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Self Assessment

As I look back at my journey through the computer science program and the development of my ePortfolio, I can say that I have definitely grown in both the technical and professional sense. This program has helped me to refine my strengths, strengthen my weaknesses, learn new tools and practices, and prepare myself for the Software development industry. Completing this ePortfolio gave me the opportunity to look back at past projects, enhance them with new skills I have developed, and clearly showcase my abilities.

Throughout the program, I’ve gained hands on experience in important areas of computer science. These would include software design, algorithms and data structures, and databases. My first artifact, a GUI investment calculator, shows how I was able to transform a basic C++ console app into a working Python application with a modern looking GUI. This shows my growth in software engineering and UI design, as well as my ability to adapt to solutions across different programming languages.

My second artifact, a Binary Search Tree, shows my ability to work with complex data structures and apply efficient sorting and filtering algorithms. Enhancing this artifact involved adding user-defined filters and sorting logic, which helped me to add to my understanding of algorithmic thinking and performance first thinkings. To filter the data the code performs an in-order traversal of the BST with a time complexity of O(n). Once filtered, the results are sorted based on the user selection using std::sort, which will run at a (m log m) complexity, where m is the number of filtered bids. This way of doing the filtering/sorting is great to keep the time complexity low while also giving the user the intended functionality.

My third and final artifact is a Dash based dashboard built on top of a MongoDB data set, which really shows off my Full stack abilities. The enchantment for this artifact included multiple UI improvements, new filters and sort options, along with an optimized backend for database queries. It represents my ability to bridge front end design with backend data handling and showcases my ability to build an interactive tool to help users make informed decisions.

These projects also show my ability to collaborate and communicate effectively. This is really evident when doing system design for different users or audiences. From my enhancement planning to my code review video, I’ve practiced translating technical ideas and code into easy-to-understand language. This experience also highlighted the importance of security, as I needed to implement ways to validate user input and improve how data is handled in all of the applications. A good example is in artifact three where the database credentials are stored in environment variables, so they aren’t exposed in the code for anyone to see.

In addition to the technical growth, this program has also helped shape my professional goals. I’ve realized that I love building an automation environment, along with data driven applications to help solve problems. I’m especially interested in careers that combine data automation to help users make informed decisions about real word problems. In this type of career, I can continue to apply my understanding of UI, data structures, databases, and system scalability.

Overall, this ePortfolio brings together the strongest example of my work from the past 2 years, along with the knowledge I have learned from the field over the past 4 years. It shows how I have progressed as a computer scientist because of that experience. Each artifact shows a different aspect of my skill set, but together they show my well-rounded ability to design, build, and develop usable applications. I’m excited to carry over this experience into the next steps of my career!