

#### Ray Tracer 4 Due April 21

It is a short step from where you are to a better lighting model.

Replace your current color determination:

1. **Ambient light.** Let's be simple. Multiple the Traceable color by (0.2,0.2,0.2) to give the ambient light. If a point is in shadow from your light source, that's it for the light.
2. **Diffuse light.** You can now calculate the (world coordinate) normal ( $n$ ) at a point, and you can calculate the direction from the point to a light source ( $ls$ ). Make sure you normalize both of them, and then the diffuse light is  $(n \cdot ls * \text{Traceable.Material.diffuse}) * \text{light color} * \text{objectcolor}$