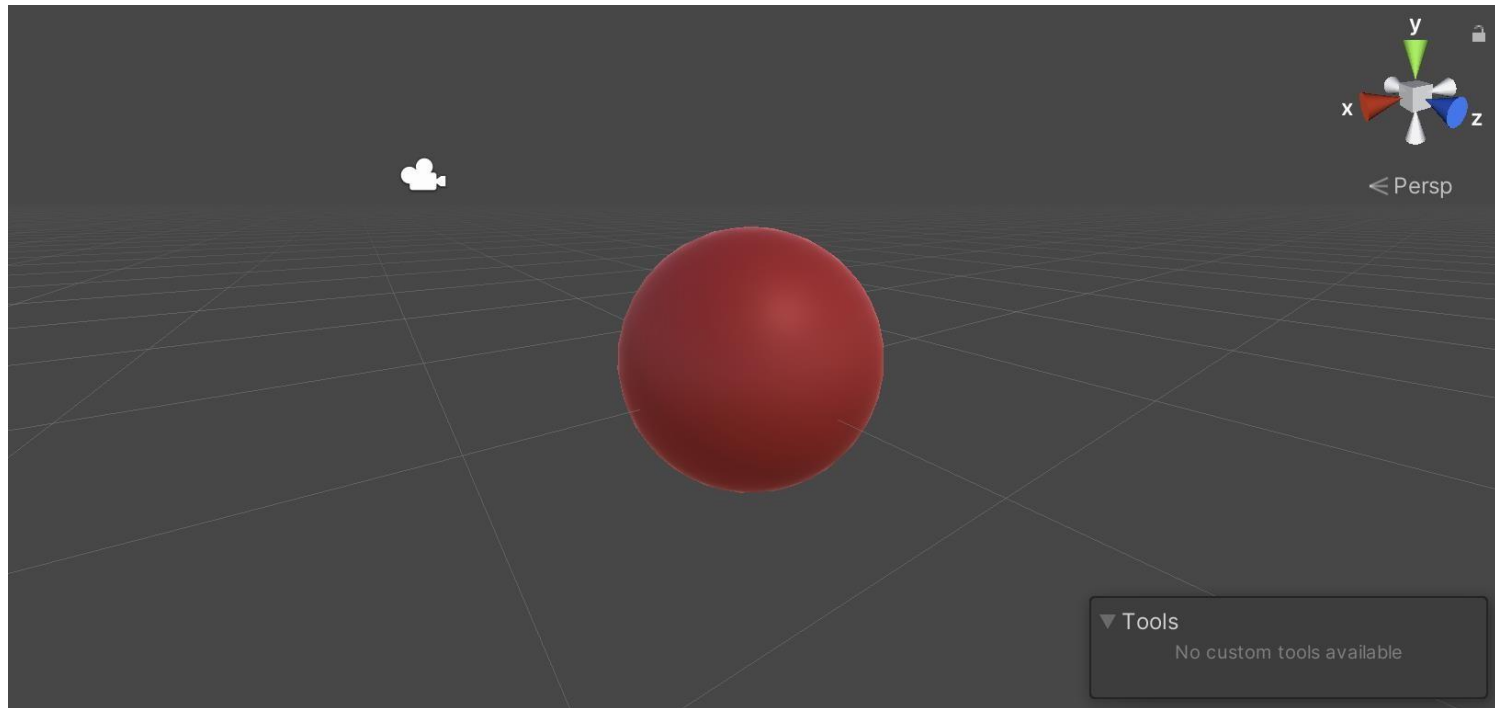

[Unity]Lighting & Shading

Sung Soo Hwang

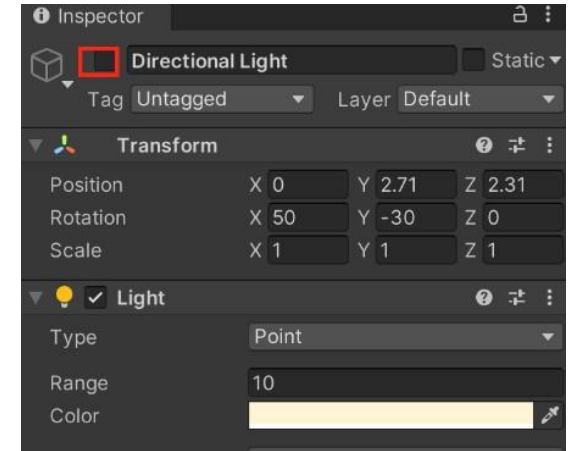
Light sources

- Make a sphere.
- Apply the material of the color you want to the sphere.

