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CS499

Professor Bryant

11/15/24

Enhancement One: Software Design/Engineering

For Enhancement One: Software Design/Engineering I chose to use a text-based game titled “Battle at Mystery Manor Text Adventure Game” that I created for my final project in my IT-140 Intro to Scripting class. IT-140 was the first class that I took after transferring to Southern New Hampshire University. Prior to this, I had not been in college for two years. There was a lot of information to take in, but I enjoyed what I learned as time went on. Python was the first programming language that I got to use, and it’s remained my favorite programming language this whole time. The text-based game is an adventure-based game that contains different rooms that each contain an item. Players will need to collect every single item prior to reaching the final room to defeat the boss and win the game.

The ”Battle at Mystery Manor Text Adventure Game” is an excellent artifact to include in my ePortfolio because it highlights several key aspects of software development that showcases my creativity, problem-solving abilities, and a great understanding of programming concepts. The artifact demonstrates proficiency in Python such as the use of functions, dictionaries, loops, and conditionals. Demonstrates the ability to build a user-focused application with an emphasis in engagement and usability. It also demonstrates my ability to think creatively and solve problems effectively by designing a room-based game world that has specific rules and objectives.

These specific components of the artifact showcase my skills and abilities in software development. Logical room transitions through the “move\_between\_rooms” function shows a clear understanding of mapping user input to actions and logically managing room navigation. Inventory management through the “get\_item” function dynamically updates the player’s inventory which showcases mastery of list operations and modified nested dictionary structures. Interactive user input uses a main game loop to handle user input dynamically and validates commands which showcases my ability to create robust input/output systems. Game flow design through winning and losing conditions demonstrate how I defined a clear game objective which adds structure to the player experience. The artifact was improved by expanding the artifact with additional features. First, I added a small description for each of the different rooms in the game. Next, I implemented a limited inventory management system which increases the difficulty of the game as it forces the player to strategize with which items they may want to keep. Next, I implemented new commands like examine for room description, drop to drop an item from your inventory, and inventory to view all the current items within the inventory. I also imported the random module that allows the player to encounter the boss prior to obtaining all the items which will result in them losing the game.

The course outcome that enhancement aligned with was: **Demonstrate an ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals.** After reviewing the enhancements made I’m certain that the enhancements made meet the course outcome that was planned. During the process of enhancing the artifact I learned how to define new functions such as examine, drop, and inventory that expanded the artifact. The biggest challenge that I faced was properly implementing the “import random” module that generated the random final boss occurrence. During the initial enhancements I actually broke the functionality of the game which frustrated me, but after carefully reviewing the changes I made I was able to get the game running with the enhancements made. There was so much that I learned when making the enhancements, and it isn’t something that I thought was possible when I first made the artifact in IT-140.