Design Decisions Reflection

For the 3D scene, I selected objects that could be effectively constructed using basic shapes. I chose a jar, a lollipop in a metal box, a round wireless charger, and a plastic container because they allowed me to explore using basic meshes in a variety of ways. The jar was created using a combination of a cylinder, a tapered cylinder, and a narrower cylinder on top. The charger consisted of a torus for the base shape, a cylinder to cover the center hole, and a smaller black torus in the center to match the design of the charger. The plastic container was represented using a simple box shape. The lollipop was modeled using a box for the tin container and a cylinder for the stick.

Navigation in the 3D scene was implemented using the WASD keys for forward, backward, left, and right movement, and QE keys for upward and downward movement. The mouse is used to control the camera orientation, allowing users to look around the scene easily. The mouse scroll adjusts the speed of the camera movement within the scene. Additionally, the O key allowed users to switch to an orthographic view, and the P key switched to a perspective view.

To achieve a clean and organized codebase, I split each object into its own function. This approach ensures that any necessary changes can be easily targeted without interfering with other objects in the scene. For instance, the RenderDesk() function handles the rendering of the desk, while the RenderLollipopBox() function focuses on the lollipop box and stick. The RenderJar(), RenderCharger(), and RenderBox() functions similarly manage their respective objects. This modular approach improves the readability of the code as well as the maintainability and scalability of the code, allowing for efficient adjustments and improvements.