Noah Lane Garza

CS-499 Computer Science Capstone

10/6/2024

Category Three – Databases Narrative.

**Artifact Description**

The artifact is the DBHelper file from my CS-360 final project, which serves as the database management component of my application. It was created in April 2024 and is designed to facilitate interactions with a SQLite database, handling tasks such as creating tables, adding users, and retrieving daily weight entries.

**Justification for Inclusion**

I included this artifact in my ePortfolio because it showcases my skills in software development, particularly in error handling and code optimization. The project was improved by implementing robust error handling mechanisms, enhancing the functionality to prevent sensitive data from being stored in plain text, and optimizing methods for better performance. These enhancements reflect my growth in understanding best practices in software engineering and my commitment to creating secure and efficient applications.

**Course Outcomes**

I met the course outcomes I planned to achieve with this enhancement in Module One, which involved implementing a robust database system. Since I do not have updates to my outcome-coverage plans, I feel confident that I have effectively covered the necessary learning objectives.

**Reflection on the Enhancement Process**

Throughout the process of enhancing and modifying the artifact, I learned the importance of robust error handling and the implications of data security in software development. I faced challenges in ensuring the database operations were efficient, especially when handling larger datasets. Debugging issues related to data retrieval and making sure that all resources were managed properly (like closing cursors and database connections) also required careful attention. Overall, this experience has deepened my understanding of best practices in database management and has better prepared me for future software development projects.