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CS 330

Final Project

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1. Justify development choices for your 3D scene. Think about why you chose your selected objects. Also, consider how you were able to program for the required functionality.

The image that I chose to replicate was a picture of a globe, a set of books, and a jar of pencils sitting on a desk. The major shapes that I chose to replicate with a sphere, three boxes stacked up on top of each other, and a cylinder. Now, the Globe took a couple of shapes together to form, given that we have to consider the mountpiece of the globe and the axle that allows the globe to spin. So, I needed a torus (similar to a donut) for the axle. Considering that the mount is usually triangular, I could have used a cone for it. However, using a tapered cylinder looked a bit more realistic for how the globe would be supported. So, just the globe alone, we used a sphere, a torus, and a tapered cylinder. For the replication of the books, the most realistic shape is a box, and once you add a texture, it will be the best book demonstration. Regarding the pencil jar, since it is circular but has an opening at the top, the cylinder was the best option. Lastly, without a backdrop, the image would have been very dark before we got to lighting. Therefore, we needed a plane rotated 90 degrees on the Z coordinate for a background.

Explain how a user can navigate your 3D scene.

If a user wants to explore moving forward they can press “w”. If a user went too far forward, the user can easily move backwards by pressing, “S”. Furthermore, pressing “d” allows you to move right and pressing “a” will allow a user to move left. Lastly, the user has full control of the speed of the scene using his/her mouse.

Explain the custom functions in your program that you are using to make your code more modular and organized. Ask yourself, what does the function you developed do and how is it reusable?

Most of the code that I used was pre-wrote. Therefore, most of my code consisted of creating the shapes which I typed the code for one shape and copied that code sample and changed the shape and altered coordinates to rotate, scale, and move to desired position. So the function to create shapes are definitely reusable.