Veer Narmad South Gujarat University, Surat.

Department of Information and Communication Technology.

M.Sc. (Information Technology) Programme

Project Report

8th Semester

M.Sc. (Information Technology)

5 Year Integrated Course

Year 2023 – 2024

Online Food Ordering System

Guided By:

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Submitted By:

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SPID : 2020049930

Veer Narmad South Gujarat University, Surat.

Department of Information and Communication Technology

M.Sc. (Information Technology) Programme

Certificate

This is to certify that Mr/**Mrs Nishi YagneshKumar Sharma** with exam seat number **64** has worked on His/**Her** project work entitled as **Online Food Ordering System** at **Department of I.C.T** as a partial fulfillment of requirement of M.Sc (Information Technology) – 8th Semester, during the academic year 2023-2024.

Date: 22-06-2024

Place: Dept. of ICT, VNSGU, Surat.

Internal Project Guide
M.Sc.(I.T.) 8th Semester
Department of I.C.T.
Veer Narmad South Gujarat University, Surat.

Head of the Department
Department of I.C.T.
Veer Narmad South Gujarat University, Surat.

ACKNOWLEDGEMENT

We would like to take this opportunity to acknowledge the person who has been involved with us in making our project feasible and to run it up into a successful piece of work.

We express our sincere and heartfelt gratitude to Ms. Hiral Padhariya Our Internal Guide for being helpful and co-operative during the period of the project.

- Nishi Sharma
- Krishi Tailor

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1. Introduction

1.1 Project Profile

Project Topic: Online Food Ordering System

Project Defination: The Online Food Ordering System is a web-based application designed to streamline the ordering process for both customers and the restaurant. It allows customers to browse the menu, place orders, and make payments online, while enabling the restaurant to manage orders efficiently. The system includes user authentication, real-time order, and ensures a seamless and convenient dining experience. Additionally, it supports promotional features like discount codes and loyalty programs to enhance customer engagement.

Project Duration: 3 Months

2. Proposed System

2.1 Scope

The scope of the Online Food Ordering System encompasses several key functionalities aimed at enhancing customer convenience and operational efficiency. This includes a user-friendly interface for customers to browse the menu, customize orders, and make secure online payments. The system also incorporates real-time order and keep customers informed. Additionally, it includes user authentication, promotional features like discount codes and loyalty programs, and a responsive design for accessibility on various devices. The system is designed to integrate seamlessly with the restaurant's existing operations, ensuring a smooth implementation and optimal performance.

2.2 Objectives

-Enhance Customer Convenience: Provide a seamless and user-friendly online platform for customers to browse the menu, customize orders, and make secure payments from any device.

- Improve Order Accuracy and Efficiency: Automate order processing to minimize errors and ensure timely preparation and delivery of food orders.

-Streamline Restaurant Operations: Implement efficient order management and inventory tracking systems to optimize kitchen operations and reduce waste.

-Support Data-Driven Decisions: Generate detailed sales reports and analytics to help the restaurant understand customer preferences, peak order times, and overall performance.

-Enhance Customer Engagement: Incorporate promotional features such as discount codes and loyalty programs to attract new customers and retain existing ones.

-Ensure Secure Transactions: Provide a secure payment gateway to protect customer information and ensure safe financial transactions.

2.3 Advantages

-Convenience for Customers: Allows customers to place orders from anywhere at any time, enhancing their dining experience with easy online access to the restaurant's menu.

-Increased Sales: Online availability can attract more customers, including those who prefer ordering food online, thereby boosting overall sales and revenue.

-Operational Efficiency: Streamlines order processing and inventory management, reducing manual errors and ensuring timely preparation and delivery of orders.

-Enhanced Customer Engagement: Features like real-time order, and promotional offers can increase customer satisfaction and loyalty.

-Cost Savings: Reduces the need for extensive phone order taking and manual processing, thereby lowering labour costs and improving efficiency.

-Competitive Advantage: Positions the restaurant as modern and customer-focused, helping to stand out in a competitive market by meeting the growing demand for online services.

2.4 Limitations

-Initial Setup Costs: Developing and implementing the system can require a significant initial investment in technology and training.

-Technical Issues: The system may face technical challenges such as server downtime, software bugs, or connectivity problems, affecting its reliability and user experience.

-Limited Reach: The effectiveness of the system is dependent on customers having access to the internet and being comfortable with online transactions, which may exclude some potential users.

-Maintenance Requirements: Regular maintenance and updates are necessary to keep the system secure and efficient, which can incur ongoing costs and require technical expertise.

-Data Security Risks: Handling online payments and customer data introduces risks related to data breaches and cyber-attacks, necessitating robust security measures.

-Dependence on Technology: Over-reliance on the system can be problematic if technical failures occur, potentially disrupting order processing and restaurant operations.

3. Environment Specification

3.1 Hardware and Software Requirements

Hardware Requirements:

Microprocessor	Intel Core 11th Generation
Memory	16GB
Hard disk	100MB Minimum

Software Requirements:

Operating System	Microsoft Windows
Web Browser	Google Chrome, Edge

3.2 Development Description

The development of the Online Food Ordering System for involves several stages, beginning with requirements gathering to understand the needs of both the restaurant and its customers. The design phase focuses on creating an intuitive and user-friendly interface, as well as a robust backend system. Development includes coding the front-end and back-end components, integrating secure payment gateways, and implementing features such as real-time order and inventory management. Rigorous testing is conducted to identify and fix bugs, ensuring a seamless user experience. The deployment phase involves setting up the system on a live server and providing training for restaurant staff. Post-launch, ongoing maintenance and updates are performed to keep the system secure and efficient.

4. System Planning

4.1 Feasibility Study

A feasibility study for an online food ordering system involves assessing various aspects to determine the viability and potential success of the project. Here's a breakdown:

-Market Analysis: Evaluate the current market trends, customer preferences, and competitive landscape in the food delivery industry. Identify opportunities and potential challenges for the proposed online ordering system.

-Technical Feasibility: Assess the technical requirements and capabilities needed to develop and maintain the online platform. Evaluate the availability of resources, technology infrastructure, and expertise required for implementation.

-Financial Feasibility: Determine the initial investment required for developing the system, including software development, hardware procurement, and any other associated costs. Calculate the projected revenue streams, including transaction fees, delivery charges, and potential partnerships with restaurants.

-Operational Feasibility: Analyze the operational aspects of running the online food ordering system, including order processing, customer support, and staff training requirements.

-Risk Assessment: Identify potential risks and challenges that could impact the success of the online food ordering system, such as competition, changing consumer behaviour, technological disruptions, and external economic factors.

-Sustainability and Scalability: Assess the long-term sustainability and scalability of the online food ordering system, considering factors such as growth projections, scalability of technology infrastructure, and ability to adapt to evolving market trends and customer needs.

4.2 Software Engineering Model

For an online food ordering system, the Agile software development model is often preferred due to its iterative and flexible nature, allowing for frequent updates and adaptations to meet evolving customer needs and market trends. Within Agile, specific methodologies like Scrum might be utilized, depending on the project requirements and team preferences.

Agile methodology enables close collaboration between development teams and stakeholders, facilitating rapid development cycles known as sprints. This iterative approach allows for early and continuous delivery of valuable software increments, ensuring that the online ordering system can be quickly developed, tested, and refined based on user feedback.

Additionally, Agile methodologies promote cross-functional teams, where developers, designers, product managers, and other stakeholders work closely together to deliver high-quality software efficiently. This collaborative approach is well-suited for complex projects like online food ordering systems, where multiple functionalities such as order processing and payment integration.

Overall, the Agile software development model offers the flexibility, adaptability, and collaborative framework necessary for the successful development and deployment of an online food ordering system.

Advantages of Agile Model:

The Agile software development model offers several advantages, particularly for projects like an online food ordering system:

-Flexibility: Agile allows for flexibility in responding to changing requirements, priorities, and market conditions. This is crucial for an online food ordering system, where customer preferences, menu items, and promotional offers may evolve over time.

-Faster Time-to-Market: Agile's iterative approach enables the delivery of working software increments in short cycles (sprints). This allows for rapid development and deployment of new features and updates, reducing time-to-market for the online ordering system.

-Continuous Feedback: Agile promotes frequent collaboration and feedback between development teams and stakeholders. This helps ensure that the online food ordering system meets customer expectations and business objectives, leading to higher user satisfaction and adoption.

-Improved Quality: Agile methodologies emphasize continuous testing and quality assurance throughout the development process. By incorporating testing into each iteration, potential issues can be identified and addressed early, resulting in higher-quality software.

-Adaptability to Change: Agile's incremental and iterative approach allows for easy adaptation to changing requirements, emerging technologies, and market dynamics. This enables the online food ordering system to stay competitive and relevant in a rapidly evolving industry.

4.3 Risk analysis

Technical Risks-

-System Downtime: The system could experience downtime due to server issues, leading to loss of orders and customer dissatisfaction.

-Data Breaches: Unauthorized access to customer data, including payment information, could occur, resulting in financial and reputational damage.

Operational Risks-

-Order Fulfillment Delays: High volume of orders could lead to delays in preparation and delivery, affecting customer satisfaction.

-Inventory Management Issues: Inaccurate inventory tracking could lead to stockouts or overstocking, impacting service efficiency and costs.

Financial Risks-

-Cost Overruns: Development and maintenance of the system might exceed budget estimates.

-Revenue Loss: Technical issues or poor user experience could lead to a loss of customers and reduced revenue.

Market Risks-

-Changing Customer Preferences: Rapid changes in customer preferences or behavior could render the system less effective.

-Competitive Pressure: New or existing competitors offering superior or more innovative solutions could impact market share.

