**4-2 Milestone Three: Enhancement Two: Algorithms and Data Structure**

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CS-499: Computer Science Capstone

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1. **Briefly describe the artifact. What is it? When was it created?**  
   The artifact used for this milestone is ProjectTwoDashboard from CS-340 Client/Server Development. I created this artifact during the 2023 May-June term at SNHU. In this project we created an interactive dashboard using Python language, Jupyter Notebook, and MongoDB. The entire project was completed in the virtual environment Apporto. The interactive dashboard used data from a csv file about shelter animals and allowed the user to filter by rescue type for dogs. There was also a map and a pie chart showing all of the animals.
2. **Justify the inclusion of the artifact in your ePortfolio. Why did you select this item? What specific components of the artifact showcase your skills and abilities in algorithms and data structure? How was the artifact improved?**  
   I selected this project for the second milestone because I felt it had a good foundation that I could build from. This was a challenging project for me, and I wanted to see how I could improve it. I implemented a hash map for this milestone. I decided on a hash map because those data structures can handle large amounts of data, and the csv file I am working with has 10,000 records on it.

A computer screen shot of a program

AI-generated content may be incorrect.

This shows my ability to recognize when there are more appropriate data structures that can be used. In this milestone, I was also going to allow for the user to select multiple rows on the dashboard, but I realized I made that enhancement in milestone 2.

1. **Did you meet the course outcomes you planned to meet with this enhancement in Module One? Do you have any updates to your outcome-coverage plans?**  
   Yes, I met outcomes 1 and 3 with this enhancement. I do not have any updates for my outcome plan currently.
2. **Reflect on the process of enhancing and modifying the artifact. What did you learn as you were creating it and improving it? What challenges did you face?**  
   I learned how to create readable data structures during this enhancement. I did come across some challenges of not being able to run the file because it is not connected to the database yet. This makes it difficult for me to check that the enhancement worked as intended. I am looking forward to completing the final enhancement and hopefully seeing the entire project come together as planned.