Reflective Report

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i. What responses were useful?

The LLM was helpful in several parts of the project. It was able to independently define entities, relationships, and normalized tables, which formed the foundation of our database. It also generated large amounts of sample data and quickly wrote the corresponding `INSERT` commands. In addition, it provided a list of potentially useful triggers based on our database state, from which we selected the one that updates the number of books available. Finally, it had no difficulty generating the questions and queries required for the assignment.

ii. Were any responses misleading?

Some responses were inaccurate. For example, the LLM suggested keeping unnecessary columns, such as publishers' and authors' phone numbers and addresses, which were not relevant to our database. It also failed to recognize that we had changed the tables (e.g., removed irrelevant columns), which led to mismatches in the data it generated.

iii. Did you have to make any major changes? If so, what?

We removed irrelevant columns, corrected table structures after changes, and replaced book names, as the LLM had initially generated unrealistic titles.

iv. How did you verify correctness?

We verified the correctness of the LLM's output through specific checks at each stage of the project:

- Creating the tables and normalization: We reviewed the table structures against the ERD and removed any irrelevant columns suggested by the LLM. At this stage, we also followed what we had learned in class and cross-checked our design using relevant resources on the internet, including the article *"Introduction to Database Normalization"* from GeeksforGeeks and *"From ER to the Relational Model"* by Business Academy South West.
- Inserting the data into the database and writing the triggers: We ensured the data was inserted by manually querying each table in full and checking that the number of rows matched the expected number of records (such as books, genres, etc.). We also verified the correctness of the database commands based on the methods and guidelines we studied in class.
- Questions and queries: For each query generated by the LLM, we executed it and compared the output with the expected results to confirm its correctness.