Module 7 Project

I will start off by saying that this course was very difficult for me, but I did try my best to complete all assignments. While developing my 3D scene I made the decision to trim it down a bit. I was having trouble including all my objects. I was also having trouble creating some of the objects as well. I decided to remove the pen from the cylindrical slinky object and lay it flat on the table. Given some time restraints on my end, I was only able to add three objects to be placed on top of the plane (desk). I was able to include a lot of my previous code from my milestone work to help create this scene. The milestones were very helpful for me. I was unable to figure out how to add multiple different textures to my objects. I really wanted to make my notebook look more like a notebook by adding a paper texture to some of the sides, but I could not figure it out. I chose the less complex objects from my 2D picture because I was struggling a bit. The pen was difficult because of the tip, but I was able to figure that part out. The other two objects were mainly rectangles, and I have been coding those for some time now when completing the milestones/assignments in previous modules.

As with the previous modules, this scene has the capability to navigate using the “A”, “S”, “D”, “W”, “Q”, and “E” keys. The user can use these keys to move around the scene in the following corresponding directions: left, backward, right, forward, up, and down. The user can also use the mouse scroll to increase the rate at which you can traverse the scene. The user can also use the “P” key to change the perspective; although I am not completely sure I did this correctly. I did have a little trouble understanding this aspect of the assignment. I did some research and perused through the past and present module’s resources, but I feel as though what I did may not achieve what was asked. To complete all of this, I had to make some changes to the camera header file. I needed to change and/or update some global variables and place them in the correct functions to be used correctly from the source file.

There are a few custom functions within the code I wrote. Important functions to note would be the render and create/destroy mesh functions. These function help organize the code and help with efficiency/reusability. Within main, we can now use a while loop that will continuously call the render function, over and over, while the window is open. Putting all the code from the render function inside this while statement would be cluttery and not very easy to read. The same can go for the create/destroy mesh functions. Instead of having multiple lines of code within main, we use the functions instead. Having the create/destroy mesh function can also help with future development. If we want to add more objects, we already have functions in place to add code to or to use/call from main. One last thing I did was I created two objects with one array that holds the vertices. I noticed that the airpods case and the notebook would both be rectangles, so I used one array and scaled, rotated, and translated the vectors accordingly from the render function.

All in all, I do wish I could have done a little better recreating my 2D scene. I wanted to make it as realistic as I could, but I underestimated how difficult that would be. Although very difficult, it was fun, and I did not think I would ever be able to develop any type of 3D object and be able to navigate through a scene. This was a very good learning experience, and I am glad it was done using C++. I have not used C++ in a very long time, and it was good to brush up on those skills.