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

Name: Satvik Matta Period: 5 Date: 5/23/2023

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):

Rotations: Multiplied using Matrix

Rotation Matrix 1:

double md[] = {1,0,0,0,0, cos(radians), sin(radians), 0, 0, -1\*sin(radians), cos(radians), 0, 0, 0, 0, 1};

Rotation Matrix 2:

double md2[] = {cos(radians), 0, -1\*sin(radians), 0, 0, 1, 0, 0, sin(radians), 0, cos(radians), 0, 0, 0, 0, 1};

Translation: Added to the point at time of rendering

Scaling: Done to the point at time of rendering

Did you use homogenous coordinates? Yes

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

Did you combine all those transformations into one single matrix? No

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

Did you name your video rotation.avi? Yes

What functions/methods from OpenCV did you use?

Line()

Circle()

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

**N/A**

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