Andrew Seba  
Math/Phys191

Scaling and Translations Lab

# Introduction:

For this lab we are scaling a group of vertices of an object.

# Methods:

Matrix multiplication is the main part of this lab. The first method was straight translating the object. To do this we just need to add the change of each axis to the objects vertices.

The second method was doing a raw scale, by using a 4 by 4 matrix we are able to scale the object’s vertices. In the solution though I used just 4 Vector3D objects for the matrix to utilize the Vector3D dot product like this equation.

# Results:

derp

# Conclusion:

Derp

# Post-Lab:

1. For centimeters we need 3 decimal places, and for a float we get about 7 accurate decimal digits. By the 10,000’Th translation we would have lost a whole centimeter of information on vertices, because if we lost a .000001 on our vertex 10,000 translations later we would have messed up our centimeter. At 30 frames a second it would take 333 seconds for a visible error to occur, after 5 minutes we get our first visible error and if you’re playing on the same scene for more than that we might see lots of visual artifacts building up.
2. That way we calculate a rough center that might gain artifacts but the shape remains the same because it’s based off the center that’s taking the calculation hit.