Comp 5/6400 Programming Assignment 2: 2D Transformations

Duration: **1 week**

Due Date: **11:59PM, Friday, February 14, 2014**

Requirements:

1. The window size should be at least ***500x500***.
2. The window's title should be "**COMP-5/6400 Assignment 2**"
3. You should have at least ***20*** geometric objects in your Student Center Complex design that are affected by glTranslate, glRotate, and/or glScale. For example, if you create only one polygon object model and use this model for all of your primitives, you can transform this object (translate, rotate, and/or scale), and give different colors. Every transformation will yield a new object with distinct size, location, and color.
4. Use smooth shading on objects. This can be done by changing the color before each vertex and using glShadeModel(GL_SMOOTH).

Description:

In this assignment, you are also required to design and model a 2D face to symbolize a student. The program must allow the user to translate, rotate, and scale the 2D student. Design your own way of handling the interactions, e.g., pressing the Up Arrow key causes the student to move forward by 5 pixels; pressing Right Arrow key causes it to turn clockwise by 5 degrees. Note that this student can only move forward and backward, i.e., s/he cannot move to the left or right like a crab. So in order to move toward another direction, s/he needs to turn a certain angle and then move forward in that direction.

You can always create as many students as you like. Again, common sense applies. Your model(s) should resemble some known human being(s), e.g., using an elephant face to indicate an AU student is not a good idea.

Bonus: Bonus points are given to those designs/programs that the 2D student cannot penetrate walls.