# CMSI 371
## COMPUTER GRAPHICS
### Spring 2009

## Assignment 0122

This initial assignment is meant to get you into a development groove with OpenGL.

## Not for Submission

### By January 20

1.  If necessary, set up your primary work machine for OpenGL and C development.

2.  Enter the *spinningsquare.c* sample code as is to make sure that you can build and execute OpenGL C code, so that you can bring up any questions or issues on the January 20 class.

3.  Once you get the source code working without modifications, try to do at least two of the requested improvements by January 20 so that you can ask questions in class.

4.  Run the *setup-class* script for class *cmsi371* and user *dondi* so that you can start committing your work. This sets up your private repository for this course, similar to previous courses; you will have a different, shared repository for the graphics project. Setup instructions for that are forthcoming.

If you encounter any problems with *setup-class* or CVS, contact either Andrés Buriticá, our lab manager, or me. The Keck lab machines should all be ready, "out of the box," for OpenGL and C development. If you need help with setting up your own personal machine for OpenGL and C, let me know as soon as possible.

### By January 22

5.  Read Chapters 1 and 2 in the red book.

6.  Type in, compile, and run the *icosahedron.c* sample code as well, just so you can log more time with just writing and building OpenGL C code.

## For Submission

Get your hands dirty with OpenGL — take the *spinningsquare.c* program and make the following changes to it:

1.  Change the object(s) being drawn. Go on, be creative, knock yourself out.

2.  Change the way spinning is toggled: instead of a mouse click, use the keyboard. You'll need to use *glutKeyboardFunc* instead of *glutMouseFunc*, and the function you pass should have signature *void func(unsigned char key, int x, int y)*. Remember that the authoritative definitions for all of these functions reside in *glut.h* — don't hesitate to open and read that file when needed.

3.  Change the title, initial size, and initial location of the window.

4.  Change the axis of the object's rotation (the sample version rotates around the $z$ axis).

5.  Implement the following keyboard controls (and their corresponding functions):

    a.  **+** and **−** increase and decrease the rate of rotation, respectively.

    b.  **[** and **]** decrease and increase the frame rate of the animation.

    c.  The *C* key changes the object's color (or color scheme, in case you figured out how to draw objects with multiple colors).

    d.  The *S* key changes the object being drawn (i.e., rotate among 2 or more different objects as the user hits the *S* key).

Commit your work under */homework/cmsi371/ spinningshape*. At this point, you should also be aware that "committing" doesn't just mean "submitting," but progressively saving what you do so that you can recover prior code as needed!