Joshua Nelson

CST-310

Ricaro Citro

Grand Canyon University

Description: *Carefully read the description of Project 4. How would you apply a lighting model to your scene? Define a model and apply it. Post the code and a screenshot, and solicit feedback. Provide feedback to your classmates' posts.*

Lighting Model Implementation Analysis:

* Lighting Components
  + Vertex Shader (basic.vs)
    - Takes vertex positions and normal and transforms to world space
  + Fragment Shader (basic.frag)
    - Implements Phong Lighting model with 3 components:
      * Ambient Lighting (Base Level Illumination)
      * Diffuse Lighting (Simulates Light Reflection)
      * Specular Lighting (Simulates the bright spot on shiny surfaces)
  + Main Application (main.cpp)
    - Sets up light properties:
      * glm::vec3 lightPos(1.2f, 1.0f, 2.0f);
      * glm::vec3 lightColor(1.0f, 1.0f, 1.0f); // White light
    - Passes values to shader uniforms before rendering

Summary:

My implementation follows standard Phong shading techniques with

* Per-fragment lighting for smooth results
* Proper normal transformation for correct lighting with transformed objects
* Separate control over ambient, diffuse, and specular components
* White light source with configurable position

Screenshot of Implementation:  
A computer screen on a desk

AI-generated content may be incorrect.