COSC 4370 Homework 4

Vincent Pham 1777469

April 2023

Objective

The goal of the assignment was to implement a given texture onto a cube. This was done with the use of texture mapping.

Method

Similar to the previous assignment, most of this assignment was pre-written. The assignment required the student to write vertex and fragment shaders in the texture.vs and texture.frag files, respectively, and project them in the main.cpp file.

Implementation

Projection Matrix

The projection matrix was set up similar to the previous assignment, using the glm::perspective command. The command was almost copied exactly over from Homework 3, with only the camera.Zoom variable being replaced with a constant value of 45.0f.

Fragment Shader

The fragment shader simply defined the color as a function of texture using the myTextureSampler variable and the UV coordinate variables.

Vertex Shader

The vertex shader was created by setting the gl_Position variable equal to the projection multiplied by the view multiplied by the model multiplied by the function vec4 given the position variable and a constant value of 1.0. Then the UV coordinate was created by inverting the vertexUV variable.

Results

The result was a spinning cube with each side having a different number, corresponding to the texture.dds file given as part of the assignment. Unfortunately, 4 was not on the top, and 6 was on the top instead. I couldn't figure out how to

Image: