CMSI 371

COMPUTER GRAPHICS

Spring 2008

Assignment 0131

This initial assignment is meant to get you into a development groove with OpenGL, plus set you up in the Keck Lab. Former CMSI 370 students have already done most of this, so for you, the work builds on what you did last semester plus sets up a new area in your CVS depots for CMSI 371.

Keck Lab Account Setup

If you haven't done so already, acquire a Keck lab user account. You won't be able to set up your repository until you have one.

Repository Setup

Since I will access your work electronically, you must follow the instructions below *to the letter, down to the capitalization*:

1. Your Keck lab account already comes with two CVS subdirectories, *projects* and *homework*.
2. Use the *setup-class* script under */afs/cs.lmu.edu/projects/m/metropolis/scripts* to initialize your CVS directories for this course.
   - For this class, the specific invocation is *~metropolis/scripts/setup-class cmsi371 dondi*
   - This script will create two correctly configured directories in your repository: *homework/cmsi371* and *projects/cmsi371*
3. On any computer that you will use for your school work, check out *homework/cmsi371*. Do your homework within this directory.
4. You should also have a *projects/cmsi371*. We'll leave that be for now.
5. Commit your files as instructed per assignment.

After completing the setup steps, your final CVS depot tree should include the following directories, and I should be able to check them out myself:

homework/cmsi371/

projects/cmsi371/

If CVS problems persist, Caskey Dickson, our lab manager, will hold a CVS learning session sometime early this semester. Contact him for details if you want (or need) to attend.

For Submission (non-370)

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

1. Change the object being drawn. Go on, be creative, knock yourself out.
2. Change the way spinning is toggled: instead of a mouse click, use the keyboard. Hint: 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)*.
3. Change the title, initial size, and initial location of the window.

When your CVS repository is ready, commit the program under */homework/cmsi371/spinningshape*.

For Submission (former 370)

Sharp-eyed former CMSI 370 students will notice that this was extra credit last time — congratulations if you've already done it:

1. Change the axis of the object's rotation (the sample version rotates around the z axis).
2. 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).

Add these features to the code that is already committed to */homework/cmsi370/spinningshape*.