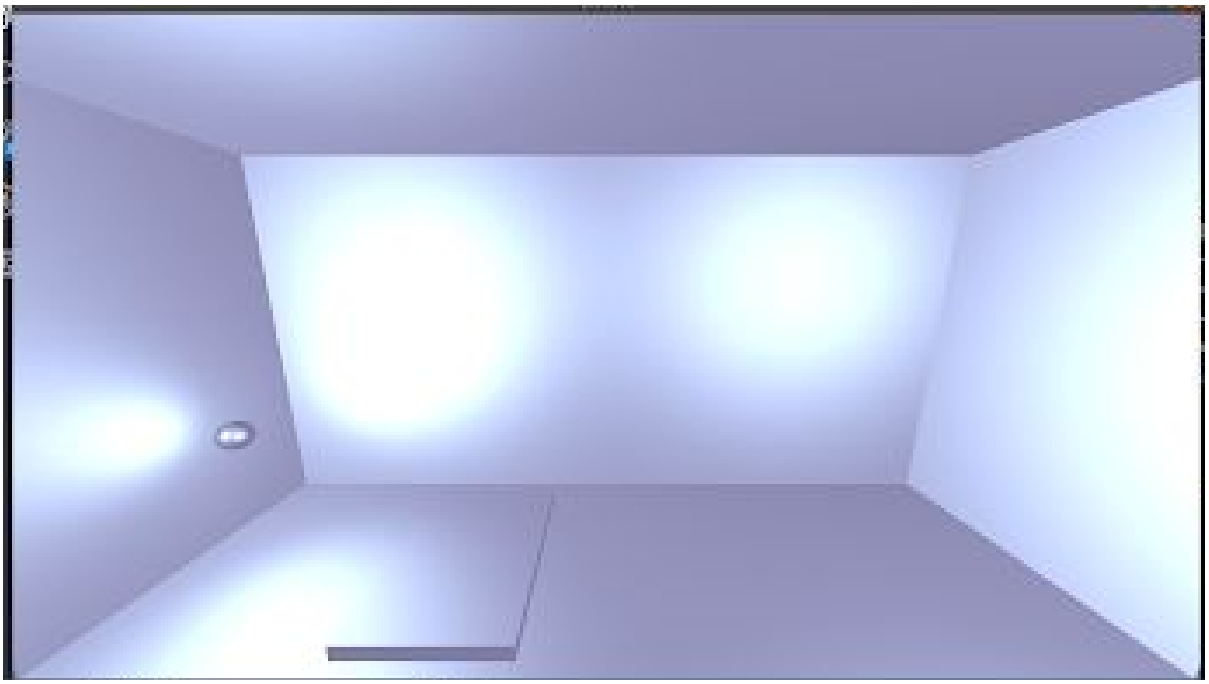
1j) Screenshot:



2a)
The perspective projection is not an affine projection, so it doesn't preserve angles.
2b)
When light hits an object it scatters in multiple directions, and then hits other objects and doing the same again. Ambient light is the light in the scene that is about evenly distributed through this process, a sort of 'background light'. The ambient light contributes a lot when we don't have a lot of diffuse or specular light, for example if the light source angle is wrong (take the floor of the screen shot for example). However, when we have a lot of specular highlights and diffuse lighting the ambient contributes very little, for example in the big white spots in the screenshot.
2c)
In Gourad we compute the intensities the same way as in Phong, but only for the vertices, and then interpolate between them. To convert to a Phong model, you can instead move the computation of the intensities to the fragment shader, computing the intensity on a per-pixel basis.
This will increase the accuracy of the light model, the Gourad model is only 'accurate' in the vertices, and can fail to capture high intensities or local maximas on a surface, for example a white spot on the middle of the floor, if you only compute the corners, but the phong calculates for every pixel, so every pixel is 'accurate' and we get to see the white spot.
2d)
Diffuse color is usually based on the color of the material, i.e. the the light rays not absorbed by the material, and scattered everywhere. Specular color on the other hand is light rays directly reflected by the material and into the camera. In a perfectly reflective surface, this will have the same color as the incoming light, but on other materials some light will be absorbed or distorted, but this can be different from the diffuse color.
2e)
The normal vector out from the vertex shader is the normalized normal vector of that vertex. The normal vector in to the fragment shader is the interpolation of the three normal vectors

of the three vertices. This interpolated normal is not guaranteed to be normalized, and we need to normalize it once more to be sure.