**3-2 Milestone Two: Enhancement One: Software Design and Engineering**

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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 the first enhancement is the final project from CS-340 Client Server Development. This project created an interactive dashboard using Python, Jupyter Notebook, and MongoDB in the virtual Apporto environment. It was created in the May-June term in 2023 at SNHU. The interactive dashboard showed various animals from an animal shelter. Filter options were created to filter the different rescue dog types. A map was created showing the location of the selected animal, and a pie chart was used to show the different selections made on the data table.

1. **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 software development? How did the artifact improve?**

I selected this project because it was my first time using MongoDB and Jupyter Notbbook. I learned how to connect a database to the Python file and how to create interactive data tables and dashboards. This course improved my skills using Python coding language. For the enhancements, I continued to use Python language using PyCharm IDE. The enhancements were made to the ProjectTwoDashboard.ipynb and main.py files. One main component this project was missing was authentication. I was able to implement authentication using FastAPI and OAuth2, creating a level of security.

A computer screen shot of a program

AI-generated content may be incorrect.

In addition to the authentication, I also added more filtering options to the dashboard code. Previously, the filtering options only included the rescue types. I added the ability to filter by animal type (cat or dog), and sex of the animal (male or female).

A screen shot of a computer program

AI-generated content may be incorrect.

I also switched from radio buttons to a checklist to allow the user to select more than one filter.

A screenshot of a computer program

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A user could only select a single row at a time, so I updated the code to allow the user to select multiple rows at once.

A screen shot of a computer code

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These improvements showcase my ability to anticipate user needs and improve the user experience.

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?**

I planned to meet course outcomes 2 and 5 with this enhancement and I did achieve this. Outcome 2 was achieved by cleaning up the comments in the code and outcome 5 was achieved by adding authentication.

1. **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 a lot about hashing passwords and using JWT tokens. I also used Git Bash for the first time, which is a terminal emulator that allows Windows users to use Git and Bash commands (GitLab, 2024). The main challenge I faced was not being able to connect to the dashboard because it was previously hosted in Apporto, which I no longer have access to. Since I could not connect to the dashboard, I was unable to check that my enhancements worked. I do plan on finding another way to connect to the dashboard so that I can check my work.

References

GitLab. 2024, December 16. *Git command line on Windows with GitBash*. GitLab.

h<ttps://about.gitlab.com/blog/2024/12/16/git-command-line-on-windows-with-git-b>ash/