TABLE OF CONTENT

SB FOODS - FOOD ORDERING APP

INTRODUCTION:

SB Foods, the cutting-edge digital platform poised to revolutionize the way you order food online. With SB Foods, your food ordering experience will reach unparalleled levels of convenience and efficiency. Our user-friendly web app empowers foodies to effortlessly explore, discover, and order dishes tailored to their unique tastes. Whether you're a seasoned food enthusiast or an occasional diner, finding the perfect meals has never been more straightforward. Imagine having comprehensive details about each dish at your fingertips. From dish descriptions and customer reviews to pricing and available promotions, you'll have all the information you need to make well-informed choices. No more second-guessing or uncertainty – SB Foods ensures that every aspect of your online food ordering journey is crystal clear. The ordering process is a breeze. Just provide your name, delivery address, and preferred payment method, along with your desired dishes. Once you place your order, you'll receive an instant confirmation. No more waiting in long queues or dealing with complicated ordering processes – SB Foods streamlines it, making it quick and hassle-free.

PROBLEM STATEMENT:

Meet Lisa, a college student burning the midnight oil to finish her assignment. As the clock strikes midnight, her stomach grumbles, reminding her that she skipped dinner. Lisa doesn't want to interrupt her workflow by cooking, nor does she have the energy to venture outside in search of food.

PROPOSED SOLUTION:

1. Lisa opens the Food Ordering App on her smartphone and navigates to the late night delivery section, where she finds a variety of eateries still open for orders.

2. She scrolls through the options, browsing menus and checking reviews until she spots her favorite local diner offering comfort food classics.

3. Lisa selects a hearty bowl of chicken noodle soup and a side of garlic bread, craving warmth and satisfaction in each bite.

4. With a few taps, she adds the items to her cart, specifies her delivery address, and chooses her preferred payment method.

5. Lisa double-checks her order details on the confirmation page, ensuring everything looks correct, before tapping the "Place Order" button.

6. Within minutes, she receives a notification confirming her order and estimated delivery time, allowing her to continue working with peace of mind.

7. As promised, the delivery arrives promptly at her doorstep, and Lisa eagerly digs into her piping hot meal, grateful for the convenience and comfort provided by the Food Ordering App during her late-night study session.

OBJECTIVE OF THE PROJECT:

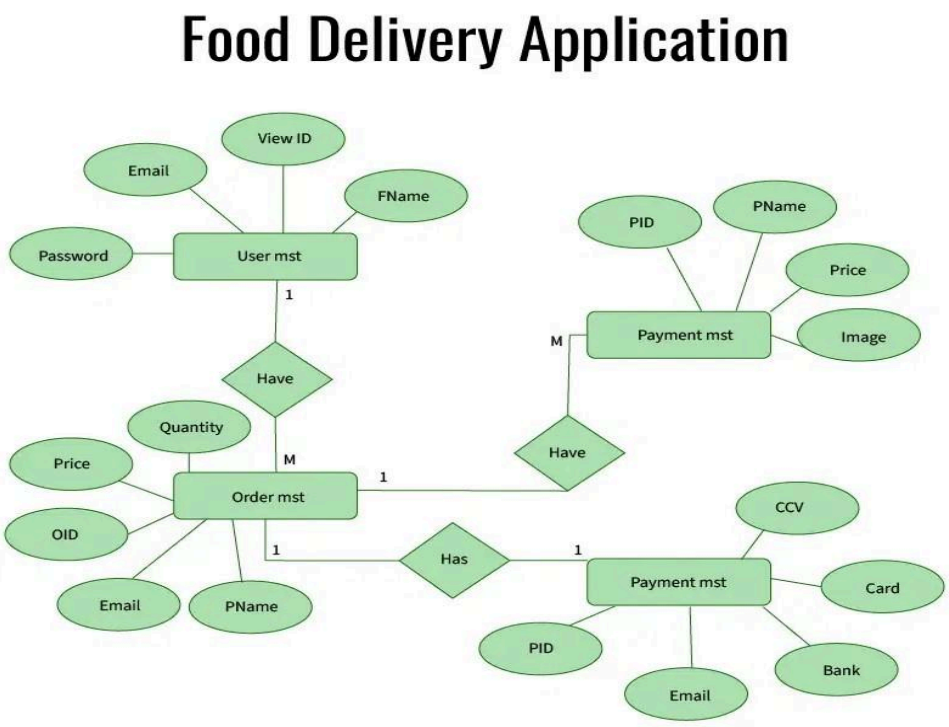
1. **Enhance Customer Satisfaction:** Focus on improving the overall dining experience for customers by providing a diverse selection of restaurants, ensuring timely deliveries, and offering features such as order tracking and customer feedback.
2. **Optimize Restaurant Operations**: Assist restaurants in managing orders more efficiently by providing tools for order management, delivery logistics optimization, and performance analytics.
3. **Promote Accessibility:** Make food delivery more accessible to a wider audience by offering a variety of cuisines and catering to different dietary preferences and requirements.
4. **Foster Growth and Innovation:** Encourage innovation within the food delivery industry by introducing new features, technologies, and strategies that improve convenience, quality, and sustainability.

