

# RayTracer

Luis Daniel Castillo Hernández

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At the beginning i had my own version of the raytracer but i ended up having a little too much difficulties so i decided to start from the latest version available Raytracerv0.7.

First I started by the implementation of shadows and the decreases in intensity of a light considering the distance, the intensity was a no brainer, but the shadows I ended up deciding to left it in hard-shadows as they seem to have a nice result for my images.

The only first problem with shadows was the intersection with the triangle with it self so i ended up moving a little bit the ray in the direction of the ray so it wouldn't intersect it maybe wasn't the best way but it has acceptable results.

Then I implemented reflections which the most difficult part was the calculation to get the ray in the desired direction but then i saw on internet that it could be recursive to get cooler result so i changed it so it was recursive if it hitted another object that was also reflective.

Then i implemented refraction which the hardest part was getting the ray in the ray direction, I manage to make it look real god in spheres real near to what real-life would be, I also made it recursive for it to work better.

1. Generates shadows done to the object by other objects of the scene.
2. Generates shadows cause by the object itself. (Didn't work correctly always so is commented)
3. Uses material in the objects.
4. Uses ambient diffuse and specular.
5. Can create reflections recursively and it has a depth limit of 5 .
6. Can create refractions recursively and it has a depth limit of 5 .
7. Both the refraction and reflection can be a percentage to be able to get better results
8. Can use material that are reflective and refractive at the same time.

I didn't have the time to try to implement any of the extra stuff, but I'm really satisfied with the results I had my raytracer create.