

# Lab 3 - Transformations

## Start Assignment

- Due Thursday by 11:59pm
- Points 3
- Submitting a media recording or a file upload

We will be playing around with a starter file today that demonstrates matrix transformations in GLM (and openframeworks).

### Instructions

- 1) Download the starter files in Labs (under Lab 3) and create a new project. We won't be using the GUI but it might be a good idea to add them in case you want to experiment using the GUI.
- 2) Source code walk-through (I'll show you the source code I've written along with the transformation methods)
- 3) Create some primitives like the Pyramid and Sphere. Use the mouse and X,Y,Z modifiers to rotate them. You can delete them by selecting them and using backspace.
- 4) Try modifying the order of the matrix multiplication in the SceneObject class (default is TRS). Try the following:

RTS, SRT and TSR.

What are your observations ?

You can set the scale of the object when it is created in the App::keyPressed() event. **Try both uniform and non-uniform scaling.**

- 5) What happens if we try to select the sphere if it's scaled ?
- 6) Create two animations
  - a) an object spinning around its local origin (with the object translated/moved to some arbitrary point)
  - b) an object spinning around the world origin
- 7) Bonus (+1 or 25%) - Create your own Primitive (you can use Pyramid as an example).

