In building the scene, I prioritized scene accuracy within requirements. In the original source image, there is a bookcase and a wall in the background. However, this would have required multiple extra objects to be rendered by the loop and may have complicated the lighting functions. Due to this being a system that I had not used before this term, I felt that it would be best to focus on achieving minimum functioning per the rubric rather than adding superfluous detail. However, I also made the decision to code a large number of vertices into the top of the game piece in the image in order to accomplish a realistic sphere, which is likely attributable to lagging framerate in the final project. Additionally, in the effort of simplifying the project, I also changed the paint pot in the source image to a basic cylinder, noting that this would be significantly less math than writing in another round object.

Navigation in the scene is intuitive, using basic WASD and mouse navigation for general camera movement, Q and E to raise and lower the camera vertically, and per the requirements the mouse scroll increases the movement speed of the camera. The camera starts in perspective mode, but pressing 2 will shift the perspective to orthogonal, users can press 1 to shift back.

A large amount of the modularity and organization for this program was taken and modified from the tutorial functions from the master guide. This applies to much of the texture mapping and lighting due to the specific nature of applying these to a scene, with several sections losing texture while adding additional functions. Due to hard-coding the vertice and indices values for each shape, I determined that the most effective way to address this would be to create individual functions to draw each shape mesh. With more time and refactoring, these vertices could potentially be stored in separate vectors, allowing for the vectors to be stored in the mesh structure itself and then loaded into a generalized function. However, with the focus on addressing functionality, particularly in establishing two separate light sources, this was something that did not adequately fit into the space of this term and would be an early stage of optimizing in revisiting this code in the future.