



Tribhuvan University

Faculty of Humanities and Social Sciences

Food Delivery System (K Khane)

A Project Report

Submitted to

Department of Computer Application

Lumbini City College

In partial fulfillment of the requirements for the Bachelor's in computer application.

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ABSTRACT

This project presents the development of an Online Food Delivery System designed to streamline the process of ordering food via the internet. The " K Khane " system provides a user-friendly interface where customers can browse the restaurant menu, select dishes, place orders, and make secure payments online. The primary goal of this project is to offer a convenient and efficient alternative to traditional food ordering methods by minimizing the time and effort required for both customers and restaurant staff. The system features user registration and login, real-time menu updates, order tracking, and a secure payment gateway. Restaurant can manage their menus, receive orders, and update order statuses through a dedicated dashboard. The system also includes an admin panel for maintaining the orders and foods and maintaining the overall system functionality. By automating the ordering process, the system enhances customer satisfaction, improves service accuracy, and reduces operational costs for the restaurant. The project is developed using modern web technologies to ensure responsiveness and accessibility across different devices. This Online Food Delivery System aims to meet the growing demand for digital convenience in the food service industry.

Keywords: *user-friendly, real-time, customer satisfaction, digital convenience*

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LIST OF ABBREVIATIONS

DFD	: Data Flow Diagram
ER	: Entity Relationship
JS	: JavaScript

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CHAPTER 1: INTRODUCTION

1.1 Introduction

In today's fast-paced world, food delivery services have become a crucial part of urban life, offering convenience, comfort, and accessibility. With busy schedules and changing lifestyles, many people prefer ordering food online rather than cooking or dining out. **"K Khane"** aims to provide a streamlined and user-friendly food delivery system that seamlessly connects users with restaurant, offering diverse cuisines and meal options to suit different tastes and dietary preferences. This system will enable customers to place orders effortlessly through a web-based application, ensuring a smooth and efficient process from browsing menus to secure payment and real-time order tracking, ultimately delivering food to their doorsteps. The food delivery industry has witnessed remarkable growth in recent years, fueled by the increasing demand for convenience and the rapid advancement of digital technology. **"K Khane"** aspires to offer a competitive and innovative service that simplifies the food ordering experience while maintaining high standards of quality, hygiene, and timely delivery. Whether customers are at home, in the office, or at any location, our platform ensures they can enjoy their favorite meals with just a few clicks. By integrating advanced technology and efficient logistics, **"K Khane"** aims to revolutionize the online food delivery industry, making dining more accessible, enjoyable, and hassle-free.

1.2 Problem Statement

As urban areas continue to grow rapidly, the demand for convenient food delivery services increases significantly. Many people desire food at their doorstep with ease and convenience, as it eliminates the hassle of cooking and dining out. Online food delivery is widely preferred over preparing meals at home or visiting restaurants because it saves valuable time, reduces effort, and helps avoid long waits in crowded places. This service is particularly beneficial during unfavorable weather conditions, late-night cravings, or situations where cooking is not an option due to a busy lifestyle. Additionally, health and safety concerns have further escalated the demand for such services, especially during pandemics and public health crises, where maintaining social distance is crucial.

1.3 Objectives

Let us discuss some of the main goals and objectives of this project:

- To provide variety of food options
- To enhance service availability
- To implement easy and efficient ordering process

1.4 Scope

- User registration and authentication
- Order tracking
- Wide range of options for food
- Payment options

1.5 Limitations

- Limited Restaurant availability
- All sea foods unavailability

CHAPTER 2: BACKGROUND STUDY AND LITERATURE REVIEW

2.1 Background Study

Nepal's food industry is experiencing rapid digital transformation, yet many small and mid-sized restaurants still rely on manual order-taking, leading to inefficiencies, delays, and errors. While platforms like Foodmandu and Bhoj serve major restaurants, smaller businesses often lack cost-effective digital solutions. Customers also face challenges like limited food options and inefficient tracking. This project aims to develop an easy-to-use, affordable food ordering system that enables restaurant to manage orders efficiently and provides customers with a seamless experience. By integrating features like real-time order tracking and digital payments, the system will enhance convenience, improve service quality, and support Nepal's evolving food industry.

2.2 Literature Review

The online food ordering system has revolutionized the food industry by enabling customers to place orders via websites and mobile applications. With increasing urbanization and digital penetration, such systems have gained popularity worldwide. [1]Nowadays, mobile devices with wireless technologies has emerged into the hospitality industry especially restaurants with the advancements of food ordering systems. Most restaurants use manual ordering process involving pen and papers in which noting down the orders can be quite slow and can caused errors in noting down the customers' orders. Based on QSR statistics, young generations usually order food online which caused the online ordering traffic to grow 300% faster than dinein traffic. Moreover, most people preferred to use online ordering system as it is more convenient and reduce their waiting time. [2] By leveraging technology, it streamlines ordering and payment processes, providing customers with swift, error-free experiences for both in-house dining and online orders. This not only caters to the modern demand for speed and convenience but also mitigates potential errors in manual order-taking. For F&B businesses, particularly SMEs, the system offers a competitive edge through digital transformation. It enhances visibility, customer loyalty, and ultimately, the long-term profitability and sustainability of the business.

CHAPTER 3: SYSTEM ANALYSIS AND DESIGN

3.1 Methodology

This platform uses the waterfall model as development methodology. This model is a linear and sequential approach to project management, which is suitable for this project's scope and objectives. The project's development process involves the following stages: requirements gathering and analysis, design, implementation, testing, and maintenance. Each stage is completed before moving on to the next stage. The developers are responsible for all aspects of the project development process, from requirements gathering to maintenance. It is ensured that the requirements are clear, and that the implementation meets the project's quality standards. The project has also been tested in implementation thoroughly to ensure that the final product meets the requirements and expectations.

3.1.1 Project Timeline

This project is developed using waterfall model where each new step is started after completing the previous step. The activity and date of execution is shown in the timeline below:

Table I:Gantt Chart

Activity	W 1	W 2	W 3	W 4	W 5	W 6	W 7	W 8	W 9	W 10	W 11	W 12
Planning												
Analysis												
Design												
Coding												
Testing												
Documentation												

3.2 System Analysis

3.2.1 Requirement Analysis

Analysis for requirements is done by categorizing into two parts i.e. Functional and non-functional requirement. Let us discuss some requirements for the development of this project:

- **Functional requirements**
 - User registration and authentication
 - Menu management
 - Payment integration
 - Order placing and tracking
 - Admin dashboard

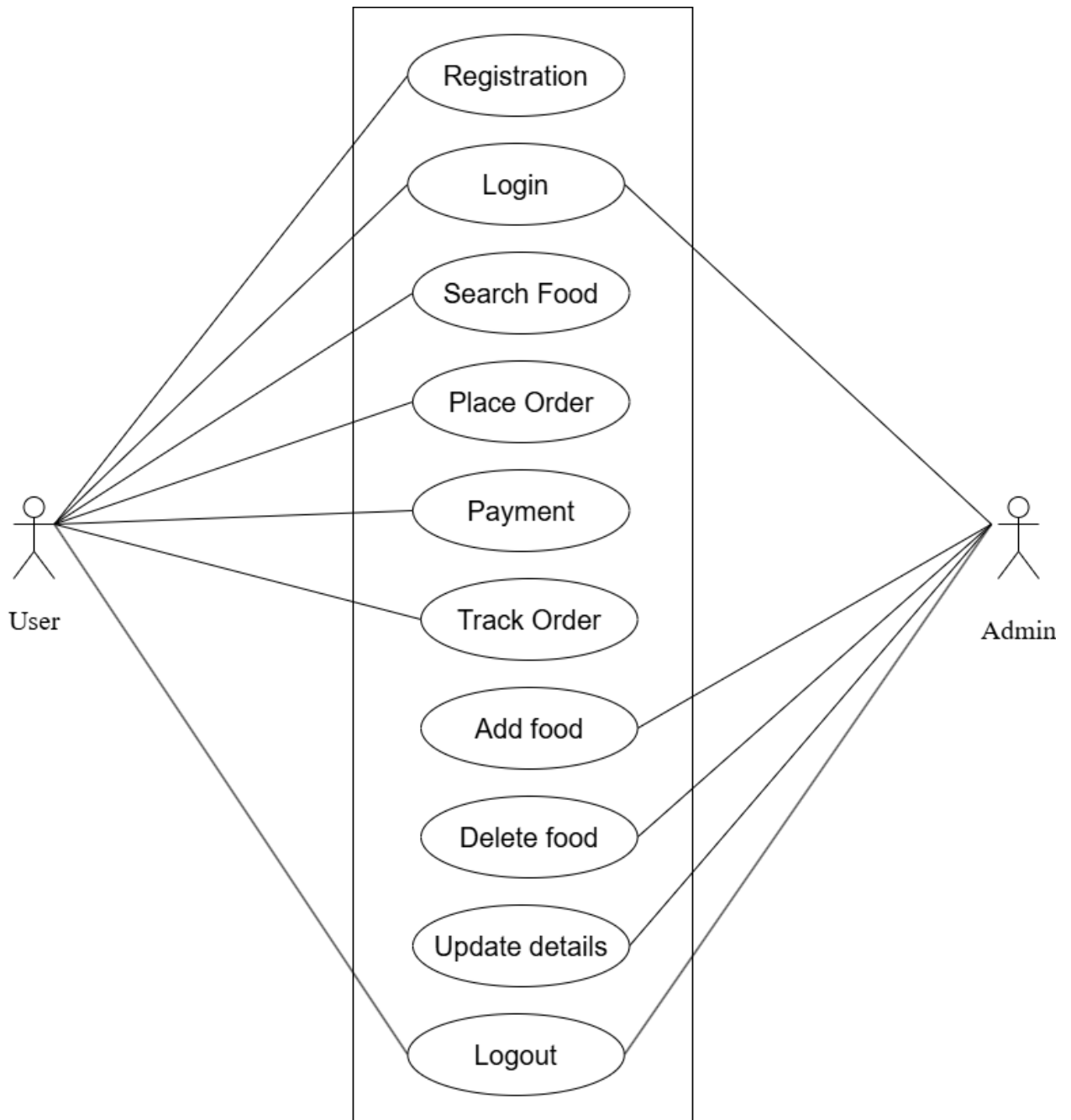


Figure I:Use case diagram

- **Non-functional requirements**

- Usability
- Scalability
- Security
- Reliability

3.2.2 Feasibility study

The following feasibility factors are studied for the development of this project. Let us discuss some of them below:

- **Technical Feasibility:**

The project is technically feasible as it is built using the existing available technologies. The technology like laptop, mobile, internet connection, basic computer interface understanding skillset required by this project is available easily. The requirements that need to be met by users are basic requirements as mentioned above and we can conclude from it that almost everyone can use it hence it is technically feasible.

- **Operational Feasibility:**

The platform K Khane is a necessity for the food industry. People can find this platform very functional and relatable so they can easily make use of this website. It also has a simple interface and users can get good user experience from this website. If any user uses it, no special administration is required, and no special training is required. So, it will be operationally feasible.

- **Economic Feasibility:**

This system will be economically feasible to implement. The economic feasibility of the proposed system is evaluated by considering the costs involved in implementing and maintaining the system. This includes hardware and software costs, website design and development costs, and ongoing maintenance and support costs. The development cost is very low, and the users can use it at a very low cost, so the application will be economically feasible.

3.3 System Design

The system will be designed with multiple features and functionality allowing user to have better user experience while accessing the website. Some graphical representation of this system using Context level DFD and System Flowchart are mentioned below:

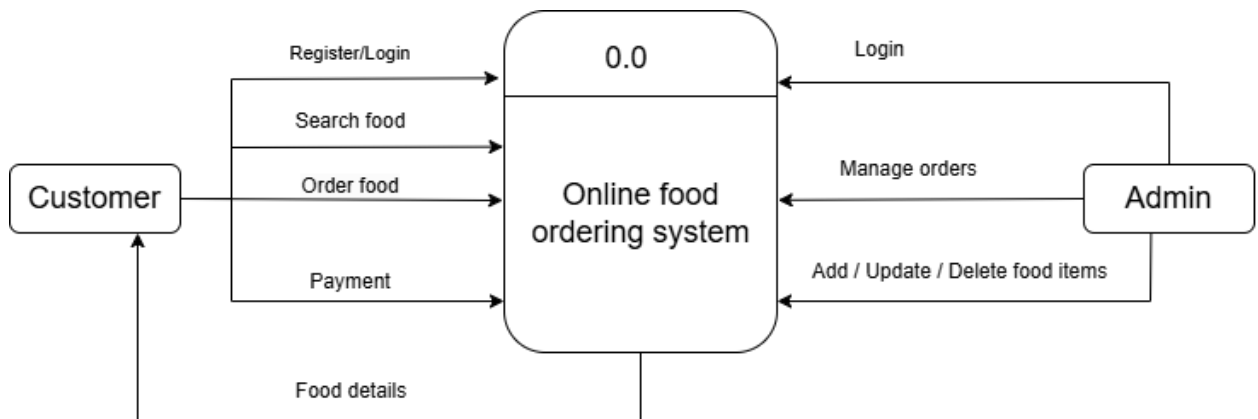


Figure II:Context Level DFD

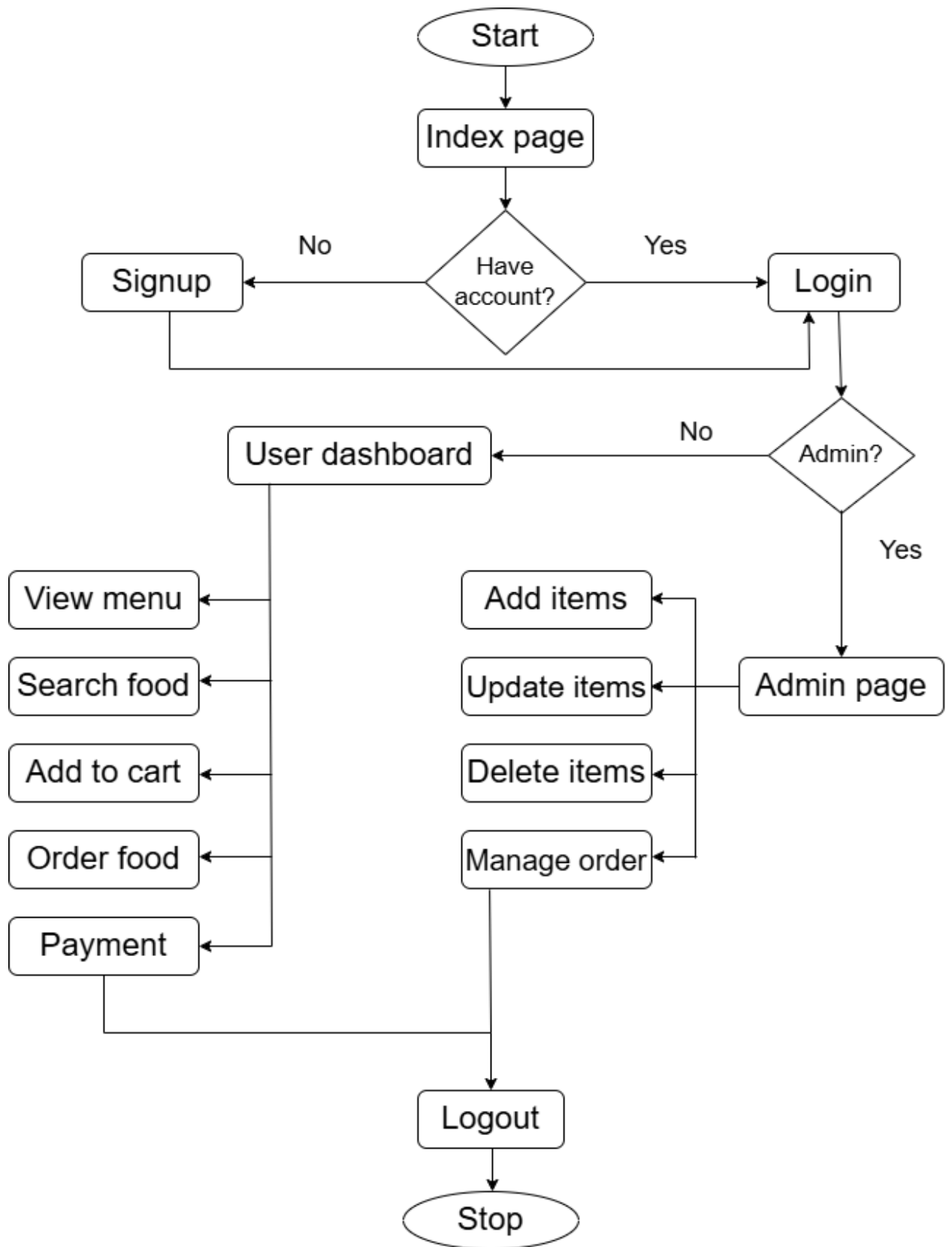


Figure III: System Flowchart

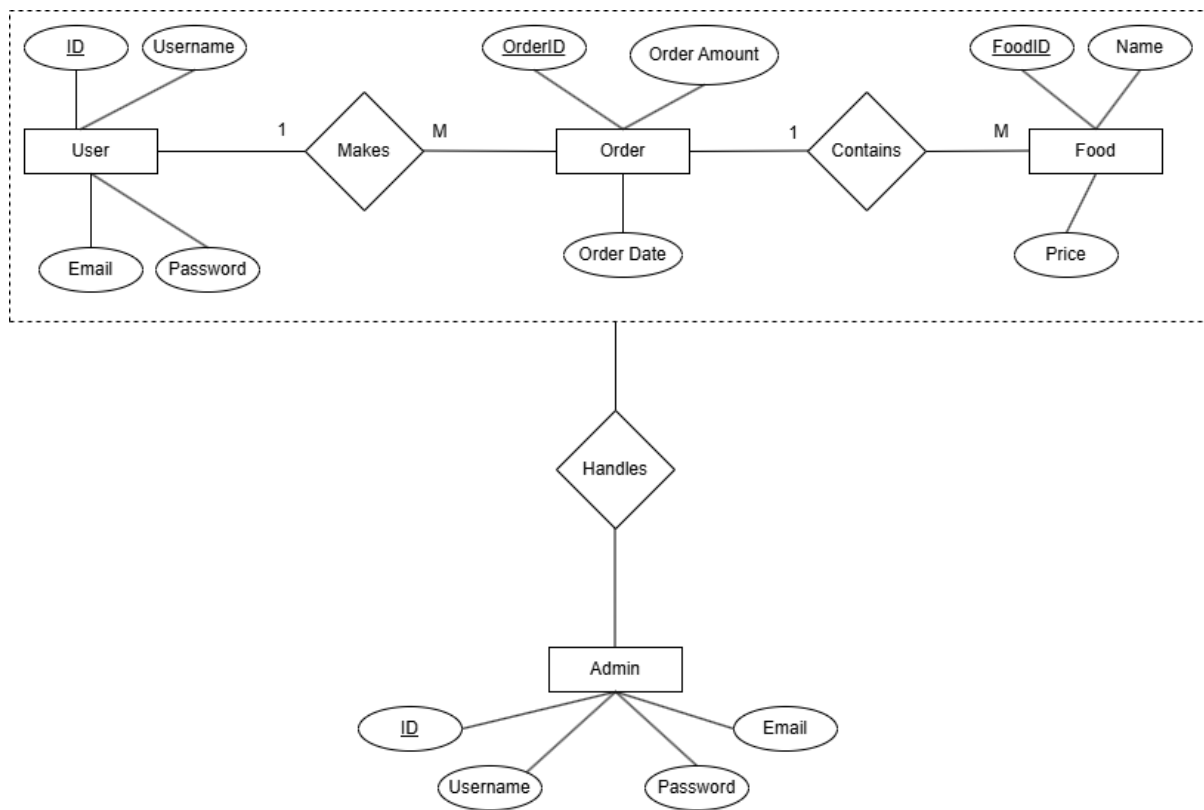


Figure IV:ER Diagram

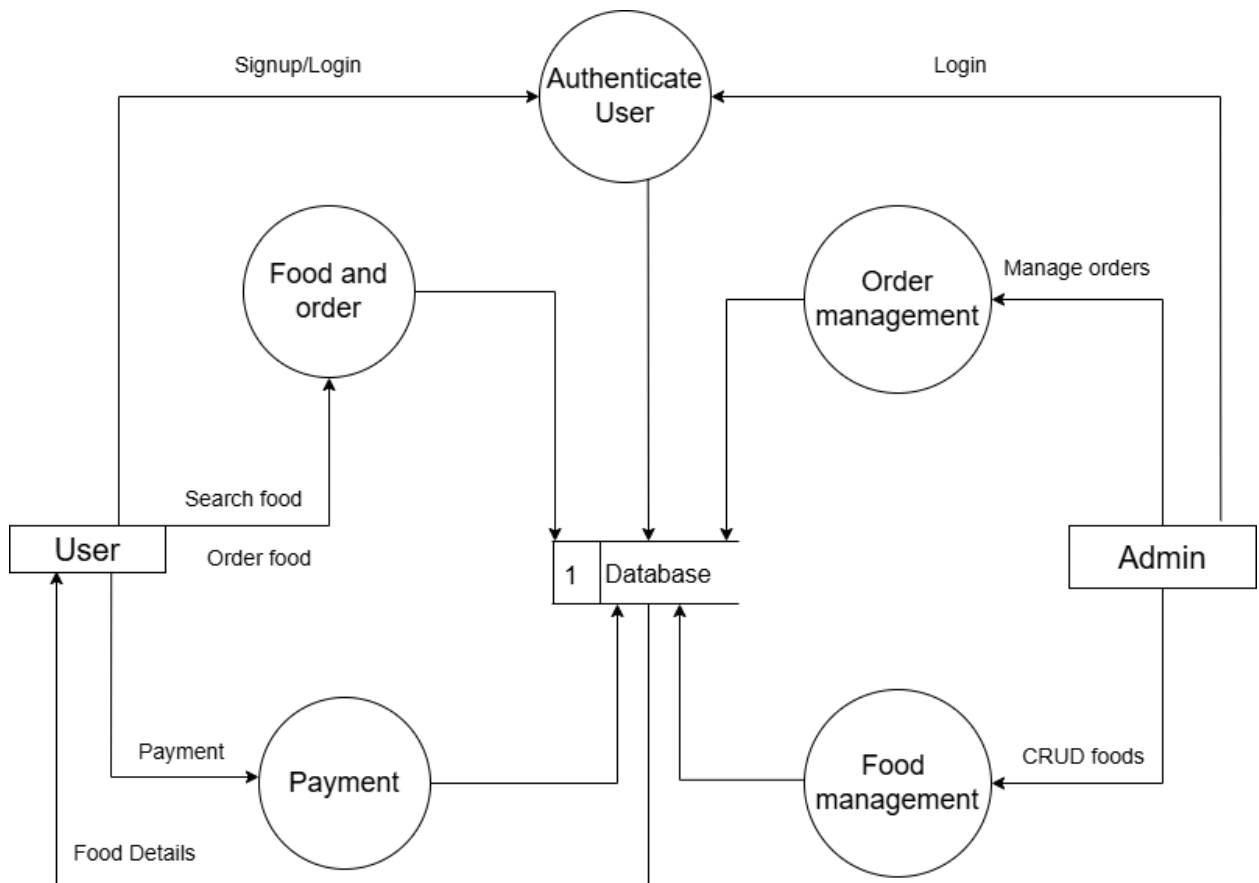


Figure V: Level 1 DFD

Chapter 4: IMPLEMENTATION AND TESTING

4.1 Implementation

In this Phase, theoretical design is turned into practice ie working system. The most crucial stage in achieving a new successful system and in giving confidence on the new system for the users that it will work efficiently and effectively. The system can be implemented only after thorough testing is done and if it is found to work according to the specification.

4.1.1 Tools and Technologies used

The tools listed below will be used for the complete development of this project. Let us discuss the use of each of them in our project:

Tools like VS Code, Node JS extension and MongoDB Compass will be used for the code implementation.

MERN stands for Mongo DB Express JS React JS and Node JS which will be used in this website.

