COSC 4370 - Homework 2

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https://replit.com/@JacobUH/hw2-4370#main.cpp

1 - Problem

In this assignment, the focus was on practicing the basics of OpenGL to create visually appealing images using simple commands and predefined shapes from its own library.

2 - Method

To achieve the goals of the assignment, I implemented a specific methodology. While the details may vary based on the OpenGL commands and shapes used, the fundamental approach involved creating graphics through a series of commands and functions remained similar for each problem. I utilized translate, rotate, push, pop, and scale for every problem but the way I built the models depends. I will discuss how I implemented this method later on.

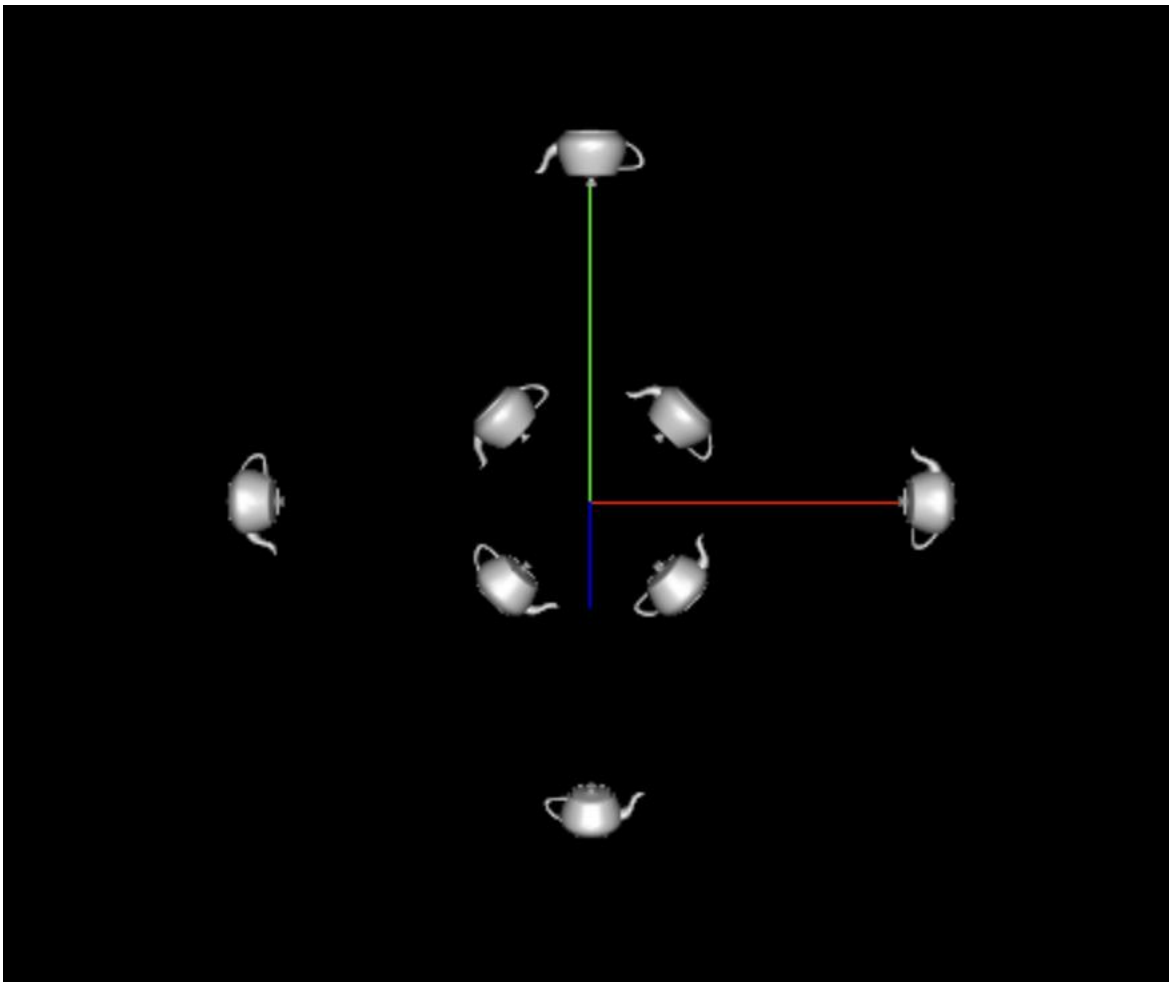
3 - Implementation

The implementation phase revolved around applying the chosen methodology to develop the desired images. This process required careful consideration of OpenGL syntax, commands, and functions to bring the specified shapes to life on the canvas. I utilized various OpenGL functions like glutSolidTeapot() and glutSolidCube to generate the required shapes. Each shape was positioned and scaled as needed to achieve the desired composition. I also used GL_TRIANGLES for Problem 4 and I will say that the use of creating vertices to make the shape is interesting compared to the glut commands. In addition to predefined shapes, custom commands were implemented to enhance the visual appeal of the images. These commands involved manipulating the attributes of the shapes, such as color, size, and orientation. Most of these were the transformations as I said earlier but I also used some more advanced ones such as glDisable() and glEnable() to configure my own lighting effects that gave my Problem 4 its own colors instead of a flat white from the template configuration.

