

FOOD CUSTOMIZED APP FOR HEALTH CONSCIOUS USERS



A DESIGN PROJECT REPORT

Submitted by

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EXTERNAL EXAMINER

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We jointly declare that the project report on "FOOD CUSTOMIZED APP FOR HEALTH CONSCIOUS USERS" is the result of original work done by us and best of our knowledge, similar work has not been submitted to "ANNA UNIVERSITY CHENNAI" for the requirement of Degree of BACHELOR OF TECHNOLOGY. This design project report is submitted on the partial fulfilment of the requirement of the award of Degree of BACHELOR OF TECHNOLOGY.

PLACE: SAMAYAPURAM

DATE:

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ABSTRACT

The app is designed with a high degree of flexibility, allowing users to adjust ingredients in real time to meet their specific health needs. Whether it's reducing sugar for diabetic users, cutting down on salt for those with hypertension, or adjusting spice levels for those with sensitive stomachs, the app makes these modifications seamless. This feature provides users with the power to tailor each meal to their individual health requirements, ensuring that they can still enjoy their food without compromising on their dietary restrictions. Real-time updates reflect how ingredient changes affect the nutritional profile of the meal, helping users make informed decisions that align with their health goals. To further enhance convenience, the app enables users to quickly order their customized meals for home delivery. This ensures that health-conscious individuals can enjoy nutritious meals tailored to their preferences without the need for meal prepor shopping. The user interface is designed to be accessible to everyone, including individuals with chronic health conditions, those following strict dietary guidelines, or even casual users looking to maintain a balanced diet. By providing realtime updates on how ingredient adjustments impact nutrition and offering convenient delivery options, the app fosters a health-focused lifestyle that is accessible, easy to use, and adaptable to a wide range of needs.

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LIST OF ABBREVIATIONS

PMP Personalized Meal Planning

NBI Nutritional Breakdown Insights

UCD User-Centric Design

API Application Programming Interface

FPA Food Preference Analyzer

FSA Food Sensitivity Alerts

BFO Budget-Friendly Options

FIS Food Ingredient Substitution

OTP One-Time Passcode

PMR Personalized Meal Recommendations

CHAPTER 1

INTRODUCTION

This project is designed with a high degree of flexibility, allowing users to adjust ingredients in real time to meet their specific health needs food-customization platform designed to support health-conscious individuals in achieving their nutritional and wellness goals. By offering personalized meal plans, recipes, and grocery lists tailored to user dietary preferences, health objectives, and lifestyle choices, the app empowers users to make informed decisions about their food intake. Show real-time updates on how ingredient changes affect nutritional content. including vegan, keto, gluten-free, and paleo, ensuring that users receive guidance that fits their unique dietary lifestyle.



Figure No. 1: Introduction

1.1 BACKGROUND

Healthier diets to manage their health and improve quality of life. Health-conscious individuals, particularly those with specific dietary needs due to medical conditions or personal goals, are increasingly seeking ways to tailor their diets. Common conditions such as diabetes, hypertension, and food sensitivities require thoughtful meal planning and strict management of ingredients, but most available dietary solutions are too generic, inflexible, or time-consuming to meet these needs effectively. While diet apps and meal services have become popular, few provide real-time customization or instant feedback on how ingredient modifications impact nutrition. Most existing platforms offer basic meal recommendations, but they don't allow users to personalize their meals to meet precise health requirements, such as reducing sugar, lowering sodium, or adjusting spices.

1.2 SIGNIFICANCE

This offers a personalized approach to diet, empowering users to manage health conditions such as diabetes, hypertension, and food sensitivities. By allowing ingredient modifications that align with individual health needs, users gain greater control over their dietary choices and can proactively support their wellness goals. For users following specific dietary plans (e.g., vegan, keto, gluten-free), the app provides a sustainable way to maintain these diets by offering flexibility and varied meal options. This customization reduces the likelihood of diet fatigue, helping users stick to their chosen lifestyle over the long term. By offering a home delivery option, the app ensures that even users with time constraints can still access nutritious, tailored meals.

1.3 PROBLEM STATEMENT

Health-conscious individuals often struggle to maintain a balanced diet that aligns with their specific nutritional and wellness goals. Despite a wealth of information on healthy eating, many people find it challenging to create customized meal plans that suit their unique dietary needs, lifestyle, and health objectives. This difficulty is compounded by limited time, lack of knowledge on ingredient substitutions, and difficulty tracking nutritional content accurately. As a result, individuals who follow specialized diets (such as vegan, keto, gluten-free, or paleo) or have specific health goals may find it hard to sustain their dietary choices, leading to gaps in nutrition and unfulfilled wellness aspirations.

Developing a food-customization platform that provides health-conscious users with personalized meal plans, recipes, and grocery lists tailored to their specific dietarypreferences and health goals. Additionally, the platform will allow users to see real- time updates on nutritional values when ingredients are modified, enabling them to make informed decisions about their food intake. By offering a solution that combines personalization, nutritional transparency, and dietary guidance, the app will empower users to achieve their wellness goals and adopt a sustainable, health-oriented lifestyle. Health-conscious individuals often struggle to manage their food budget while prioritizing healthy ingredients.

1.4 OBJECTIVE

This design aims to achieve the following

• Personalized Meal Planning:

To provide users with tailored meal plans that align with their specific dietary preferences, health goals, and lifestyle choices, such as vegan, keto, gluten-free, or paleo.

• Nutritional Transparency:

To enable users to view and understand the nutritional breakdown of meals and individual ingredients, helping them make informed food choices that align with their wellness objectives.

• Budget-Friendly Options:

To provide budget-friendly meal options that help users balance their health goals with financial considerations, making nutritious eating accessible.

• Dynamic Adjustments:

Allow users to adjust their meal plans based on changing health goals (e.g., weight loss, muscle gain) or dietary needs (e.g., seasonal allergies, medical conditions).

1.5 RELEVANCY OF THE PROJECT

The demand for specialized diets (such as keto, paleo, gluten-free, vegan, and low-sodium) continues to rise, as people become more aware of how diet impacts overall health. This project is highly relevant as it allows users to follow these diets withease by offering customized meal plans that suit their dietary preferences, ensuring users can enjoy variety without compromising their health goals.

As individuals become more proactive about their health and wellness, preventive healthcare is gaining importance. Diet plays a significant role in preventing a variety of health issues, and this app provides users with a tool to prevent, manage, and improve their health outcomes by making healthy eating accessible and personalized. Consumers are more health-conscious than ever before, with an increasing interest in foods that support wellness, vitality, and longevity. The project can cater to these growing preferences by providing an intuitive platform for customizing meals making it a timely and relevant solution for today's health-conscious This project fills a significant gap in the market by offering real-time ingredient modifications with immediate updates on nutritional content, making it more relevant to individuals who need specific dietary adjustments for health reasons.

CHAPTER 2

LITERATURE SURVEY

2.1 TITLE: HEALTH-AWARE FOOD RECOMMENDATION BASED ON

KNOWLEDGE GRAPH AND MULTI-TASK LEARNING

AUTHOR: Yi Chen, Yandi Guo, Qiuxu Fan, Qinghui Zhang, and Yu Dong

YEAR OF PUBLICATION: 2024

ALGORITHM USED: Knowledge Graph Embedding, Multi-Task Learning, and

Graph Convolutional Neural Networks

ABSTRACT: This study proposes a health-aware food recommendation model that incorporates user preferences and personalized health requirements. The system uses a collaborative recipe knowledge graph to connect user interactions with recipes and ingredients. A novel scoring system evaluates the alignment of recipes with user health needs, and multi-task learning optimizes both preference matching and health-based recommendations. Results show enhanced accuracy in generating personalized, health-conscious food suggestions.

MERIT: Accurately integrates health and user preferences in food recommendations.

DEMERIT: Requires complex data collection and processing.

2.2 TITLE: FOOD ORDERING APPS:A SYSTEMATIC REVIEW OF FEATURES, BENEFITS AND CHALLENGES.

AUTHOR: R. Kumar.

YEAR OF PUBLICATION: 2023

ALGORITHM USED: Order tracking, payment gateway integration.

ABSTRACT: This systematic review examines the features, benefits, and challenges of food ordering apps, which have revolutionized the food delivery industry. The study explores essential functionalities such as menu browsing, order tracking, and secure payment options. It highlights the benefits of these apps, including convenience, time savings, and access to diverse cuisines. However, challenges such as maintaining data security, ensuring app reliability, and addressing customer complaints are also discussed. By analyzing user feedback and market trends, this review provides insights into optimizing app performance and enhancing user satisfaction while addressing operational and technological limitations.

MERIT: Allows users to browse menus, and customize orders easily.

DEMERIT: Slow loading time or System crashes.

2.3 TITLE:A COMPARATIVE ANALYSIS OF FOOD ORDERING APPS: FUNCTIONALITIES, SECURITY AND USER EXPERIENCE.

AUTHOR: M.A.Al-Shammari.

YEAR OF PUBLICATION: 2021

ALGORITHM USED: Cloud computing, DBMS, Recommendation Engine

ABSTRACT: It examines critical issues such as user engagement, system scalability, and data security. The study identifies trends in automation, personalization, and integration with delivery logistics. Challenges include maintaining platform reliability and addressing customer concerns over data privacy. Opportunities arise from leveraging artificial intelligence and expanding access to underserved markets. The findings offer insights into improving operational efficiency and enhancing the user experience in food ordering platforms.

MERIT: Speed and responsiveness, Platform compatibility (iOS, Android, web).