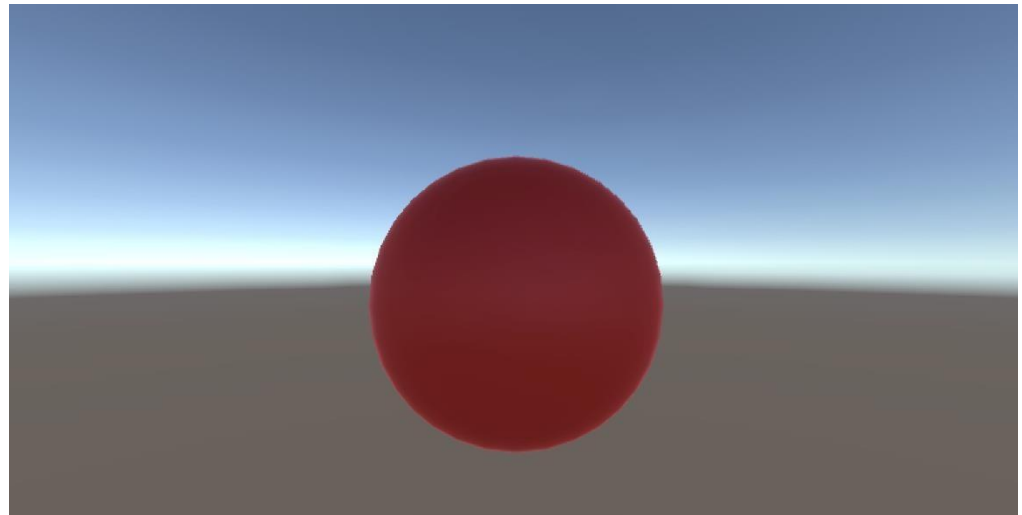


Light sources

- Disable all light sources on your screen



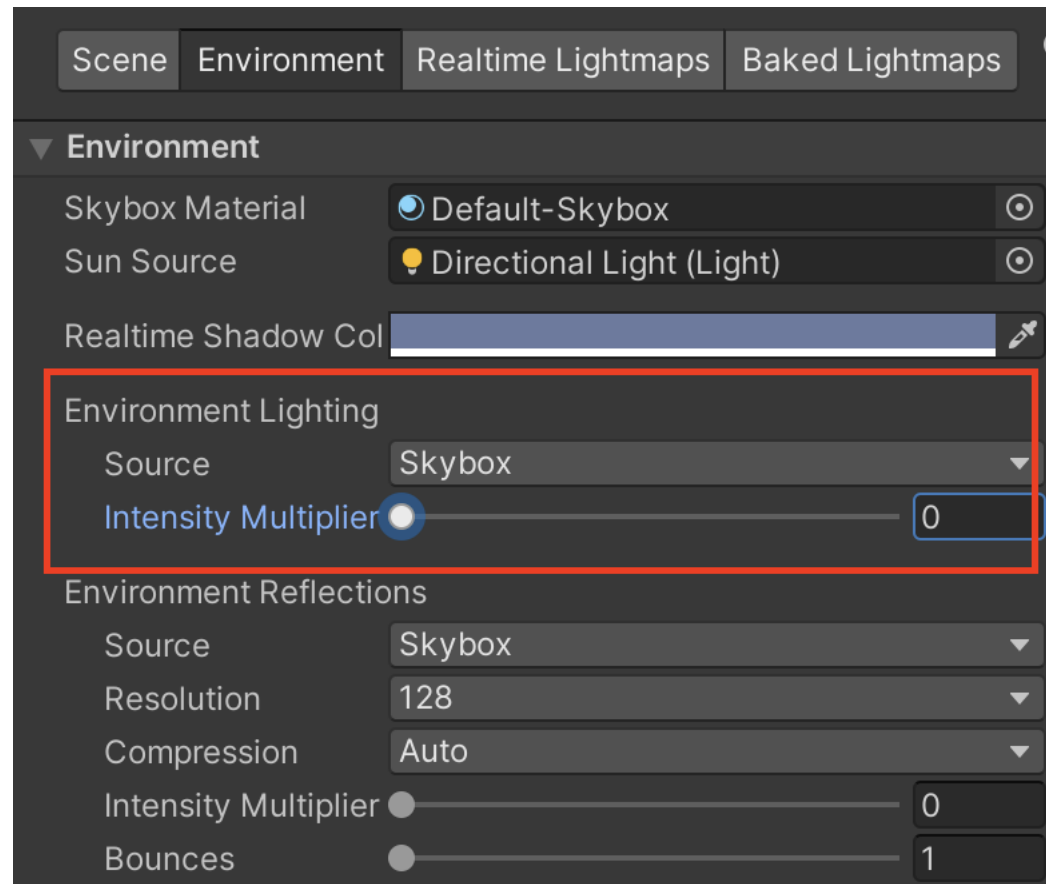
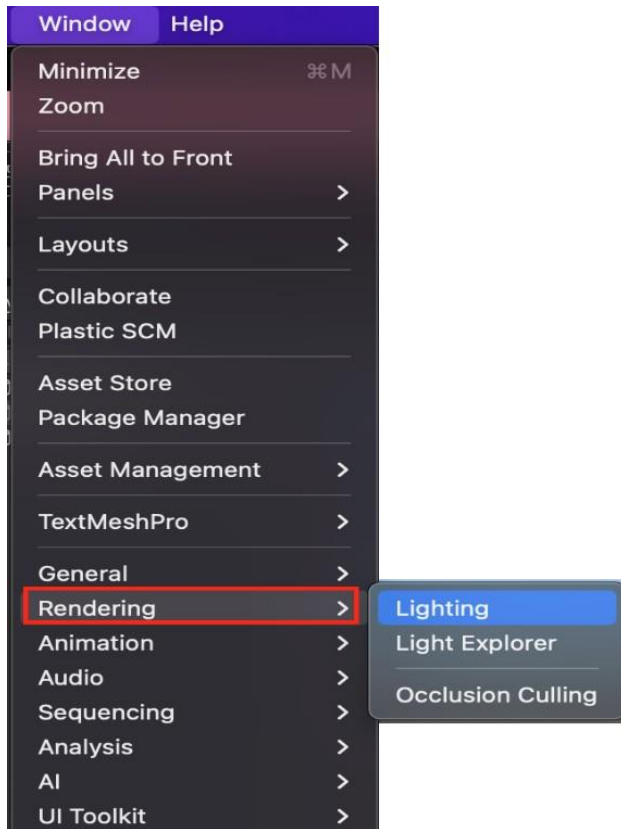
- Now, Render(Play) it



- Ambient is present all around the Scene and **doesn't** come from any specific source object

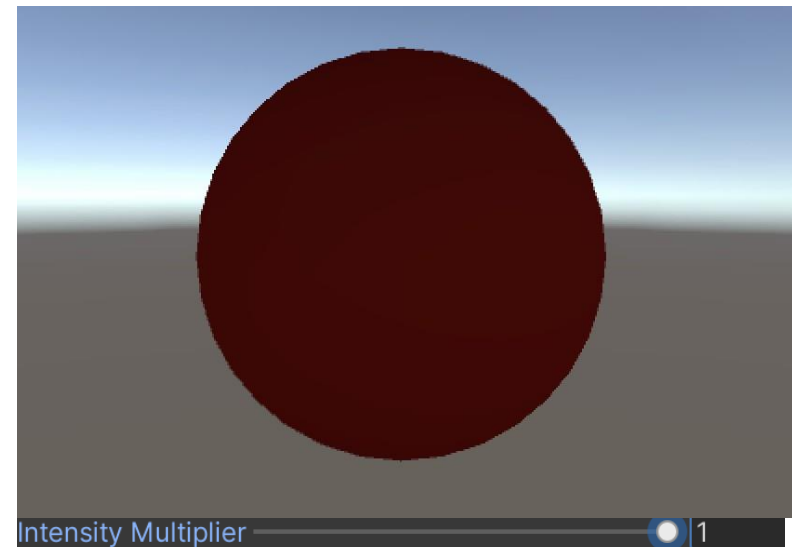
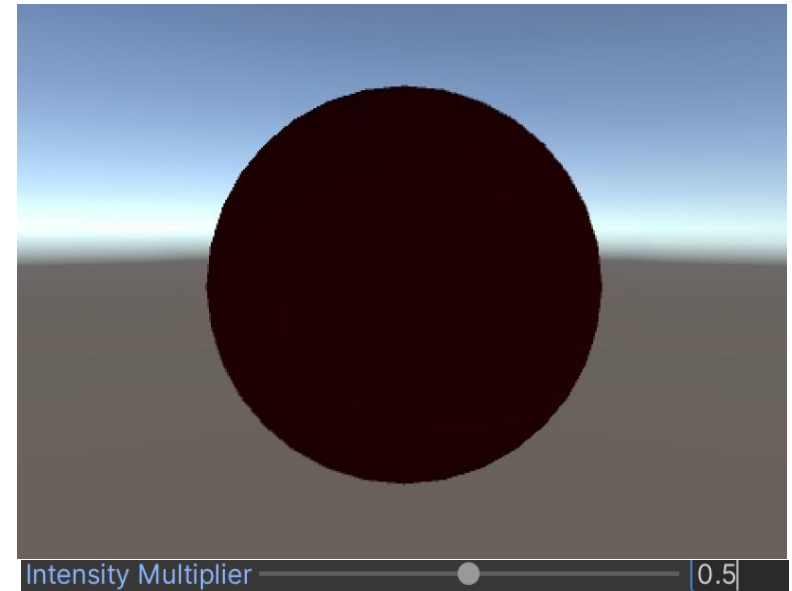
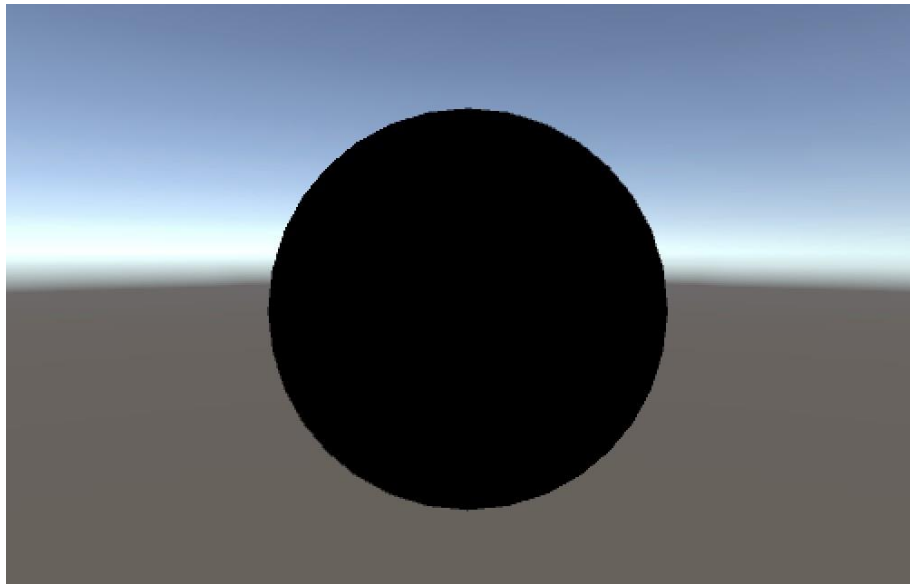
Light sources

