MERN Stack Developer Assignment
Generative AI Chatbot

Objective

You are required to build a Generative AI Chatbot web-app using the MERN stack (MongoDB, Express.js, React.js, Node.js). The app should provide an interactive chat interface where users can enter their query, receive AI-generated responses.

This assignment will help us evaluate your skills in:
- Full-stack development (React + Node.js + Express + MongoDB)
- API integration (free Generative AI API of your choice)
- UI/UX design and responsiveness
- Code quality, structure, and best practices

Technical Requirements

1. **Frontend (React.js)**
   a. Create a responsive and clean UI similar to modern AI chat apps (Gemini/ChatGPT).
   b. Features:
      i. A text input box for prompts.
      ii. A 'Send' button (or enter-to-send).
      iii. Display AI responses in a chat format.
      iv. Show user messages and AI messages distinctly.

2. **Backend (Node.js + Express.js)**
   a. Create API endpoints for:
      i. User chat and ai api response
      ii. Fetch chat history of a session.

3. **Database (MongoDB)**
   a. Design a schema for storing chat history
   b. Ensure chat history can be retrieved and displayed

4. **Generative AI API Integration**
   a. Use any free AI API (such as OpenAI free tier, Hugging Face Inference API, Gemini api or other public generative text APIs)
   b. The API should:
      i. Accept a text prompt
      ii. Return a generated text response

5. Bonus (Optional but Appreciated)
   a. Add dark/light mode toggle
   b. Add typing indicator (e.g., "AI is typing...")
   c. Allow users to continue old conversations by fetching saved history.
   d. Deploy your app (Netlify/Vercel for frontend, Render/Heroku for backend, MongoDB Atlas for DB)

Deliverables

A GitHub repository with Public access

Evaluation Criteria

Functionality: Does the app work as expected?
Code Quality: Structure, readability, and best practices
UI/UX: Clean, responsive, and user-friendly interface
Database Integration: Proper storage and retrieval of chat history
API Integration: Correct handling of AI responses
Creativity & Extra Features: Bonus points for thoughtful additions