Mongo DB: It is one of a popular database system used in multiple cross platform software to store the data of users, products and content of the websites. We will be using this database to store and retrieve users and movies information.

Express JS: A web application framework for Node.js, designed for building robust web applications and APIs. It simplifies the process of writing server-side code, handling HTTP requests, and routing.

React JS: It is a framework that provides us with multiple features such as libraries and CDNs allowing developer to use it without writing all the syntax and codes. It is basically used to create UI i.e. outer face of a website for users.

Node JS: A runtime environment that allows JavaScript to be executed on the server side. It uses an event-driven, non-blocking I/O model, making it lightweight and efficient for

building scalable network applications.

4.2 Testing

4.2.1 Test Cases for unit testing

Table II: Test cases for registration/login

Test Case ID	Module	Description	Input	Expected Result	Result
1	Registration	Register with valid details	Valid username, email, password	Account created successfully	Pass
2	Login	Login with correct credentials	Valid email, password	Login successful	Pass
3	Login	Login with wrong password	Valid email, wrong password	Error: Invalid credentials	Pass

Table III: Test cases for CRUD on Foods

Test Case ID	Module	Description	Input	Expected Result	Result
4	Add food	Add food with valid data	Food data, valid token	Food added successfully	Pass
5	Display food	Display all the foods	Invalid token	Error: Cannot display foods	Pass
6	Delete food	Delete food item	Food ID, valid token	Food deleted successfully	Pass

4.2.2 Test cases for system testing

Table IV:Test cases for system testing

Test Case ID	Scenario	Steps	Expected Result	Result
7	Register and login flow	1. Register with valid data. 2.Login with same credentials	Account created and login successful	Pass
8	Order a food after login	1. Login. 2.Order a food and view order	Order placed and user can track it	Pass

