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CS 330

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Final Project Reflection

1. **Justify Development Choices for 3D Scene**

When considering development choices for my 3D scene I wanted a different variety of shapes that I could bring to life. Three of the choices were a sphere, cylinder, and box which are more basic. The fourth shape was a torus with a cylinder on top to portray a vase shape. This one was more challenging because I needed to line the cylinder up with the top of the tours and have them look like they were going together. One of the requirements was also to create a 3D shape using two or more shapes, so the vase object was a good choice to meet these standards.

1. **Explain How a User Can Navigate The 3D Scene**

The user can navigate the 3D scene using the keys a, s, w, and d. The A key moves the user around the screen to the left, the D key moves to the right of the scene, the W key takes the user up or zooms into the scene, and the S key moves the user down or further out from the scene. The camera position needed to be repositioned so that it lined up with the plane or “counter” because it was originally showing underneath the plane. Moving the mouse allows the user to rotate and look around the scene while using the mouse scroll can have the user zoom in or out.

1. **Explain the Custom Functions in the Program that Make the Code More Organized**

Some functions in the code that allow my code to be more organized are comments and labels of each portion. I commented a label each time I started to create a new mesh which allowed me to easily find each shape within the code if I needed to add or fix something. Having comments for portions of the code like “Render Scene”, “Prepare Scene”, and “Set Shader Material” allowed me to easily find where I would have to add something as well. The Render Scene code was also able to be reused every time I needed to add another mesh. Another example of reusability is the rotate camera function, which can be reused for different camera rotations, and allows me to use different camera controls without having to implement new code. The handle input that implements different keyboard functions for the user to move around the scene can also be implemented in other scenes or games. Overall, the functions in the program provide better readability and maintainability.