CMSI 371-01

COMPUTER GRAPHICS

Spring 2013

Assignment 0319

Time to start building your very own personal 3D graphics library!

Outcomes

This assignment will affect your proficiency measures for outcomes *1b*, *1c*, *3d*, *3e*, and *4a–4f*.

Not for Submission

If you have access to the Angel textbook, the following readings will add depth and detail:

- (already mentioned) *3D graphics overview and pipeline:* Sections 1.1–1.9 (pages 1–40). Restated here in case you now "get" why this is worthwhile.
- *Introductory graphics programming:* Sections 2.1–2.4 (pages 43–67).

For Submission

For the following tasks, start by copying one of the *hello-webgl* bazaar samples into *homework/pipeline* on your `git` repository.

Envision a Scene

It's a good idea to have *some* notion of what you want to render by the end of the semester. Create a stub web page that will eventually hold the final version; for now, you can use it to demonstrate and test the work listed below.

Expand Your Shape Library

Add at least two (2) mesh generation routines to the shapes library. You may enhance the rudimentary mesh model in the sample code if you like.

Implement Shape Groups

Modify the `drawObject` function in the sample code so that it can handle *composite* or *group* objects: that is, objects that have more than one vertex array and associated mode, color array, etc. within them (and yes, there *will* be an etc.).

Approximate a Sphere

Implement a `sphere` mesh function within the `Shapes` module. Some starter code can be found in the Angel text ("Approximating a Sphere," Section 2.4.3, pages 60–62), if needed. *Hint:* Having shape groups already implemented will help you here.

How to Turn It In

Show off your hard work in the aforementioned scene stub web page, even if it doesn't look anything like your final intended scene yet. Commit and push your work to your `git` repository under *homework/pipeline*.