The artifact selected for enhancement is a Python script that connects to a MongoDB database to retrieve animal records using the pymongo library. Originally written as part of a data access layer, the script worked as intended but lacked modularity, robust error handling, and industry-aligned practices for maintainability and security. I selected this artifact because it demonstrates my skills in database interaction and backend scripting, and I saw clear opportunities to modernize and refactor it.

My enhancements focused on improving the code's structure and reliability. I separated the database connection logic into its own reusable function, get\_database\_connection(), which makes the script more modular and easier to maintain. I added structured logging throughout the program using Python's built-in logging module to replace basic print statements, enabling better traceability during debugging and production use. Additionally, I used quote\_plus() for password encoding, which ensures that special characters in credentials are properly handled in URLs. Lastly, I added conditionals to handle failed connections gracefully and prevent the script from crashing.

These enhancements demonstrate my understanding of clean coding practices, separation of concerns, and secure database access. They also reflect my ability to evaluate and refactor working code to meet industry standards for performance and professionalism. This artifact aligns with course outcomes related to database handling, security, and designing functional solutions using appropriate tools.