Chatbot with Audio Integration

Project Overview:

This project is an AI-powered chatbot designed using Express.js and Groq's AI API, enabling real-time conversations with users through both text and voice interaction. The chatbot provides an interactive, human-like experience by integrating speech-to-text and text-to-speech functionalities, making it accessible and user-friendly.

Technologies Used:

- Backend: Express.js, Node.js
- AI & NLP: Groq AI API for intelligent responses
- Frontend: HTML, CSS, JavaScript (Vanilla)
- Audio Processing: Web Speech API for voice output
- Hosting: (To be added, e.g., GitHub Pages, Vercel, or Netlify)

Key Features:

- Real-Time Conversations – AI-driven chatbot with instant responses
- Voice Interaction – Allows users to speak and hear responses
- Adaptive Learning – AI model improves based on user interactions
- Error Handling & Fallback – Ensures smooth user experience
- Scalable & Lightweight – Optimized backend for fast performance

Challenges & Solutions:

- Challenge: Implementing real-time voice processing with minimal

latency.
Solution: Used Web Speech API and optimized AI calls for quick response times.

- Challenge: Handling API errors and ensuring smooth user interactions.
  Solution: Added error-handling mechanisms with retry logic and a fallback response system.
- Challenge: Making the chatbot interface engaging and visually appealing.
  Solution: Designed a modern UI with neon effects, animations, and an intuitive layout.

Project Link and Screenshot :

GitHub Repository: https://github.com/Aakanksssha/Chatbot-with-Audio-Integration.git