**Homework #3**

**CSCI 3353 - Hibbs**

The model I created was a ring with a diamond/gem on it. I decided on a ring after seeing the torus shape in class, and I decided something similar to that (though with the inside flat) along with a diamond could be a cool realistic shape that wouldn’t be too difficult to build. When it came to implementation of lighting and glass ball, I started with lighting. I used various types of light, particularly the ambient, specular, and point, to create the 3D model. I also set the shininess. This is how I created a surface that’s almost metallic from my perspective, with the lighting being different from different angles. For the glass ball interface, what basically happens in my code is each time the user clicks and drags the model, a new rotation axis is created at that drag point and the angle is changed based on how the mouse moves. It is a little complicated to handle, but I really struggled to figure out a better way to do it on my own. As for extensions, I texture-mapped a brushed gold/chrome texture onto the ring to make it appear more realistic. It is very minimal in appearance, however I think it makes the ring look significantly more authentic/textured than not. This is possible because I used normals for the ring. It’s part of what makes the ring look slightly different from various angles--the texture is lighter where it is mapped onto the outermost part of the ring, for example, and there are a few different streaks of color running through. I also used per-vertex normals for the ring shape and added per-vertex surface normals to draw the pyramids for the gem. I included specular light in the scene too that changes between the gem color and ring color. The gem is drawn after the ring, so I was able to do all the transformations necessary and change some of the lighting settings before drawing the gem too.