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CS-330: Comp Graphics and Visualization

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**Reflection**

I chose to develop a scene based on a computer desk with an Apple iMac with various accessories. The desk also had other objects to tackle such as a flower vase, magazines, camera and lamp. Some objects were omitted from the scene based on complexity but overall, the scene rendered well using the various basic shapes. The desk surface object was a plane in which the other objects were placed upon. The monitor and magazines were drawn using multiple box objects. The flower vase used a half sphere along with a cylinder. The keyboard and mouse/mousepad used cylinders and box shapes. The trackpad used a cylinder and box object. The objects had different levels of complexity (size, placement and rotations) and provided me with opportunities to practice with the different basic shapes required to render them.

The user can navigate my scene with the WASD keys. The W key is used to move the camera forward on the z-axis, and the S key is used to move the camera backwards on the z-axis. The A key is used to move the camera left on the x-axis while the D key is used to move right on the x-axis. The Q and E keys are used to move the camera up and down on the y-axis. The user can also switch between perspective view (P key) and orthographic view (O key). The mouse is also used to control the camera's orientation, where moving the mouse left and right rotates the camera around the y-axis (yaw) and moving the mouse up and down tilts the camera around the x-axis (pitch).

Having functions such as DefineObjectMaterials, SetupSceneLights and LoadSceneTextures and RenderScene breaks down the scene into manageable and modular code that is easier to debug and maintain (each function handling a distinct aspect of the scene such as the objects, lighting, textures and rendering). The functions can be reused in future projects which will aid with development costs and efficiency. This approach allows for more efficient development and future modifications.