DSCI-551 ChatDB Project:

Trader John's Database Chatbot

Team ChatDB 58:

Chung Sheng (Johnson) Chang

Chu-Huan (Chris) Huang

Team member's background and skills

- Johnson Chang:

  Currently a MSADS student at USC, Class of 2026. During my undergraduate studies in economics, I developed strong statistical analysis skills and worked on several ML projects as well as some robotics development, which has given me some experience in software development.

- Chris Huang:

  Currently a student in the USC ADS master's program, class of 2026. My undergraduate background in Quantitative Finance has provided me with a strong foundation in statistics and finance. Additionally, it has equipped me with proficiency in R and Python for tasks such as data processing and analysis.

Project requirements

In our assessment, the final product of ChatDB must be capable of facilitating the following functionalities through a designated platform (which we intend to implement as a Telegram bot):

1. Enable users to explore sample data (provided by us) within SQL and NoSQL databases.

2. Upon specification of SQL and NoSQL databases, provide users with sample queries (each generation must be unique) to conceptualize how SQL and NoSQL languages can be utilized to process the sample dataset.

3. When a specific construct is specified, identify which database type's syntax it belongs to and generate a sample query to process the sample dataset.

4. Allow users to pose questions and receive responses in natural language. This necessitates that our Telegram bot be capable of processing natural language, discerning patterns, and executing the three functionalities above.

Planned Implementation

*   Apply the methodologies learned in class and through online resources to use Python for the following purposes: establishing integration between two different types of databases (MySQL and MongoDB) and a Telegram bot and making it easy to retrieve and manipulate data from these databases.

*   Enable the Telegram bot to accurately identify specific patterns within users' natural language input, thereby implementing the example query functionality.

*   Enhance the Telegram bot's capabilities to respond to inquiries using natural language, generate example queries in programmatic form, and explain each query's functionality in the responses.

Team Responsibilities

- Johnson Chang: Telegram Bot, MySQL Database

- Chris Huang: MongoDB Database, MySQL Database

Timeline

Milestone/Checkpoint	Date	Tasks
Project Proposal Submission	September 23	Submit project proposal
Checkpoint 1	October 11	Set up MySQL database
Midterm Progress Report	October 18	Complete basic MySQL database structure
Checkpoint 2	November 19	Build MongoDB database Start developing a Telegram bot Prepare for presentation
In-class Demo	November 26	Demo in class
Checkpoint 3	December 6	Final editing Refine based on feedback
Final Report	December 13	Submit final report