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CS-499

**Enhancement 3 Narrative**

The artifact that I chose for Enhancement 3: Databases is a Python file from CS-340 Client/Server Development. The Python file created a connection to a MongoDB database and used CRUD operations to work within the database. The database held different animal profiles used for a rescue project, so the database needed to be updated frequently to work with the changing information. The Python file was created in May-June of 2024.

The reason why this artifact was chosen for the Database category is due to the fact that it already had a simple database created, with basic CRUD operations to work within the database. The database operations were very basic and did not have specific functions to insert, update, or delete one entry. All of the functions were meant to modify all matching entries. To enhance the artifact, I added more query functions to allow for SQL querying throughout the database. This then allowed for multiple entries to be added at a time, as well as the ability to update or delete a singular entry. The data was also made into a dictionary for easy querying and modification.

The course outcome that I planned to meet with this enhancement was: 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. I met this course outcome by implementing well-founded and innovative techniques and skills by converting the database from simple CRUD operations to a more advanced SQL database. By implementing this enhancement, it makes the database more valuable and follows industry specific goals, as having a database that can do more specific tasks is more desirable and makes for easier use when actually using the program. As of now, the original plan that I created for outcome coverage stays the same.

While enhancing the artifact, I learned that it is important to make sure the database has functions to do more specific tasks, otherwise changes may be made that were not intended. The challenges that I faced during this enhancement were surrounding the knowledge I had on CRUD operations. Originally, I did not know that CRUD operations were apart of SQL databases already, I thought it was an entirely different system. After doing extensive research on how to enhance the database and allow for better querying, I found that CRUD operations do work with SQL databases. However, they are just simpler, more basic operations. By adding the extra functions to allow for more specific actions to happen, the previous functions just needed a little bit of modification to make it seamlessly work with the new additions.