

Knight Foundation School of Computing and Information Sciences (KFSCIS)

Spring 2024 Senior Design Project

STARS GPT (AI-Based Tutoring Chatbot)

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Instructor/Faculty: Prof. Seyedmasoud Sadjadi

Summary

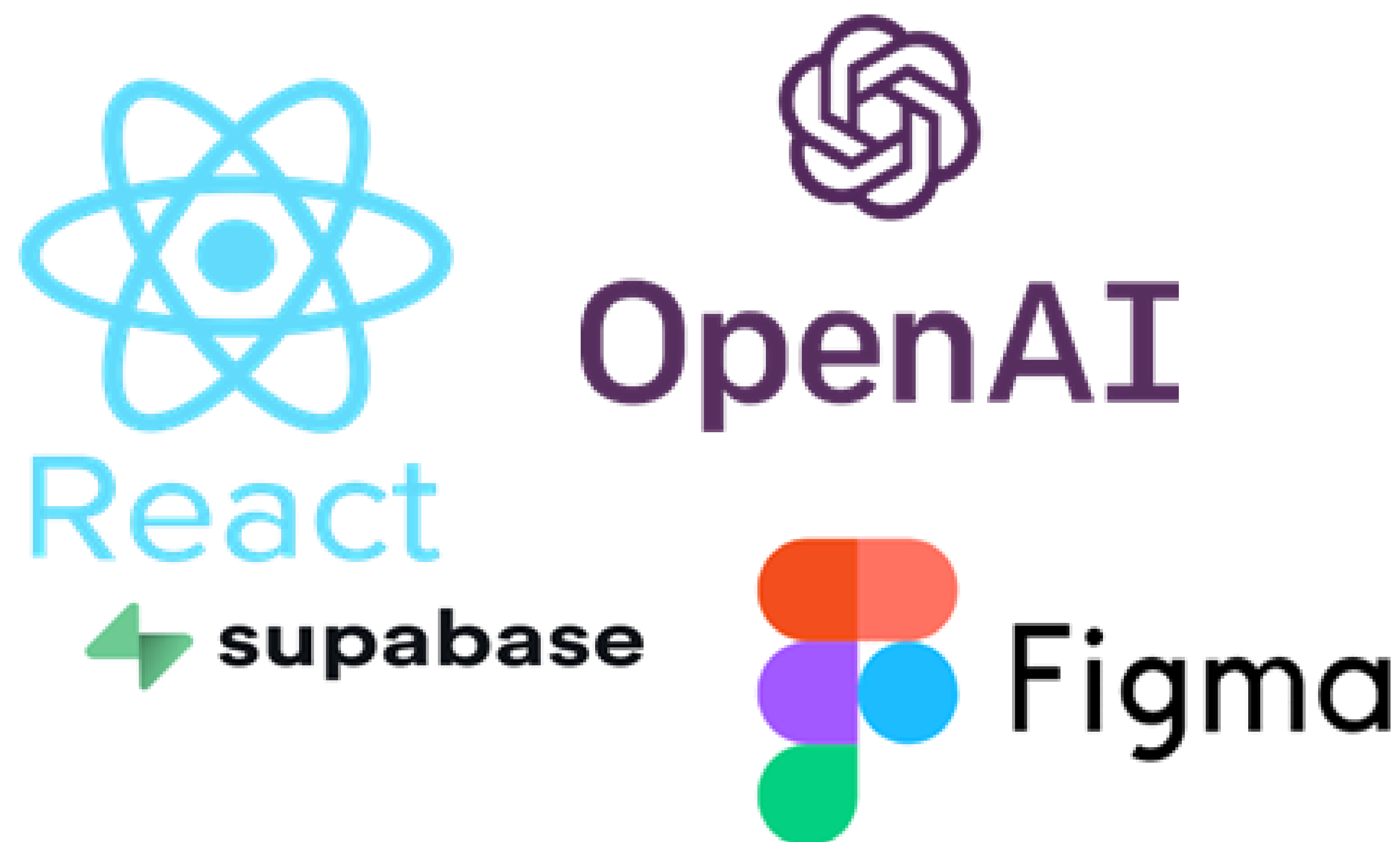
The application is built to provide a support system catering to both students and STAR tutors. This AI chatbot serves as a tool to clarify complex concepts found in the KFSCIS coursework and answer student questions, aiding them in solidifying their understanding. By integrating the personalized guidance of STARS tutors with the chatbox's 24/7 accessibility, the platform aims to foster a comprehensive learning environment for FIU students.

