Lab2: Rasterization

February 11, 2008

1 Introduction

The goal of the lab this week is to introduce you to modelling objects with OpenGL and placing them in a three dimensional world using the basic OpenGL functions for primitives and mathematics. You will also be introduced to shading to some degree and some of your linear algebra classes from previous assignments will be used. By then end of the practical you will be able model simple platonic solid and also some of the more complex geometric structures that you will use later in the course.

2 Lab Guidelines

All functions that are to be implemented are flagged. You only need to edit two classes, the **render class** and the **objects class**. All the functions for drawing geometric structures are defined in the objects class and all the drawing will be done in the render class. The cube and cylinder are given to you in the in the lecture notes;

For the **Monday** practical you **must** to implement at least **three** platonic solids, with wireframe and shading:

- Tetrahedron
- Cube (Hexahedron) **(Given in the notes)**
- Octahedron

Advanced:

- Dodecahedron
- Icosahedron

For the **Wednesday** practical you **must** to implement at least **three** complex geometric solids, with wireframe and shading:

- Cylinder **(Given in the notes)**
- Cone
- Sphere

Advanced:

- Torus
- Teapot

These will be the solids that you will use to build your tree later in the course. Hopefully will have a seen like the following. Finally take a screen capture of the of all your work and submit with your source code.

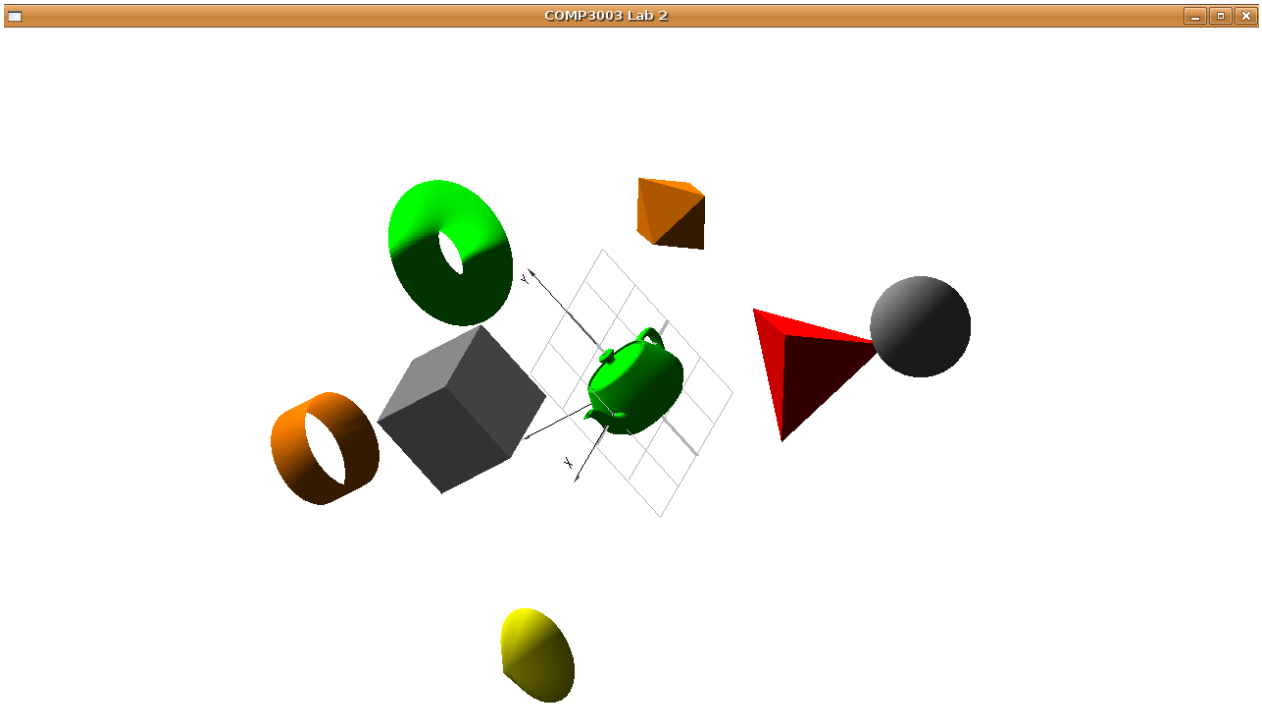

Figure 1: Screen capture of platonic solids.

3 Submission

Please upload you code as an archive, one of **(.tar .tar.gz .tar.bzip .zip etc..)** for information on using any of the archiving tools mentioned previously please consult the man pages or ask a demonstrator. File must be no larger then **2Mb**. This weeks submission is due **18:00 hrs this Thursday**. You may resubmit your code as many times as you like up to the deadline.