**Artifact Three Narrative**

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**Artifact Description:**

Artifact Type: From DAD-220 Introduction to Structured Database Environments, Project One taken in Dec of 2022, PDF with screenshots and SQL queries and commands for use in MySQL.

Language: SQL and MySQL are database-related languages. While SQL is a programming language used to work with data in relational databases, MySQL is an open-source database product that implements the SQL standard.

Creation Date: The commands used and SQL queries were done in Dec of 2022, the enhancements were added in September of 2023.

**Justification for Inclusion in ePortfolio:**

To provide a comprehensive justification for the inclusion of my relational database skills, specifically working with MySQL, in my portfolio I include the work below. As a passionate and dedicated individual in the field of data management, I strongly believe that my proficiency in this area is essential for showcasing my expertise and versatility as a professional.

First and foremost, relational databases, particularly MySQL, are widely recognized and extensively used in various industries and organizations worldwide. By including my proficiency in MySQL in my portfolio, I am highlighting my ability to work with a widely accepted and highly utilized database management system. This demonstrates my adaptability and readiness to contribute effectively to any project or team that relies on database management.

Furthermore, relational databases play a crucial role in organizing and managing large volumes of data efficiently. The ability to handle and manipulate data effectively is invaluable in today's data-driven world, where organization heavily rely on accurate and accessible information for decision-making and strategic planning.

Lastly, including my proficiency in MySQL in my portfolio also reflects my commitment to continuous learning and professional growth. Relational databases are constantly evolving, and staying up-to-date with the latest advancements and best practices is essential.

**Specific Components Demonstrating Skills:**

Enhancing the Artifact requires a secure environment in which to work. The environment provided when a MySQL download is installed and configured accommodates these conditions from the very beginning. Allowing the user to set a password for the root, to act as administrator and assign permission to users is a way MySQL allows security measures to be set. The screenshots in the Artifact Three enhancement show how to enable the authentication plugin so no unauthorized access will be permitted. The use of the newer feature, “caching\_sha2\_password” greatly ensures a safe and workable environment reducing the threat of cyber-attacks and hackers. MySQL has a built-in feature called “at rest encryption” that ensures the data is encrypted and protected from attacks. The recreation of the database schema “QuantigrationUpdates” with its three tables, “Customers, Orders, and RMA” were provided to demonstrate my ability to recreate the same dataset in a different environment. The examples provided of the CRUD functions, Create, Read, Update and Delete show my ability to manage data in the way that all big data are used just on a larger scale.

**Key Differences in the two Versions:**

The original environment was Codio and security was handled behind the scenes and not mentioned in the Project One exercises. To take a security minded approach I detail the process in recreating and working in the environment offered with the download for MySQL. My user profile utilizes an authentication plugin and the data is encrypted when the system is at rest. The CRUD operations are demonstrated in the enhancement; along with an SQL script which was used to load data to create a new schema called “store”.

**Meeting Course Objectives:**

Providing a secure environment in which to work with the dataset of Artifact Three demonstrates my ability to develop a security mindset that anticipates adversarial exploits in software architecture and designs to expose vulnerabilities, mitigate design flaws, and ensure privacy and enhanced security of data and resources. The recommendations I provided for all phases of a project further demonstrate the fact that I understand that cybersecurity starts with awareness. I also understand that awareness is everyone’s responsibility regardless of their role.

**Reflection on Enhancement:**

While creating and improving this artifact, I learned how to add security features such as an authentication plugin and ensure encryption was enabled when data is at rest. I reenforced my skills to recreate the database schema and add tables from my original artifact. I added a new schema from an SQL script and I demonstrated the CRUD functionality with screenshots to show each function which I chose to demonstrate on the recreated QuantigrationUpdates schema.

Challenges I faced: Using the Community version of MySQL and not the Enterprise version limited me from fully demonstrating an example for a working environment with varying security measures in place. I chose to describe how in a working environment security should be the first line of defense and what options could work best when working on a project.