

BISTRO BOSS RESTAURANT: A WEB-BASED RESTAURANT MANAGEMENT SYSTEM

BY

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor in Science in Computer Science and Engineering

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APPROVAL

This Project titled “**Bistro Boss Restaurant: A web-based Restaurant management system**”, submitted by **Shourav Ahammed**, ID No: **212-15-14705** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 16.07.24.

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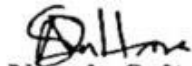
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I hereby declare that, this project has been done by Shourav Ahammed under the supervision of Naznin Sultana, Associate Professor, Department of CSE Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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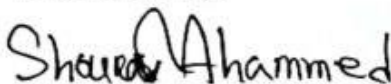


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ABSTRACT

The Bistro Boss Restaurant website offers a user-friendly interface for both customers and managers. It features a home page with ordering options, reviews, and contact details, along with special deals for the day. The menu offers various food options, including salads, pizzas, soups, desserts, drinks, and traditional dishes like Chicken and Wane Salad and Roast Duck Breast. Customers can easily select items and pay for them or save a table by clicking on them. The cart interface allows customers to view their selected items, change their order amount, and pay or reserve a table. The platform also has a robust payment system, tracking orders and providing a list of payments made with dates and payments. Users can reserve a table by choosing a date, time, and number of people. The user activity section provides a summary of past orders, payments, reviews, and reservation details. The admin panel is designed to help manage the restaurant better. It provides a dashboard with financial data, customer interaction, menu information, and monthly orders data. Charts show sales and sales trends, enabling businesses to make informed decisions. Users can add or remove items from the menu and manage their information, including roles and permissions. In summary, the Bistro Boss Restaurant website offers easy-to-use options for customers and helpful tools for restaurant managers, making dining enjoyable and smooth.

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CHAPTER 1

INTRODUCTION

1.1 Overview

Bistro Boss Restaurant's website offers an intuitive and comprehensive platform designed to enhance the dining experience for both customers and administrative staff. The primary objective of this digital interface is to streamline the process of browsing, ordering, and managing food and reservations, thus providing a seamless and efficient service to all users. The user interface of the Bistro Boss Restaurant website is meticulously organized to cater to the diverse needs of its patrons. The homepage serves as the central hub, presenting various sections such as Order Online, Testimonials, and Contact Information. It also highlights special daily offers, ensuring that users are always informed about the restaurant's featured dishes. The menu section categorizes the wide array of food items available, including salads, pizzas, soups, desserts, drinks, and traditional dishes like Chicken and Wane Salad and Roast Duck Breast. This categorization allows users to easily navigate through the options and make informed choices. Special daily offers are prominently displayed, adding an element of excitement and exclusivity to the dining experience. The ordering process is designed to be user-friendly. Customers can effortlessly browse through the menu, add desired items to the cart, and modify quantities as needed. The cart interface provides a clear overview of the selected items, including images, names, prices, and total costs. Once the selection is finalized, users can proceed to checkout, where they can enter their delivery address manually or use the locate function for added convenience. The checkout process culminates in a secure payment gateway, ensuring a smooth transaction. In addition to food ordering, the website features a reservation system that allows users to book tables by selecting the desired date, time, and number of guests. This function is particularly beneficial for those planning special occasions or group gatherings. The user dashboard offers a comprehensive activity log, enabling users to track their order history, payments, reviews, and reservations. This feature enhances transparency and allows customers to

manage their dining activities effectively. The administrative panel is equipped with robust management tools. Administrators can oversee menu items, update or delete food options, and manage user roles. The dashboard provides valuable insights into revenue growth, customer engagement, and monthly orders, supported by visual data representations such as charts and graphs.

1.2 Problem Statement

The current online food ordering systems available in the market often lack comprehensive functionality and user-friendliness, leading to customer dissatisfaction and inefficiencies in restaurant management. These systems usually offer limited features, such as basic menu browsing and ordering, but fail to provide an integrated solution that encompasses the full spectrum of user needs, from detailed menu descriptions to seamless payment processes and efficient order tracking. Additionally, many platforms do not offer robust tools for restaurant administrators to manage menu items, monitor sales, and handle customer interactions effectively. Customers today demand a more personalized and efficient online food ordering experience. They seek platforms where they can easily browse diverse food options, view special offers, customize their orders, and make reservations without hassle. The lack of an intuitive interface and comprehensive features often results in a frustrating experience, leading to abandoned carts and lost sales. Furthermore, the absence of a reliable system for tracking order history, managing payments, and handling reservations creates additional inconveniences for users. For restaurant administrators, the challenges are equally significant. Many existing systems do not provide adequate tools for managing menu items, updating prices, or handling special offers efficiently. Administrators struggle with outdated interfaces and lack of automation in managing user roles, monitoring sales performance, and generating reports. This inefficiency hinders their ability to respond promptly to market demands and customer preferences, ultimately affecting the restaurant's profitability and customer satisfaction.

1.3 Motivation and Objectives

The Bistro Boss Restaurant website project is driven by the need to streamline the dining experience, providing users with a seamless interface to browse, order, and manage their food preferences. The primary motivation stems from the growing demand for digital solutions in the restaurant industry, where customers seek convenience and efficiency. A key objective is to offer an intuitive platform that caters to diverse user needs, including easy navigation of the menu, quick order placement, and secure payment options. The website aims to enhance customer satisfaction by offering a variety of features such as real-time order tracking, reservation capabilities, and personalized recommendations based on past orders. In addition to improving user experience, the website focuses on providing robust administrative tools. Admin functionalities include efficient menu management, user control, and comprehensive analytics to monitor business performance. By integrating these features, the project aspires to support restaurant owners in optimizing operations and driving revenue growth.

- 1 Enhance user convenience with a user-friendly interface.
- 2 Provide diverse food options, including daily specials.
- 3 Implement secure and efficient payment systems.
- 4 Enable real-time order tracking and reservation management.
- 5 Offer personalized recommendations to users.
- 6 Equip admins with tools for menu management and user control.
- 7 Use analytics to provide insights into business performance.

1.4 Project Scope

The scope of the Bistro Boss Restaurant website encompasses a comprehensive online platform tailored for both users and administrators

User Experience:

1. The website offers users a seamless navigation experience with multiple functionalities:

2. Homepage: Provides access to menu categories such as salads, pizzas, soups, desserts, and drinks, alongside daily specials and testimonials.
3. Ordering System: Users can add items to their cart directly from the menu, adjust quantities, and proceed to checkout.
4. Cart Management: Allows users to review selected items, choose delivery locations, and complete payments securely.
5. Reservation System: Enables users to reserve tables by selecting dates, times, and specifying the number of guests.
6. Activity Tracking: Provides a feature to monitor past orders, payment history, and reservation details for enhanced user convenience.
7. Customer Support: Includes a contact option for inquiries or assistance related to orders and services.

Admin Panel:

- 1 Administrators have access to tools for efficient management:
- 2 Dashboard: Displays revenue growth metrics, customer engagement statistics, and monthly order summaries through interactive charts.
- 3 Menu Management: Allows admins to add, update, or remove menu items, specifying details like name, category, price, and description.
- 4 User Management: Provides functionality to view and manage user accounts, assign administrative roles, and control user permissions.

The Bistro Boss Restaurant website aims to streamline the process of food ordering and table reservations while providing robust administrative tools to manage operations effectively. The project scope ensures a user-friendly interface for customers and comprehensive management capabilities for administrators, promoting an intuitive and efficient online dining experience.

1.4 Project Outcome

The project aims to deliver a sophisticated and user-friendly online ordering platform for Bistro Boss Restaurant, catering to both customers and administrative staff. The

platform's primary objective is to enhance user experience by providing seamless navigation and comprehensive functionalities.

Features

1. **User Interface (UI):** A visually appealing and intuitive interface that allows users to easily explore menu items, place orders, and make reservations.
2. **Menu Navigation:** Customers can browse through various food categories such as salads, pizzas, soups, desserts, and drinks. Special daily offers are highlighted to attract attention.
3. **Ordering Process:** Users can add desired items to their cart with a simple click, review their selections, and proceed to checkout. Options for location services or manual address entry streamline the ordering process.
4. **Payment and Checkout:** Secure payment gateway integration ensures smooth transactions. Users can view their payment history and track order statuses.
5. **Reservation System:** Customers can reserve tables by selecting dates, times, and specifying the number of guests. This feature aims to optimize the dining experience and accommodate preferences.
6. **Admin Dashboard:** A robust backend system for administrators to manage menu items, monitor revenue growth, track customer engagement, and analyze sales data through interactive charts.
7. **User Management:** Administrative capabilities include user role assignment, user deletion, and oversight of customer interactions.

The project aims to achieve the following:

1. **Enhanced Customer Satisfaction:** By providing a user-friendly interface and efficient ordering process.
2. **Increased Operational Efficiency:** Through streamlined menu management and administrative functionalities.
3. **Business Growth:** Facilitating easier access to the restaurant's offerings and promoting customer loyalty through seamless interactions.

4. Data-Driven Insights: Utilizing analytics to make informed decisions and improve service offerings.
5. Scalability: Designing a platform that can accommodate future expansions and technological advancements.

In summary, the project endeavors to elevate Bistro Boss Restaurant's digital presence, optimize customer interactions, and foster sustainable business growth in the competitive food service industry.

1.6 Report Organization

The This report is structured to provide a comprehensive overview of the Bistro Boss Restaurant website, detailing its development process and key functionalities. The organization of this report is as follows:

1. Introduction: Provides an introduction to the Bistro Boss Restaurant website, its purpose, and the technologies used in its development.
2. Project Scope: Defines the scope of the project, outlining the objectives and features planned for implementation.
1. Requirements Analysis: Discusses the requirements gathering process, including user stories, functional and non-functional requirements, and system constraints.
2. Design and Architecture: Describes the design decisions made, including the architectural design of the website and database schema using MongoDB.
3. Implementation: Details the implementation phase, focusing on the use of HTML, CSS, React JavaScript, and MongoDB to build the website.
4. Testing and Quality Assurance: Covers the testing strategies employed to ensure the functionality, usability, and security of the website.
5. Deployment and Maintenance: Addresses the deployment process and ongoing maintenance considerations for the live website.
6. Conclusion: Summarizes the project outcomes, challenges faced, and future enhancements planned for the Bistro Boss Restaurant website.

CHAPTER 2

LITERATURE REVIEW

2.1 Overview

In their paper [1], the authors talk about how restaurants can use e-commerce to save money, build better relationships with customers, and make more profit. They emphasize the importance of having a strong website and using the latest technology to stay ahead in the competitive online restaurant industry. Paper [2] employs grounded theory to meticulously explore the multifaceted experiences of restaurant patrons navigating through websites. Core concepts such as "Website experience" and "Website usability" emerge as focal points, intricately shaped by demographic nuances, psychological inclinations, and the underlying motivations driving visits to restaurant websites. Examining the attributes of restaurant review websites, paper [3] employs the Stimulus-Organism-Response framework to dissect their impact on consumer cognitive and affective attitudes, subsequently influencing behavioral responses. Attributes such as usability, visual appeal, social presence, informativeness, credibility, and scalability are scrutinized for their roles in shaping consumer perceptions and actions. In paper [4], a pivotal model for assessing the quality of restaurant websites is developed, emphasizing their potential to significantly enhance business value within the hospitality sector. The study pioneers an evaluation instrument derived from established IS ecommerce success models, poised to guide the development of impactful and effective restaurant websites. Lastly, paper [5] introduces an expansive functional model tailored for evaluating the operational efficacy of hospitality and tourism websites, with a particular focus on casual dining establishments. This holistic framework appraises websites across critical domains such as information dissemination, communication efficacy, transactional capabilities, relationship cultivation, and technological prowess. Its aim is to optimize overall website functionality, bolster user engagement, and navigate the competitive digital milieu with precision.

2.2 Related Works

I used specific technologies to build my restaurant website so that it works well for medical needs. We carefully picked these technologies because they work well together and are efficient in giving the users the experience they want.

HTML5 (JSX) [11]:	HTML stands for Hypertext Markup Language which allows the user to make and structure sections, paragraphs, headings, titles, line breaks, add media, links, blockquotes, etc. for websites and applications.
CSS [12]:	Stands for Cascading Style Sheets which is a simple design language intended to simplify the method of constructing this website presentable. It's designed to enable the separation of presentation and content,
Node.js and Express.js [13]:	Node.js serves as a back-end runtime environment, while Express.js simplifies server-side development, offering a fast and minimalist framework for building web and mobile applications.
JavaScript [14]:	JavaScript, as a versatile programming language, enables the creation of interactive and dynamic elements on web pages, facilitating enhanced user engagement and a more responsive user experience.
MongoDB [15]:	MongoDB, a flexible NoSQL database, organizes and manages data in a document-based structure, providing robust querying capabilities for efficient storage and retrieval of property profiles and rental information.

OpenTable is a popular online restaurant reservation service. Users can search for restaurants, view menus, make reservations, and read reviews[6].

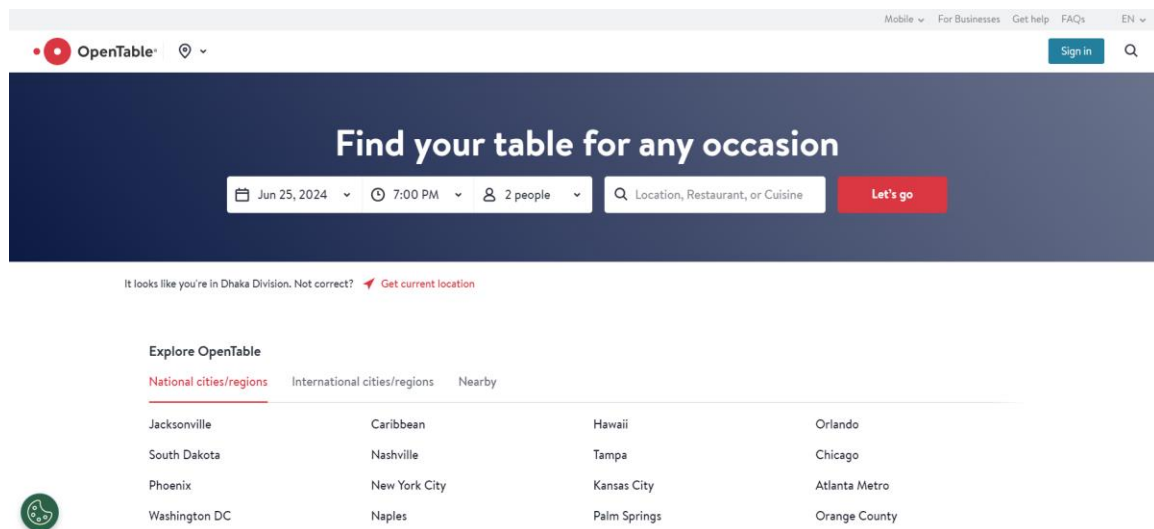


Figure 2.1: OpenTable

DoorDash is a food delivery service that partners with local restaurants. Users can browse menus, place orders, and track deliveries in real-time[7].

