SAVITRIBAI PHULE PUNE UNIVERSITY

M. G. VIDYAMANDIR'S

MAHARAJA SAYAJIRAO GAIKWAD ARTS COMMERCE AND SCIENCE COLLEGE

" DEPARTMENT OF COMPUTER SCIENCE "

A Project Report
On

" CAFEMAN "

Submitted in the partial fulfillment of the requirement for the award of the
Degree of
Bachelor of Science in Computer Science

Submited by
Bhalchandra Prashant Khairnar (16)
Rahul Vilas Wagh (115)
Gaurav Gokul Thoke (15)

under the guidance of

Dr. Amit D. Kasliwal

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Mahatma Gandhi Vidyamandir's

Maharaja Sayajirao Gaikwad Arts, Science & Commerce College

Malegaon Camp, Tal. Malegaon, Dist. Nashik (MS)
Affiliated to Savitribai Phule Pune University, Pune
(Estd.1959)
NAAC accredited with A+ Grade

CERTIFICATE

This is to certify that Mr. Khairnar Bhalchandra Prashant , Mr. Wagh Rahul Vilas , Mr. Thoke Gaurav Gokul have completed their project on "**CAFEMAN**" satisfactorily in the partial fulfillment of the requirement for the award of the degree of **B. Sc. (Comp. Science)** for the subject CS3611, course affiliated to Savitribai Phule Pune University for the academic year 2023-2024.

Project Guide   Prof. D. J. Deore

Internal Examiner   External Examiner

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Finally, we thank each and everyone who helped to complete our project work with their cordial support.

Project Team Members
Bhalchandra Prashant Khairnar (Roll no 16)
Rahul Vilas Wagh (Roll No 115)

Gaurav Gokul Thoke(Roll No15)

8 Bibliography and References

Abstract

The Cafe Management System is a PHP project designed to streamline operations for cafes or coffee shops. It serves as a straightforward web application where customers can place orders and potential customers can explore menu offerings. By efficiently managing orders, this project aims to save time for both cafe management and customers. The system includes both Public and Admin modules.

In the Admin module, administrators have full control over data management, including menu items, staff roster, and order lists. Admin users can efficiently handle crucial information such as inventory management and menu updates. Staff users, on the other hand, have limited control over the admin side, ensuring smooth operations without compromising security.

On the Public side, customers can browse the cafe's menu offerings, making informed decisions about their orders. This user-friendly interface enhances the overall customer experience and promotes customer satisfaction.

Overall, the Cafe Management System offers intuitive functionalities for both cafe management and customers, aiming to streamline operations and enhance service quality.

1. Introduction to proposed system

"CafeMan" is a revolutionary cafe management website designed to streamline your cafe's operations and elevate customer experience. With features like intuitive menu management, online ordering, smart reservations, and QR code functionality, "CafeMan" is your all-in-one solution for efficient and modern cafe management. Embrace simplicity, enhance customer satisfaction, and propel your cafe to new heights with "CafeMan."

a. Motivation

- **1.Customer-Centric Experience:**
  Make your customers' experience a top priority with convenient features like online ordering and smart reservations, ensuring a smooth and enjoyable time at your café

- **2.Adaptation to Modern Trends:**
  Stay updated with the times by incorporating modern trends like QR codes in your cafe, keeping up with the latest technology in the hospitality industry.

- **Competitive Edge:**
  Stand out from the competition by having a cafe management system with lots of useful features, giving your business an edge over others

- **Contactless Solutions:**
  Make it easy for people by using QR codes for a clean and modern dining experience,

meeting the increasing need for contactless interactions.

- **5.Business Growth Facilitation:**
  Help your business grow by giving tools that encourage customers to come back, stay loyal, and spread positive word-of-mouth about your services.

b.Problem Statements

- **Contactless Or deringand Payment:**
  In some cafes, people still use old-fashioned ways to order and pay, which can be a problem for cleanliness and efficiency. Without a contactless system, it might make customers less happy and create safety issues.

- **Order Accuracy and Efficiency:**

When cafes take orders by hand, mistakes and delays can happen, making the cafe less efficient. Using a modern system with QR codes can make ordering smoother, cutting down on errors and wait times.

- **Customer Data Management:**
  Cafes might find it hard to keep track of customer information without a good system. This makes it tough to offer personalized services, do targeted marketing, and build a loyal group of customers.

- **Competitive Disadvantage:**
  As the hospitality industry evolves, cafes without a QR code-based management system might fall behind competitors who offer more convenient and technologically advanced services. This lack of adaptation could result in a loss of customers.

- **Limited Analytics and Insights:**
  Many cafes don't have the right tools to understand what customers like, popular menu items, and busy times. A QR code system can give important information for making smart decisions, something many traditional setups are missing

c. Objective

- **Contactless Ordering:**
  Enable customers to access menus, place orders and make it easy to explore the menu by using QR codes, creating a smooth and engaging experience.

- **Smart Table Reservations:**
  Let customers easily reserve tables by scanning QR codes, making the booking process convenient and straightforward.

- **Promotions and Discounts:**

Give out discounts and special deals using QR codes, so customers can easily grab the offers on the website.

- **Enhanced Marketing Opportunities:**
  Create QR codes for marketing campaigns, making it simple to share on social media and in promotional materials for better exposure.

d.Project Scope

The Coffee Shop management help to manage and run the Cafe shop systematically. In this management system we will provide that can be used by café employee to take order .So that owner of shop can evaluate the whole system. Employee can take payment which will manage into the software.The administrator can handle all record like employee ,product ,customer ,order and bill.

- **Contactless Ordering System:**
  Let customers order without touching anything by scanning QR codes linked to menu items, making the process smooth and hands-free.

- **Efficient Table Reservations:**
  Make table reservations easy with QR codes; customers can reserve tables effortlessly and get instant updates on availability.

- **Promotional Engagement:**
  Boost marketing by using QR codes for promotions, discounts, and special offers, make in fun and easy for customers to join in.

- **Streamlined Loyalty Program:**
  Make the loyalty program straightforward by letting customers earn and use rewards with QR codes, easily scanned during transactions.

- **Enhanced Safety and Hygiene:**
  Use QR codes to keep things safe and clean – let customers pay without contact, track orders, and ensure hygiene for both customers and staff.

e.Limitations

- **Internet Connectivity:**
  Customers need a stable internet connection to access the website and use QR code features. Poor connectivity may lead to delays or disruptions in service.

- **Data Privacy Concerns:**
  Collecting and storing customer data through QR code interactions may raise privacy concerns. Adequate measures must be in place to secure and protect user information.

- **Technical Support Requirements:**
  Staff may require additional training to assist customers who face issues with QR code scanning or usage. This adds to the need for ongoing technical support.

- **Limited Interaction with Staff:**
  Over-reliance on QR codes may reduce face-to-face interactions between customers and staff, impacting the personalized and social aspects of the dining experience.

- **Health and Safety Concerns:**
  In situations where customers need to touch physical menus or QR code scanners, there may be concerns about the spread of germs, especially during health crises.

2. System Analysis

a. Existing System

- **Order Placement with QR Codes:**
  Customers scan QR codes on tables or menus to access the cafe's online ordering system through a link in a mobile-optimized website or app for easy order placement.

- **Menu Accessibility:**
  Customers can easily browse the menu, customize orders, and place them online using table-specific QR codes for a seamless and personalized ordering experience.

- **Menu Management**:
  The system allows cafe managers to update and manage the menu items. Each menu item has a corresponding QR code for easy access.

- **Order Placement via QR Code:**
  Customers scan QR codes on tables or menus to view the menu and place orders through the website. The QR code links to a specific menu item or table in the system.

- **Notifications:**
  Automated notifications, such as order confirmations, reservation reminders promotions, are sent to customers through the system.

- **Dynamic Menu Access:**
  Customers scan QR codes to access dynamic menus with images and descriptions.

- **Contactless Ordering:**
  Orders are placed seamlessly by scanning QR codes on tables.

b. Scope and limitation of Existing System

- **Ordering Efficiency:**
  Using QR codes for ordering helps customers quickly access the digital menu, place orders, and pay, making the process faster and more convenient, leading to happier customers.

