

Financial Data Analysis for GFC AI Chatbot Project

This chatbot transforms raw financial data into interactive, insightful conversations. It is designed to answer predefined financial queries and help users quickly access key financial metrics.

What This Chatbot Does?

This AI-powered financial chatbot provides structured responses to common financial queries. It is built using rule-based logic, ensuring quick and accurate answers.

Key Features:

- ✓ Answers predefined financial questions about revenue, net income, debt ratio, cash flow, and financial health.
- ✓ Uses rule-based logic for structured responses.
- ✓ Handles unrecognized queries gracefully with helpful guidance.
- ✓ Built in Google Colab for easy execution.

Supported Queries

Category	Microsoft Example	Tesla Example
Total Revenue	"microsoft total revenue"	"tesla total revenue"
Net Income	"microsoft net income"	"tesla net income"
Debt Ratio	"microsoft debt ratio"	"tesla debt ratio"
Cash Flow	"microsoft cash flow"	"tesla cash flow"
Revenue Growth	"microsoft revenue growth"	"tesla revenue growth"
Financial Health	"microsoft financial health"	"tesla financial health"

- ✓ **Flexible queries:** The chatbot recognizes slight variations like capitalization changes or typos (e.g., "Tell me Tesla's revenue").

Key Implementation Aspects

1. Rule-based logic

This chatbot follows a structured **if-then** approach, where if a user asks "X," the chatbot responds with "Y." This ensures accurate and relevant responses for frequently asked financial questions.

2. State management

Even in a simple chatbot, **remembering the conversation context** is crucial. The chatbot keeps track of previous user queries to provide more personalized and relevant responses.

3. Error handling

The chatbot is equipped to **handle unrecognized queries gracefully**. If a user asks something beyond its scope, it will:

- Inform them that it doesn't understand the question.
 - Suggest topics it can answer, guiding them toward useful queries.
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Limitations

- ✗ **Predefined responses only** – The chatbot does not fetch real-time data.
 - ✗ **Limited to Microsoft and Tesla** – Other companies are not covered.
 - ✗ **No advanced NLP** – It can recognize similar queries but does not process complex financial questions.
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Open for Feedback & Collaboration!

I'm always eager to learn from fresh perspectives. If you have ideas, suggestions, or even challenges while using the chatbot, feel free to:

💡 Drop a message at <mailto:divleenkaurchaudhery@gmail.com> or **submit an improvement**—every bit of feedback helps!

If you're into coding, **contribute** by refining responses or adding new features.

Let's make financial insights **smarter, more accessible, and fun to explore!**