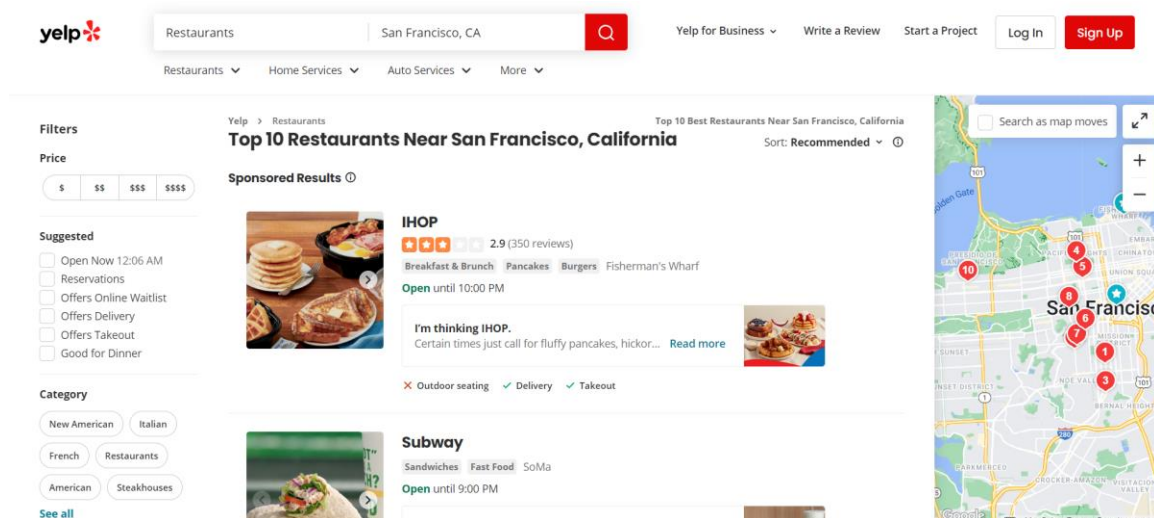


Figure 2.2: DoorDash

Uber Eats is another popular food delivery service. It offers a wide selection of restaurants, allowing users to order food and track deliveries in real-time[8].

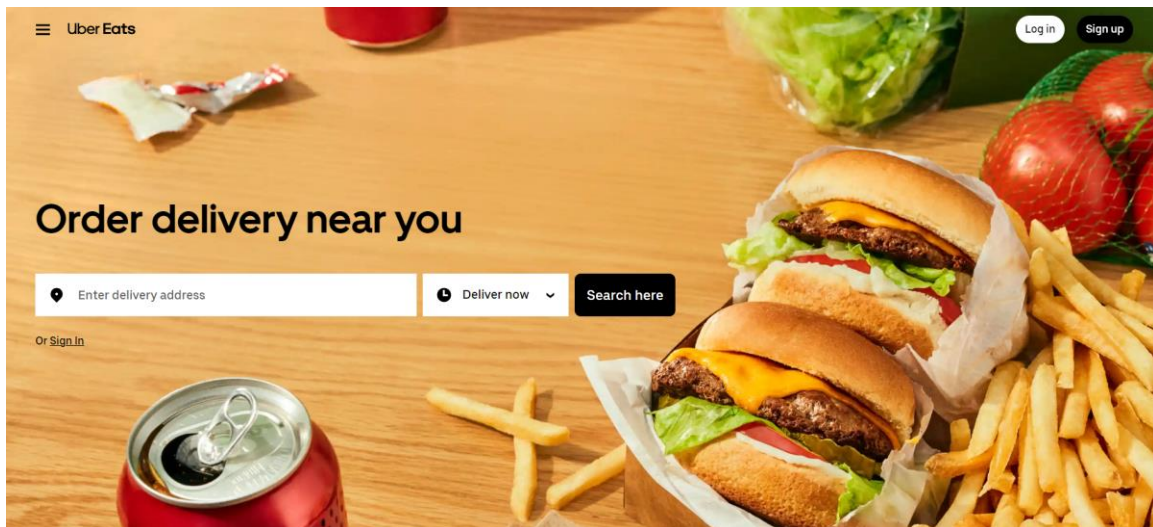


Figure 2.3: Uber Eats

Zomato is a restaurant search and discovery platform. Users can explore restaurants nearby, view menus, read reviews, and order food for delivery or takeaway[9].



Figure 2.4: Zomato

Yelp is a platform for discovering local businesses, including restaurants. Users can read and write reviews, view photos, and find restaurant contact information[10].

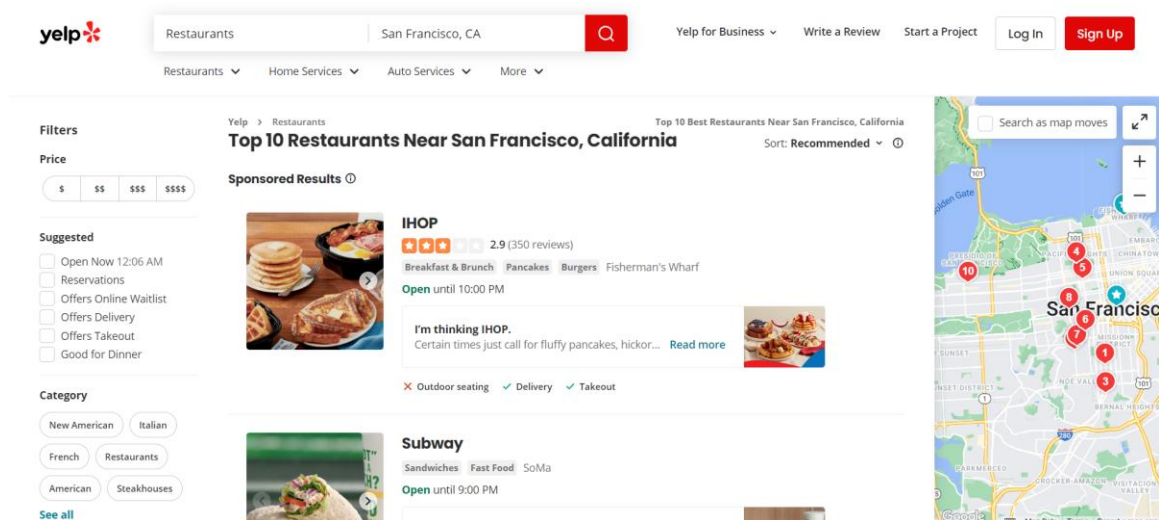


Figure 2.5: Yelp

CHAPTER 3

METHODOLOGY

3.1 Overview

This chapter traces the strategy utilized within the improvement of the Bistro Boss Eatery site, built utilizing HTML, CSS, Respond JavaScript, and MongoDB. The technique includes a few key stages to guarantee a organized and productive improvement prepare. The extend started with a comprehensive necessity gathering stage, where the functionalities and highlights of the site were recognized based on client and regulatory needs. This stage involved consultations with partners to set up clear targets and scope. Taking after the prerequisites stage, design and arranging commenced. Wireframes and mockups were made to imagine the client interface and client involvement. Plan choices centered on guaranteeing a user-friendly interface that encourages simple route and availability over gadgets. Improvement was executed utilizing dexterous techniques, permitting for iterative advancement and visit criticism circles. This approach encouraged ceaseless change and adjustment all through the improvement lifecycle. Execution included the utilization of present-day web innovations. HTML given the structure, CSS taken care of the styling, Respond JavaScript guaranteed intelligently components and energetic client interfacing, whereas MongoDB served as the database administration framework for putting away and recovering information. Testing and Quality Confirmation were fundamentally parts of the advancement handle. Thorough testing strategies, counting unit testing, integration testing, and client acknowledgment testing, were conducted to distinguish and correct issues expeditiously.

3.2 Requirement Analysis

The advancement of the Bistro Boss Eatery site taken after an organized technique starting with comprehensive prerequisite examination. This stage included gathering and scrutinizing the utilitarian and non-functional prerequisites basic for the website's plan and usefulness. Key contemplations included client parts such as customary clients and

directors, their individual functionalities, and interface prerequisites. Amid prerequisite investigation, accentuation was put on guaranteeing consistent route and ease of use over different areas of the site, counting the homepage, menu browsing, requesting handle, cart administration, installment choices, reservation framework, and client account administration. Integration of highlights such as location-based administrations for conveyance address, responsive plan for availability over gadgets, and strong security measures were moreover pivotal components distinguished amid this stage. The examination stage iteratively refined prerequisites based on partner input and industry best hones to adjust the website's highlights closely with client desires and trade objectives. This approach encouraged the consequent plan and improvement stages to viably interpret these necessities into a completely useful web application[16].

3.3 Proposed Methodology/System Design

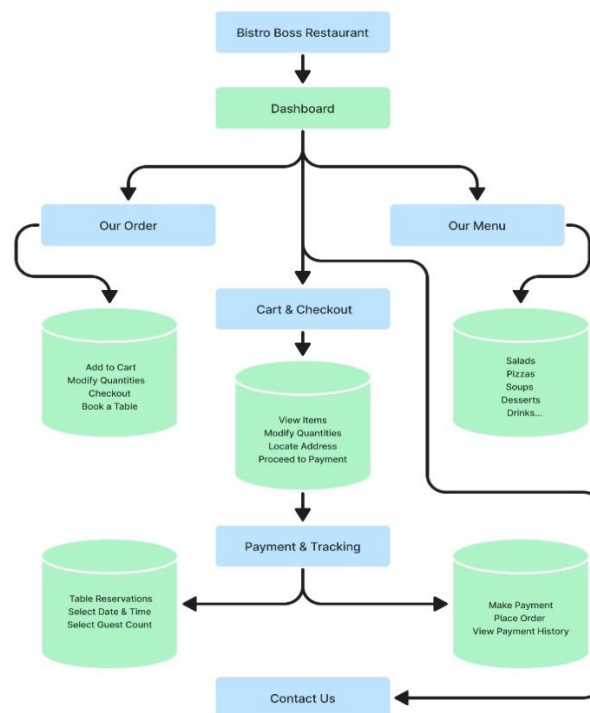


Figure 2.6: Proposed Methodology

The proposed methodology for developing the Bistro Boss Restaurant website involves a systematic approach using HTML, CSS, React JavaScript, and MongoDB. The system design aims to create a user-friendly interface that enhances the dining experience for customers and facilitates efficient management for administrators. HTML and CSS will be utilized to structure and style the website, ensuring a visually appealing and responsive design across devices. React JavaScript will handle dynamic user interactions, such as menu browsing, item selection, and cart management, providing a seamless and interactive user experience. MongoDB will serve as the database management system to store and retrieve menu items, user data, orders, and reservations. Node.js will be used with Express.js to build the server-side application, enabling backend logic for user authentication, order processing, and data management. The development will follow an Agile methodology, emphasizing iterative development cycles, continuous integration, and frequent testing to ensure functionality and reliability. Regular feedback loops will guide refinements and enhancements throughout the development process, culminating in a robust and scalable restaurant management system.

3.4 Data Collection/Input Output Analysis

The website for Bistro Boss Restaurant is developed using HTML, CSS, React JavaScript, and MongoDB. The methodology for building this platform involves several key steps. Firstly, data collection focused on gathering comprehensive information about the restaurant's menu items, special offers, user preferences, and operational needs. This data was then structured and organized for input into the MongoDB database, which serves as the backend storage solution. Input-output analysis was critical in designing user interfaces that facilitate seamless interactions. User inputs, such as food orders, reservations, and reviews, are processed through React components to generate appropriate outputs, including order confirmations, payment processing, and reservation bookings. The frontend design, implemented with HTML and CSS, ensures a user-friendly experience, enabling customers to navigate menus, place orders, and manage reservations effortlessly. This methodology ensures robust functionality and responsiveness, enhancing both user satisfaction and administrative efficiency.

3.5 Business Process Modeling

The website allows users to browse menus, order food online, make reservations, and view past orders. Users can create an account to save information for future orders.

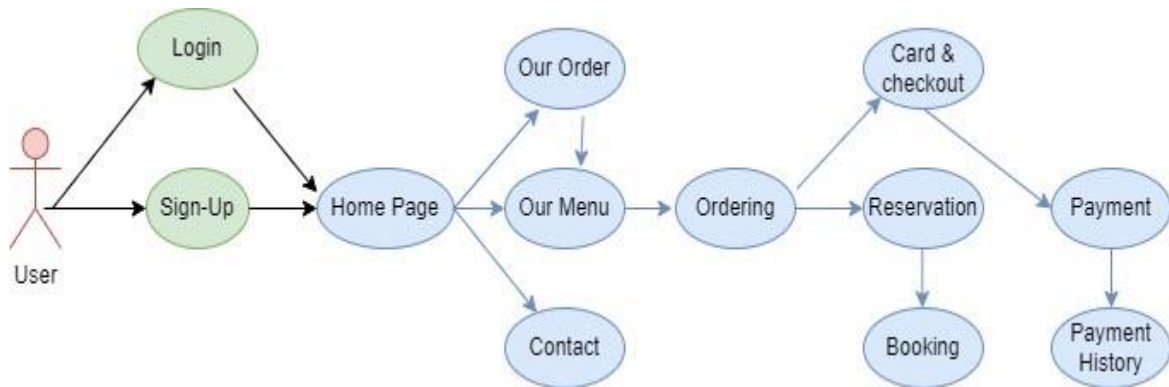


Figure: 3.1 Business Process Model User

The content management system allows restaurant Admin to add, update, or delete menu items. They can also manage user accounts and payment history.



Figure: 3.2 Business Process Model Admin

3.6 Flowchart

The website for Bistro Boss Restaurant is built using HTML, CSS, React JavaScript, and MongoDB. It features a user-friendly flowchart starting with a homepage displaying menus and special offers. Users can browse, order, and pay for food items, manage their cart, make reservations, and review orders. Admins oversee item management, user roles, and business analytics through a comprehensive dashboard.

