Project Proposal

Project Proposal: Khiyalat – An AI-Powered Conversational AssistantCourse: Web Development
Semester: 4th Semester
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1. Project Title

E-Commerce Store: A Full-Stack Web Application for Online Retail

(Voglianzo)

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2. Project Overview

"Khiyalat" is a modern AI-powered conversational assistant designed to understand and respond to user queries in natural language. It supports text-based interactions and voice-based conversations using advanced speech synthesis (voice cloning). The system leverages AI models to generate intelligent, context-aware responses and offers a range of functionalities such as question answering, task automation, content generation, and voice-based communication.

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3. Objectives

- ***To build a dynamic web application for human–AI interaction.***
- ***To integrate a conversational AI engine with natural language understanding.***

- ***To support real-time text and voice interaction.***
- ***To implement voice cloning for personalized and realistic audio output.***
- ***To ensure responsiveness, security, and accessibility.***

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4. Tools and Technologies

- ***Front-End: React.js / Next.js, Tailwind CSS***
- ***Back-End: Node.js with Express.js / Python with FastAPI***
- ***AI/ML Integration: OpenAI API, Hugging Face Transformers, or custom LLMs***
- ***Voice Cloning: ElevenLabs API / Coqui TTS / Microsoft Azure TTS***
- ***Speech Recognition: Web Speech API / Deepgram / Whisper***
- ***Authentication: Firebase Auth / OAuth***
- ***Database: MongoDB / PostgreSQL***
- ***Deployment: Vercel / Heroku / AWS / Render***
- ***Version Control: Git & GitHub***

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5. Features and Functionality

Core Functionalities

- ***Text-based conversational interface (chatbox)***
- ***Real-time response generation via AI***
- ***Contextual memory for coherent conversations***
- ***Natural language understanding (NLU) and generation (NLG)***

Voice Capabilities

- ***Voice input using speech-to-text***
- ***Voice output using realistic voice cloning***
- ***User-selectable voice profiles***

User Features

- ***Secure login and profile***
- ***Conversation history***
- ***Theme toggling (light/dark)***
- ***Language support (optional)***

Admin Features

- ***Monitor usage and performance***
- ***Manage API keys and tokens***
- ***View interaction logs (anonymized)***

Optional/Beta Features (if time allows)

- ***Personal assistant tasks (reminders, to-dos)***
- ***Custom personality modes (e.g., formal, casual, humorous)***
- ***Multilingual support***

6: Conclusion

"Khiyalat" represents an ambitious yet feasible integration of web technologies and artificial intelligence. The project bridges human-computer interaction with cutting-edge voice and language capabilities. It aligns with real-world applications in virtual assistants, customer service, and accessibility, providing a valuable learning experience in building intelligent, multimodal web applications.