- **Table Management:**
  Assigning QR codes to tables helps waitstaff easily manage and track orders, improving communication between the kitchen and serving staff for a smoother dining experience.

- **Dependency on Technology:**
  The QR code system's success depends on technology, and any issues with internet, smartphones, or the system itself could disrupt regular cafe operations.

- **Analytics and Reporting:**
  The system collects data on customer preferences, peak hours, and popular items to provide insights for informed business decisions, better marketing strategies, and optimizing cafe operations.

- **Maintenance and Updates:**
  Regular maintenance and updates are crucial to keep the system running smoothly and prevent software issues or vulnerabilities that could affect the cafe's operations.

c. Stakeholders

- **Customers:**

  Customers can conveniently view menus, order food, by scanning QR codes, elevating their dining experience with a smooth and efficient process.

- **Staff:**

  Staff can simplify order taking, payments, and table management with QR codes, freeing up time to enhance customer service and efficiently oversee café operations.

- **Technology Providers**:

  Technology providers play a key role in building and maintaining the QR code system, ensuring it's reliable, secure, and continuously improved to meet the evolving needs of the cafe and its stakeholders.

3. Requirement Analysis.

a. Functional Requirements :

- **Menu Management:**
  Create a system that allows easy uploading and updating of menu items with descriptions, prices, and images, categorizes items, and generates dynamic QR codes for convenient customer access.

- **Order Processing:**
  Implement a QR code-based ordering system for customers, send real-time order notifications to the kitchen, and integrate with a secure payment system for smooth transactions.

- **Table Management:**
  Assign QR codes to tables for streamlined order tracking, provide status updates (occupied, vacant, awaiting cleaning), and integrate with the ordering system to link orders to specific tables.

- **Inventory Tracking:**
  Automatically update inventory by deducting sold items, receive low stock alerts for timely restocking, and integrate with suppliers for real-time update son product availability and pricing

- **Reporting and Analytics:**
  Generate sales reports with popular items and revenue trends, analyze customer preferences for improvement, and maintain system logs for security and accountability.

b. Performance Requirement

- **Response Time:**

  Requirement: The website should have a low response time, with pages loading within a specified duration (e.g., 2 seconds or less) to ensure a fast and responsive user experience.

- **Image and Media Loading:**

  Images and media files, such as menu item pictures, should load quickly to enhance the visual appeal of the website without causing delays.

- **Notification Delivery Time:**

  Notifications, including order confirmations and updates, should be delivered promptly to users through various channels (e.g., email, SMS, in-app notifications).

c. Social Requirements

- **User Accessibility:**
  Make sure everyone can easily use the cafe system, even if they have trouble seeing or hearing. For example, let people adjust the text size, use high-contrast colors, and have the system work well with screen readers.

- **Multilingual Support:**
  Allow the cafe system to work in different languages so that people who speak different languages can use it without any problems. This means having menus and messages available in various languages to make everyone feel welcome.

- **Cultural Sensitivity:**
  When designing the cafe system, think about the different cultures of both customers and staff. Use images, language, and symbols that are respectful and inclusive of everyone's backgrounds to create a friendly atmosphere in the cafe.

- **User Training and Support:**
  Help staff members learn how to use the new cafe system with easy-to-follow instructions. Provide them with all the training they need and be there to help them if they have any questions or problems, so they can provide excellent service to customers.

d. Data Collection

- **Customer Information:**
  Name and Contact Details: For order tracking and customer communication. Preferences and History: To personalize recommendations and improve customer experience

- **Feedback and Reviews:**
  Place QR codes on receipts or in specific areas for customers to provide feedback. Direct customers to a feedback form or review platform, helping you improve your services.

- **Ordering:**
  Implement QR codes on tables or menus that customers can scan to access the digital menu. Capture order preferences, special requests, and modifications through the digital menu. Record order history for personalized recommendations in the future.

- **Promotions and Discounts:**
  Issue QR codes for promotional offers or discounts. Track coupon redemptions and customer participation in marketing campaigns.

- **Social Media Integration:**
  Include QR codes on marketing materials that lead customers to your social media profiles.
  Encourage customers to check-in or share their experiences online.

e. Software / Hardware Specification

- **Hardware Requirements:-**

1.Processor: i3 ,o i5 or Above

2.RAM: 8Gb

3. Storage: 120Gb

4.Keyboard

5.mouse

6.Std.monitor

- **Software Requirements:-**

1: Operating system: Linux/windows

2. Software: Apache Netbean pgadmin4

4.System Design

Data dictionary

1.users

Field Name	Data Type	Constraint	Description
id	integer	Not null	Primary Key
Username	text	Not null	User Name
firstName	text	Not null	First Name
lastName	text	Not null	Last Name
email	text	Not null	Email
phone	bigint	Not null	Phone Number
userType	text	Not null	User Type
password	text	Not null	Password of user

Field Name	Data Type	Constraint	Description
joinDate	timestamp	Not null	Date

2.categories

Field Name	Data Type	Constraint	Description
categorieId	integer	Not null	Primary Key
categorieName	text	Not null	Categorie Name
categorieDesc	text	Not null	Categorie Desc.
categorieCreateD	timestamp	Not null	Cate.Create Date

3.item

Field Name	Data Type	Constraint	Description
itemId	integer	Not null	Primary Key
itemName	text	Not null	Item Names
itemPrice	integer	Not null	Item Price
itemDesc	text	Not null	Item Desc.
itemCategorie	integer	Not null	Item Categorie
itemPubDate	timestamp	Not null	Item Pub Date

4.orderitems

Field Name	Data Type	Constraint	Description
id	integer	Not null	Primary Key

orderId	integer	Not null	Order ID
itemId	integer	Not null	Item ID
itemQuantity	integer	Not null	Item Quantity

5.orders

Field Name	Data Type	Constraint	Description
orderId	integer	Not null	Primary Key
userId	integer	Not null	User ID
table_no	text	Not null	Table Number
amount	integer	Not null	Amount
paymentMode	text	Not null	Payment Mode
orderStatus	text	Not null	Order Status
orderDate	timestamp	Not null	Order Date

6.viewcart

Field Name	Data Type	Constraint	Description
cartItemId	integer	Not null	Primary Key
itemId	integer	Not null	Order ID
itemQuantity	integer	Not null	Item ID
userId	integer	Not null	Item Quantity
addedDate	timestamp	Not null	Added Date

7.contact

Field Name	Data Type	Constraint	Description
contactId	integer	Not null	Primary Key
userId	integer	Not null	User ID
email	integer	Not null	Email
phoneNo	integer	Not null	Phone No.
orderId	timestamp	Not null	Order ID
Message	text	Not null	Messages
time	timestamp	Not null	Time

8.contactreply

Field Name	Data Type	Constraint	Description
id	integer	Not null	Primary Key
contactId	integer	Not null	Contact ID
userId	integer	Not null	User ID
message	text	Not null	Messages
datetime	timestamp	Not null	Date time

9.sitedetail

Field Name	Data Type	Constraint	Description
tempId	integer	Not null	Primary Key
systemName	text	Not null	System Name
email	text	Not null	Email
contact1	bigint	Not null	Contact 1
contact2	bigint	Not null	Contact 2
address	text	Not null	Address
dateTime	timestamp	Not null	Date Time

