Food Delivery Application Project Report

Project Team members:

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1. Title and Abstract
Title: Food Delivery Application

Abstract:

This project is a web-based food delivery application designed to streamline online food ordering. The app enables users to browse items, add them to a cart, and place orders, while an admin panel manages food items and orders. Built with React for the frontend, Express for the backend, and MongoDB for the database, this application offers an integrated approach to online food ordering with user authentication, cart management, and order processing.

2. Introduction   Objective:

The objective of this project is to create an efficient, user-friendly food delivery application. It focuses on intuitive navigation, responsive design, and easy order processing to enhance user experience and simplify food delivery management for admins.

3. Literature Review
Existing Solutions:

Several food delivery applications currently exist, including platforms like Uber Eats, DoorDash, and Grubhub. These applications excel in user interface design, wide menu availability, and efficient delivery networks. This project emulates some of these best practices while aiming to streamline backend functionality for a smoother, resourcefriendly setup.

4. System Requirements

Hardware Requirements:

– Processor: Intel i3 or above
– RAM: 4GB minimum
– Storage: 500 MB for app data

Software Requirements:

– Frontend: React
– Backend: Node.js, Express
– Database: MongoDB
– Additional Tools: NPM, Postman (for API testing), GitHub (for version control)

5. Methodology

Modules:

1. User Module : Handles user registration, login, and authentication.
2. Admin Module : Manages food items and orders.
3. Cart Management : Allows users to add, update, or remove items.
4. Order Processing : Processes orders placed by users.

Tools and Technologies Used:

– Frontend : React with Context API, React Router
– Backend : Express with REST APIs, JWT for authentication
– Database : MongoDB for storing users, food items, and orders
– Payment Integration : Stripe for payment processing (in test mode)

6. System Design

Architecture:

The application uses a client-server architecture, with the frontend handling the user interface and the backend managing API endpoints, user authentication, and database interactions. MongoDB is used as the primary data source.

Database Schema:

– Users : `_id`, `username`, `email`, `password`
– Food Items : `_id`, `name`, `description`, `price`, `category`, `image` - Orders : `_id`,

   `userId`, `items`, `totalPrice`, `status`

Flowchart:

   Illustrate the overall flow: User Login → Browse Items → Add to Cart → Place Order → Admin manages orders.

7. Implementation

Frontend Implementation:

   The React frontend includes components for navigation, displaying food items, cart management, and order submission. React Router manages routes, while Axios is used for API calls to the backend.

Backend Implementation:

   Node.js and Express are used to create REST APIs for user authentication, food item retrieval, and order management. Mongoose connects to MongoDB and performs data validation.

Admin Panel Implementation:

   Admin users can manage menu items and orders using a separate panel, providing CRUD operations on the food items and viewing orders.

8. Key Functionalities

User Features:

– Registration & Login : Users can register or log in with their credentials.

- Menu Browsing : Users view available food items and search by category.
- Cart Management : Add, remove, or update items in the cart.
- Order Placement : Place orders and view order status.

Admin Features:

- Food Item Management : Add, update, or delete menu items.
- Order Management : View and update the status of orders.

9. Testing

Testing Types:

- Unit Testing : Individual components and API endpoints.
- Integration Testing : Testing interactions between frontend, backend, and database.
- User Acceptance Testing (UAT) : Ensures the final product meets user expectations.

Testing Tools :

Jest for frontend tests, Postman for API testing, and manual testing for UI validation.

10. Results

Performance Metrics :

The application performs efficiently under moderate load, with an average response time of less than 200ms for most API requests.

User Feedback :

Initial test users found the application easy to navigate, with a smooth and intuitive order process.

11. Challenges and Solutions
- Challenge : Implementing secure payment processing.

– Solution : Used Stripe for secure, test-mode payment integration.
– Challenge : Ensuring database reliability and scalability.
– Solution : Used MongoDB with data validation through Mongoose.

