Problem statements 3

NLP Customer-Care Chatbot: "Veda"

This document summarizes the "Veda" chatbot prototype, built to provide 24/7 automated support to Vedantu's students and parents.

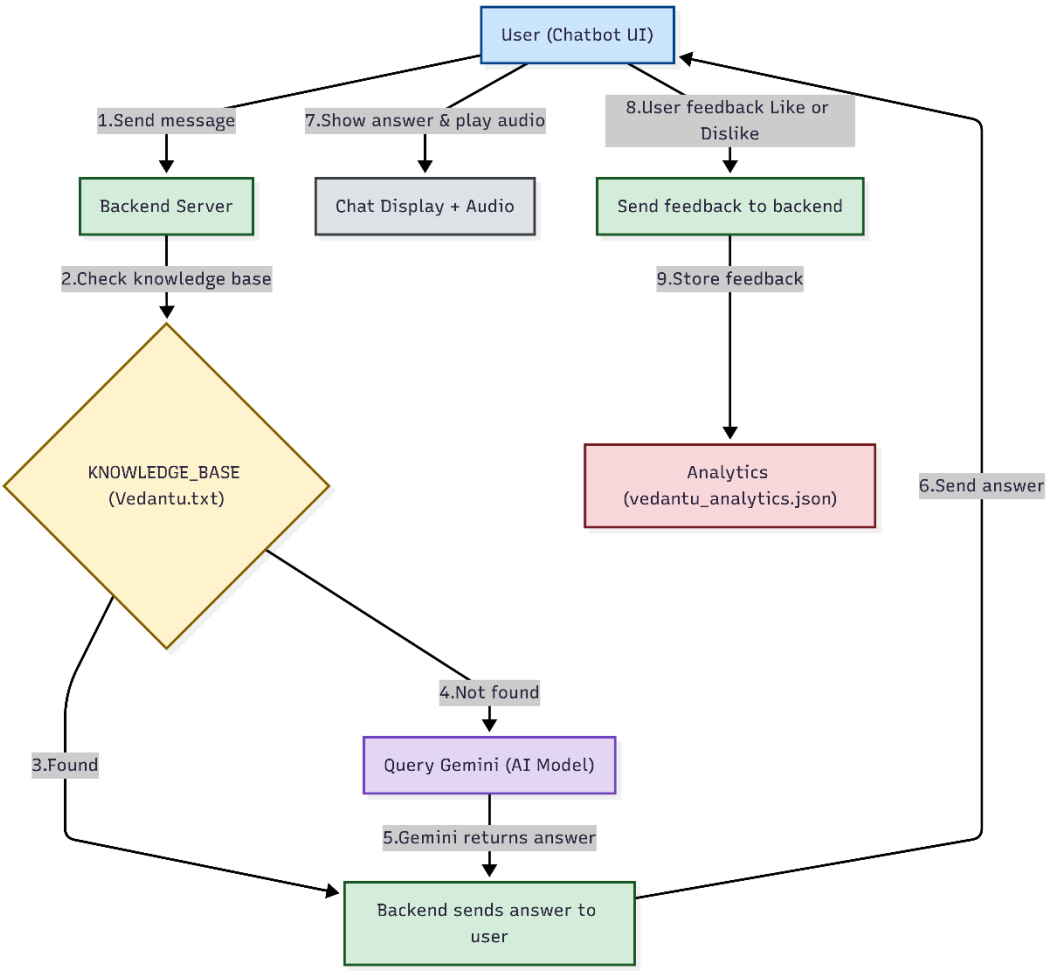
1. Problem & Solution

Problem: Students and parents lack immediate support outside of agent hours.

Solution: "Veda," a conversational AI that uses Natural Language Understanding (NLU) to instantly answer Frequently Asked Questions (FAQs).

2. Architecture & Flow

The prototype uses a web UI, a Node.js backend for logging, and Google's Gemini and Text-to-Speech APIs.



Submitted by Vinayak Kumar Singh
Email: Vinayaksingh762@gmail.com

- **Flow:** A user's question is sent to the Gemini AI along with a local knowledge base (Vedantu.txt). The AI generates an answer based *only* on this data, which is then presented as text and auto-playing audio.
- **Prompting:** A carefully designed prompt instructs the AI to act as "Veda," ensures responses are accurate by grounding them in the knowledge base, and includes logic for identifying when to escalate to a human.

3. Measuring Success

Success is measured via the analytics logged in vedantu_analytics.json:

- **User Satisfaction:** A direct score is calculated from the 👍 / 👎 feedback collected on every answer.
- **Intent Coverage:** Analyzing the list of user questions reveals the most common topics and identifies areas where the knowledge base is lacking.

4. Current Limitations

- **Knowledge Scope:** The bot only knows what is in the Vedantu.txt file.
- **Simulated Escalation:** The logic to identify a need for human help exists, but the actual handoff is not implemented.

5.Future Steps

1. **Implement Escalation:** Integrate with a support ticketing system (e.g., Zendesk) for seamless human handoff.
2. **Build Analytics Dashboard:** Create a simple UI to visualize satisfaction rates and popular queries.
3. **Dynamic Knowledge:** Connect the bot to a CMS or database so the knowledge base can be updated without code changes.

Submitted by Vinayak Kumar Singh
Email: Vinayaksingh762@gmail.com