B.System

Diagram
i. ER

Diagram
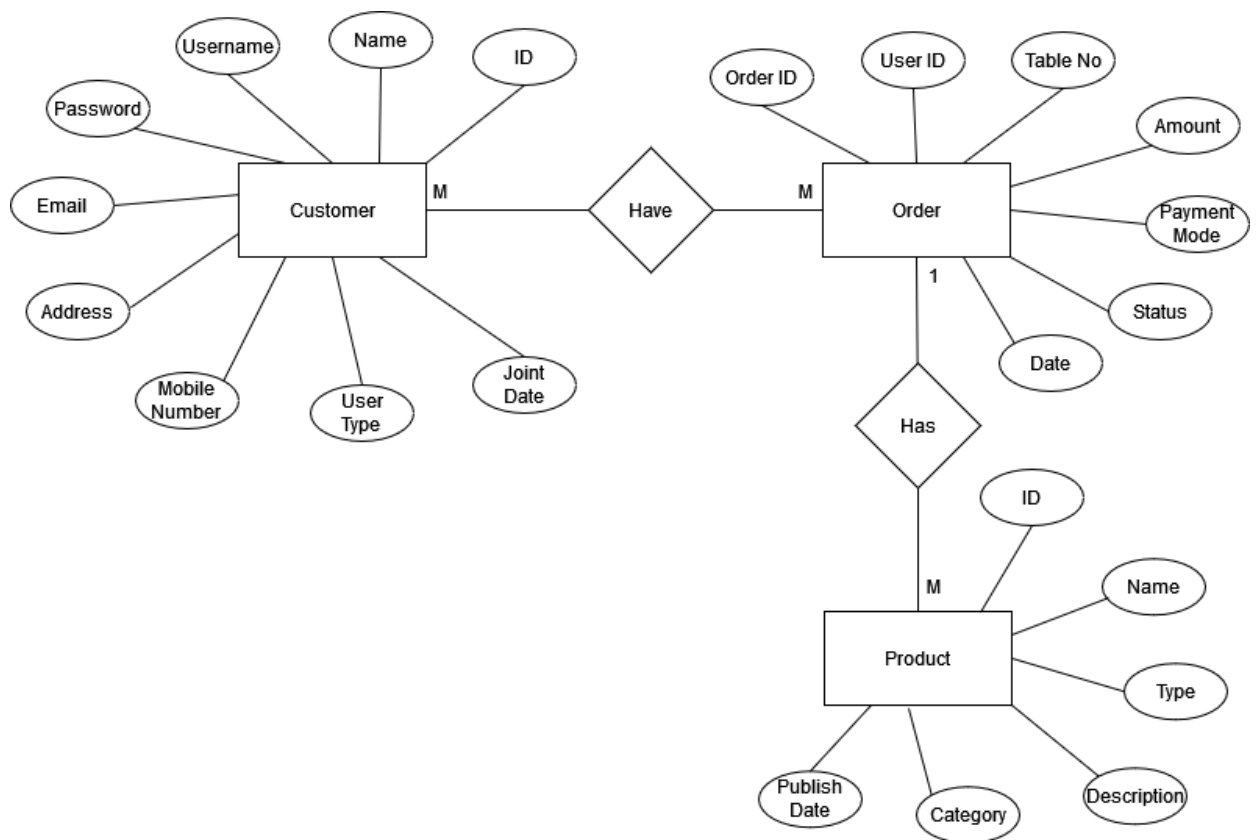
ii. Class diagram

iii. Use Case Diagram

Cafe Management System

Browse Menu

Place Order

Make Reservation

Generate QR Code

Manage Menu

Manage Orders

Manage Reservations

Manage Wifi Security

Validate QR Code

Customer

Admin

Wifi Security

QR Code
