Design Decisions

The first object I selected to create was the coffee mug, which is a good choice for my work because it allows me to demonstrate creating an object using multiple different 3D shapes. The shapes I used to create the mug were an upside-down tapered cylinder for the body of the mug, a half torus for the handle, and full torus for the rim.

The user can navigate the 3D scene using a combination of the mouse and keyboard controls/ A user can change the camera view, and the keyboard to move the camera’s position. W, A, S, D can be used to move forward, backward, left, and right respectively. Furthermore, Q and E can be used to move the camera up and down. Also, the mouse’s scroll wheel can be used to increase the speed at which the camera moved.

One custom function in my program that is used to make the code more organized is the defining object materials function, which allows the creation of each material to be separated from the rest of the code. Furthermore, another function in the program used for organization is the setup scene lights function which allows the all the code for both point and directional lighting to be separated from the rest of the codebase. Also, the load scene textures function does the same, allowing all imported textures to be separated from the rest of the code. Finally, there is the prepare scene and render scene functions which help with initializing all materials, textures and objects, then transforms and renders them.