Daniel Anderson

Comp Graphics and Visualization

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**Project Reflection**

Throughout this entire project I learned and great number of things that will always be helpful in the future throughout my entire career choice. This project has taught me several different things about how to handle coding on so many different levels including how to add to preexisting code and how to properly track what I am coding into the project as I go along. So, when I chose to create a scene where there were many different things, I had to investigate such as certain shapes and to even had to learn how to construct them with just triangles. The first step was to create a base level that all my other objects would sit on, and this was my first challenge. Creating a plane is simple enough in concept in theory but to code I had to imagine the plane on a 3D axis and then draw the triangles in to it just to get a basic concept down. After the plane was created then came adding in my cube, this challenge was easiest since it was mostly just repeating the process of the plane, however I needed the cube to rest on top of the plane and not pass through it. This was my second challenge and smoothed out the more I messed with the vectors to not cause too many collisions or clipping through the shapes. After this adding the triangle, cylinder, and the last plane were basic and easy to code in within the scene. I then selected the colors to separate the objects for them to stand out from each other to see how they all connect and work with each other. Lastly light needed to be added and I had to select the correct light source in order to had the effect I wanted to my scene. After reviewing the different types of lighting, I chose to go with ambient lighting for it to have a more natural look to the objects.

The next big step within this project was to create motion and movement within my scene. After learning how to first of code in the movement it was very easy to implement into my code and to make work correctly. The first thing I got to add in was using the “WASD” keys to have movement within the scene to allow the user to move around the scene to see it from different views. After the movement was added in and working properly, I used that to look at the shapes to ensure that the scene and objects were sitting with each other correctly and the colors were covering the shapes all the way around. This movement allowed me to ensure that everything was lined up and ready to go. The next step was to add mouse controls to my scene and allow the user to view it in different angles within the scene. The mouse controls were important to add because they allow a different view that the “WASD” wouldn’t allow.

After everything was added into the scene, keeping it organized was very important to add more things to it but also allow me to add those things to the correct spot. For me to maintain this organization I had to ensure I had proper comments within my code to make the beginning and the end of different events that were happening within the code. The commenting became even more detailed when I had to code each shape. The reason this coding was so important is because like I previously stated everything in triangles, so I had to make a comment on every single point within each shape to ensure that everything connected and linked back together. Commenting on everything was very time consuming however it was the most helpful when I referenced back to my photo because I marked the photo with the same comment names. Overall, this project taught me a lot about keeping my code clean and to ensure I have proper comments throughout the code to ensure nothing gets jumbled together and is easily readable.