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7-1 Final Project Reflection

The scene I chose is ideal for this project because it contains several objects, many of them complex, but there isn’t an overabundance of objects in the scene. I also felt that I had a good intuition of which primitives I could use to construct each of the complex objects in the scene. For instance, I knew that I could construct the coffee mug out of a cylinders and a tori, the laptop out of rectangular prisms, and the notepad out of a cylinder and a rectangular prism. I sought out an image that had interesting lighting and a mixture of simple and complex objects. I also knew that, given the short time frame for the class term, I should look for an image that wasn’t too overly detailed, since that would most likely require more time than I could spare.

Navigating the world is fairly easy. The user can navigate forward using the w key, backward using the s key, left using the a key, and right using the d key. The camera can be raised and lowered using the q and e keys, respectively. It is also possible to switch between perspective and orthographic views. This is accomplished by using the p and o keys. The user can also control the viewing angle by moving the mouse cursor. Movement speed is controlled using the scroll wheel. If the user scrolls up, the camera’s movement through the scene becomes slower. If the user scrolls down, the camera’s movement speeds up. These controls allow for very intuitive movement throughout the scene and allow the user to get closer views of objects of their choosing.

The majority of the custom code I created for this program revolved around drawing individual objects within the scene. These functions allowed me to change the position and scale of the objects within the scene. Instead of having to adjust the x, y, and z coordinates of each primitive, I could simply adjust the origin of the whole object. The scaling functionality came in very handy, as I created each object individually and then integrated them into the scene, after the fact. While each of the objects looked correct individually, when I put them all together, they were not consistently scaled with respect to each other. The biggest issue involved with this scaling functionality was figuring out how to keep the primitives that make up each complex object positioned correctly with respect to each of the other primitives while changing the scale.