Problem Statement

The prevalent reliance of students on AI platforms such as ChatGPT or Google Gemini for homework answers poses a significant challenge. While these platforms offer quick responses, the inconsistency in results hampers genuine learning experiences as observed by the STARS tutoring group at FIU. This reliance not only fosters a dependency but also impedes the development of critical thinking and problem-solving skills essential for academic growth. To address this issue, used past assignments by Dr. Wells to help train our AI, aiming for more precise and effective responses to help foster a culture of independent learning while leveraging technology as a supplementary tool.

Technologies Used

- **React:** Library for building UI interfaces.
- **SupaBase:** A Comprehensive Backend-as-aService (BAAS) that includes features such as Authentication, PostgreSQL, GraphQL, Edge Functions, etc.
- **OpenAI API:** For AI Messages/Responses.
- **Figma:** UI Design and Mockups.



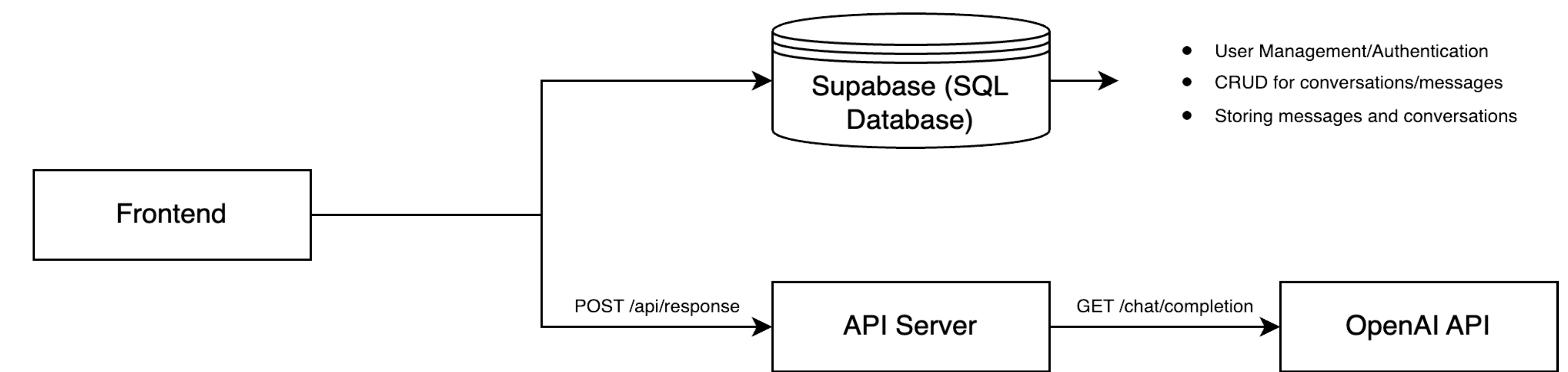
UI Design

- (1) Created a **chat box** reminiscent of ChatGPT or Google Gemini, catering to users familiar with these popular AI chat platforms for facilitated use. The chat box is able to produce code blocks for facilitated visual code learning.
- (2) **Conversation notes** are located on the upper right hand corner of the chat box. Handled by BlockNote which supports Markdown, users have the ability to add images, tables, bullet points, headings, and change the text color. Notes are saved and attached to their respective chat.
- (3) **Light and dark mode** are integrated for eye comfort and accessibility according to the users preference.
- (4)(5) Created **loading and error instances**. The user is able to press on the button labled "Please Reload the Page" to reload the page. The loading state allows for the expectation management of the user by indicating that the system is processing the users input.