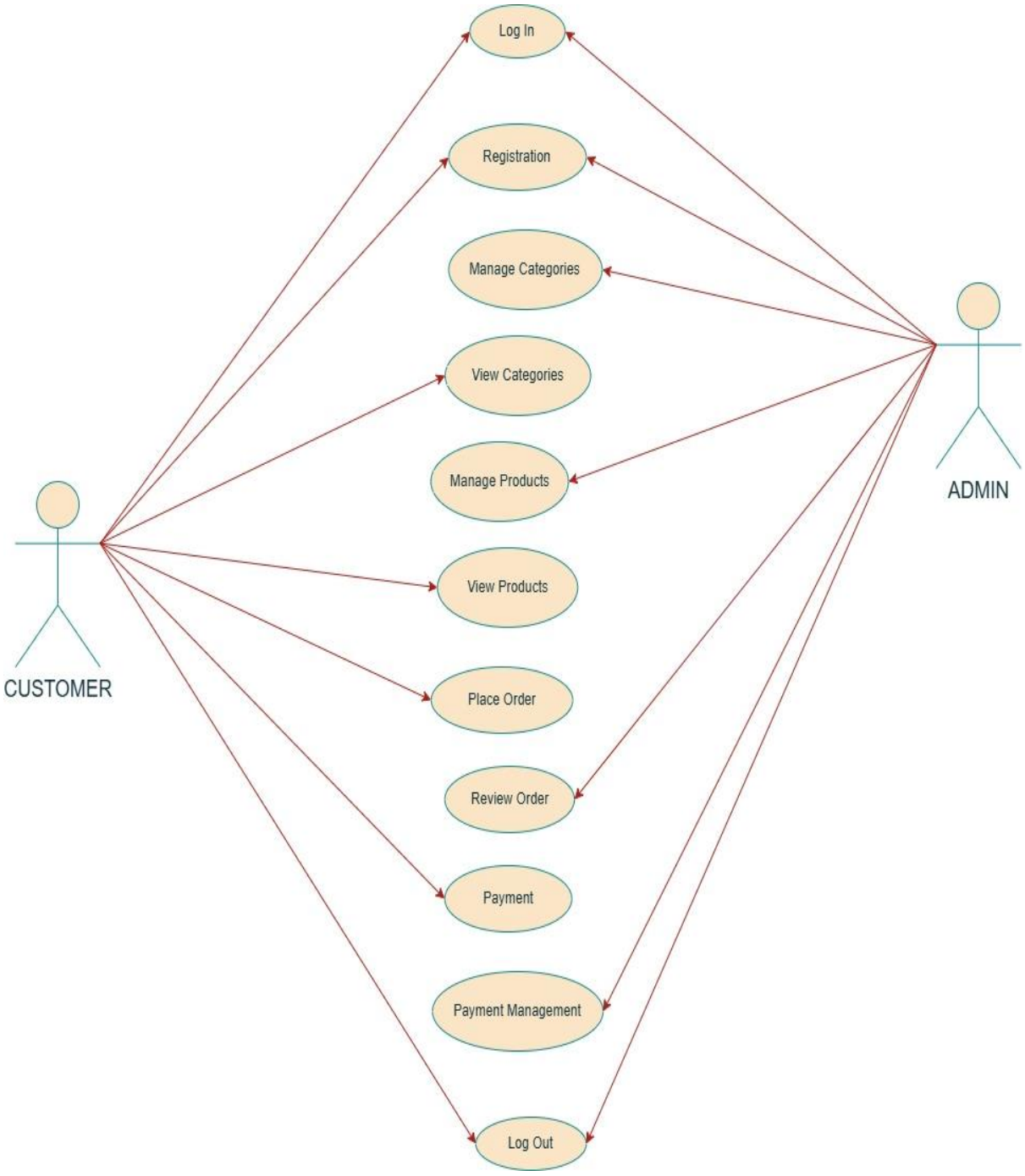
Scalability Risks-

-Inadequate Scalability: The system may not scale effectively with increased user load or order volume, leading to performance issues.