SCOPE OF THE PROJECT:

1. **Restaurant and Menu Management:** Enable restaurants to manage their menus, update dish availability, and set prices.
2. **Order Placement and Management:** Facilitate users to browse menus, place orders, and make payments securely. Provide order management features for restaurants to accept, process, and fulfill orders.
3. **Delivery Tracking:** Implement real-time order tracking for users to monitor the status of their deliveries, including estimated arrival times and delivery driver information.
4. **Feedback and Rating System:** Incorporate a system for users to provide feedback and ratings on their dining experience, allowing restaurants to improve their services.

METHODOLOGIES:

ER MODEL:



Entities:

1. **User:** Represents individuals who use the food delivery application. Attributes may include UserID (Primary Key), Name, Email, Password, Phone Number, and Address.
2. **Restaurant:** Represents the restaurants available on the platform. Attributes may include RestaurantID (Primary Key), Name, Cuisine Type, Address, Contact Number, and Rating.
3. **Menu Item:** Represents the individual food items offered by restaurants. Attributes may include MenuItemID (Primary Key), Name, Description, Price, and RestaurantID (Foreign Key).
4. **Order:** Represents the orders placed by users. Attributes may include OrderID (Primary Key), UserID (Foreign Key), OrderDate, DeliveryAddress, TotalAmount, and OrderStatus.
5. **Delivery Driver:** Represents the individuals responsible for delivering orders. Attributes may include DriverID (Primary Key), Name, Contact Number, and Availability.

Relationships:

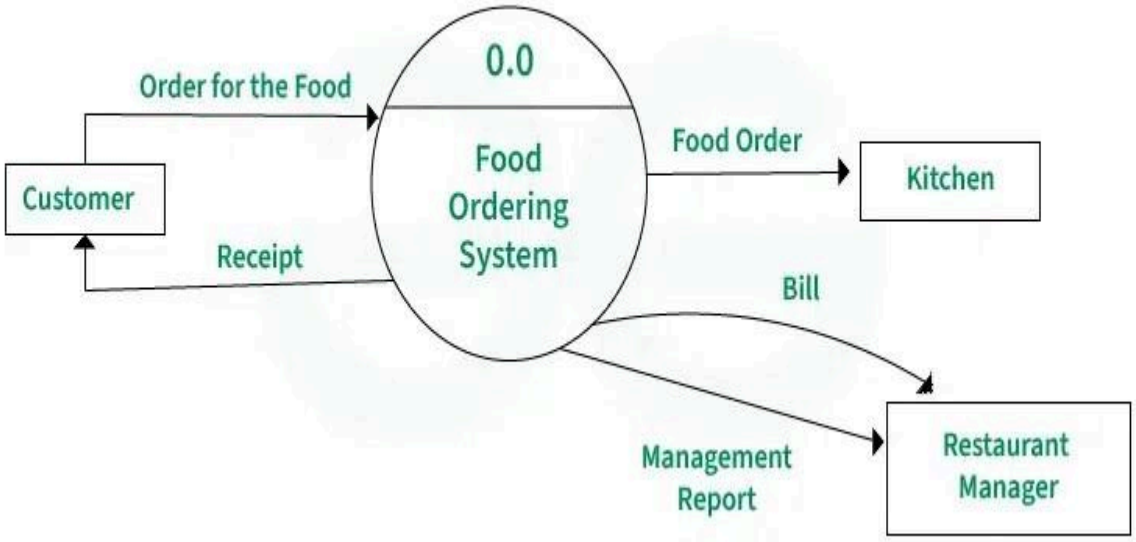
1. **User-Order Relationship:** One-to-Many relationship between User and Order. One user can place multiple orders, but each order belongs to one user.
2. **Restaurant-Menu Item Relationship:** One-to-Many relationship between Restaurant and Menu Item. One restaurant can offer multiple menu items, but each menu item belongs to one restaurant.
3. **User-Review Relationship:** One-to-Many relationship between User and Review. One user can provide multiple reviews, but each review is provided by one user.
4. **Order-Menu Item Relationship:** Many-to-Many relationship between Order and Menu Item. An order can contain multiple menu items, and a menu item can be part of multiple orders. This relationship is represented by an associative entity or junction table.

