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CS-330 – 22EW5

Final Project Reflection

For my 3D scene, I chose to create a model based on the house I recently moved into. My reasoning for this was that I could build it using the required number of primitive shapes and I thought it would not be as difficult to create the model at the start of the course. As the course progressed and we got into more advanced concepts such as creating primitive objects more complicated than planes, pyramids, and cubes, as well as texturing objects, I quickly realized how difficult it would be to render all parts of the house. My original intention was to add bushes and posts for the front porch, but I needed to focus on the structure of the house itself due to time constraints.

The bulk of the model could be built with cubes, pyramids, and planes. I had Four objects that made up the structure of the house. My primary use of a plane was the ground that the house sits on, but I also considered the roofs on the house to be a mix of pyramids and planes since the roof was a longer shape than an actual pyramid. The house structure and the front porch were created by using rectangular cubes. Since I knew I would have more difficulty figuring out how to create other primitive shapes, this the house started to feel like it was a smart choice due to it is square like design. Texturing the house on the other hand, was a task I was not able to fully comprehend. I could use one texture but could not figure out how to apply multiple textures to create a roof texture different from the siding. I made several attempts to add multiple textures to the scene, but when I made too many changes to my code, the model would fail to render.

Users can navigate my scene using the W, A, S, and D keys for forward, backward, left, and right movement. The mouse mouse/trackpad can be used for changing the angle of the camera. Scrolling on the mouse or trackpad with adjust the speed at which the camera will move forward and backward. The Q and E keys move the camera up and down as well. Another feature is the ability to switch between orthographic 2D perspective and a 3D perspective by pressing the P key and spacebar. This was made possible by utilizing the UProcessInput function.

A function I used in my code to make to make it more modular and organized was the UCreateMesh function and how I organized my vertices and indices within the function. Rather than just go point-by-point in how I created my triangles, I separated each triangle and labeled each on so that modifying or adding to the structure would be easier to do. As the weeks progressed, I found myself wanting to add to the structure I created, so being able to know what each vertex coordinate was made this incredibly helpful.