Chapter 5: CONCLUSION AND FUTURE RECOMMENDATIONS

5.1 Conclusion

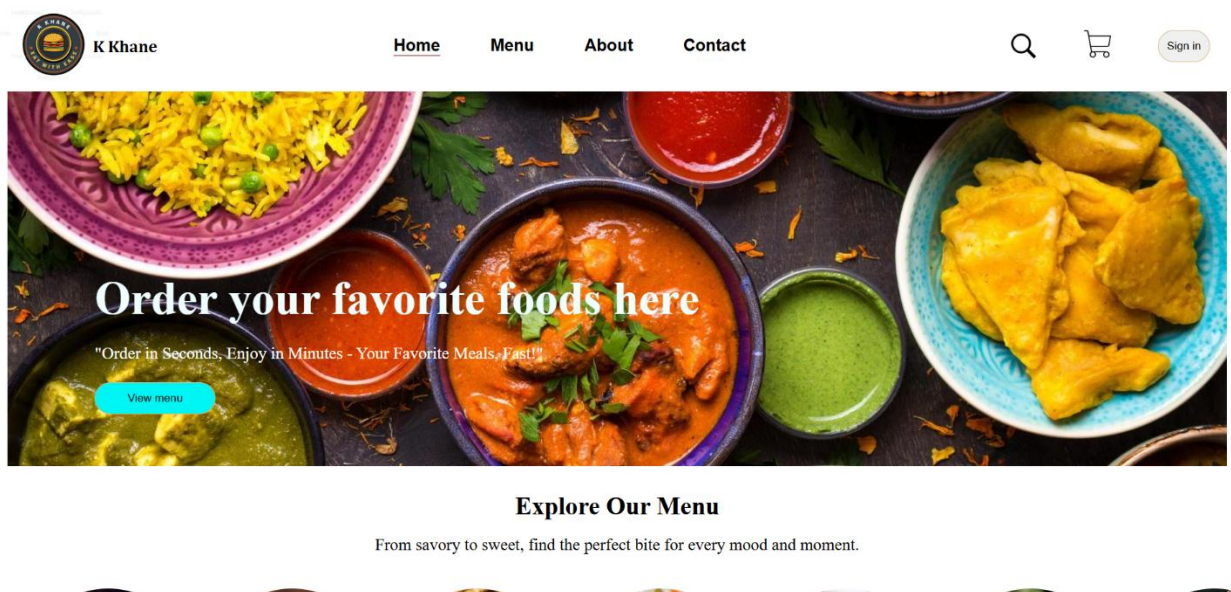
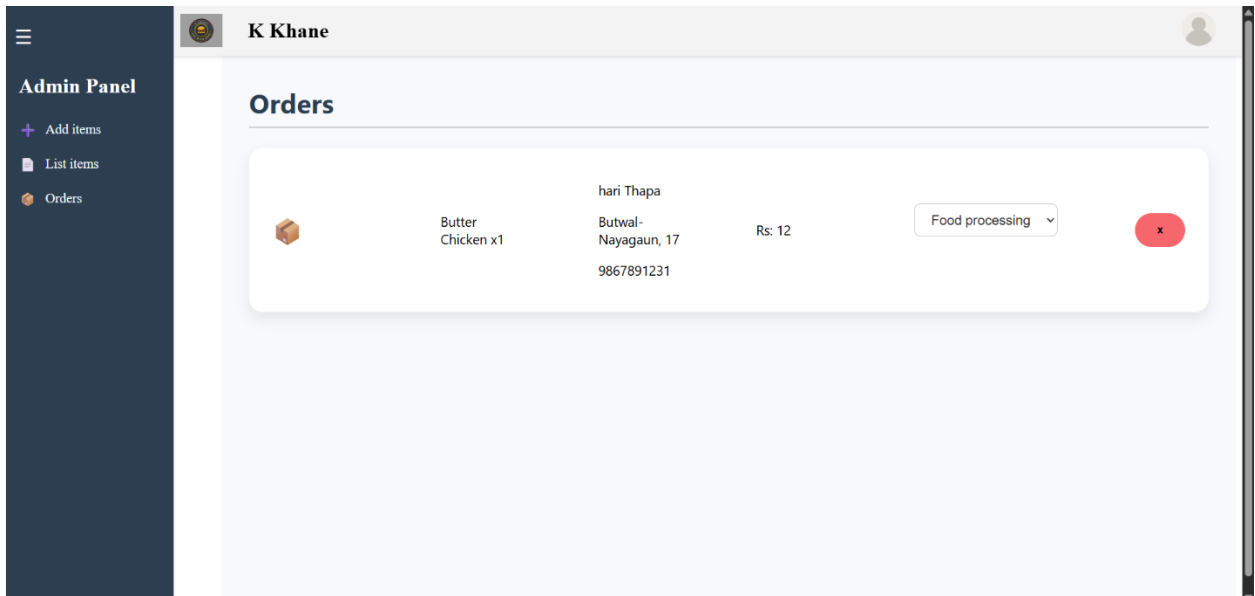
The K Khane online food ordering system is created to provide customers with an easy and convenient way to order food from a restaurant. With a simple interface and secure payment options, the platform makes ordering quick and hassle-free. It ensures that customers can enjoy their meals without any delays or complications. This system helps improve the relationship between the restaurant and its customers, offering a better, more reliable food ordering experience. Ultimately, it aims to increase customer satisfaction and make the whole process smoother and more enjoyable.