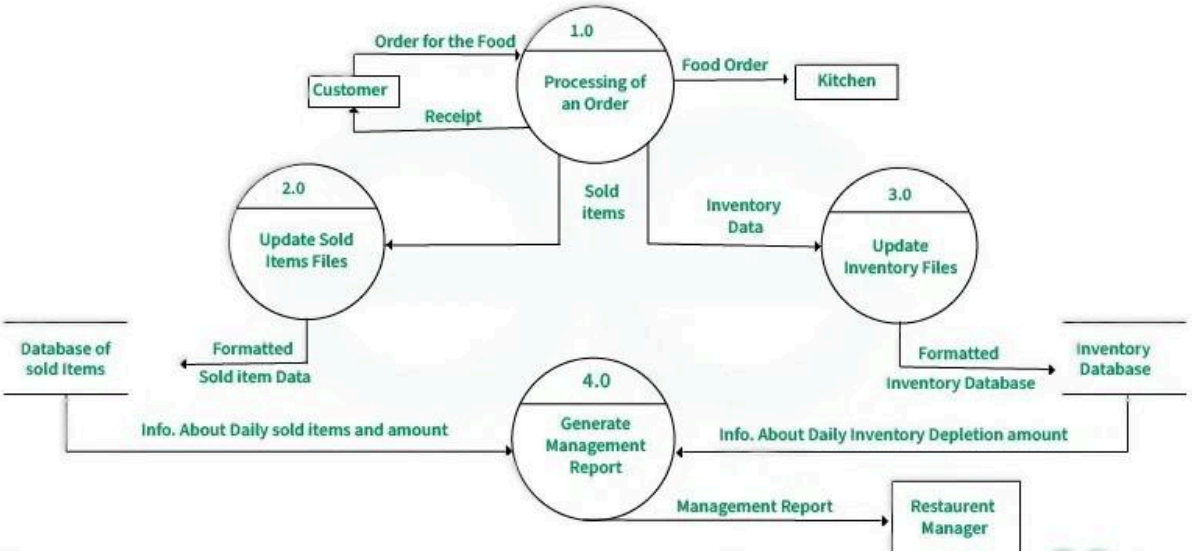
5. **Order-Delivery Driver Relationship:** Many-to-One relationship between Order and Delivery Driver. Multiple orders can be assigned to the same delivery driver, but each order is assigned to one delivery driver.

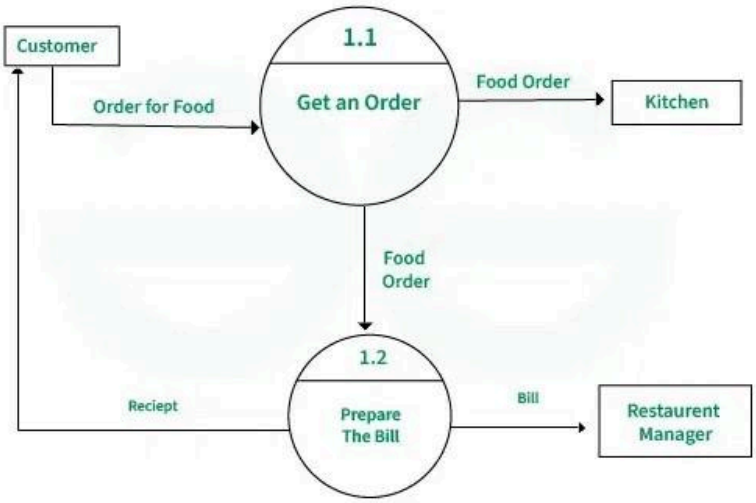
DATA FLOW DIAGRAM:

Data Flow Diagram (DFD) serves as a visual representation of the flow of information within the system. The DFD provides a concise yet comprehensive overview of the project's data flow and interactions, aiding in the analysis, design, and communication of the system's functional aspects.

