond these objectives, the system offers additional benefits such as reduced paper usage, scalability, and valuable data insights.

6.2 Further Development

- **Mobile app integration:**
  Offering a mobile app would enhance user accessibility and convenience.

- **Payment integration:**
  Online payment processing portal supporting all mobile wallets would create a more streamlined experience for customers.

- **Specific Date and Time Booking:**
  Customers can book a table for up to the next 7 days for a specific time and date.

References:

[1] System Using Android Mobile Application" in International Journal of Advanced Research in Science, Engineering and Technology Vol. 5, Issue 9, September 2018

[2] S. R. Patil, Snehal Salunkhe, Nikita Kulkarni & Priyanka Savant, "E-converse An Affordable Touch Screen Solution to Intrigue Dining Experience", Department of Computer, Bharati Vidyapeeth's College Of Engineering.

[3] S.Pressman "Software Engineering Fundamentals", Seventh Edition.

[4] info@ncit.edu.np, NCIT LMS

APPENDIX
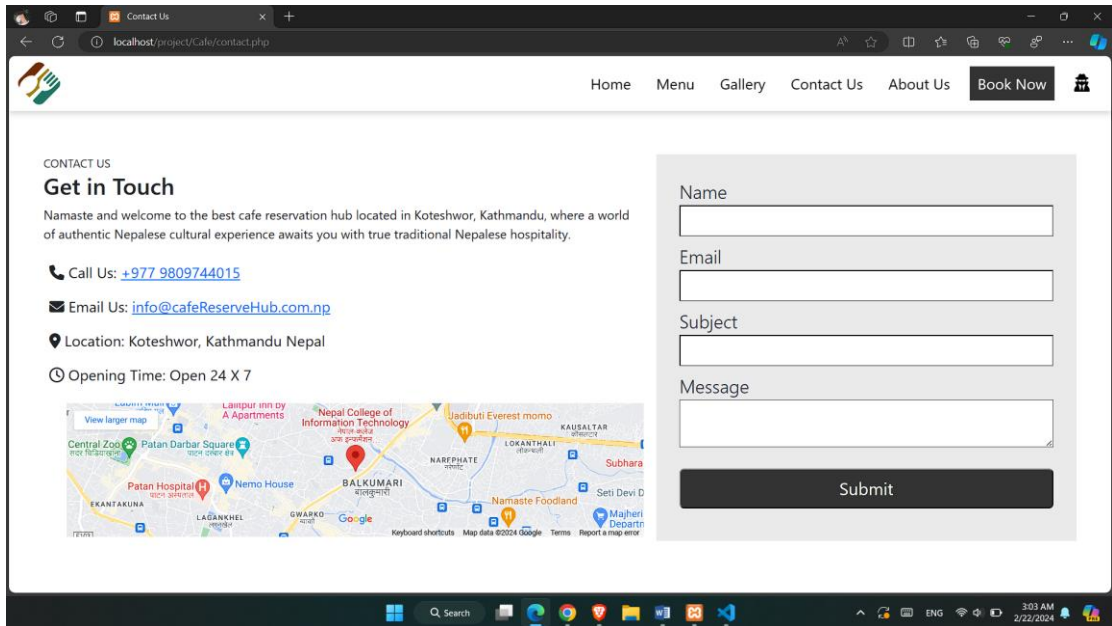
Home Landing Page:
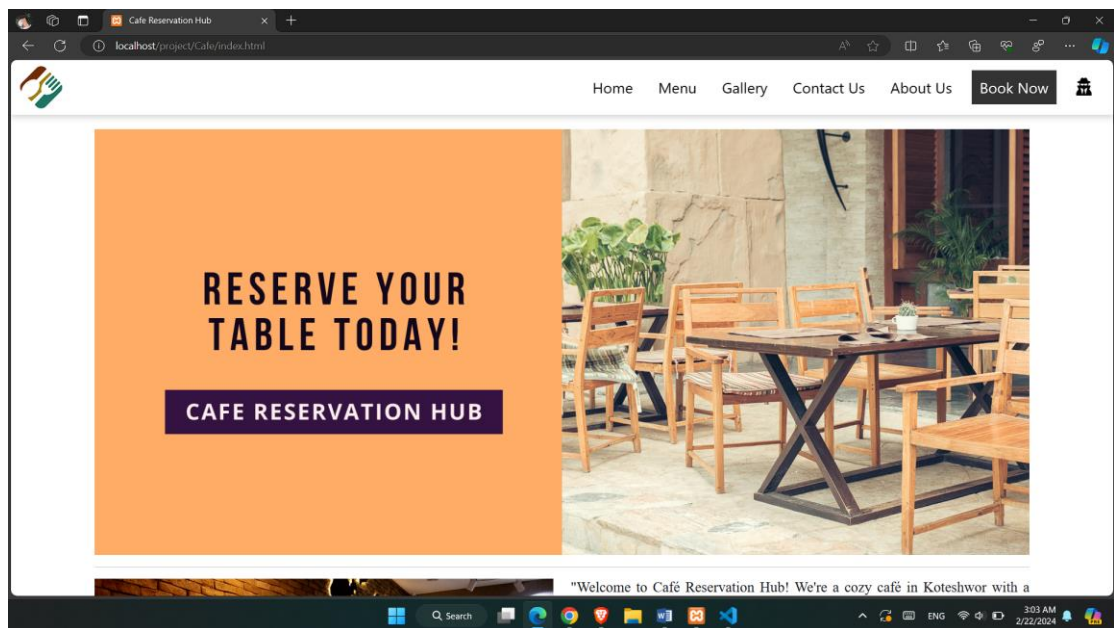
Cafe's Menu Page:
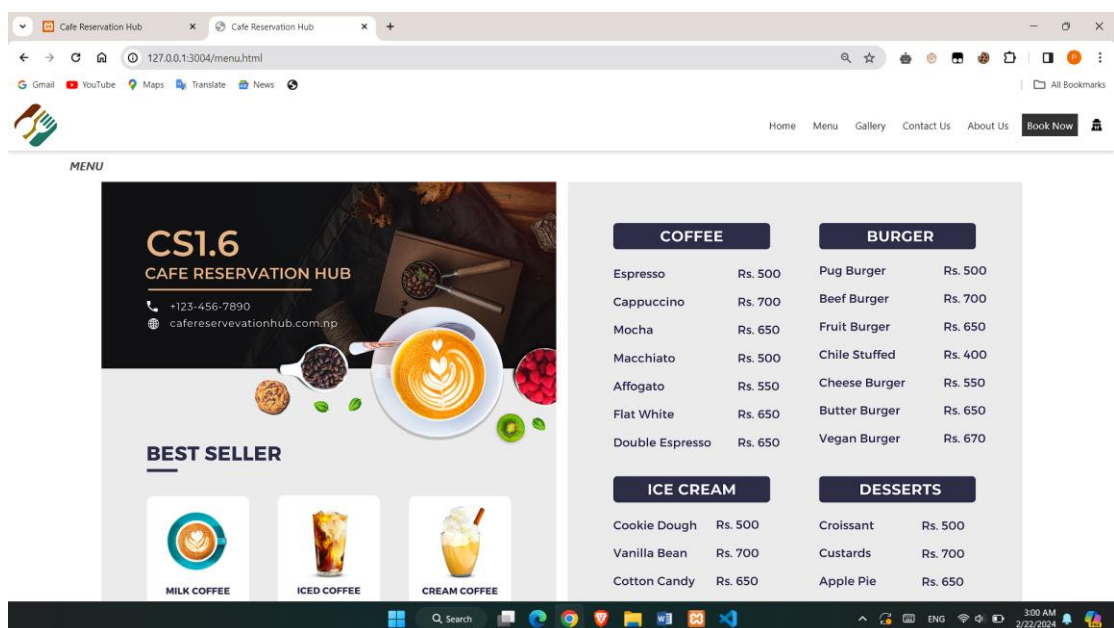
Contact Us Page:
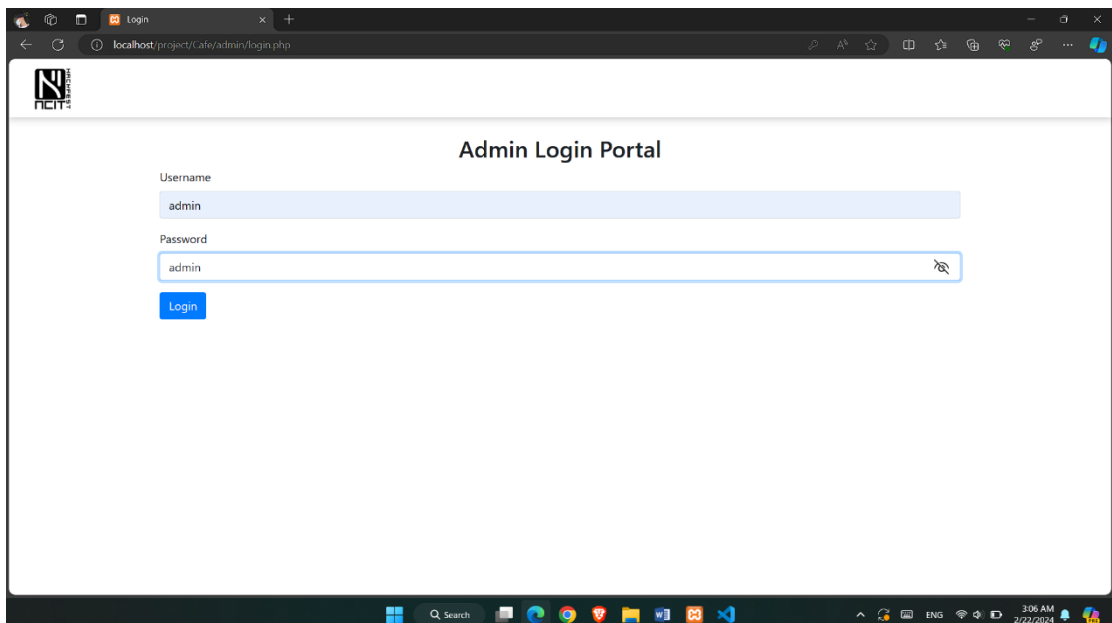
Admin/Manager/Receptionist Login Portal:

Book Now Page:

Table Status Page:

Customer's Message Page:

Booking Information Page: