

CIS 636 Introduction to Computer Graphics

CIS 736 Computer Graphics

Spring 2008

Lab 1 of 7

OpenGL Setup and Basics

~~Fri 01 Feb 2008~~ Mon 04 Feb 2008
Due: Wed 06 Feb 2008 (before midnight)

The purpose of this lab exercise is to help you get up and running with Mesa (Linux OpenGL) in the CIS Department's Linux environment and over XWindows, and to show you some basic rendering.

This lab assignment is worth a total of 10 points (1%).

Upload an electronic copy of the assignment in PDF form (converted from your word processor, or scanned) to your K-State Online (KSOL) drop box before the due date and time.

References

NeonHelium tutorials: <http://nehe.gamedev.net>

Mesa home page: <http://www.mesa3d.org>

1. **(20%) Mesa setup.** Log into your Gentoo Linux account in Nichols 128, the Linux Lab. Go to the NeHe site and follow the "Setting up OpenGL in MacOS" to create a GL window. As in MacOS X, Gentoo keeps its GL include files in `/usr/include/GL`. Name your program `lab1_1.c` and include it in your lab assignment submission. Take a screen shot of the window and save it in GIMP as `lab1_1.jpg`.
2. **(20%) Polygon rasterization (scan conversion).** Follow Lesson 02 to draw a 2-D polygon and shade it using smooth (Gouraud) and constant (flat) shading. Turn in `lab1_2.c` and `lab1_2.jpg`.
3. **(20%) Modelview transformation: 3-D Rotation of 2-D objects.** Follow Lesson 03 to rotate the flat polygons and then render them. Turn in `lab1_3.c` and `lab1_3.jpg`.
4. **(20%) Modelview transformation: 3-D Rotation of 3-D objects.** Follow Lesson 04 to draw 3-D polyhedra and rotate them. Turn in `lab1_4.c` and `lab1_4.jpg`.
5. **(20%) XWindows.** Repeat Lesson 04 from a notebook computer or PC running Mac OS X, Windows XP or Windows Vista. Turn in `lab1_5.jpg`.

A look ahead to MP2: Look at Lesson 26, "Clipping & Reflections Using The Stencil Buffer" by Banu Octavian.

Class Participation (required):

Select a term project topic by Fri 22 Feb 2008. Post a brief discussion of the topic you are considering in the class mailing list CIS560-L@listserv.ksu.edu before you finalize your choice, and ask any questions you like. State your choice by e-mail to CIS560TA-L@listserv.ksu.edu.