AI-Powered Smart Restaurant Web App

# Project Overview

The AI-Powered Smart Restaurant Web App is a cross-platform application developed using React for the frontend and Node.js with the OpenAI API for backend AI integration. It allows users to explore a restaurant menu, receive personalized food recommendations, and manage their cart, all supported by intelligent chatbot interactions.

# Objectives

- Build a food ordering interface with AI-powered chat recommendations.

- Use OpenAI GPT to provide smart, context-aware responses.

- Allow customers to filter, search, and order dishes easily.

# System Architecture

The system is divided into three key layers:

- Frontend (React.js): Handles UI and user interactions.

- Backend (Node.js + Express): Handles API requests and OpenAI communication.

- AI Layer (OpenAI API): Processes user input and generates smart responses.

# Tech Stack

Frontend: React.js, Tailwind CSS  
Backend: Node.js, Express, dotenv  
AI: OpenAI GPT-3.5 API  
Optional: Firebase/MongoDB (for storing data)  
Hosting: Netlify (frontend), Render (backend)

# Key Features

- Menu display with filters (sugar-free, vegetarian, category-wise).

- Smart chatbot using OpenAI API for personalized food suggestions.

- Add to cart functionality.

- Real-time feedback in chat UI.

# Security & Reliability

- Secure OpenAI key management using .env.

- Input validation and error handling.

- CORS enabled for frontend-backend communication.

# Future Enhancements

- Add authentication and admin dashboards.

- Include payment gateway integration.

- Enable order history and real-time order status.