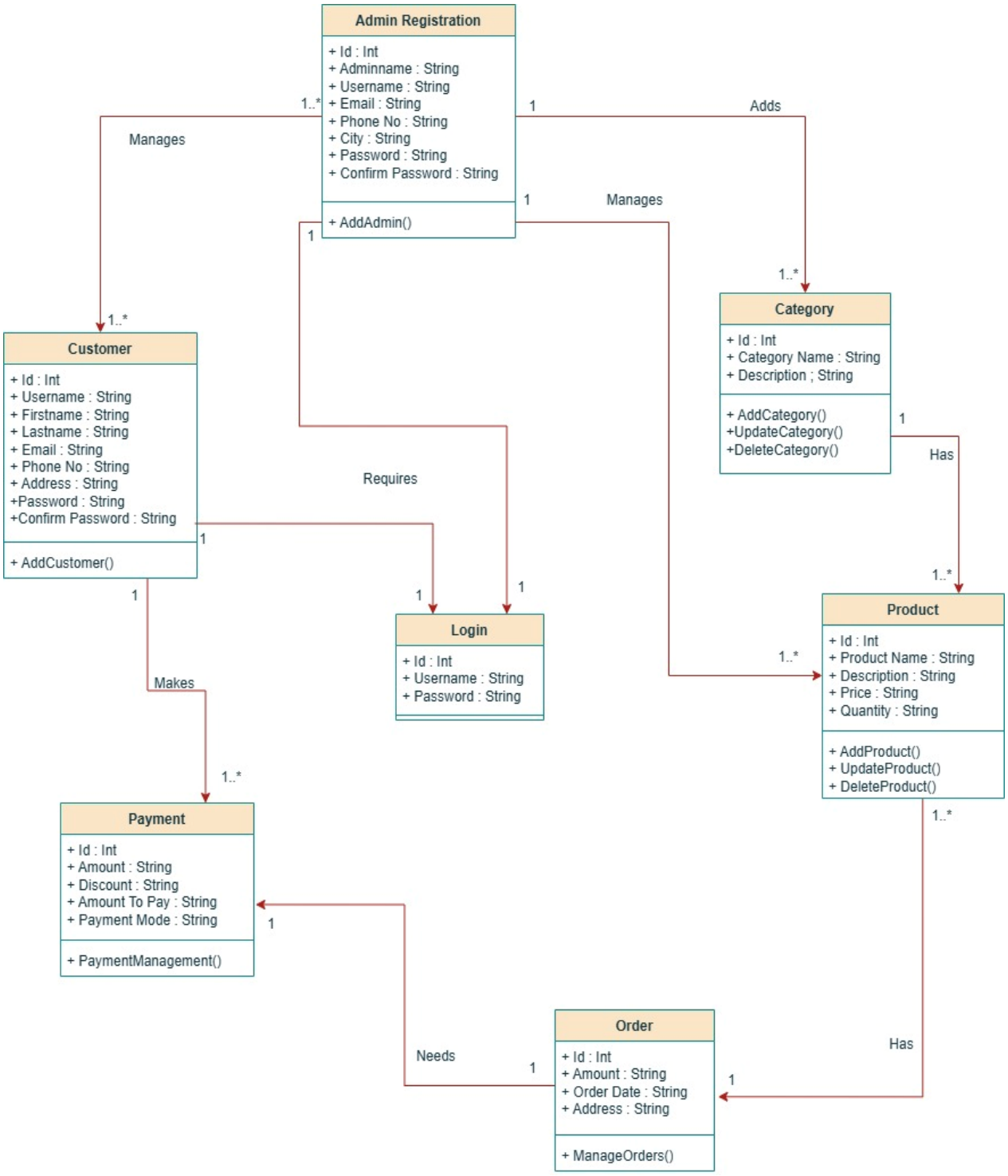
5. System analysis

5.1 UML Diagrams

5.1.1 Use Case Diagram

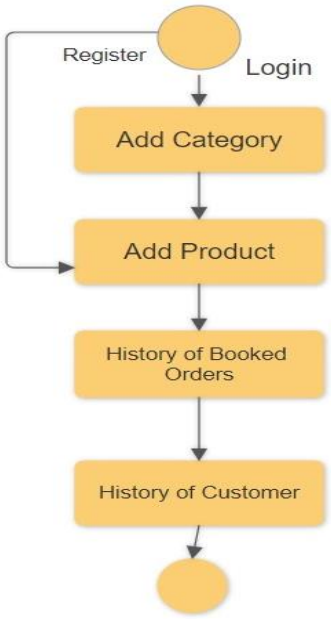


5.1.2 Class Diagram

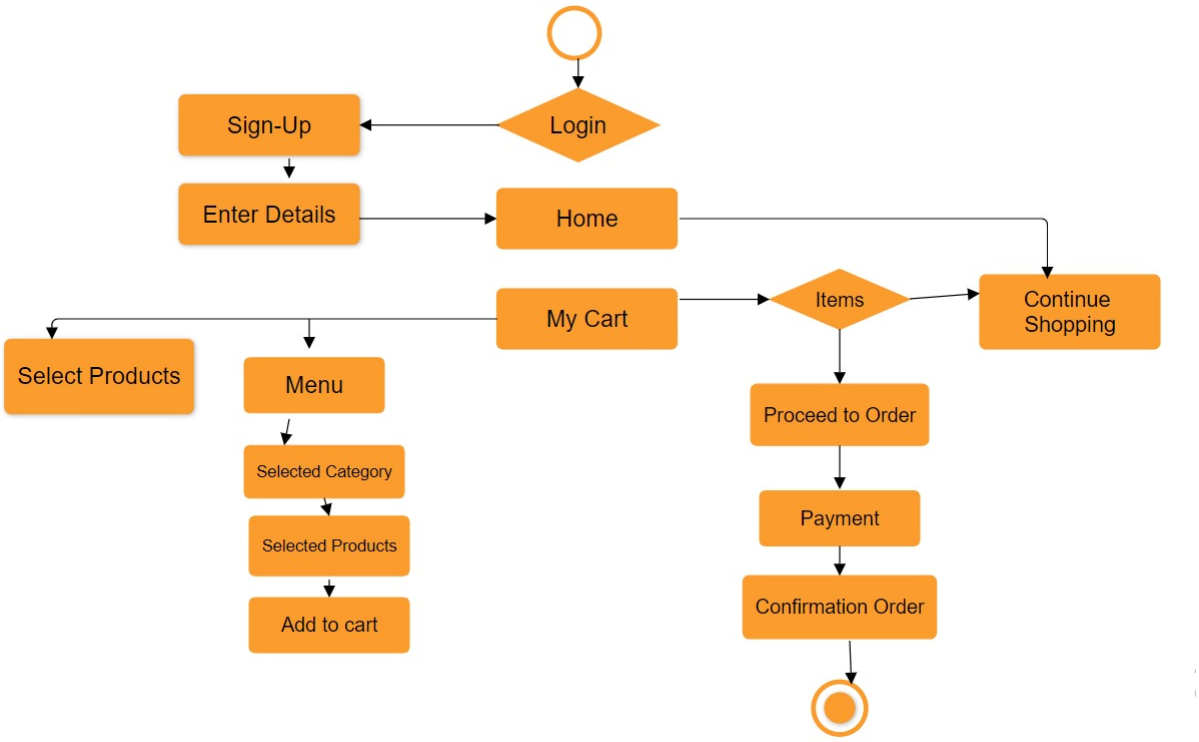


5.1.3 Activity Diagram

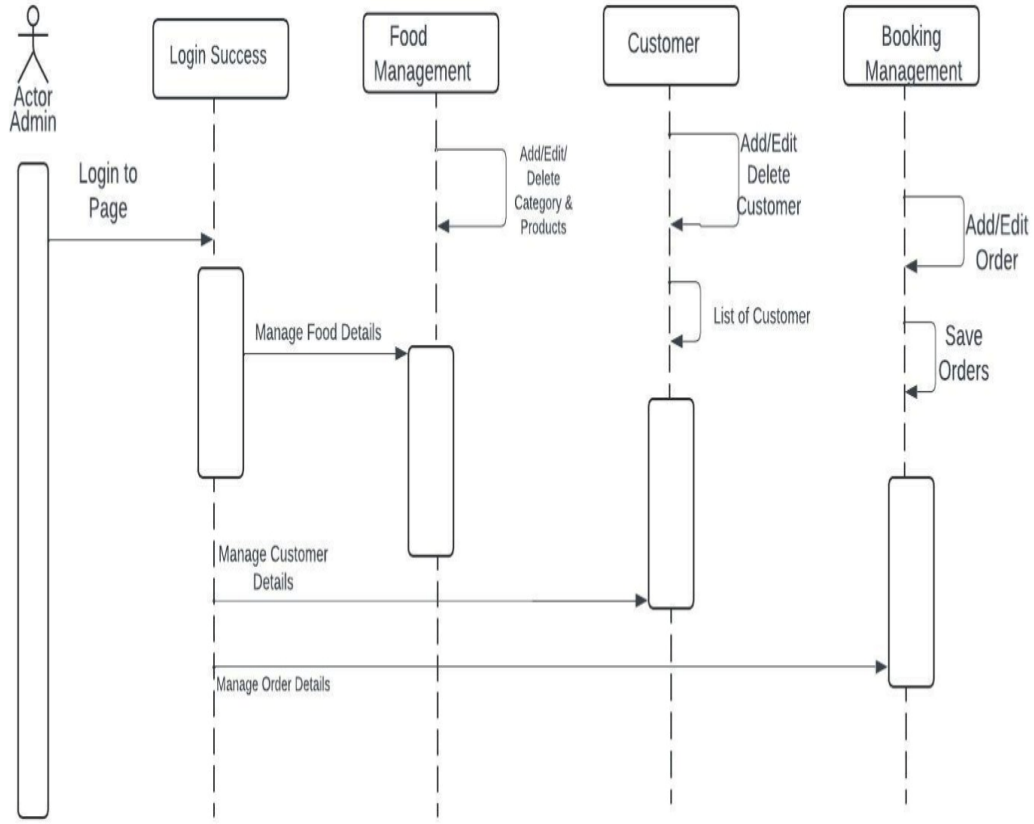
Activity diagram for Admin:



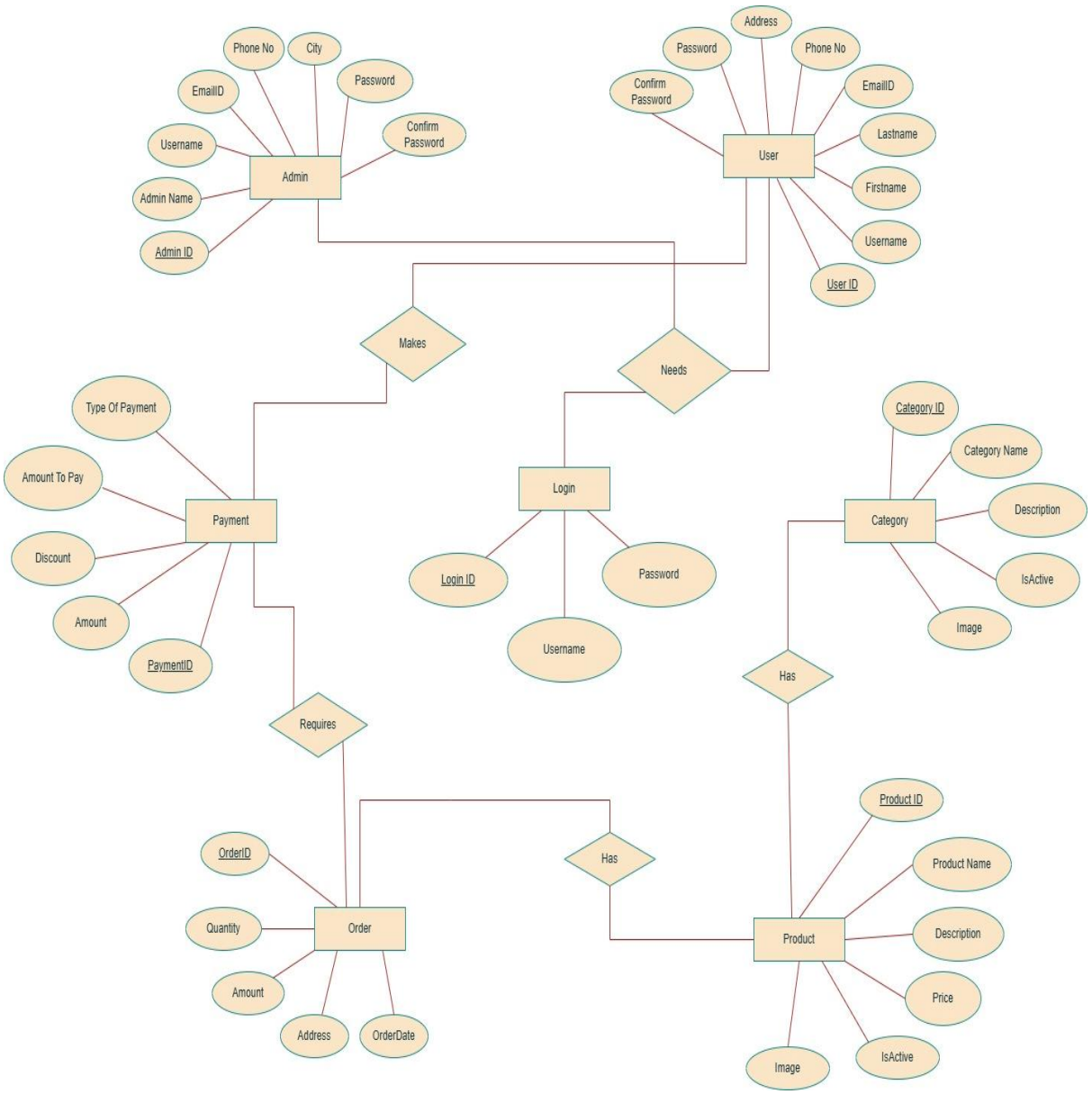
Activity diagram for Customer:



5.1.4 Sequence Diagram



5.2 E-R Diagram



6.1 Designing

6.1 Database Designing

Role Table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	**roleid**	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	**rolename**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
3	**username**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More

Usermaster Table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	**username**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
2	**firstname**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
3	**lastname**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
4	**email**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
5	**city**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
6	**password**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More

Category Table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	**categoryid**	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	**categoryname**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
3	**description**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
4	**isactive**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
5	**image**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More

Product Table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	**productid**	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	**categoryid**	int(11)			No	*None*			Change Drop More
3	**productname**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
4	**description**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
5	**price**	int(11)			No	*None*			Change Drop More
6	**quantity**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
7	**isactive**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
8	**image**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More

Cart Table:

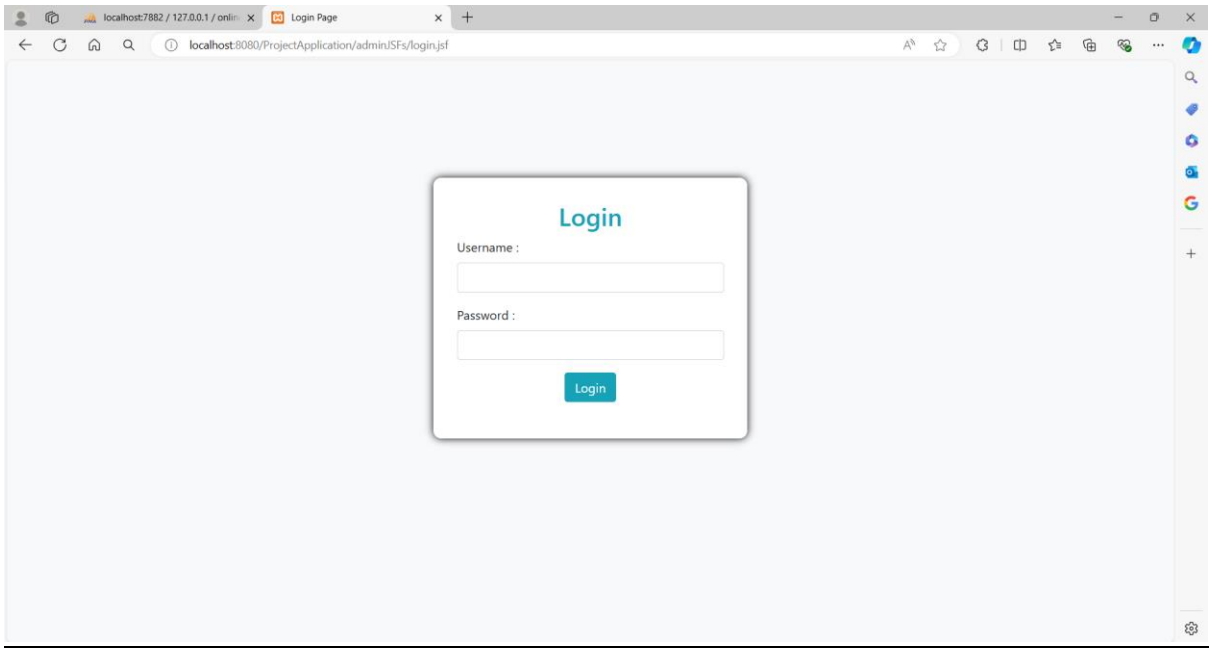
#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	**cartid**	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	**username**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
3	**productid**	int(11)			No	*None*			Change Drop More
4	**quantity**	int(11)			No	*None*			Change Drop More
5	**totalprice**	int(11)			No	*None*			Change Drop More

