More Lighting in OpenGL

Tom Kelliher, CS 320

Apr. 20, 2011

1 Administrivia

Announcements

Assignment

Read 8.7–8.9 (texture mapping).

From Last Time

Light lab.

Outline

1. Walk-through code.
2. Lab.

Coming Up

Texture mapping.

2 Code Walk-Through

1. Lines 13–24: The experiments.

2. Lines 76–78: Disable all lighting to render the sphere representing the moving light as a 2-D object.

3. Lines 143–144: Disable and enable the fixed spotlight.

4. Lines 210–216: Specifying `GL_LIGHT1`'s position here, before the call to `gluLookAt()` results in the light being positioned in eye coordinates.

5. Line 227: `glLightModel*(pname, param)`:

   (a) This call correctly computes specular reflections by correctly determining the viewer angle. Otherwise, the viewer is assumed to be at infinity and the view angle will be along the -z axis.

   (b) Other `pname`s:

      i. `GL_LIGHT_MODEL_AMBIENT`: Set global ambient parameters.

      ii. `GL_LIGHT_MODEL_TWO_SIDE`: Set to !0 to enable two-sided lighting using back material parameters.

   For details, RTFM.

6. Lines 228–230: Note that lighting and individual lights are enabled separately.

3 Lab

Refer to source code.