Maxim Colburn

CS-449 Computer Science Capstone

Southern New Hampshire University

Professor Bryant

October, 6th, 2024

Enhancement Three: Databases

The artifact I created was to manage an animal adoption system called AnimalTracker. This database stores information about animals, their adoption status, their health status, feedback from previous customers, and audit trails. It was created for CS-340. This project was initially created on the SNHU virtual environment, which I could not get into due to it being a past course. So, I took it upon myself to build it in Codio from scratch.

For my ePortfolio, I chose this artifact that showcases my comprehensive approach to software development, with a strong focus on database design and user interactions. The design features three tables: 'animals\_simple,' 'feedback,' and 'animal\_audit,' Which demonstrate my understanding and skills in database creation. The added features, such as triggers for health status automation and a complex feedback system, highlight my ability to work with intricate logs within a database. The numerous queries I created for data retrieval and manipulation underscore my strong grasp of SQL and data retrieval techniques. Each feature enhances this artifact, making it more user-centric and accountable.

My planned course outcomes in module one made this a more reliable database with more features. I could not piece together my work from my previous assignment due to the barriers due to the virtual environment. I overcame these barriers by starting fresh and creating a whole new database. I was able to re-create a successful, well-structured database. I also demonstrated that I can write complex SQL queries for data manipulation and retrieval. Lastly, I applied my best practices in database management, ensuring no bugs / and clean tables. Overall, I achieved these outcomes when creating AnimalTrakcer in the Codio database. For my upcoming coverage plans, I will add an authentication system to help secure the database and improve the user experience.

During the creation of this artifact, I encountered numerous enlightening moments and challenges. One of the most significant learning experiences was gaining a deeper understanding of how to create better databases and automate specific processes. I also learned how to handle foreign vital relations, which is crucial for ensuring referential integrity. I faced two major challenges: attempting to build the original piece on Jupyter and Mongodb, only to realize that I needed a different configuration than the class used, which I spent countless hours trying to fix. However, after moving to Codio and starting from scratch, the biggest challenge was working with a foreign key when creating the feedback table. This required extensive research on my other tables and their relationships. Despite these challenges, I believe it was a relatively smooth transition, given my position when trying to fix the original artifact.

Overall, I am thrilled with the significant contribution the AnimalTracker database has made to my growth as a software developer. It has allowed me to apply older skills that I had not used for some time, and I am excited to have completed this project the way I envisioned. I look forward to expanding on similar projects in the future. Below, I have provided code snippets of my queries to showcase my work.