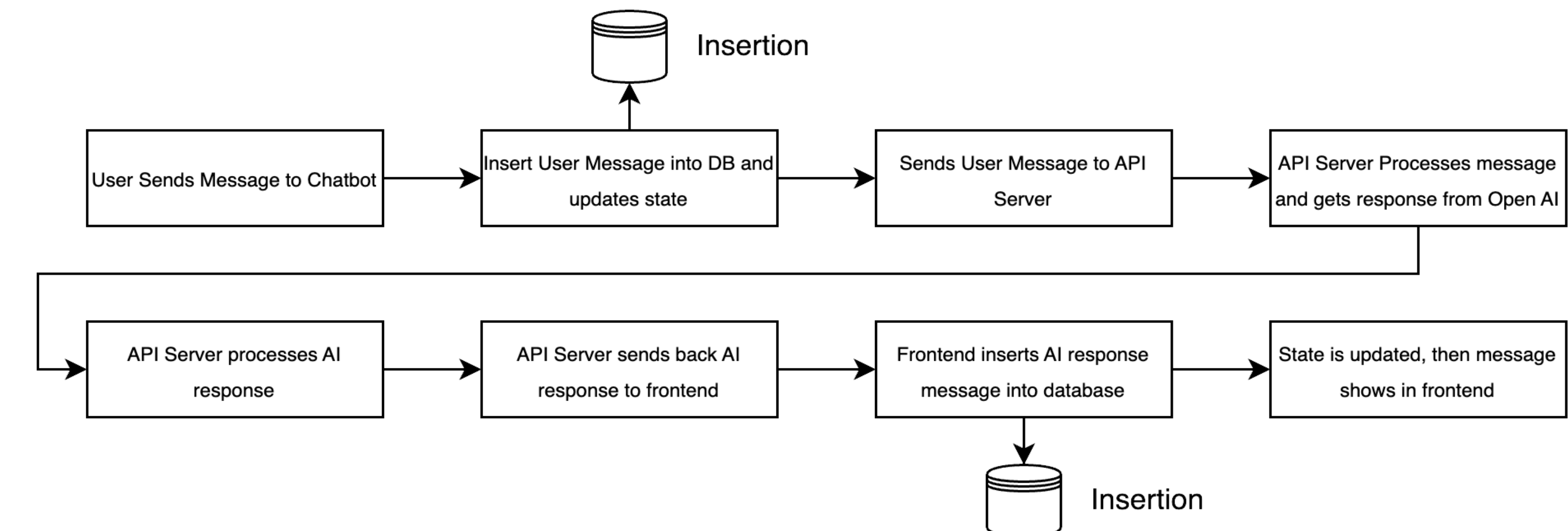
ACKNOWLEDGEMENT

The material presented in this poster is based upon the work supported by STARS Tutoring and Dr. Patricia McDermott-wells. We'll thank Dr. Wells for his/her/their assistance and mentorship that we've received throughout this project.

System Architecture:



AI Messaging System:

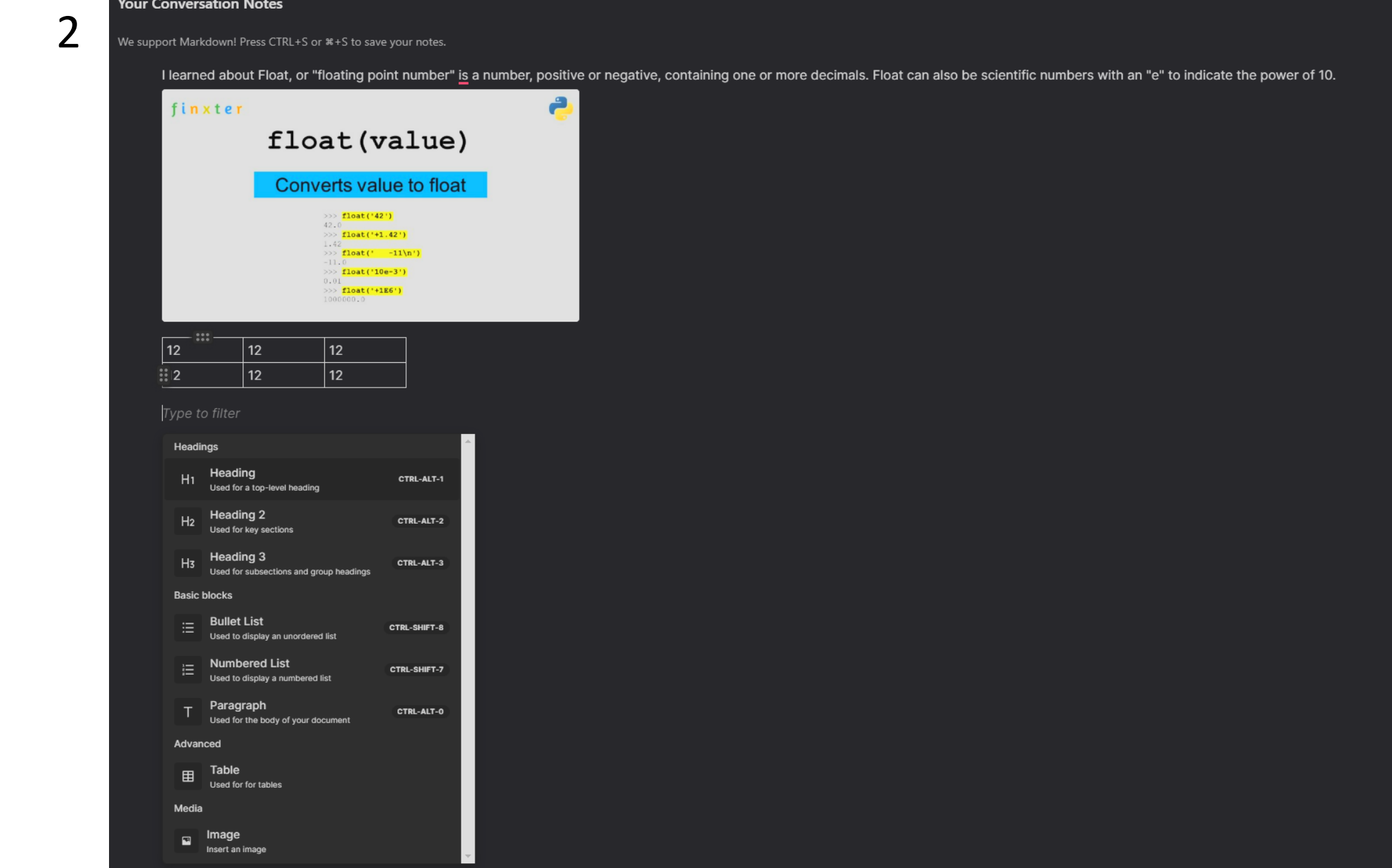
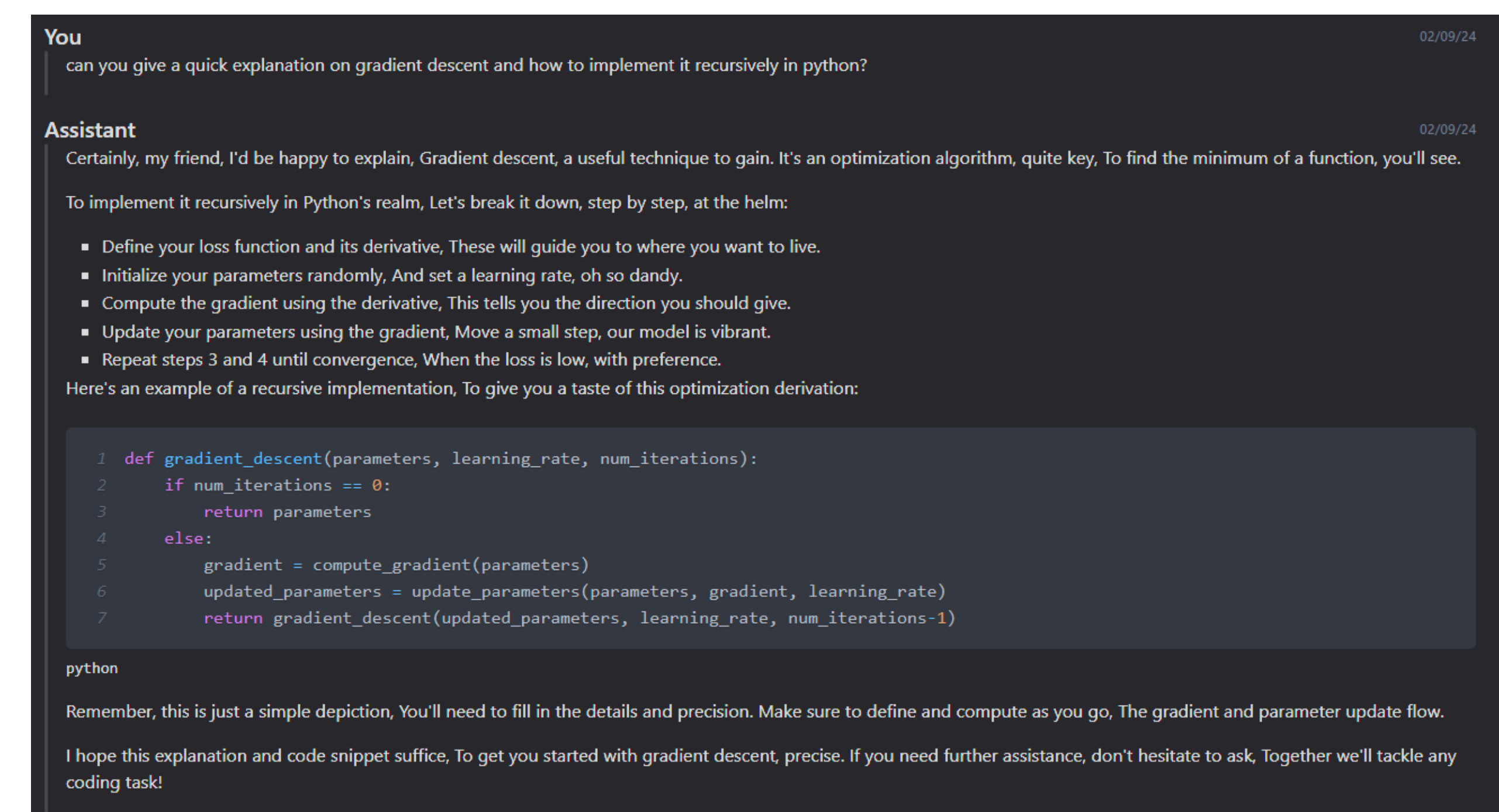