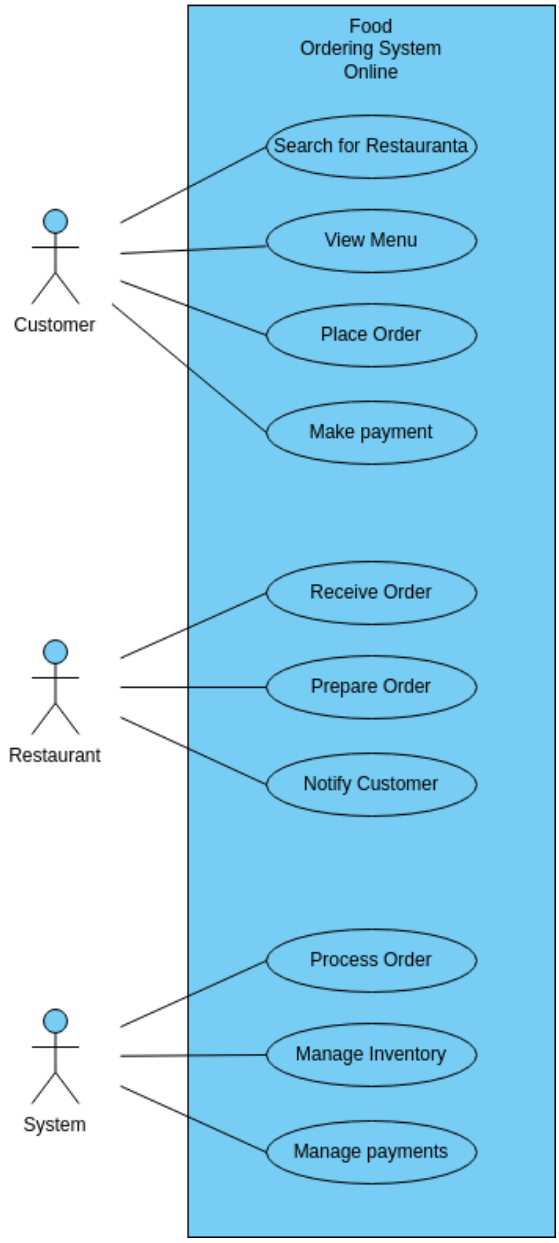
- Processes:
    - Order Management
    - User Management
    - Restaurant Management
    - Delivery Management
    - Review Management
- External Entities:
    - User
    - Restaurant
    - Delivery Driver
- Data Stores:
    - User Data
    - Restaurant Data
    - Order Data
    - Review Data
- Data Flows:
    - Order Request
    - Order Details
    - Delivery Assignment
    - Review Submission


0.0
Food
Ordering
System
Order for the Food
Customer
Receipt
Food Order
Kitchen
Bill
Management
Report
Restaurant
Manager


1.0
Processing of an Order
Order for the Food
Customer
Receipt
Food Order
Kitchen
2.0
Update Sold Items Files
Sold items
Inventory Data
3.0
Update Inventory Files
Database of sold Items
Formatted Sold item Data
Formatted Inventory Database
Inventory Database
4.0
Generate Management Report
Info. About Daily sold items and amount
Info. About Daily Inventory Depletion amount
Management Report
Restaurent Manager


Customer
1.1
Get an Order
Order for Food
Food Order
Kitchen
Food Order
1.2
Prepare The Bill
Reciept
Bill
Restaurent Manager

USE CASE DIAGRAM:



Here are the features of the Food Delivery Application:

1. User Registration and Authentication:
    - Allow users to register accounts securely.
    - Implement authentication mechanisms to ensure data security.
2. Browse Restaurants and Menus:
    - Provide users with a comprehensive list of restaurants.
    - Allow users to browse restaurant menus and view dish details.

3. Order Placement and Customization:
    - Enable users to place orders easily with a few clicks.
    - Allow customization of orders, such as adding special instructions or modifying ingredients.
4. Real-Time Order Tracking:
    - Implement a feature for users to track their orders in real-time.
    - Provide updates on order status, estimated delivery time, and delivery driver information.
5. Secure Payment Options:
    - Integrate secure payment gateways for seamless transactions.
    - Support various payment methods such as credit/debit cards, digital wallets, and cash on delivery.
6. Delivery Management:
    - Assign delivery drivers to orders efficiently.
    - Optimize delivery routes to ensure timely and efficient deliveries.
7. Rating and Feedback System:
    - Allow users to rate restaurants and delivery drivers.
    - Provide a feedback mechanism for users to share their dining experience and suggest improvements.
8. Order History and Favorites:
    - Maintain a record of users' order history for easy reordering.
    - Allow users to save favorite restaurants and dishes for quick access.
9. Push Notifications:
    - Send notifications to users regarding order status updates, promotions, and new restaurants.

10. Customer Support:

- Offer customer support channels such as chat support or helpline for assistance with orders or technical issues.

11. Restaurant Management Portal:

- Provide a portal for restaurants to manage their menus, view orders, and track performance metrics.

12. Delivery Driver App:

- Develop a separate app for delivery drivers to receive delivery assignments, navigate to delivery locations, and update order statuses.

