Tribhuvan University

Faculty of Humanities and Social Sciences

Online Cake Delivery System

A PROJECT REPORT

Submitted To

Department Of Computer Applications

Ratna Rajyalaxmi Campus

Pradarshanimarga, Kathmandu

In partial fulfillment of the requirements for the Bachelors in Computer Application

Submitted By

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Under the Supervision of

Mr. Bijay Mishra

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Tribhuvan University

Faculty of Humanities and Social Sciences

Ratna Rajyalaxmi Campus

SUPERVISOR RECOMMENDATION

I hereby recommend that this project prepared under my supervision by **"Lokendra Joshi"** entitled **"ONLINE CAKE DELIVERY SYSTEM"** in partial fulfillment of the requirements for the degree of Bachelor of Computer Application is recommended for the final evaluation.

.....

Mr. Bijay Mishra

SUPERVISOR

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Faculty of Humanities and Social Sciences

Ratna Rajyalaxmi Campus

Pradarshani Marga, Kathmandu

LETTER OF APPROVAL

This is to certify that this project prepared by **"Lokendra joshi"** entitled **"Online Cake Delivery system"** in partial fulfillment of the requirements for the degree of Bachelor in Computer Application has been evaluated. In our opinion it is satisfactory in the scope and quality as a project for the required degree.

Signature of supervisor …… **Bijay Mishra** Department of BCA Lecturer, Project Supervisor Ratna Rajyalaxmi campus	**Signature of HOD Coordinator** ……. **Bhupendra Ram Luhar** Coordinator Department of BCA Ratna Rajyalaxmi Campus
Signature of internal Examiner ……	**Signature of External Examiner** …….

ACKNOWLEDGEMENT

The project work presented in this report has been carried out and presented at Ratna Rajya Laxmi Campus, Faculty of Humanities and Social Sciences Tribhuvan University of Technology as a part of Bachelors of Arts in Computer Application. Project is a test of not only technical skills but also team work and performance under various constraints. This journey cannot be successfully accomplished without help from experts. Furthermore, we would like to thank our lecturers of the Department of Computer Application for their kindness in sharing their knowledge with us which in different ways has helped us in coming up with this project and being there for us when we needed them, our friends who have always been there to support us and our respondents who gave us feedbacks on improving our project work.

We will be ever grateful to our supervisor **Mr. Bijay Mishra** without whose guidance, this project would not have become successful.

We are also grateful to our department coordinator **Mr. Bhupendra Ram Luhar**. Finally, our greatest appreciation and love goes to our families, friends and mentors and for sure this would not have happened without their unconditional love, care and support.

ABSTRACT

The rapid growth of e-commerce and the increasing reliance on online platforms for various services have prompted the need for efficient and user-friendly systems in various domains. One such domain is the food industry, which has witnessed a significant shift towards online ordering and delivery services. This paper presents the design and implementation of an Online Cake Delivery System (OCDS) aimed at enhancing the customer experience in ordering and receiving cakes. proposed OCDS integrates modern web technologies and user-centric design principles to provide a seamless and intuitive platform for users to browse through a diverse range of cakes, customize their orders, and have them delivered to their desired locations. encompassing a user-facing web application, a backend server, and a database to manage order and cake details. Key features of the OCDS include a user registration and login system and delivery scheduling. To enhance user engagement and trust, the system incorporates high-quality visuals of cakes, detailed descriptions, and user reviews.

Keywords: e-commerce, cake, system

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The Online Cake Delivery System (OCDS) is a testament to the convergence of culinary artistry and digital innovation. It is designed to cater to the evolving preferences of modern consumers who seek convenience, variety, and personalized experiences. OCDS leverages the power of e-commerce and logistics to bridge the gap between cake enthusiasts and bakeries, allowing customers to explore an array of delectable cakes, customize their orders, and have them promptly delivered to their doorstep.

In the following sections, we will delve deeper into the functionalities and components of the Online Cake Delivery System. We will explore its features, advantages, and the technology that underpins its seamless operation. Additionally, we will discuss the significance of such systems for both customers and businesses, highlighting how they contribute to the growth of the food industry in the digital age.

The system we have built is made by using free technology available on the internet and these technologies include apache server , MY SQL,CSS,JS and PHP which performed operations like creation of this system.

1.2 Problem statement

In the modern era of fast-paced lifestyles and digital connectivity, traditional businesses, including bakeries, are facing the challenge of adapting to changing consumer behaviors and preferences. As consumers increasingly turn to online platforms for convenience and efficiency, brick-and-mortar cake shops are struggling to keep up with the demand for seamless, personalized, and timely services. This has led to the emergence of a significant problem within the cake industry: the need for an efficient and user-friendly Online Cake Delivery System (OCDS) to bridge the gap between traditional cake shops and the expectations of digitally-engaged customers.

1.3 Objectives

The main Objective of Online Cake Delivery System:

i. Convenience and Accessibility: The primary objective of an online cake delivery system is to provide customers with a convenient and accessible platform to order cakes from the comfort of their homes or workplaces.
ii. Wide Range of Choices: To offer a diverse selection of cakes, including various flavors, sizes, and designs, catering to different tastes and preferences of customers.
iii. Time-saving Solution: Streamlining the process of cake purchase and delivery to save customers' time, eliminating the need for physical visits to bakeries or stores.
iv. Efficient Delivery Network: Establishing a reliable and efficient delivery network to ensure that cakes reach customers promptly and in the best possible condition.

1.4. Scope and Limitations

The scope of the Online Cake Delivery System (OCDS) encompasses a wide range of functionalities and benefits aimed at revolutionizing the cake industry and enhancing customer experiences. The system is designed to provide a user-friendly online platform that connects customers with bakeries, offering a variety of cakes, customization options, and seamless delivery services.

This project is helpful to computerize the sales activities and the payment given to the user.

1.Cake Catalog and Customization: The system will provide an extensive catalog of cake designs, flavors, and sizes, allowing customers to explore various options and personalize their orders according to their preferences.

2.User Registration and Authentication: Customers will be able to create accounts, log in securely, and manage their profiles, enabling a personalized experience and easy order tracking.

3.Delivery Scheduling: The system will allow customers to choose their preferred delivery dates and times, accommodating their schedules and enhancing convenience.

1.5 Report Organization

The report can be organized into 5 chapters which are given below:

Chapter 1 includes introduction includes the brief introduction of the system, statement of problem, objectives, scope and limitation.

Chapter 2 includes background study and literature review includes the previous work related to the systems and similar works were studied and are summarized.

Chapter 3 includes system analysis and design includes different feasibility analysis and designed system architecture, system flow diagram, dataflow diagram.

Chapter 4 includes implementation and testing includes various implementation method and tools and also contains description of testing.

Chapter 5 includes conclusion and future recommendations includes outcomes of the system, conclusion to the system and description about what features can be added in the future.

CHAPTER 2

BACKGROUND STUDY AND LITERATURE REVIEW

2.1 Background Study

Online Cake Delivery System involves a thorough exploration of the e-commerce landscape and the evolving trends in online food delivery. It entails a comprehensive analysis of market dynamics, consumer behavior, and technological infrastructure. By delving into these aspects, the system aims to cater to the growing demand for convenient cake purchasing experiences. This study encompasses user experience design principles to ensure a seamless interface, as well as logistical considerations for maintaining cake quality and timely delivery. It further addresses payment security, legal compliance, and sustainable practices. By understanding these components, the system aims to position itself effectively in the market, providing a user-friendly platform that not only meets but exceeds customer expectations while offering a wide range of cakes for various occasions.

