

## Work Logs

Date	Hours	Description of Work Done
March 16	2	Researched LangChain's memory module and streaming API integration.
March 17	3	Implemented streaming responses using asyncio and tested latency improvements.
March 18	2.5	Created AI tools for sentiment analysis, stock/housing predictions, and summarization.
March 19	3	Refactored chatbot's logic to ensure dataset validation before executing tools.
March 20	2	Debugged agent tool execution to improve response accuracy and consistency.
March 21	3.5	Conducted end-to-end testing, optimized prompt engineering for better responses.
March 22	2	Finalized chatbot enhancements and improved UI for displaying AI-generated insights.
March 23	1.5	Checked in final code to GitHub, documented progress, and prepared the report.

### Work Completed This Week

This week, I worked on refining the Asklytics AI chatbot by improving the integration of LangChain's memory module and implementing streaming responses for better user interaction. I also optimized the dataset handling process, ensuring the chatbot can dynamically analyze stock/housing data only if a dataset is uploaded. Additionally, I created and tested AI tools for sentiment analysis, data summarization, and predictive modeling within the chatbot.

Challenges encountered included handling concurrent AI calls while maintaining response speed. To resolve this, I utilized asynchronous processing (asyncio) for better efficiency. I also ensured that all outputs were displayed in a structured format within Streamlit.

### GitHub Repository Check-In

The following files and folders have been checked into the GitHub repository under Implementation:

- **asklytics\_chatbot.py** (Updated chatbot logic with streaming, memory, and AI tools)