IMPLEMENTATION:

Approach to create Restaurant App using MERN:

1. Import Statements:

- Import necessary dependencies and components.
- React is imported for defining React components.
- RestaurantList, RestaurantCard, DishesMenu, DishCard and Cart are custom components, assumed to be present in the ./components directory.
- RestaurantContext is imported, presumably a custom context provider.

2. Functional Component:

- Define a functional component named App.

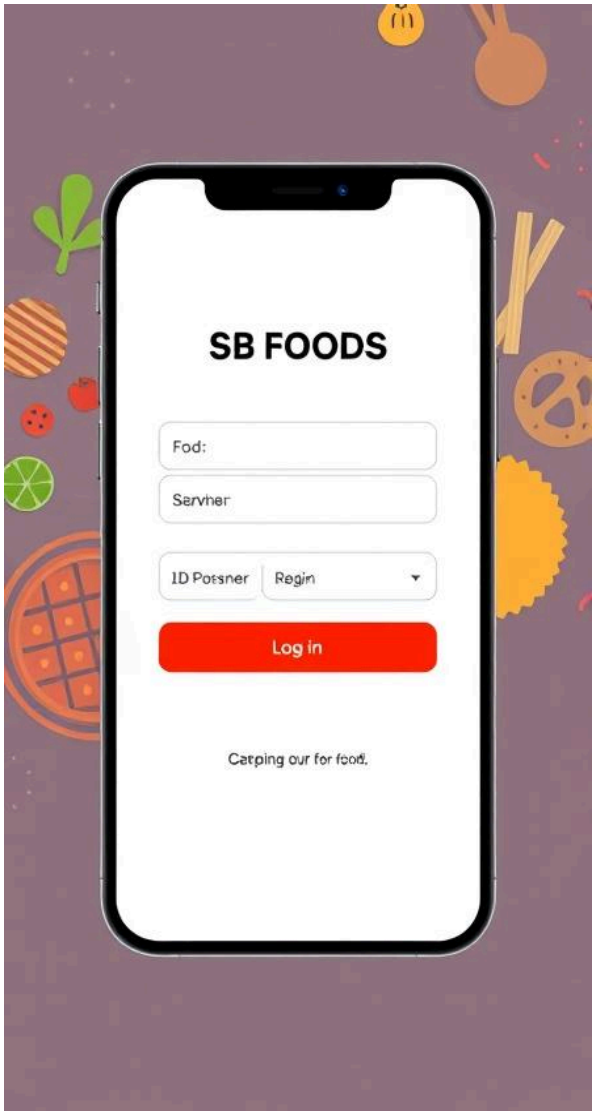
3. Context Provider:

- Wrap the App component inside the RestaurantContext provider. This suggests that the components within this provider have access to the context provided by RestaurantContext.

4. Component Rendering:

- Render the following components:
- RestaurantContext: Presumably, this is a context provider that wraps its child components (App). The purpose of this context is not clear from the provided code snippet.
- All other components such as RestaurantList and Dishes Menu are wrapped inside the App component so it also has the access of RestaurantContext.
- RestaurantList wraps RestaurantCard.