Current Systems

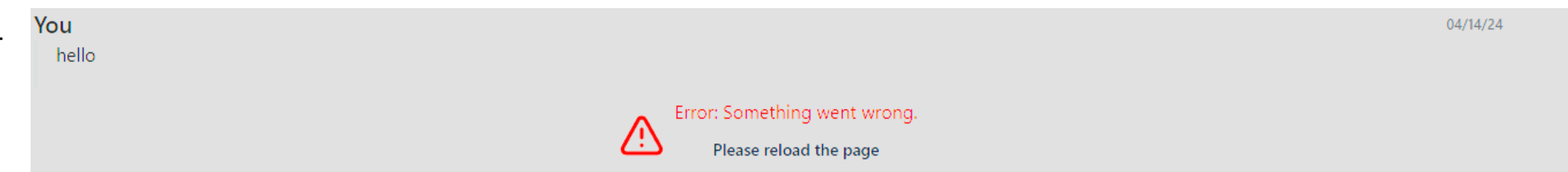
- There are no current systems in place that this replaces
- LLMs have been used by students such as ChatGPT and Google Gemini.

Screenshots

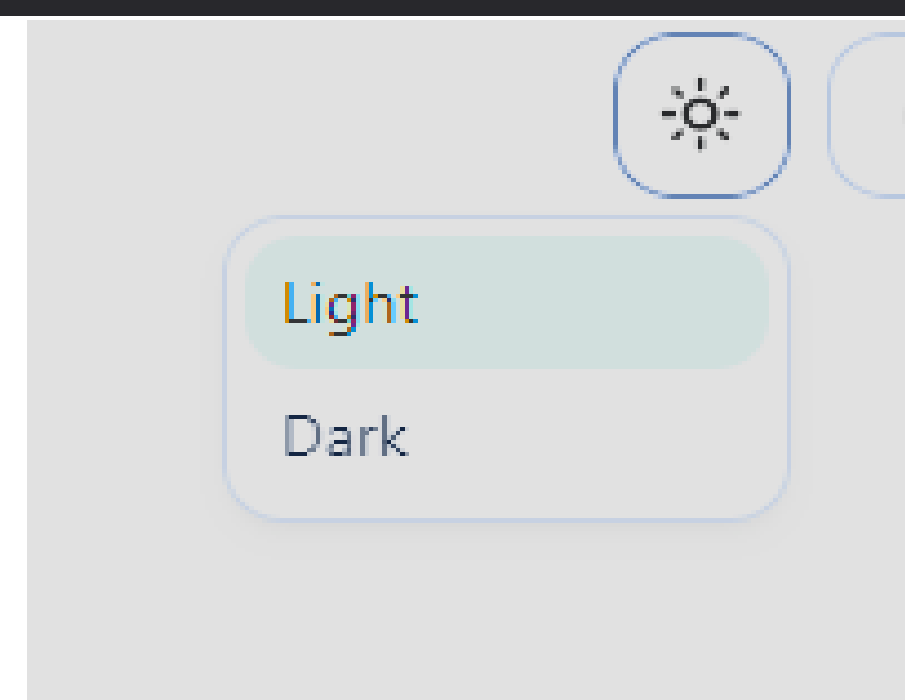
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