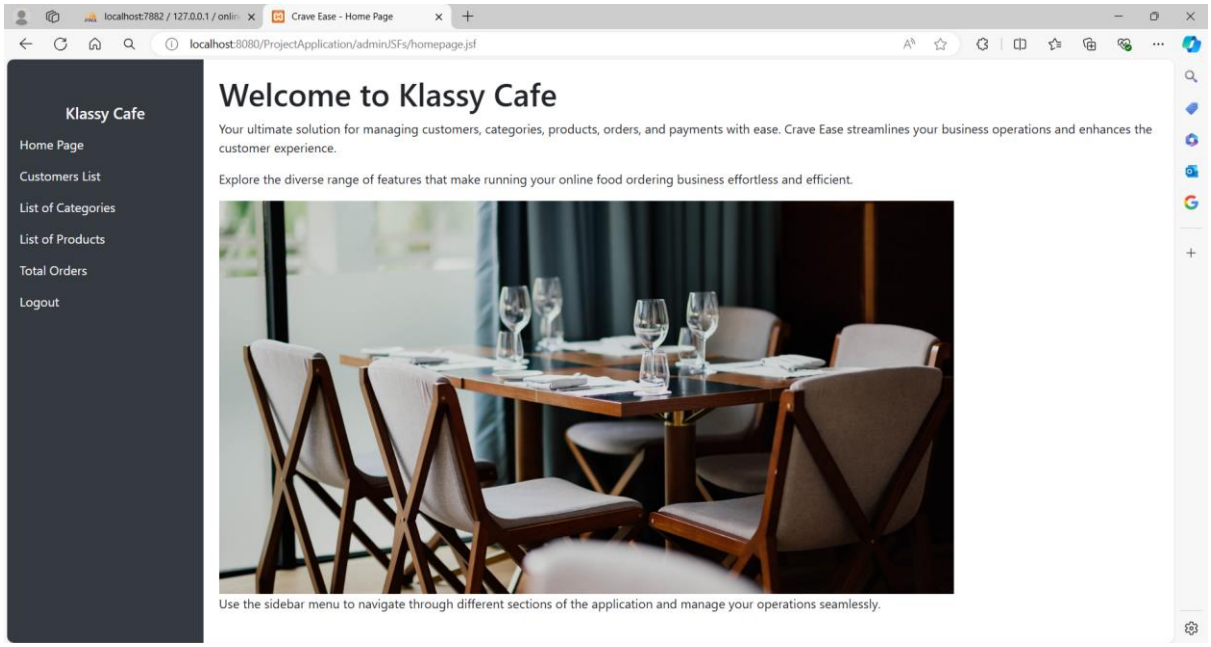
Order Table:

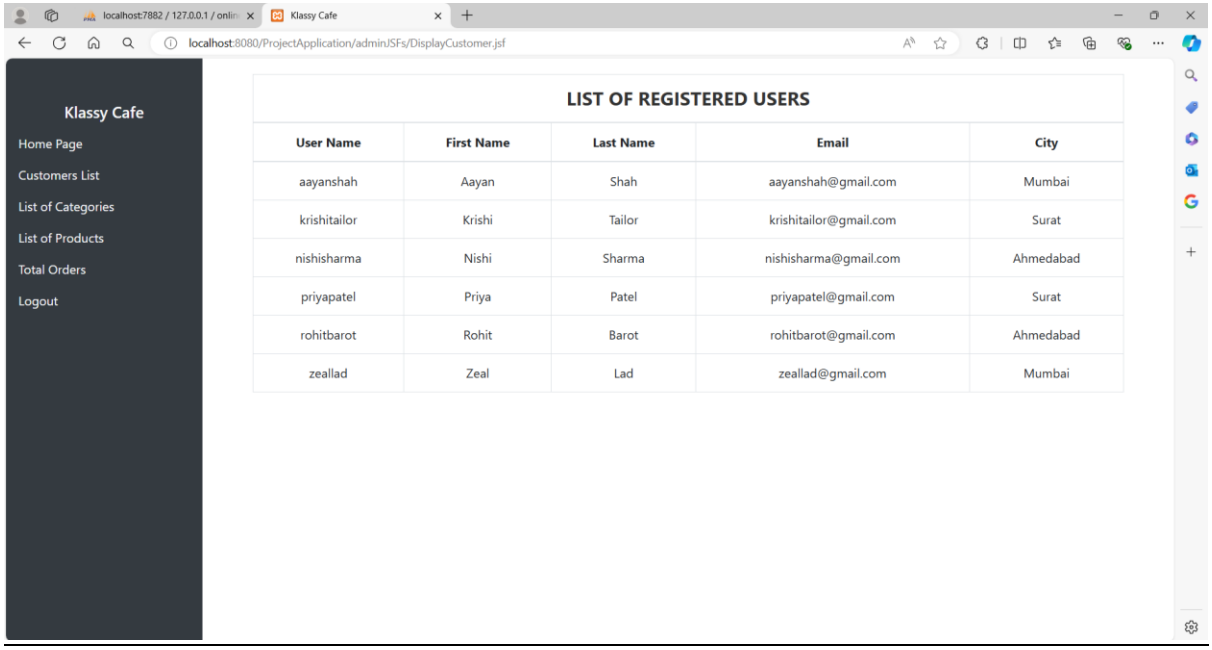
#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	**orderid**	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	**productid**	int(11)			No	*None*			Change Drop More
3	**quantity**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
4	**amount**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
5	**orderdate**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More
6	**address**	varchar(100)	utf8mb4_general_ci		No	*None*			Change Drop More

6.2 Interface Designing

Admin Side:



