Mao Christie

December 12, 2024

CS-330

Final Project Reflection

The scene I chose to recreate for the final project is a kitchen countertop with a board on which a plant pot(and plant), clock, shakers, and jar sit. Out of these items, I chose to recreate the board, two salt shakers, the plant pot, and the clock. I chose to recreate the board to act as the base on which everything else will sit. The clock, plant pot, and shakers required more than one primitive shape to recreate, and so I chose these items to fulfill the requirement for more complex items. They were also more challenging objects, which helped me become more familiar with using OpenGL as they required more thought and research to figure out how to recreate. To program all the required functionalities, I used the resources provided throughout the course, as well as other sources like stack overflow and OpenGL tutorials.

To navigate the scene, a user can use two input methods: a mouse or keyboard keys. I coded several methods to specify the movements that could be done with a keyboard or mouse. To use the mouse, moving the cursor moves the user through the scene, and the mouse scroll changes the speed of movement. The WASD keys on the keyboard move the user forward, back, left, and right. The Q and E keys move the user up and down. The P key changes the scene display to a perspective view and the O key changes it to an orthographic view.

I used custom functions like loadSceneTextures(), SetupSceneLights(), and DefineObjectMaterials() to help keep the code modular and clean. By using custom functions, each task could be broken down into a specific function, which makes them reusable in the future and easy to identify in case of updates or fixes. If the lighting needs to be changed, it only needs to be changed in one place. Custom functions like the examples I mentioned also keep the code clean by being called with a single line when needed rather than writing several lines of code for each object, material, and texture.