OUTPUT: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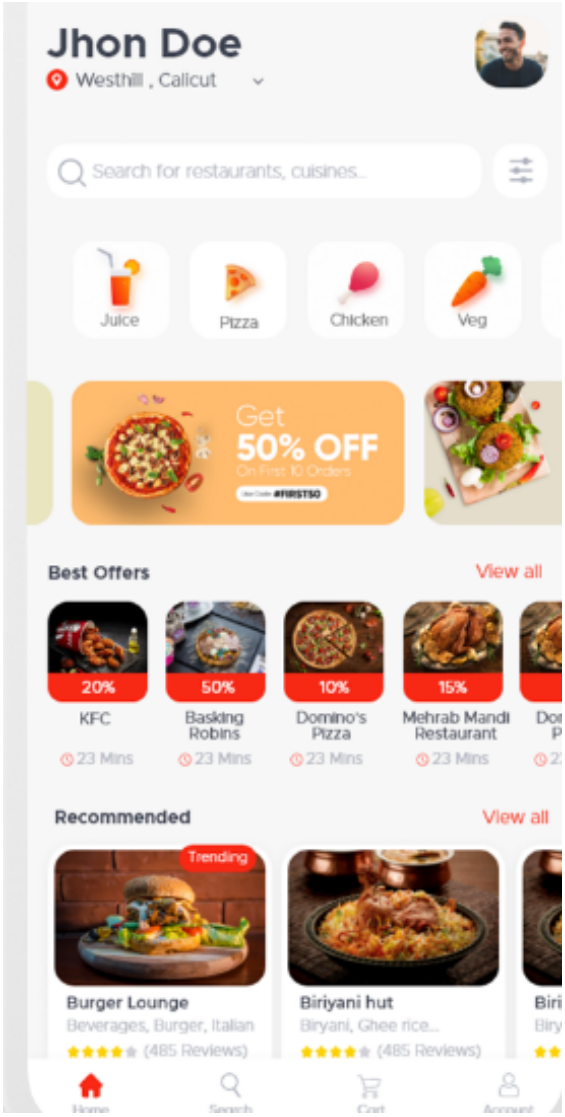
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Westhill , Calicut
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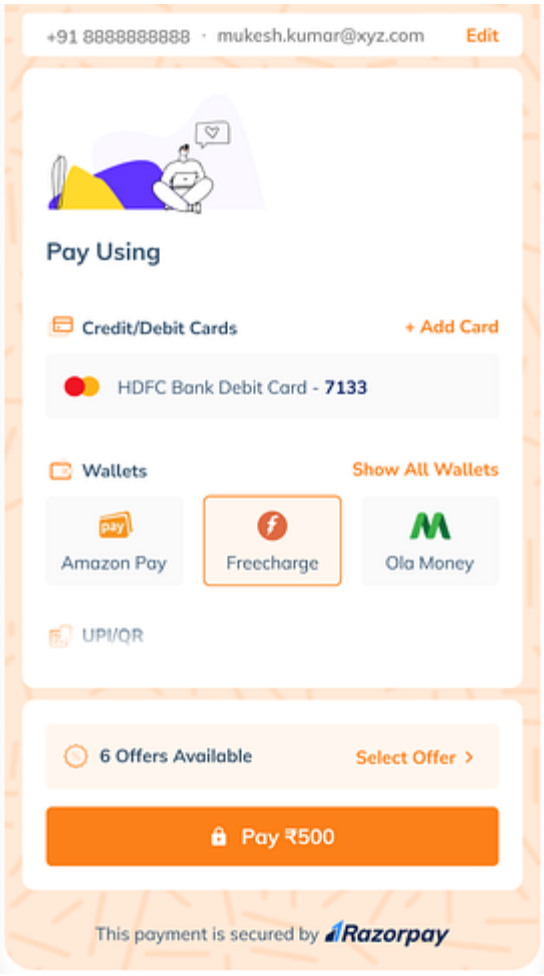
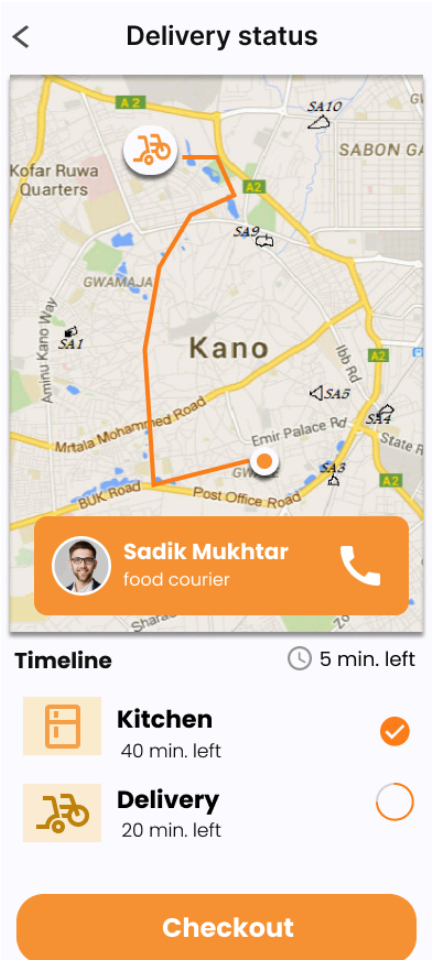
Pizza
Chicken
Veg
Get
50% OFF
Best Offers
View all
20%
50%
10%
15%
KFC
Basking Robins
Domino's Pizza
Mehrab Mandi Restaurant
23 Mins
Recommended
View all
Trending
Burger Lounge
Beverages, Burger, Italian
(485 Reviews)
Biriyani hut
Biryani, Ghee rice...
(485 Reviews)





FEATURES OF THE PROJECT:

FOR USERS:

1. User Registration & Login

- Secure user authentication using email/phone.
- Social media login (Google, Facebook, etc.).
- Profile management (profile picture, address, payment methods, etc.).

2. Restaurant Listings

- Browse restaurants by cuisine, ratings, distance, etc.
- Filter restaurants based on preferences (vegan, vegetarian, gluten-free, etc.).
- Restaurant details with images, menu, contact info, and operating hours.

