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CS499

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Module 4-2:

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

This artifact is the stack redo/undo enhancement based on the React enhancement. The original artifact was a CRUD based python project which allowed the users to easily iterate and manage data which was originally created in 2024. This new artifact, created in 2025, aims to solve ones of the main issues with databases, human error. The implementation of the undo/redo will allow users to track back on any mistakes they may make through the program recording instances and allowing for the user to either go back, or forward with their actions.

2. **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 algorithms and data structure? How was the artifact improved?**

While the total enhancements can be improved, the undo/redo using the stack allows for the CRUD features to be more user friendly as they can fix potential errors they may have committed. I selected this item because I wanted to build one bigger project rather than three separate ones in order to showcase a “larger” scale upgrade and being able to undo/redo is one of the more important UI/UX features. The ability to use the stack to undo/redo errors shows the

ability to use the data structure to provide a more user-friendly feel to the project which shows the ability to understand how data structures work.

3. 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?

I accomplished the course outcome of being able to design and evaluate computing solutions using algorithmic principles as I had created a stack-based data structure which allows the program to store its states in a nest for the purpose of allowing the user to redo/undo alterations. Overall, my course outcome-coverage plans, through this project, are accomplished as the ability to work with data structures is clearly displayed.

4. 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 biggest challenge for me was finding a way to improve the data structure/algorithms for the project since my initial plan did not properly cover the goals of the course. Contrastingly, in development, the main issue I faced was being unable to find a good way to store past states for the undo/redo events to work properly. Once I found a solid way to implement these designs, the changes were relatively easy. I learned through this enhancement how to properly apply logic to a program that allows for the states to be called upon and altered.