DEMERIT: Poor Navigation, Limited Features.

2.4 TITLE: A SURVEY ON FOOD ORDERING SYSTEMS: CHALLENGES AND OPPORTUNITIES.

AUTHOR: S. S.Lyer.

YEAR OF PUBLICATION: 2020

ALGORITHM USED: Embedding Predictive analytics, Dynamic pricing, and Route optimization..

ABSTRACT: This survey explores the challenges and opportunities in modern food ordering systems. It examines critical issues such as user engagement, system scalability, and data security. The study identifies trends in automation, personalization, and integration with delivery logistics. Challenges include maintaining platform reliability and addressing customer concerns over data privacy. Opportunities arise from leveraging artificial intelligence and expanding access to underserved markets. The findings offer insights into improving operational efficiency and enhancing the user experience in food ordering platforms.

MERIT: Strategies to maintain user engagement and loyalty.

DEMERIT: Unauthorized access, Difficulty with order modification

2.5 TITLE: SECURE FOOD ORDERING SYSTEM USING BLOCKCHAIN TECHNOLOGY.

AUTHOR: R. Kumar.

YEAR OF PUBLICATION: 2020

ALGORITHM USED: Blockchain technology, Cryptographic encryption.

ABSTRACT: Blockchain technology to address challenges in data integrity, transparency, and transaction security. The system ensures tamper-proof order records, secure payments, and enhanced trust between customers and restaurants. Key features include decentralized storage, real-time transaction validation, and privacy-preserving mechanisms for user data. The integration of smart contracts automates order processing, reducing delays and errors. This paper evaluates the system's performance, benefits, and potential scalability while addressing challenges such as blockchain cost and complexity. demonstrate blockchain's potential to revolutionize the food ordering ecosystem.

MERIT: Reduced dependency on intermediaries, lowering operational costs.

DEMERIT: Limitations Complexity in implementation, Scalability issues.

CHAPTER 3

SYSTEM SPECIFICATIONS

3.1 HARDWARE SPECIFICATION

- **Processor** (CPU): Intel Core i5 (or equivalent) or higher
- **RAM:** 8 GB or more
- Storage: 256 GB SSD (Solid State Drive) or higher for faster data access
- **Graphics:** Integrated graphics or a dedicated GPU for handling app rendering during development
- **Operating System:** Windows 10 or 11 (64-bit), macOS (Mojave or later), or Linux (Ubuntu 20.04 or later)
- **Display:** 1080p resolution, at least 13-inch screen for comfortable development
- **Network:** High-speed internet (minimum 10 Mbps for effective API testing and uploads)

3.2 SOFTWARE SPECIFICATION

- Operating System: Windows, macOS, or Linux platforms
- Development Tool: Visual Studio Code
- **Recommendation Engine:** TensorFlow / PyTorch (for personalized meal suggestions)
- Payment Gateway: G pay, Paytm, Phone pay

CHAPTER 4

SYSTEM ANALYSIS

4.1 EXISTING SYSTEM

Current food delivery platforms offer limited customization, allowing users to make basic adjustments like removing or adding ingredients (e.g., "no onions" or "extra cheese"), but they lack the ability to control specific aspects like salt, sugar, or spice levels. Meals are typically predefined, and while some dietary filters (e.g., vegan, gluten-free) exist, they don't accommodate more nuanced health needs such as managing diabetes or high blood pressure. Additionally, there is no real-time nutritional feedback to show how ingredient changes impact calories, sodium, or other nutritional values, making it difficult for users to make informed, health-conscious decisions.

4.1.1 DEMERIT

- Limited Customization: Users can only add or remove certain ingredients but cannot control specific details like quantity or intensity.
- **Basic Meal Options:** Existing platforms typically have predefined meal options without the flexibility to adjust them to user needs.
- Generalization: These platforms primarily cater to the mass market, offering
 meals that do not consider specific health conditions like diabetes, high blood
 pressure, or cholesterol, and fail to offer meals suited to these conditions.
- Collaboration: Collaborate with nutritionists to curate these meal plans, ensuring they meet dietary guidelines.

4.2 PROPOSED SYSTEM

The Proposed System is designed to offer a superior and personalized food ordering experience by bridging the gaps found in current food delivery applications. Focusing on health-conscious customization and real-time nutritional insights, this platform aims to cater to users with specific dietary needs and preferences while maintaining a seamless and user-friendly experience. Users receive suggestions that are both delicious and nutritionally balanced, encouraging healthier eating habits. This offers a holistic solution to the current limitations of food delivery apps by prioritizing customization, health, and user experience.