2.2 Literature Review

Online Cake Delivery System reveals a substantial body of research and insights into the realm of e-commerce, food delivery, and user behavior. Existing studies highlight the transformative impact of digital platforms on traditional business models, emphasizing the convenience and accessibility they offer to consumers. Scholars have explored the significance of user experience design in enhancing online shopping interfaces, particularly in the context of food-related services. Logistics and delivery management have also been extensively examined, with research focusing on strategies to ensure the safe and timely transportation of perishable goods like cakes. Payment security emerges as a crucial concern, with discussions on secure payment gateways and data protection measures to foster customer trust. Moreover, legal and regulatory considerations are discussed, with attention to health and safety standards and compliance with food regulations. The concept of sustainability has also found its way into the literature, as researchers investigate environmentally friendly practices within the context of food delivery systems.[1]

Understanding customer preferences is crucial for the success of any online cake delivery system. Studies have shown that customers value user-friendly interfaces, clear product descriptions, and secure payment options. They also appreciate a wide range of cake designs, flavors, and customization options. Moreover, timely and reliable delivery services are of paramount importance to ensure customer satisfaction. By catering to these preferences, online cake delivery platforms can enhance the overall user experience, leading to higher customer retention rates. While online cake delivery systems have experienced remarkable growth, they also face challenges such as intense competition, logistical complexities, and maintaining product freshness during transit. Overcoming these hurdles will require continuous innovation in packaging solutions and delivery methods. Additionally, leveraging emerging technologies like artificial intelligence and machine learning for predictive analytics can further enhance customer experiences and streamline operations.[2]

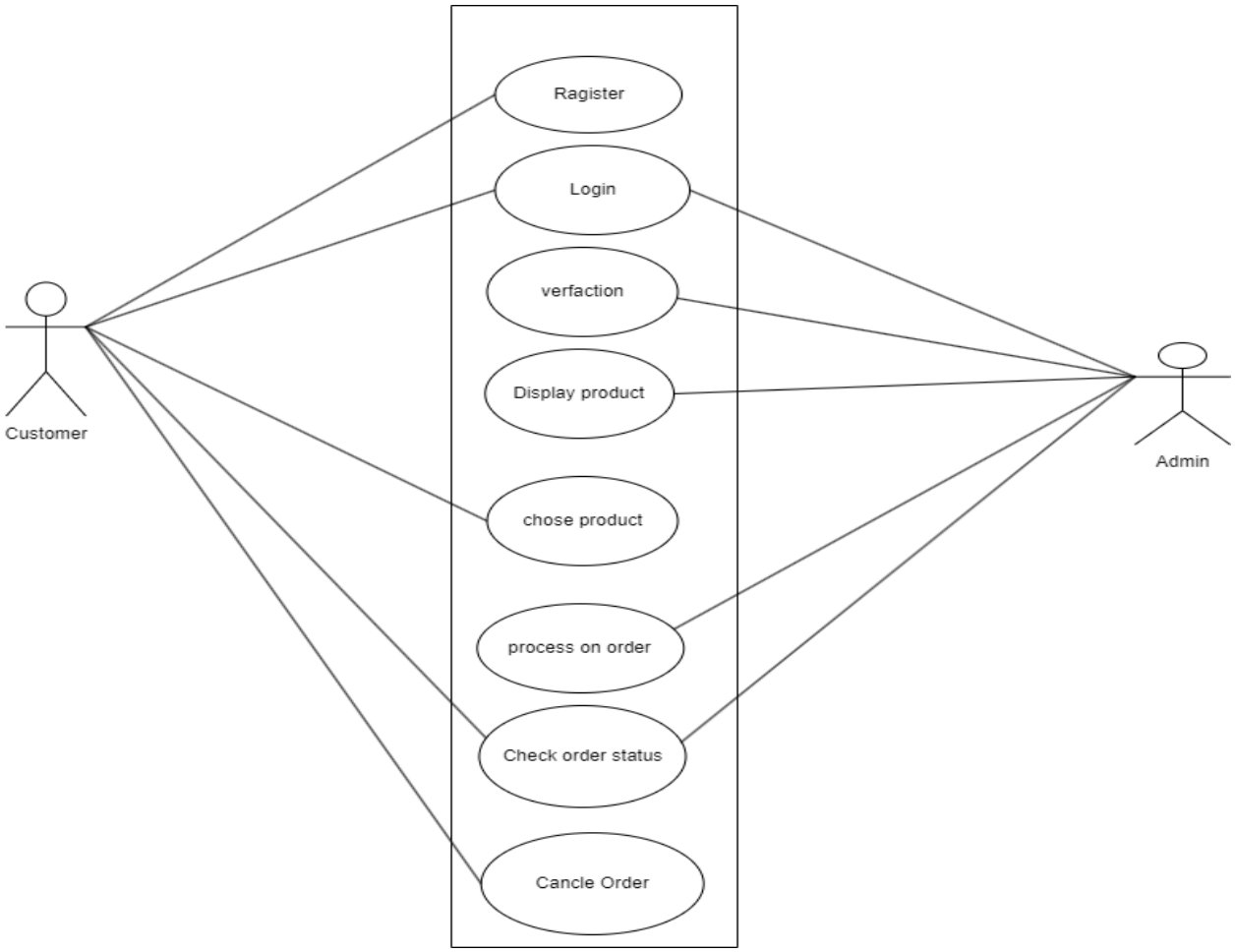
The online cake delivery system has evolved into a dynamic industry, driven by customer preferences, technological advancements, and innovative business strategies. By prioritizing user-friendly interfaces, embracing technological innovations, and implementing creative business approaches, platforms can position themselves for long-term success. As the market continues to evolve, staying attuned to customer needs and integrating cutting-edge technologies will be crucial for sustaining growth and profitability in the online cake delivery sector.[3]

CHAPTER 3 SYSTEM ANALYSIS AND DESIGN

3.1 System Analysis

System analysis for an Online Cake Delivery System involves a comprehensive assessment of user requirements, functional and non-functional specifications, data flow, architecture, user interface design, user experience, and business processes. By meticulously identifying user needs and crafting detailed use cases, the system's functionality becomes tailored to customers, bakers, and delivery personnel. This analysis defines both the features that the system will offer, such as order placement, inventory management, and payment.

***Figure 3.1 Use Case Diagram of* Online Cake Delivery System**



3.1.1 Requirement Analysis

Requirements analysis a crucial step for determining the success of a system or software project. Requirement are generally split into two types:

I. Functional requirements

ii.Non-functional requirements

I. Functional requirements

This section provides the requirement overview of the system various modules implemented by the system are:

a. User Module
b. Admin Module

ii. Non-functional requirements

Online Cake Delivery System encompass the characteristics and qualities that contribute to its performance, security, scalability, and overall user experience. Here are some key non-functional requirements for such a system:

- Performance and Response Time: The system should exhibit fast response times, ensuring that users can browse the cake catalog, place orders, and process payments without significant delays. Pages should load quickly, and actions should be executed promptly to prevent user frustration.

- Scalability: The system should be able to handle varying levels of user traffic, particularly during peak periods like holidays and special occasions. It should scale seamlessly to accommodate increased orders and user activity without compromising performance.

- Security and Privacy: Robust security measures should be implemented to protect user data, payment information, and sensitive details. Encryption should be employed to secure data transmission, and measures like authentication and authorization should ensure that only authorized individuals can access and modify the system.