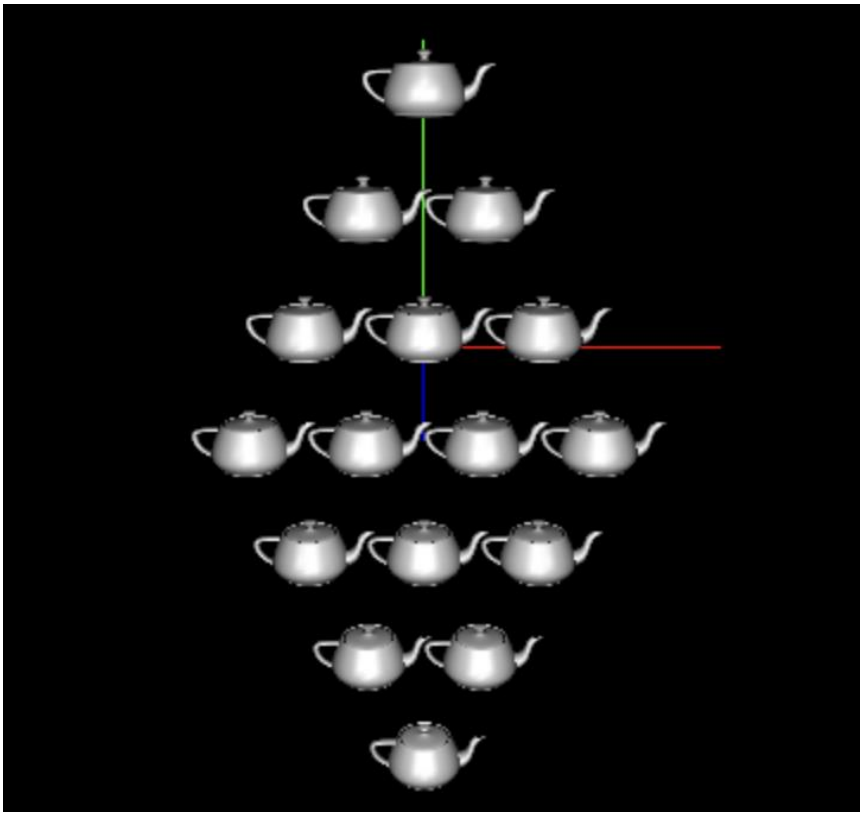
4 - Results

In all this assignment was not too hard but it also was not easy. I was able to learn the basics of OpenGL through a couple of mistakes along the way, but I should be good going forward without any major hiccups. I captured all the problem's outputs like how it was on the reading.pdf except for my last problem.

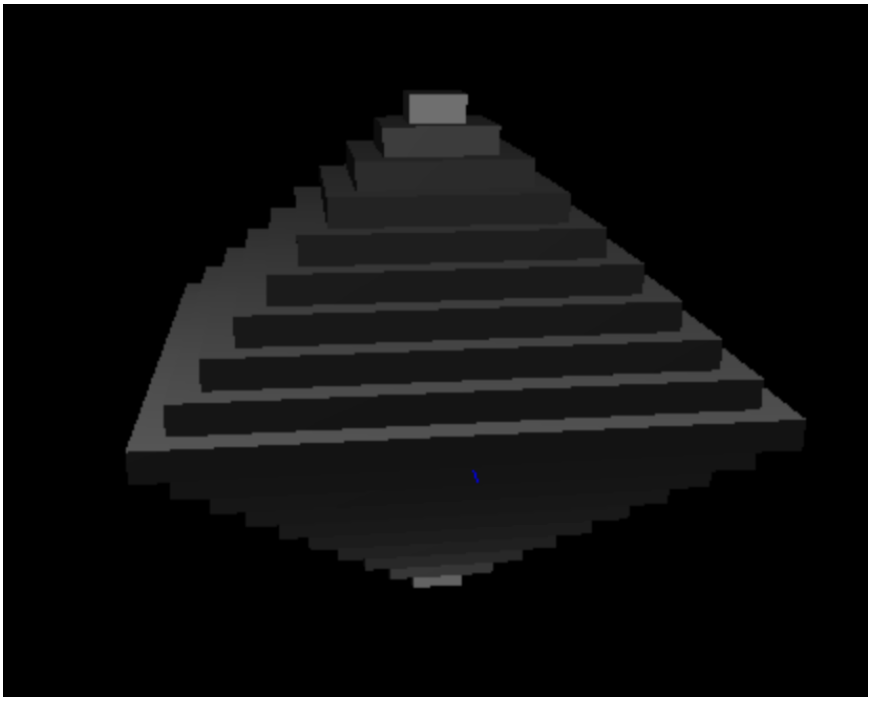
4.1 - Problem 1: Teapot Orientations



4.2 - Problem 2: Teapots Pyramid



4.3 - Problem 3: Pyramid Design



4.4 - Problem 4: Texas Flag