4.2.1 MERIT

- **Health-conscious individuals:** Users who actively monitor their diet and prefer customized meals for better nutrition control.
- Health-Focused Approach: The system's emphasis on nutritional transparency empowers users to make healthier food choices, supporting those who need to manage chronic health conditions like diabetes or high blood pressure.
- **Time-saving:** Users can save time by ordering customized meals directly through the app, rather than having to request modifications over the phone or make manual adjustments at home.
- **User friendly**: Customization options help users order exactly what they want, reducing the likelihood of food waste due to unwanted ingredients.
- Premium Customization for Restaurants: Restaurants can offer premium customizable menu options, attracting health-conscious customers and boosting their revenue.

CHAPTER 5

ARCHITECTURAL DESIGN

5.1 SYSTEM DESIGN

A system design is a conceptual model that defines the structure, behavior, and views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system.

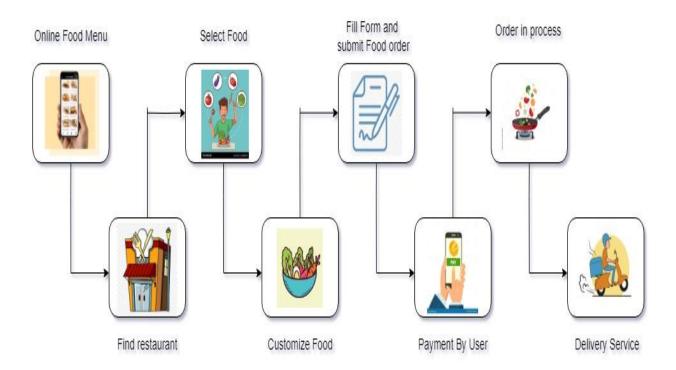
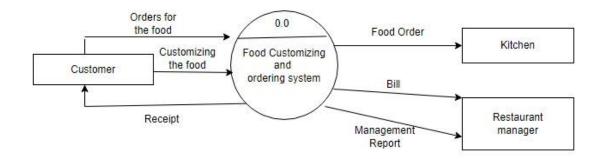


