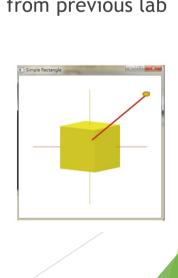# Lab 04
Transformation Matrix

Lab 04 Goal – Transformation matrix

1. Arbitrary Rotation 80%
   - Read in the v1, v2 coordinate from the command line (30%)
   - Draw the line (arbitrary axis) between v1 and v2 (20%)
   - Rotate your object along the arbitrary axis (30%)
     - use your own key setting
2. You will still need to be able to do the rotation, translation from previous lab
3. Reset the object to origin 20%
   - use your own key setting

- Write comments in your code about your key setting
- Do not use glRotate, glTranslate in your code
- Turn in your code

Transformation Matrix

- All modeling transformations are represented as 4x4 matrices

- Identity matrix

```
GLfloat rotMatrix[] = {
        1.0, 0.0, 0.0, 0.0,
        0.0, 1.0, 0.0, 0.0,
        0.0, 0.0, 1.0, 0.0,
        0.0, 0.0, 0.0, 1.0  };
```

```
rotMatrix[0] = 1;   rotMatrix[4] = 0;    rotMatrix[8] = 0;   rotMatrix[12] = 0;
rotMatrix[1] = 0;   rotMatrix[5] = 1;    rotMatrix[9] = 0;   rotMatrix[13] = 0;
rotMatrix[2] = 0;   rotMatrix[6] = 0;    rotMatrix[10] = 1;  rotMatrix[14] = 0;
rotMatrix[3] = 0;   rotMatrix[7] = 0;    rotMatrix[11] = 0;  rotMatrix[15] = 1;
```