Design Decision for my 3D scene

Reflection:

For my 3D scene, I selected objects that I see everyday and my favorite place to be. The primary objects I included are the monitor, stack of books, pencil and coffee cup. These are the most common things found in anyone’s computer table. I think it was easier for me to choose plane to mimic the table. Then, I put all these objects on top of the table. I used box for the monitor, tapered cylinder and torus for coffee cup, cylinders for pencil and boxes with different textures to represent stack of books. I also positioned the books so that they look stacked informally and will appear more realistic than directly on top of each other. I’ve also used different materials for the objects so that the light reflects differently on each object according to the material they are made of. I’ve also used multiple lights so that it looks more realistic and nothing is under complete shadow.

User can navigate the 3D scene by using the mouse and keyboard as inputs. The virtual camera speed is controlled by the scroll on the mouse. The keyboard’s W, A, S, D allow users to move forward, left, backward and right respectively. The keyboard’s E, Q allow users to move up and down. These keys help with navigation within the 3D scene and make the user feel the virtual environment. The mouse is also used to adjust the camera angle and allows rotation of the views depending on where the mouse pointer is.

In order to keep the code modular and organized, I created multiple custom functions that helps with modularizing scene creation and transformation. For example, AddComputerMonitor(), AddPencil() and AddStackOfBooks() are functions that help simplify object creations such as computer monitor, pencil and stack of books and helps with reusability as well. By structuring it this way, it is more maintainable, reusable and cleaner and can be highly scalable in the future. Also, it will be easier to modify if needed.