HW2 – OpenGL

Problem: Recreate the three images using OpenGL and create a fourth image using similar techniques

Requirements: Use the glutSolidTeapot and the glutSolidCube and OpenGL's methods for transformation like glPushMatrix, glPopMatrix, glTranslatef. For the fourth image, it is required to create a nested application of glPushMatrix and to render at least one triangle by manually inputting the coordinates.

Method: For the first image, each teapot appears to be rotated relative to its position and origin. By using a for loop, I went though trial and error with sin and cos to find the best numbers to use to get 10 teapots in that position. For the second image, it appears to be a staircase of 15 steps. So using a for loop, I transformed the cubes up a fraction of their size. Within the for loop, I created if statements based on how high the iterator was to add more blocks to fill in the gaps. Another method that could have worked was scaling the cubes. For the third image, each row increases by one teapot. By starting at the top and rendering each row later, using a for loop was the best application. It was also imperative to shift them over and make them stagger with the adjacent rows. For the final image, I rendered three triangles and created a nested pushMatrix for the cubes and their relative rotation

Result: