**Milestone 3 Narrative**

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This artifact is the text-based game, Succulent City. The objective of the game is to navigate a castle for items to help defeat the Argentinean Ants that are destroying Succulent City. I created this project early in my studies in the course, IT 140. I selected this artifact as my second and third artifacts to update because I could use it to showcase my skills in algorithms, data structures, and databases. I wanted to create a more complex way for players to beat the game so I set up an algorithm that would make winning the game not only dependent on gathering the required items but in also being lucky enough to have a successful fight against the game Argentinean Ant. I improved the artifact through creating algorithms that allowed the user to register, login, and play against the game boss. I also created relational database tables so that data was more easily accessible in the project. Instead of having duplicate data in multiple tables, I broke apart the data into multiple tables so that it increased project efficiency.

The course outcomes I planned for this artifact were to 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 and to develop a security mindset that anticipates adversarial exploits in software architecture and designs to expose potential vulnerabilities, mitigate design flaws, and ensure privacy and enhanced security of data and resources. I met the first outcome by implementing an algorithm that would continue to iterate until a user registers and/or logs in and I implemented an algorithm that calculates damage taken and given in the final boss fight so that winning the game becomes more complex than simply gathering each inventory item. I met the second outcome by implementing relational database tables and while in this scenario, there isn't complex data stored in the tables but it does showcase that I can securely organize databases with different tables so that private information can be more securely stored and maintained. I also implemented the course outcome of 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 implemented this course outcome by my implementation of algorithms to improve the game function and experience.

During the time of enhancing and modifying this artifact I faced a lot of challenges. I had not implemented a database in a Python program, but I have regularly created repositories to connect my Visual Basic .net (vb.net) projects to database in my job so I wasn't completely new to connecting code to a database. There was a lot of debugging and incrementally working through the project to ensure that it was functioning as intended. I also had to re-design the database tables several times so that the interaction between them was as expected. Growing in my skills at debugging and correcting errors has been a great experience during this course. When working on updating and maintaining systems it is important to be able to review code to find errors and where different code functionality is occurring. All of the issues that I ran into with implementing the new functions in this project gave me more experience and confidence that I can find issues in projects and resolve them.