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Klassy Cafe
Home Page
Customers List
List of Categories
List of Products
Total Orders
Logout
LIST OF REGISTERED USERS
User Name
First Name
Last Name
Email
City
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Shah
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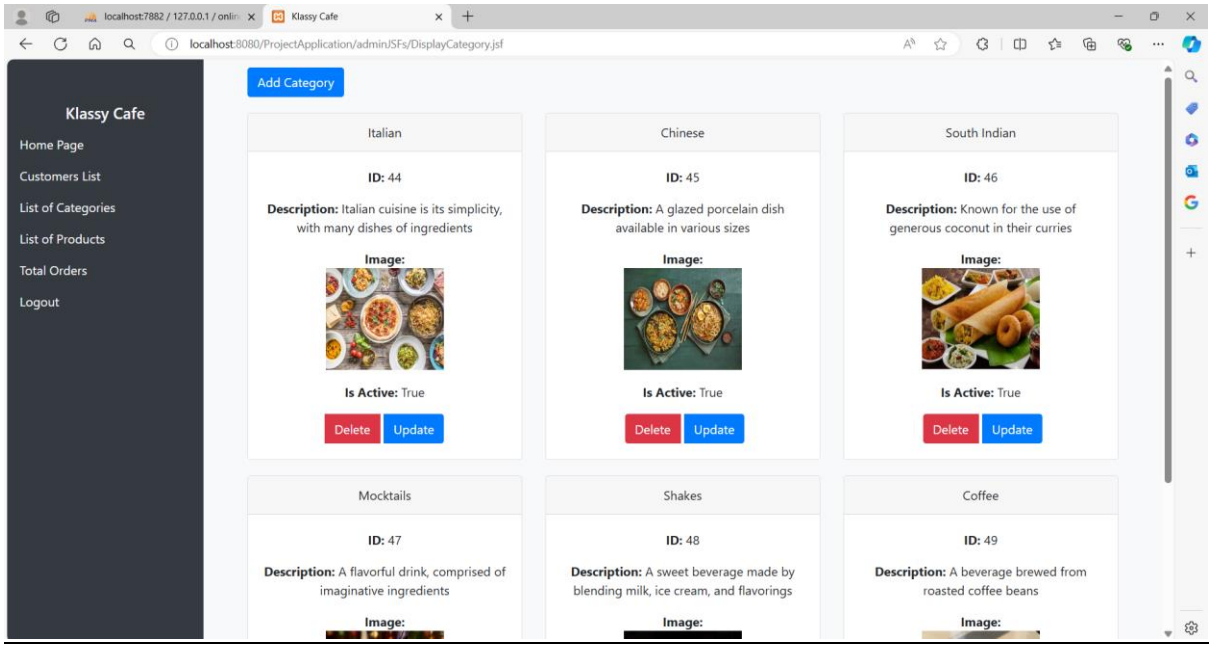
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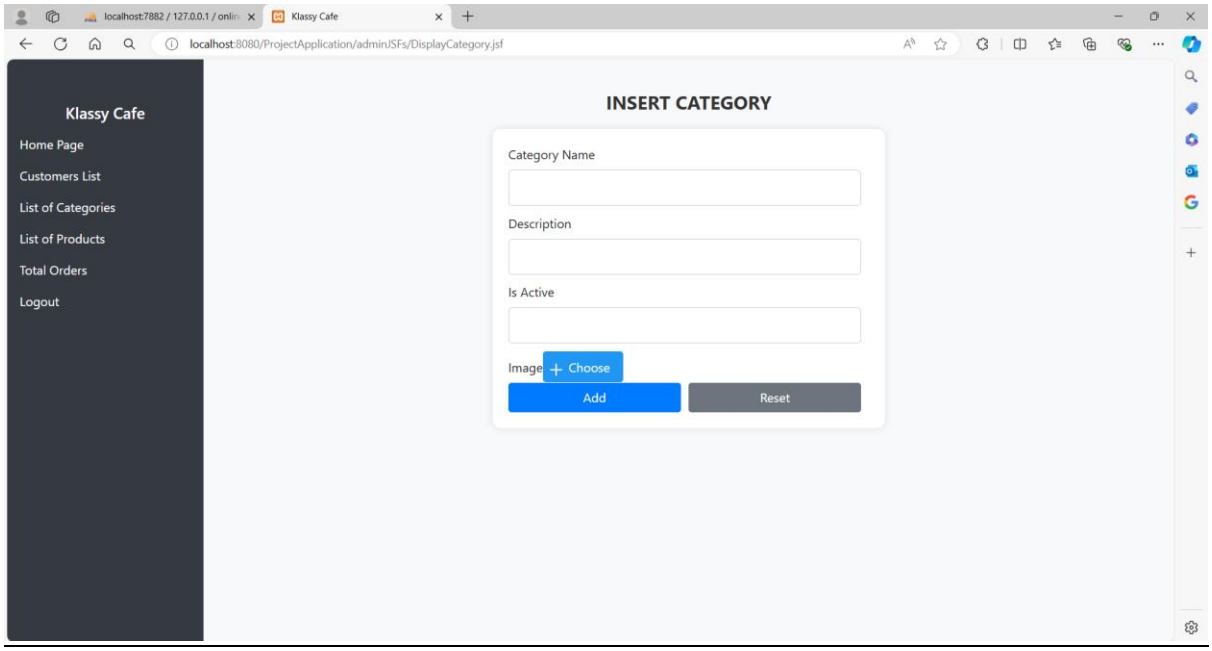
Klassy Cafe
localhost:8080/ProjectApplication/adminJSFs/DisplayCategory.jsf
Klassy Cafe
Home Page
Customers List
List of Categories
List of Products
Total Orders
Logout
Add Category
Italian
ID: 44
Description: Italian cuisine is its simplicity, with many dishes of ingredients
Image:
Is Active: True
Delete
Update
Chinese
ID: 45
Description: A glazed porcelain dish available in various sizes
Image:
Is Active: True
Delete
Update
South Indian
ID: 46
Description: Known for the use of generous coconut in their curries
Image:
Is Active: True
Delete
Update
Mocktails
ID: 47
Description: A flavorful drink, comprised of imaginative ingredients
Image:
Shakes
ID: 48
Description: A sweet beverage made by blending milk, ice cream, and flavorings
Image:
Coffee
ID: 49
Description: A beverage brewed from roasted coffee beans
Image: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Klassy Cafe
Home Page
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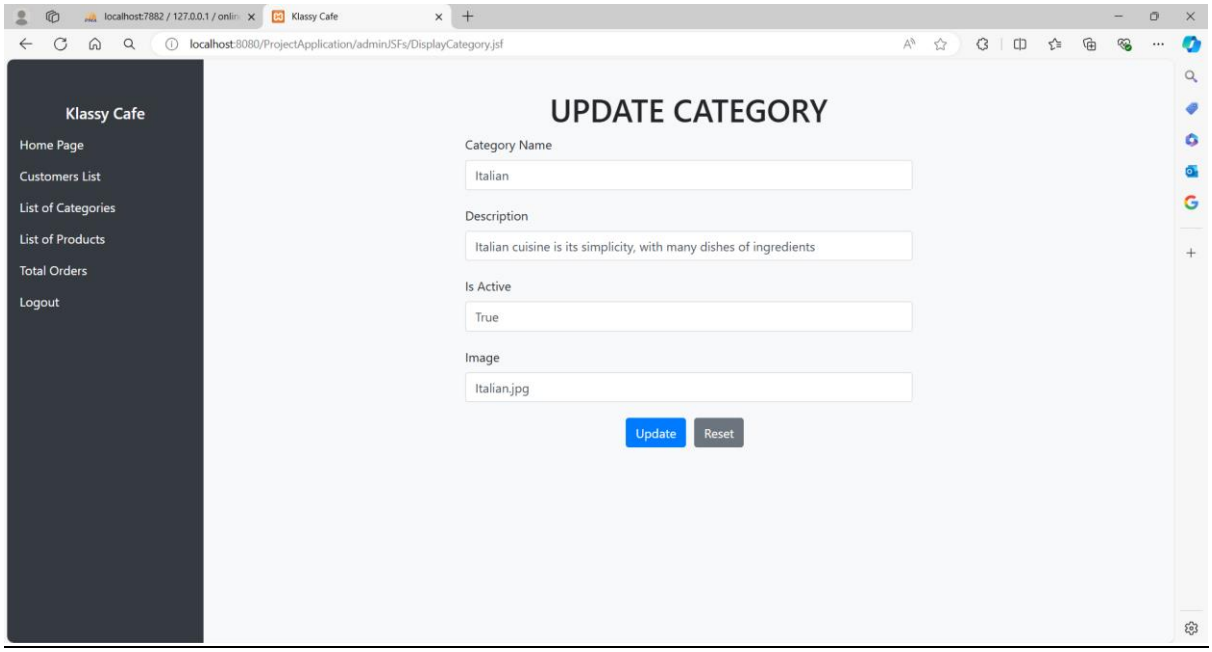
List of Categories
List of Products
Total Orders
Logout
INSERT CATEGORY
Category Name
Description
Is Active
Image
Choose
Add
Reset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Klassy Cafe
Home Page
Customers List
List of Categories
List of Products
Total Orders
Logout
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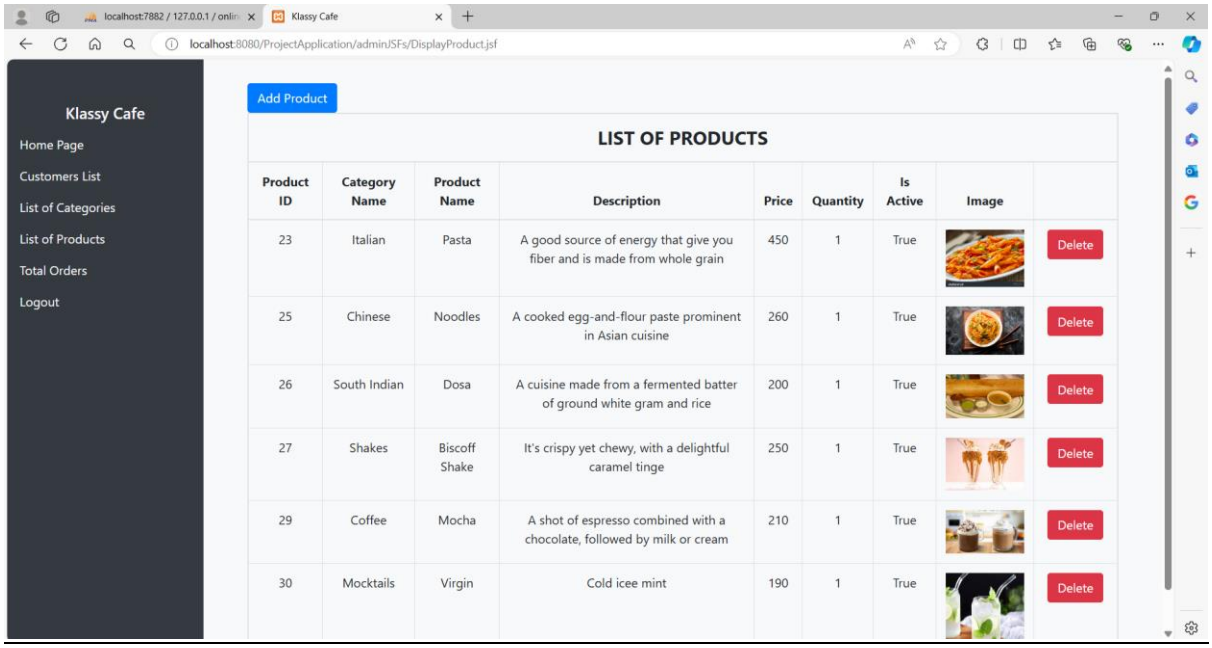
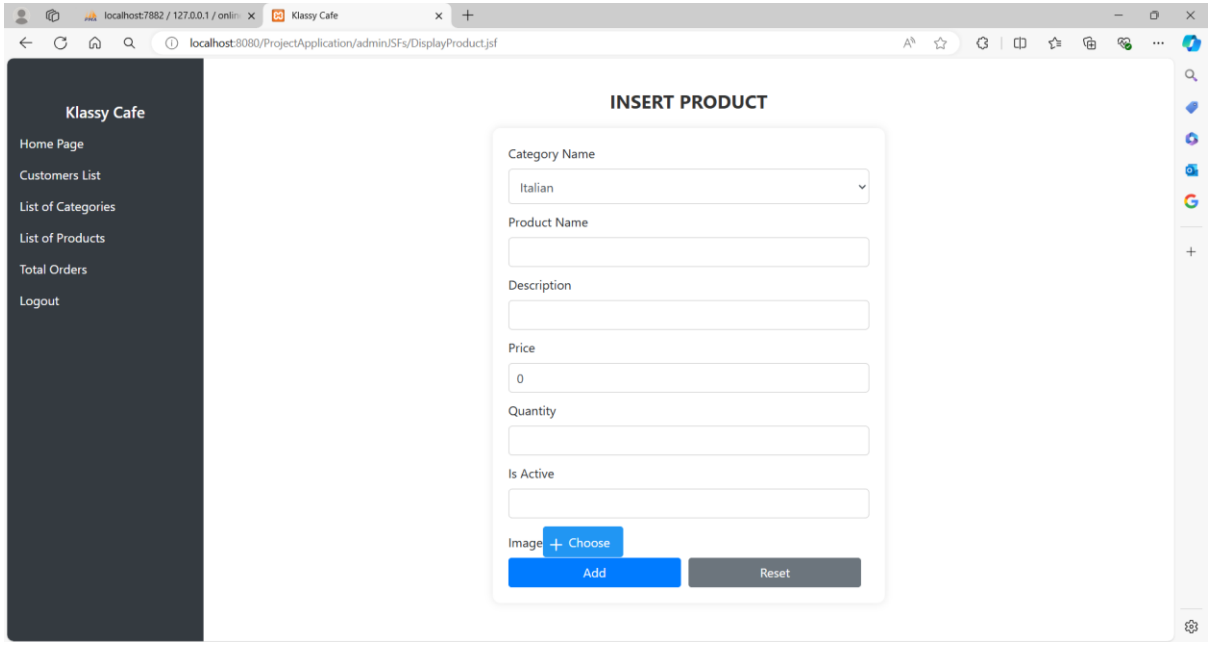
Description
Italian cuisine is its simplicity, with many dishes of ingredients
Is Active
True
Image
Italian.jpg
Update
Reset


