**Narrative: Database Enhancement**  
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**Artifact:** Inventory Management Android Application

**1. Description of the Artifact**  
The artifact is an Android inventory management application built with Kotlin and SQLite, originally created as a capstone project. It provides user authentication and full inventory CRUD operations with a low-stock alert system.

**2. Justification for Inclusion and Showcased Skills**  
I selected this artifact for my ePortfolio because it demonstrates critical database security and management skills that are essential for any professional developer. The database enhancements specifically showcase:

The implementation of BCrypt password hashing demonstrates a crucial security mindset. By replacing plain-text password storage with salted, hashed passwords using a industry-standard algorithm, I've addressed a critical vulnerability that could have exposed user credentials in a data breach. This shows I understand and can implement fundamental security principles.

The database migration strategy in the DatabaseHelper showcases professional database management skills. Instead of simply dropping tables and losing user data (the previous approach), I implemented a proper migration path using ALTER TABLE statements. This demonstrates an understanding of real-world application maintenance where schema changes must preserve existing data.

These enhancements collectively show I can "Develop a security mindset that anticipates adversarial exploits" and "use well-founded techniques for implementing computer solutions that deliver value."

**3. Meeting Course Outcomes**  
This enhancement successfully addresses the planned outcome: "Develop a security mindset that anticipates adversarial exploits in software architecture and designs to expose potential vulnerabilities, mitigate design flaws, and ensure privacy and enhanced security of data and resources."

The password hashing implementation directly mitigates a severe design flaw that could have compromised user privacy and security. Additionally, the database migration work demonstrates progress toward "using well-founded techniques for implementing computer solutions." My outcome coverage plan is now complete, with all three enhancements providing comprehensive evidence across the program outcomes.

**4. Reflection on the Process**  
Enhancing the database security was the most valuable part of this project. The main challenge was implementing BCrypt in the Android context and understanding the trade-offs between different hashing algorithms. I learned that security isn't an afterthought but must be integrated into the fundamental design of an application.

The migration process taught me about the importance of forward-thinking database design. While the current migration is simple, implementing the pattern prepares the application for future enhancements without data loss. I also learned about dependency management in Android, as integrating the BCrypt library required careful configuration in the build files.

The most significant lesson was understanding that database security extends beyond just the queries—it encompasses how data is stored, how schemas evolve, and how to balance security with performance. This experience has given me confidence in implementing production-ready database solutions that prioritize both functionality and security.