UNIVERSITY OF CALIFORNIA, MERCED

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CSE 165/ENGR 140: Introduction to Object-Oriented Programming
Mini Project 0

Due Date Wednesday, February 22, 2017

Total Points: 20

1. Download the file OpenGL Template.zip from CatCourses and run it on your computer.

   In the lab: Simply navigate to the freeglutapp folder and type `make`. This produces an executable called glutapp. To run it, type: `./glutapp` and you should see a window on which you can click and draw points.

   On Windows: Microsoft Visual Studio is recommended. Download Visual Studio 2015 Community Edition from `https://www.visualstudio.com/vs/`. Open the included solution file, visualc15/glutapp.sln, and compile and run the project.

   On macOS: Xcode is recommended. Download and install from the Mac App Store. Open the included Xcode project file, glutapp.xcodeproj, and compile and run. You can also compile in the command line but you should still install Xcode so that you can get the compilers as well as the OpenGL and GLUT libraries on your system.

   On Linux: Install the Free GLUT library on your system. Using apt, you can type: `sudo apt-get install freeglut3-dev`. You can then compile and run the app by typing `make`.

2. Modify the program so that when the user clicks with the mouse, a square is drawn so that the top-left corner of your square is at the point where the mouse was clicked. The sides of the square should be 0.1 units long. Your program should maintain a collection of squares in some data structure. Every time the display is redrawn, your GLUT display function should go through the collection of squares and draw each one of them. You are free to implement this in any way you wish.

3. Add a feature to your program that manipulates the squares in some way. For example, you can press a key on the keyboard to increase or decrease the size of the squares, or the color.

4. Upload a ZIP archive of your completed project folder on CatCourses and present your code to your TA before the deadline.

Grading policy:

Correctly draws squares on click	10 points
Additional feature to manipulate squares	5 points
Code clarity and readability	5 points