CS 499 Milestone 4

The artifact that I selected was my inventory app that I created in CS 360 Mobile Architecture and Programing. The app was initially developed to provide a simple inventory management system that allowed users to log in, add items to a database, and view those items in a list. I selected this artifact for my portfolio because it is a great example of my ability to apply algorithms and data structures. The enhancements I made showcase my skills in optimizing data access, validating user input, and improving usability with efficient search and sort operations.

I made several enhancements to my inventory app in the category of Databases. My improvements included:

* Method for checking whether a user already exists when creating an account
* New action log table in the database
* New actionLogAdapter, actionLogActivity, and actionLog classes
* An activity\_action\_log.xml
* Updated the inventory table in the database class
* Created a method for if an item exist, duplicates will not be allowed.

My enhancements aligned with several course outcomes. It aligned with course outcome 3: Design and evaluate computing solutions that solve a given problem using algorithmic principles and computer science practices and standards appropriate to its solution, while managing the trade-offs involved in design choices. It aligned with course outcome 4: Demonstrate an ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals. It aligned with course outcome 2: Design, develop, and deliver professional-quality oral, written, and visual communications that are coherent, technically sound, and appropriately adapted to specific audiences and contexts. This is demonstrated by my documentation of changes through code comments, a video walkthrough, and written user guide that communicates the system’s design to both technical and non-technical users. It aligned with course outcome 1: Employ strategies for building collaborative environments that enable diverse audiences to support organizational decision making in the field of computer science. This is demonstrated by my designing the UI and functionality of the app with end-users in mind, prioritizing simplicity, accessibility, and clarity.

This milestone helped to grow my technical skills in many ways. One key thing was understanding the importance of planning out database relationships early in development. Another important takeaway was how small design decisions can significantly improve data reliability and user experience. Implementing validation at both the UI level and the database level helped me think more critically about defensive programming and safeguarding application logic.