

Project Overview — Chat-Based SQL Agent Using LangChain & Streamlit

This project is an interactive **chat-driven SQL learning and exploration platform** built using **Python, Streamlit, LangChain, and OpenAI**.

Get the [code](#)

It allows users to **converse naturally** with a database and get insights without writing SQL manually.

The application loads the **Chinook SQLite database** and uses LangChain's SQL Agent to translate natural-language questions into SQL queries, execute them, and return the final results — all in a seamless chat interface.

Users can:

- Ask multiple questions in a conversational chat format
- Get AI-generated SQL queries behind the scenes
- View responses and explanations like a real chatbot
- Interactively explore database tables, values, and insights
- Learn SQL concepts by observing how AI converts questions to queries

This project demonstrates how LLMs can be combined with real databases to create **intelligent data assistants, SQL tutors, and AI-powered analytics tools**.

It serves as an excellent foundation for building educational platforms, database explorers, or enterprise data-querying applications.

Get the code: <https://github.com/akshatagrawal1998/Langchain-Tutorial-and-Projects>