Klassy Cafe
Home Page
Customers List
List of Categories
List of Products
Total Orders
Logout
Add Product
LIST OF PRODUCTS
Product ID
Category Name
Product Name
Description
Price
Quantity
Is Active
Image
23 Italian Pasta A good source of energy that give you fiber and is made from whole grain 450 1 True Delete
25 Chinese Noodles A cooked egg-and-flour paste prominent in Asian cuisine 260 1 True Delete
26 South Indian Dosa A cuisine made from a fermented batter of ground white gram and rice 200 1 True Delete
27 Shakes Biscoff Shake It's crispy yet chewy, with a delightful caramel tinge 250 1 True Delete
29 Coffee Mocha A shot of espresso combined with a chocolate, followed by milk or cream 210 1 True Delete
30 Mocktails Virgin Cold icee mint 190 1 True Delete


Klassy Cafe
Home Page
Customers List
List of Categories
List of Products
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Logout
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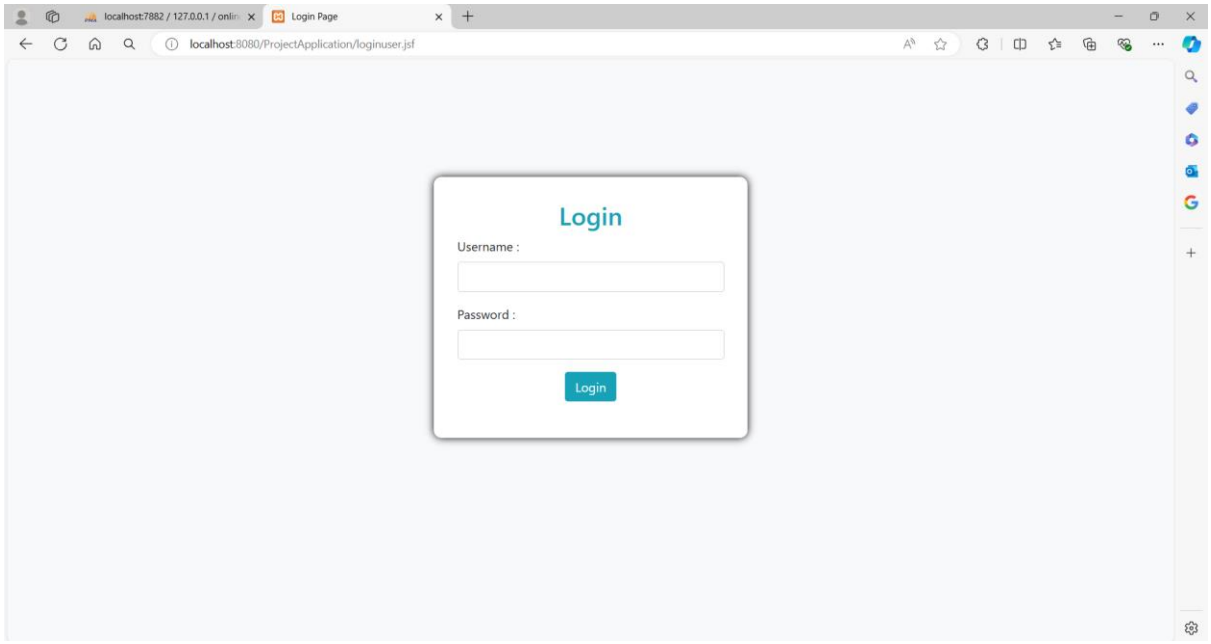
Category Name
Italian
Product Name
Description
Price
0
Quantity
Is Active
Image
Choose
Add
Reset

User Side: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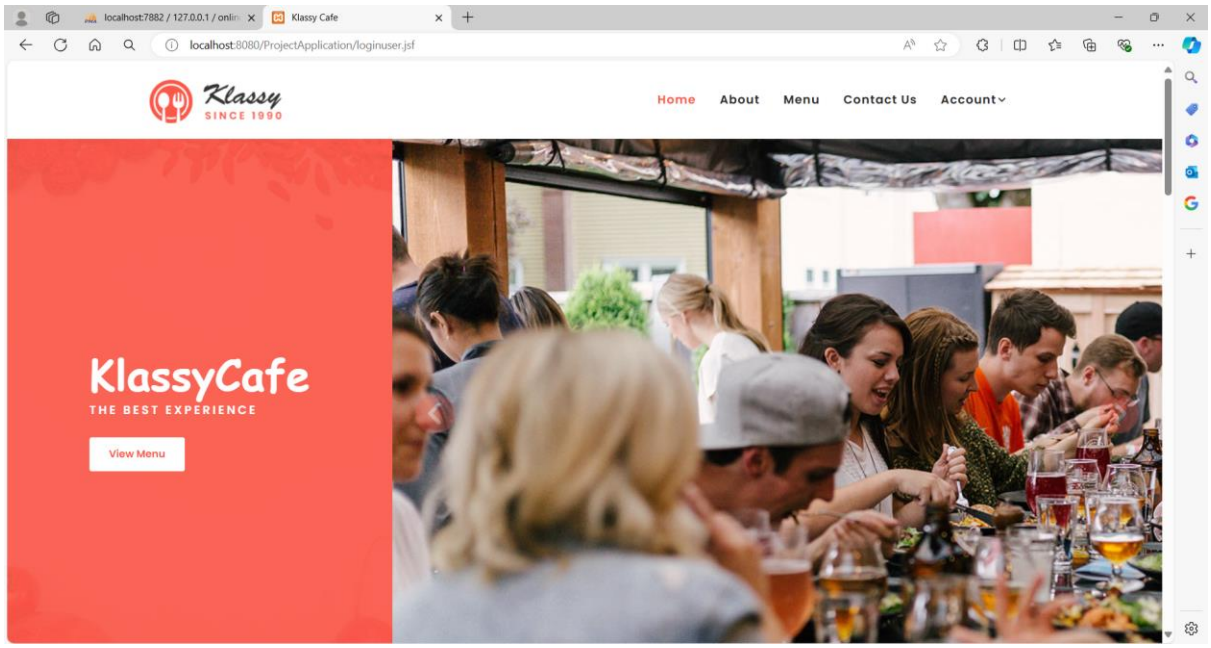
Login
Username :
Password :
Login


Klassy Cafe
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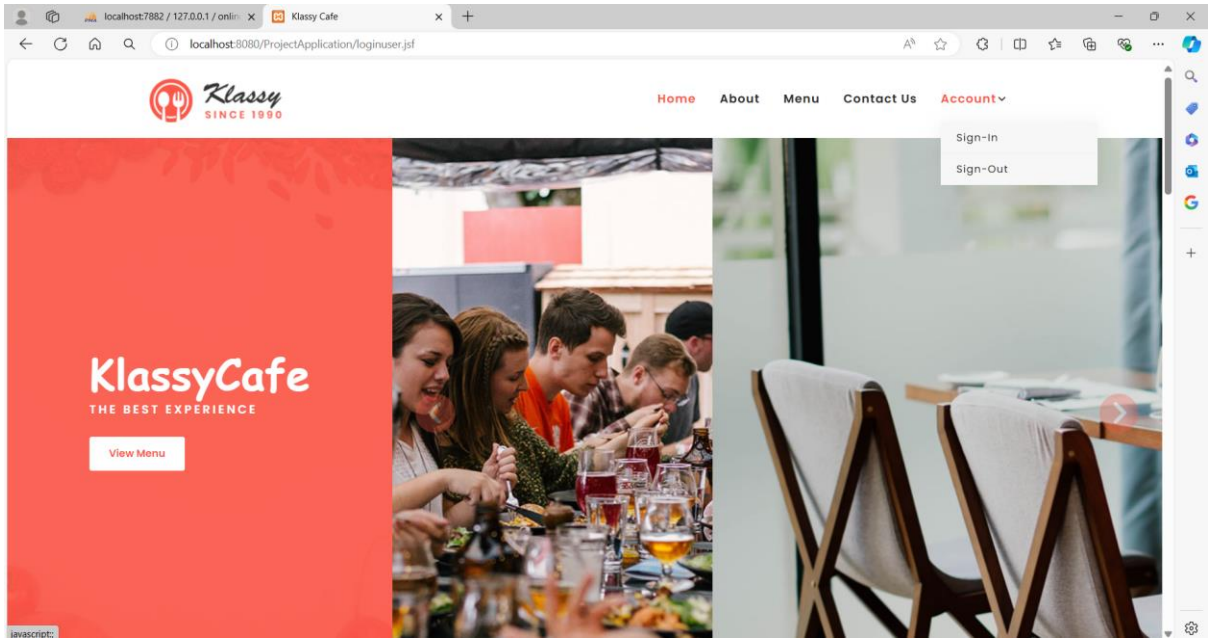
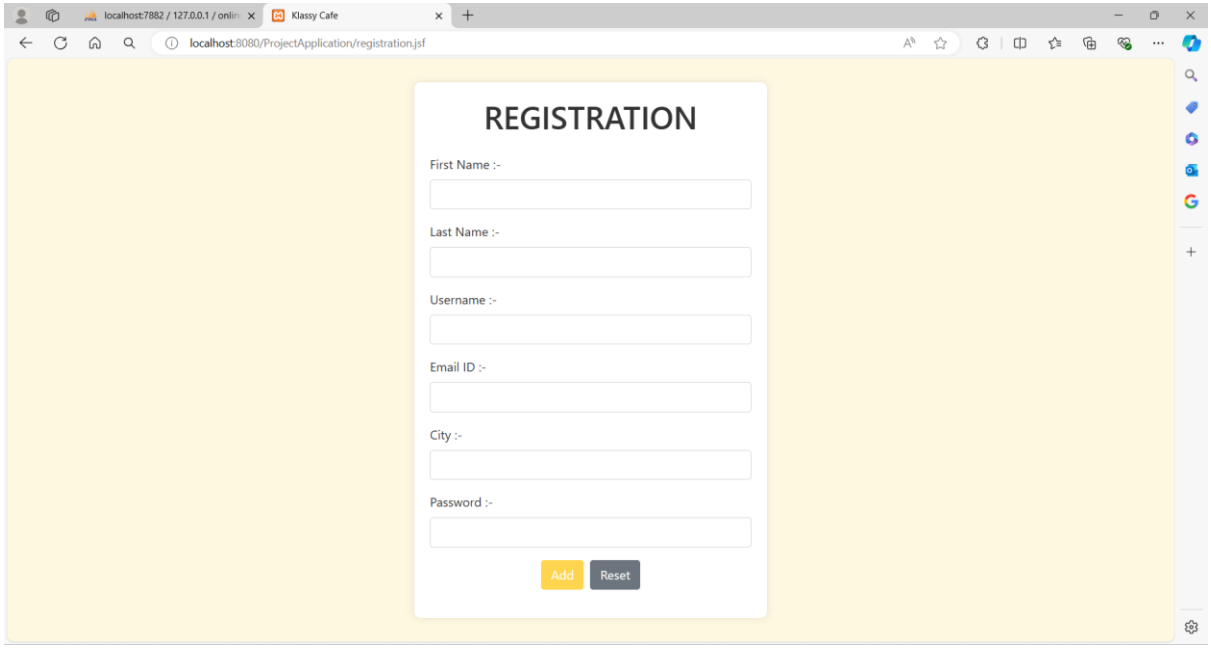
Klassy
SINCE 1990
Home
About
Menu
Contact Us
Account
KlassyCafe
THE BEST EXPERIENCE
View Menu