12. Future Enhancements

–   Implement real-time order tracking.
–   Add a recommendation engine based on user preferences.
–   Introduce delivery partner functionality.

13. Conclusion
This project successfully demonstrates a streamlined approach to online food ordering with user and admin functionalities. It is built using modern web technologies, including React, Node.js, and MongoDB, ensuring scalability and a good user experience.

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14. Project Setup for GitHub

Project Setup Instructions

Frontend

1. Navigate to the frontend directory :

   cd frontend

2. Install dependencies :
   npm install

3. Start the frontend server :
   npm start

Backend

1. Navigate to the backend directory :

    cd backend

2. Install dependencies :
    npm install

3. Start the backend server :
    npm run dev

Admin Panel

1. Navigate to the admin directory :
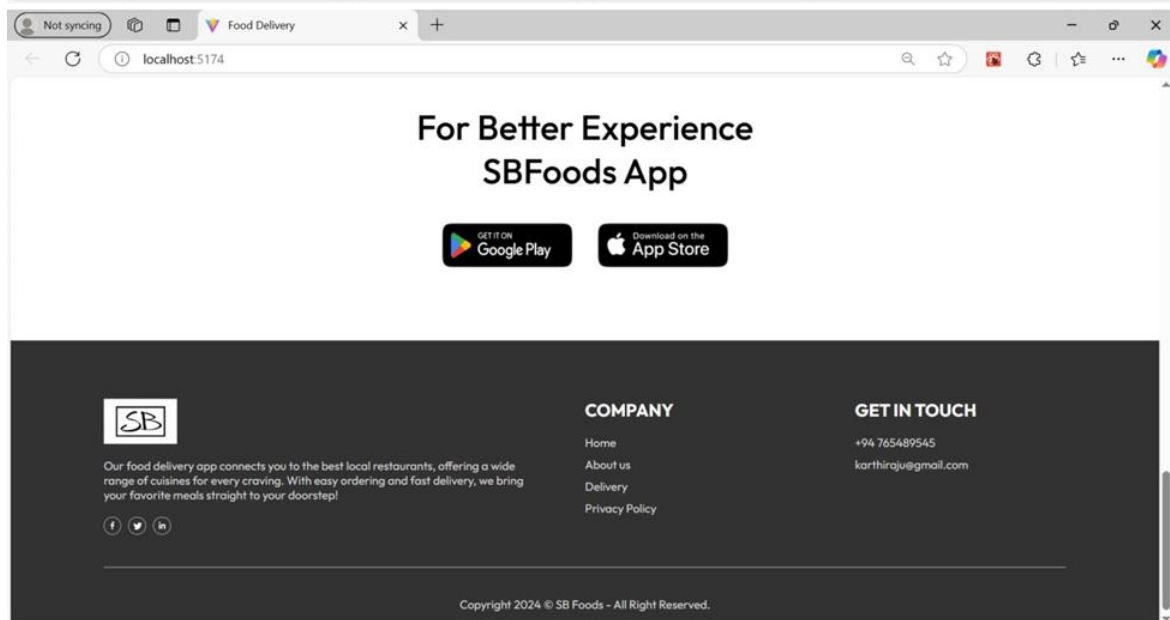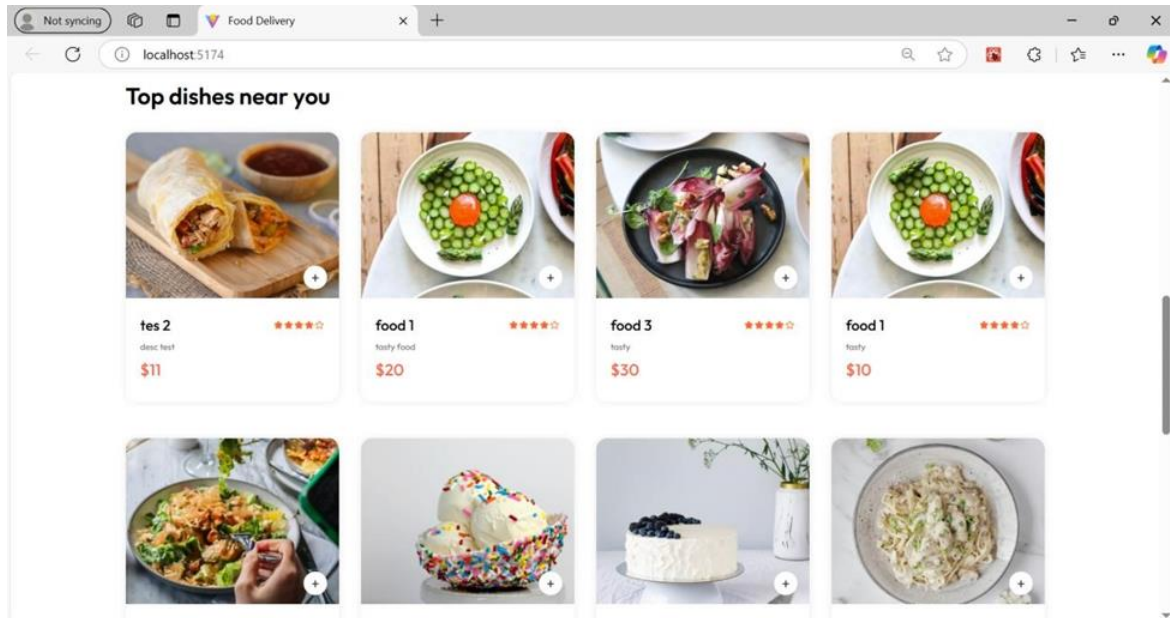
    cd admin

