Michael Oelschlager

Dr. Fitz

CS-499

22 June 2025

Enhancement One and Three: Software Design and Engineering, and Databases Narrative

The artifact I have chosen for this milestone is the ProjectTwoDashboard.ipynb file from CS-340, Client-Server Development, and its linked supporting file AnimalShelterCRUD.py, which handles the interaction between the dashboard and the database for the project. This project is a software application I assembled in a previous course, which uses both an HTML user interface and a MongoDB database with CRUD functionality. I plan to use this artifact for both the first and third enhancements of my final project for this course.

The enhancements I have chosen for this artifact are to redesign the user interface using UI/UX principles for the software design and engineering enhancement, and update the CRUD functionality for the database for the databases enhancement. In addition to these enhancements, I also need to install the supporting software that has gone missing since I finished my CS-340 class and debug the program so that I can check the dashboard's view. To improve the user interface for my first enhancement, it's important to follow UI/UX principles such as keeping the UI simple and easy to understand, making sure the important information is at the forefront, and establishing visual hierarchy for the various parts of the dashboard layout.

For the process of implementing my software design and engineering enhancement, I moved the grazioso salvare logo to the top left corner, moved the title to the same level and added an extra line with the project's name, and shifted the graphs upwards so that they would be

visible when the dashboard first loaded. With these changes, the UI for the project became much more efficient and simple to understand, with the most important and informative parts of the dashboard at the forefront and near the top of the page, establishing a strong visual hierarchy. I believe that this enhancement has achieved all the goals I have set for it, and accomplished the course outcome for software design and engineering.

The AnimalShelterCRUD.py file is closely linked to the ProjectTwoDashboard.ipynb program, and has been used to meet the databases enhancement category for my project. The original project included quite a lot of database functionality, although some of it was lost when I lost access to the CS-340 virtual environment. In addition to enhancing the CRUD functionality of this project, I also built a local database of the same kind the project originally used and populated it with the same information set once I found the aac_shelter_outcomes file that was used before. Between the project's database, CRUD file, and dashboard, the best enhancement I could think of that wasn't already a part of the original project was to update the AnimalShelterCRUD.py file's functionality to allow it to handle multiple database entries at a time for each aspect of CRUD operations, and to build an additional function for counting database entries. I believe my work on this part of the project has achieved my goal of demonstrating my skill with working on databases and accomplish the databases course outcome for CS-499.