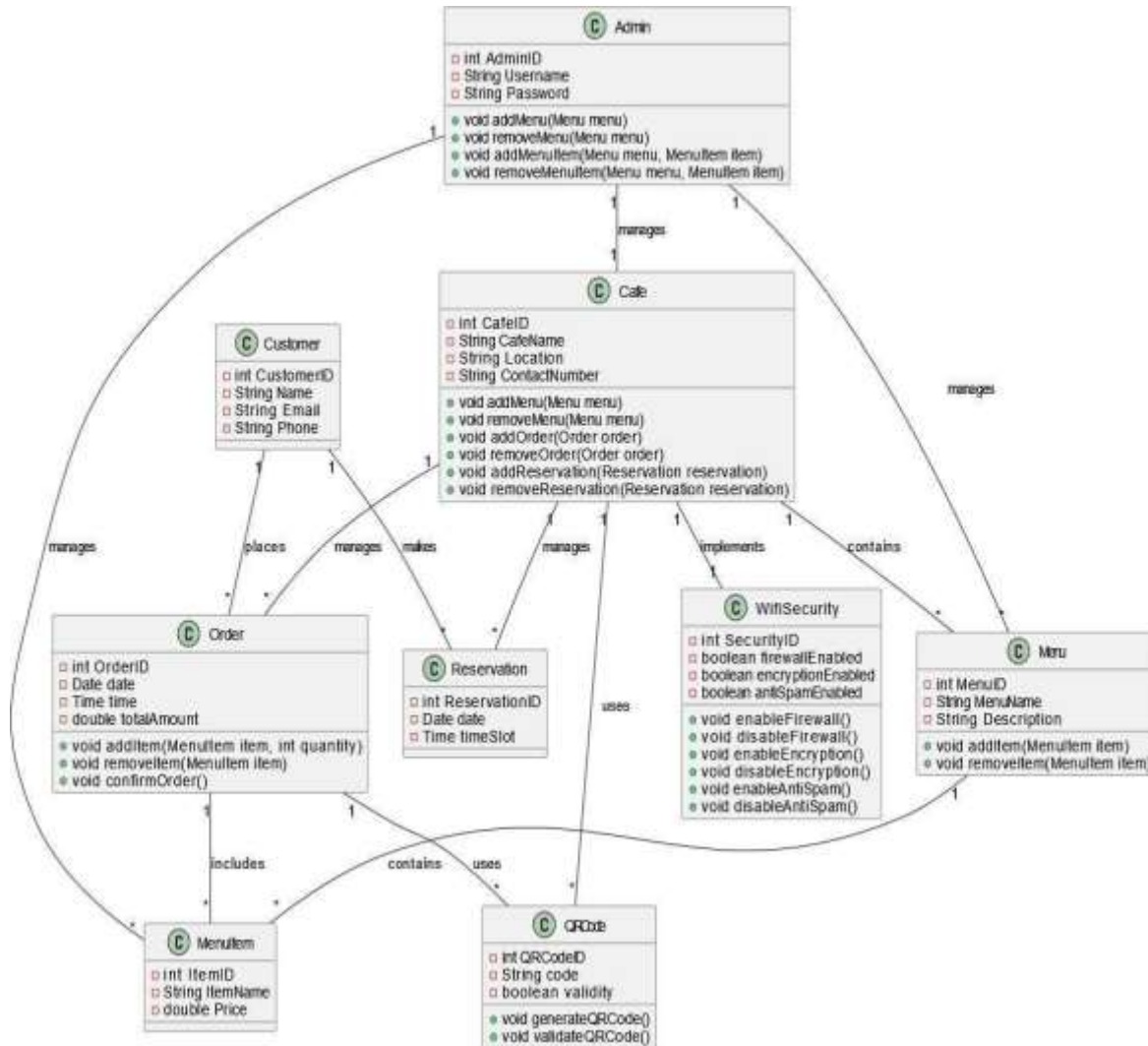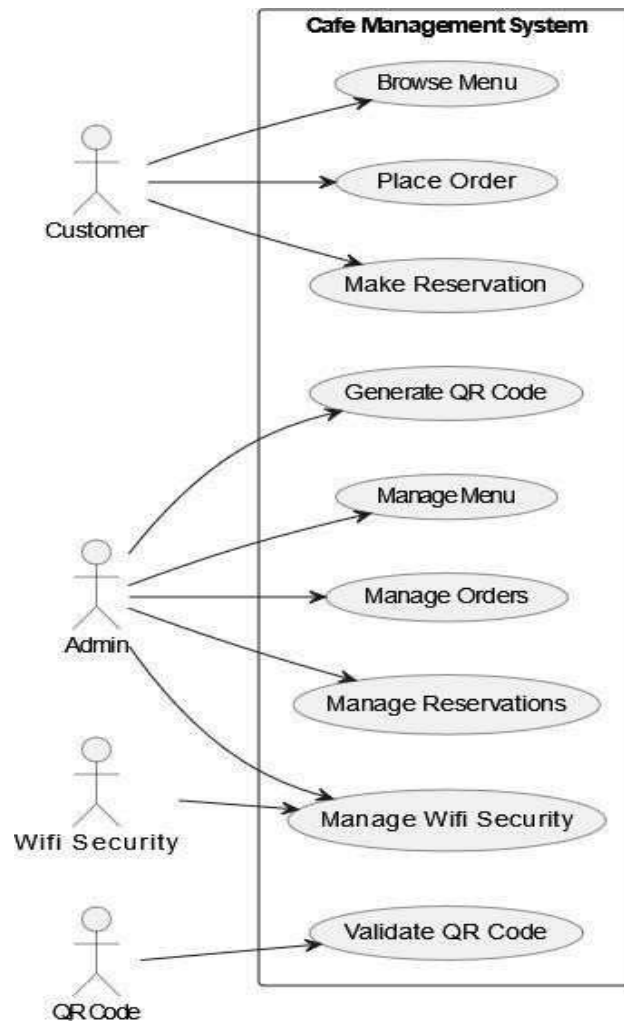
iv. Activity Diagram
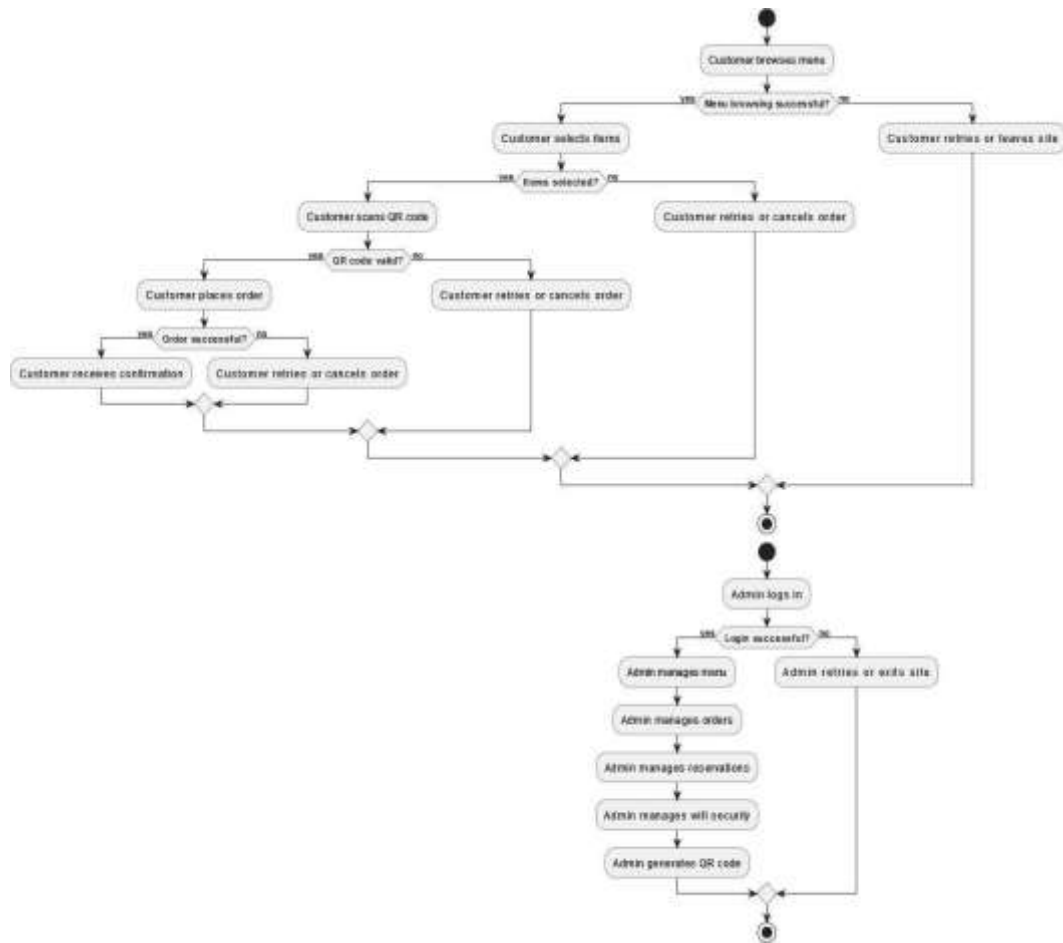
V. Sequence Diagram
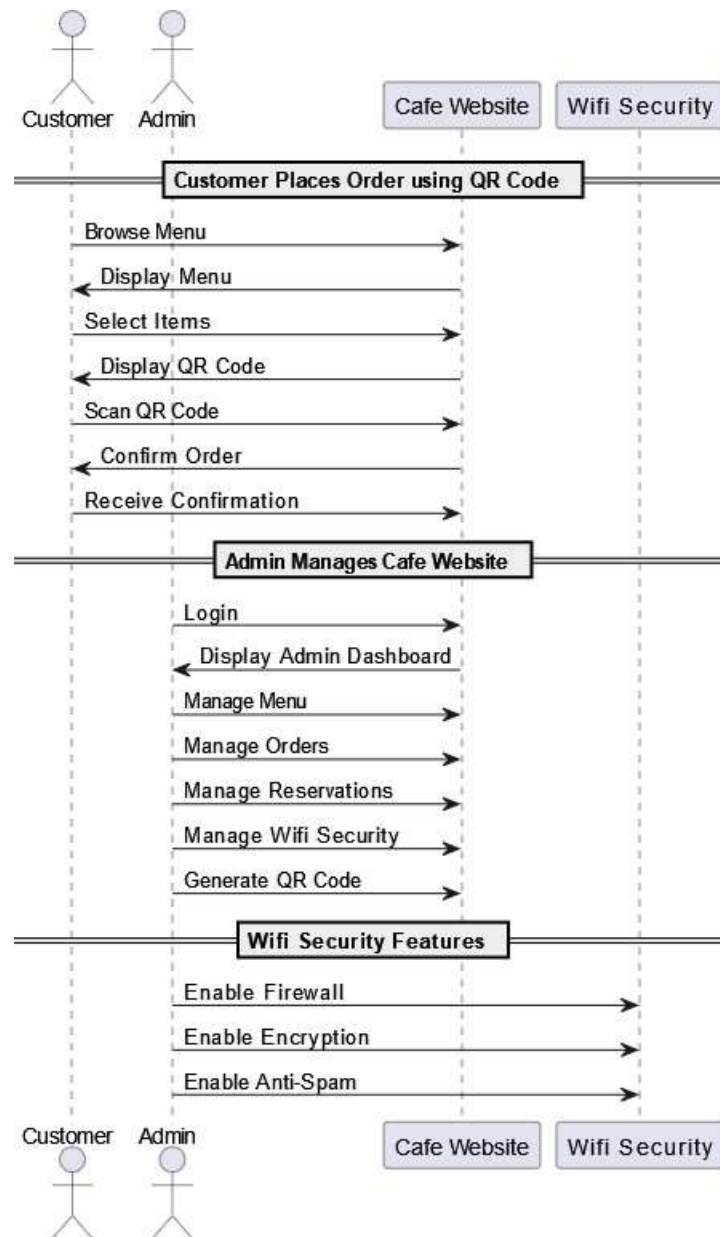
vi. Component Diagram
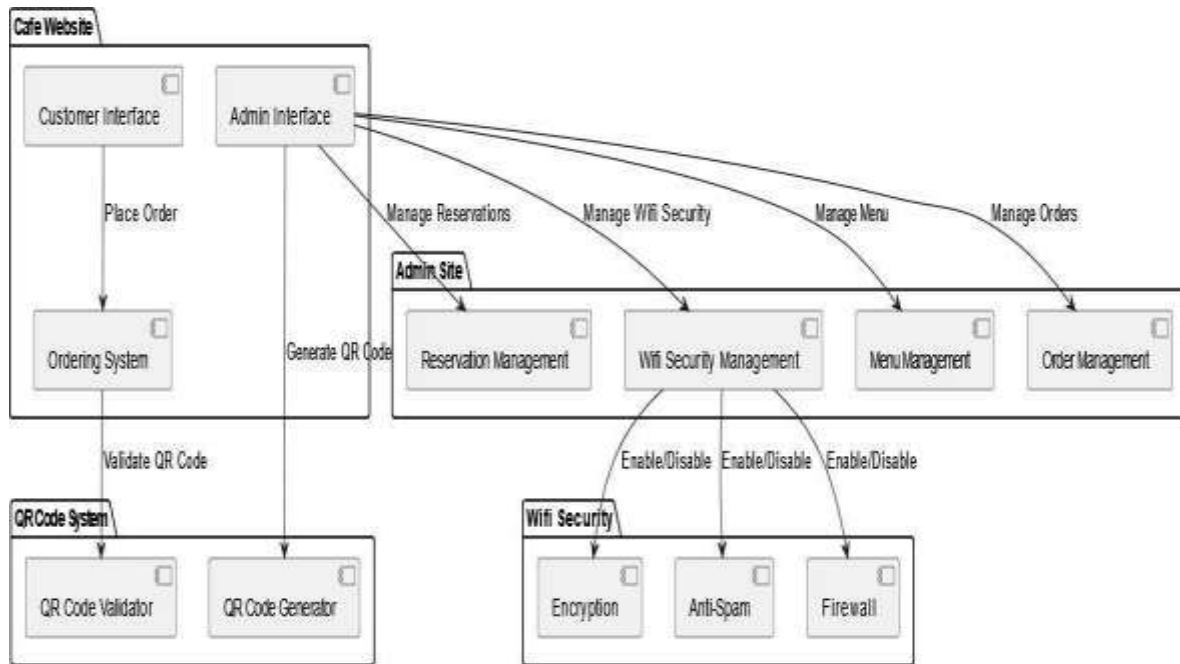
vii. Deployment Diagram
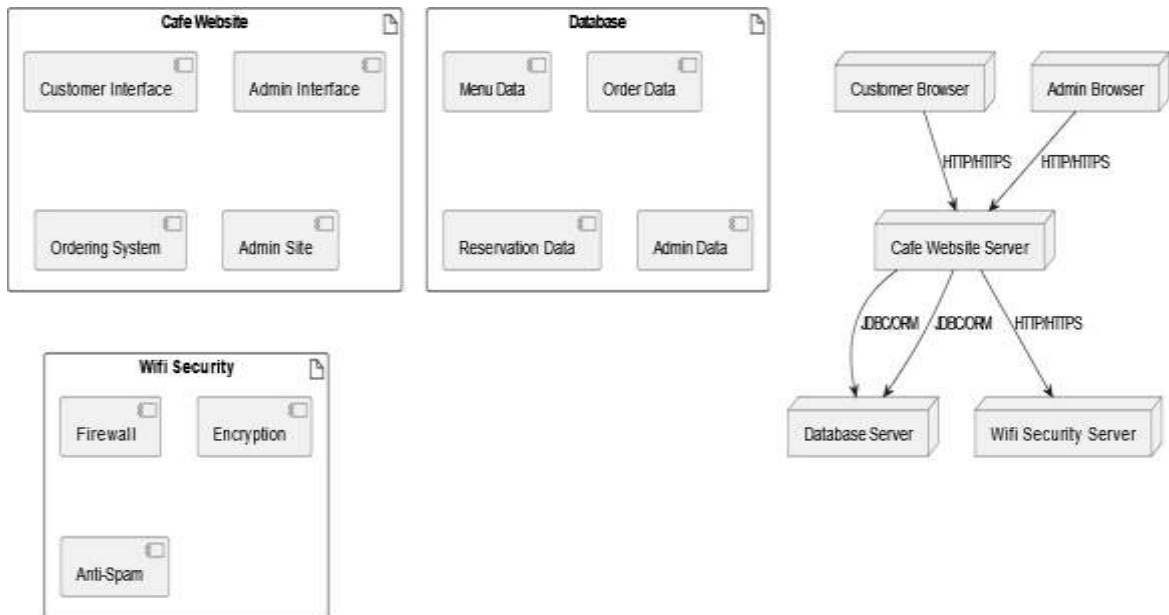
5. System Implementation

