**Bruce Gaudet**

**CS-499**

**7/29/25**

**5-2 Milestone Four: Enhancement Three: Databases**

The artifact I selected for this enhancement is the Grazioso Salvare MongoDB CRUD Application, which was originally developed in a prior course to demonstrate database functionality. This project involved using PyMongo to interface with a MongoDB collection and implement full Create, Read, Update, and Delete operations for managing animal records. I chose this artifact because it directly showcases my ability to program solutions for storing, accessing, and manipulating structured data, all of which are essential skills in database management and software engineering. For this milestone, I enhanced the artifact by improving both its reliability and security. I added exception handling to each CRUD function to catch and report database errors gracefully, making the application more robust and user-friendly. I also ensured the code adhered to secure practices by validating inputs and updating only allowed fields where applicable. These enhancements allowed the application to better align with industry standards for secure data management while remaining easy to test and extend.

This artifact strongly supports the database-related outcomes of the program by demonstrating how to implement practical and scalable solutions to real world data challenges. It also illustrates my ability to identify and address potential design and structural flaws, particularly around error handling and update operations. The enhancement process taught me how critical it is to anticipate user and system errors in database programs and to build in mechanisms that ensure continuity and resilience. While the original artifact functioned well, it lacked the kind of reliability and polish expected in professional systems. Making these improvements pushed me to think critically about software robustness, and as a result, I now feel more confident building applications that deal with persistent data storage. I am submitting both the original and updated versions of the artifact, along with this narrative, as part of my ePortfolio to demonstrate growth in technical skill and project maturity.