2. Install dependencies :
    npm install

3. Start the admin panel :
    npm start

PROJECT OUTPUT:
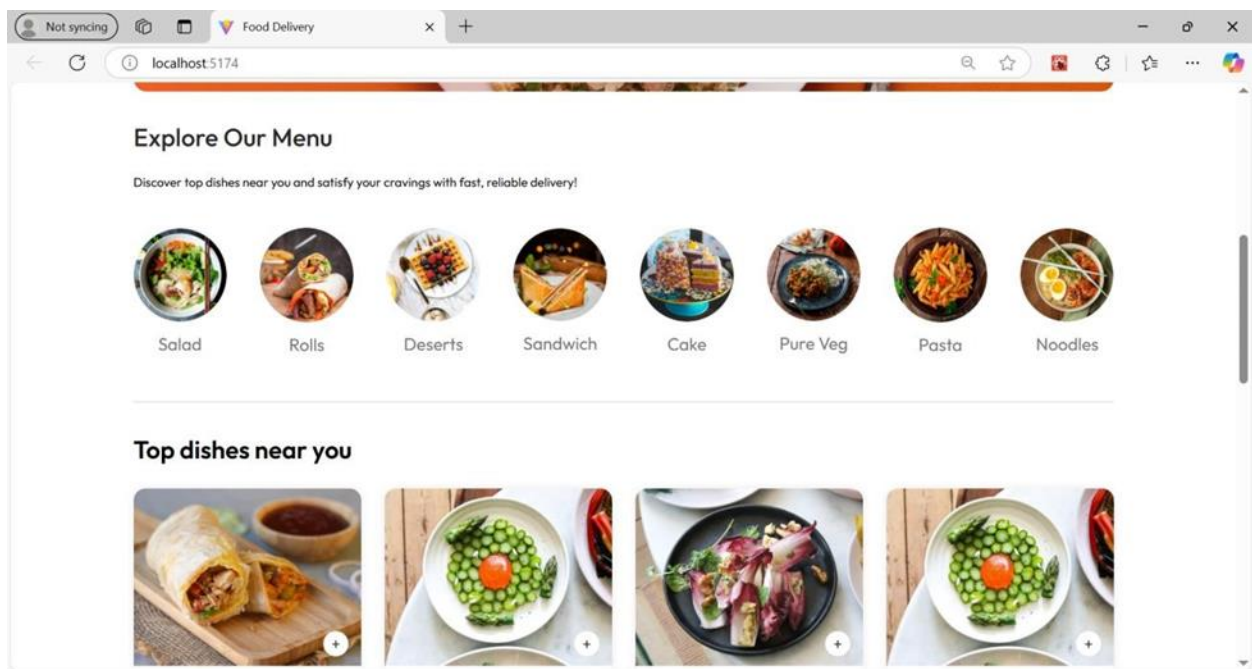
Top dishes near you

tes 2 ★★★★☆	**food 1** ★★★★☆	**food 3** ★★★★☆	**food 1** ★★★★☆
desc test	tasty food	tasty	tasty
$11	$20	$30	$10

For Better Experience
SBFoods App

GET IT ON **Google Play**   Download on the **App Store**

SB

home   menu   mobile-app   contact us

Itmes	Title	Price	Quantity	Total	Remove
	tes 2	$11	1	$11	x
	ice cream	$40	1	$40	x
	pasta	$15	1	$15	x

Cart Total

Subtotal	$66
Delivery Fee	$2
Total	**$68**

PROCEED TO CHECKOUT

If you have a promo code, enter it here

| Promo Code | Submit |

SB

home   menu   mobile-app   contact us

Delivery Information

First Name	Last Name
Email address	
Street	
City	State
Zip code	Country
Phone	

Cart Total

Subtotal	$66
Delivery Fee	$2
Total	**$68**

PROCEED TO PAYMENT

← ▢   **TEST MODE**

Pay

LKR 19,960.00

tes 2	LKR 3,300.00
ice cream	LKR 12,000.00
pasta	LKR 4,500.00
Delivery Charges	LKR 160.00

Pay with card

Email

Card information

1234 1234 1234 1234   VISA

MM / YY   CVC

Cardholder name

Full name on card

Country or region

India   ⌄

☐ **Securely save my information for 1-click checkout**
