**Enhancement 1 Narrative**

The artifact I selected is a Python Dash dashboard that connects to my MongoDB CRUD module (the AnimalShelter class). It was originally created in a previous course to fulfill client requirements for Grazioso Salvare, where I built a database interface and visual dashboard for the Austin Animal Center dataset. The initial version provided a simple layout with filters, a data table, and basic queries. In the Capstone, I took this existing work and refactored it into a modular Dash application with a cleaner structure, including separate layout, callbacks, and service layers.

I chose this artifact for my ePortfolio because it demonstrates my ability to design and implement a full-stack solution that integrates a database back end with a user-facing web interface. The dashboard highlights multiple skills: database operations via CRUD in MongoDB, query optimization using projection and pagination, and front-end design using Dash components. The enhancements also showcase my knowledge of secure coding practices, since I replaced hardcoded connection details with environment variables and added query whitelisting. Together, these improvements demonstrate both technical depth and professional readiness.

I met the course outcomes I set in Module One for this enhancement. Specifically, I demonstrated my ability to design and evaluate computing solutions with appropriate trade-offs by implementing server-side pagination and modularizing the application. I also met the outcome of applying innovative tools and techniques, using Dash testing and structured service layers, and showing a security mindset by incorporating least-privilege MongoDB connections and safer query handling. At this point, I do not need to update my outcome-coverage plans because the enhancements successfully align with the goals I outlined.

The process of enhancing and modifying this artifact taught me how important modular architecture is for readability and maintainability. I learned to separate concerns more effectively, making the code easier to debug and extend. One of the biggest challenges I faced was environment setup: conflicting bson packages, relative import issues, and Dash version changes caused multiple errors. By systematically troubleshooting and restructuring the project, I improved both my technical skills and my resilience in solving problems. Overall, this enhancement gave me practical experience with building a production-ready dashboard and strengthened my confidence in handling end-to-end software development.