3.1.2 Feasibility Analysis

i. Technical Feasibility

This aspect examines whether the technology and resources required for the system's development are available and feasible to implement. Consider factors such as the availability of skilled developers, compatibility with existing systems, and the feasibility of integrating necessary third-party tools or APIs.

ii. Economic Feasibility

Economic feasibility evaluates the cost-effectiveness of developing and maintaining the system. This includes estimating the initial development costs, ongoing operational expenses, and potential return on investment. A cost-benefit analysis should be conducted to determine if the benefits derived from the system justify the associated costs.

iii. Operational Feasibility

Operational feasibility assesses whether the proposed system aligns with the organization's processes and goals. Consider how the system will impact existing workflows, whether the staff can adapt to the new processes, and if any restructuring is required to accommodate the system.

iv.Schedule Feasibility

Schedule feasibility analyzes whether the system can be developed within the desired timeframe. Consider development milestones, potential delays, and any external factors that could affect the project's timeline. Adequate planning and resource allocation are crucial to ensure timely delivery.

iv. Schedule Feasibility

The time required to complete the project is calculated and classified using the following

Gantt Chart:

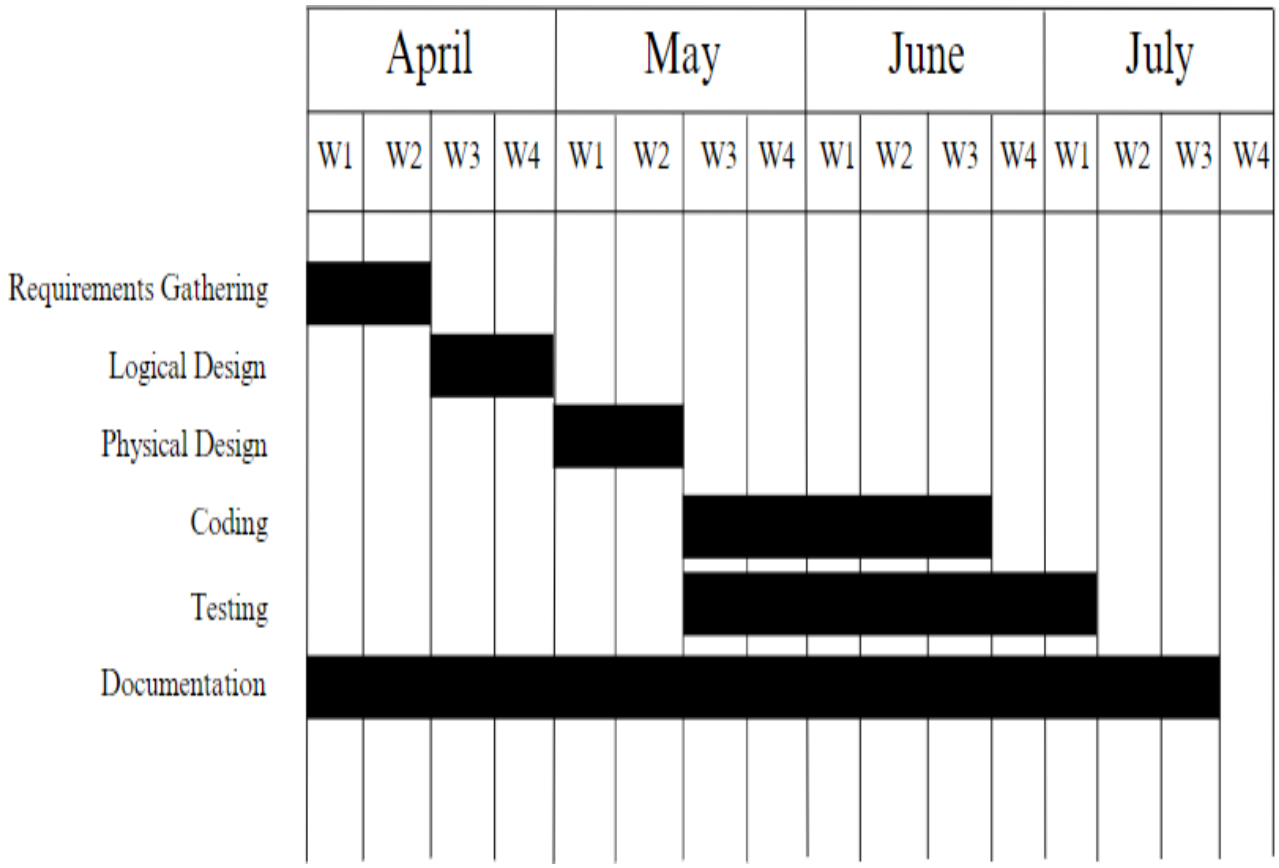


Figure 3.2 gantt chart of online cake delivery system

3.1.3 Data Modeling using ER-Diagram

This diagram would typically include entities like "Customer," "Order," "Cake," "Address," and "Payment." Relationships would be depicted as lines connecting these entities, with cardinality indicators specifying how many instances of each entity are associated with the others. Attributes like "Customer ID," "Cake Name," "Order Date," "Address Line" would be associated with their respective entities. This ER diagram visually illustrates the core components and connections within the Online Cake Delivery System, aiding in understanding its structure and data flow.