3. Search & Filters

- Search bar for specific dishes or restaurants.
- Filters for cuisine, price range, delivery time, and special offers.

4. Menu with Details

- Menu display with categories (Starters, Main Course, Desserts, etc.).
- Details for each dish (ingredients, price, calorie info, etc.).
- Dish images to visualize options.

5. Order Customization

- Option to customize dishes (choose toppings, ingredients, portion size, etc.).
- Special instructions for the restaurant (allergies, spice level, etc.).

6. Cart & Checkout

- Add, remove, and modify items in the cart.
- Price summary with taxes, delivery charges, and discounts.
- Secure payment gateway (credit card, debit card, net banking, wallets, etc.).

7. Order Tracking

- Real-time tracking of order status (order confirmed, preparing, out for delivery, etc.).
- Map integration to see delivery progress.
- Estimated delivery time updates.

8. Payment Options

- Multiple payment methods (Cash on Delivery, Credit/Debit Cards, UPI, Wallets).
- Integration with popular payment gateways.
- Option for tips for delivery personnel.

9. Offers & Discounts

- Promo codes and discount vouchers.
- Offers section displaying available discounts.
- Loyalty programs and rewards for regular users.

10. Order History & Reordering

- View past orders with details.
- Option to reorder previous items with a single click.
- Save favorite dishes or restaurants.

11. Reviews & Ratings

- Rate restaurants and individual dishes.
- Leave written reviews for feedback.
- View other users' reviews to make decisions**.**

12. Notifications & Alerts

- Push notifications for offers, discounts, order updates, etc.
- Email/SMS alerts for order confirmation and delivery.
- Reminder notifications for favorite restaurants.

13. User Feedback & Support

- Customer support via chat, email, or call.
- Feedback forms for suggestions or complaints.
- Frequently Asked Questions (FAQ) section.

14. Social Media Integration

- Share dishes or restaurant reviews on social media.
- Referral system to invite friends and earn rewards.

15. Location-Based Services

- Use GPS to detect user location and show nearby restaurants.
- Option to manually enter delivery address.
- Delivery radius and restaurant availability based on location.

16. Favorites & Wishlist

- Mark favorite restaurants or dishes for quick access.
- Wishlist feature to save
- items for future orders.

17. In-App Chat or Contact Restaurant

- In-app chat for quick inquiries with restaurants.
- Option to call the restaurant directly from the app.

18. Advanced UI/UX

- Intuitive design for easy navigation.
- Dark/Light mode options.
- Simple and engaging onboarding process for new users.

19. Multi-Language Support

- Choose language preferences for app navigation.
- Localized content based on user location.**20. Delivery Person Integration**
- Profile of the delivery person with name and contact.
- Delivery person rating after order completion.
- Contact delivery person for real-time communication.

21. Safety & Hygiene

- Safety protocols and hygiene ratings for restaurants.
- Contactless delivery options.
- Delivery tracking updates with a "safety badge" for restaurants.

FOR ADMIN:

1. Admin Dashboard

- Overview of the total number of orders, earnings, active users, and restaurants.
- Daily, weekly, and monthly statistics for user engagement and sales.
- Quick links to manage key sections like users, orders, restaurants, and reviews.

2. User Management

- View and manage all registered users.
- Edit, deactivate, or delete user accounts.
- Access user order history and feedback.

3. Restaurant Management

- Add, edit, or remove restaurants from the platform.
- Approve or disapprove restaurant registrations.
- Manage restaurant profiles (name, location, menu, contact info, etc.).
- Set or modify restaurant status (open, closed, busy).

4. Menu Management

- Add or edit restaurant menus, including categories and dishes.
- Manage dish details like name, ingredients, images, price, availability, and specials.
- Apply bulk updates to menu items for discounts or promotions.

5. Order Management

- View and track all user orders with detailed information.
- Manage order status (confirmed, in preparation, out for delivery, delivered).
- Assign delivery personnel to orders.
- Cancel or modify orders if necessary.

6. Payments & Financial Management

- Overview of total earnings, pending payments, and payment history.
- Manage payment disputes, refunds, and chargebacks.
- Track restaurant payouts and commissions.
- Generate financial reports for analysis.

7. Promotions & Offers Management

- Create and manage promo codes, discounts, and special offers.
- Set conditions for offers (minimum order value, first-time users, etc.).
- Track the performance of promotions and adjust them as needed.

8. Review & Feedback Management

- View and moderate user reviews for restaurants and dishes.
- Remove inappropriate reviews or flag them for further inspection.
- Respond to user or restaurant complaints.
- Use feedback to identify areas for improvement.

