

CS 499 – Enhancement Three Narrative

Noah M. Figueroa

Department of Computer Science, Southern New Hampshire University

CS 499 – Computer Science Capstone

Professor Bhandari

October 4, 2025

Enhancement Three Narrative

To showcase my proficiency with databases, I enhanced an animal dashboard program. This program stores information about endless amounts of animals and allows users to filter them based on desirable traits. Furthermore, users have access to a geo-location map which showcases the exact location of the animal they currently have selected. This program was initially created for CS-340 with the intention of assisting an international rescue-animal training company identify dogs from local shelters with traits suitable for rescue missions. This project both optimized and simplified the selection process for dogs.

I chose to include this artifact in my ePortfolio as it involves full CRUD functionality with a database. I also knew that this project would push the boundaries of my knowledge allowing me to gain more knowledge from the enhancement process. The dashboard, its components, the database, and the refactored CRUD functionality all showcase my skills and abilities in software development. The artifact in general was improved in a myriad of ways. Firstly, the program underwent a database migration from MongoDB to MySQL. This of course included the setup of the server, the database, and the refactoring of the CRUD functionality. Secondly, the entire process allowed me to attend to the opportunities I identified during the code review such as the poor commenting and lack of existence checks.

I did meet the course outcomes that I had initially planned to meet with this enhancement. As this is the final enhancement and all outcomes have been satisfied, I have no updates to my outcome-coverage plans.

The process of enhancing and modifying the artifact was a great learning experience. As the previous iteration of the program was developed on a virtual machine, being able to set up the server, the database, and the table, for this iteration strengthened my understanding of SQL

and databases in general. The refactoring of the code also highlighted to me the pros and cons of each database management system and their implementation. Working outside of the virtual environment has also allowed me to work much more with powershell and Jupyter notebook allowing me to hone my skills as a programmer. The main challenge that I faced was in the refactoring process. The reason for this is that MongoDB supports certain methods that MySQL does not. Rather than being able to correlate the two methods, there were times where I had to construct my own logic.