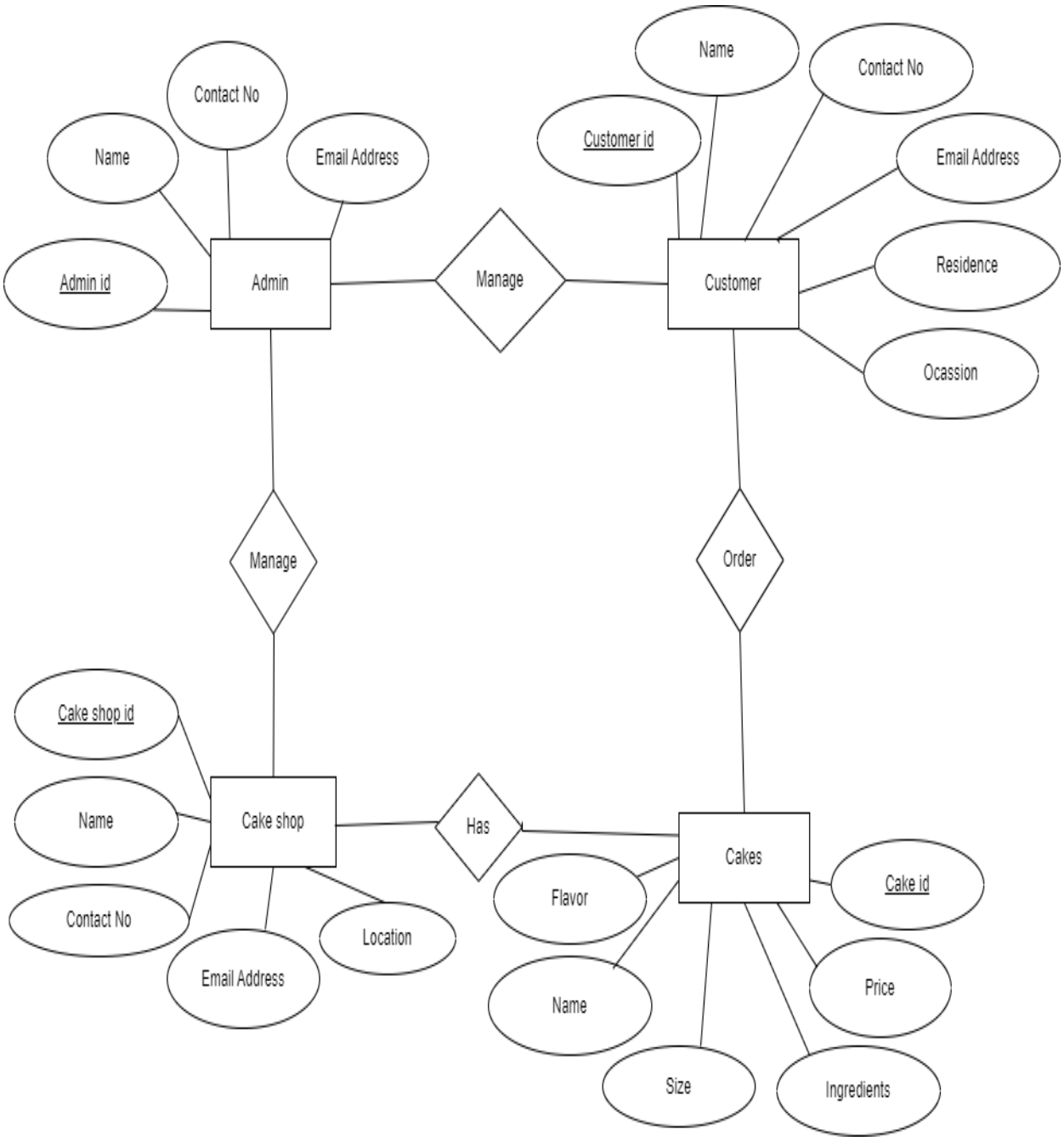


Figure 3.3 ER-Diagram of Online Cake Delivery System

3.1.4 Process Modeling using DFD

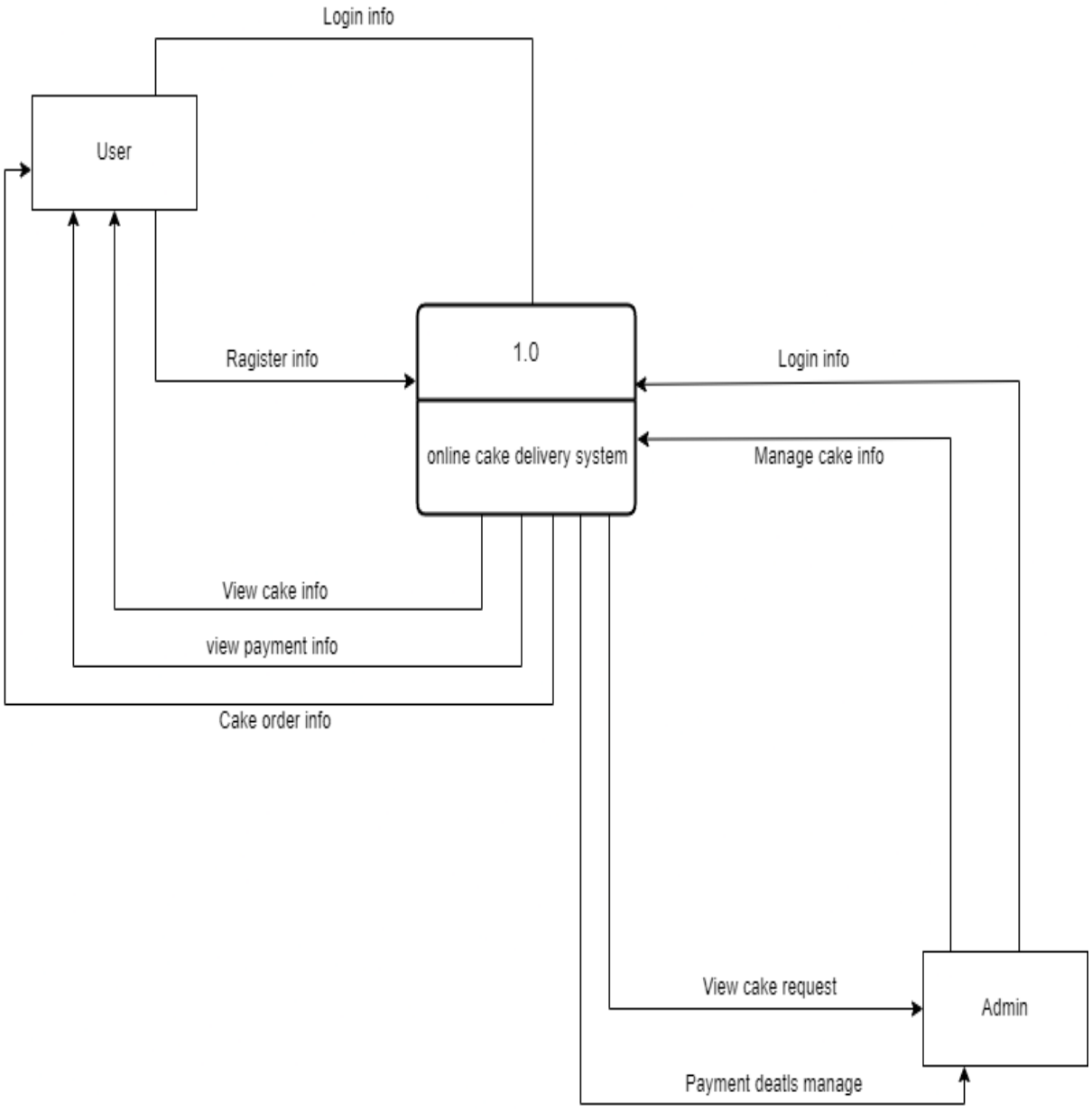


Figure 3.4 context diagram of Online Cake Delivery System

Level 1 DFD of OCDS

In this Level 1 DFD, three primary components are depicted: the "Customer," the "Order Processing System," and the "Delivery System." The "Customer" initiates the process by placing an order through the online platform. This order information, including details about the selected cake and the delivery address, is then passed to the "Order Processing System."

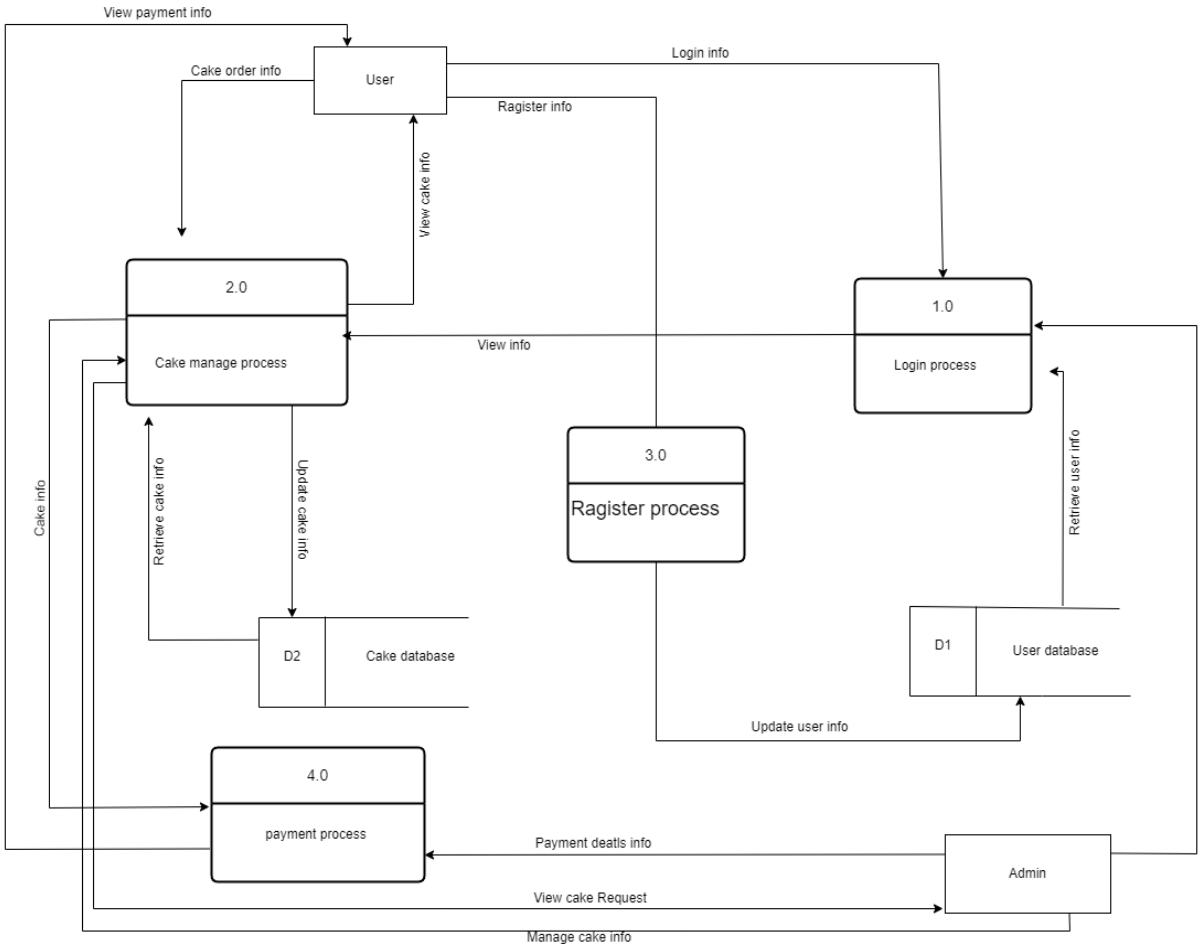


Figure 3.5 Level 1 DFD of online cake delivery system

3.2 System design

The system design of system consists of architectural design, database schema design, user interface design, and physical DFD are shown as follows:

3.2.1 Architecture Design

The architecture design of an online cake delivery system encompasses a sophisticated blend of technological components that work in concert to ensure a seamless and delightful customer experience. At its core, this system leverages a multi-tiered architecture model, combining front-end, back-end, and database layers to efficiently manage the various functionalities.