Klassy
SINCE 1990
Home
About
Menu
Contact Us
Account
Sign-In
Sign-Out
KlassyCafe
THE BEST EXPERIENCE
View Menu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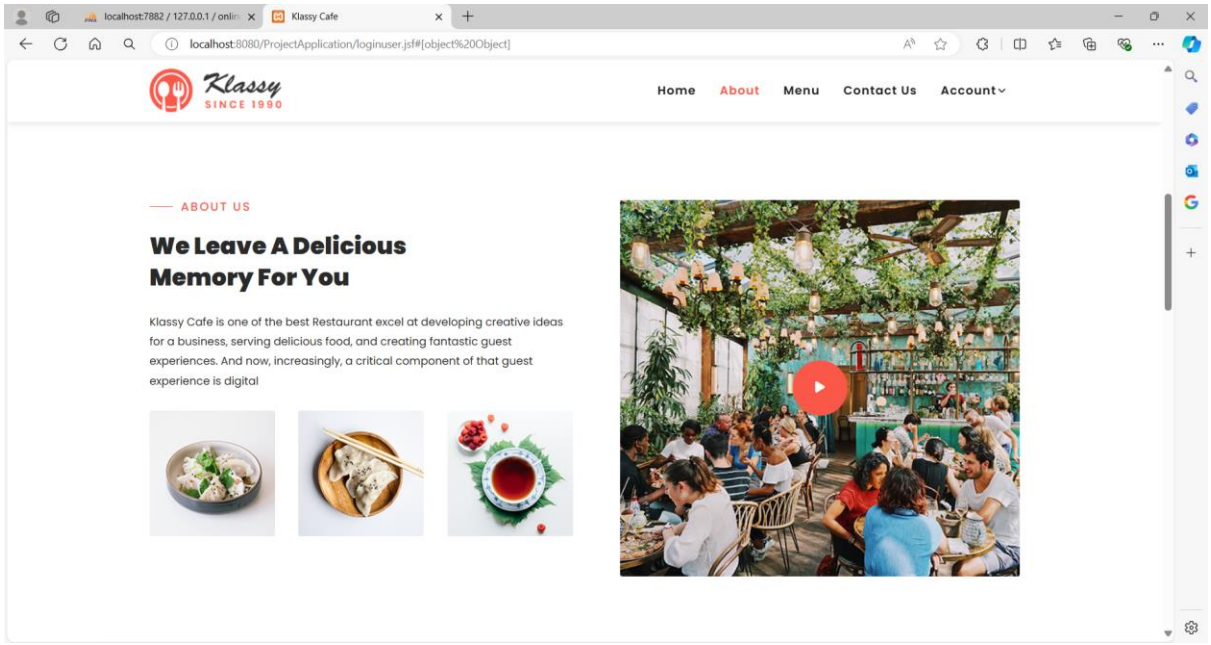
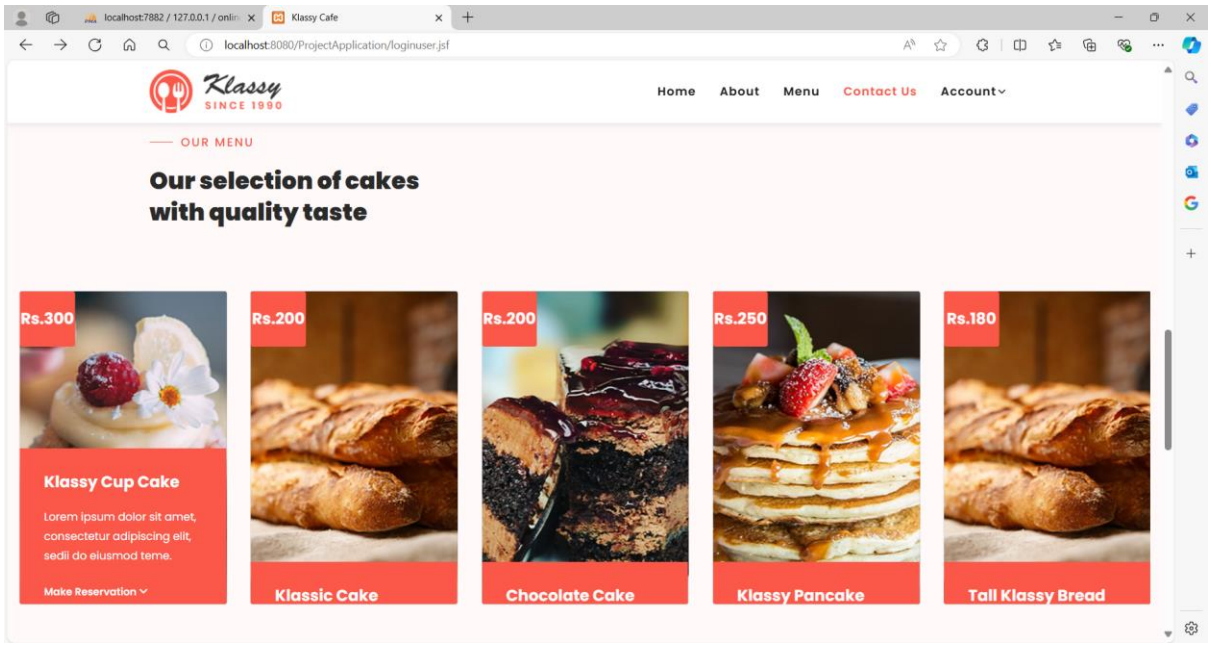
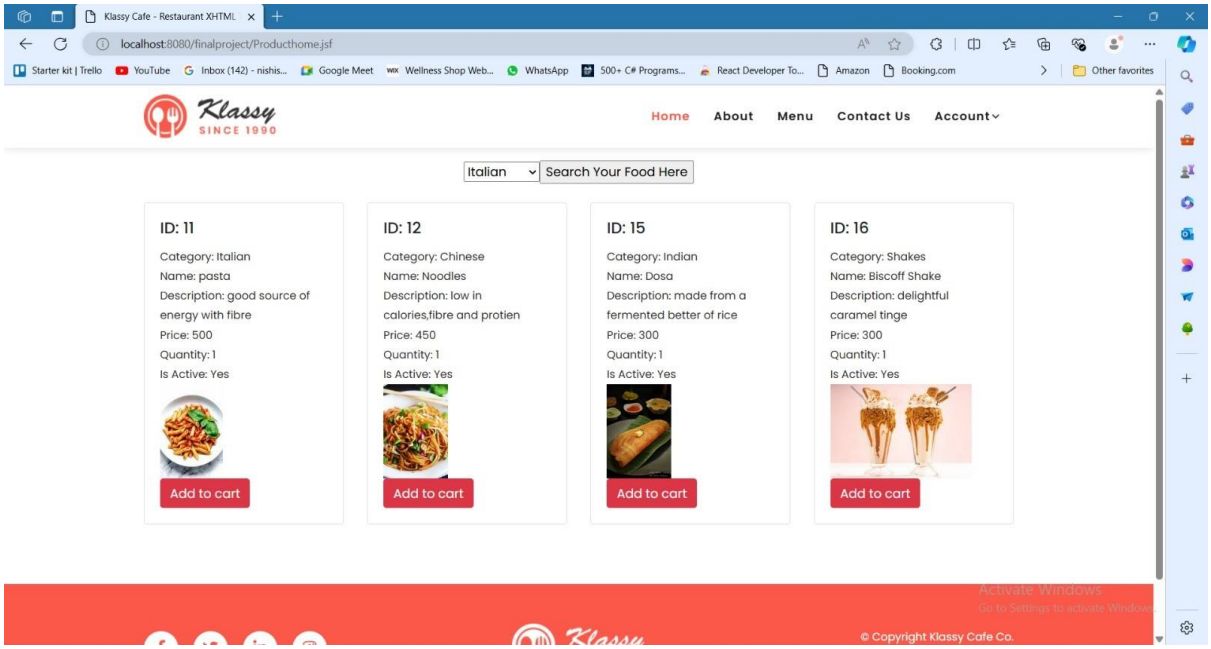
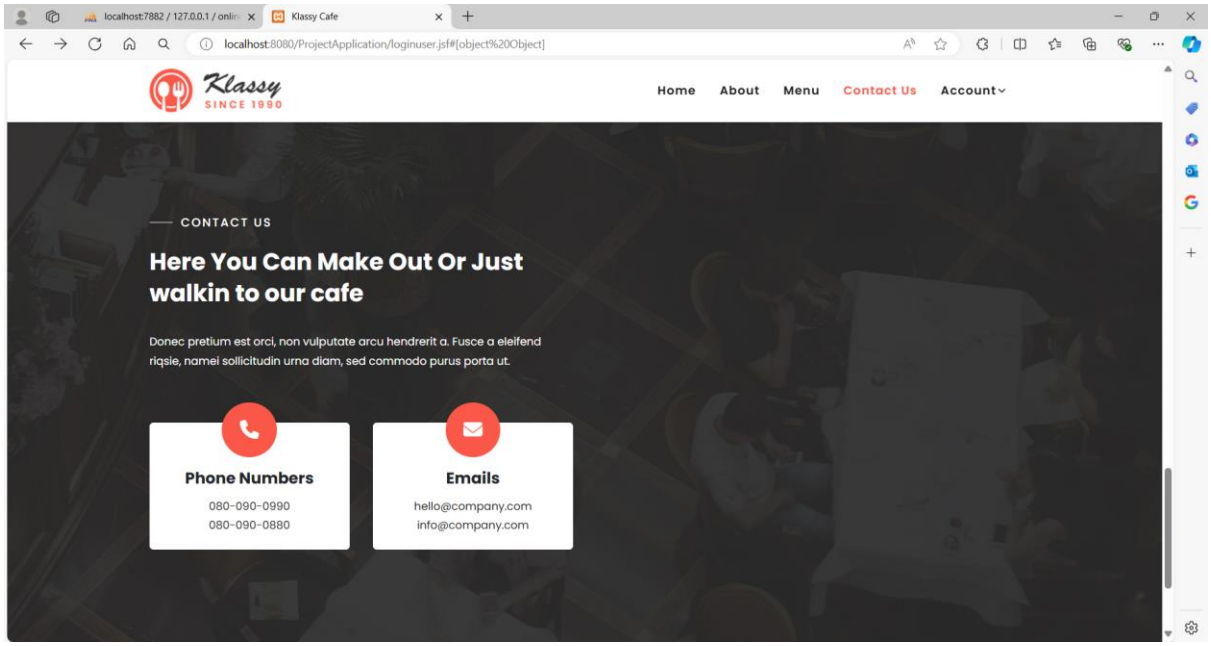
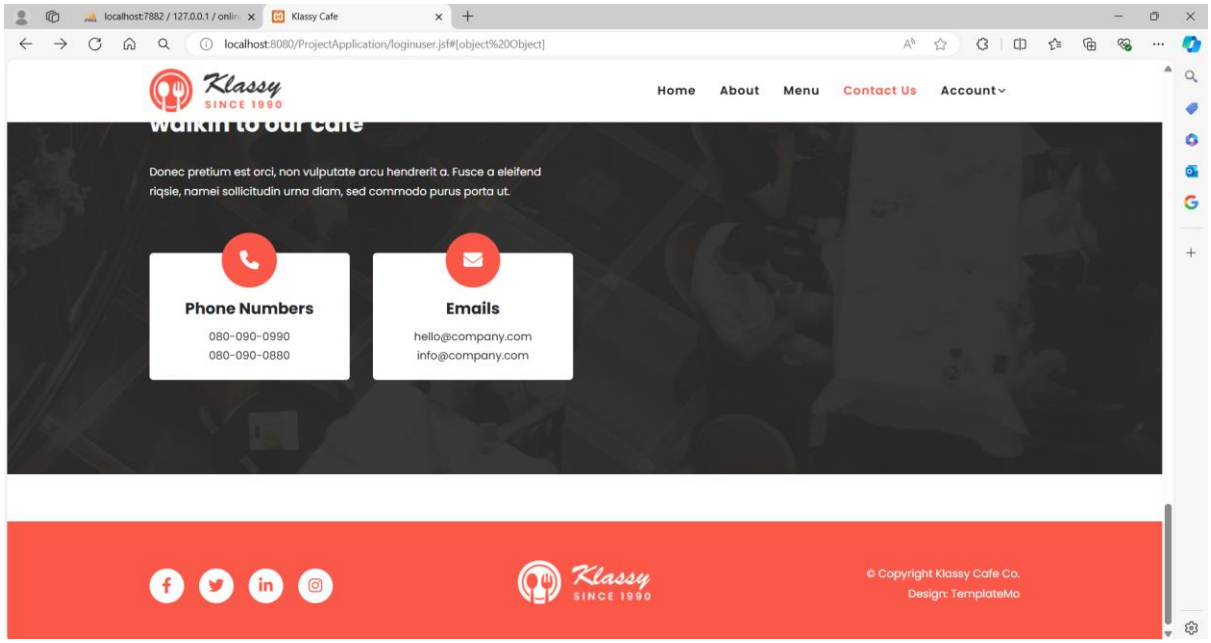
First Name :-
Last Name :-
Username :-
Email ID :-
City :-
Password :-
Add
Reset


