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SNHU

CS330

Final Project

My final project consisted of 5 total objects. The plane/table, Marvel Champions board game, cylinder container of sugar, cylindrical object of paper towels, and a baseball piggy bank. I created the plane with 2 triangles laid flat on the z axis. My Marvel board game was a rectangle. I created it by using 2 triangles for every side of the rectangle. When creating the rectangle, be cautious on how we are laying our triangles and the order we call the indices in. All triangles must be drawn either clockwise, or counterclockwise. The direction cannot be mixed throughout the program or the textures will not be able to be rendered correctly onto the objects. My paper towel and sugar container were created using cylinder code from the songho website. My baseball piggy bank was also constructed from the songho opengl code for a sphere. I took the songho code and created it to match my program requirements. Once this was implemented correctly, the code would generate all the correct vertices and indices for the cylinder to be rendered correctly. Creating these shapes was not too difficult as I learned that most shapes in graphics are created by using only triangles.

I set up the virtual camera in my scene to be able to be navigated by using the mouse to control the point of the camera. I then used WASD keys to allow the user to go forward, left, down, and right respectively. You can also view an orthographic view of the scene by pressing the p key. The scene is overall easy to navigate and look around the world. The middle mouse button zooms in on the screen and zooms out. This creates an illusion that we can speed up or slow down the camera as it moves slower the more zoomed in, and faster the further zoomed out we are.

I created my program with classes and abstraction. My vertices and indices for all my shapes are held in one types.h file. My camera class is setup within its own files. I have created a shader class to be able to call on to setup the shader for the scene. My mesh class is what is used to store the objects for the scene and then a draw() function that can be used to populate the objects to the screen. By setting up the main meat of the program into their own classes, they are easier to manipulate and edit as we do not have to search through hundreds of lines of code for one section. We can just refer to the file that we want to make change to. Overall, this course was extremely challenging. It pushed my limits on how to write a full-size program compared to previous courses where most of the code is already given to us.