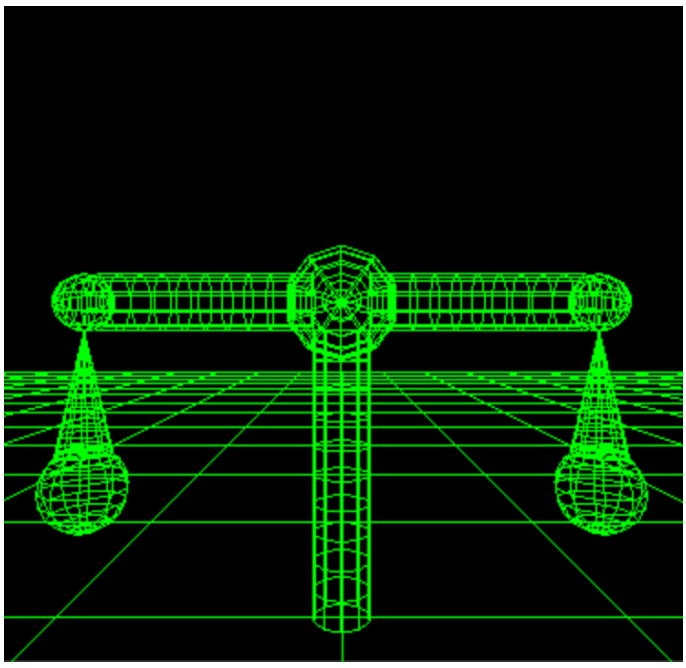
CS460 HW3 REPORT

UMUT CEM KAYAALTI B00694107

PART A

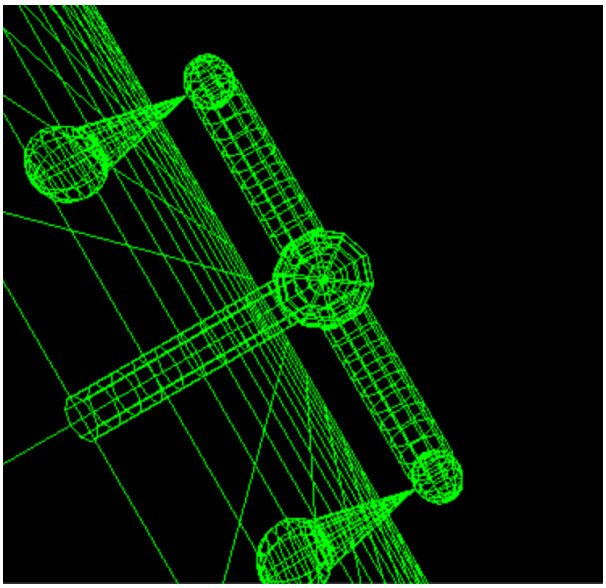
For the starting after dividing the screen to 4 rectangles putting a viewports on each corner of the screen. Focusing on the lower left viewport of the screen. GluPerspective is use to create the field of view and aspect ratio of the screen as well as the depth. Creating ground plane was done with GlVertex3f and GlLine to draw lines in 3D space. I had created a 3D object Lewer using a GluCylinder and GluSphere functions to put the Cylinders have rotated the x axis making the Z axis upwards to put the cylinders vertically. I had to translate the x, y, z coordinates around to put the shapes in the right location relative to the other shapes.

