

## GEN-AI

Throughout this project, Gen-AI was a huge help in understanding the overall gist of this project. I have had multiple uses for this service throughout the project, however, it is not as easy as I thought. In all honesty, Gen-AI barely gives you a solution, I have found it to be a better resource than StackOverflow, but ideally, it is doing the same job. It compiles a bunch of solutions and approaches to a certain problem you might have and gives a very high-level approach to how one can tackle the given task at hand. Gen-AI isn't the best at writing code, but it did help me a lot in understanding concepts I didn't know and bringing a fresh perspective when I was overworked by a persistent issue. Here are a few of the areas that Gen-AI has really helped me with;

- (1) **Debugging and Error Handling** – having never used SQLite before, I was running through a lot of issues when initially setting up the database and carrying through the commands. The biggest issue here was a try-catch statement when running a SQL query to feed into the database. When asked chatgpt, it gave me the idea that I wasn't maybe closing my prepared statement objects correctly, and following a line of code that really helped me narrow down the issue. It turns out that since I was opening the pstmt object, yet not closing it, it was showing up as errors in the final output. Thus, implementing that try-catch block into my code was a huge lifesaver.
- (2) **SQLite** – I had never worked with SQLite before this project. I knew how to run SQL queries and PostgreSQL, but never integrated SQLite with Java. Having not coded in over a year, I was very crusty, but I used ChatGpt, StackOverflow as well as the SQLite API to really help me understand what it takes to integrate and use SQLite in a database. Gen-AI really helped me, once again debug my code, often giving me numerous approaches in which I can debug the issues that are presented.
- (3) **JSON and runme.sh** – Another pinnacle point that Gen-AI helped me with is understanding how one can parse JSON data and set up shell functions, alongside jar-dependencies. As I said once before, taking a break from coding really made my coding skills rusty, thus I was often 90% of the way there with 100 questions. Gen-AI really helped me narrow down that thinking by helping point out what might be causing certain errors in my code.
- (4) **HttpResponseError** – This was the biggest issue of the entire project, it seemed that the server was getting a request but was ignoring it and hence shooting back the error. I used Gen-AI to help me find ways to debug the code, however, it gave me back to where the potential issues might be listed. After 3-4 hours of communicating back and forth with ChatGpt about potential issues, I ended up resolving it all by myself. Given that I had resolved the issue, I asked more questions about how I can maintain a healthy client and server relationship, things to keep in mind for the development of A2.

## SHORTCUTS

- (1) **New Connection per Request vs. Polling Connections** – after a lot of error handling and debugging, it seems that for the purpose of A1, I had to change from creating a static default connection to creating and closing one for every request. Now this is fine for the amount of requests we are calling however if we increase it might lead to inefficiencies, thus, looking at a polling connections approach might benefit later on.
- (2) **Architecture;** Microservice arch. is slightly optimized to fit the same solution with less traffic on server requests, making it slightly more efficient. This works for A1 however given the requirements of a2 and their complexity, this might mean that we have to go back to the original architecture for the purpose of these two microservices as it was more convenient.
- (3) **Maven Build:** Maven was used as a way to manage our dependencies more easily, now this will continue for A2 as well, however, I thought that this was a shortcut as it was seemingly an easier build than figuring out how to manage the dependencies in the root folder. It was causing way too many issues that I didn't have time to figure out in the given time, maybe I might try implementing it for learning purposes in the build of A2, however, Maven was a shortcut that was used to build a reliable project in the given time.