- Go to "Window" menu > "Rendering" > "Lighting" and then in the inspector under "Environment Lighting"



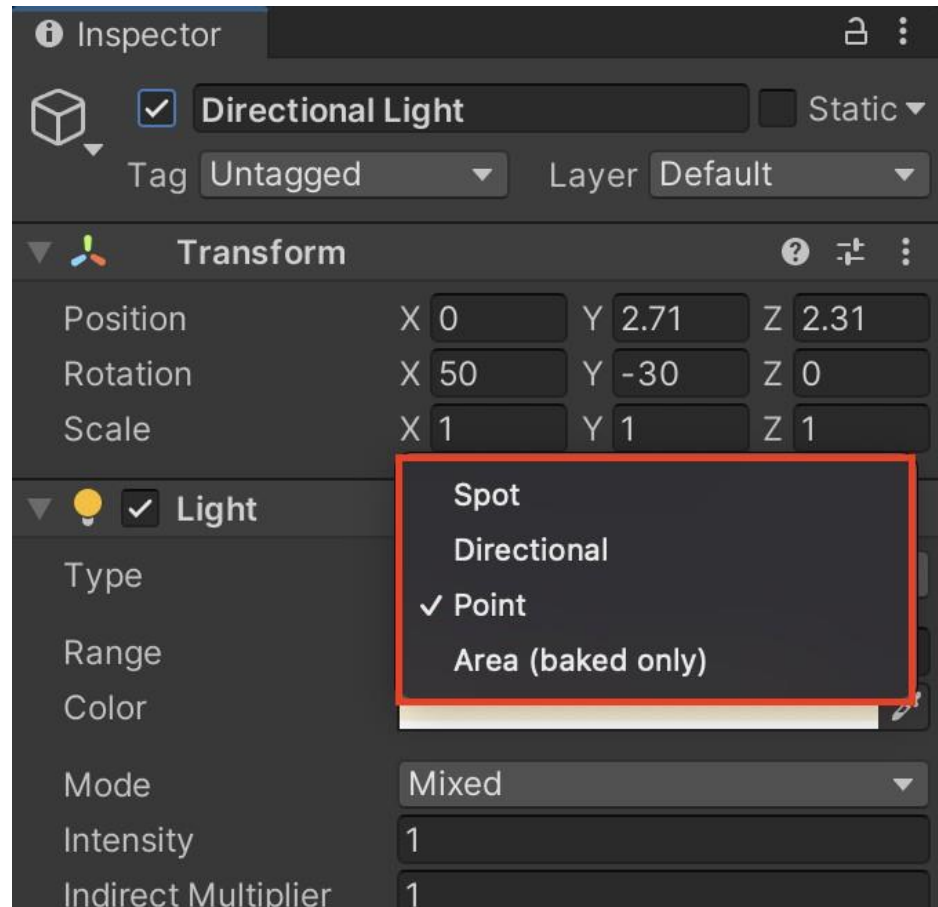
Surface

- Change the Intensity Multiplier value and render it



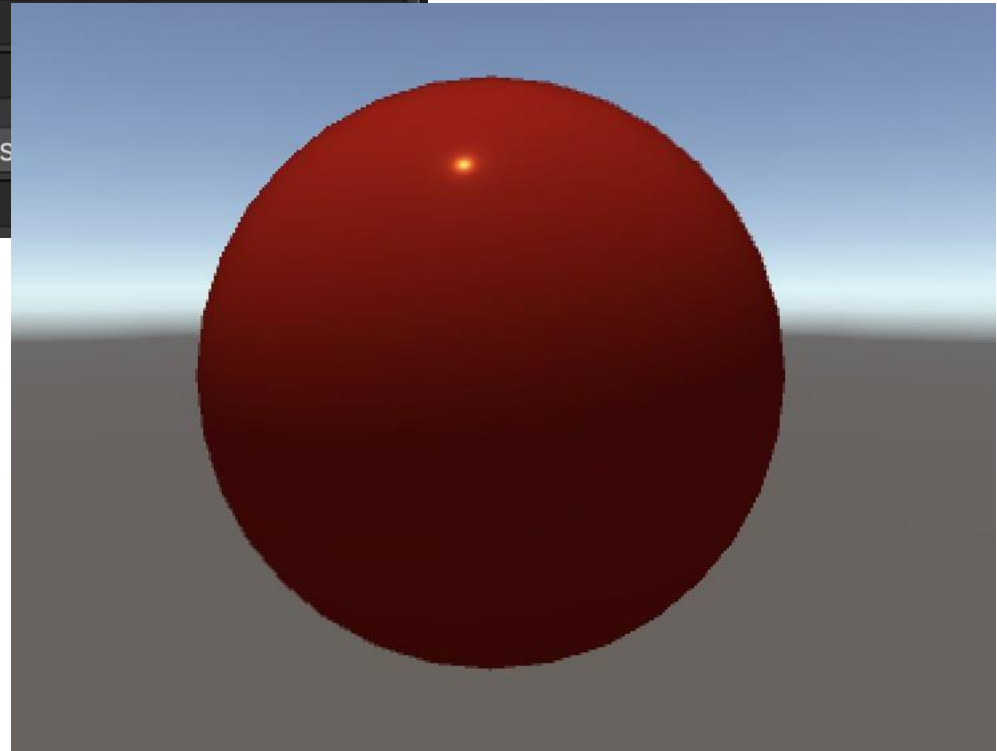
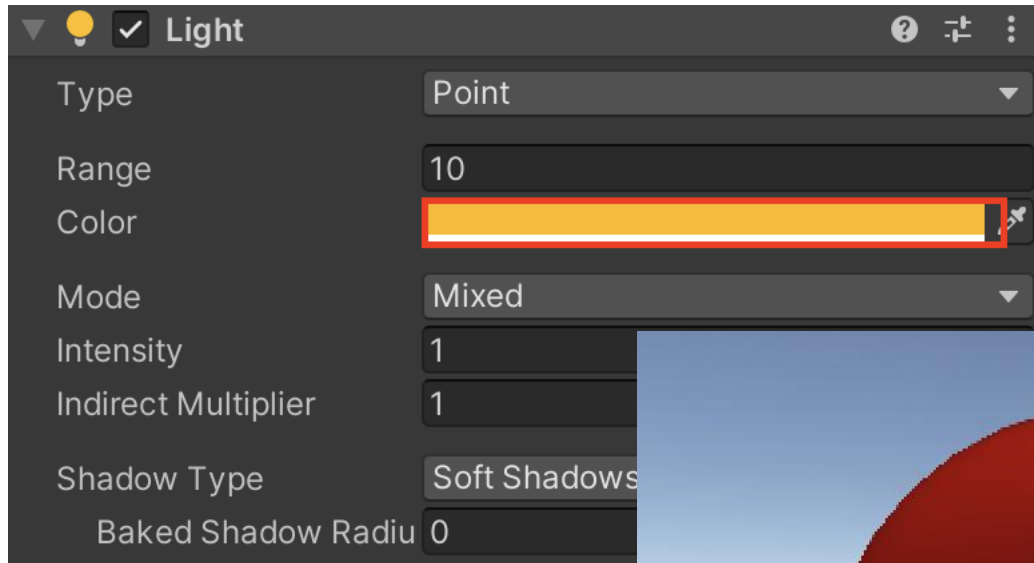
Light sources

