**ePortfolio and Professional Self-Assessment**

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Hello, my name is Daniel Finley and before I started this computer science program, I knew very little about how computers operate. I have always worked in a physically demanding job and decided that I need a change. I wanted to challenge myself to learn a new skill and settled on computers and programming. I did not expect this to be as difficult as it has been. Doing this course all online has been the toughest part, I basically taught myself what I know. Which means that I still have a lot to learn. I understand this and cannot wait to learn more after school is over. Throughout this course I have worked with Python, Java, C++, Unreal Engine 4 and 5, and some html.

Python was the first coding language I learned. Starting with *print “Hello world!”* and moving to creating a text base game from scratch. The text base game took the player’s input and moved them throughout the map. If the player moved in a direction that did not work, there would be a warning telling the player “You hit a wall”. The player was tasked with collecting items to help them escape without running into enemies trying to stop them.

The second coding language I learned was Java and working with user input and displaying simple tasks on screen. Java was tough for me to pick up at first just based the difference in syntax with Python. But once I got the syntax down, I was able to use it to input data into a database and display it on a local host webpage or mobile apps.

C++ is my favorite coding language to use, because it feels like real code unlike Python and easier to read/write than Java. C++ was used to work in non-SQL databases. Taking user input to insert new data into an existing database, editing existing data, or removing obsolete data. C++ was also used to create a 3D scene by connecting 3 vertices to create 2D triangles and connecting these triangles to create 3D shapes.

Communication is very important for whatever job you have. Coding is no different. Commenting throughout your code is highly important and something that I greatly improved on. Making a detailed name for each variable only tells half of what the variable stands for. Without commenting on what each class or function does, it is difficult to go back and know exactly what each does. This will be more difficult if more people work on the application. Being an online student, I did not have many chances to work in a team environment besides working with Unreal Engine 4 (UE4). In a team environment we created a 2D side scrolling game. We used discord to communicate and set up specific meeting times to discuss our game. UE4 uses blueprints to help create the C++ code, but still this needs to be sectioned off and commented on.

The artifact that I worked to improve on for my capstone project is my 3D scene from my CS 330 class. With this assignment, I was tasked with creating a 3D scene with the requirements of certain number of shapes and a light source. The 3D shapes were created by connecting vertices to create 2D triangles. To create my scene, I first created a plane from 2 triangles. On the plane, I created a pyramid, a cube, and half of a house. The pyramid consists of 10 triangles, 2 on each side and 2 on the bottom. The cube consists of 12 triangles with 2 on each side also. The half house has 8 triangles with 2 on each side. The light source floats above the scene and rotates around to show the shadows rotating. The issue I have with the scene is it consists of one color. I spent all term trying to implement textures to the shapes to give the scene a more detailed look.

As with all skills, I need to improve my understanding of how certain codes work. Knowing how each variable works and how each line works will be beneficial to learn. Where I ran into problems was working alone. Working with tutors helped me understand more about how each program worked. It is easier to ask someone a question than it is to search for it online.