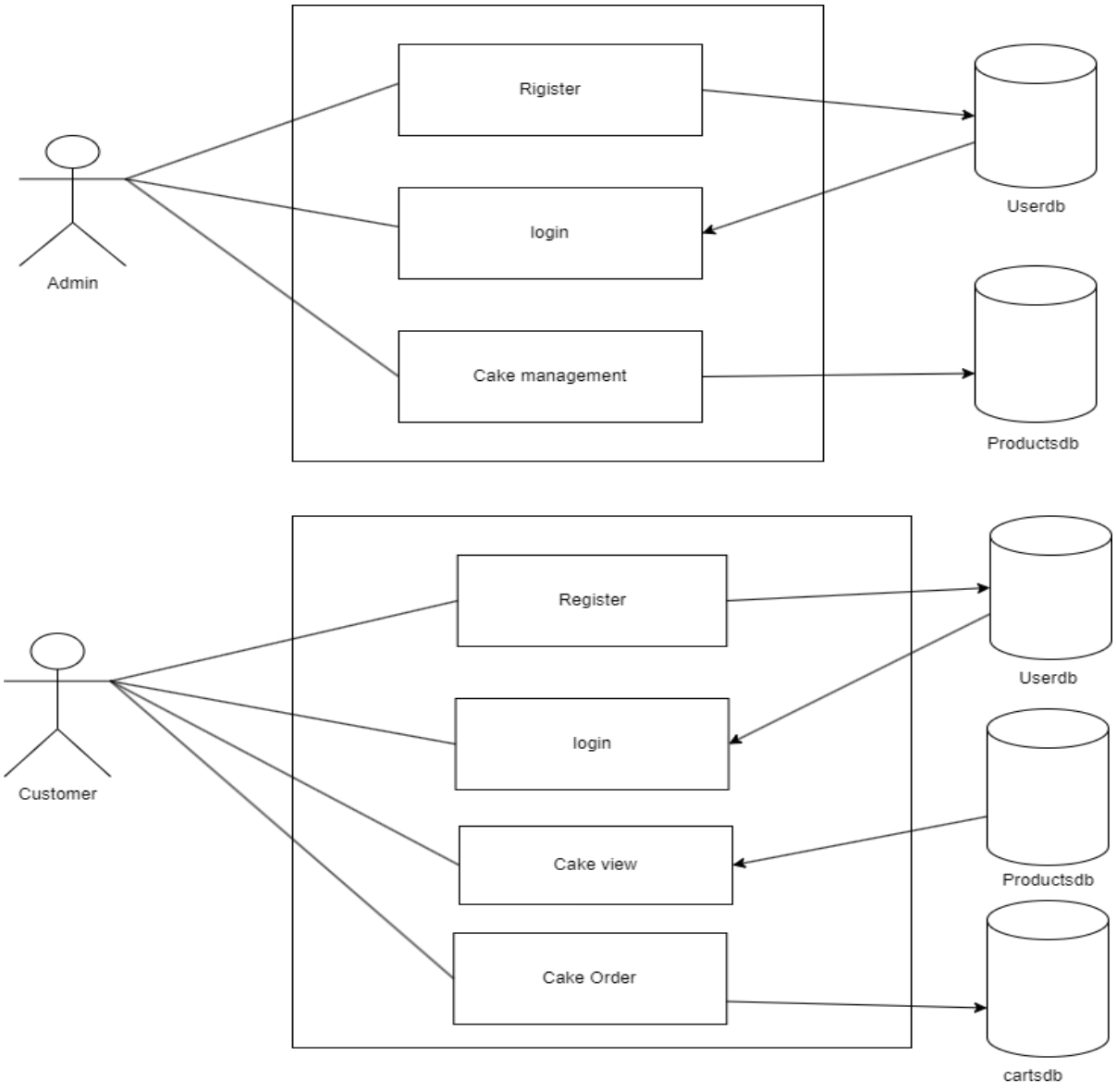


Figure 3.6: Architectural Design of Online cake delivery system

Here a user sends request through the web browser to the HTTP Apache server and the server communicates with the local database and returns the desired data to the user. So, this architectural design used for our project. For the presentation HTML, CSS, JavaScript has been used, for the business logic layer PHP has been used and for database layer MySQL had been used.

3.2.2 Database Schema Design

The database schema design for Online cake delivery system showing all the relations along with their attributes and inter-relationship between the relation is shown below:

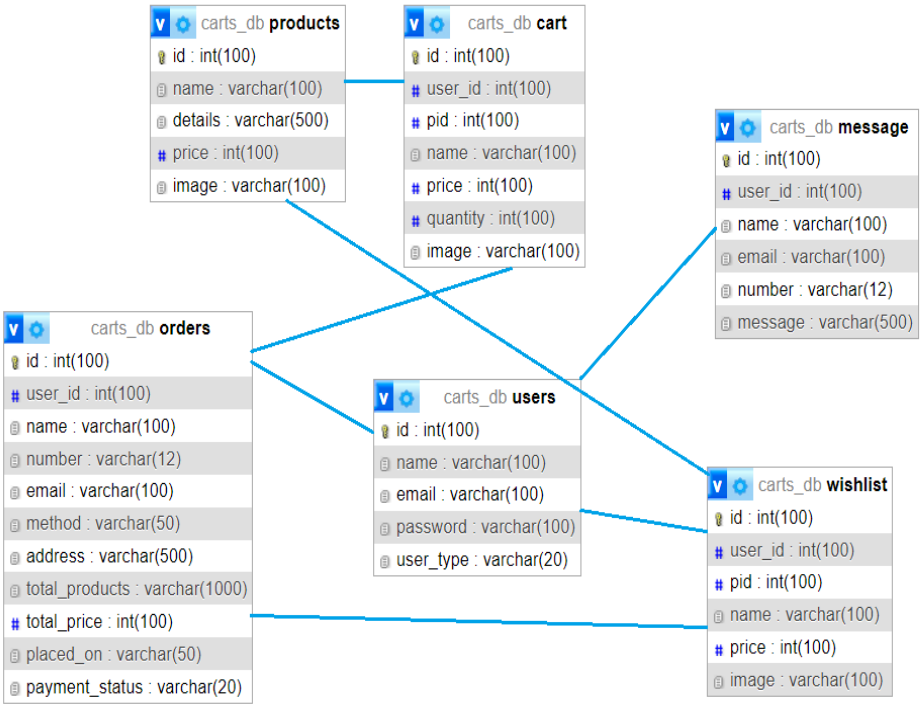


Figure 3.7: Database Schema Design of Online cake delivery system

3.2.3 Interface Design

The interface design for the system is shown as follows:

a. User registration page

The interface design for user registration is shown below:

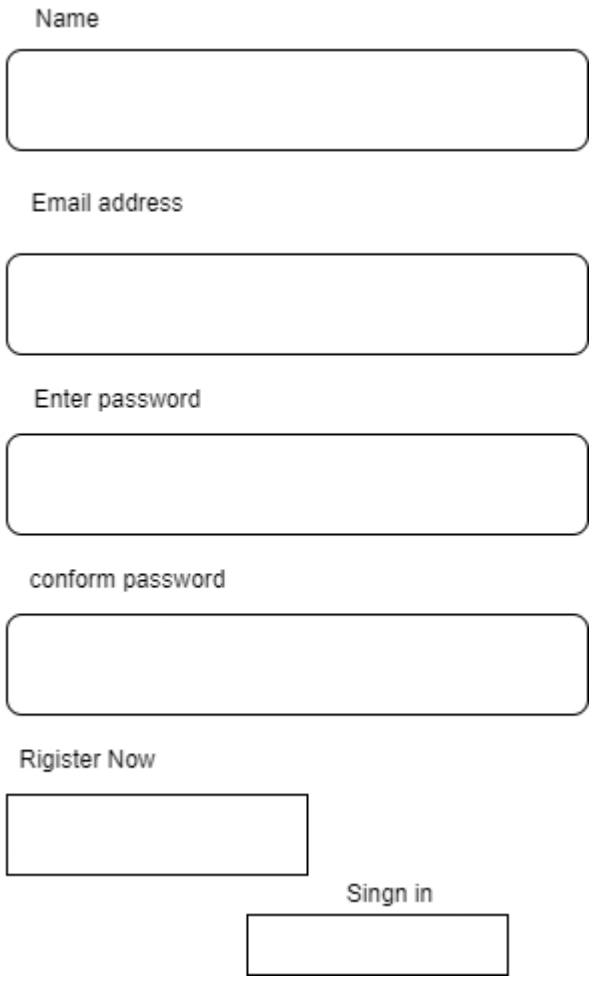


Figure 3.8 User registration page

b. Admin Panel

The interface design for admin panel page is shown below:

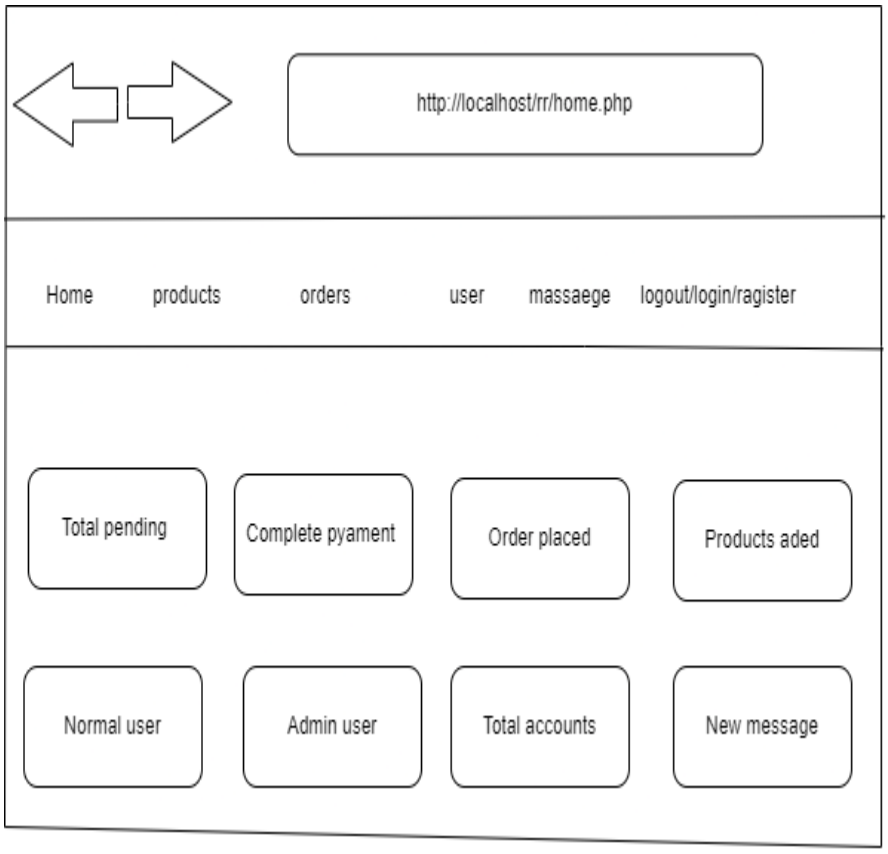


Figure 3.9 Admin panel page

3.2.4 Physical DFD

Physical Data Flow Diagram (DFD) for an online cake delivery system provides a concise overview of the interactions between various physical components in the system. This diagram captures the flow of data and processes as they occur within the system's hardware and devices.

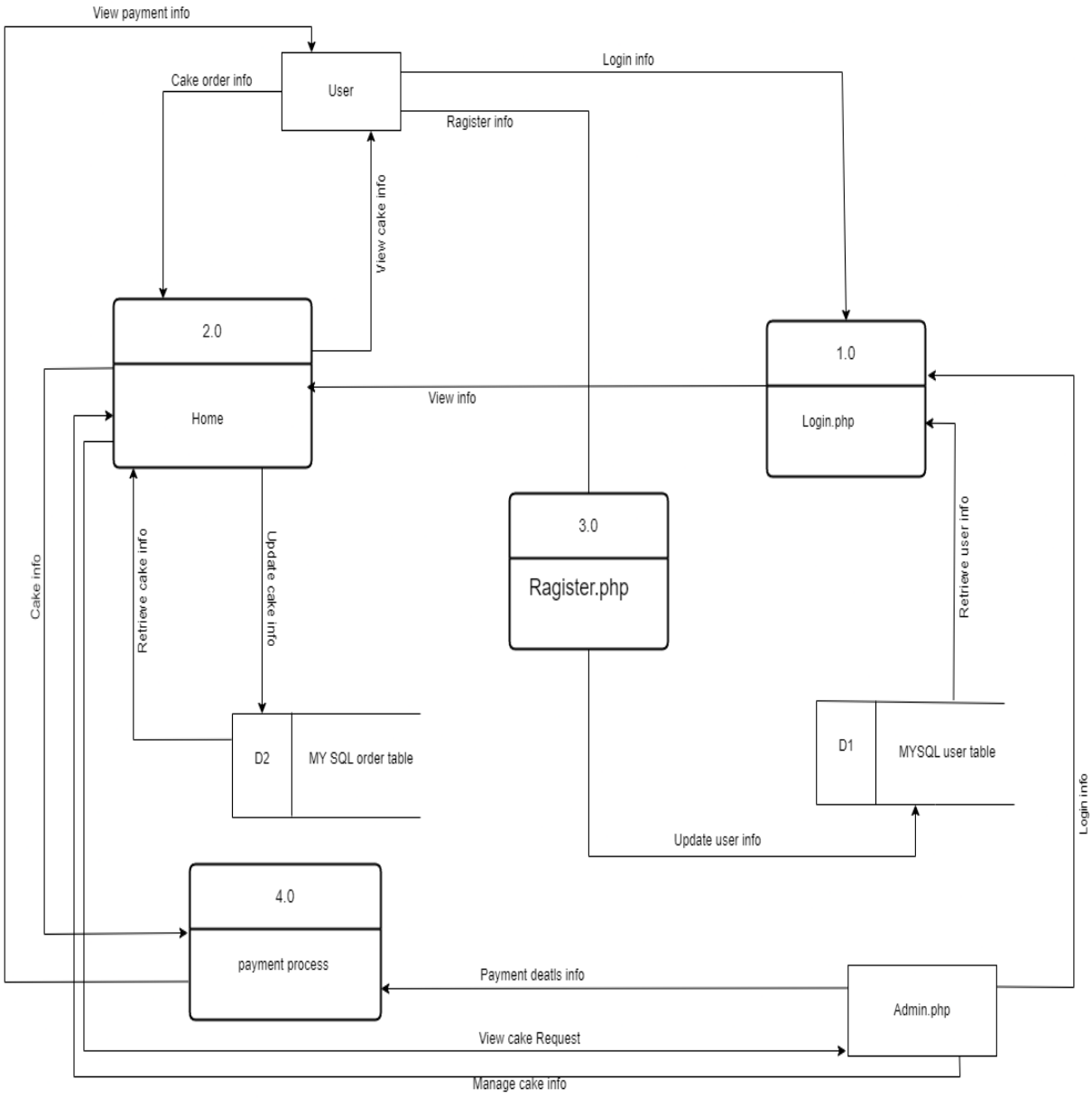


Figure 3.10 physical DFD of online cake delivery system

CHAPTER 4: IMPLEMENTATION AND TESTING

4.1 Implementation

The implementation phase involves the application of the design specifications done before. The implementation involves coding of the system designs if this project, systems testing and live running.