- Reactivate the light source in the scene, change its type (point, directional, spot), and render it from various angles



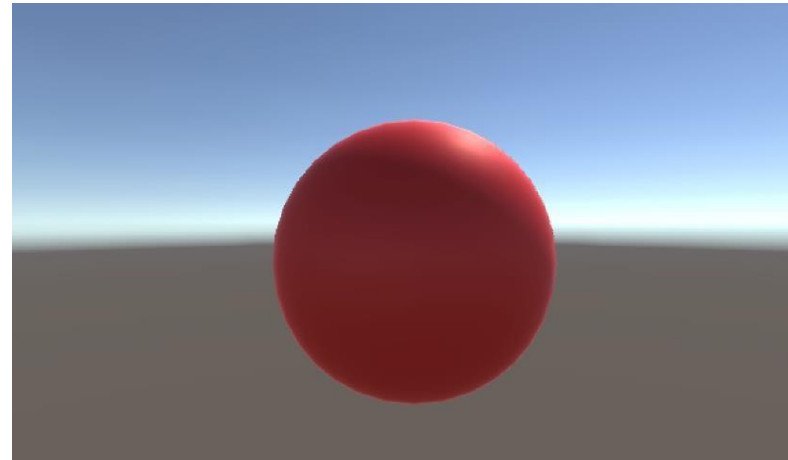
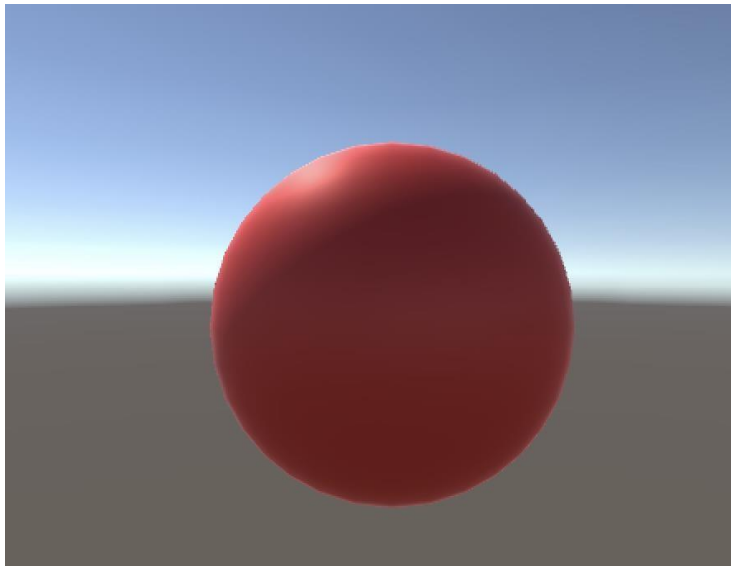
Light sources

- Also, you can change the color of the light source

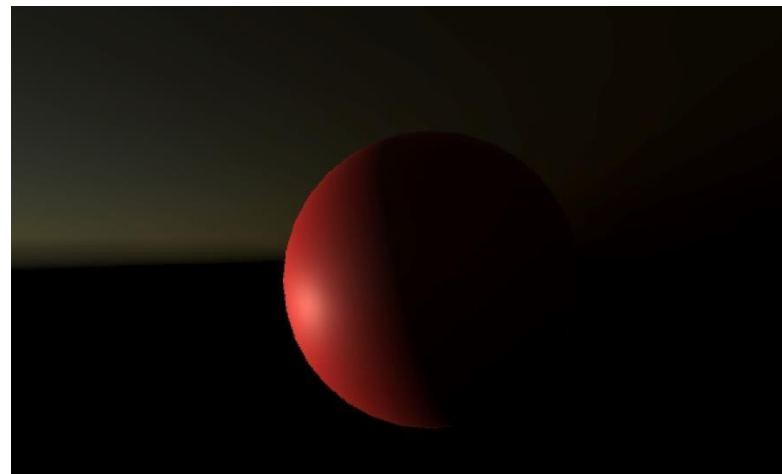


Light sources

- Directional Light
(Try to rotate or move your light object!)



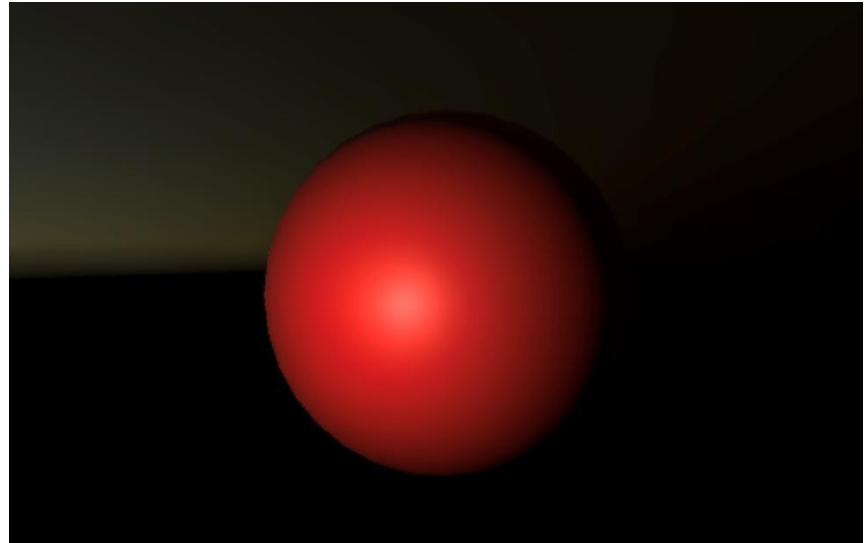
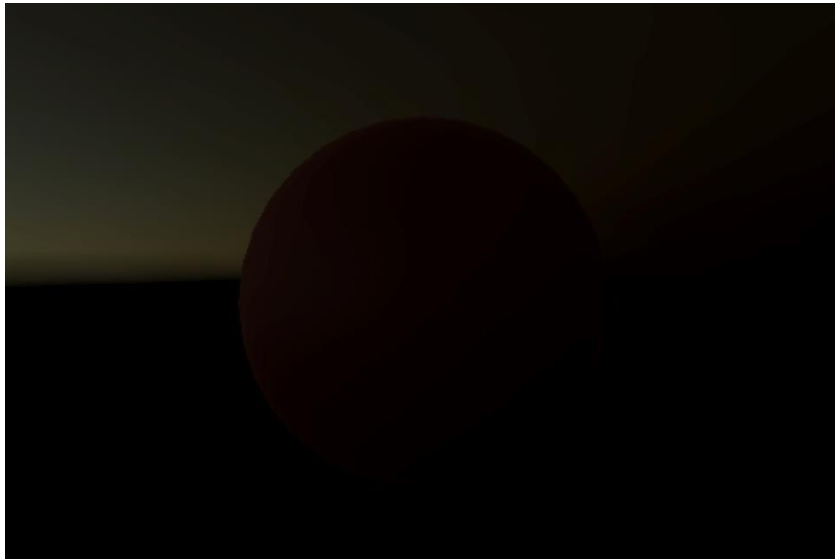
Rotation : x : 80, y : 50, z : 0



