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CS-499

Milestone Four Narrative

10/4/2025

The artifact I chose for enhancement plan three is a CRUD based application that ties into a database that sorts through an animal shelter to find the most suitable home for dogs. This specific artifact was created roughly 10-12 months ago and required the Jupyter Notebook extension to function.

I decided to include this artifact in my ePortfolio because databases are what I consider my weakest skillset when it comes to software development. While I kept a lot of the work within the Jupyter Notebook itself I was able to enhance the CRUD file to work more efficiently and adjusted the credentials for database access to no longer be hardcoded for security purposes. This enhancement showed me that I have come a long way in developing databases specifically when it comes to putting security at the forefront and making the base of the application more efficient.

The course outcomes I originally set out to meet were outcomes 3, 4, and 5. Outcome three was a big one for me because the trade-off I came to was that running the application outside of Jupyter Notebook would negatively impact on the overall integrity of the system, so I decided to keep the files within the Notebook framework. This enhancement aligned with outcome four in a very interesting way that I did not expect when initially going over the enhancement plan. As it turns out, there is no Jupyter Notebook extension for Visual Studio. This meant that I had to install and configure Visual Studio Code with the proper Python and Jupyter Notebook extensions to make this entire enhancement plan possible. Another big thing I utilized during this enhancement was the AI tools provided by GitHub. This CoPilot helped me decipher error codes and recommend solutions to errors without giving me direct lines of code. I found this tool to be extremely helpful because the constructive feedback provided without an actual code reference allowed me to formulate my own solutions without outside interference. Finally, adding the proper imports to enable the login information to not be hardcoded was the biggest piece of this enhancement that aligned with outcome five. Keeping login credentials confidential is extremely important and helps keep the application in line with the CIA Triad.