a. User input interface

1. Login page

2. Signup page

3. Home Page
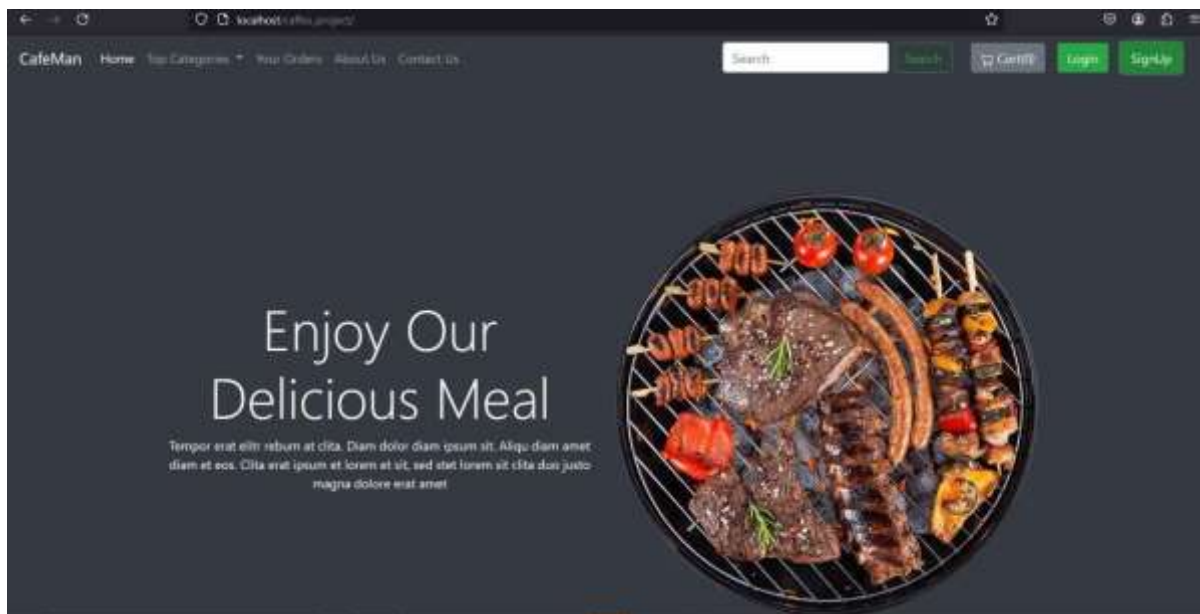
4. Menu and SubMenu
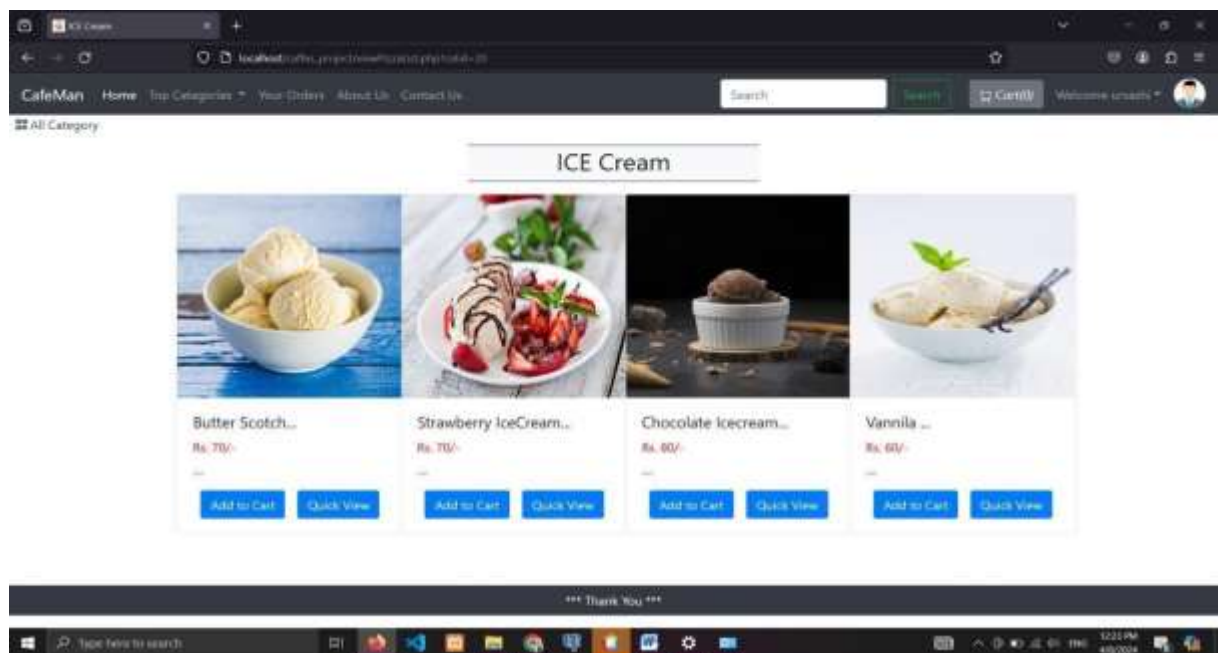