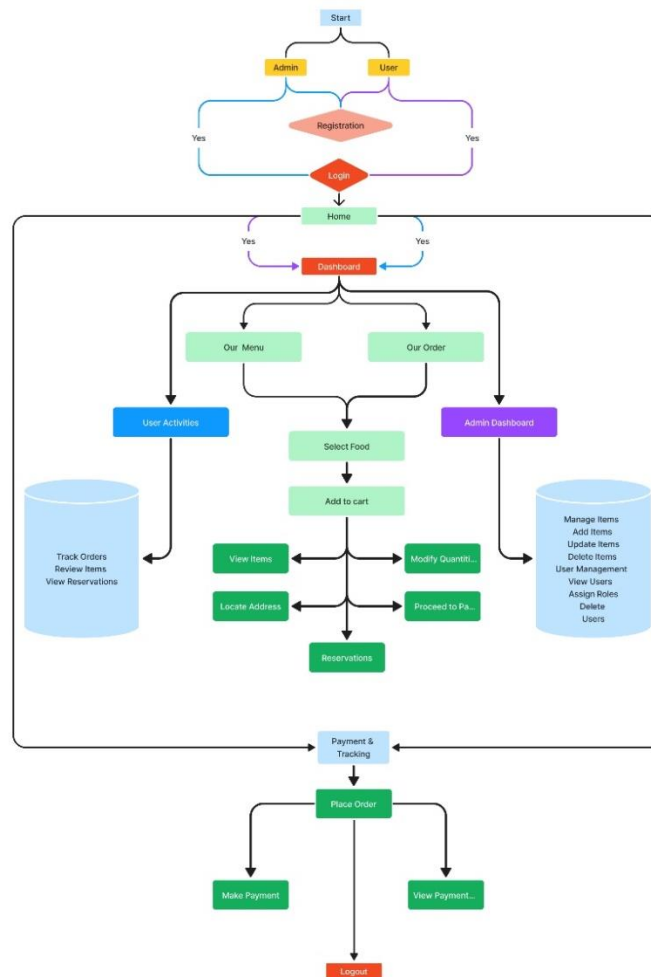


Figure: 3.3 Flowchart of Bistro Boss Restaurant

3.7 ER Diagram

The restaurant management system uses usernames and passwords to control access for different roles, allowing staff to view and manage user accounts. Menu management allows staff to add, edit, or delete items, categorize items, and set promotions. Order management allows staff to view or track online orders. The CMS also provides tools for restaurant staff to view data such as revenue growth, customer count, number of menus viewed, and selling items.

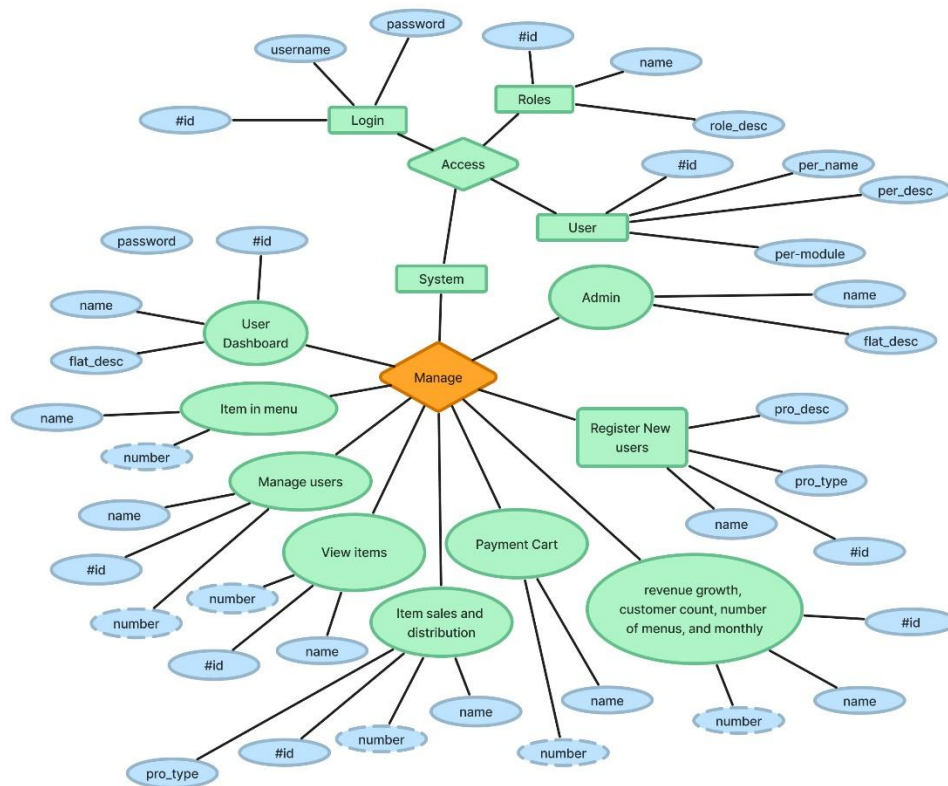


Figure: 3.4 ER Diagram

3.8 Class Diagram

The restaurant staff management system uses usernames and passwords to control access for various roles, including admin and manager. Staff can view and manage user accounts, add new users, and assign permissions. Menu management allows staff to add, edit, or delete items, categorize items, and set promotions. Order management allows staff to view and manage orders, update or cancel details, and view related data. The CMS also provides tools for viewing order data, such as the viewOrders() function.

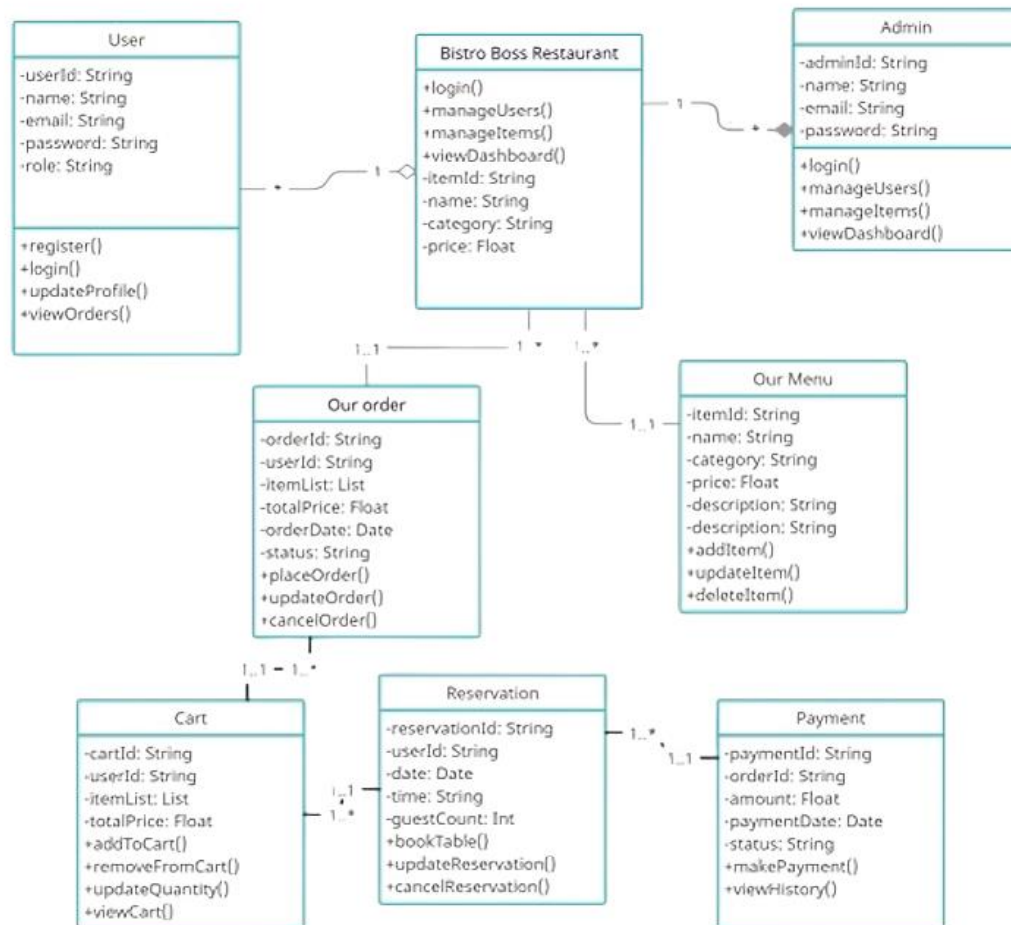


Figure: 3.5 Class Diagram

3.9 MVC Diagram

The CMS uses a Model-View-Controller (MVC) architecture for content management, delivering content using common web technologies like HTML, CSS, and Javascript. Staff can manage user accounts, manage menu items, and manage online orders. The CMS also provides tools for restaurant staff to view revenue growth, customer count, menu views, and selling items.

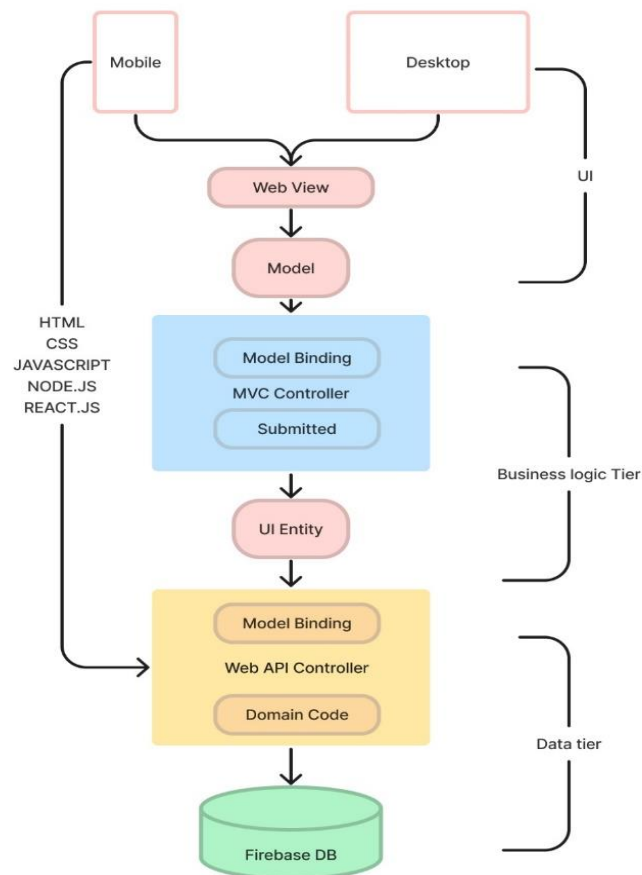


Figure: 3.6: MVC Diagram

3.10 Project Management and Financial Analysis

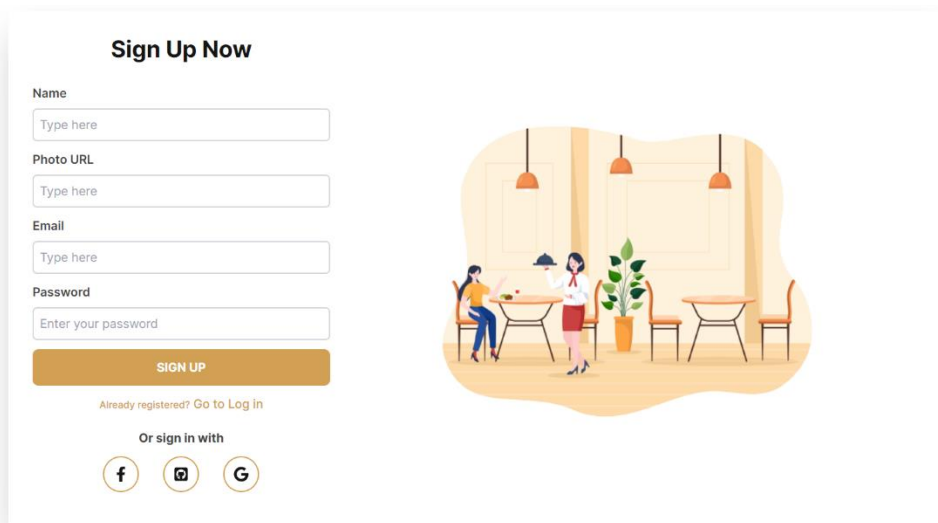
The Bistro Boss Restaurant website was developed using HTML, CSS, React JavaScript, and MongoDB. This project underwent several phases, including initial planning, design, implementation, and deployment. Financially, the project incurred expenses primarily for domain registration, web hosting services, and software licenses for development tools. Additionally, some costs were allocated to outsourcing certain design or development tasks. These expenses were managed within a predefined budget to ensure financial sustainability throughout the project lifecycle. Project management played a crucial role in the successful completion of the website. Clear milestones were set, and tasks were assigned to team members to streamline the workflow. Project management tools were utilized for effective collaboration and communication among the team. Regular progress meetings were held to monitor development, address challenges promptly, and ensure alignment with project goals. During the implementation phase, the focus was on frontend development using HTML and CSS for layout and styling, React JavaScript for dynamic functionality, and MongoDB for database management. This phase involved meticulous attention to detail to ensure a seamless user experience. Testing and debugging were integral components, ensuring the website functioned smoothly across different devices and browsers. Overall, the development of The Bistro Boss Restaurant website was a comprehensive process involving careful planning, effective project management, and rigorous implementation. The result is a robust and user-friendly website that meets the client's needs and expectations. Through careful budgeting and efficient resource allocation, the project was completed successfully, showcasing the team's technical skills and project management capabilities. The website stands as a testament to the collaborative efforts and dedication of the development team[17].

CHAPTER 4

REQUIREMENT ANALYSIS AND DESIGN SPECIFICATION

4.1 Front-End Design

The front-end design of the Bistro Boss Restaurant website, built with HTML, CSS, React JavaScript, and MongoDB, emphasizes user-friendly navigation and aesthetic appeal. It features a responsive layout that seamlessly integrates menu browsing, order placement, and reservation options. Visual elements are carefully crafted to enhance user experience and showcase daily specials effectively.



The image displays a 'Sign Up Now' form on the left and a restaurant illustration on the right. The form includes input fields for Name, Photo URL, Email, and Password, followed by a 'SIGN UP' button. Below the button is a link for 'Already registered? Go to Log in' and a section for 'Or sign in with' featuring Facebook, Instagram, and Google icons. The illustration shows a restaurant interior with two people at a table and a server.