localhost:7882 / 127.0.0.1 / onlin
Klassy Cafe
localhost:8080/ProjectApplication/loginuser.jsf#[object%20Object]
Klassy
SINCE 1990
Home
About
Menu
Contact Us
Account
ABOUT US
We Leave A Delicious Memory For You
Klassy Cafe is one of the best Restaurant excel at developing creative ideas for a business, serving delicious food, and creating fantastic guest experiences. And now, increasingly, a critical component of that guest experience is digital


localhost:7882 / 127.0.0.1 / onlin
Klassy Cafe
localhost:8080/ProjectApplication/loginuser.jsf
Klassy
SINCE 1990
Home
About
Menu
Contact Us
Account
OUR MENU
Our selection of cakes with quality taste
Rs.300
Klassy Cup Cake
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sedii do eiusmod teme.
Make Reservation
Rs.200
Klassic Cake
Rs.200
Chocolate Cake
Rs.250
Klassy Pancake
Rs.180
Tall Klassy Bread


Klassy Cafe - Restaurant XHTML
localhost:8080/finalproject/Producthome.jsf
Klassy
SINCE 1990
Home
About
Menu
Contact Us
Account
Italian
Search Your Food Here
ID: 11
Category: Italian
Name: pasta
Description: good source of energy with fibre
Price: 500
Quantity: 1
Is Active: Yes
Add to cart
ID: 12
Category: Chinese
Name: Noodles
Description: low in calories,fibre and protien
Price: 450
Quantity: 1
Is Active: Yes
Add to cart
ID: 15
Category: Indian
Name: Dosa
Description: made from a fermented better of rice
Price: 300
Quantity: 1
Is Active: Yes
Add to cart
ID: 16
Category: Shakes
Name: Biscoff Shake
Description: delightful caramel tinge
Price: 300
Quantity: 1
Is Active: Yes
Add to cart
Activate Windows
Go to Settings to activate Windows.
© Copyright Klassy Cafe Co.


localhost:7882 / 127.0.0.1 / onlin
Klassy Cafe
localhost:8080/ProjectApplication/loginuser.jsf#[object%20Object]
Klassy
SINCE 1990
Home
About
Menu
Contact Us
Account
CONTACT US
Here You Can Make Out Or Just walkin to our cafe
Donec pretium est orci, non vulputate arcu hendrerit a. Fusce a eleifend riqsie, namei sollicitudin urna diam, sed commodo purus porta ut.
Phone Numbers
080-090-0990
080-090-0880
Emails
hello@company.com
info@company.com


Klassy
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Donec pretium est orci, non vulputate arcu hendrerit a. Fusce a eleifend riqsie, namei sollicitudin urna diam, sed commodo purus porta ut.
Phone Numbers
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080-090-0880
Emails
hello@company.com
info@company.com
Klassy
SINCE 1990
© Copyright Klassy Cafe Co.
Design: TemplateMo

7. Testing

Module	Description	Test Cases	Expected Result	Status
Login	Test user authentication	-Login with valid credentials. -Login with invalid username/password. -Login with empty username/password	-Logged in successfully. -Invalid Credentials. -Invalid Credentials.	-Passed. -Passed -Passed
Customers	Manage customers	-Get valid customers details.	-Display Customers.	-Passed
Categories	Manage categories	-Add all fields. -If any one field missing. -Image not in jpeg/jpg form.	-Inserted successfully. -Error message. -Error message.	-Passed -Passed -Passed
Products	Manage Products	-Add all fields. -If any one field missing. -Price not in integer form.	-Inserted successfully. -Error message. -Error message.	-Passed -Passed -Passed
Cart	Manage cart	-Single item in cart. -Multiple items in cart.	-Total must be update accordingly. -Total must reflect the calculation.	-Passed -Passed

8. Future Enhancement

-Mobile App Development: Create native mobile apps (iOS and Android) to provide a more convenient ordering experience for customers on-the-go.

-Integration with IoT Devices: Enable orders to be placed via smart devices (e.g., voice assistants or IoT-enabled kitchen appliances) for seamless and innovative ordering experiences.

-Social Media Integration: Integrate social media platforms for seamless sharing of reviews, promotions, and order statuses, leveraging social networks to increase brand visibility and customer engagement.

-Enhanced Personalization: Implement machine learning algorithms to analyze customer preferences and suggest personalized menu items or promotions based on past orders.

9. Reference

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http://www.javatpoint.com

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https://www.youtube.com

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