

**Aim**

I am aiming for this project to not be too extensive, in that I want to explore basic implementation of a technique. I am looking for more of a basic pass, since I am quite new to computer graphics and do not think I am able to produce things for higher grades. I am however quite intrigued by creating nice looking things.

**Motivation**

I am interested in looking into implementing Phong illumination in a ray tracing scene. I think it will be natural for me to continue using C++, SDL and GLM since I have done the labs with it and feel somewhat comfortable in it. Ray Tracing feels like the concept I kind of understand the best at the moment and I was intrigued when I first got to know about Phong illumination in a previous course. I would make use of the previous labs and borrow or extend the code from them. Adding ambient, diffuse and specular components to the Cornell box scene based on the Phong reflection model is a straightforward implementation of a basic technique, at least in theory.

**References**

I have some sources that I think are interesting. I might be able to get some inspiration from them and include them in the report.

1. <https://viclw17.github.io/2018/07/30/raytracing-reflecting-materials>
2. <https://raytracing.github.io/>
3. [https://en.wikipedia.org/wiki/Phong\\_reflection\\_model](https://en.wikipedia.org/wiki/Phong_reflection_model)
4. <http://www.graphics.cornell.edu/online/box/>
5. Shirley, P. and Marschner, S. *Fundamentals of Computer Graphics, Third Edition*. A K Peters, Natick, Massachusetts, 2009.
6. Angel, E. and Shreiner, D. *Interactive Computer Graphics: A Top-Down Approach with Shader-Based OpenGL (6th Edition)*. Addison Wesley, 2011.
7. <https://chicio.medium.com/phong-reflection-model-764f8065f19a>
8. <https://www.cs.utexas.edu/~bajaj/graphics2012/cs354/lectures/lect14.pdf>

**Blog**

I will also make a blog for continuous reporting on this. It can be found at this link: <https://lillekvarre.wixsite.com/website> (please don't mind the name for it, it automatically assigned my email as a domain).