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CS 499

Milestone Two: Enhancement One: Software Design and Engineering — Narrative Paper

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

This artifact was created in CS 250: Software Development Lifecycle. It is a simple program that calculates compound interest based on a few user inputs. The artifact was created on April 10, 2023, and it was one of the first projects I developed.

# 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 software development? How was the artifact improved?

I chose this artifact because it was one of the first programs I wrote in C++. I selected this item because comparing where I started in programming to where I am now demonstrates significant growth, and improving this program highlights that progress. Since then, I have learned many programming languages and wanted to showcase my ability to work across multiple languages by recreating this project in both Python and Java.

The artifact was improved by creating a more interactive and cleaner user interface. Additionally, the output was enhanced with better column alignment and formatting, making it clearer for the user. In the Java version, I implemented a feature that generates a CSV report and saves it to the local directory for future reference. Lastly, I cleaned up the code to make it more concise, improving functionality, performance, and stability.

# 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?

The outcome I aimed to achieve was to demonstrate the ability to use well-founded and innovative techniques, skills, and tools in computing practices to implement computer solutions that deliver value and accomplish industry-specific goals. I believe I have met this goal through the dynamic and structural enhancements I made to this program.

# 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 process of enhancing and modifying the artifact began with a thorough code review. I reflected on my earlier work and identified areas for improvement. During the review, I realized that several lines of code could be consolidated, and some calculations could be performed in a single step instead of using multiple lines. This made the code cleaner, more organized, and reduced processing requirements, resulting in a more efficient program.