Courtney Warner

Final Project

Design Decisions

06/20/2024

I was tasked to design and produce a 3D scene for this class. For my project proposal for making a 3D scene intended to create a random assortment of household objects. The scene consists of a yellow construction paper that serves as the plane and a vibrant backdrop on top of a desk, an orange plastic cone megaphone toy, with a stone nested on top of the plastic megaphone toy, a kitchen spoon with a natural wooden handle with a rubber scoop end, a light green cloth-covered hair elastic, and finally a pink dumbbell weight.

I started by working with and building a complex object. For this, and every object in my project, I needed to adjust and apply the scale, rotation, and translation to position the objects in the 3D scene. This was the hardest part of rendering the scene. Once the scale, rotation, and translation were set I would need to assess and interact with the objects in 3D which required me to enable the keys W, A, S, D, Q, and E to navigate the camera forward, backward, left, right, up, and down respectively. Additionally, I needed to invoke the mouse cursor and scroll wheel to adjust and change the camera orientation and movement speed.

Once I could assess the scene I moved on to textures. I applied textures to the complex shape that simulated the textures and colors of the wooden spoon handle and green spoon scoop. I also added a yellow paper texture to the plane. The textures needed to be JPEGs, square, 1024 pixels, and seamless. The size of the texture image was important because if it was too big it wouldn’t translate properly to the object. If the texture being applied seamlessly improves the look of the texture application.

The best lighting for the scene was determined to be a combination of ambient, diffuse, and specular lighting. Utilizing a combination of these lights through 4 iterations with different strengths and intensities the scene was lit without any dark contrasts or shadows. It created a nice ambiance to illuminate the scene and the textures properly.

After the complex object and scene were rendered with the camera enabled, I applied all those techniques to the remaining objects. However, while attempting to render the dumbbell weight I realized that the object was a bit out of my league. I attempted to construct it but was not getting a shape to look like the dumbbell.