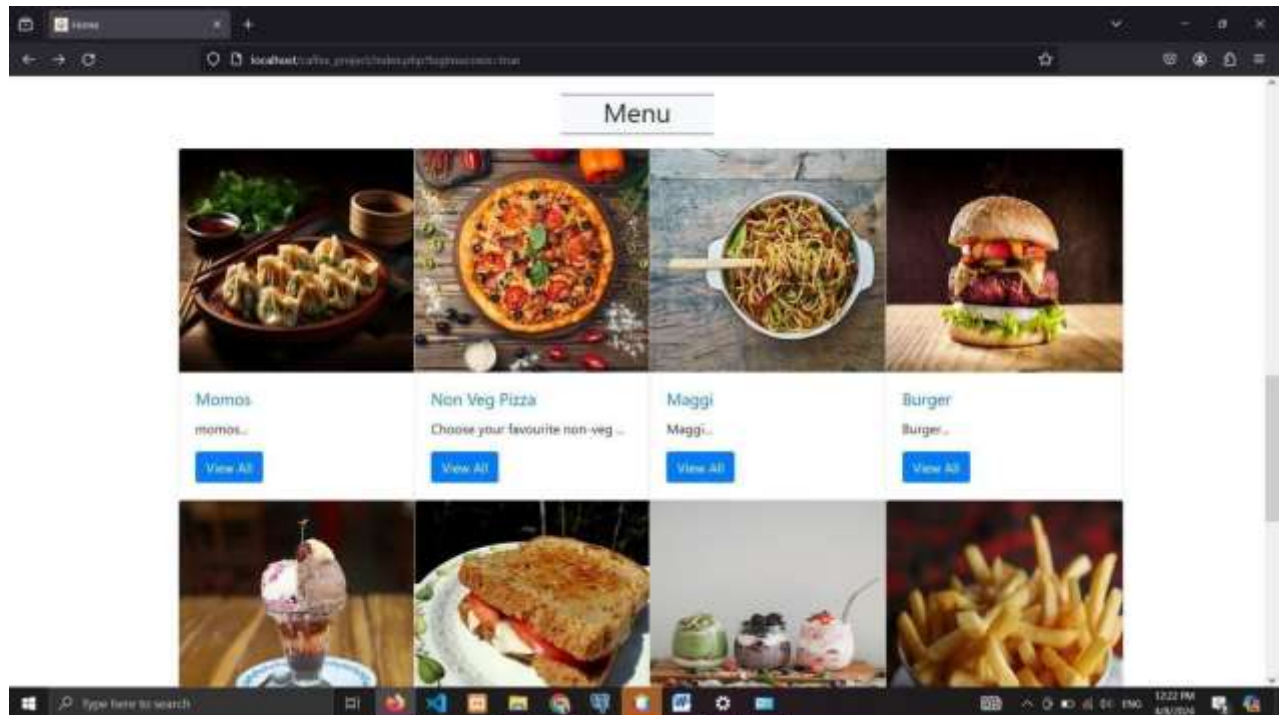
5. Order Page
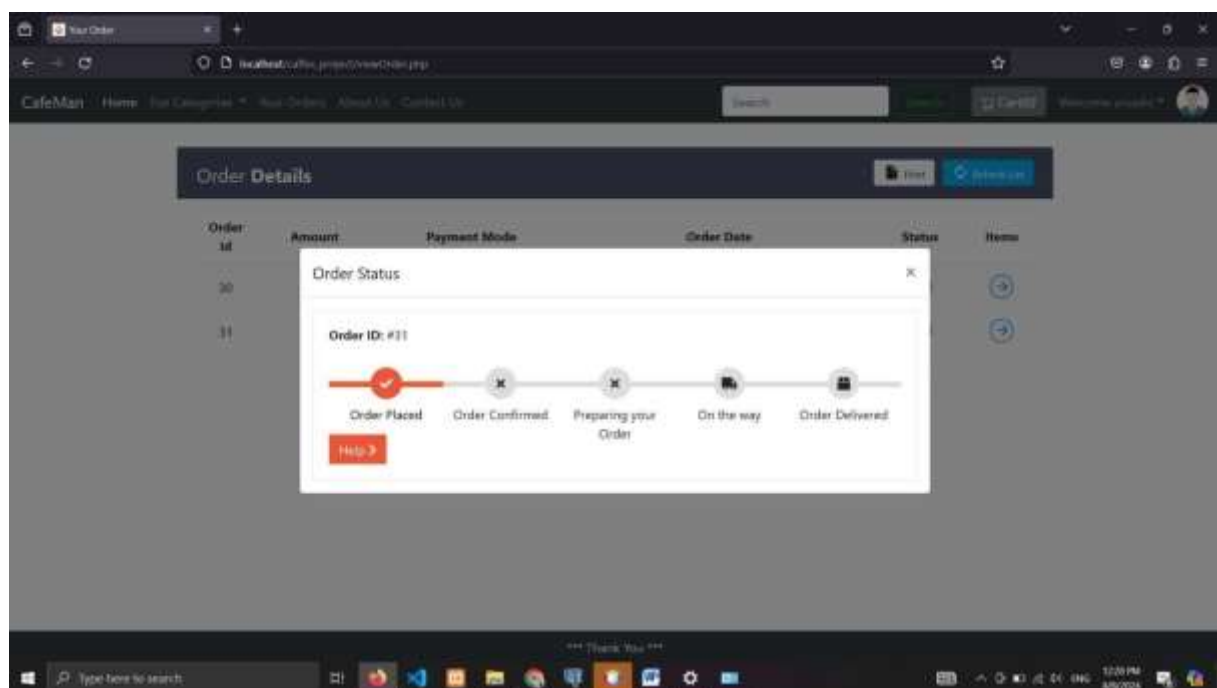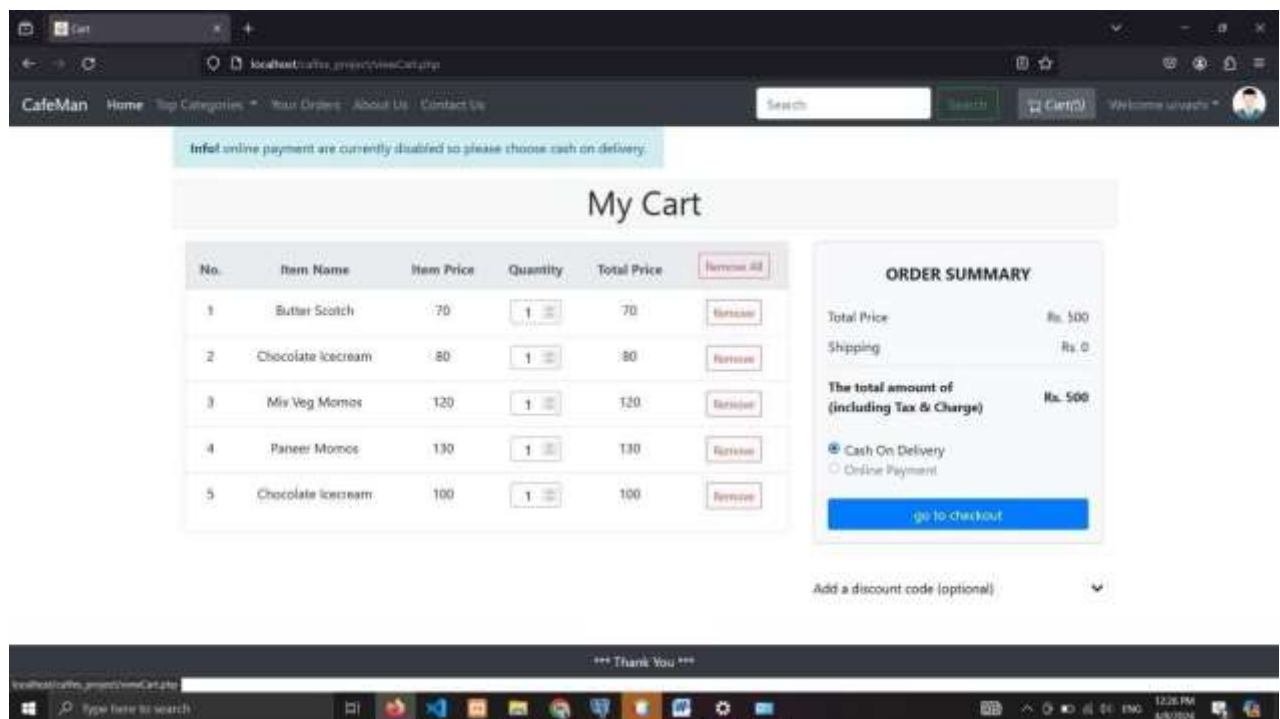
6. Admin Page

