Brighton Ulery

CSCI 330

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Reflection

For this project, I chose to create a scene of some of my daughter’s toys. I chose this scene as my subject as the toys provided a lot of different shapes that would be interesting to model in OpenGL. The stacking toy provided the most variety, with its base and rings offering a lot of shapes to choose from. I also included a ball and three cubes to even out the space while providing varying object rotations. This not only enhanced the scene but provided more of a challenge with placing the 3D objects within the scene correctly to emulate the original image.

The objects I chose also had some variance in their texture. The stacking toy was made of wood, the ball was made of glossy plastic, and the cubes were made of a duller rubber-like material. The flooring in the scene also had to be considered. This provided different materials to work with in terms of creating lighting for the scene. Some objects, such as those made of wood, would be far less reflective that others with glossier textures, such as the floor or the ball.

Navigating around the scene is very user-friendly, designed similarly to how many already navigate around scenes or games. The WASD keys are used to move in cardinal directions; forward, backward, left, and right. The user can also use Q and E to move the camera up or down, respectively. To increase (or decrease) the speed at which the camera moves, the user can spin their mouse wheel forward or backward. A niche feature was included as well for changing the view: P changes the view to perspective, while O changes the view to orthogonal.

In terms of custom functions developed for this project, there were none. All of the functions were either provided within the project source code or taken from the completed example project that was included. I did, however, have to learn how these functions worked, what was expected in terms of variables, and how to apply them correctly to achieve the scene I wanted. For example, when implementing the mouse scroll wheel controls, I had to look through the source code provided to understand how to set up a callback function, as well as understand the variables that needed to be passed to the function. I had to modify existing functions to include the desired functionality, such as locking the camera rotation when in orthogonal view.

The most difficult part of this project was the lighting. Thankfully, the professor assisted us with this. In retrospect, I believe that I could manage to correctly place my own lights now that I have had more time to experience the OpenGL lighting system. Making modifications to the material lighting became more apparent on how it would affect the scene as I progressed throughout this unit.