Jeremy Morrison

CS 499 Computer Science Capstone

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ePortfolio Selection and Refinement Plan

For the final project I have chosen CS-340. The course I took has a different name than the option provided, it is not Advanced Programming Concepts, it is Client/Server Development. In this course we were to apply database systems concepts and principles to develop client/server applications that interface client-side code with databases. The project was essentially a CRUD console application that ran a script to manipulate a database. We accomplished this using MongoDB and python Jupyter notebook. In order to fulfill category 1: Software design/engineering, I have decided to transfer the project from python and Jupiter notebook and Mongodb to a website using html, CSS, JavaScript, php, sql. In creating this project as a web application I will be Employing strategies for building collaborative environments that enable diverse audiences to support organizational decision making in the field of computer science, Designing and evaluating computing solutions that solve a given problem using algorithmic principles and computer science practices and standards appropriate to its solution while managing the trade-offs involved in design choices, Demonstrating 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, Developing 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. Through review and reconstruction of this project I will be designing, developing, and delivering professional quality oral, written, and visual communications that are coherent, technically sound, and appropriately adapted to specific audiences and contexts.

This project will demonstrate knowledge of data structures and algorithms by including categorical lists of specified search criteria and advanced search queries. The website will contain a navigation that allows you to choose between advanced search options, category search options, add, delete, and update database entries.

This project will demonstrate knowledge of databases by creating and allowing data manipulation within the database through the user interface provided to the user on the website. The database was originally a JSON format database, and I will be converting this to a MySQL database and connecting to that database in PHP.

Additionally, to demonstrate the security mindset and practice in this project I will include a login page on the welcome page to allow registration and login of users to access the database.

Through this project I believe I will be successfully demonstrating proficiency in the 3 catagories of software design/engineering, databases, and algorithms/data structures. I will be doing this by reconstructing a python mongodb client/server application to an html css javascript php mysql web application allowing registered users to search and manipulate the data within the database. This along with the video code evaluation demonstrates the core outcomes of this class.