7. Mangae order

6. System Testing

a. Defining Test Plan :

1 Introduction

- This document outlines the testing approach for the cafe management website to ensure its functionalities, usability, and performance meet user requirements.

2. Objectives

- Validate that all features of the cafe management website work correctly and reliably.

3. Scope

- The testing will cover all key features of the website, including menu management, ordering system, table reservations, user management, payment processing, and reporting.

4. Test Environment:

- Testing will be conducted on various devices including desktops, laptops, smartphones, and tablets.
-

6. Testing Approach

- Test cases will be executed manually by testers.
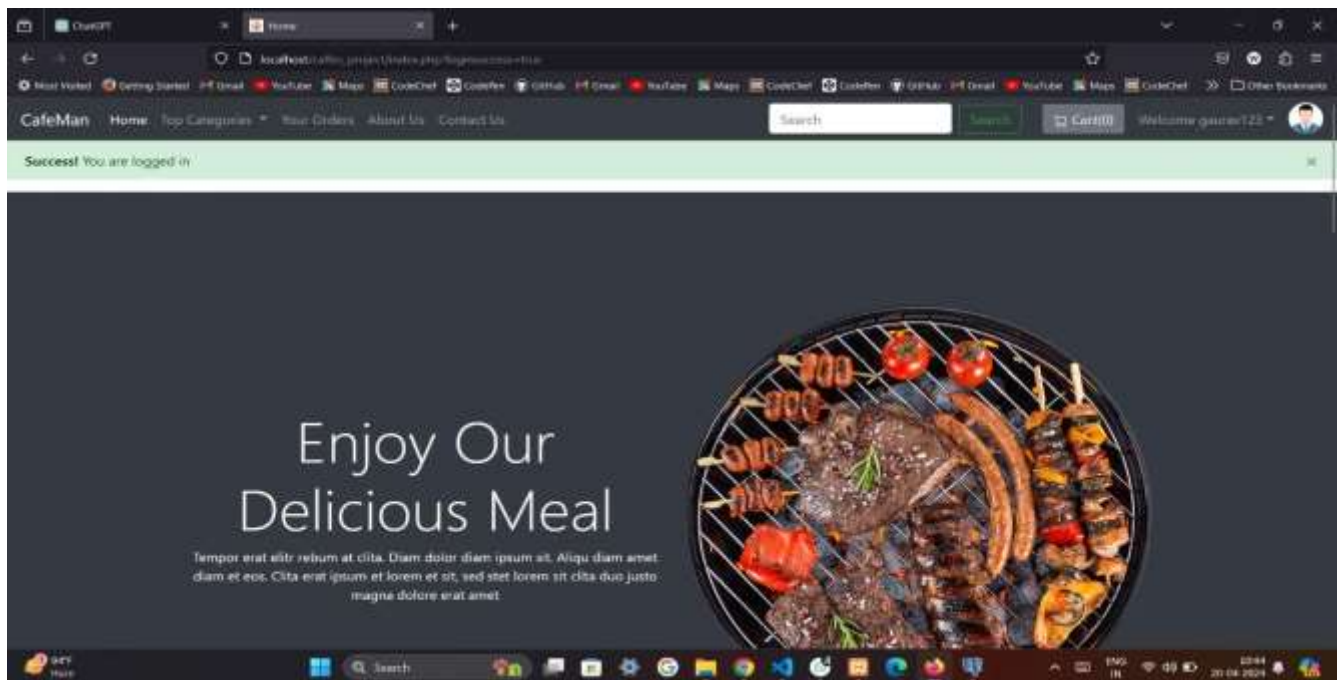
7. Risks and Mitigation:

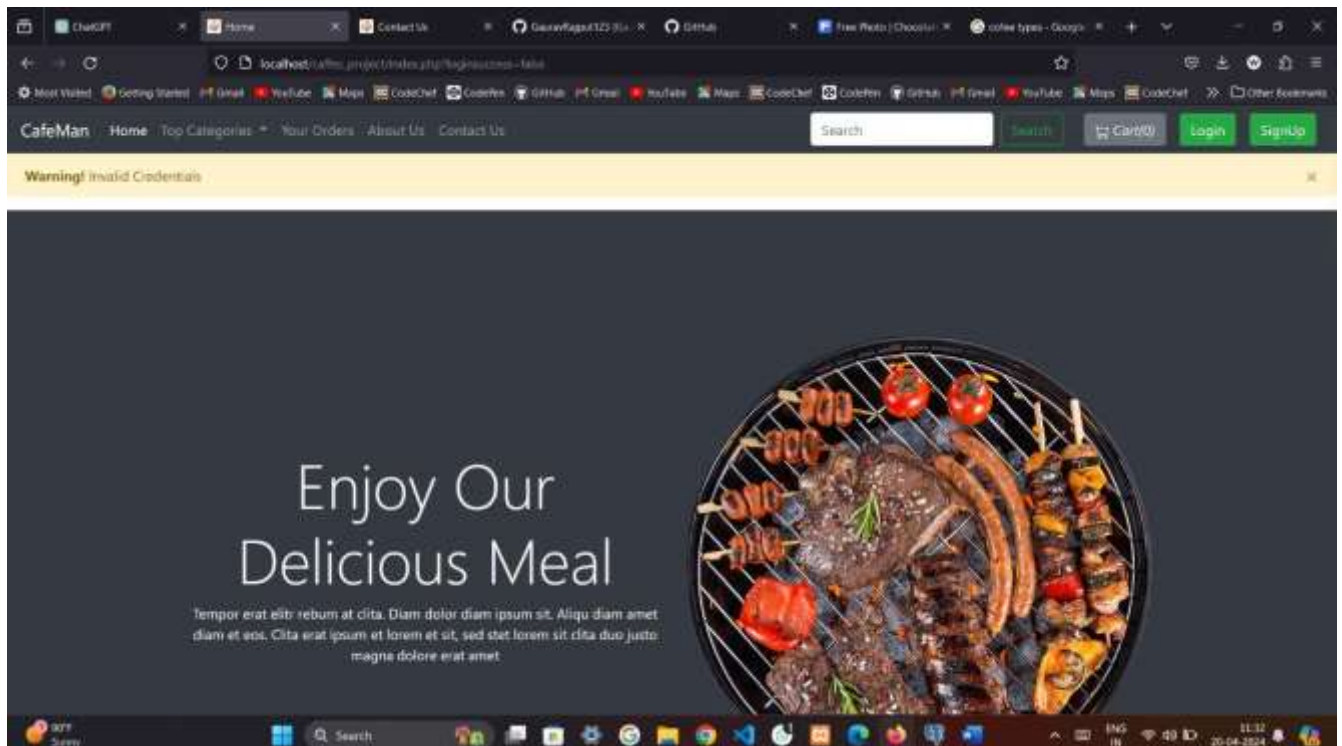- Risk: Payment processing errors may result in financial loss.

