COMP 371 – Computer Graphics

Assignment 3: Lighting

Due: Wednesday, July 31th, End of Day
Worth: 10% of your final grade

Topics

- OpenGL/GLSL Programming
- Lighting Per-Vertex (Gouraud Shading) and Per-Fragment (Phong Shading)

Programming Assignment [10 points]

Tasks to Do:

- Implement Phong and Gouraud Shading **[5 points]**

  Within the lighting framework, the rendering context is setup, shader constants are sent to the shaders. You just need to implement lighting in the shaders.

  - You must implement per-vertex lighting using the Gouraud Shading Model for point and directional lights within the Lighting Framework provided. **[2 points]**
  - You must implement per-fragment lighting using the Phong Shading Model for point and directional lights within the Lighting Framework provided. **[2 points]**
  - Your shaders must support both point lights and directional lights **[1 point]**

- Previous Assignment Framework Integration **[5 points]**
  - Add at least one light source in the world **[1 point]**
  - Add the Phong Material properties to your Models in scene files and set all shader constants required **[2 points]**
  - Add Phong Lighting to Solid Color Shaders **[1 point]**
  - Add lighting to the Textured Shaders used by particles **[1 point]**

- **BONUS: Add support for 8 light sources all defined in your scene file [up to 2 bonus points to be added on your assignments grade]**

Submission Guidelines

- You need to submit your assignment on Moodle by the deadline.
- Late submission will be penalized by 5% per hour late.
- You can submit only the source directories for both the lighting framework, and your previous assignments framework.