Full Stack Development with MERN

Project Documentation

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1. Introduction

Project Title: OrderOnTheGo

Team Members:

- **Dasari Bhavya Sree(22BFA33079)** : (Team Leader) Backend Development, Schemas & Controllers
- **Modhukuru Kavya (22BFA33121)**: Backend Development, Rotes & API Integration
- **Gownipalli Harshitha(22BFA33088):**Frontend Development, UI Design & Implementation
- **Puthuru Samatha(22BFA05328) :**Frontend Development, Authentication, Cart & Order Logic

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2. Project Overview

Purpose

OrderOnTheGo is a food ordering platform built with the **MERN stack**. The goal is to connect users with local restaurants through an easy-to-use, secure platform that allows browsing, ordering, and managing orders. Restaurant owners can manage their menu, and admins can promote restaurants and oversee the platform's operation.

Features

- User authentication (sign up, login, JWT token)
- Browse restaurants, products, and categories
- Cart management (add/remove items)
- Order placement and tracking
- Restaurant management (add, update, delete products)
- Admin dashboard for restaurant promotions

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3. Architecture

Frontend

The frontend is built using **React.js**. It includes:

- **React Router** for dynamic page routing.
- **Redux** (optional) for state management.
- Custom components for user interface design, including reusable components like the header, footer, cart, and product cards.

Backend

The backend uses **Node.js** and **Express.js** to handle:

- API routes for user authentication, cart management, and order processing.
- Role-based access control (user, restaurant, admin).
- JWT token authentication for secure communication.

Database

The database uses **MongoDB** for storing:

- **Users** (authentication data)
- **Restaurants** (details, products, orders)
- **Orders** (order status, payment tracking)

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4. Setup Instructions

Prerequisites

- **Node.js**: Version 14.x or higher
- **MongoDB**: Installed locally or using MongoDB Atlas
- **npm**: Node package manager

Installation

1. **Clone the repository**:
   git clone https://github.com/your-repo/OrderOnTheGo.git
2. **Install Dependencies**:
   - For **Frontend** (React):
   - cd client
   - npm install
   - For **Backend** (Node.js, Express):
   - cd server
   - npm install
3. **Set up environment variables**:
   - Create .env files in both client and server directories:
     - **Frontend**: Set the API base URL (REACT_APP_API_URL)
     - **Backend**: Set MongoDB URI (MONGO_URI), JWT secret (JWT_SECRET)
4. **Start the Application**:
   - For **Frontend**:
   - cd client

  - npm start
  - For **Backend**:
  - cd server
  - npm start

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5. Folder Structure

Client

- client/: React.js frontend folder.
  - src/
    - components/: Reusable UI components (e.g., Header, Footer)
    - pages/: React components for different routes (e.g., Home, Cart, Orders)
    - redux/: Optional state management files (if Redux is used)

Server

- server/: Node.js backend folder.
  - controllers/: Logic to handle API requests.
  - models/: MongoDB schema models.
  - routes/: API routes (e.g., user, restaurant, order).
  - middleware/: Custom middleware (e.g., authentication, error handling).
  - config/: Environment variables and database connection.

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6. Running the Application

To start the application locally, follow these commands:

- **Frontend**:
- cd client
- npm start
- **Backend**:
- cd server
- npm start

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7. API Documentation

User Endpoints

- **POST /api /register**: Register a new user

- **POST /api /login**: Log in and receive JWT token
- **GET /api /profile**: Get user details (Protected route)

Restaurant Endpoints

- **POST /api/restaurants/login**: Restaurant login
- **GET /api/restaurants/:id/products**: Get products for a specific restaurant
- **POST /api/restaurants/:id/products**: Add a product

Order Endpoints

- **POST /api/orders**: Create a new order
- **GET /api/orders/:id**: Get order details

Admin Endpoints

- **POST /api/admin/promote/:id**: Promote restaurant to homepage

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8. Authentication

Authentication in *OrderOnTheGo* is handled using **bcrypt** for secure password hashing and **React Context API** for client-side authentication state management.

- **Password Handling**:
  - User passwords are hashed using bcrypt before being stored in the database.
  - During login, the hashed password is compared with the entered password securely.
- **Session Management**:
  - Once a user logs in, their information (like user ID, role, etc.) is stored in React's **Auth Context**.
  - This context is used across the app to control access to protected routes and display appropriate UI components (e.g., user vs. restaurant header).
- **Role-Based Access**:
  - React Context tracks user roles (user, restaurant, admin) to ensure each role sees the correct dashboard and has access to relevant features.

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9. User Interface

Screenshots showcasing key UI elements:

- **Homepage**: Displays restaurant categories and popular restaurants.
- **Cart Page**: Lists added items with the option to update and checkout.
- **Restaurant Dashboard**: Allows restaurant owners to manage their products.

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10. Testing

Testing Strategy

- **Unit Tests**: Tests for backend API routes, models, and controllers.
- **Integration Tests**: Full-stack testing (frontend to backend communication).
- **Manual Testing**: Functional testing of user flows such as login, cart updates, and order placement.

Tools Used

- **Jest** for unit testing
- **Supertest** for API testing

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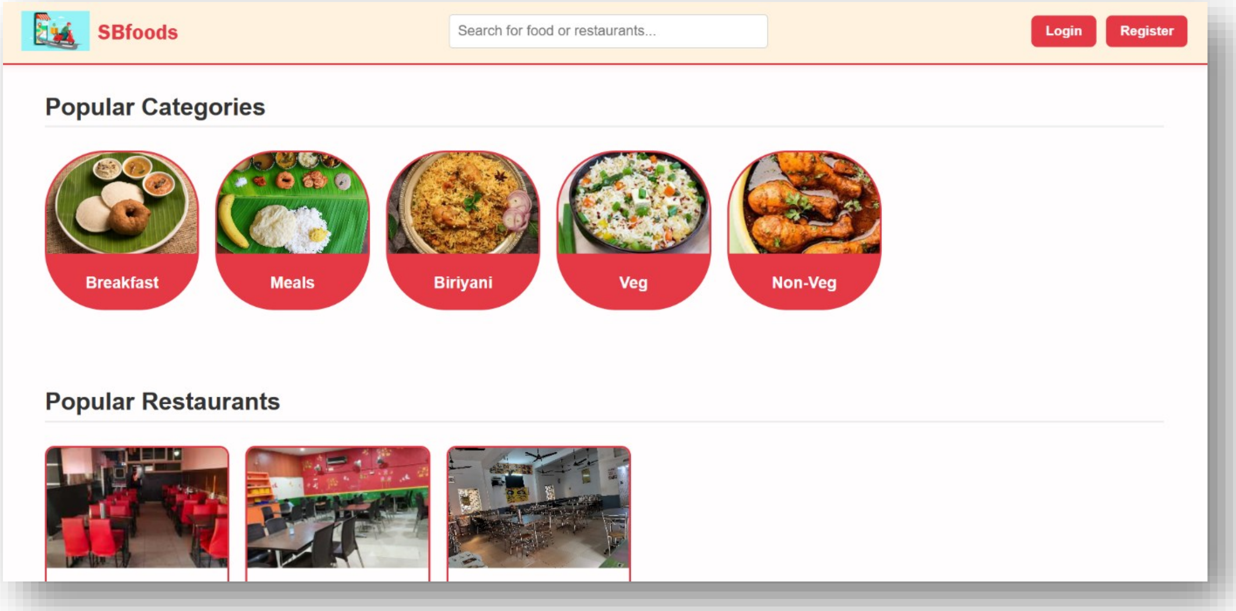
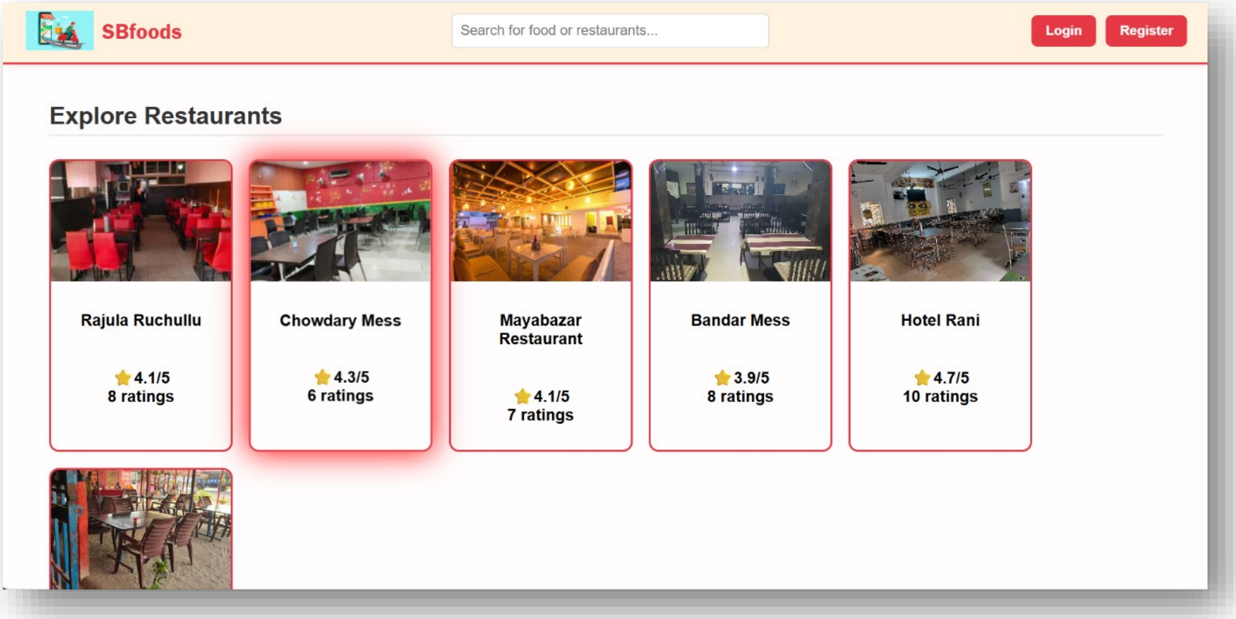
11. Screenshots