Figure No.5.1: Architecture Diagram

5.2 DATA FLOW DIAGRAM



LEVEL 0 DFD

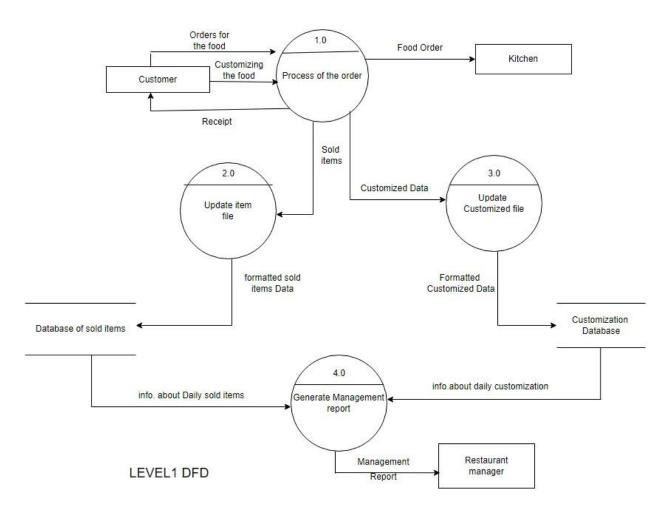


Figure No.5.2: Data Flow Diagram

5.3 SEQUENCE DIAGRAM

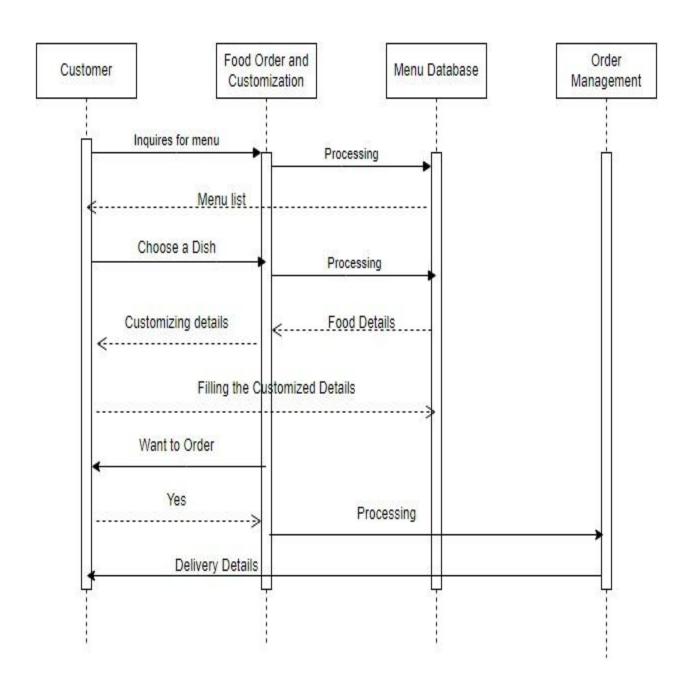


Figure No.5.3: Sequence Diagram

5.4 USE CASE DIAGRAM

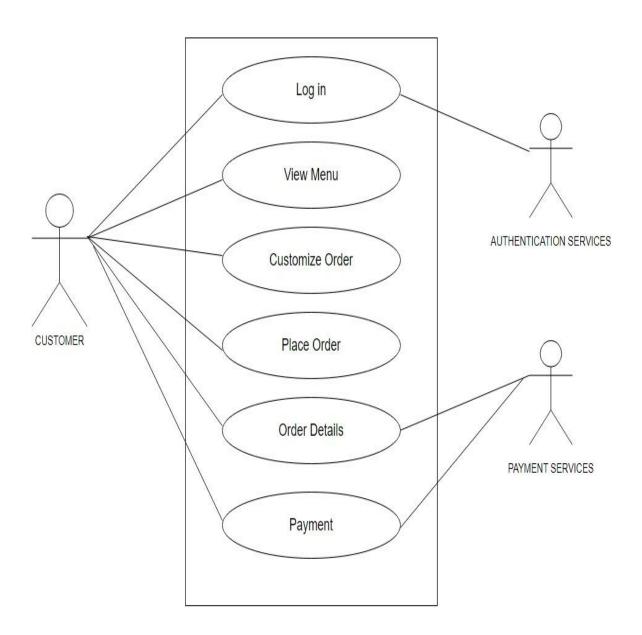


Figure No.5.4: Use Case Diagram

5.5 CLASS DIAGRAM

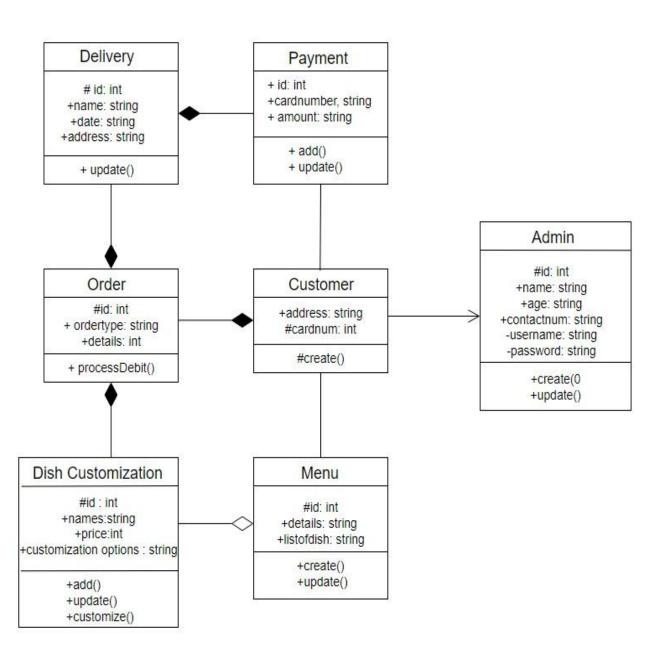


Figure No.5.5: Class Diagram

CHAPTER 6

MODULE DESCRIPTION

6.1 MODULES

- Log In Screen
- Home Page
- Order and Customization Page
- Form Page
- Payment Gateway Page
- Order Confirmation and Delivery Tracker

6.1.1 LOG IN SCREEN

• Purpose:

Facilitates user authentication and personalized access to the app.

- Features:
- 1. **Sign-in/Sign-up:** Allows new users to register and existing users to log in using email, phone number, or social accounts.
- 2. **Health Profile Integration:** Optional input of health goals, dietary restrictions, and allergies during sign-up.
- 3. **Secure Authentication:** Implements two-factor authentication and encrypted password storage.
- 4. **Forgot Password:** Enables password recovery via email or OTP.

6.1.2 HOME SCREEN PAGE

• **Purpose:** Serves as the central dashboard for users explore, search, and customize meals.

• Features:

- 1. **Personalized Meal Suggestions:** Displays recommendations based on user preferences, dietary restrictions, and health goals.
- 2. **Search Bar:** Allows users to search by meal type, ingredients, or health benefits.
- 3. Categories: Sections like "Low Carb," "High Protein," "Vegan," or "Keto-Friendly."
- 4. **Promotions & Offers:** Highlights discounts or special deals on health-focused meals.
- 5. **Quick Access to Favorites:** Provides a shortcut to saved or frequently ordered items.

