

Project Documentation

Log Analyzer Bot

✦ Project Overview

The **Log Analyzer Bot** enables developers and support engineers to upload system `.log` files and receive intelligent summaries, issue detection, and severity-level breakdowns, powered by **Google's Gemini 1.5 Flash model**.

It supports real-time analysis through a user-friendly **Streamlit interface** and allows follow-up questions for deeper insights. The tool also logs feedback to continuously improve quality and support audit trails.

✂ Technology Stack

- **Frontend/UI:** Streamlit (Python-based UI)
 - **Backend:** Python
 - **LLM Model:** Gemini 1.5 Flash (via `google-generativeai` API)
 - **Deployment:** Localhost (via Streamlit, default port: 8501)
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⚙ System Workflow

1. **Log Upload:** User uploads a `.log` file via the Streamlit UI.
 2. **Log Preview:** The first 3,000 characters of the log are shown for review.
 3. **Gemini Analysis:** The AI model summarizes the log, detects issues, and recommends actions.
 4. **Follow-Up Chat:** Users can ask follow-up questions (e.g., about specific errors or timestamps).
 5. **Download Report:** A downloadable PDF report is generated with the AI summary and follow-up responses.
 6. **Severity Breakdown:** Counts and visual display of `INFO`, `WARNING`, `ERROR`, and `CRITICAL` logs.
 7. **Feedback Collection:** User indicates if the summary was helpful (`Yes / No`).
 8. **Logging:** All interactions are saved in `logs/user_feedback.csv`.
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❏ LLM Model Used

- **Model:** Gemini 1.5 Flash (Free-tier)
 - **Provider:** Google
 - **API Library:** google-generativeai (Python SDK)
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📁 Input Formats Supported

- .log files (uploaded via file uploader)
 - Up to **10,000 characters** from the log are passed to Gemini for analysis
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📝 Feedback Logging

- **Fields Captured:**
 - Timestamp
 - Filename
 - User Feedback (Yes / No)
- **Storage Location:**
 - logs/user_feedback.csv (new data is auto-appended)
- **Format Example:**

```
pgsql
CopyEdit
filename,timestamp,feedback
error_logs.log,2025-08-01 18:40:33,Yes
```