Design Decisions

**When coming up with the scene I kept in mind first the requirements to include four objects, covering at least four simple shapes, with at least one being a complex object. The second thing I decided is I wanted a scene that was real to me, so I used objects I had next to me and only moved them for a better picture environment. I did this so that I would have easy references later and could take closer pictures for better textures later.**

**When it came to building objects, I had quite the learning experience. At first, I fumbled every step of the way not knowing what affected what in the code I was learning from. As I created more objects and added more to the scene, I began to learn how everything functioned and from that I made a few big decisions. First, I would put textures on everything and have lighting affect everything rather than create another shader for non-textured objects. Second, I found an easy way to create vertices, normals, and texture coordinates for circles and so I implemented that in most of my objects except the plane, the light cubes, and the body of the switch. Third, I reused whatever code I could during the rendering and got rid of anything extra as it started to really cramp up the code.**

**I used the old fashioned WASD for movement with the mouse being used to change the view orientation. In addition to that I placed the camera at the optimal position from the beginning so the user will not have to move much for a good initial view. I added in the ability to move the main light to check if the lighting effects were working appropriately and I left that in for the user to get better light angles if they want during viewing.**

**I made separate meshes creating functions for almost every object in the program as almost none of them could be directly reused with two notable exceptions. The controllers were the same shape and just a mirror of each other, so I used the same mesh but translated and rotated the second one. The only issue that came up was needing to flip and invert the texture, so it matched after movement. The other exception was the light sources. Both could be the same in every way except position and color, so I reused that mesh as well.**

**I stand by all these decisions with where I am now and the time I had. Going forward I would prefer to create a class for the mesh creations as scrolling up and down the code to make changes got very tedious by the end. This did not affect the functionality of the code but would clean up the look and make finding and fixing issues much easier.**