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CS 499: Algorithms & Data Structure Narrative

The artifact that I chose to incorporate in my ePortfolio was my final project for my CS 340 class that I took in October, 2019. It is a code that is used in MongoDB to utilize CRUD functions (read, create, update, delete) in order to manage/maintain a database. The code itself is short; it only has about 120 lines. However, the reason I chose this piece was because this code is one that I am most proud of. When I took this class, I not only learned about how to use MongoDB, but it was also one of my first times experiencing how to write in Python. I had many hurdles and had to seek a lot of assistance in order to understand concepts and strategies, but I completed it with a lot of time, effort, and determination. What showcased my skills in this was the ability to write a code that contained CRUD functions that any user was able to utilize in the Terminal to enter commands that displayed the desired results. How this applies to the algorithms and data structure portion of the ePortfolio is the ability and skill to manage data within a database using a combination of functions and commands.

Improving upon this artifact did not go the way that I expected. Not only did I run into obstacles along the way with not being able to access the environment needed to modify the assignment, once I was able to I found that my original plan of changing the Python code to Java was above my level of expertise. Java is another language that I am not the most familiar with, but when I changed the code more errors arose. When I would fix one problem, three more surfaced. I sought out assistance online from forums on this type of ordeal, and every piece of advice given was to not change the language. This was not due to the fact that it was impossible, but rather, the environment and set up would need to be altered to fit the needs of the language. Given the fact that my computer and operating system were not applicable for what was needed to be installed, I decided to change my course of action to an alternate route. I decided to edit my code to incorporate aggregation and finding functions in addition to the CRUD functions. Aggregation is an operation that takes large data amounts, groups them, and then returns a single result. For example, I could take the data, find a like-variable to match, and return how many of them were contained within the data set. Even though this did not meet the requirements of my initial plan, this still meets the requirements for this sector of the ePortfolio. Adding aggregation and finding functions showcase the ability to expand what my code could do in regard to data manipulation.

Given these challenges that I faced with this project, what I learned was that patience is key with coding. Having patience helps with reducing a stressful environment and potential for errors. When I was attempting to translate the language from one to another, I found that it wasn’t as simple as a line-to-line translation; there was so much more involved that I was unable to change myself. One other thing that I learned is that there are many ways to complete a desired task. The task of this ePortfolio section was to display my ability to enhance a project that dealt with data structures and algorithms that would suit the requirement which displayed my ability to do so. Overall, I find that this project enhancement was a success, as well as a learning process.