A1-REPORT

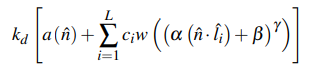
Evyn Brouwer – 100702629

Anthony Smiderle – 100695532

Daniel Hong – 100623669

MATH

TF2 Lighting (Unimplemented):



kd = albedo of the object sampled from the texture map

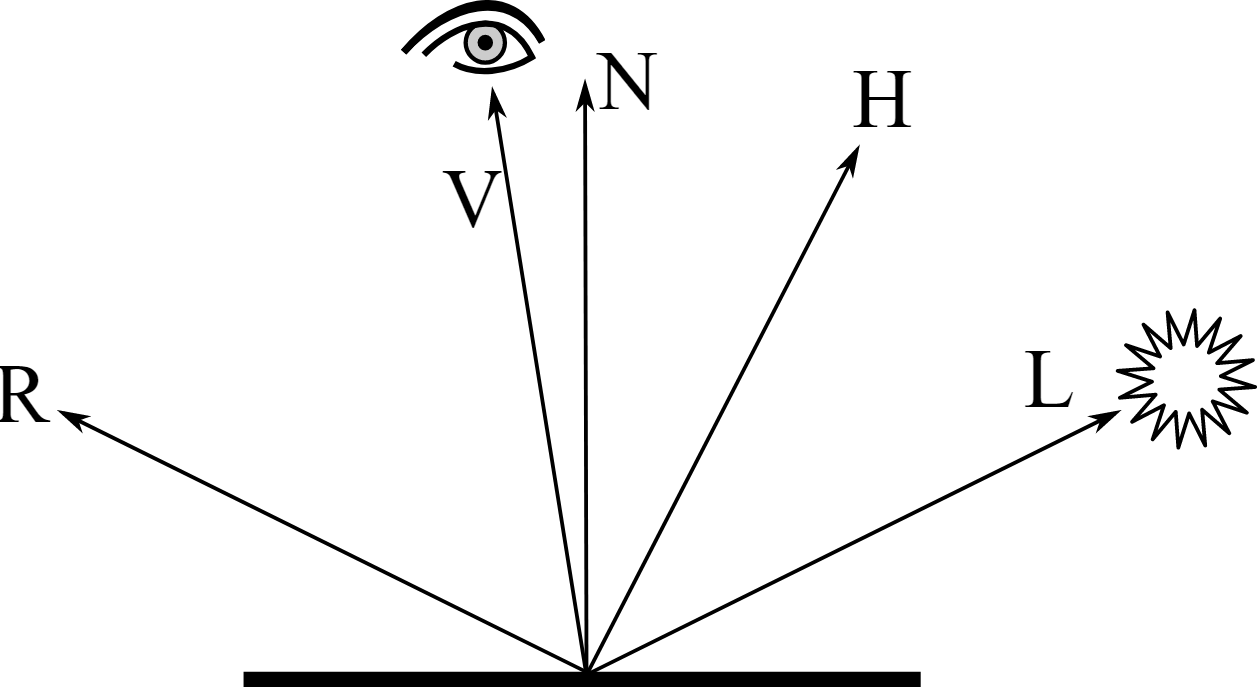
a(n) = directional ambient lighting on the object as a function of the per pixel normal n

∑Li=1 = the summation of the following function for L = number of lights and i = light index

ci = color of the light i

w = wrapping function that applies a 1D LUT and multiplies the color output by 2 before clamping to 0-1 range

n dot li = Lambert term found through (N dot L) based on the following diagram:

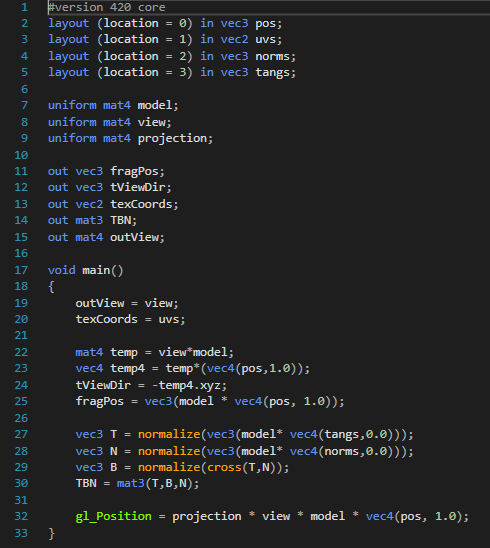


a, b, y = scale, bias, and exponentiation which are set to 0.5, 0.5, 1 for the purpose of TF2 lighting

