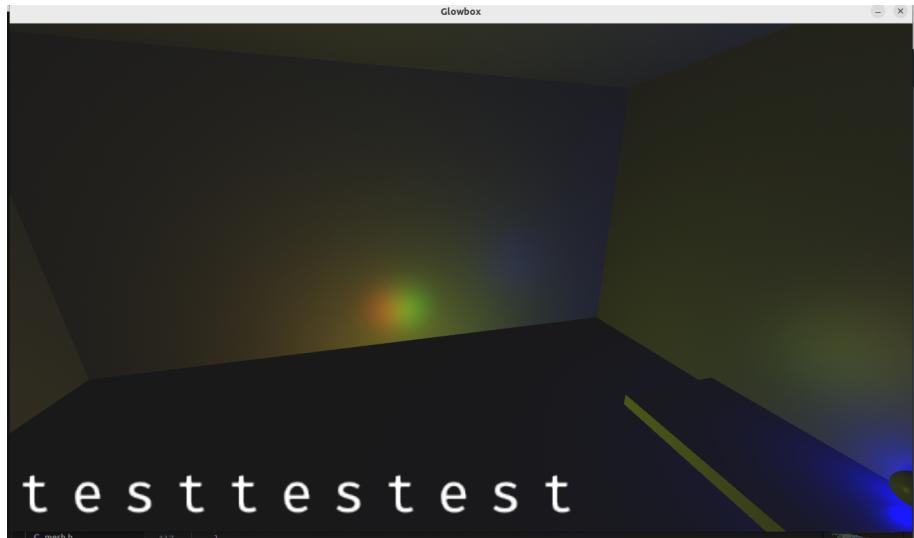


Report

Task 1



I made the text a bit bigger

Task 2

a)

The primary cause is for perspective correction. Texture coordinates are typically specified in world space, but when we render it, it is typically projected to 2D space. This will make objects farther away appear smaller. To do the projection, we divide with the z-coordinate, thus making the interpolation non-linear. If it was linear, objects farther away can appear stretched and distorted. The reason why this would happen is because the rate at which the texture coordinates changes would be constant, and not account for the change in depth variation.

b)

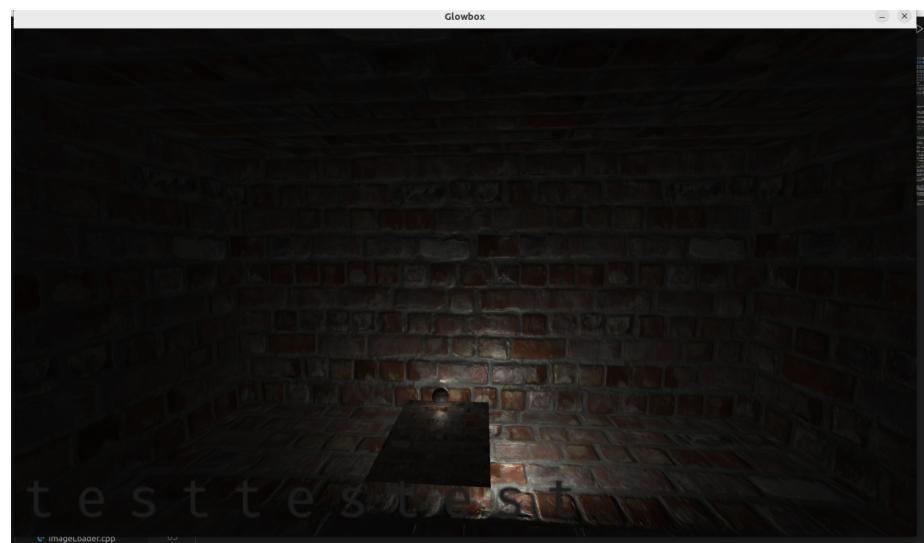
- 1) A displacement map maps triangles to new positions. In our scene, we use a cube with 6 sides. This means that we have 12 relatively big triangles. If we apply the displacement map on our scene, the triangles will only move a bit, which will cause the sides on the scene to look more skewed. If the scene on the other hand consisted of many small triangles, we will get a much more better result with better geometry. What we have done in our assignment is to use a trick where we use normal maps to give the geometry effect, thus not distorting the scene with a displacement map.
- 2) We can change the scene to make the walls have more triangles.

c)

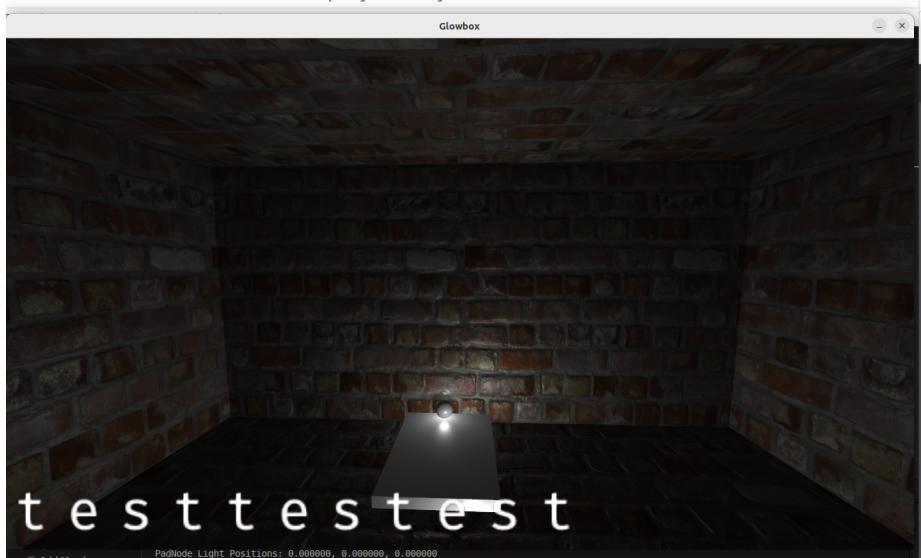
We will expect to see a blending of the red and green. In mip-maps the original texture map gets sampled down to smaller versions (the mip-maps). We use a 2x2 box filter for averaging the parent texels. Nearby, we basically use the original texture, but when we move farther away, we use a smaller resolution mip-map which in this case blends out the red and green.

Task 3

f)



j)



Here is a picture of the normals also:

