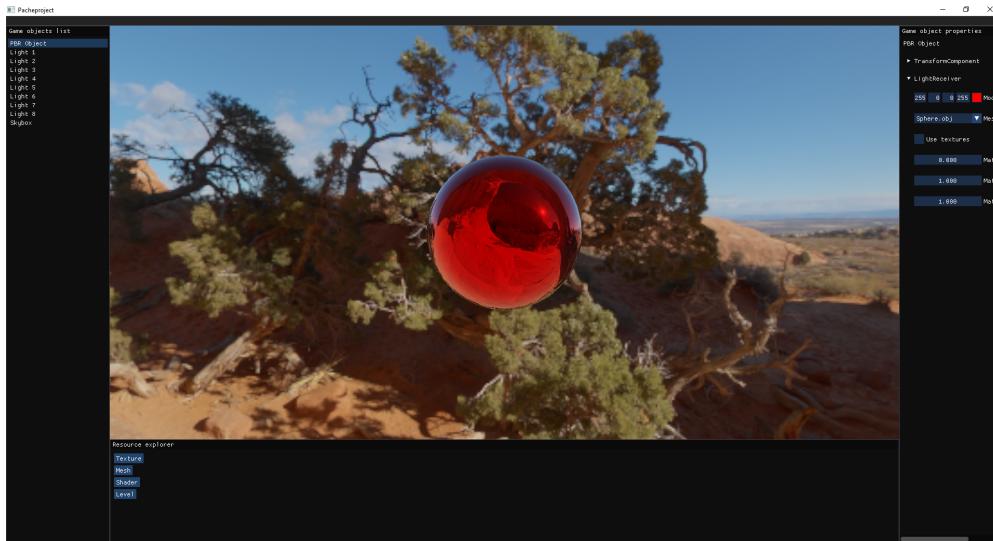


Juan Pacheco Larrucea

PHY250 Final Project : PBR

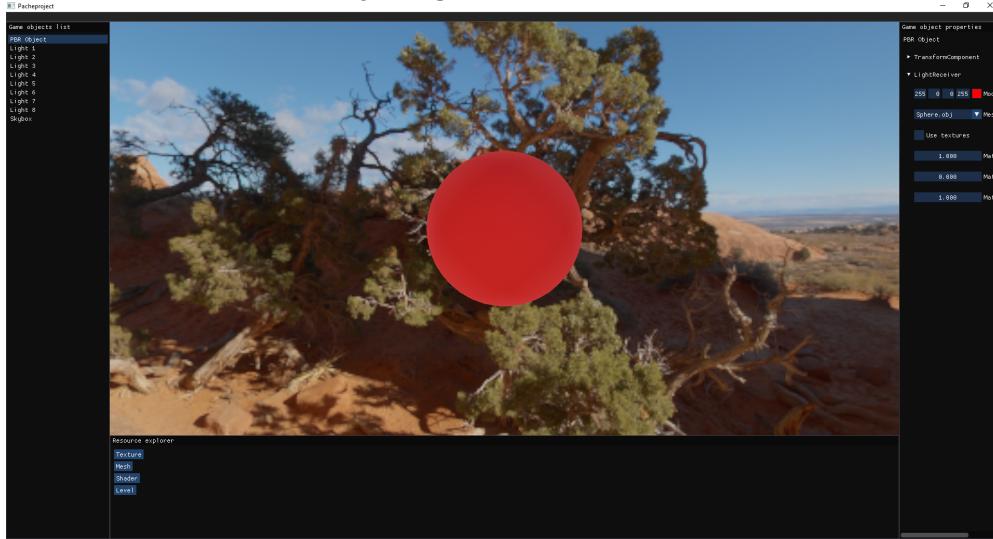
-First case: Completely metallic



For this case, the parameters are 1 of metallicness and 0 roughness.

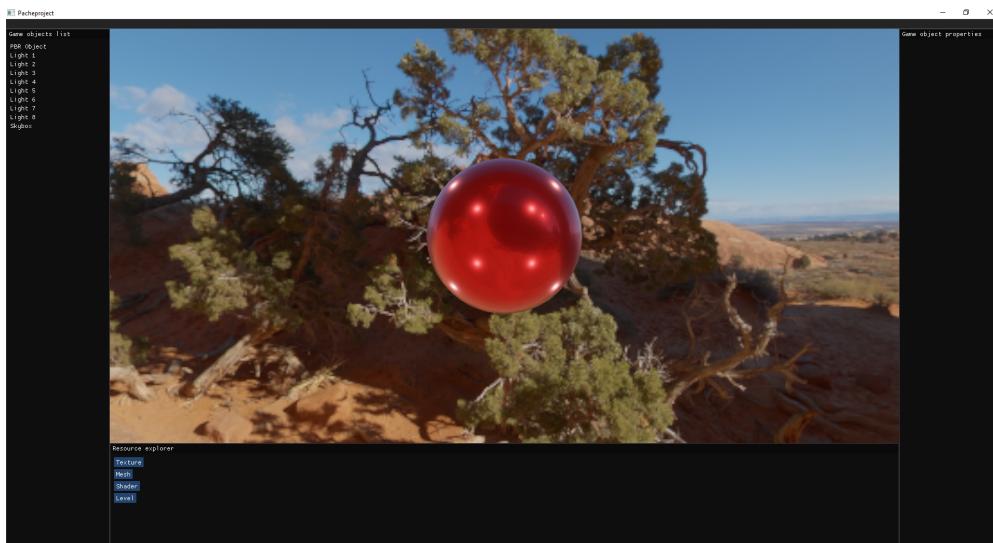
In this case, as the roughness is 0, the microfacets will be aligned, so it will be a completely smooth surface (well, the most smooth it can be considering at microscopic level nothing is completely smooth) at a microscopic level, that is why there is not any self shadowing of the microfacets and thanks to the metallicness there is a lot of elastic scattering so that is why the light has a lot of specular reflection , so that is how we can see all the background reflected in the sphere.

-Second Case: Completely roughness



In this case we can see how the metallic parameter is 0 and the roughness is 1. In here, the smooth is very rough, so the microfacets are almost not aligned so there is a lot of self shadowing between them and also we can see there is apparently no bright (specular) area due to this but the thing is that the bright area is now very increased but its intensity has decreased a lot as it is not focused on one part of the sphere, instead it is spreaded through all of it due to how the microfacets are alligned.

-Third case: Metallic and roughness



In the last case there is a combination of the two parameters, so there is metallicity and roughness. Here we can see how the microfacets are not perfectly aligned, so there is self shadowing between them and we can also see how the bright area is not small and not very intense, as the roughness has made its intensity to spread and decrease. For the metallicity we can see how there is some elastic scattering so that's why we can see part of the background