4.1.1 Tools Used (CASE tools, Programming languages, Database platforms)

Diagramming tools such as draw.io, lucid chart and dia were used for graphical representation of the data and systems. These were used to make flowcharts, DFD, ER diagrams, Gantt Charts, etc. MSWord was used for the documentation. Visual Studio Code was used to write, edit and compile the codes. PHP, JavaScript, CSS, HTML was used to build the webapp. XAMPP was used to host the webapp. MySQL was used to design the database for data storage.

Table 4.1: Test Case 1-Registration Form

Test Case ID	Test Case Name	Test Case Description	Step	Expected Result	Actual Result	Test Case Pass/Fail TC Status
Input 01	Input Form Password Validation	Display unmatched Password	Display unmatched Password	alert message "Confirom Password does not match."	alert message "password don't match Please try again."	Pass
TC 02	Registration Form Validation	Entire form validation	Input every detail	If same Details then display Message ''A user with same email or contact already exists'' else register	When entered existing user's details error Message displays saying "A user with same email or contact already exists'' and when new details are entered account creates.	Pass

TC 03 panel	Registration Form Validation	Provide valid username username Password password Email email phone and other phone and number	Login to the valid	Logged in to panel	Pass the

Table 4.2: Testing Login Pag

Test Case E Id	Test Name	Test User	Test Case Description	Step	Expected Result	Actual Result	TestCase Case Case status Pass/Fai
TC 04	Validate Login	Admin invalid	Enter invalid Username Or Password	Enter invalid username Or password	An error messages “Invalid Username Or Password... ” Must be displayed.	An error messages “Invalid Username Or Password... Please Try again.” Is displayed.	Pass
TC 05	Validate Login	Admin	Enter valid username And password. password.	Enter valid username And password.	Log in successfully and direct user to the Admin panel.	Logs in successfully and user is directed to the admin panel.	Pass
TC 06	Validate Login	Patient invalid	Enter invalid Username Or Password	Enter messages username Or Password	An error messages “Invalid Email Or Password... ” Must be Displayed	An error “Invalid Username Or Password... Try again.” is displayed	Pass

4.2.2 Test case for system testing

System testing is done after integration testing in order to ensure that the whole system functions properly. After the integration testing, the entire system working process was checked. The output was as per the system specifications and hence the system was found to work properly.

Table 4.3: Testing for Admin Panel

Test case id	Test Case Name	Test case Description	Step	Expected Result	Actual Result	Test Case status Pass/Fail
TC 07	Security Testing	Checking Security to access system	Login with your registered username and password	Successful Login Directed to Admin dashboard.	Successful Login Directed to Admin dashboard.	Pass
TC 08	Delete and update	Checking Owner search function or products	Click on manage user and then click delete to delete selected user	Delete And update selected user request details	Update and Deleted successfully	Pass

Tc 09	Edit User	Edit selected User Data	Click on manage User and then click edit to edit selected User	Display form to edit User details and then Updated successfully message should be displayed	Updated successfully	Pass
Tc 10	Delete User	Delete selected user data	Click on manage user and then click delete to delete selected user	Delete selected user details	Deleted successfully	Pass
Tc 11	Logout	To exit from the dashboard	Click on logout	Direct to index page	Directed to index page	Pass

CHAPTER 5: CONCLUSION AND FUTURE RECOMMENDATIONS

5.1 Conclusion

The online cake delivery system represents a significant advancement in the realm of e-commerce and customer convenience. Through this platform, customers can effortlessly browse a wide assortment of cakes, place orders, and have them delivered directly to their doorsteps. This streamlined process eliminates the need for in-person visits to bakeries and offers a diverse range of cake options at one's fingertips. Moreover, the system's integration of secure payment gateways ensures seamless transactions. However, it's essential to note that while online cake delivery provides undeniable benefits, such as time savings and a broader cake selection, challenges like maintaining cake freshness during transit and addressing any delivery mishaps must be efficiently managed. In conclusion, the online cake delivery system harmonizes technological innovation with culinary delight, offering a promising solution for those seeking a hassle-free and delightful cake procurement experience.

5.2 Future Recommendations

online cake delivery system has a promising future, but there are areas where improvements and innovations can enhance the overall customer experience. Firstly, investing in advanced packaging techniques and temperature control solutions will be crucial to ensure cakes arrive in perfect condition, even during extended transit periods. Secondly, incorporating AI-driven customization options could allow customers to design their cakes with specific flavors, decorations, and dietary preferences. Furthermore, integrating real-time delivery tracking and notifications will provide customers with transparency and control over their orders. Collaborations with local bakeries and sustainable sourcing practices can add a personalized touch while promoting ethical and environmentally friendly practices. Finally, maintaining a responsive customer support system to address any concerns promptly will further build trust and loyalty among customers. By embracing these recommendations, the online cake delivery system can continue to evolve and thrive in the competitive e-commerce landscape of the future.

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[3] https://foodmandu.com/restaurant/index, “Foodmandu.com: Think. Tap. Eat!,” Foodmandu Main, Jan. 12, 2019. https://foodmandu.com/

