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Reflection

This scene was an interesting one to work on and I am proud of my work throughout the weeks. I chose the objects I worked on based on the complexity of the objects and planned out how I could create these objects using basic shapes. Each object is made using at least three basic shapes and laid out in ways to help show the details in OpenGL. I also wanted each object to be in slightly different parts of the table as if they were naturally placed on the table to create a visually interesting scene. When creating the functionality in the code I had some difficulty with creating an orthographic view option that allowed each object to be visible at once, so I rearranged the items to be closer together. I also placed some items closer to the camera and others further away to create a pseudo three dimensional effect even when the camera is set to show an orthographic perspective of the objects with some items being behind others.

To achieve the ability to pan the camera with the keyboard I simply had the program check for the key that is being pressed and to have the camera move in the expected direction at a rate monitored by the change in time, so the movement would be smooth for the user’s experience. To achieve the functionality to allow the user to control how fast movement with the camera is I noted the attribute which governed the speed of the camera and asked the program to check for the mouse scroll wheel’s movement and to change the speed accordingly. For this function I also created a lower boundary to avoid the camera control being able to move backwards if the movement speed was changed to a negative value. The mouse can also be used to point the camera which when combined with the keyboard controls allows free movement of the camera where the user needs to move it to and allows the user to choose many different views for a single scene.

To aid with the modularity of my code I made sure to create separate functions for each rendered object. This has two separate but equally important uses, first I could reuse the code in another visual project to render each object as I created it for this project with little chance of using another object’s values by mistake, secondly I was able to edit my values for each object quickly and with certainty I was looking at the correct object’s values. Similarly, the code created for navigation of the camera by keyboard controls and manipulation of camera speed by the mouse scroll wheel can also be reused easily in another OpenGL project as these functions are also distinct from the rest of the code.