# Documentation for AI Chatbot

**How the Chatbot Works:**

The financial chatbot is a Flask web application designed to provide financial data for specific companies based on user queries. The chatbot processes user input to extract the company name and the year for which financial data is requested. It uses regular expressions to identify these elements within the query. Once the company and year are identified, the chatbot retrieves the relevant financial data from a predefined dictionary and returns a formatted response.

**Predefined Queries:**

Company and Year Specific Revenue:

"What was the total revenue of Microsoft in 2021?"

"What was the total revenue of Apple in 2022?"

"What was the total revenue of Tesla in 2023?"


Net Income Change:

"How has the net income changed for Microsoft over the last year 2022?"

"How has the net income changed for Apple over the last year 2023?"

"How has the net income changed for Tesla over the last year 2022?"


Profit Margin:

"What was the profit margin of Microsoft in 2023?"

"What was the profit margin of Apple in 2021?"

"What was the profit margin of Tesla in 2022?"


Total Assets:

"What were the total assets of Microsoft in 2022?"

"What were the total assets of Apple in 2023?"

"What were the total assets of Tesla in 2021?"


Liabilities to Assets Ratio:

"What was the liabilities to assets ratio of Microsoft in 2021?"

"What was the liabilities to assets ratio of Apple in 2022?"

"What was the liabilities to assets ratio of Tesla in 2023?"

**Limitations:**

Limited Companies and Years: The chatbot only has data for Microsoft, Apple, and Tesla for the years 2021, 2022, and 2023. It cannot provide information for other companies or years.

Predefined Queries Only: The chatbot can only respond to specific types of queries about total revenue, net income changes, profit margins, total assets, and liabilities to assets ratios. Queries outside these predefined formats will result in a default error message.

Query Format Sensitivity: While the chatbot uses regular expressions to identify the company and year, the query needs to include these terms in a recognizable format. Unusual phrasing or typos may prevent the chatbot from correctly understanding the query.

No Real-Time Data: The financial data is static and predefined in the code. The chatbot does not fetch real-time financial data from any external sources.

This summary provides an overview of how the chatbot operates, the types of queries it can handle, and its current limitations.