APPENDICES

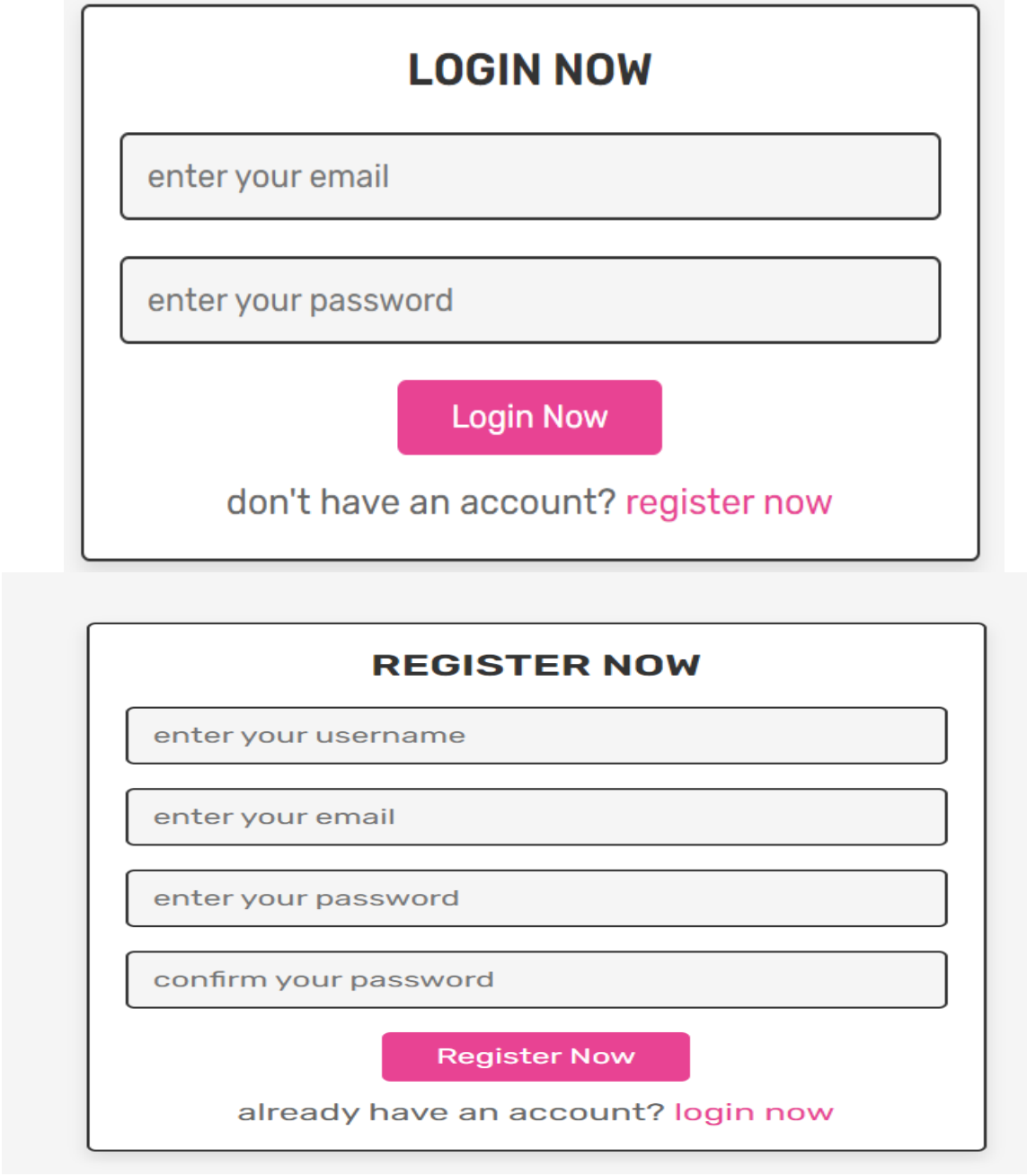

Figure: user admin login and register page

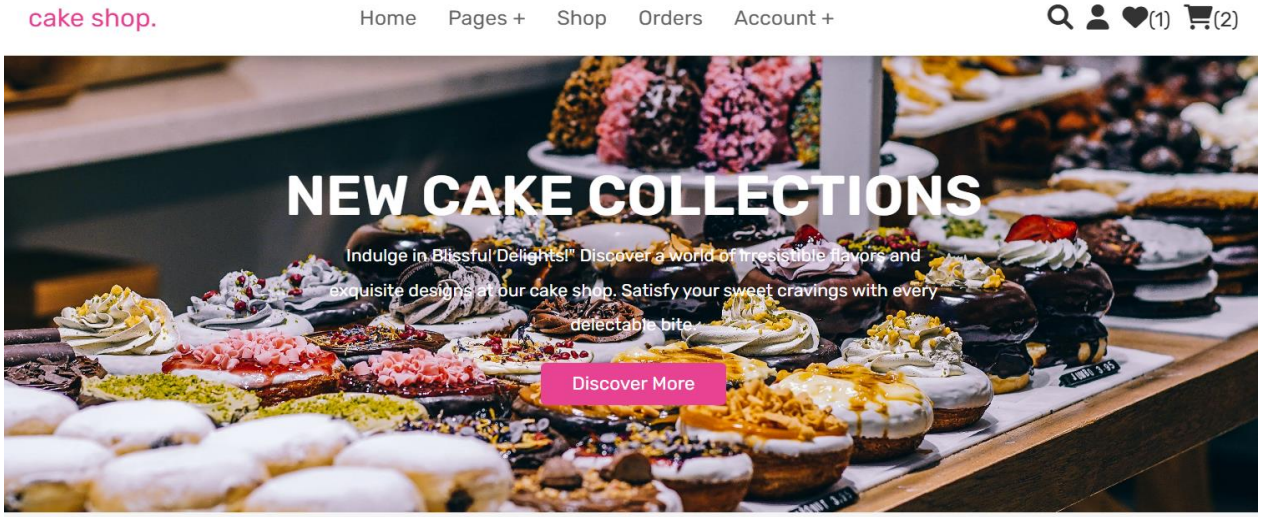

Figure: Home and shop

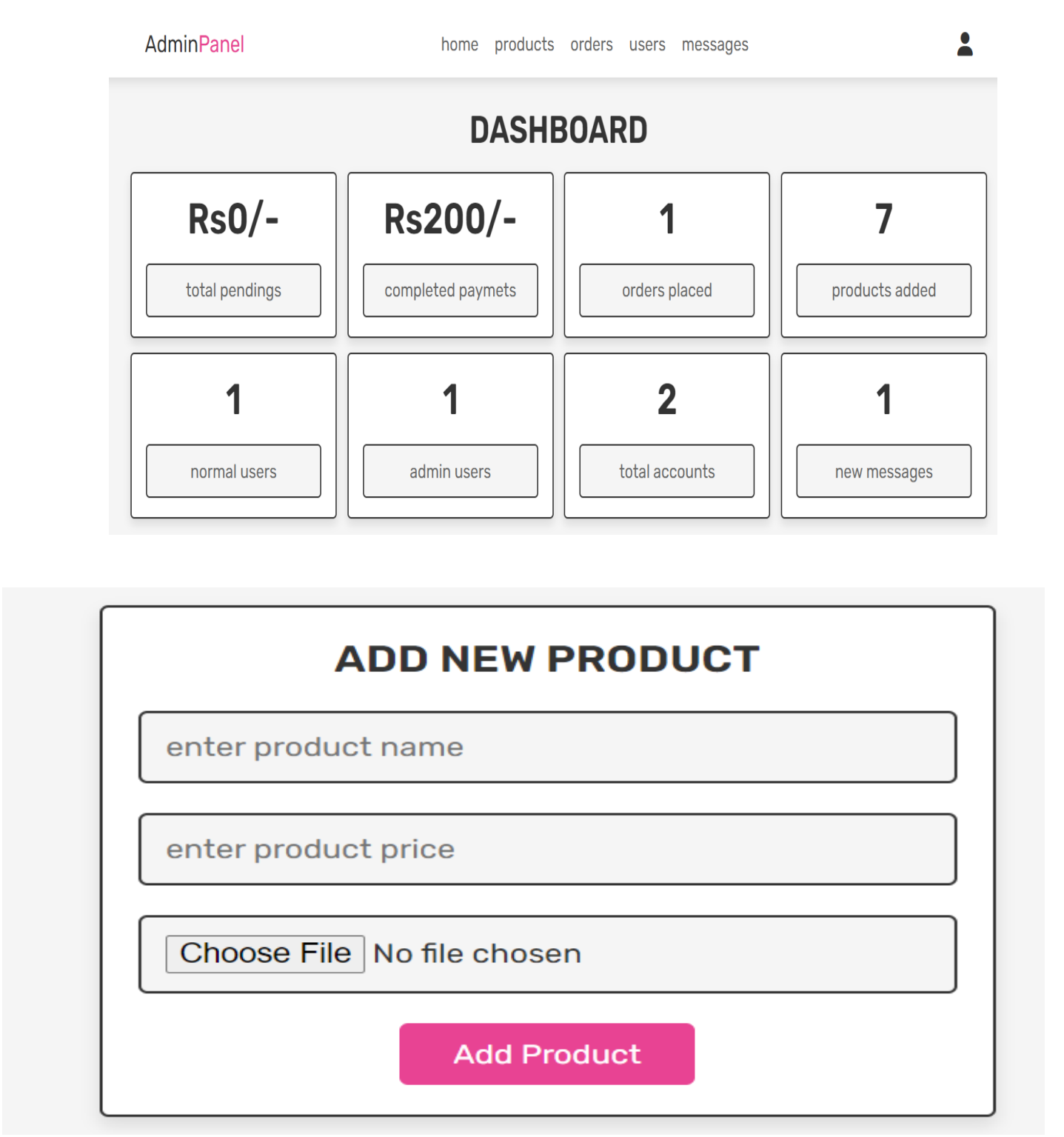

Figure: Admin dashboard and add product