Rotation : x : -10, y : -280, z : 0

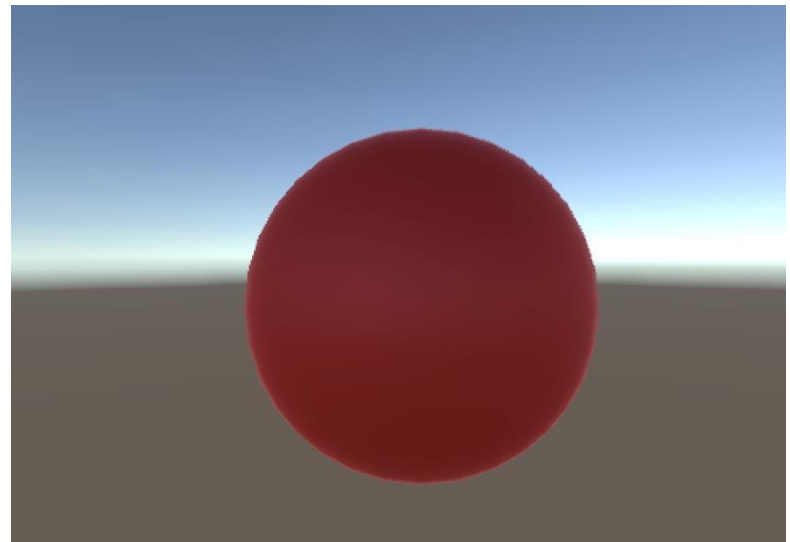
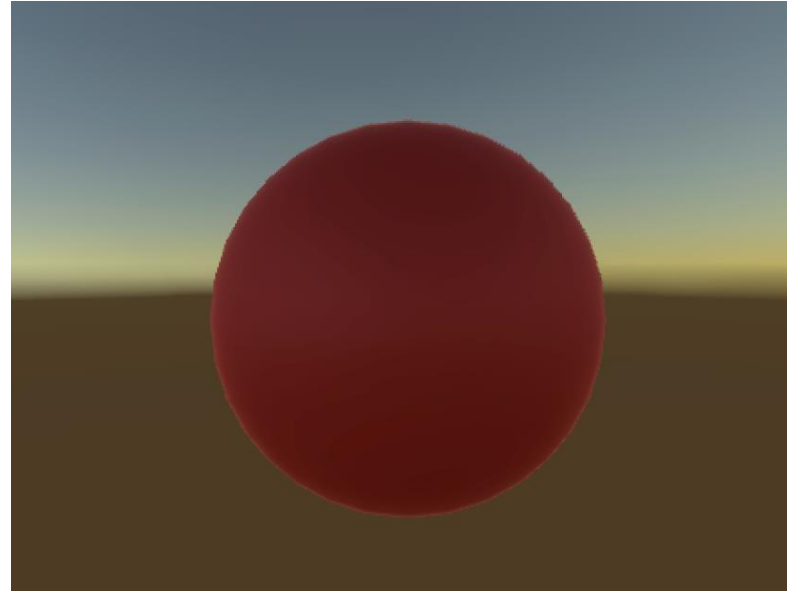
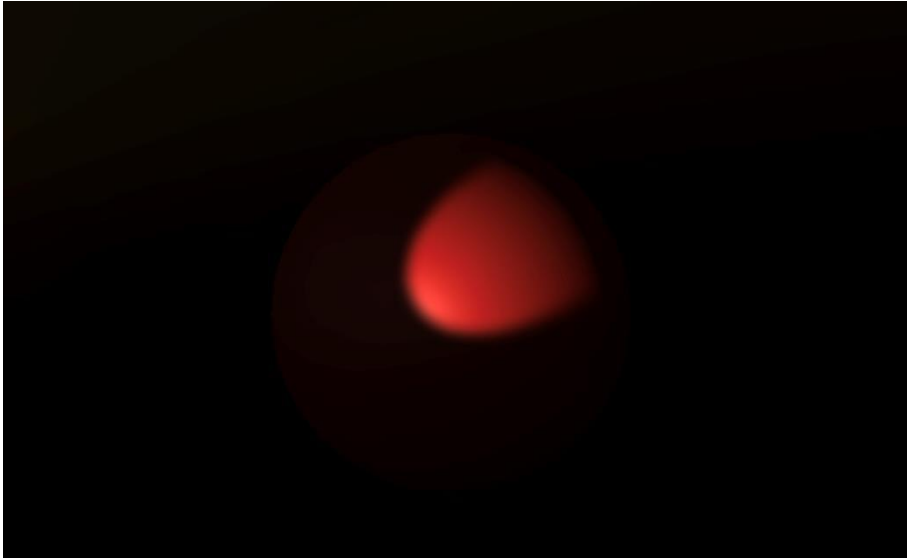
Light sources

- Point Light



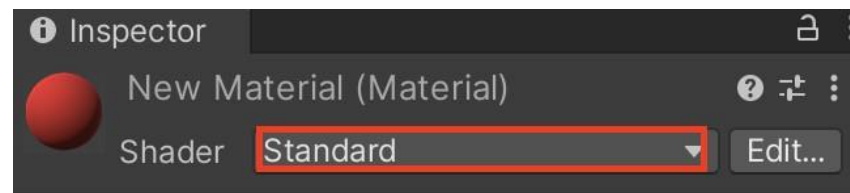
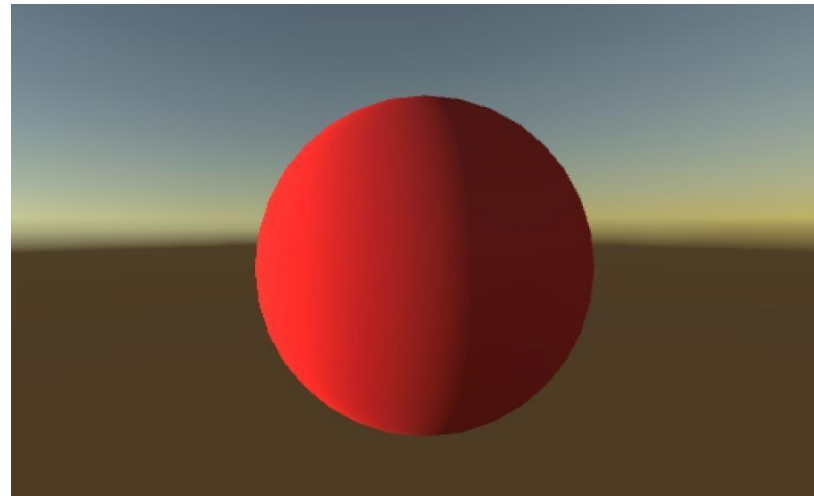
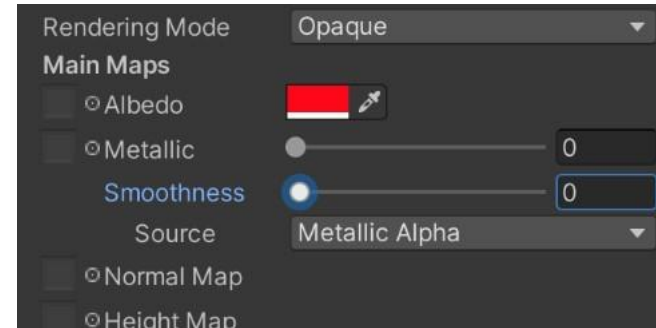
Light sources

