**Project 8 Part 1 Rotating a platonic solid with OpenCV**

Name: Ram Reddy Period: 4 Date: 04/22/2022

Did you name your file l081.cpp (Lower case L, then 081)? Yes

Does your file compile & run on terminals/jupyterhub? Yes

Did you use a rotation matrix? Yes

Did you do orthographic rendering? Yes

Did you start from the coordinates I provided for the cube?? Yes

Describe here in words all the transformations you applied to vertices, for each describe how you implemented it in your code (by multiplying with a matrix, what was the matrix, or by adding a matrix, what was that matrix… be specific): I multiplied a rotation matrix that combines the three angles in the x and y and z system. This matrix is created by a function that takes angles as an input based on yaw pitch and roll and then from that creates a matrix. In the x and y axis I used a 1 degree rotation and then in the z axis I used a 0 degree rotation.

Did you use homogenous coordinates? No

(that allows you to combine all transformations into one matrix)

Did you combine all those transformations into one single matrix? Yes

If you used only one transformation matrix, what was it?

The matrix was:

[0.9998476951563913, 0.0003045864904521349, 0.01744974835125048;

0, 0.9998476951563913, -0.01745240643728351;

-0.01745240643728351, 0.01744974835125048, 0.9996954135095479]

Did you name your video rotation.avi? Yes

What functions/methods from OpenCV did you use?

I used Mat for matrices, VideoWriter to create the video, and I used line to create the edges.

What functions/methods from OpenCV did you experiment with but ended not using?

Suprisingly I used all the functions and methods I experimented with.

Obs.: feel free to rotate any platonic solid, around any line.