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CS 499 Milestone 4

The artifact I am using for milestone four is my final project from my cs 340 class. This project we created a mongodb using data provided from the instructor. We then had to make a backend program to access this data. We had to have a create,read, update and delete function in this. We then had to make a front end web portal for users to access this data. The web portal is to be used by an animal shelter.

This was my first experience with full stack development and using a database in a real world application. I wanted to include this project for my artifact due to its real world feel and the fact that I had some known issues when I finished it in my cs 340 class. The main issue I found and could not resolve at the time was database functionality speed. My create, read, update and delete functions seem slow to standard. This made it a perfect candidate for me to enhance now.

The enhancements I made on this project include rebuilding the create,read,delete and update functionality of the backend to the database. I had to rebuild from the ground up to enhance the speed of the functions. This was done by storing user queue data throughout the program instead of having to grab the user queue for each run. The next change was an addition of a login feature. This was done to the front end web portal and supported in the backend. The database stores password information. The following change was changing the commenting standard throughout the code with readability and professional use in mind. Finally I updated the included readme file to include the changes made

The course outcomes I reached with these changes are as follows. 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. This was achieved with rebuilding the create,read,delete and update functionality of the backend to the database to increase speed and efficiency. The next outcome I reached is to 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 was achieved by reworking commenting standards throughout the code and updating the readme file. The final outcome I reached is to develop a security mindset that anticipates adversarial exploits in software architecture and designs to expose potential vulnerabilities, mitigate design flaws, and ensure privacy and enhanced security of data and resources. This was achieved by adding a user login feature to the webportal, this limits the access to the database and protects client data.

Comparing what I achieved with these changes compared to my original plan in module one, I met more objectives than I originally expected to. I was able to include the commenting standard change alongside the updated readme file.

The main thing I learned with this milestone enhancement is to ensure you set a strong enough timeline to support unexpected issues. I originally did not expect to have to rebuild the CRUD functionality from the ground up. This added development time I was not expecting.