- Spot Light

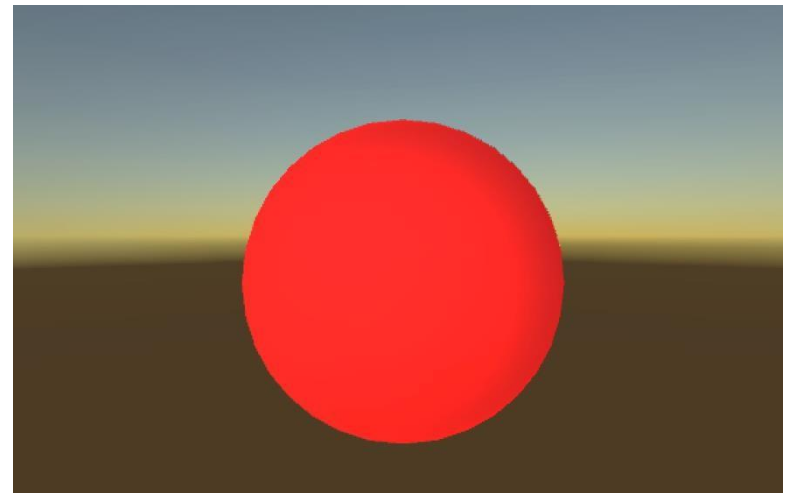
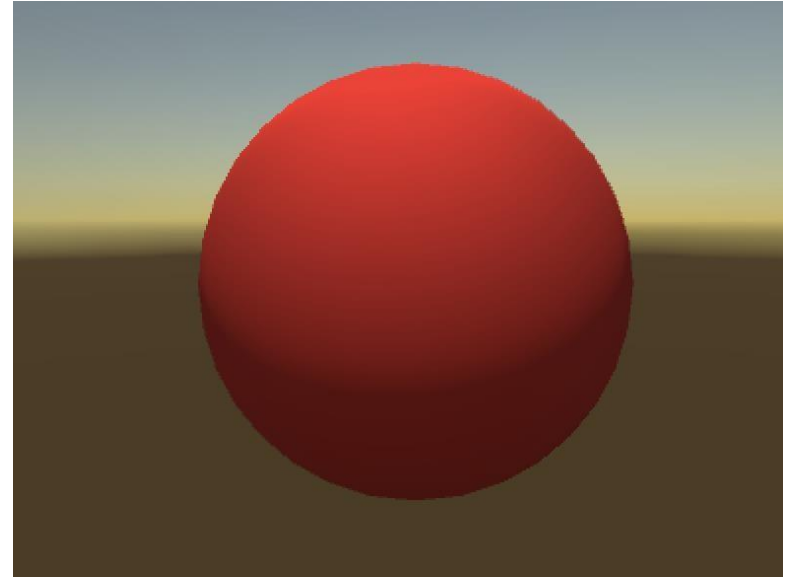
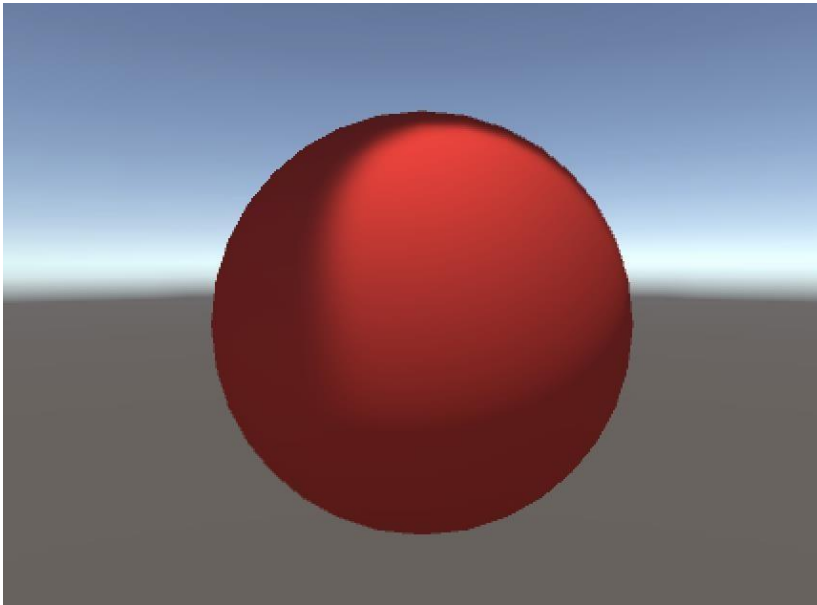


Surface

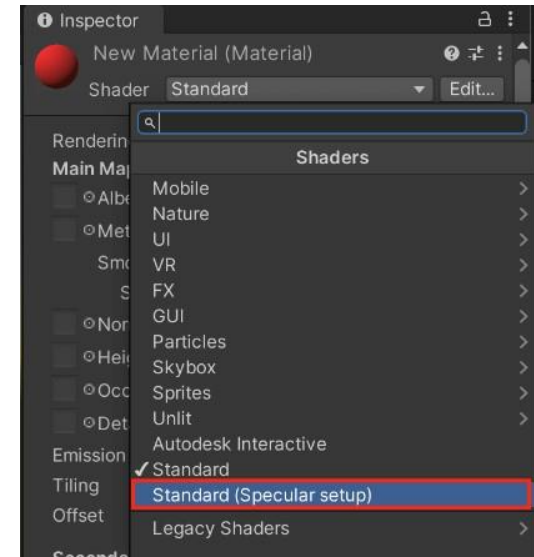
- Lambertian Surface
 - Set the smoothness of the sphere to zero
 - Render it
 - Unity introduced the **Standard Shader** which replaces the Diffuse(Lambertian) shader



