Andrew Park

2084836

2/23/2025

# 7-1 Design Decisions

The development choices to change from the ocean liner cargo ship to the desk with student’s items on it was made because of the complexity when dealing with the scaling, rotating, and translating of tapered cylinders. Furthermore, to create the texture of the ocean as a back drop is also very difficult for a beginner at Open GL. Choosing a much more realistic goal has also helped me submit the assignment on time. The four completed objects in the scene are a pencil (complex/compound object), clock (cylinder), notepad (box), and calculator (box). The pencil is a combination of cones and cylinders. Again these design decisions were chosen with the goal of speed in mind. Using materials, the pencil would be composed of mutliple meshes. Using textures, the notepad, calculator and clock were designed to utilize the simplicity of textures to add an illusion of detail to the scene.

The controls used to navigate the scene were designed to take input from the keyboard and mouse. Specifically the W, A, S, D, Q, and E keys were used to translate the camera position. The mouse position input/callback is used to control the orientation of the camera. By combining the mouse and keyboard, user’s can move about the world in full 360 degrees of motion. Furthermore, the mouse scroll wheel input is used to determine the speed of the camera movement; scrolling up will increase the speed and scrolling down will decrease the speed.

A screen shot of a computer

AI-generated content may be incorrect.

A computer screen with text and numbers

AI-generated content may be incorrect.

The custom code used above shows the Scrol\_Callback function being defined that checks for the offset in the scroll position and then according adjusts the camera movement speed variable. This makes for easy, modular code. Should any develops wish to increase the camera speed acceleration, they can change it here.