

CS4204 Computer Graphics Spring 2012

Homework Assignment 1

Due Dates

Assignment 1 is due on Monday, 1/30/2012 11:59pm.

Introduction

You need to write an application program that uses the OpenGL graphics package to draw a scene (or scenes) of your own design. Your scene must include one or more of each of the elements described below. **The scene should have the first letter of your name in it.**

Important Elements

Your program must contain at least one instance of each of the following types of primitives, each rendering type counts for 5 points in your final grade (**50 points**):

- Points – `GL_POINTS`
- Triangles – `GL_TRIANGLES`, `GL_TRIANGLE_STRIP`, `GL_TRIANGLE_FAN`
- Quads/Rectangles – `GL_QUADS`, `GL_QUAD_STRIP`
- Polygons – `GL_LINE_LOOP`, `GL_POLYGON`
- Lines – `GL_LINES`
- Polylines – `GL_LINE_STRIP`

i.e. for Triangles, your program should contain at least one usage of a `GL_TRIANGLE`, at least one usage of

`GL_TRIANGLE_STRIP` and at least one usage of `GL_TRIANGLE_FAN`.

In addition, you must experiment with all the following state modifications, 5 points for each state (**15 points**):

- Color – `glColor*()`
- Point Size – `glPointSize()`
- Line Width – `glLineWidth()`

You may, of course, use any number of variations on these. You are also encouraged to experiment with the mouse and keyboard callbacks. You must include specific running instructions in a `description.txt` file when you submit your program (**15 points**). The `description.txt` file must also include the basics of what your program does (or was supposed to do) and how you met the requirements of this project.

What to Submit

Put your solution in one C++ source files, named `assignment1.cpp`. Upload the `cpp` file and `description.txt` to the Dropbox of the scholar site for this course.

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Grading

Your overall grade will be based on the following:

- Demonstration of the required routines
- Complexity of your graphical output
- How good s your descriptions.txt file?
- The design of your code - is your coding style consistent, readable, commented and modularized?