For my scene, I recreated my desk space, including my computer screen, keyboard, and an acrylic photo frame of my Grandfather and relatives. For my desk, I went with a nice rustic look on the desk as my desk is plain black wood and would not show as well alongside the computer and black background. The computer is textured with black plastic material and I used a screenshot of my Shopify store for the still image on the screen to enhance the realism. For the acrylic picture frame, I wanted to show kind of how the acrylic bends the photo at different angles so I textured it to look that way.

The way users navigate around the 3D scene is with the mouse and keyboard. The mouse allows you to look around while the w, a, s, d, q, and e move you around the scene. The w key moves you forward, the s key moves you backward, the a key moves you to the left, and the d key moves you to the right. Also, the q key moves you straight up and the e key moves you downward. As an added feature pressing the j key will cause the scene’s light source to orbit the scene and you can stop it where ever it is with the k key.

Functions that I am using to make the code more modular and organized are: UInitialize, which initializes the glfw, glew, and creates a window, UProcessInput, which processes standard movements and navigational input from the user via the keyboard and this function (minus the orbiting light source with keys j and k) would work great for a standard default key input set for moving around a 3D scene. Likewise, the UMousePositionCallback, UMouseScrollCallback, and UMouseButtonCallback functions are also great for reusable code modules for adding a default mouse input handling for 3D scenes. The URender function is semi-reusable with some modifications to adjust to what scene it was being used for. The UCreateMesh is the least reusable in the sense of the rest of the functions, which could mostly be used as reusable default code for setting up a scene, it could only be reused in a way that uses the objects from the scene as part of another scene. The UDestroyMesh, UCreateTexture, UDestroyTexture, UCreateShaderProgram, and UDestroyShaderProgram are also part of the functions that could be rolled up as a kind of default toolset to implement when starting an OpenGL scene.