- Render it with various Light sources from various angles

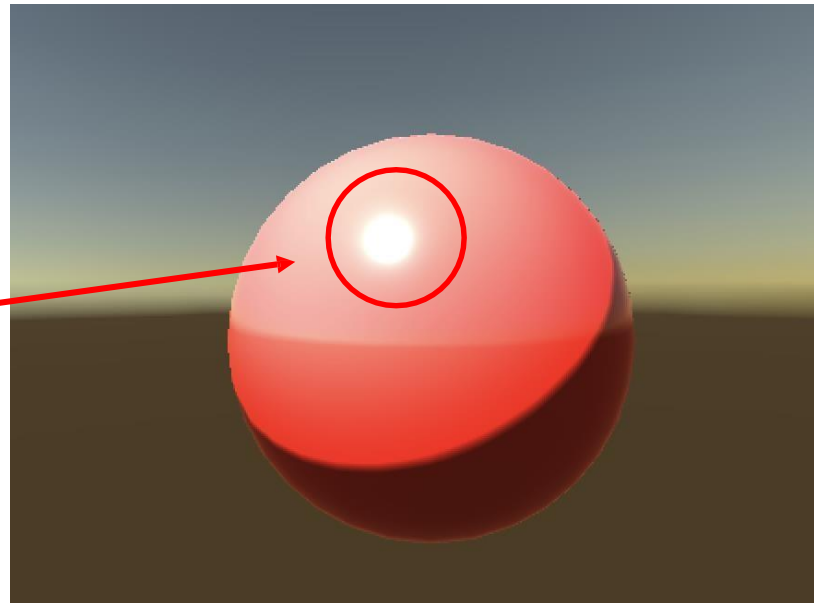


- Specular Surface
 - Change the current shader to “Standard (Specular Setup)”



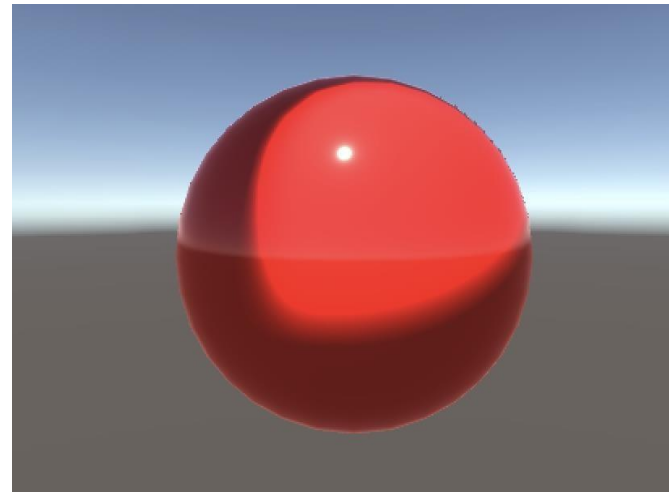
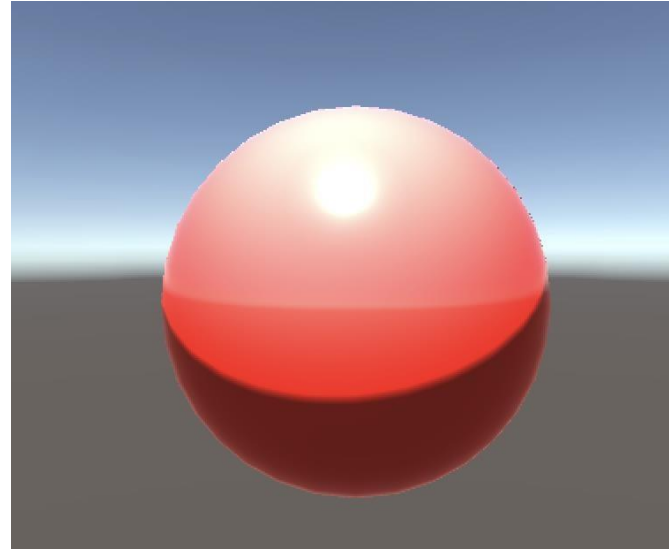
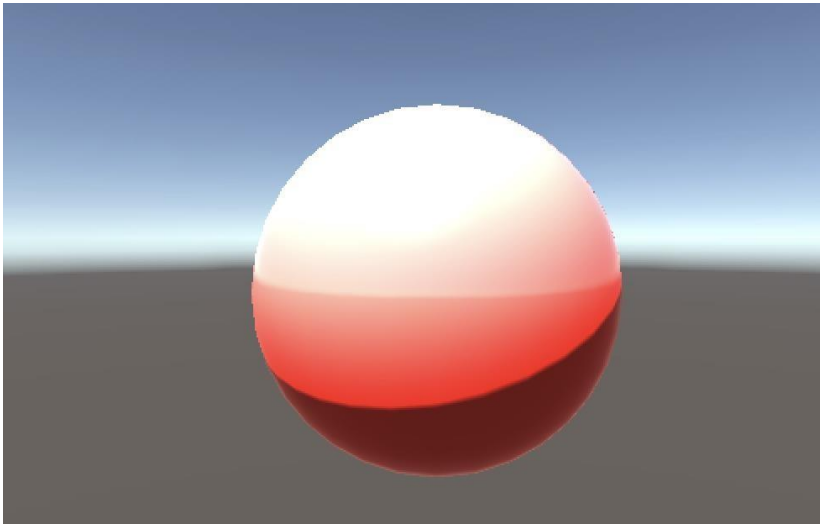
- Increase the smoothness and render it

Specular
Highlight

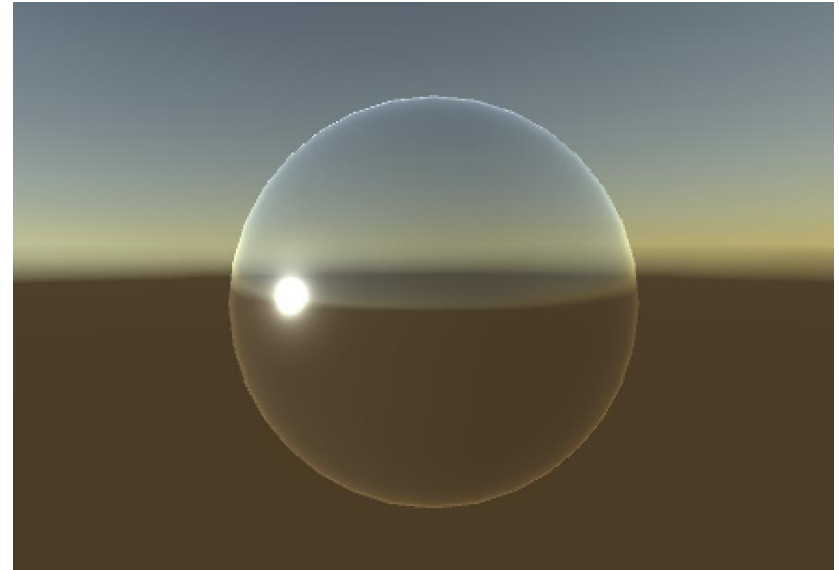
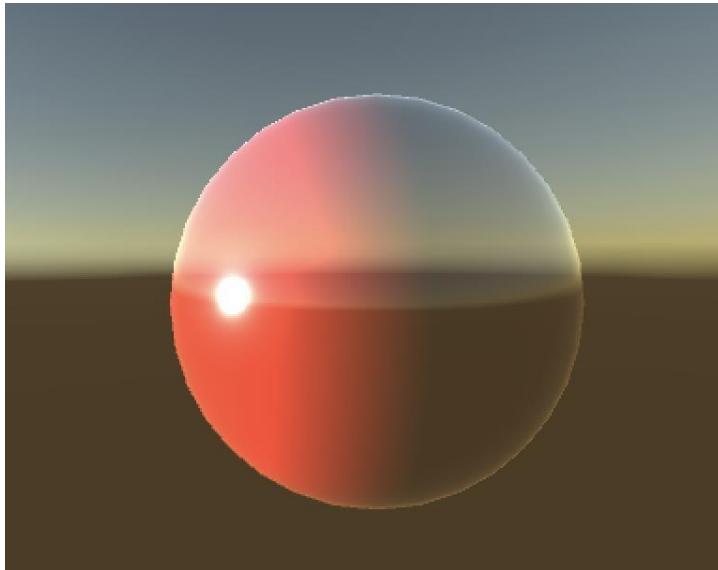
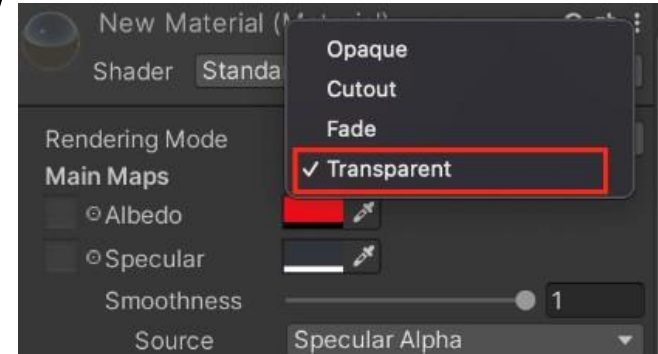