9. Content Management System (CMS)

- Manage homepage banners, promotional content, and featured restaurants.
- Update FAQ, Terms & Conditions, and Privacy Policy.
- Manage push notifications and email templates.

10. Analytics & Reporting

- Access to real-time analytics for app performance.
- Generate detailed reports on sales, top-performing restaurants, popular dishes, etc.
- User and restaurant engagement analytics.
- Insights into user behavior, order trends, and peak times.

11. Delivery Management

- Manage delivery personnel profiles and schedules.
- Assign orders to delivery personnel.
- Monitor delivery status and performance.
- Set delivery charges, time estimates, and delivery zones.

12. Restaurant Registration & Approval

- View and verify new restaurant sign-up requests.
- Check restaurant documents and verify details for approval.
- Notify restaurants about approval or required changes.

13. User & Restaurant Notifications

- Send notifications to users for offers, order updates, and feedback.
- Notify restaurants about orders, feedback, and platform updates.
- Schedule notifications for specific dates or times.

14. Security & Access Control

- Set user roles (Admin, Moderator, Restaurant Manager, etc.) with specific permissions.
- Monitor suspicious activities or login attempts.
- Implement security protocols for sensitive data

.

15. Multi-Language Support Management

- Manage translations for multiple languages.
- Update and review content in different languages.
- Adjust language settings based on user demographics.

16. Commission & Revenue Settings

- Set commission rates for different restaurants.
- Create rules for commission splits and revenue sharing.
- Adjust commission rates based on restaurant performance.

17. Dispute Resolution Center

- Handle complaints from users and restaurants.
- Settle payment disputes between restaurants and users.
- Provide a system to handle complaints about orders, deliveries, or restaurants.

18. Location & Delivery Zone Management

- Set up delivery zones and define delivery charges based on location.
- Adjust zones based on delivery performance and user density.
- Manage location-based restaurant visibility.

19. Performance Monitoring

- Monitor restaurant and delivery personnel performance.
- Analyze data on delivery times, user satisfaction, and restaurant service quality.
- Generate performance reports for internal evaluation**.**

20. Data Backup & Recovery

- Schedule automatic data backups.
- Access previous versions of data for recovery.
- Manage backup storage and recovery settings.

21. Customer Support Tools

- Integrated ticketing system for user and restaurant queries.
- Predefined responses for common issues.

IMPACT OF THE PROJECT:

1. Improved Access to Food:

The app will enhance customer convenience by providing a large selection of restaurants, thus increasing access to a variety of cuisines from the comfort of home.

2. Enhanced Business for Local Restaurants:

Restaurants can expand their customer base and generate additional revenue streams by joining the platform, without needing to build their own delivery infrastructure.

3. Job Opportunities for Delivery Personnel:

The platform will create employment opportunities for delivery agents, giving them flexible work schedules and earning potential.

4. Digital Transformation in the Food Industry:

The app will contribute to the digitalization of the food service industry, helping restaurants to embrace technology for more efficient order and delivery management.

5. Sustainability Focus:

With the potential integration of eco-friendly delivery practices (such as electric vehicles and reusable packaging), the platform can work towards reducing the carbon footprint of food deliveries.

LIMITATIONS OF THE PROJECT:

1. **Scalability Management**: Although MongoDB is highly scalable, handling rapid growth may require significant infrastructure changes to manage high traffic, such as 12,000 requests per second (as seen with companies like Delivery Hero) .

2. **Data Consistency**: MongoDB is a NoSQL database, and its eventual consistency model may lead to issues if real-time consistency is essential, such as ensuring that menu availability and customer orders are synchronized instantly.

3. **Complex Queries**: For complex transactions and relationships, MongoDB might not perform as efficiently as traditional SQL databases, which are better suited for handling highly relational data.

4. **Development Overhead**: NoSQL databases like MongoDB may require developers to implement more logic at the application level, such as ensuring transactional consistency, which could increase development time .

FUTURE SCOPE OF THE PROJECT:

1. **Scalability:** MongoDB’s horizontal scaling capabilities make it well-suited for handling the increasing demands of food delivery systems as user bases grow.

2. **Real-Time Data Processing:** MongoDB's ability to store large amounts of real-time data, like customer orders, restaurant menus, and delivery tracking, is essential for fast-paced applications like food delivery.

3. **Evolving Technology:** As the technology landscape evolves, more companies are likely to adopt NoSQL databases like MongoDB due to its flexibility and ease in managing unstructured data, including customer reviews and recommendations.

4. **Growing Online Food Market:** With the rise of online food ordering, leveraging MongoDB ensures businesses can efficiently handle the increasing number of orders, updates to menus, and dynamic customer preferences.