Figure: 4.1 Sign up page.

Login:

The Bistro Boss Restaurant website, built with HTML, CSS, React JavaScript, and MongoDB, features user and admin login functionalities. Users can access home, menu, and order pages to select and purchase food items, make reservations, and view order history. Admins manage menu items, user roles, and monitor business metrics via a dedicated dashboard.

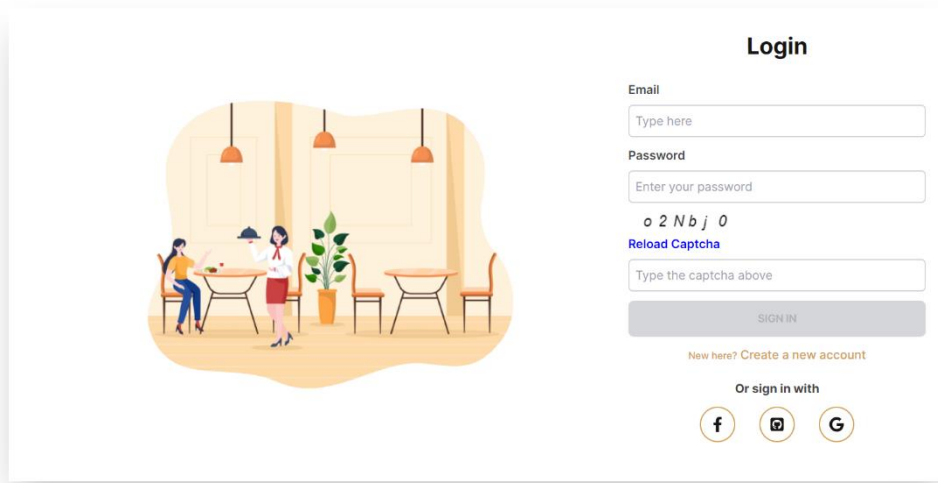


Figure: 4.2 Login page

Home page:

The Bistro Boss Restaurant website, built with HTML, CSS, React JavaScript, and MongoDB, features a dynamic home page welcoming users to explore its diverse menu and convenient ordering options. Highlighting daily specials and testimonials, it offers seamless navigation to place orders, reserve tables, and contact support, ensuring a user-friendly dining experience.



Figure: 4.3 Front page

Specification of services:

Appointments in the "Bistro Boss Restaurant" allow users to schedule consultations with healthcare professionals. Users can select their preferred doctor, date, and time slot based on availability. Once booked, users provide necessary personal information and submit the appointment request. The system confirms appointments, facilitating efficient patient-doctor interactions and improving healthcare access and organization.

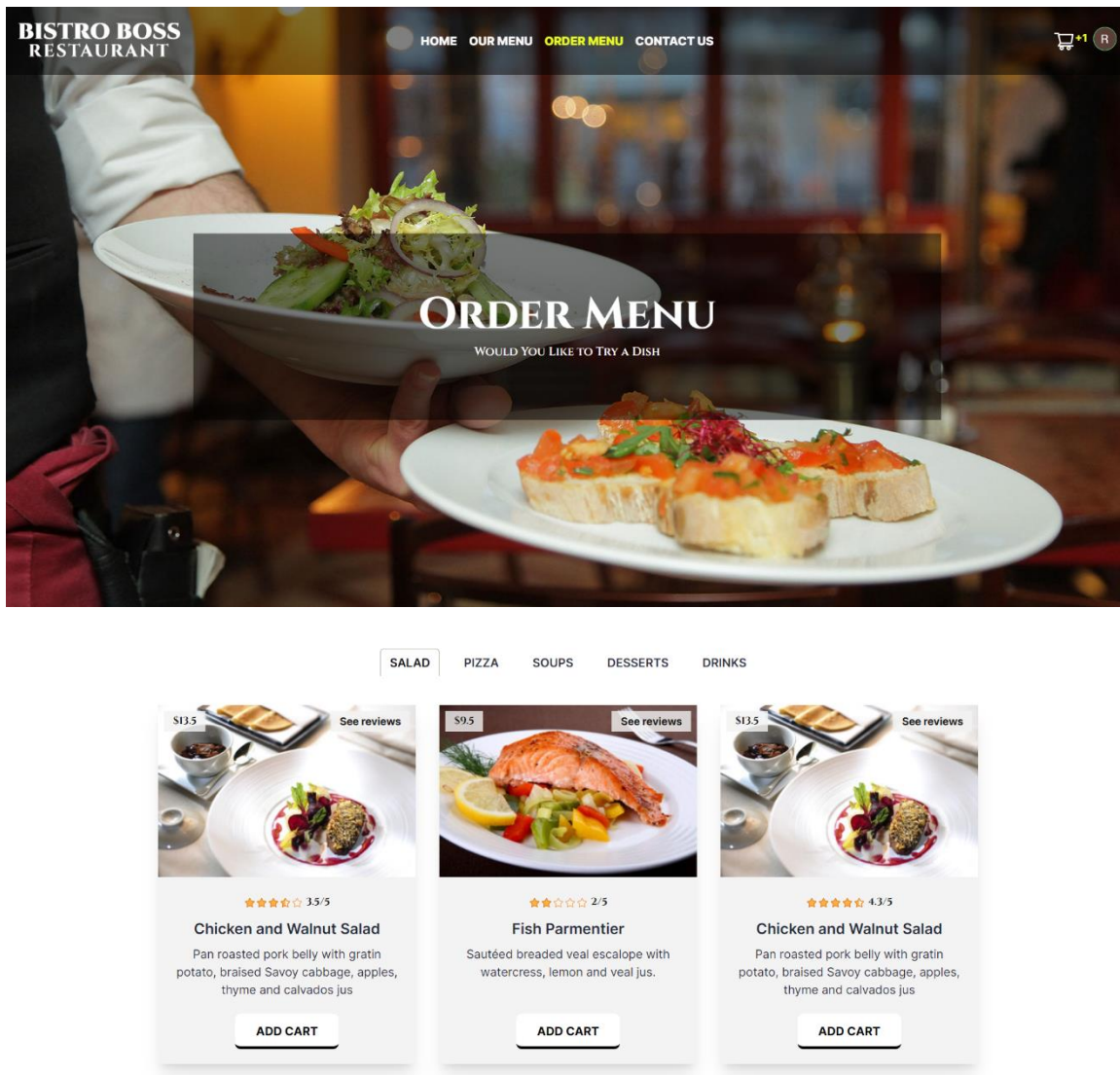
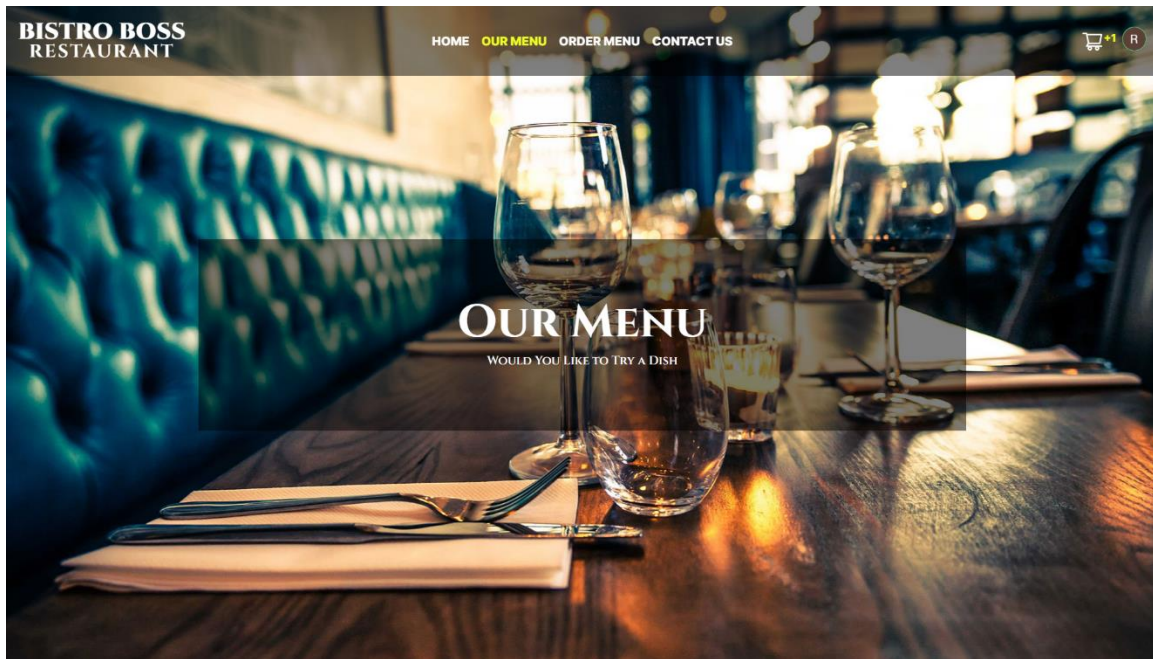


Figure: 4.4 Order Menu

The menu at Bistro Boss Restaurant features a diverse selection including salads, pizzas, soups, desserts, and drinks. Specializing in traditional favorites like chicken and waned salad and roast duck breast, the menu also highlights daily specials to cater to varied tastes and preferences.



	CHICKEN AND WALNUT SALAD----- 13.5 Pan roasted pork belly with gratin potato, braised Savoy cabbage, apples, thyme and calvados jus		ESCALOPE DE VEAU----- 12.5 Pan roasted haddock fillet wrapped in smoked French bacon with pea purée and tomato and chive vinaigrette
	ROAST DUCK BREAST----- 14.5 Roasted duck breast (served pink) with gratin potato and a griottine cherry sauce		CHICKEN AND WALNUT SALAD----- 13.5 Pan roasted pork belly with gratin potato, braised Savoy cabbage, apples, thyme and calvados jus
	FISH PARMENTIER----- 9.5 Sautéed breaded veal escalope with watercress, lemon and veal jus.		CHICKEN AND WALNUT SALAD----- 13.5 Pan roasted pork belly with gratin potato, braised Savoy cabbage, apples, thyme and calvados jus
	ESCALOPE DE VEAU----- 12.5 Pan roasted haddock fillet wrapped in smoked French bacon with pea purée and tomato and chive vinaigrette		CHICKEN AND WALNUT SALAD----- 13.5 Pan roasted pork belly with gratin potato, braised Savoy cabbage, apples, thyme and calvados jus
	CHICKEN AND WALNUT SALAD----- 13.5 Pan roasted pork belly with gratin potato, braised Savoy cabbage, apples, thyme and calvados jus		HADDOCK----- 14.7 Chargrilled fresh tuna steak (served medium rare) on classic Niçoise salad with French beans
	TUNA NIÇOISE----- 10.5 Warm goats cheese and roasted vegetable salad with black olive tapenade crostini		ESCALOPE DE VEAU----- 12.5 Pan roasted haddock fillet wrapped in smoked French bacon with pea purée and tomato and chive vinaigrette

ORDER YOUR FAVOURITE FOOD

Figure: 4.5 Our Menu

Feedback & contact us:

For any feedback or inquiries, please reach out to us. We value your input and strive to enhance your experience. Contact us via the provided form or email us directly. Your feedback is crucial in improving our services. Thank you for choosing Bistro Boss Restaurant.

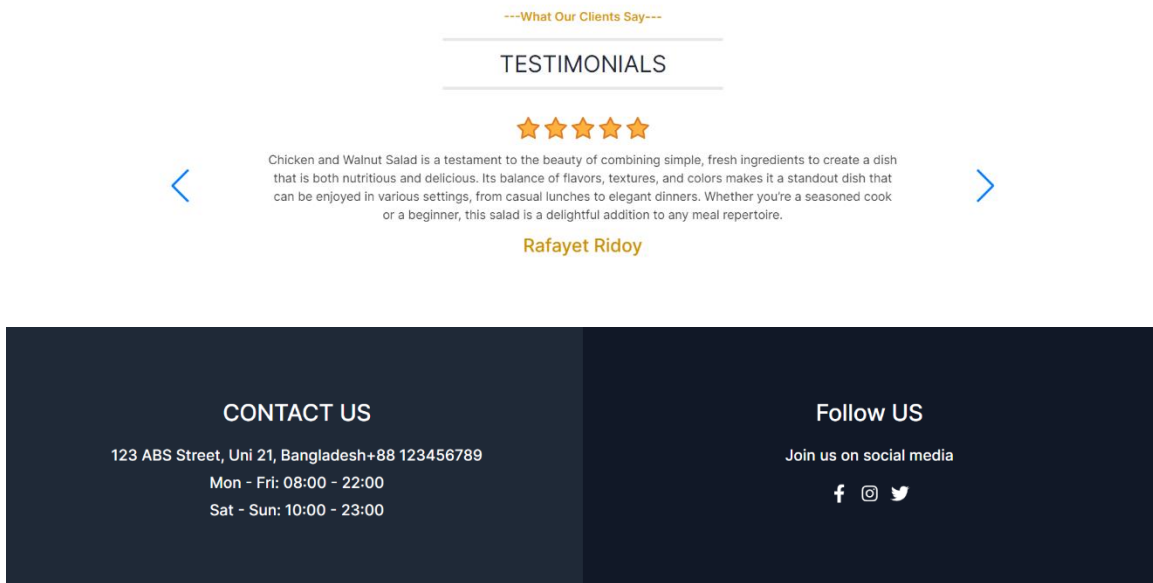


Figure: 4.6 Contact us

User Section:

This section allows users to manage their table reservations effortlessly. Users can view reservation details such as date, time, and number of guests, with options to modify or cancel reservations as needed. This feature ensures flexibility and convenience for planning dining experiences at Bistro Boss.