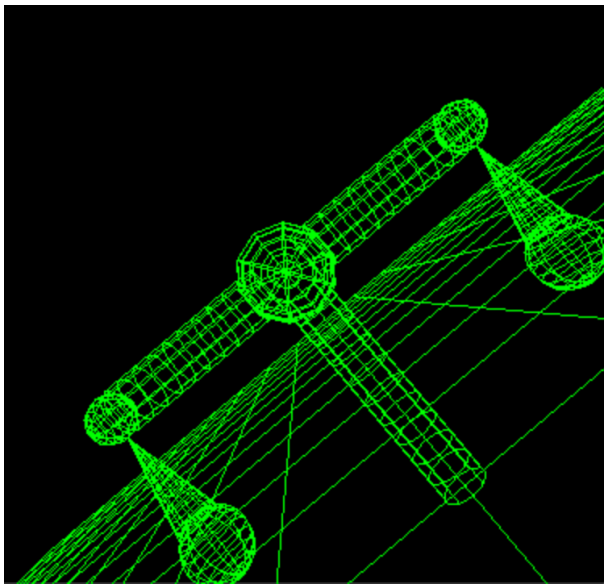


Afterwards using a menu and adding the functions for the Roll+, Roll-, Pitch+, Pitch-, Yaw-, Yaw+, Slide+, Slide-.For having the effect of rolling the screen was rolling around the Z axis. For the effect of changing pitch was to rolling around Y axis. Yaw effect was created with rolling around the X axis. And Sliding around the space was done with changing the Z value of the eye.

