Danna Laynas Hernandez

CS-330-Comp Graphic and Visualization

Southern New Hampshire University

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7-1 Assignment: Reflection

The image I selected was not the original image I wanted to recreate but I also had to

consider various aspects, such as my limited knowledge of OpenGL and the complexity of the

objects I was contemplating. I carefully thought about the difficulties I would encounter if I

overcomplicated the shapes in my 3D scene. I did some research on what to expect when

creating certain shapes and it influenced my choices heavily. The following image was what I

selected and wanted to recreate as a 3D scene.

The scene I decided on making made the most sense because they are relatively simple

shapes that can be constructed using one to two different figures. The perfume bottle could be

recreated using a cylinder as the cap and the bottom portion of the bottle could be created using a

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single box mesh or two cubes stacked on one another. Since my understanding was still limited while placing the box meshes I discovered the shape could be altered using the dimensions. I decided this was the best choice and it made it easier for me to rebuild certain shapes in my 3D scene. The box to the right was a simple box mesh but I decided to include a torus for the handle because I liked the unique pairing of the two and it gave the overall figure more character.

The two other shapes were straightforward as they only consisted of one shape each. The deodorant bottle was recreated using a cylinder and the Pokeball was created using a sphere. Although creating both of these shapes was simple I encountered some delays when adding texture to both shapes because I had to get a better understanding of how the texture wrapped around the shapes. Luckily I found solutions for both, but it was tougher than I was expecting and I spend quite some time on this aspect of my 3D scene.

The controls that are used to navigate my 3D scene are standard WASD controls and camera movements that make it easy for the user to navigate the world. There are a few features like camera control speed and the QE keys which give the user a bit more control over where the camera moves when moving up and down. Another important navigation tool that is included is the ability to use the mouse cursor to turn the camera which enhances the navigation experience. The mouse scroll wheel is also an important navigation feature as it allows the user to quickly zoom in and out for faster navigation.

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I made my code as modular as possible by separating the objects, which made adding changes and troubleshooting errors easier. Not having all my mesh code on the same cpp file as my main source code helped with repurposing week by week when updates needed to be made to the original files. Having the mesh code separate helped when adding new shapes as there were fewer lines of code that I needed to be altered instead of having to look through one cpp file with hundreds of lines. The code could easily be reused for other projects or can be expanded later on if wanted.