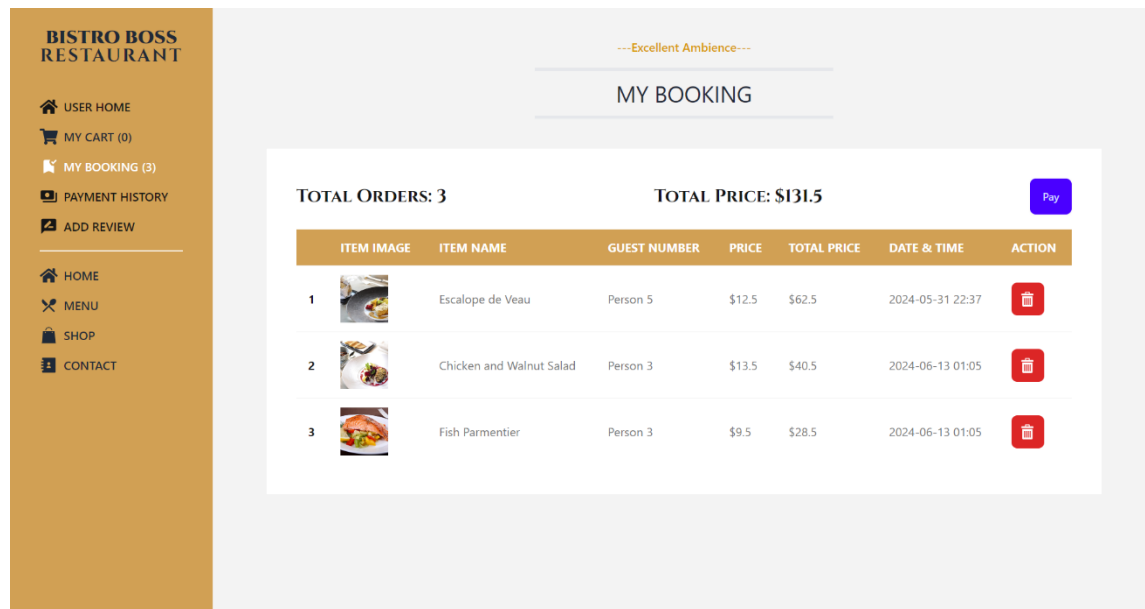


Figure: 4.6 User Profile

MyCart: Users can easily monitor and adjust the contents of their shopping cart. They have the ability to modify quantities, remove items, and view updated costs before proceeding to checkout. This intuitive interface streamlines the ordering process, providing a seamless shopping experience.

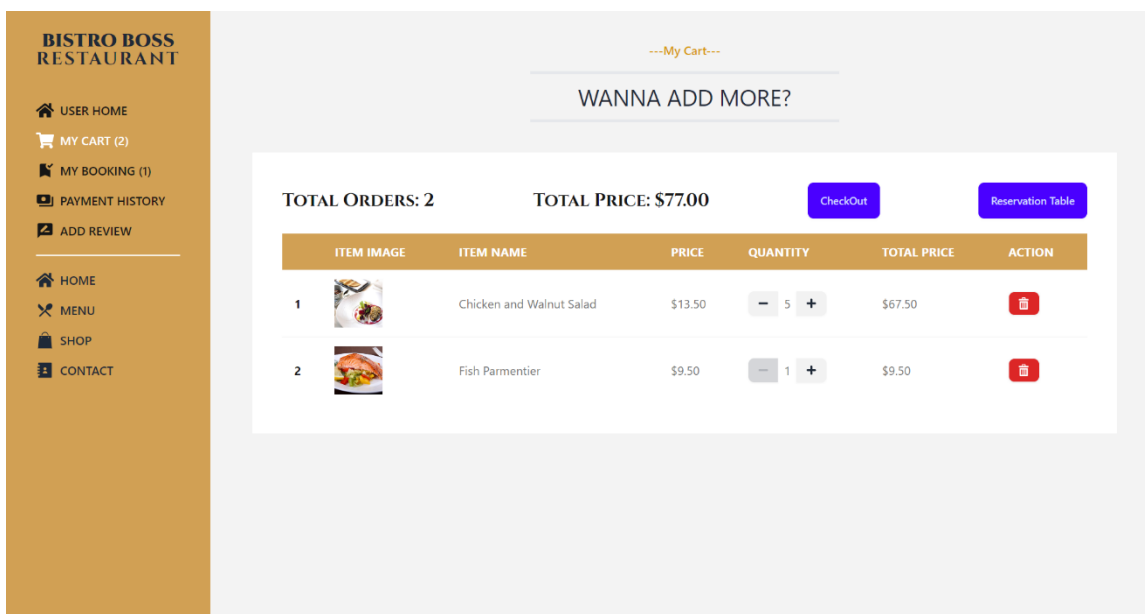


Figure: 4.7 User Profile Filling Info

 USER HOME  MY CART (0)  MY BOOKING (3)  PAYMENT HISTORY  ADD REVIEW	HOME MENU SHOP CONTACT	PAYMENT HISTORY TOTAL ORDERS: 11 <table> <tr> <th></th><th>EMAIL</th><th>CATEGORY</th><th>TOTAL PAYMENTS</th><th>PAYMENT DATE</th></tr> <tr> <td>1</td><td>rafayetr4@gmail.com</td><td>pi_3PMw8O06zp3N89LR0v1eEvfUJ</td><td>\$90.7</td><td>2024-06-01T17:54:43.224Z</td></tr> <tr> <td>2</td><td>rafayetr4@gmail.com</td><td>pi_3PQthZ06zp3N89LR0XRh6kUa</td><td>\$46</td><td>2024-06-12T16:07:26.723Z</td></tr> <tr> <td>3</td><td>rafayetr4@gmail.com</td><td>pi_3PQtlY06zp3N89LR0J7zR5p4</td><td>\$457.5</td><td>2024-06-12T16:11:57.603Z</td></tr> <tr> <td>4</td><td>rafayetr4@gmail.com</td><td>pi_3PR4Ak06zp3N89LR1fcw5fm1</td><td>\$98.5</td><td>2024-06-13T03:18:07.280Z</td></tr> <tr> <td>5</td><td>rafayetr4@gmail.com</td><td>pi_3PR75p06zp3N89LR1zOm0TgJ</td><td>\$97.5</td><td>2024-06-13T06:25:42.164Z</td></tr> <tr> <td>6</td><td>rafayetr4@gmail.com</td><td></td><td>\$54</td><td>2024-06-13T06:26:22.185Z</td></tr> <tr> <td>7</td><td>rafayetr4@gmail.com</td><td>pi_3PRgR506zp3N89LR0M6lPbbz</td><td>\$40.5</td><td>2024-06-14T20:09:31.926Z</td></tr> <tr> <td>8</td><td>rafayetr4@gmail.com</td><td>pi_3PRgYm06zp3N89LR0RzGNIYc</td><td>\$241.2</td><td>2024-06-14T20:17:29.287Z</td></tr> </table>		EMAIL	CATEGORY	TOTAL PAYMENTS	PAYMENT DATE	1	rafayetr4@gmail.com	pi_3PMw8O06zp3N89LR0v1eEvfUJ	\$90.7	2024-06-01T17:54:43.224Z	2	rafayetr4@gmail.com	pi_3PQthZ06zp3N89LR0XRh6kUa	\$46	2024-06-12T16:07:26.723Z	3	rafayetr4@gmail.com	pi_3PQtlY06zp3N89LR0J7zR5p4	\$457.5	2024-06-12T16:11:57.603Z	4	rafayetr4@gmail.com	pi_3PR4Ak06zp3N89LR1fcw5fm1	\$98.5	2024-06-13T03:18:07.280Z	5	rafayetr4@gmail.com	pi_3PR75p06zp3N89LR1zOm0TgJ	\$97.5	2024-06-13T06:25:42.164Z	6	rafayetr4@gmail.com		\$54	2024-06-13T06:26:22.185Z	7	rafayetr4@gmail.com	pi_3PRgR506zp3N89LR0M6lPbbz	\$40.5	2024-06-14T20:09:31.926Z	8	rafayetr4@gmail.com	pi_3PRgYm06zp3N89LR0RzGNIYc	\$241.2	2024-06-14T20:17:29.287Z
	EMAIL	CATEGORY	TOTAL PAYMENTS	PAYMENT DATE																																											
1	rafayetr4@gmail.com	pi_3PMw8O06zp3N89LR0v1eEvfUJ	\$90.7	2024-06-01T17:54:43.224Z																																											
2	rafayetr4@gmail.com	pi_3PQthZ06zp3N89LR0XRh6kUa	\$46	2024-06-12T16:07:26.723Z																																											
3	rafayetr4@gmail.com	pi_3PQtlY06zp3N89LR0J7zR5p4	\$457.5	2024-06-12T16:11:57.603Z																																											
4	rafayetr4@gmail.com	pi_3PR4Ak06zp3N89LR1fcw5fm1	\$98.5	2024-06-13T03:18:07.280Z																																											
5	rafayetr4@gmail.com	pi_3PR75p06zp3N89LR1zOm0TgJ	\$97.5	2024-06-13T06:25:42.164Z																																											
6	rafayetr4@gmail.com		\$54	2024-06-13T06:26:22.185Z																																											
7	rafayetr4@gmail.com	pi_3PRgR506zp3N89LR0M6lPbbz	\$40.5	2024-06-14T20:09:31.926Z																																											
8	rafayetr4@gmail.com	pi_3PRgYm06zp3N89LR0RzGNIYc	\$241.2	2024-06-14T20:17:29.287Z																																											

Figure 4.9: Payment History

BISTRO BOSS

RESTAURANT

HOME

MY CART (2)

MY BOOKING (1)

PAYMENT HISTORY

ADD REVIEW

HOME

MENU

SHOP

CONTACT

Reservation

RESERVE A TABLE

Date*

mm/dd/yyyy

time*

--:--:--

Guest*

Person

RESERVE A TABLE

Figure 4.9: Table Reserve

UserHome: The homepage serves as a central hub for navigating various sections of the website. It provides easy access to menus featuring diverse food categories, testimonials from satisfied customers, and contact information for inquiries or assistance. Special offers and promotions are prominently displayed, enhancing user engagement and satisfaction.

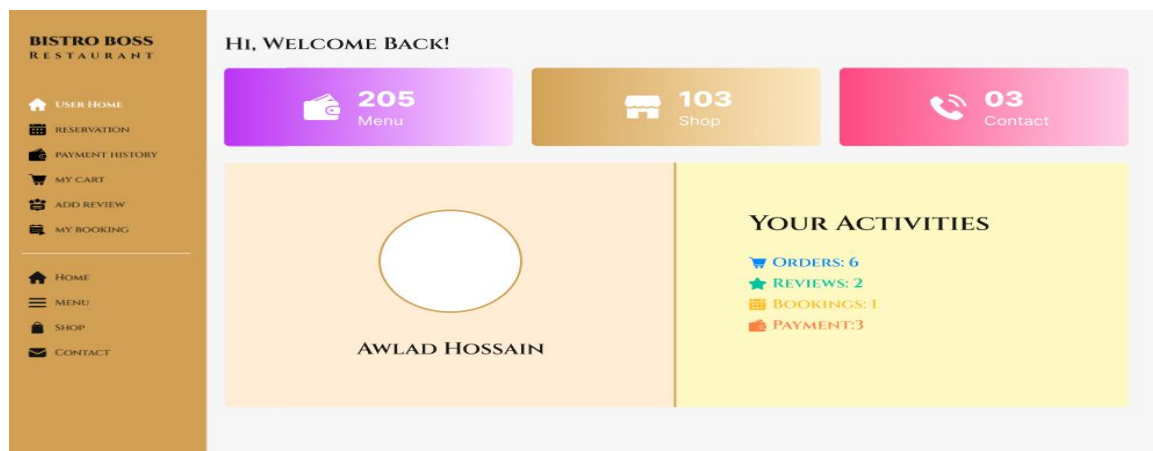


Figure 4.10: UserHome

CheckOut: Users finalize their orders by reviewing items in their cart and securely proceeding to payment. They can choose to automatically locate their delivery address or input it manually for accurate delivery. The checkout process ensures transparency with detailed breakdowns of costs, including taxes and fees, providing a clear overview before confirming their order.

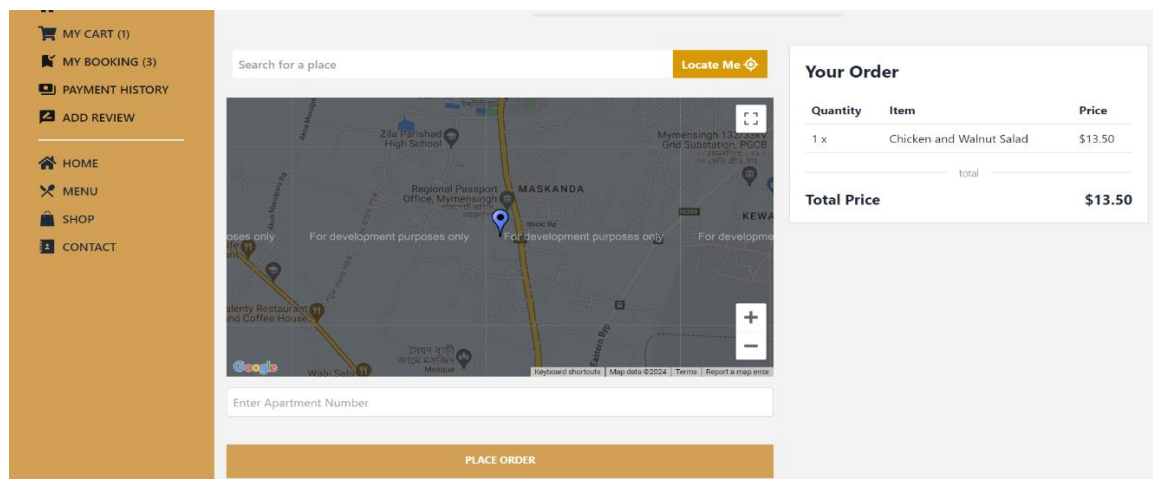


Figure 4.11: CheckOut

Admin Section:

Upon login, the admin is greeted with a dashboard displaying key metrics such as revenue growth, customer acquisition, menu count, and monthly order statistics. Visual aids like charts depict item sales trends and distribution.

