Final Project Reflection

In my 3D scene, I have created the environment of a slice of a kitchen countertop. The surface has a dish with two oranges on it and a tissue holder off to the side of that. I selected these objects to get all of the shape requirements within the scene. The scene contains a plane, two spheres, a spheroid, and a cube. The bowl of oranges I would consider an object made out of two unique shapes, and the plane and cube are both their own unique shapes respectively as well. To program these for the required functionality, I used the provided shape generator code to generate the plane and spheres, and the vertices method used for the course tutorials for the cube object.

A user can navigate through my scene using their mouse and keyboard. The WASD keys move the camera forward, left, back, and right respectively. The Q key can be used to ascend and E to descend. The P key can be used to switch between presentation modes, either a perspective or orthographic display of the scene. Moving the mouse around changes the rotation of the camera, and scrolling with the mouse wheel increases or decreases the zoom of the camera. Using the provided camera header files, this setup was fairly intuitive. The only thing that needed to be modified from there was implementing the up and down controls into the header file to have them behave functionally in the final project.

Custom functions within the code include the one I had to implement to incorporate the up and down motions of the camera, and I also had to rework the implementation of the orthographic and perspective display toggle, since it was buggy in a previous iteration of my scene. These functions are reusable in any openGL project, especially the camera, which I could see myself using in the future. Other interesting functions were the ones within the shape generator header to quickly create spheres and planes.