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CS 330

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Final Project Reflection

When choosing objects for the scene, I tried to find simple objects that all made sense in the same scene. It really kind of had a theme from Harry Potter with a wand and wand box, a book, and a mug which one could drink while reading said book. I thought these objects would use a good variety of shapes to create them. It turns out that the easiest way to create these objects used a used mostly modified cubes and cylinders. The floor was created using a plane. The mug ended up using features of both a cylinder and a pyramid seeing as how the top of the mug is wider than the bottom. The functionality for the movement was straight forward. I did not focus much on doing more than the basic functionality for this. To replicate the light in the photo I used a simple white light placed above where the camera position starts. The location of the light source is shown by using a small cube.

To navigate the scene a user can use a standard keyboard and mouse for PC gaming. The mouse changes the direction the camera looks. Using the scroll wheel on the mouse will change the speed the camera moves. The user can use the WSDA keys to move forward, backwards, and side to side, The Q and E keys allow the user to move the camera position up and down. The other keys that have functionality are the P and O keys which change the view. P changes the view to a perspective view and the O changes the view to an orthogonal view. Clicking the mouse buttons will register and appear on the control panel but they have no functionality in the program.

I created two functions for drawing each object in the scene. One that would create the mesh for the object, creating the vertices for drawing the object. The other function for the object would tell OpenGL to draw the object including the textures and lighting information. These functions were called in a main rendering function. The book used two separate drawings for the pages and the cover of the book, each drawing part of a rectangular prism. The wand draw function is called three separate times, rendering three different sized cylinders, using different parameters to change the angle position and size of each. The vertices for each object are mostly created using a standard 2 by 2 by 2 gride across the x, y, and z axes ranging from -1 to 1. Using this scale each item can be scaled using a parameter for each axis when the function is called. This is one way to approach creating objects that is better for encapsulation. I did try a different way for one part of the book where instead of stretching the cube parts when calling the function, the vertices were made exactly where they would need to be in the coordinate planes. This was kind of an experiment as to learn how OpenGL renders the objects.