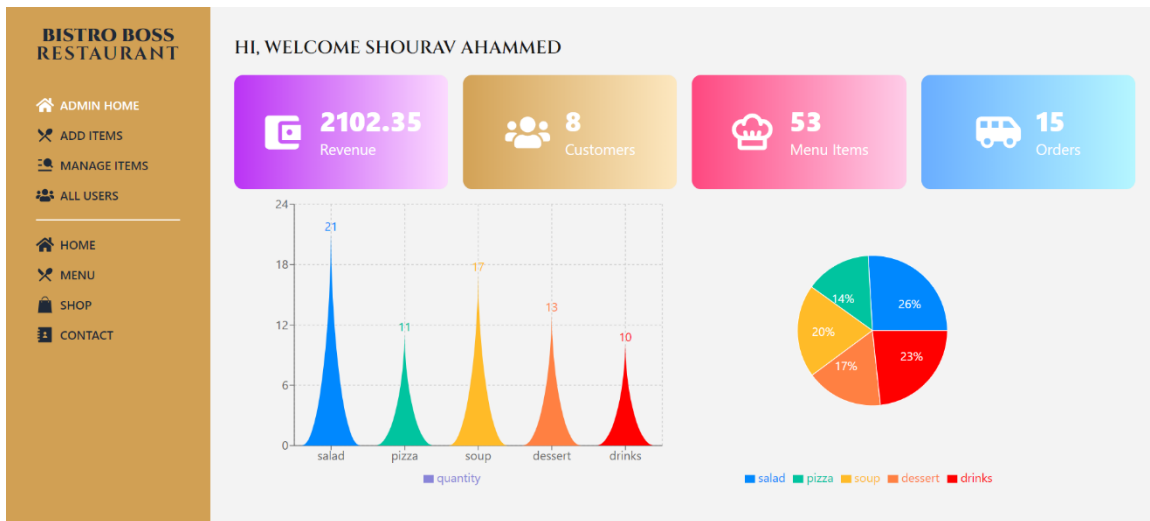


Figure 4.12: Admin Home

Add/Delete Items: Admins have the capability to add new menu items by entering details such as recipe name, category, price, and description. They can also delete existing items from the menu to reflect changes in offerings or seasonal updates.

The Add An Item form for BISTRO BOSS RESTAURANT allows admins to add new menu items. The form includes fields for Recipe Name, Category, Price, and Recipe Details. A file upload button is also present for adding images. The form is titled "ADD AN ITEM" and includes a "What is new?" link.

Recipe Name*

Category*

Price*

Recipe Details*

Choose File | No file chosen

ADD ITEM

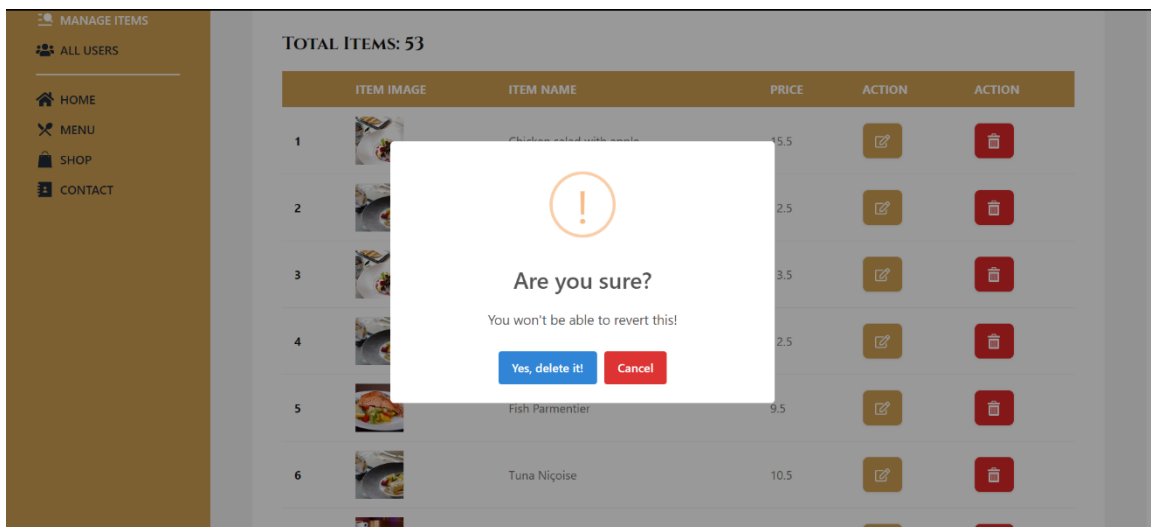
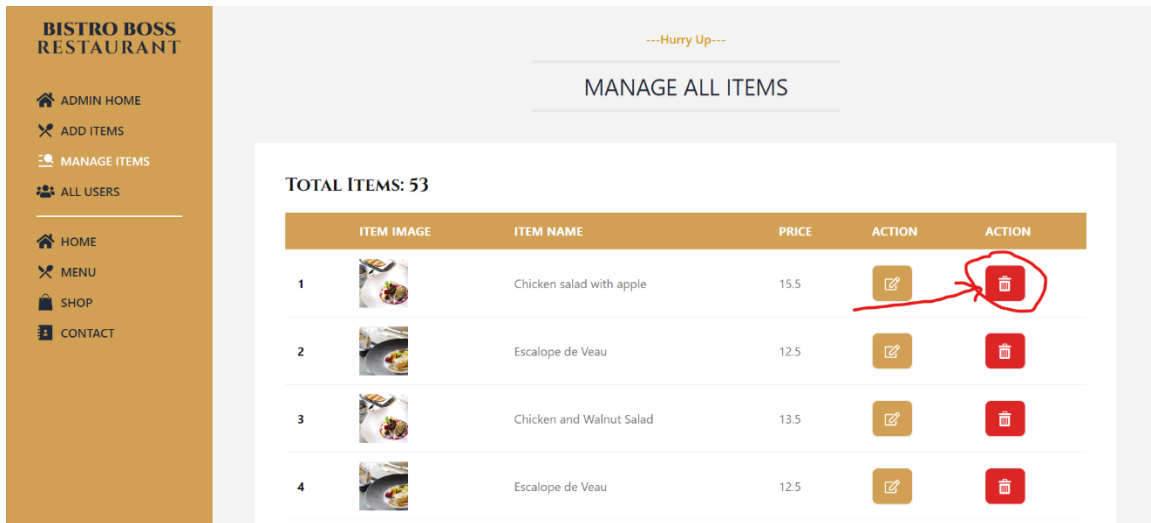


Figure: 4.13 Add/Delete Items

Manage All Users: Admins can view a list of all registered users, including their names, email addresses, and roles. They have the authority to manage user roles by assigning administrative permissions or deleting users from the system as necessary.

BISTRO BOSS
RESTAURANT

ADMIN HOME

ADD ITEMS

MANAGE ITEMS

ALL USERS

HOME

MENU

SHOP

CONTACT

---How Many?---

MANAGE ALL USERS

TOTAL USERS: 8

	USER NAME	USER EMAIL	ROLE	ACTION
1	Saheb golam	saheb@golam.com		
2	Shourav Ahammed	shouravahammed.1@gmail.com	Admin	
3	Rafayet Ridoy	rafayetr4@gmail.com		
4	Rifat	rifat1@gmail.com	Admin	
5	Legend	legendary@gmail.com		

Figure: 4.14 Manage All Users

Manage Items: Admins can update existing menu items by modifying details such as category, price, or description to ensure accuracy and relevance to the current menu offerings. This administrative functionality ensures effective oversight and control over the restaurant's menu management and user administration, supporting smooth operations and customer service excellence.

BISTRO BOSS
RESTAURANT

ADMIN HOME

ADD ITEMS

MANAGE ITEMS

ALL USERS

HOME

MENU

SHOP

CONTACT

---Hurry Up---

MANAGE ALL ITEMS

TOTAL ITEMS: 53

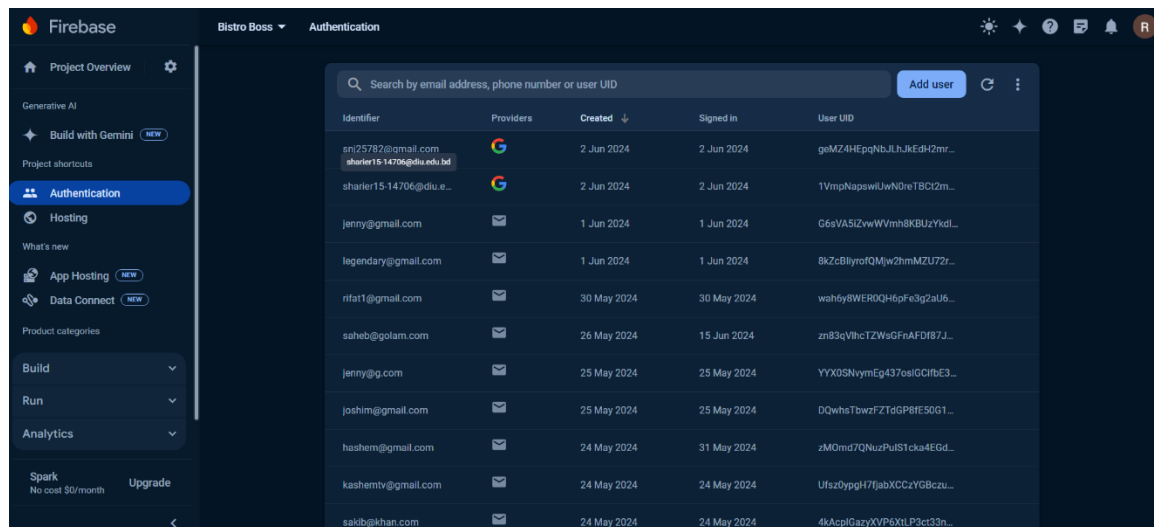
	ITEM IMAGE	ITEM NAME	PRICE	ACTION	ACTION
1		Chicken salad with apple	15.5		
2		Escalope de Veau	12.5		
3		Chicken and Walnut Salad	13.5		
4		Escalope de Veau	12.5		

Figure: 4.15 Manage Items

4.2 Back-End

Firestore:

Authentication activity: Firebase Analytics integrates with Google Analytics to track user activity in apps and web applications. Developers use the Firebase SDK to automatically capture user interactions. The dashboard presents data in charts, graphs, and numbers, highlighting key metrics like active users, user acquisition, engagement, events, and user demographics. Firebase dashboards offer customizable insights for app developers, allowing them to analyze user behavior, optimize features, and make data-driven decisions based on specific metrics.



Identifier	Providers	Created	Signed in	User UID
snr25782@gmail.com	Google	2 Jun 2024	2 Jun 2024	geMZAHEpNbJLhJkEdH2mr...
sharier15-14706@diu.edu.bd	Google	2 Jun 2024	2 Jun 2024	1VmpNapswUwN0reTBCI2m...
jenny@gmail.com	Google	1 Jun 2024	1 Jun 2024	G6sVA5IzrwWVmh8KBuZykd...
legendary@gmail.com	Google	1 Jun 2024	1 Jun 2024	8k2cBliyrofQMjw2hmMZU72r...
rifat1@gmail.com	Google	30 May 2024	30 May 2024	wah6y8WER0QH6pFe3g2aU6...
saheb@golam.com	Google	26 May 2024	15 Jun 2024	zn83qVhczTWaGFnAFDIB7J...
jenny@g.com	Google	25 May 2024	25 May 2024	YYX0SNvymEg437osIGCfB3...
joshim@gmail.com	Google	25 May 2024	25 May 2024	DQwhsTbwZFZtGp8FE50G1...
hashem@gmail.com	Google	24 May 2024	31 May 2024	zM0md7QNuzPulS1cka4EGd...
kashemtv@gmail.com	Google	24 May 2024	24 May 2024	Ufsz0yppgH7j7abXCCzYGBczu...
sakib@khan.com	Google	24 May 2024	24 May 2024	4kAcplGazyXVP6XtLP3ct33n...

Figure: 4.16 Authentication activity

Manage Site :Firebase dashboards for web applications like Bistro Boss collect data through the Firebase SDK, tracking user activity and properties. The dashboard presents this data in a user-friendly format with charts, graphs, and numbers, showing metrics like active users, user acquisition, engagement, events, and user demographics. The specifics of the project cannot be discussed due to blurred information.

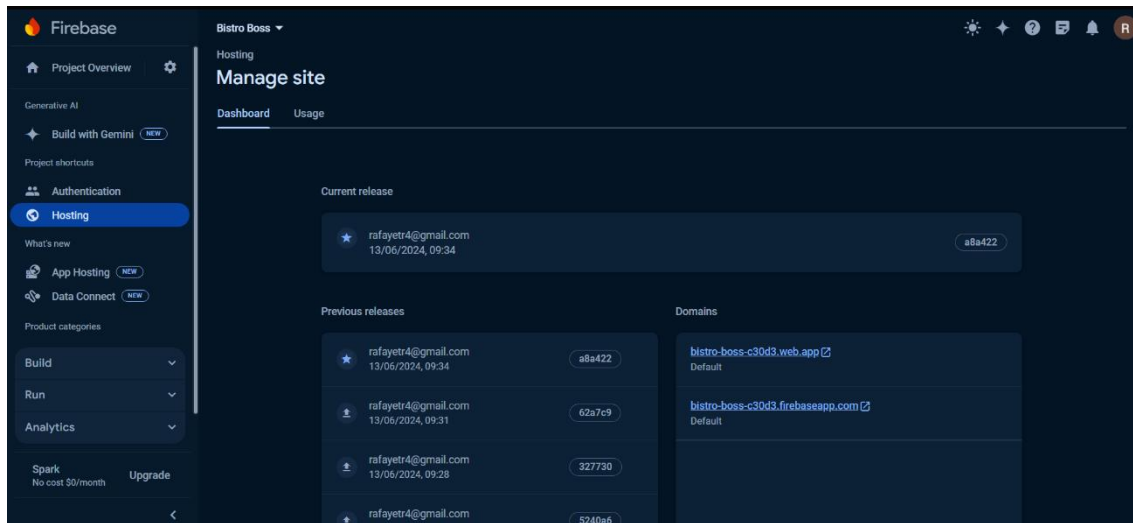


Figure: 4.17 Manage Site

Usage: The web sites metrics include daily active users, user acquisition, user engagement, events, and user demographics. The image shows a graph for daily active users, while the dashboard displays charts for engagement. Firebase tracks specific actions, such as button clicks or purchases, and provides information about users' location, device type, and language.

