CS 411 – HW5

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November 22, 2016

The professor said there is no penalty for this assignment if submitted before 11:59pm on Sunday, November 27. This is because the syllabus states that late penalty does not apply on holidays.

# **How to Run Code:**

I only did handwritten math problems. To see the picture of the handwritten problems go into the Math Problems directory then open the mathProblems.jpg file

To see the output for the coding problems go into the code directory the open the cs411-assignment5.html file using Firefox 50.0. Click buttons on the screen and drag the sliders to see the different functionalities.

# **Design Issues:**

1. The math problems were easy to do after watching the lecture once again.
2. The code was quite challenging to do. I did not know how to pass values to the shader.
3. The hardest part was computing the different light/material source parameters and light attenuation. I could not do some calculations in the shader.

# **Solutions:**

1. After watching some lectures over again I figured out how to solve math problems very easily.
2. For the coding problems I discussed with friends how to pass values to the shader and I searched online for clues and examples. I understood how to use gl.getUniformLocation(), gl.uniform1f() and gl.uniform3fv().
3. For computing the light/material parameters I did this in webGL and the shader. In the shader I changed the formula for specular from Ispecular= Is\*ks(nDotH)^ns to Ispecular=Is\*ks(vDotR)^ns because it was difficult to compute H (halfway vector) in the shader.
4. For computing lightAttenuation I had to do it in the shader. I changed the formula for Euclidean distance to length(lightDirection – vertexPosition) for easy computation.

# **Sample Input / Output:**