6.1.3 ORDER AND CUSTOMIZATION PAGE

- **Purpose:** Users can customize meals according to their health needs, preferences.
- Features:
- 1. **Ingredient Selection:** Option to include/exclude specific ingredients.
- 2. **Nutritional Breakdown:** Real-time updates on calories, macronutrients, and allergensbased on customization.
- 3. **Portion Control:** Slider or dropdown for portion sizes with corresponding nutritional data.
- 4. **Custom Instructions:** Text box for users to provide specific cooking instructions.
- 5. **Health Tips:** Suggestions for healthier customization options

6.1.4 FORM PAGE

- **Purpose:** Collects additional details necessary for order fulfillment.
- Features:
- 1. **Delivery Information**: Fields for address, delivery time, and contact details.
- 2. **Health Preferences:** Option to update dietary preferences or restrictions.
- 3. **Feedback & Notes:** Space for users to share specific requirements(e.g., "No spicy food")

6.1.5 PAYMENT GATEWAY PAGE

- **Purpose:** Ensures a secure and seamless payment experience for users.
- Features:
- 1. **Multiple Payment Options:** Credit/debit cards, digital wallets, UPI, and cash-on-delivery.
- 2. **Discounts & Coupons:** Integration for promo codes and wallet cashback.
- 3. Secure Transactions: SSL encryption and PCI DSS compliance.
- 4. Order Summary: Displays meal cost, delivery charges, taxes, and total.
- 5. **Payment Confirmation:** Real-time status update for successful/failed transactions.

6.1.6 ORDER CONFIRMATION AND DELIVERY TRACKER

- **Purpose:** Provides post-purchase updates and order tracking in real-time.
- Features:
- 1. **Confirmation Screen**: Displays order number, summary, and estimated delivery time.
- 2. **Real-Time Tracker:** Map-based tracker showing the delivery agent's location andestimated time of arrival.
- 3. **Order Status Updates:** Notifications for order preparation, dispatch, and delivery.
- 4. **Customer Support:** Quick access to contact the restaurant or delivery agent.
- 5. **Delivery Feedback:** Option to rate the delivery experience and food quality.

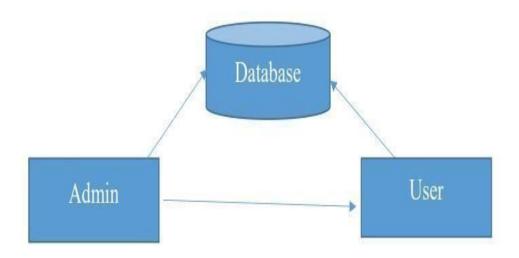


Figure No.6.1.6: Order Database

CHAPTER 7

CONCLUSION AND FUTURE OUTLOOK

7.1 CONCLUSION

The food customization app for health-conscious users effectively bridges the gap between convenience and healthy living by offering personalized meal options, nutritional transparency, and seamless delivery. By catering to diverse dietary preferences and restrictions, it empowers users to make informed decisions that align with their health goals. With its user-friendly design and focus on customization, the app not only promotes a healthier lifestyle but also fosters trust and satisfaction among its users.

They seek tailored approaches to diet that cater to their specific needs, whether it's adhering to a keto, vegan, gluten-free, or paleo lifestyle, or simply trying to eat healthier while managing a busy schedule. This kind of app serves as a bridge between individual preferences and balanced, nutritious eating, making it easier for users to navigate the often overwhelming landscape of dietary choices.

Beyond customization, the app also enhances convenience by allowing users to order their personalized meals for home delivery quickly. This feature ensures that even the busiest health-conscious individuals can enjoy nutritious, customized meals without the hassle of meal prep or shopping. The project provides a user-friendly interface makes it accessible to a wide range of users, from those managing chronic health conditions to those simply looking to maintain a balanced diet.

7.2 FUTURE OUTLOOK

For future enhancements, the app can leverage AI for more advanced personalization and integrate with wearable devices to offer real-time recommendations based on users activity levels. Introducing features like meal planning, augmented reality for virtual meal previews, and gamification can further enrich user engagement. Additionally, expanding community features, supporting sustainability initiatives, and enhancing allergen alerts can broaden its appeal and functionality. By continuously evolving to meet user needs, the app can become a comprehensive platform for health-conscious dining and lifestyle management.

• Integration with Advanced Health Monitoring Devices:

Future apps will likely integrate seamlessly with wearable devices (e.g., smartwatches, and fitness trackers) and health sensors (e.g., continuous glucose monitors) to offer real-time, personalized meal recommendations based on users' physiological data.

• AI-Powered Personalized Nutrition:

Enhanced AI and machine learning algorithms will further refine the personalization aspect, analyzing user preferences, medical history, genetic data, and lifestyle to deliver highly specific dietary advice and tailored meal plans.

• Integration of Genetic and Microbiome Data:

Personalized nutrition will use **genetic** and **microbiome data** to offer precise, tailored dietary recommendations based on individual **genetics** and **gut health**.

• Automated Grocery Delivery Integration:

The app could be integrated with grocery delivery services or online marketplaces, allowing users to order ingredients directly through the app, simplifying the meal preparation process.

