

CMSI 371

COMPUTER GRAPHICS

Spring 2007

Assignment 0201

This assignment continues the process of getting to know the OpenGL API by adding more functionality to your *fiveshapes* program.

Not for Submission

1. Background and reference reading for this assignment can be found in Angel Chapters 2 and 3.
2. On the API side, red book Chapters 3, 4, and 5 will contain the programming information that you're most likely to use/need.

For Submission

What to Do

Add the following features to your *fiveshapes* program. Note how some of these features were extra credit assignments from last week; good for you if you've added them already:

- Convert all of your shapes into genuine 3D objects *that do not use* the prefabricated GLUT convenience functions.
- Implement lighting and shading.
- Change the control that starts/stops spinning the displayed shape from a mouse click to a press of the space bar.
- Have a press of the “V” key toggle between orthographic and frustum/perspective viewing volumes for your shapes.
- Have a press-and-drag of the left mouse button rotate or move around the shape in 3D.
- Have a press-and-drag of the right mouse button scale the shape up or down.

Make sure to follow the MVC paradigm when implementing these new features and controls.

How to Turn it In

1. Since this is essentially a “new and improved” version of *fiveshapes*, commit your changes “in place,” under */homework/cmsi371/fiveshapes*.
2. Tag the submission as *hw-0201*.

Extra Credit

You will get extra credit if your *fiveshapes* program includes performs texture mapping on your shapes. If you derive your textures from external image files, make sure to commit those along with the source code.