



CHATBOT USING GEMINI AND OPENWEATHERMAP

(USED IN YOUR STREAMLIT APP)

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PROBLEM SUMMARY

This project solves a common user need: checking weather conditions like temperature or rain using natural language queries. The chatbot supports queries like:

- “Will it rain in Mumbai tomorrow?”
- “What’s the temperature in Chennai today?”

The project combines Google's Gemini AI for natural language understanding and OpenWeatherMap API for live weather data, providing users with a conversational and intelligent weather assistant.

APPROACH AND ASSUMPTIONS

Tools Used

- Google Generative AI (Gemini)
- OpenWeatherMap API
- Streamlit
- Python

Assumptions

- User input will generally include a city and a query related to rain or temperature.
- Gemini AI can reliably extract correct entities (city, day, intent).
- The OpenWeatherMap API is accessible and responds accurately

LIMITATIONS AND POTENTIAL IMPROVEMENTS

Limitations

- Only supports “today” and “tomorrow”.
- Handles only rain and temperature queries.
- API keys are hardcoded (security risk).
- Gemini may misinterpret vague user inputs.
- No support for detailed weather metrics (like humidity or wind).

Potential Improvements:

- Use environment variables for API keys.
- Support more query types (humidity, wind, etc.).
- Add flexible date parsing (e.g., specific dates).
- Improve error handling and Gemini response validation.
- Enhance UI with visual weather trends or maps.