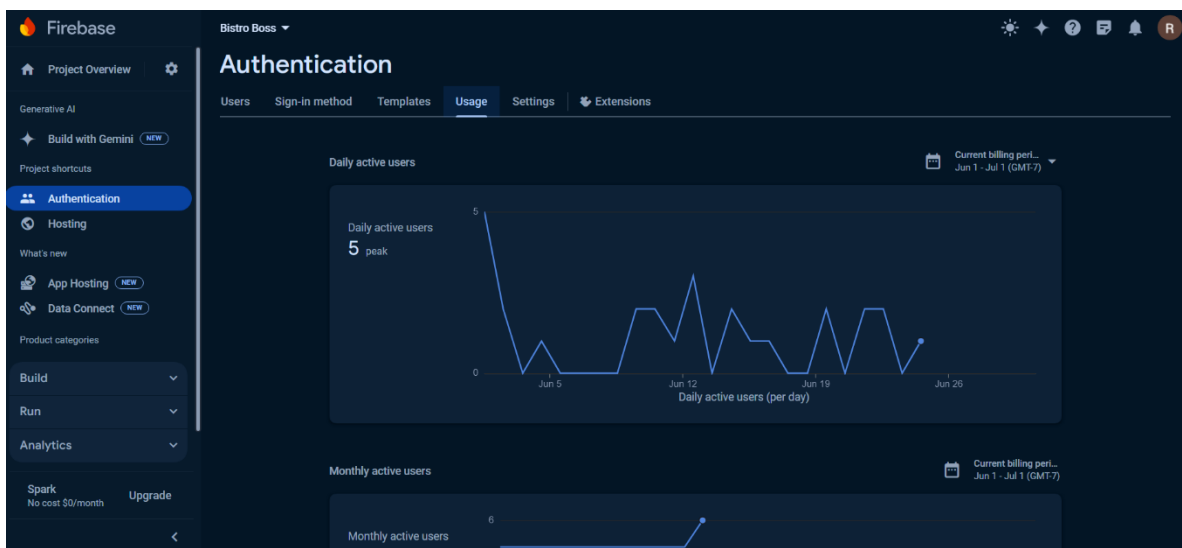


Figure: 4.18 Usage

MongoDB:

Database Access: MongoDB Atlas provides a dashboard for managing MongoDB deployments, allowing users to view cluster health, database access, security, and billing information. It provides a centralized place to view and manage MongoDB clusters. Firebase dashboards work similarly, collecting data through the Firebase SDK that tracks user activity. The console presents this data in a user-friendly format, including active users, user acquisition, engagement, events, and user demographics. Both dashboards provide a centralized place to manage MongoDB deployments.

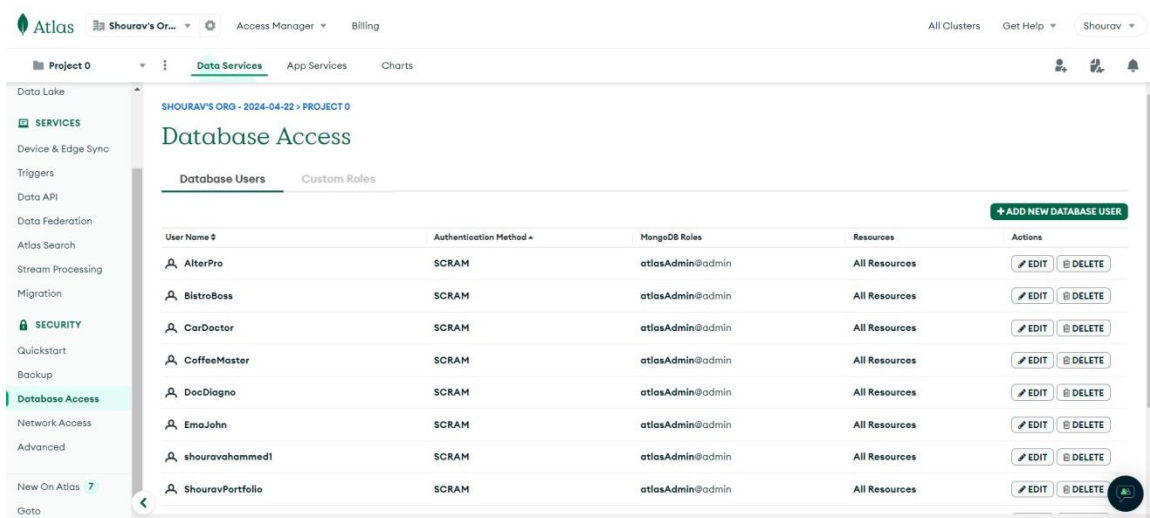


Figure 4.19: Database Access

Data Collection: Firebase collects user activity data through the SDK, which developers integrate into their apps. The data is visualized using charts, graphs, and numbers, showing metrics like logical data size, storage size, documents, and average document size. The Firebase console displays these metrics in a user-friendly format, including 25.20KB for the database for AlternativeProductDB and 200KB for the storage size.

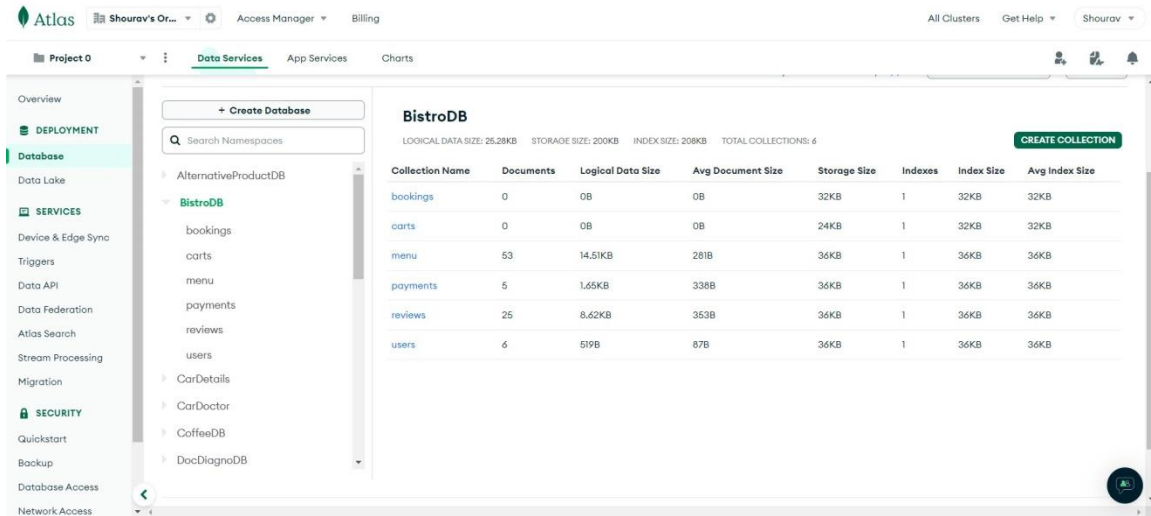


Figure 4.20:Data Collection

Users Data : Firebase collects user activity data through the Firebase SDK, which developers integrate into their apps. The collected data is processed and stored on Google Cloud Platform (GCP), using services like Cloud Firestore for document databases, Cloud Storage for media files, and Cloud Functions for serverless workflows. The Firebase console presents the data in a user-friendly format with charts, graphs, and numbers, showing important metrics like logical data size, storage size, documents, and average document size.

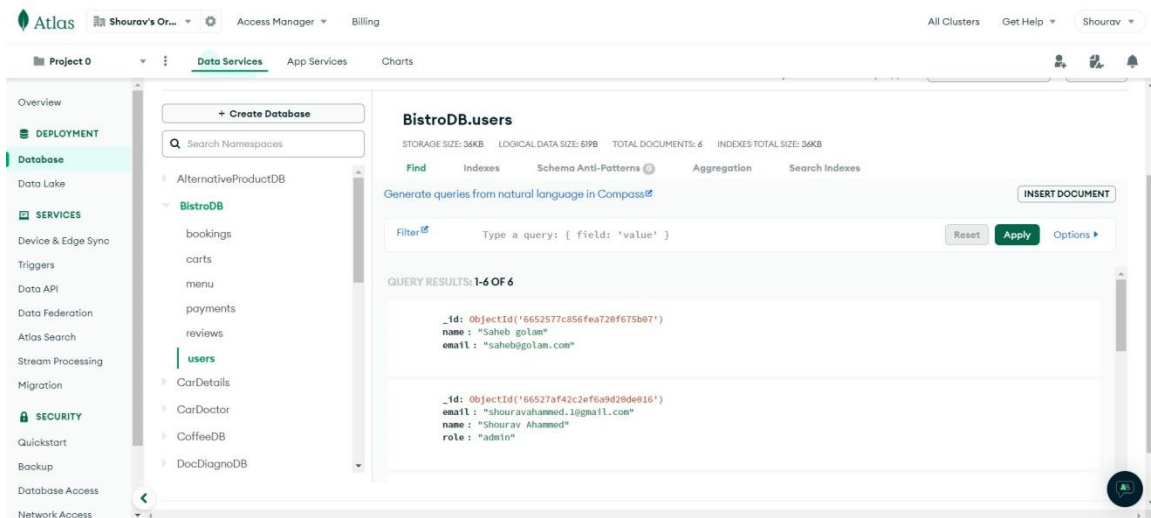


Figure 4.21:Users Data

Item Data: MongoDB Atlas manages data in collections within databases, retrieving it through MongoDB server software. It displays database size and collection details, including document count and average size. The dashboard presents this data in a user-friendly format, including project and database lists, storage size, and indexes size for selected databases.

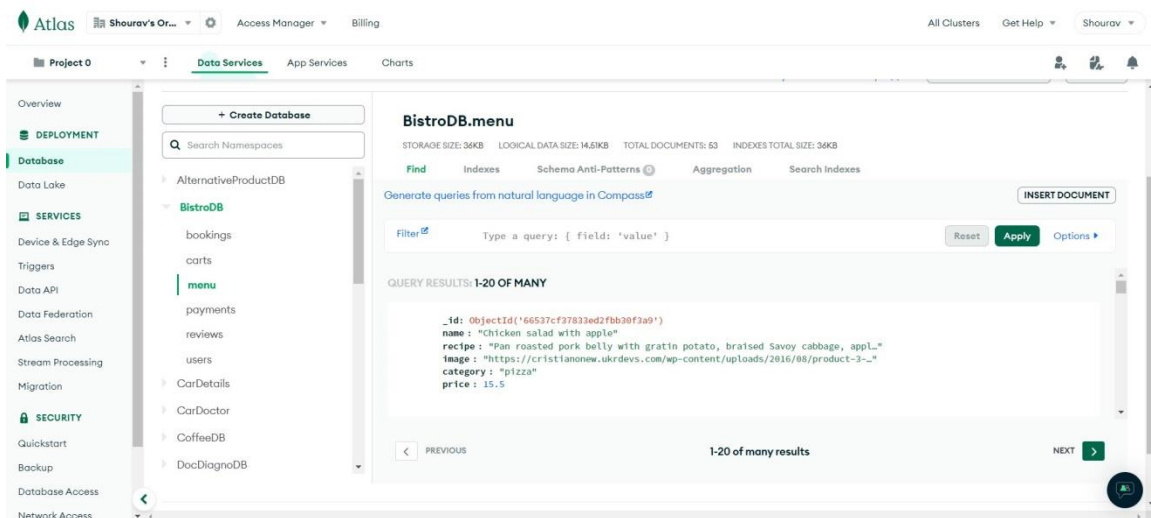


Figure 4.22:Item Data

Payments Data : MongoDB Atlas manages data in collections within databases, retrieving it through MongoDB server software. It displays database size and collection details, including document count and average size. The dashboard presents this data in a user-friendly format, including project and database lists, storage size, and indexes size for selected databases.

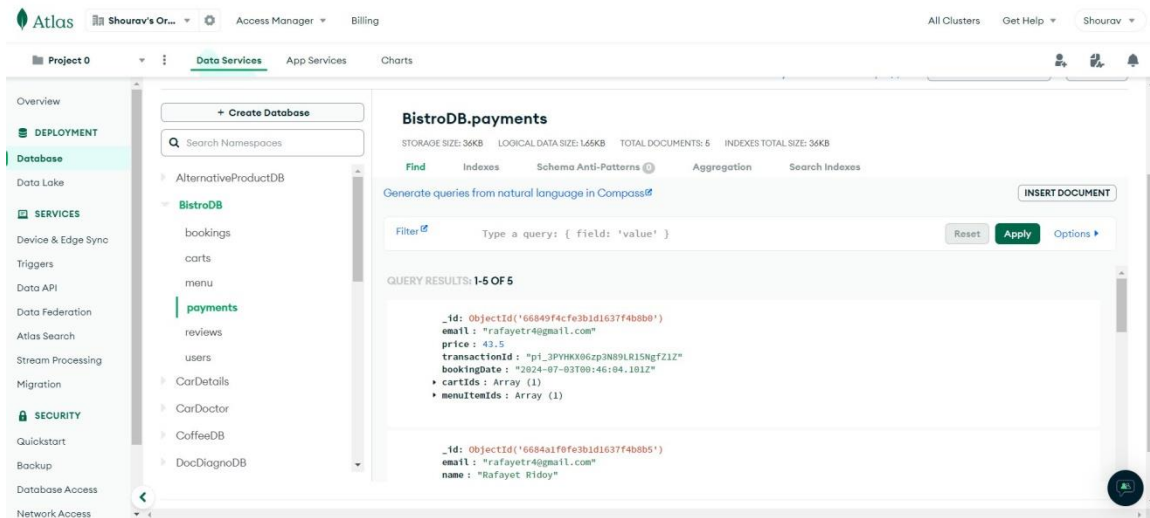


Figure 4.23:Payments Data

4.3 Interaction Design and User Experience (UX)

The Bistro Boss Restaurant website offers a seamless user experience through its intuitive interaction design. Upon visiting, users are greeted with a visually appealing and easy-to-navigate homepage that prominently features sections for ordering food, exploring the menu, reading testimonials, and contacting support. The menu is categorically organized, showcasing a diverse range of dishes including salads, pizzas, soups, desserts, and beverages, alongside daily specials. Each item can be added to the cart with a simple click, allowing users to modify quantities and proceed to checkout effortlessly. Navigation throughout the site is clear and efficient, with a persistent cart feature displaying selected items and total costs, while offering options to locate delivery addresses or manually input details. The checkout process is streamlined, guiding users through payment options securely and providing a summary of their order before finalizing. For those interested in dining in, the website features a table reservation system. Users can select specific dates, times, and the number of guests, ensuring a tailored dining experience. Additionally, the site includes a comprehensive user activity section, enabling customers to track their order history, reviews, and payment records.

conveniently. This feature enhances the overall user experience by providing easy access to past interactions and transactions.[18].

