The objects in the 3D scene where a pen, a book, a sphere, and a ring on top of a wood desk. To create the scene, I made a plane out of two squares to crate the desk. The pen was created out of a cylinder for the pen grip, a pyramid for the pen tip, and a cube for the pen clip. The book was made from a cube and the sphere on the desk was made from a sphere out of triangles. All the objects in the scene were created out of triangles. For example, to create the sphere I created four circles using triangle to create them and put them at different heights with a smaller circle at the top and bottom of the stack then linked the edge of the circles together creating the sphere. This method is similar to how I created the cylinder but with the cylinder I used two circles of the same size one on each side of the cylinder then linked them together. I choose these objects was not just because they are different primitive shapes and not because they sit on my desk all the time. I choose these objects because of their meaning to me. I am a tinker I like to create thinks sometimes its food ideas like creating different beef jerks and sometimes it is creating an arcade out of a Raspberry PI. I write down my ideas in the book in this scene. The sphere in the scene is a fidget spinner like device which I use when I’m thinking about what next project I want to try. The ring in the scene is my wedding ring and is very important to me because of what it symbolizes which is twelve years of marriage.

To navigate the scene the user can use the keyboard or the mouse to move around. To navigate the scene using the keyboard the user can press the W key to move the camera forward, the S key to move the camera backward, the A key to move the camera left, and the D key to move the camera right. To move the camera upward the user can press the Q key and to move downward the user can press the E key. To navigate the scene using the mouse the user can move the mouse downward to move the cameras view to look downward. The user can move the mouse upward to move the camera view to look upward. The user can move the mouse left to move the camera view to look left and if the user moves the mouse to the right the camera view will look right. The user can also use the mouse scroller to scroll the speed of the movement up by scrolling up on the scroller and to slow down the speed of the movement of camera the user can scroll down.

The functions I used in my program were the initialize, resize window, process input, mouse position, mouse scroll, create scene mesh, destroy mesh, create texture, destroy texture, render, create shader program, and destroy shader program. The initialize function is where GLFW is initialized and configured, creating the window for the scene, capture the mouse initialize the GLEW. The resize window function sets the size of the window for the scene. The process input function controls the inputs from the keyboard and holds the camera speed default. The mouse position function changes the view of the camera from the mouse movement. The mouse scroll function changes the speed of the camera by getting the scroll input. The create scene mesh function hold the positions, colors, and textures of the object created in the scene and sends this information to the GL vertex attribute pointer. The destroy mesh and destroy texture deletes the mesh and texture from the vertex array and vertex buffer. The create texture function takes the image from the file and sends it to the GPU. The render function creates the scene and create shader program function creates the shader. The destroy shader program function destroys the shader at the end of the program. By creating functions like the create texture program I can reuse them to add more textures to the program.