**Project Title:** Advanced Food Delivery App

**Developed By:** Abhishek Singh  
**Technology Stack:** MERN (MongoDB, Express.js, React, Node.js)  
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**1. Introduction**

The Advanced Food Delivery App is a full-fledged food delivery web application developed using the MERN stack. The app allows users to browse top dishes near you, order food and make secure payments. This project provides a seamless user experience for food lovers and enhances the operations of restaurants by providing order management features.

**2. Objective**

The objective of this project was to build an intuitive, scalable, and responsive food delivery platform that includes:

* Location-based restaurant discovery.
* Secure payment processing.
* Efficient order management for users and restaurants.

**3. Key Features**

**3.1 Location API Integration**

* **Functionality:** The app integrates with a Location API that allows users to find restaurants based on their current location, similar to platforms like Zomato. This feature helps users discover nearby restaurants and enhances the user experience with accurate delivery tracking.

**3.2 Payment Gateway Integration**

* **Payment Gateway:** Stripe was used for seamless payment integration. It supports multiple payment options for users, ensuring secure and fast transactions.
* **Features:** It handles order payments, processes refunds, and manages the transaction history.

**3.3 Order History and Management**

* **Functionality:** Users can view their order history, track current orders, and review past transactions. An admin panel is also provided for restaurant owners to manage incoming orders, track payments, and view analytics.

**3.4 User Authentication**

* **Authentication:** Secure login and signup features using JWT (JSON Web Tokens) for session management. Unauthenticated users are redirected to the login/signup page when attempting to access certain features like order placement and tracking.

**3.5 Responsive Design**

* **Front-end:** Built with React and styled using Bootstrap to ensure a fully responsive design. The app provides a seamless user experience across devices, from desktops to mobile screens.

**4. Technology Stack**

* **MongoDB:** Used for storing user details, restaurant information, order details, and payment history.
* **Express.js:** As the back-end framework, it handles API requests, routes, and business logic for the application.
* **React:** Used to build the front-end interface, ensuring a dynamic and responsive user experience.
* **Node.js:** A back-end server that powers the application, handling requests, managing databases, and integrating third-party APIs.

**5. Architecture**

The app follows a modular architecture, ensuring scalability and maintainability. It includes:

* **Front-End (React):** Handles user interface and communicates with the back-end using REST APIs.
* **Back-End (Express & Node.js):** Manages authentication, order processing, and API calls.
* **Database (MongoDB):** Stores all user, order, restaurant, and payment-related data.
* **Third-Party Integrations:** Stripe API for payment processing and Google Maps API for location services.

**6. Challenges Faced**

* **Payment Gateway Integration:** Ensuring secure transactions and handling various edge cases such as failed payments and refunds.
* **Scalability:** Structuring the database for future scalability, especially in terms of handling large amounts of real-time orders.

**7. Future Scope**

* **Mobile App Development:** An additional mobile app for iOS and Android platforms could be developed using React Native to provide a wider user base.
* **More Payment Methods:** Integration with other payment gateways such as PayPal and Apple Pay.
* **Recommendation System:** A machine learning-based recommendation engine to suggest popular dishes based on user preferences and past orders.

**8. Conclusion**

The Advanced Food Delivery App is a feature-rich, responsive, and user-friendly platform that simplifies the process of ordering food online. The integration of, location-based dishes discovery, and secure payments makes it a competitive solution for both users and restaurant owners.

**Project Demo:** Food Delivery App  
**GitHub Repository:** [Insert link to GitHub repo]

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