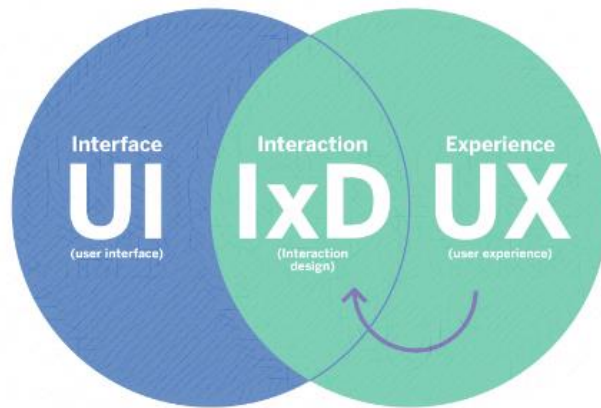


Figure: 4.24: Interaction Design and User Experience (UX)

The Bistro Boss Restaurant website offers a robust admin panel that allows administrators to monitor revenue growth, customer engagement metrics, and order trends. This data-driven approach helps in making informed decisions to improve business operations. The admin panel also allows easy management of menu items, such as updating descriptions, categories, and prices. User management tasks like assigning roles and permissions can be efficiently handled. The website emphasizes customer support and engagement, with a dedicated section for users to contact support. Testimonials from satisfied customers are prominently displayed, providing social proof and building trust with potential customers. The website's design and functionality are designed with the user in mind, providing a seamless and intuitive user experience. The table reservation feature, comprehensive user activity section, and robust admin panel further enhance the site's functionality. By focusing on both customer and administrative needs, the website ensures a smooth and enjoyable experience for all users.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

The Bistro Boss Restaurant website uses MongoDB to store and manage different kinds of data because it is flexible and can handle a lot of information. The restaurant chose MongoDB because it can handle a lot of data and work with different types of data. This is important for the restaurant's menu and the way customers interact with it. In the setup, MongoDB arranges restaurant information into groups that match the important parts of the website. For example, a menu_items collection keeps information like item names, categories, prices, and descriptions. This makes it easy to find and change the menu options. Each paper in this collection shows a different type of food. We can easily change, add, or remove menu items using MongoDB's document-based system. Another important group is orders, which holds details about what users have bought, how many, how much it all costs, and whether they have paid for it. This collection helps keep track of orders and manage them, making it easy for customers to place an order, pay for it, and get it delivered. In addition, MongoDB is used to store user data such as usernames, email addresses, secured passwords, and user roles (like admin or regular user) in a collection called "users". This helps the website confirm who users are in a safe way and control what they can do on the site. Also, MongoDB's tools for organizing and searching data help create reports and analysis for administrators. This means keeping track of how much money is made, what food is liked the most, and what customers like best by looking at the information in the database[19].

5.2 Implementation of Front-end Design

The Bistro Boss Restaurant website is built using different types of technology: HTML for the basic structure, CSS for making it look nice, React JavaScript for making it interactive, and MongoDB for saving and organizing information. The front-end design makes sure that users can easily use all the features without any problems. The Home

Page has a simple layout. It shows important things like the menu, customer reviews, and contact information. Using HTML5 tags helps to organize the content, while CSS3 is used to make it look good. React components help to update content and make things interactive. This makes users more engaged because they can see updates on specials and featured items in real time. The Menu Section shows different types of food with pictures and short descriptions. People can easily browse through different categories using simple filters and search tools. This makes it easy to find what they are looking for. To order food, the website uses React to manage the shopping cart. People can easily put in or take out things, change the amount, and see a list of what they picked. "We use address input forms that work with geolocation features in web browsers to help find and fill in the exact location easily. " The Reservation System uses React forms for booking tables. Users can easily choose the date, time, and number of guests they want. Validation methods make sure that the information entered is correct and give immediate feedback, making users happier. Finally, the front-end has a Payment Gateway Integration to make transactions safe. React components control the steps to buy something, making sure everything goes smoothly from placing the order, checking the payment, to getting the final confirmation. The Bistro Boss Restaurant website uses HTML, CSS, React JavaScript, and MongoDB to create a user-friendly design that looks good and works well for customers.

5.3 Testing Implementation

The testing implementation for the Bistro Boss Restaurant website spans across various stages to ensure robust functionality and user experience. The testing process begins with unit testing of individual components developed using React JavaScript. This involves testing each React component in isolation to verify that they render correctly and function as expected according to the design specifications. Unit tests also check the logic and behavior of interactive elements such as buttons for adding items to the cart and updating quantities. Integration testing follows, focusing on testing interactions between different components to ensure seamless communication and functionality across the website. For instance, integration tests validate that when a user adds an item to the cart, it correctly

updates the cart summary and total price displayed to the user. These tests also confirm that user actions, such as placing an order or making a reservation, trigger the appropriate backend operations and update the user interface accordingly. End-to-end (E2E) testing is crucial for simulating real-world user scenarios across the entire application. Using tools like Selenium or Cypress, E2E tests simulate user interactions from start to finish, including navigating through the menu, adding items to the cart, proceeding to checkout, and making a payment. These tests verify the website's functionality across different browsers and devices, ensuring a consistent user experience. Performance testing assesses how the website handles varying levels of user traffic and interactions. Tools like JMeter or LoadRunner simulate multiple users accessing the website simultaneously to evaluate its responsiveness and stability under peak loads. Performance tests help identify and address bottlenecks that could affect user experience during high-demand periods, such as peak dining hours. Lastly, usability testing involves gathering feedback from actual users to evaluate the website's intuitiveness, ease of navigation, and overall user satisfaction. This feedback helps identify areas for improvement in terms of design and functionality, ensuring that the website meets the expectations and needs of its target audience effectively. By implementing a comprehensive testing strategy encompassing unit, integration, E2E, performance, and usability testing, the Bistro Boss Restaurant website can deliver a reliable, user-friendly experience to its customers while maintaining operational efficiency.

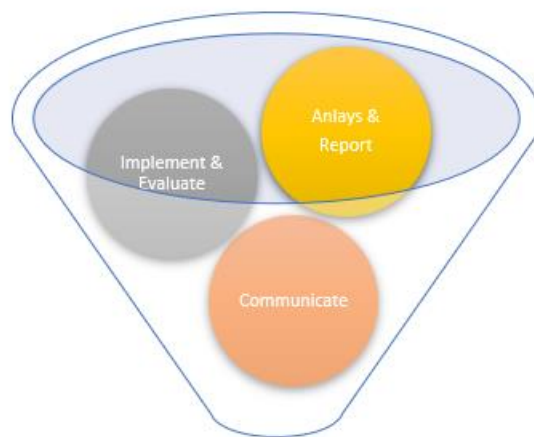


Figure: 5.1: Testing Implementation

5.4 Test Results and Reports

The Bistro Boss Restaurant website was checked in a careful way to make sure it works well and is safe to use. We tested both the part of the website you see and the part you don't see using different tools like HTML, CSS, React JavaScript, and MongoDB. Testing the part of the software that the user interacts with. The front part of the website was carefully checked to make sure it works well on all devices and web browsers. This meant using tools like Chrome Developer Tools to adjust how things look on the website, and making sure users have a good experience on both computers and mobile phones. Functional testing checked if all the buttons and menus worked properly. UI testing made sure that the design elements like fonts, colors, and spacing followed the rules and made it easier for users to interact with. Testing of the part of the program that handles the data and the part of the program that stores the data. We tested the backend functions using MongoDB to make sure the data was safe, accurate, and fast. This involved checking that we could create, read, update, and delete menu items and user data. We did testing to make sure that the front and back parts of our system are working well together. We wanted to check that when users do things like ordering or booking, it all shows up right in the system and on the screen quickly. Security testing checks for hacking risks like SQL injection and makes sure that user data is protected with encryption and controlled access. Testing how well a product or system works and how fast it is. Functional testing checked if the website worked correctly from start to finish, including browsing the menu, making orders, and handling reservations. We tested the payment system to make sure that payments went through without any problems. Performance testing checked how fast the website loads and responds when there are lots of people using it. This helped make the website faster and better for users.

CHAPTER 6

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact on Society

Different computer languages are utilized on the Bistro Boss Restaurant website to enhance the convenience of ordering food for patrons. It helps people have a better experience when they go out to eat. It is easy for customers to look at menus, order food, and book tables online because the website is user-friendly. This new technology makes it easier to enjoy a meal, which is good for busy lifestyles where being quick and convenient is important. Furthermore, the website helps local businesses by giving them a way to reach more people and make more money. This helps the food service industry grow and could create jobs in restaurants. Moreover, the website helps customers by allowing them to pay online and track their orders. This makes the restaurant more open and trustworthy. This way of doing things on the internet not only makes customers happy, but also makes them want to come back because it's easy to use. Also, Bistro Boss helps bring people together by sharing customer reviews and giving a way for people to share their opinions. This talking helps make people feel like they belong at the restaurant and makes them want to tell others about their meal. In simple words, the Bistro Boss Restaurant website shows how new technology can make things better for people by making it easier to access, work more efficiently, make more money, and bring people together in the food industry.

6.2 Impact on Environment

The Bistro Boss Restaurant website is made using different technologies like HTML, CSS, React JavaScript, and MongoDB. This can affect the environment through its online presence and day-to-day operations. Although it's a website on the internet, it still affects the environment because it uses energy from servers, needs a lot of storage, and makes devices use more energy when people access it. The website uses servers to store data and this uses electricity, which can create carbon emissions if the electricity is not from renewable sources. Moreover, using MongoDB for managing databases requires more

server space and uses more energy, but it is managed efficiently through modern database practices. Also, when people use their phones, computers, or tablets to look at the website, order things, or book a table, it uses energy. When you do these things one by one, they don't make much of a difference. But when you add them all up, they make digital activities create more carbon emissions. The Bistro Boss Restaurant website helps the environment by using less paper for menus and receipts, and it can also reduce pollution from customer travel. Compared to regular restaurants, the website is better for the environment. In general, the Bistro Boss Restaurant website mainly uses energy from servers and devices, but it might also have some benefits for the environment compared to regular restaurants.

6.3 Ethical Aspects

Ensuring that the Bistro Boss Restaurant website follows ethical guidelines is very important to gain user trust and uphold ethical standards. First, we are very concerned about keeping personal information safe and secure. The website needs to have very strong rules to protect the information of users when they make transactions, reservations, or sign up. This means keeping important data safe by storing it securely and using codes to protect it from people who shouldn't see it. Honesty about prices and terms is another important ethical principle. The menu prices, extra charges, and how to pay should be easy for people to find and understand. This helps to make sure things are fair and stops people from being misled or tricked. Being able to access something is very important. The website should be designed so that everyone, including people with disabilities, can use it easily. This means following guidelines to make sure it's accessible for everyone. This means adding things like descriptions for pictures, using the keyboard to navigate, and making sure the website works well with tools for people who need help using technology. Additionally, it's important to be ethical when interacting with customers and providing customer service. It's important to handle customer questions, complaints, and feedback politely and with care. Treating everyone fairly and respectfully makes customers happy and keeps them coming back. Finally, we need to make sure we do marketing in a fair and honest way. The website should not trick people with its ads and

should make sure that any deals or discounts it offers are real and easy to understand. By following these moral rules, the Bistro Boss Restaurant website can create a good experience for users and still be honest and trustworthy in what it does.

6.4 Sustainability Plan

The Bistro Boss Restaurant website has a plan to use resources efficiently and have less impact on the environment. This plan applies to all the restaurant's activities and projects. Using HTML, CSS, React JavaScript, and MongoDB helps manage code and database operations well. This reduces the strain on servers and saves energy. The website is designed to work well on different devices and uses coding that is efficient and doesn't need a lot of data, which helps reduce the environmental impact of using the website. Using MongoDB for content management and updates helps store and find data easily, which makes managing databases more efficient and uses less energy. This way of doing things helps the environment by cutting down on building and equipment costs for servers. It also saves money on day-to-day expenses. In addition, React JavaScript helps create user interfaces that are dynamic and easy to use, making them better for users without slowing down. The Bistro Boss Restaurant website uses efficient coding and modern technology to reduce its digital impact and help reach sustainability goals online. In general, the sustainability plan makes sure that the website is developed and operated in an environmentally-friendly way, so it can help with long-term efforts to be sustainable.

CHAPTER 7

CONCLUSION AND FUTURE WORK

7.1 Discussion and Conclusion

To sum up, the Bistro Boss Restaurant website is made using different computer codes and provides a strong system for both customers and managers. The user experience gets better with easy-to-use navigation and lots of helpful features. Customers can easily look at the menu, order food, and make reservations without any problems. The website is designed to make ordering easier and faster. It shows you updates on your shopping cart in real-time, lets you order based on your location, and keeps track of your payment history. This makes the ordering process run smoothly. The website gives admins the tools they need to easily control the menu items. This includes adding, changing, and removing items. User management features make it easy to control who can do what on the platform, so it runs smoothly. The admin dashboard shows important information like how much money the company is making, how many customers are involved, and what people are buying, using pictures and graphs to help with decision-making. In simple words, the Bistro Boss Restaurant website shows that it uses the latest web development techniques. It uses React to make the website interactive and MongoDB to handle a lot of data. The restaurant tool is designed with the customer in mind and has strong administrative features. It helps improve restaurant operations and makes customers happy in a competitive food industry.

7.2 Scope for Further Developments

The Bistro Boss Restaurant website is built using HTML, CSS, React JavaScript, and MongoDB, which provide a solid foundation for future improvements. Enhancements in various areas can significantly enhance user experience and operational efficiency. Firstly, optimizing the user interface can make navigation more intuitive. Implementing real-time order tracking, personalized user accounts with order history and preferences, and interactive, customizable menus catering to dietary needs, allergies, and nutritional

preferences can increase user engagement. Such features can attract a broader customer base by accommodating diverse needs. Secondly, enhancing management capabilities can streamline restaurant operations. Developing tools for inventory tracking, automating reorders when supplies are low, and utilizing analytics to monitor customer preferences and performance metrics can lead to more efficient management. Additionally, ensuring the website is mobile-responsive and optimized for speed will improve accessibility and user satisfaction across various devices. Thirdly, establishing robust security measures is crucial to protect user information and payment details, especially as the platform expands. Implementing advanced security protocols will safeguard sensitive data and foster user trust. Lastly, integrating with third-party services such as online payment systems, delivery management platforms, and loyalty programs can further enhance customer satisfaction and loyalty. These integrations can provide seamless and convenient experiences, encouraging repeat business. In conclusion, with its current technology stack, the Bistro Boss Restaurant website has substantial growth potential to meet evolving user and business needs. Continuous improvements in user interface design, management tools, mobile optimization, security, and third-party integrations will ensure the website remains competitive and contributes to the restaurant's growth and customer satisfaction.

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