

Resubmit

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Enhancement Plan: Software Design/Engineering

Overview:

To demonstrate expertise in software design and engineering, we will enhance the existing AnimalShelter class by incorporating advanced features for better performance, security, and scalability. This enhancement aligns with the category of software design and engineering, showcasing skills in database management, security practices, and deployment.

Artifact Description:

The artifact is a Python script (animalshelter.py) that interfaces with a MongoDB database to perform CRUD (Create, Read, Update, Delete) operations on an animal shelter's data. It was created as part of the CS 340 course to demonstrate practical database management skills.

Enhancement Goals:

Advanced Query Optimization

Enhanced Data Security

Scalability and Performance Improvement

Enhanced Code: animalshelter.py

python

Narrative

Briefly describe the artifact. What is it? When was it created?

The artifact is a Python script designed to interact with a MongoDB database for managing animal shelter data. It was created as part of the CS 340 course project.

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 was the artifact improved?

I selected this artifact because it showcases my ability to implement and enhance a real-world application using advanced software design and engineering principles. The artifact demonstrates skills in database management, query optimization, and security implementation. The enhancements include creating indexes for optimized queries, implementing data encryption, and planning for Kubernetes deployment for scalability and performance.

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, the enhancements align with the planned outcomes: designing and evaluating computing solutions, demonstrating innovative techniques and tools, and developing a security mindset.

No updates to the outcome-coverage plans are needed.

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?

The enhancement process taught me the importance of advanced query optimization, data security practices, and planning for scalability. I faced challenges in configuring the encryption options and ensuring that the indexes were correctly set up to optimize queries. The process also improved my understanding of deployment strategies using Kubernetes.