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CS 330

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CS330 Final Project Reflection

For the 3D scene I decided to focus on a ceramic pot, a candle, and the counter where the objects are placed on. From these shapes I created four primitives’ shapes which were a cube, a cylinder, a pyramid, and a plane. These primitive shapes represent the base of the ceramic pot, the candle, the plant/ top part of the ceramic pot and the counter respectively. The way that I created my different shapes was I created different vertex buffer object for each shape that was going to get recreated as well as different vertex arrays with different plane positions and rotations so they can be called later in the program. This allowed me to use a loop to create the shapes by transforming the planes from the vertices to create the desired shape.

For the base of the pot, I decided to go with a cube shape rather than a cylinder because I noticed that when I tried to add a texture with words it would not wrap correctly around the cylinder since it was compiled using triangular strips. I decided the base had a square enough shape that a cube could still provide a similar look to the shape. For the top part of the pot, I used a pyramid to mimic the look of the plant since they were triangular shapes they were represented well with a pyramid and that was placed directly on top of the cube. The candle I decided to create two cylinders using triangular strips and rotating them to give it a rounded shape. I initially just used one cylinder to represent this object however I decided to create another smaller cylinder on top to represent a wick to give it a little more clarity of what it supposed to represent. For the counter I decided to create a plane which was done by creating two triangles and scaling them to be a larger shape so all my other objects can rest on top of it.

For the lighting I utilized two kinds of lights, one light was supposed to mimic the sunset of the scene, so it gives off a more amber/ orange tint which was the main light to illuminate the scene. The second light I used was a white light that was a weaker light that was mainly used to prevent the candle from being too dark but also sort of represents the candles weaker led light that gets washed out in daylight.

When it came to creating my camera controls, I tried to keep it simple the WASD keys are used to pan the camera left, right, forward, and backward, and the QE keys move it up and down, I adjusted the camera speed slightly so it can pan around the scene a little faster. I used the pot as the focus or anchor point for the camera so most of the movements you will notice revolve around that object. For the mouse controls I used the mouse to zoom in and out of the scene. Pressing the left alt button and left mouse button allows you to orbit the camera around the scene, I also made it to where the orbiting recenters the camera back to the focus point after using other features like the panning, so the camera does not get too lost from the main scene. Additionally, I also made it to where pressing the F key resets the scene so you can see the entire scene. When it came to creating customs

When it comes to creating my functions I wanted to make it to where I can reuse features for different object, for example I did not create multiple VBO for the candle and wick I reused that same one since the shapes where going to be the same type but I changed the position the wick and scaled it to be smaller than the candle, yet I called different textures for each shape so we understood that they are supposed to represent different things. Other functions like the textures could also be reused I created different objects for each texture image but if I wanted to I can reuse the same texture for multiple primitives and all I would have to do was call that particular textures name rather than recreating the whole texture from scratch.