Loren Beck
Milestone 4
CS499
2.2.2025

The artifact that I chose is a text-based game called "Shape Monster Game," which I originally created in 2022 during my IT-145 class using Python on Pycharm. The game is designed for children to help them practice reading by collecting shapes in different classrooms while avoiding the Shape Monster. The point of the game is to gather the shapes and return to the main office without meeting the running into the monster. The game is simple and educational, but it made a great project to show my coding skills.

I chose to include this artifact in my ePortfolio because it shows my technical skills, creativity, and my ability to create educational tools. The game shows my journey from where I learned the basics of coding to using more advanced concepts such as object-oriented programming (OOP) and data structures. I used std::unordered_map to show the rooms and their connections and used std::unordered_set for the collectedShapes to make sure that the shape collection and lookup operations were correct which helped with the game's performance. It has a strong foundation for adding enhancements and has really shown my growth as a software developer. These enhancements not only improved the structure and readability but also made it more maintainable. I made sure that the related logic was kept together making it easier for future modifications and extensions.

I exceeded the course outcomes I planned to achieve with the enhancements in Module One. My original plan was to implement a linked list and a hash table to show my understanding of data structures, however, I went abovve and beyond by incorporating additional advanced concepts. For example, I added std::unordered_ set for the collectedShapes, which allowed efficient shape collection and lookup operations. I also introduced a Game class to show OOP principles, to show the game logic within a flexible and maintainable structure. I then set up the

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foundation for CRUD with a to-do list which I will use to show my skills in the 3rd category

databases. I feel confident that I have successfully met the course outcomes, and I do not have

any updates to my outcome-coverage plans.

Reflecting on the process of enhancing and modifying the Shape Monster Game, I

learned the importance of thorough testing and troubleshooting to make sure that the user has an

enjoyable user experience. By testing the game with my son, I discovered that the theater room

needed adjustments to provide a way out, highlighting the value of user feedback in identifying

and addressing issues. I repeatedly played the game to identify and fix errors in the code, which

showed how important debugging and using coding best practices for clean code is. This

experience improved the game's functionality and also strengthened my problem-solving skills

and attention to detail.