- **Screenshots**:

Homepage:



Restaurants:



Explore Restaurants

Rajula Ruchullu
⭐4.1/5
8 ratings

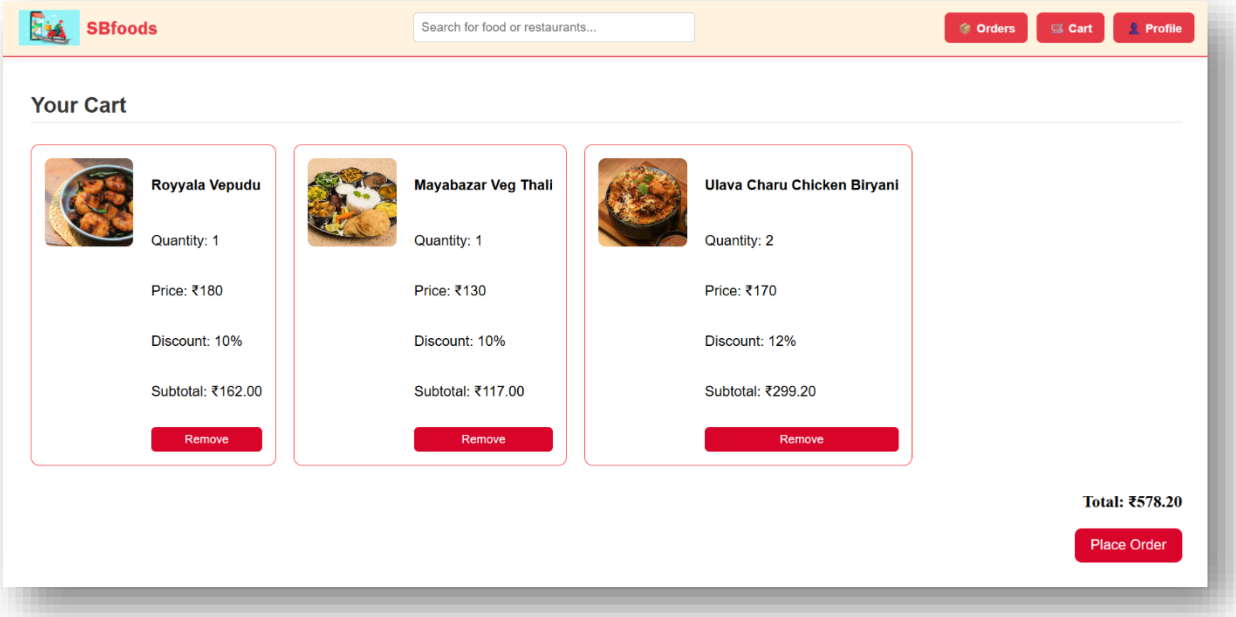
Chowdary Mess
⭐4.3/5
6 ratings

Mayabazar Restaurant
⭐4.1/5
7 ratings

Bandar Mess
⭐3.9/5
8 ratings

Hotel Rani
⭐4.7/5
10 ratings

Cart:



Your Cart

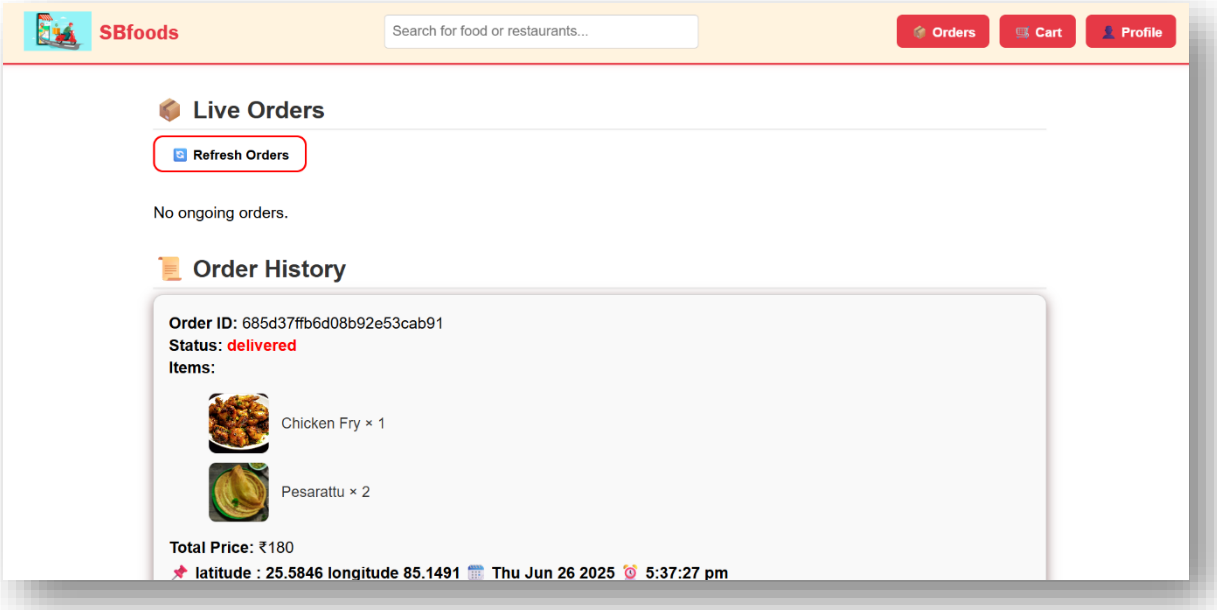
Royyala Vepudu
Quantity: 1
Price: ₹180
Discount: 10%
Subtotal: ₹162.00

Mayabazar Veg Thali
Quantity: 1
Price: ₹130
Discount: 10%
Subtotal: ₹117.00

Ulava Charu Chicken Biryani
Quantity: 2
Price: ₹170
Discount: 12%
Subtotal: ₹299.20

Total: ₹578.20

Orders:



📦 Live Orders

🔄 Refresh Orders

No ongoing orders.

📜 Order History

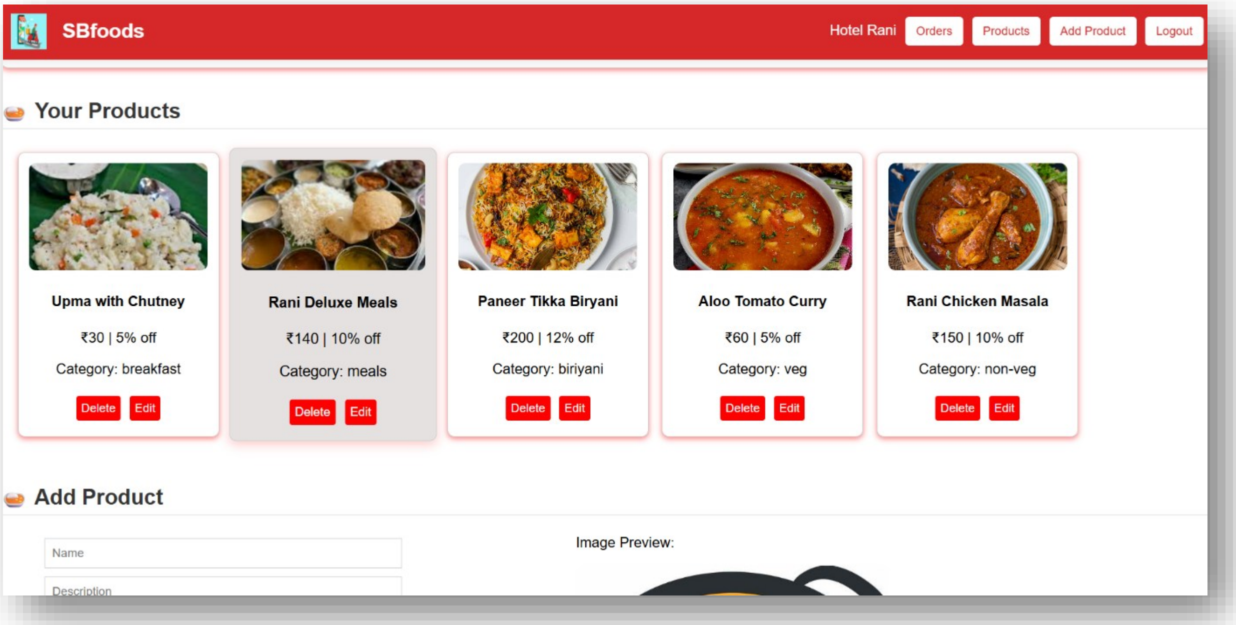
Order ID: 685d37ffb6d08b92e53cab91
Status: delivered
Items:

Chicken Fry × 1

Pesarattu × 2

Total Price: ₹180
📌 **latitude : 25.5846 longitude 85.1491** 📅 **Thu Jun 26 2025** ⏰ **5:37:27 pm**

Restaurant Dashboard:



Your Products

Upma with Chutney
₹30 | 5% off
Category: breakfast
Delete Edit

Rani Deluxe Meals
₹140 | 10% off
Category: meals
Delete Edit

Paneer Tikka Biryani
₹200 | 12% off
Category: biriyani
Delete Edit

Aloo Tomato Curry
₹60 | 5% off
Category: veg
Delete Edit

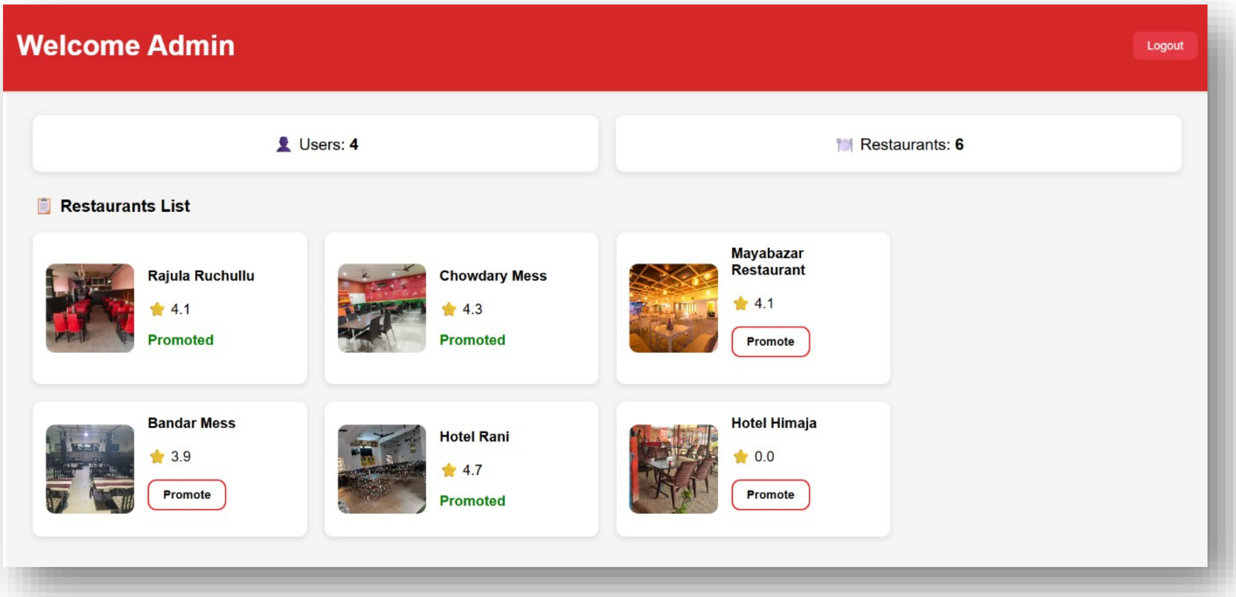
Rani Chicken Masala
₹150 | 10% off
Category: non-veg
Delete Edit

Add Product

Name
Description

Image Preview:

Admin Dashboard:



👤 Users: **4**

🍽 Restaurants: **6**

📋 **Restaurants List**

Rajula Ruchullu
⭐ 4.1
Promoted

Chowdary Mess
⭐ 4.3
Promoted

Mayabazar Restaurant
⭐ 4.1
Promote

Bandar Mess
⭐ 3.9
Promote

Hotel Rani
⭐ 4.7
Promoted

Hotel Himaja
⭐ 0.0
Promote

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12. Known Issues

- **Payment Integration**: Not implemented yet, placeholder functionality.
- **Mobile App**: Currently no mobile app version, only web-based.

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13. Future Enhancements

- **Payment Gateway**: Integrate with a real payment provider (e.g., Stripe, Razorpay).
- **Mobile App**: Develop a mobile version using **React Native**.
- **Notifications**: Implement order status notifications for users and restaurants.
- **Analytics Dashboard**: Add real-time analytics for restaurants and admins.