COSC 4370 - Homework 2

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1 Problem

In this project we recreated the images provided in the instructions. The point of this is to get familiar with openGL and its functions. The first two images is using a solidTeapot already in the freeglut library and we are making patterns with them. The third image was a staircase using solidCubes and stacking them over and over. The final image was an open image, meaning we could make whatever we wanted with parameters. The image had to be made using GL_TRIANGLES function and had to be nested with glPushmatrix and glPopmatrix.

2 Method

In the first problem, we needed to print out 10 solidTeapots and we did that by focusing on the pots above the axis first. We did a glPushMatrix() function followed by a glTranlatef() , then the SolidTeaPot() and finished up with a glPopMatrix(). After we created a semi-perfect circle we just copy and pasted the code in the same function and converted all the y variables to negative.

For problem 2 we had to create an upside-down triangle of solidTeaPots. For this part, we created a for loop of the same functions as problem 1 but printed the teapots in a row. After the loop ended we created another loop each time with a smaller upper bound and larger lower bound in order to create the perfect triangle. We also needed to glTranslatef() the y down by 1.

In the 3rd problem, we had to create a staircase by making stacks of cubes. Every 2 rows the stack count would decrease by one. The reason for stacking it twice was to elongate the staircase to fit the image described.

In the 4th problem, we used the same techniques above to create a basket with a handle. The basket used cubes to form a handle and the actual basket was a triangle(image provided at the bottom of this document).

3 Implementation

In problems 1-4, the implementation was done by using the glutSolidCube(), glutSolidTeapot(). In order to create more than one and translate the new one we used the glPushMatrix() and glPopMatrix() functions to create a new scenario. The 4th problem did a nested function of glPushMatrix and glPopMatrix within each other. The 4th one also used a glBegin(GL_TRIANGLES) function to create a triangle and glEnd() to finish the code. In the middle, there were the three vertices given to give the points of the triangle.

Results

The output of the program was a .png file, which shows the output of each function, there is no color in any of them, just white, tried changing the color, but could not figure it out.