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CS 499

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Milestone Four

This artifact was created in October of 2024 in CS 340. The point of this artifact was to create a dashboard for Grazioso Salvare Animal Rescue. This artifact included the development of a web application dashboard. This dashboard included interacting with MongoDB to pull and display animal rescue data, allowing the company to efficiently find information on dogs to adopt to be able to rescue others. This shows my ability to integrate MongoDB into a web-based application showing CRUD operations and the ability to filter outcomes.

I included this artifact to showcase my skills and ability to interact with databases, skills in filtering data and aggregating that data. With this artifact I added advanced indexing and aggregation features in Jupyter notebook that works with MongoDB. This enhances the user experience and improve the query efficiency. I added different query options allowing the user to query the database based on breed, age, and sex. These additional queries help the users find the exact dog they are looking for in the location that they are searching. I added interactive callbacks updating the data and visualizations. I also updated dash to the latest update ensuring all security patches were up to date. Below are some example images showing the updated dashboard with the filters.

A screenshot of a computer

AI-generated content may be incorrect.

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AI-generated content may be incorrect.

With the completion of this artifact, I completed course outcomes 2, 4, and 5. Outcome 2 is to design, develop, and deliver professional-quality oral, written, and visual communications that are coherent, technically sound, and appropriately adapted to specific audiences and contexts. Outcome 4 is to demonstrate an ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals. And outcome 5 is to develop a security mindset that anticipates adversarial exploits in software architecture and designs to expose potential vulnerabilities, mitigate design flaws, and ensure privacy and enhanced security of data and resources. I ensured that the only people that can access the database is someone with the username and password showing a security mindset. I have completed all the Computer Science program outcomes with this last artifact demonstrating my full competency in Computer Science.

Enhancing and modifying this artifact was difficult, I had a hard time setting up MongoDB on my computer and creating an account to use with the database. One thing I learned is that to keep a skill you need to continue using it and that’s exactly what I need to do with databases. Knowing the exact modifications I wanted to make helped me code it faster as I knew exactly what I wanted the program to do. One of the challenges I faced was connecting to my local host, I was able to fix the problem aby reloading the kernel in Jupyter notebook. I believe the notebook wasn’t properly updating. Enhancing this artifact was difficult but I believe it showcased my skills even more.