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Reflection Report

GenAI ToDo Application

Prompts I Used

When starting the assignment, I used prompts like:

"First just provide me simple FastApi CRUD commands"
"I want to add entry from user to Sqlite3 database. Provide me format to achieve Add operations that add store update and delete tasks"
"Write pytest unit tests for this FastAPI app"
"Fix sqlite3 OperationalError: table already exists"

These prompts helped generate both boilerplate code and fixes during debugging.

Bugs Copilot Introduced

While Copilot was helpful, a few issues appeared:

1. Table creation conflict – Copilot suggested CREATE TABLE Tasks, but running tests multiple times caused an error ("table already exists").
2. SQL update syntax – Copilot inserted raw f-strings for updates, which was unsafe and sometimes broke when passing parameters.
3. Route mismatches – A few times Copilot wrote routes incorrectly (e.g., mismatched endpoint paths).

Debugging with AI

I solved the issues by asking ChatGPT step-by-step:

Changed CREATE TABLE to CREATE TABLE IF NOT EXISTS.
Replaced raw f-strings with parameterized queries (cursor.execute("DELETE FROM Tasks WHERE id=?", (ID,))).

Added a pytest fixture to drop and recreate the table before tests, so each run started with a clean state.

Pros of Copilot

Saves time writing repetitive boilerplate (FastAPI endpoints, SQL insert code).
Good at filling in predictable patterns (CRUD operations).
Speeds up writing unit tests by generating pytest structure.

Cons of Copilot

Sometimes suggests insecure code (string interpolation in SQL).
Can repeat mistakes unless corrected.
Doesn't fully understand context (e.g., re-creating tables vs. preserving data).
Generated code often needs cleanup to look professional.

Final Thoughts

Overall, Copilot was a useful assistant for scaffolding this project. However, I had to carefully check its suggestions and rely on debugging with ChatGPT to make the application reliable. The project gave me practical experience combining AI assistance with my own understanding of FastAPI, SQLite, and testing.