8. Deliverables:

- Test plan document.
- Test cases and scripts.
- Test execution reports detailing test results and any issues encountered.
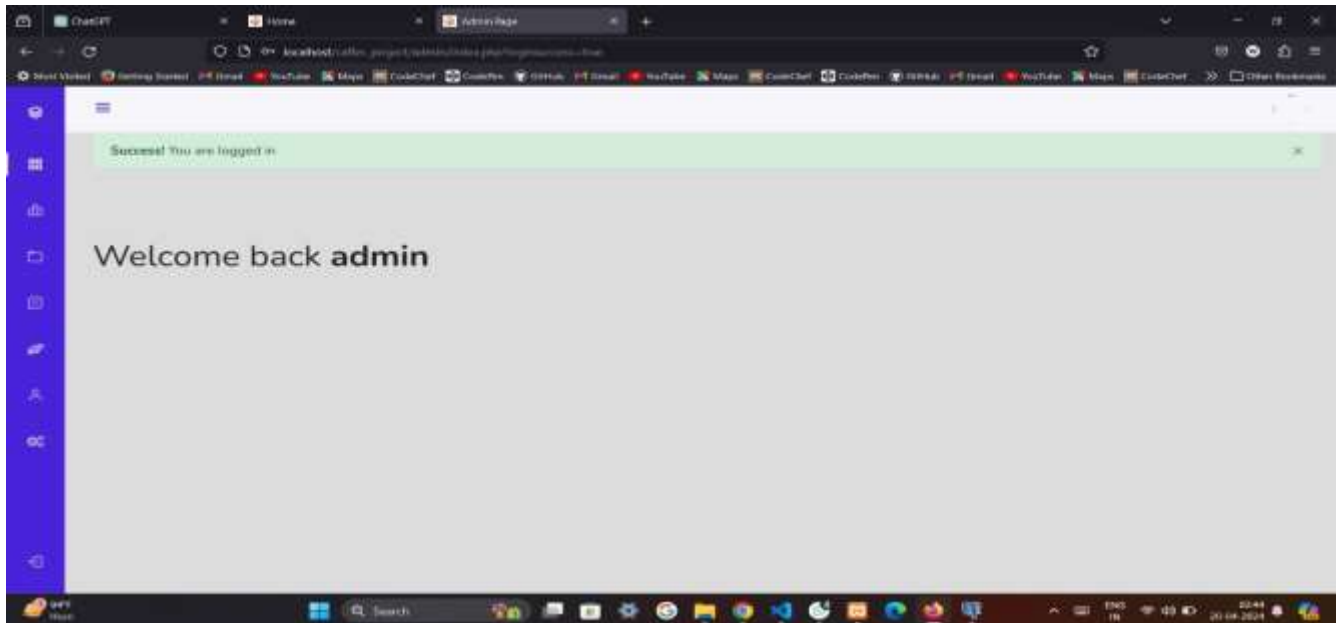
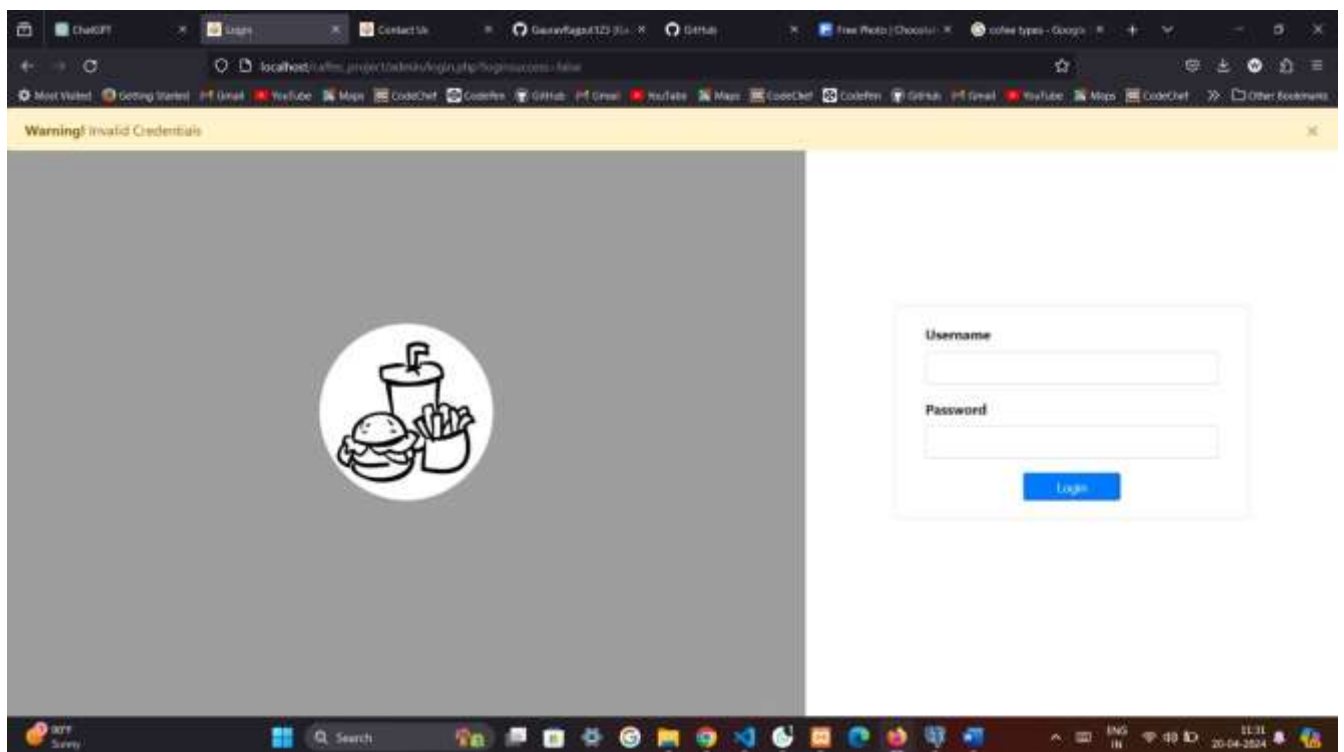## b. Implementing testing strategy :

▢) User Login Success

▢) User Login Unsuccess

▢) Admin Login Success

◻) Admin Login Unsuccess

7. Conclusion and Future Plans:

• Conclusion

In conclusion, the development and testing phases of the Cafe Management System have been successfully completed. Through thorough testing and collaborative efforts, we've

ensured that the system meets the essential standards of functionality, reliability, and ease of use. The invaluable contributions of our team members, supervisors, and stakeholders have played a pivotal role in achieving this significant milestone.

The Cafe Management System is poised to revolutionize cafe operations by streamlining order management, improving communication between staff and customers, and enhancing overall operational efficiency. With its robust features and user-friendly interface, the system is well-equipped to meet the dynamic needs of the cafe industry and elevate the cafe experience for both customers and staff members.

- **Future Plan:**

1. Enhanced User Interface:
Continuously improve the website's user interface to make it more intuitive and visually appealing. Incorporate user feedback to refine design elements and optimize navigation flow.

2. Mobile Application Development:
Develop a mobile application for the cafe management system to provide users with a convenient and on-the-go solution. Ensure seamless integration with the existing website and maintain consistency in features and functionalities.

3. Additional Features:
Implement additional features such as loyalty programs, promotions, and customer feedback mechanisms to enhance customer engagement and satisfaction. Integrate social media platforms for marketing and customer interaction.

8.Bibliography and Refererences

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UML Diagram :- https://drawio.com/

Github : https://github.com/GauravRajput123/cafeMan123.git