

T-637-GEDE Game Engine Architecture

Problem Set 4

Problem 1 – Phong Lighting Model (50%)

If we have a point on a model surface at world coordinates $(10,5,0)$ where the surface normal is $(0,1,0)$, and we have a camera at world coordinates $(5,8,0)$ facing that point, where would a point light source have to be, according to the Phong Lighting Model, for us to see:

- a. The maximum diffuse light intensity in the point
- b. The maximum specular light intensity in the point
- c. The maximum ambient light intensity in the point

Problem 2 – Texture Use (50%)

Name and explain 8 different kinds of information that one could store and look up in a texture, using interpolated texture coordinates, during the rendering of a particular pixel.