Ryleigh Mathieu

Erik Moore

CS-499 Computer Science Capstone

April 1, 2025

4-2 Milestone Three Narrative

The artifact is a harry potter text-based adventure game. Players are able to navigate between different rooms in Hogwarts to collect items (Horcruxes) to defeat Voldemort. This artifact was created as a project in IT140. I selected this project for my ePortfolio because it was a simple yet fun project that I can now use to showcase my full-stack development skills.

To enhance this artifact, I implemented a graph for room navigation. I represented the map of Hogwarts using a graph where rooms are nodes and paths are edges. I used Breadth-First Search (BFS) to find the shortest path between rooms. I implemented this into game play by providing a hint button for the player to show the shortest path the finish. I also used a hash map for inventory management. This ensures efficient item handling and scalability.

I met the course outcomes I planned to meet with this enhancement. I completed the data structures and algorithms category by 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. I faced a few difficulties designing and implementing the graph and map into the game, however was able to work through these issues.