Pay faster on this site and everywhere Link is accepted.

Pay

▢   **TEST MODE**

Pay

LKR 19,960.00

tes 2	LKR 3,300.00
ice cream	LKR 12,000.00
pasta	LKR 4,500.00
Delivery Charges	LKR 160.00

Pay with card

Email

karthiraju@gmail.com

Card information

4242 4242 4242 4242   VISA

09 / 25   678

Cardholder name

kart

Country or region

India

☐ **Securely save my information for 1-click checkout**
Pay faster on this site and everywhere Link is accepted.

Add Items

List Items

Orders

All Foods List

Image	Name	Category	Price	Action
	tes 2	veg	$11	x
	food 1	Deserts	$20	x
	food 3	Pure Veg	$30	x
	food 1	Deserts	$10	x
	salad	Salad	$30	x
	ice cream	Deserts	$40	x
	blueberry cake	Coke	$30	x
	pasta	Pasta	$15	x

Add Items

List Items

Orders

Order Page

tes 2 x 1 , food 1 x 1 , food 3 x 1   Itmes: 3 $63

karthi R
xxx,
xxxx ,xxx ,India ,6000000
1234567890

Delivered ⌄

tes 2 x 2 , food 1 x 2 , food 3 x 2 , food 1 x 1   Itmes: 4 $134

karthi R
xxx,
xxxx ,xxx ,India ,6000000
1234567890

Delivered ⌄

food 1 x 2 , food 1 x 1   Itmes: 2 $52

prithik eashwar
x,
x ,x ,India ,6000000

SB

Order your
favourite food here

Craving something delicious? Get your favorite dishes delivered hot and fresh, right to your door!

View Menu