Surface

- Render it with various Light sources from various angles

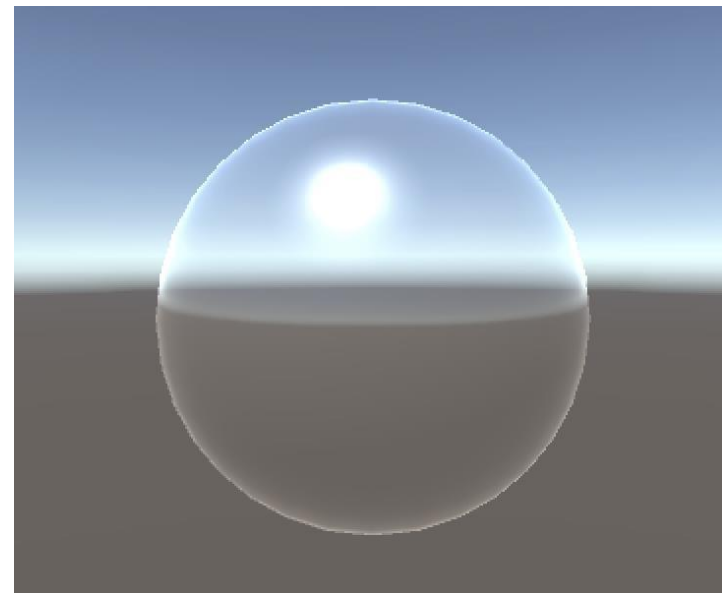
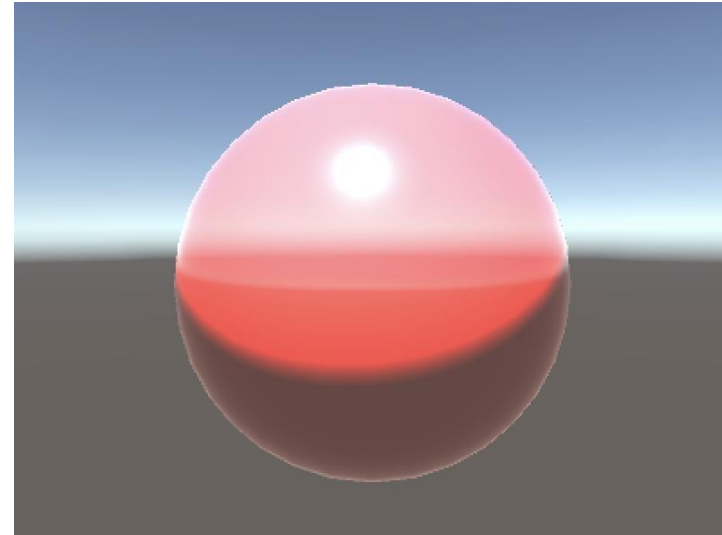
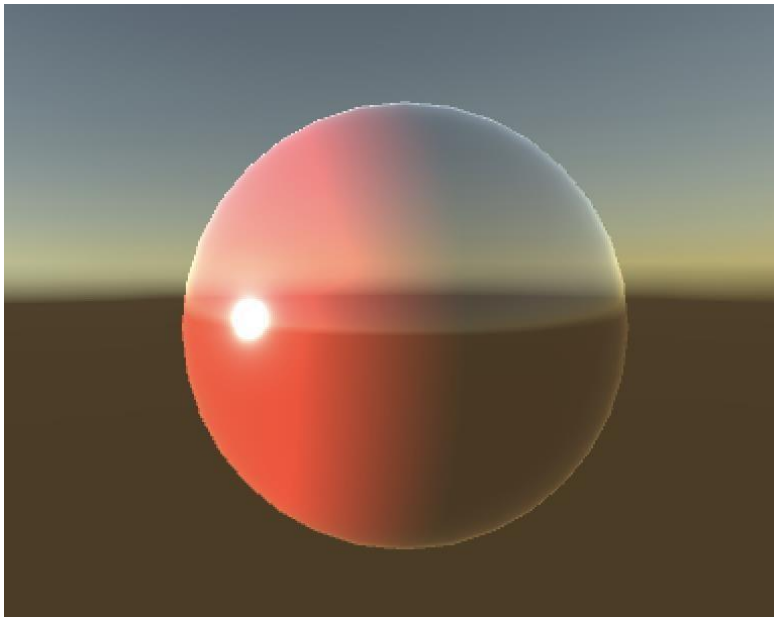


- Translucent(Transparent) Surface
 - Change Rendering Mode to "Transparent"
 - Change its alpha values and render it



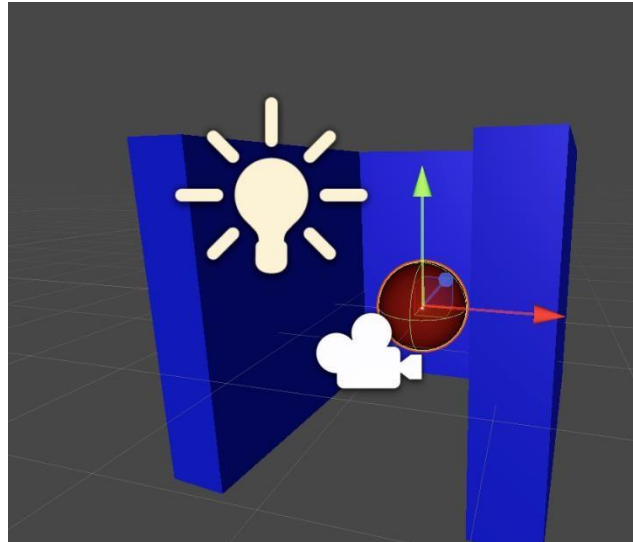
Surface

- Render it with various Light sources from various angles



Local vs Global Illumination

- Create cubes and scale to create a three-sided wall around the sphere (Apply the material(RGB : 0, 0, 255) to the wall)



- Go to "Window" menu > "Rendering" > "Lighting" and Change source to "Color" then in the inspector under "Environment Reflections"