• Increased Adoption of AI-Generated Recipes:

The future may see a rise in AI-generated recipes that cater to specific dietary needs, preferences, and health goals, providing innovative and personalized culinary experiences for users.

• Subscription-Based Models for Premium Features:

The industry trend may shift towards subscription-based models, offering premium services like access to professional dietitian consultations, exclusive recipes, and advanced health analytics.

• Expansion into Preventive Health and Wellness:

The focus of these apps could extend beyond just diet and nutrition to encompass overall preventive health, offering insights into exercise, mental well-being, and sleep habits, creating a comprehensive wellness platform.

• Predictive Meal Planning:

Leveraging big data and predictive analytics, the app can anticipate user needs and preferences based on previous behavior, seasonal trends, and health goals, offering proactive meal suggestions.

APPENDIX 1

SAMPLE CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>foodi</title>
  <style>
    body{
      background-image: url(https://wallpapers.com/images/hd/food-4k-
3gsi5u6kjma5zkj0.jpg);
      background-repeat: no-repeat;
      background-size: cover;
    }
    .yr{
      background-color:rgba(0, 0, 0, 0.347);
      display: flex;
```

```
justify-content: center;
  width: 500px;
  height: 1050px;
  margin-top: 50px;
  padding-top: 40px;
  border-radius: 30px;
  margin-left: 500px;
}
.vr{}
  font-size: 20px;
  font-family: sans-serif;
  font-weight: bold;
  color: white;
}
.tr\{
  padding: 10px;
  width: 300px;
  background-color: rgba(0, 0, 0, 0.253);
```

```
color: white;
  font-size: 15px;
}
.trr{
  padding: 10px;
  width: 300px;
  height: 100px;
  background-color: rgba(0, 0, 0, 0.253);
  color: white;
  font-size: 15px;
}
.ur{
  padding: 10px;
  width: 300px;
  background-color: rgba(0, 0, 0, 0.253);
  color: white;
  font-size: 15px;
  text-align: center;
```

```
font-weight: bold;
     }
    .payment-option {
       display: none;
     }
  </style>
</head>
<body>
  <div class="yr">
    <form id="paymentForm" action="/submit" method="post">
       <label class="vr" for="firstName">First Name</label><br>
       <input class="tr" placeholder="Enter your first name...." type="text"</pre>
id="firstName" name="firstName" required><br><br>
       <label class="vr" for="lastName">Last Name</label><br>
       <input class="tr" placeholder="Enter your last name....." type="text"</pre>
id="lastName" name="lastName" required><br><br>
       <label class="vr" for="email">Email:</label><br>
       <input class="tr" placeholder="Enter your mail Id....." type="email"</pre>
id="email" name="email" required><br><br>
```

```
<label class="vr" for="password">Male or female:</label><br>
       <input class="tr" placeholder="Male/Female...." type="password"</pre>
id="password" name="password" required><br><br>
       <label class="vr" for="phoneNumber">Phone Number:</label><br>
       <input class="tr" placeholder="+91 Enter your phone number" type="tel"</pre>
id="phoneNumber" name="phoneNumber" required><br><br>
       <label class="vr" for="address">Address:</label><br>
       <textarea class="trr" placeholder="Enter your Address...." id="address"
name="address" required></textarea><br><br>
       <label class="vr" for="couponCode">Coupon Code:</label><br/>br>
       <input class="tr" placeholder="Enter couponCode....." type="text"</pre>
id="couponCode" name="couponCode"><br><br>
       <label class="vr" for="payment">Payment Method:</label><br/>br>
       <input class="" type="radio" id="online-payment-option"</pre>
name="paymentMethod" value="online-payment-option">
       <label class="vr" for="online-payment-option">Online
payment</label><br><br><br><br/>
       <div class="payment-option">
         <input class="" type="radio" id="paytm" name="paymentMethod"</pre>
value="paytm">
```

```
<label class="vr" for="paytm">Paytm</label><br><br>
        <input class="" type="radio" id="gpay" name="paymentMethod"</pre>
value="gpay">
        <label class="vr" for="gpay">GPay</label><br><br>
        <input class="" type="radio" id="phonepay" name="paymentMethod"</pre>
value="phonepay">
        <label class="vr" for="phonepay">PhonePe</label><br><br></ri>
      </div>
      <input class="" type="radio" id="cash" name="paymentMethod"</pre>
value="cash">
      <input class="" type="radio" id="card" name="paymentMethod"</pre>
value="card">
      <label class="vr" for="card">Credit/Debit Card</label><br><br>
      <input class="ur" type="submit" value="Pay">
    </form>
  </div>
```

```
<script>
    document.querySelector('#online-payment-
option').addEventListener('change', function() {
       var onlinePaymentOptions = document.querySelector('.payment-option');
       if (this.checked) {
         onlinePaymentOptions.style.display = 'block';
       } else {
         onlinePaymentOptions.style.display = 'none';
       }
    });
    document.getElementById("paymentForm").addEventListener("submit",
function(event) {
       event.preventDefault(); // Prevent default form submission
       var paymentMethod =
document.querySelector('input[name="paymentMethod"]:checked').value;
       var paymentUrls = {
         'paytm': 'https://paytm.com',
         'gpay': 'https://pay.google.com',
         'phonepay': 'https://www.phonepe.com',
```

```
'cash': '/cash-payment',
         'card': '/card-payment'
       };
       // Redirect to the respective payment URL
       if (paymentMethod in paymentUrls) {
         window.location.href = paymentUrls[paymentMethod];
         alert('Redirecting to ' + paymentMethod + ' payment method.');
       } else {
         alert('Please select a payment method.');
       }
     });
  </script>
</body>
</html>
```

APPENDIX 2

SCREENSHOT



Figure No.A.2.1: Screenshot 1

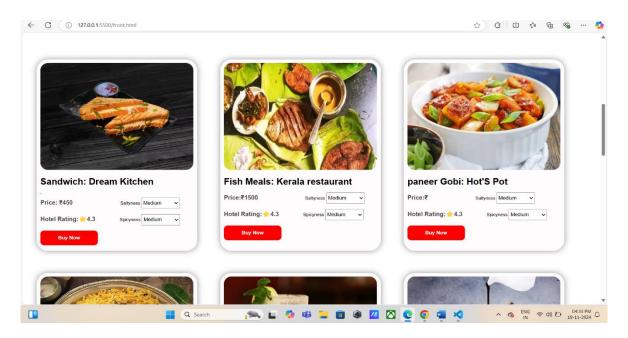


Figure No.A.2.2 : Screenshot 2

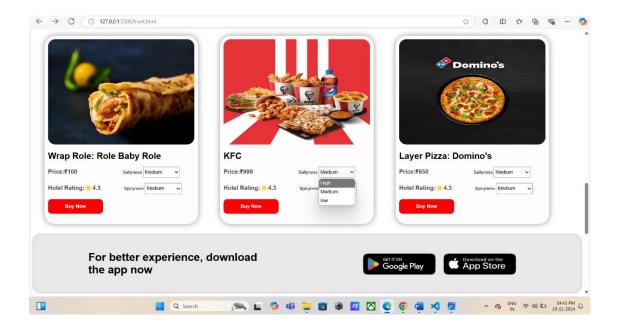


Figure No.A.2.3 : Screenshot 3

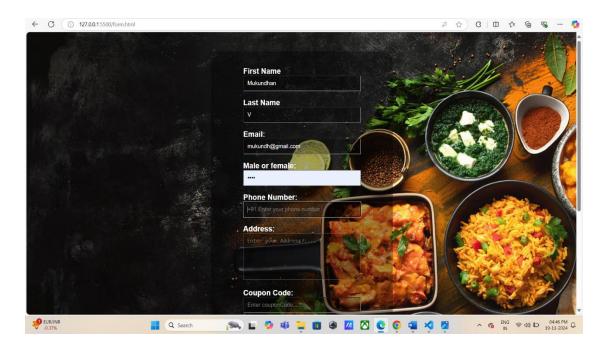


Figure No.A.2.4 : Screenshot 4

REFERENCES

- [1] Brown, L., & Patel, R. (2024). AI in Food Services: Transforming the Customer Experience. International Journal of FT,15(2), 101-112.
- [2] Patel, A., & Zhang, L. (2023). Leveraging AI for Food Customization and Health Monitoring in Digital Diet Apps. IEEE Access, 11, 44520-44535.
- [3] Smith, J., & Brown, R. (2022). Personalized Nutrition: Trends and Challenges in Food Customization Apps. Journal of Nutritional Science, 15(2), 98-112.
- [4] Green, A. (2022). Eco-Friendly Innovations in Food Delivery Services. Sustainability Journal, 14(5), 67-82.
- [5] Davis, K., & Wong, T. (2021). Ensuring Food Safety: The Role of Allergen Warnings in Customized Meals. Journal of Nutritional Studies, 9(3), 142-156.
- [6] Johnson, M. et al. (2021). Wearable Technology and Its Applications in Health Monitoring and Dietary Management. Smart Health Review, 8(4), 215-229
- [7] Lee, S., & Kim, H. (2021). Mobile Health Applications for Personalized Nutrition and Lifestyle Recommendations. Journal of Medical Internet Research, 23(5), e25432.
- [8] Garcia, M., & Li, W. (2020). User-Centric Design in Food Customization Apps for Health and Wellness. Human-Computer Interaction Journal, 34(4), 567-583.
- [9] Kaur, P., & Malik, D. (2020). Gamification in Health Apps: Increasing User Motivation through Challenges and Rewards. Health Informatics Today, 6(1), 33-40.