5.2 Future Recommendations

Here are some future recommendations to enhance and expand this online food delivery system project:

- **AI-Based Recommendation System:** Integrate AI to offer personalized food suggestions based on user preferences, order history, and current trends.
- **Real-Time Delivery Tracking with Maps Integration:** Add GPS tracking and live map integration to allow users to monitor the status and location of their deliveries in real-time.
- **Loyalty and Reward Programs:** Implement a reward system to encourage repeat orders, such as points, discounts, or referral bonuses.
- **Multi-Currency Support:** Enable support for different currencies to cater to a broader audience and facilitate expansion to other regions.

Appendices





Explore Our Menu

From savory to sweet, find the perfect bite for every mood and moment.



Beverage



Desert



Soup



Salad



Non-veg



Veg



Chines

Top dishes near you



K Khane

[Home](#)

[Menu](#)



[About](#)

[Contact](#)



[Sign in](#)

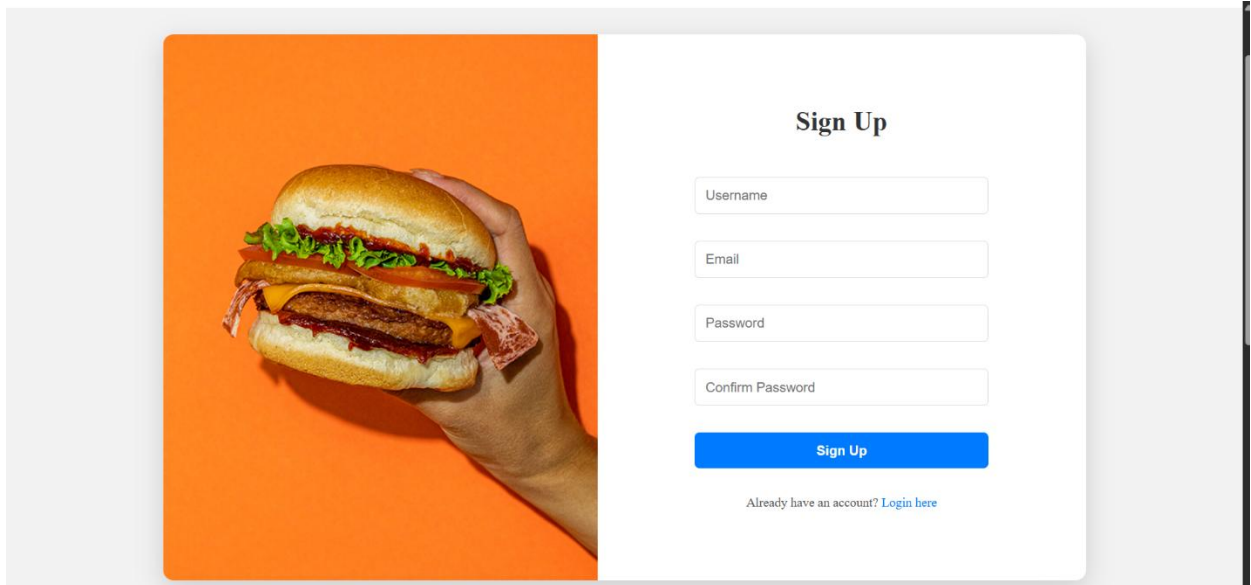
Your Items

Item	Quantity	Price	
 Butter Chicken	*3	12	x
 Cheese Cake	*1	10	x

Order Details

Subtotal:	Rs 46
Delivery:	Rs 10
Discount:	Rs 0
Total:	Rs 56

[Proceed to Checkout](#)



☰

Admin Panel

+

 Add items

📄





 List items

🍔

 Orders

K Khane

Food List

Image	Name	Description	Price (Rs)	Category	Action
	Butter Chicken	tasty butter chicken	Rs 12	Non-veg	<div><div>📄</div><div>✕</div></div>
	Cheese Cake	creamy and sweet cheesecake	Rs 10	Desert	<div><div>📄</div><div>✕</div></div>
	Cold coffee	cold coffee for hot summer	Rs 8	Beverage	<div><div>📄</div><div>✕</div></div>
	Sprout salad	Fresh salad	Rs 6	Salad	<div><div>📄</div><div>✕</div></div>

References

- [1] S. M. a. H. H. Alagoz, ""A study on tam: analysis of customer attitudes in online food ordering system.", " *Procedia-Social and Behavioral Sciences*, Vols. 1138-1143, p. 62, 2012.
- [2] X. Y. Chong, "Integrated Food Ordering System-Merchant Side," 2024.