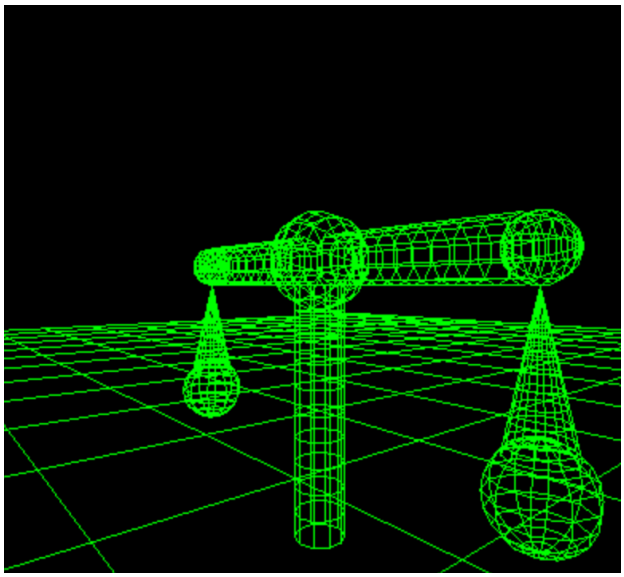
PART A PICTURE EXAMPLES

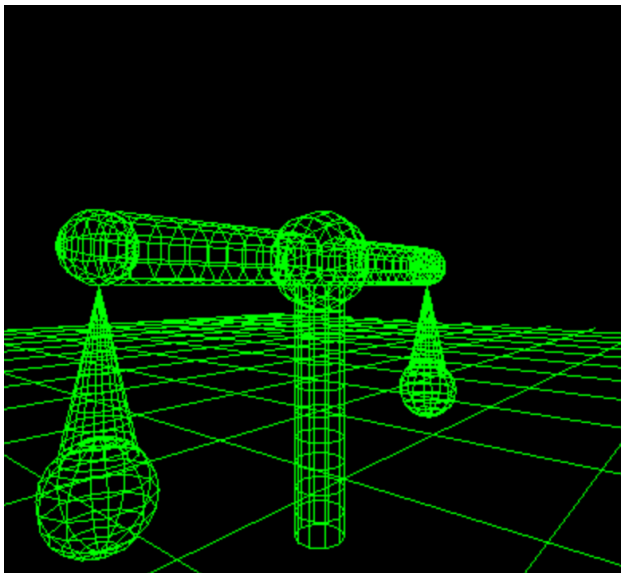
ROLL - /+



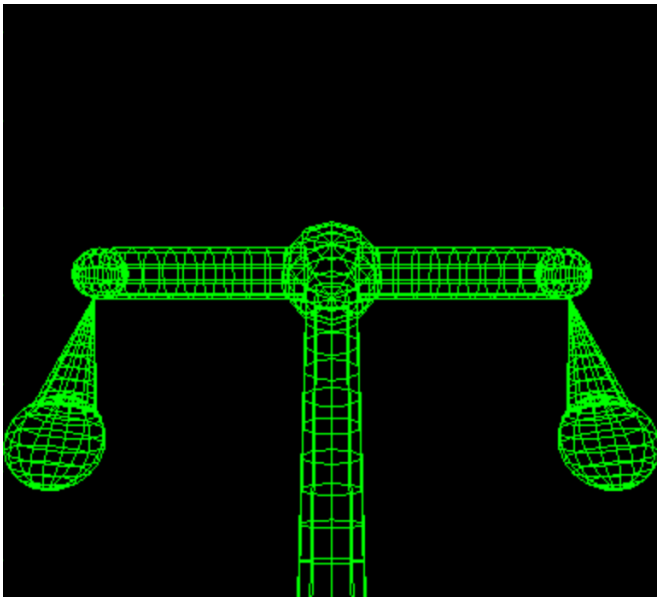


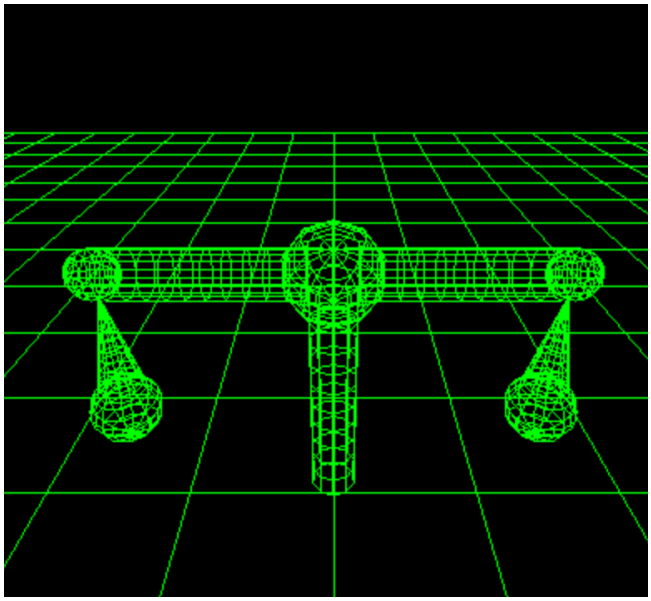
PITCH - / +



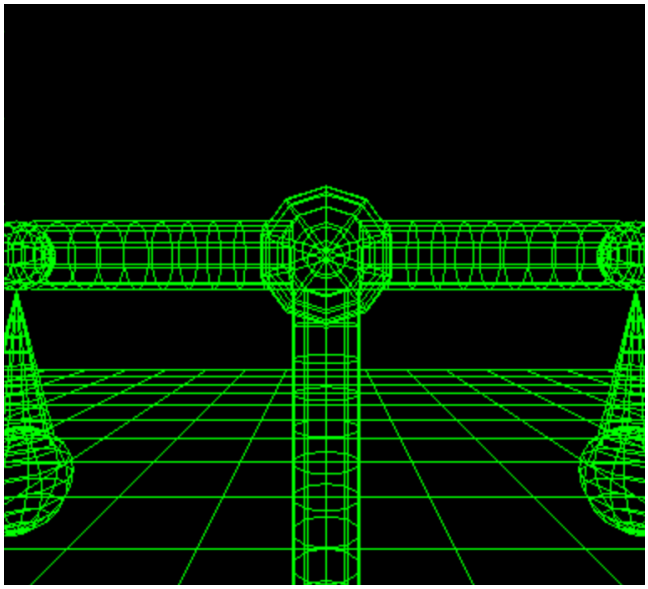


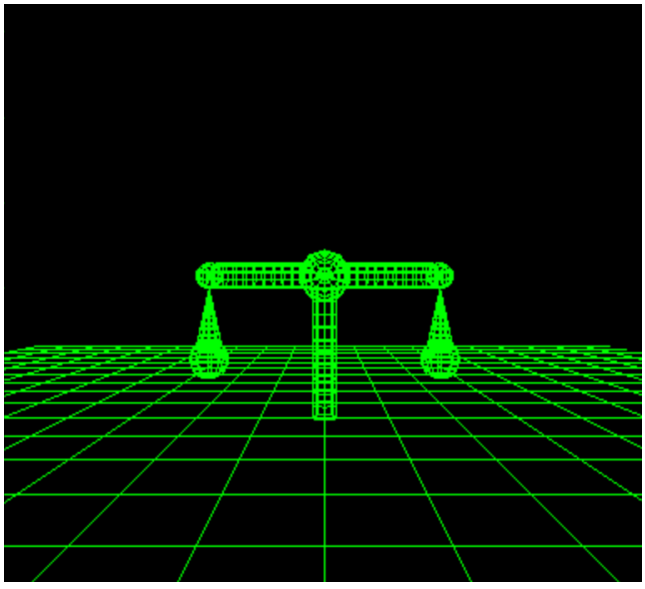
YAW - / +





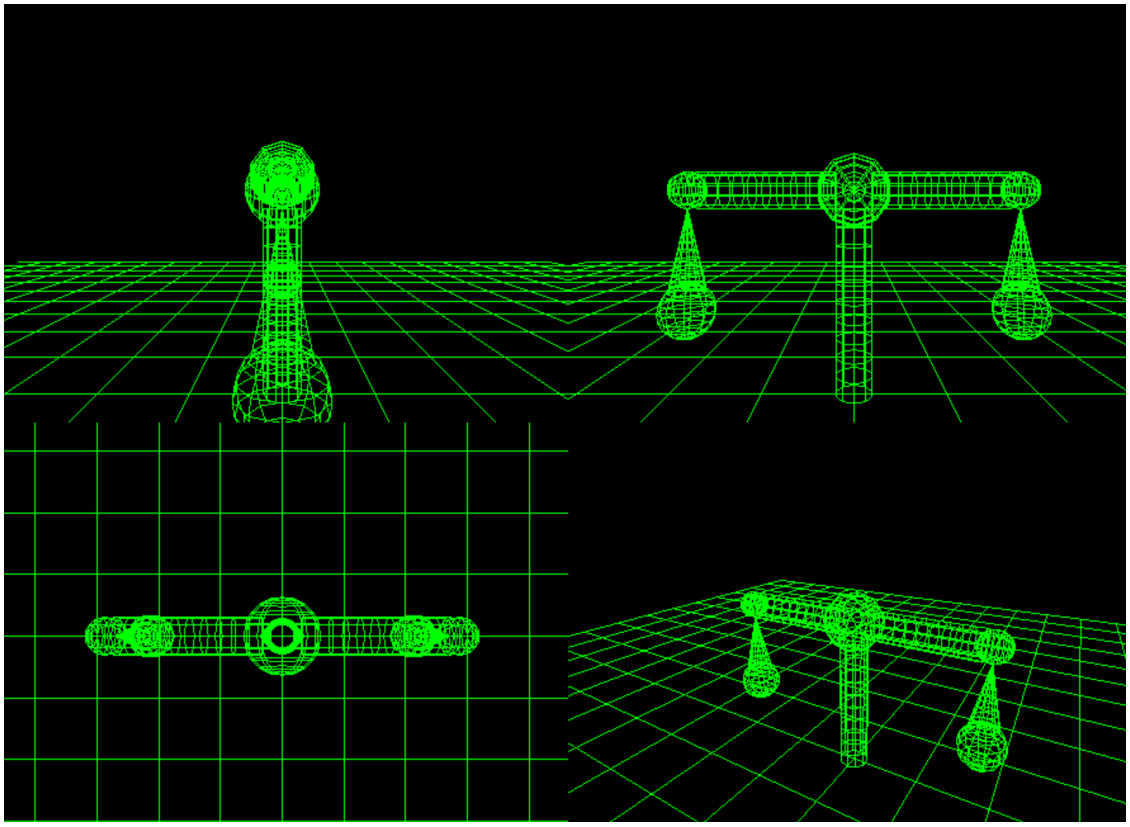
SLIDE - / +





PART B

When it came to filling the rest of the other viewports I first used fixed values. For viewport 2 which looks at the object from top view I had to change the eye point of the viewport from y 0 to y 40 putting it in a upper direction also made Z as the upper direction. For viewport 3 which looks at the object from side view I changed the eye point of the viewport of the X value from 0 to 40. For viewport 4 I just made the Z value to 40 which is the location you start in the intractable viewport 1.



For the movement part I had to change the fixed rotation points I used while creating object with variables with the same value. I created a function for the lever rotation and tied it with a menu button and also tied it with the both of the keyboard arrows. Every time this lever rotation function is called it changes the rotation values with 10 either increasing or decreasing to create the visuals of movement and then redraw the shapes.

PART B ROTATION EXAMPLES