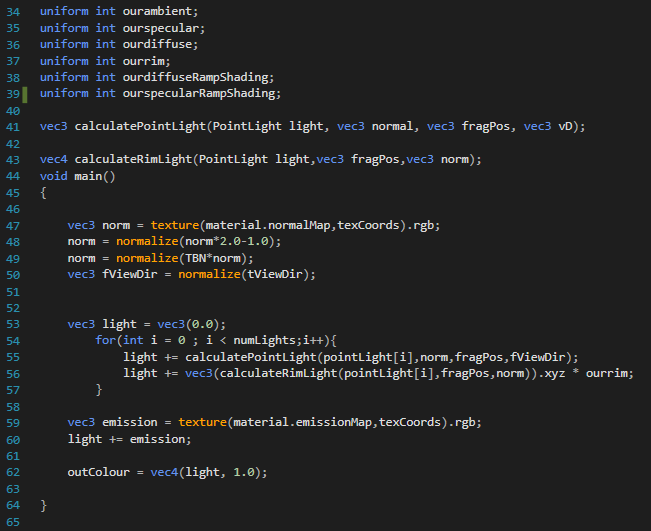
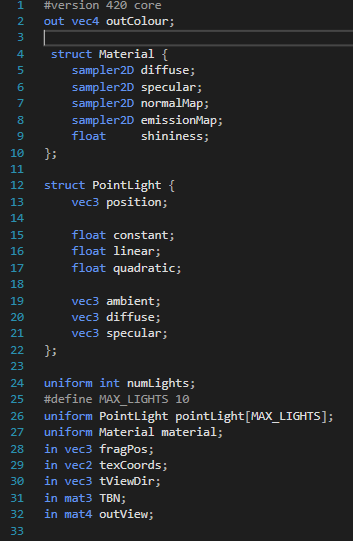
ALGORITHM

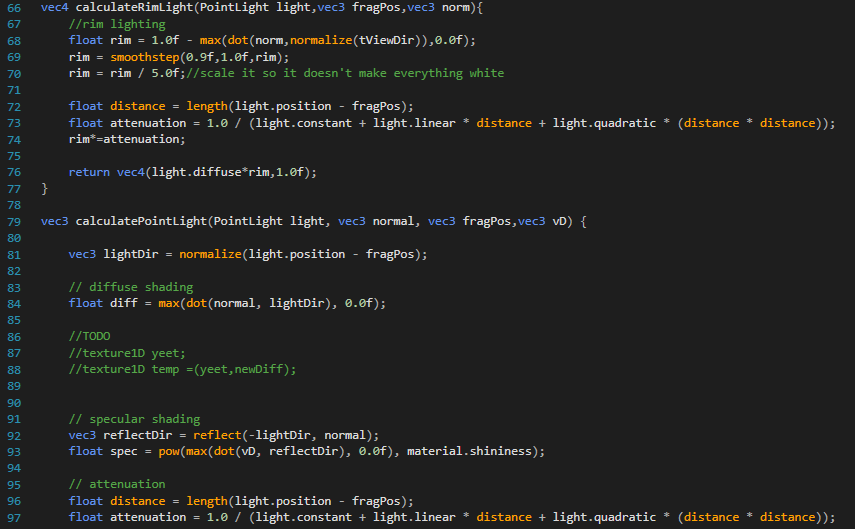
CODE

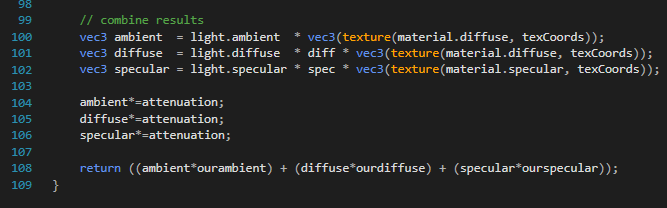
Vertex



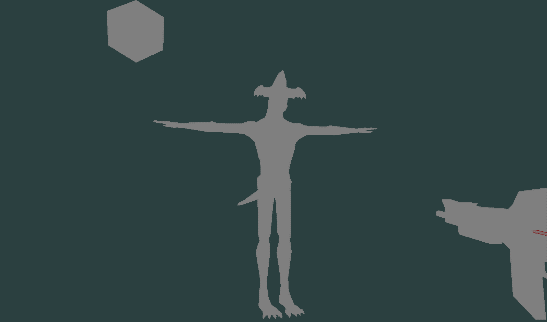
Fragment







Screenshots of Modes

No lighting Ambient Lighting



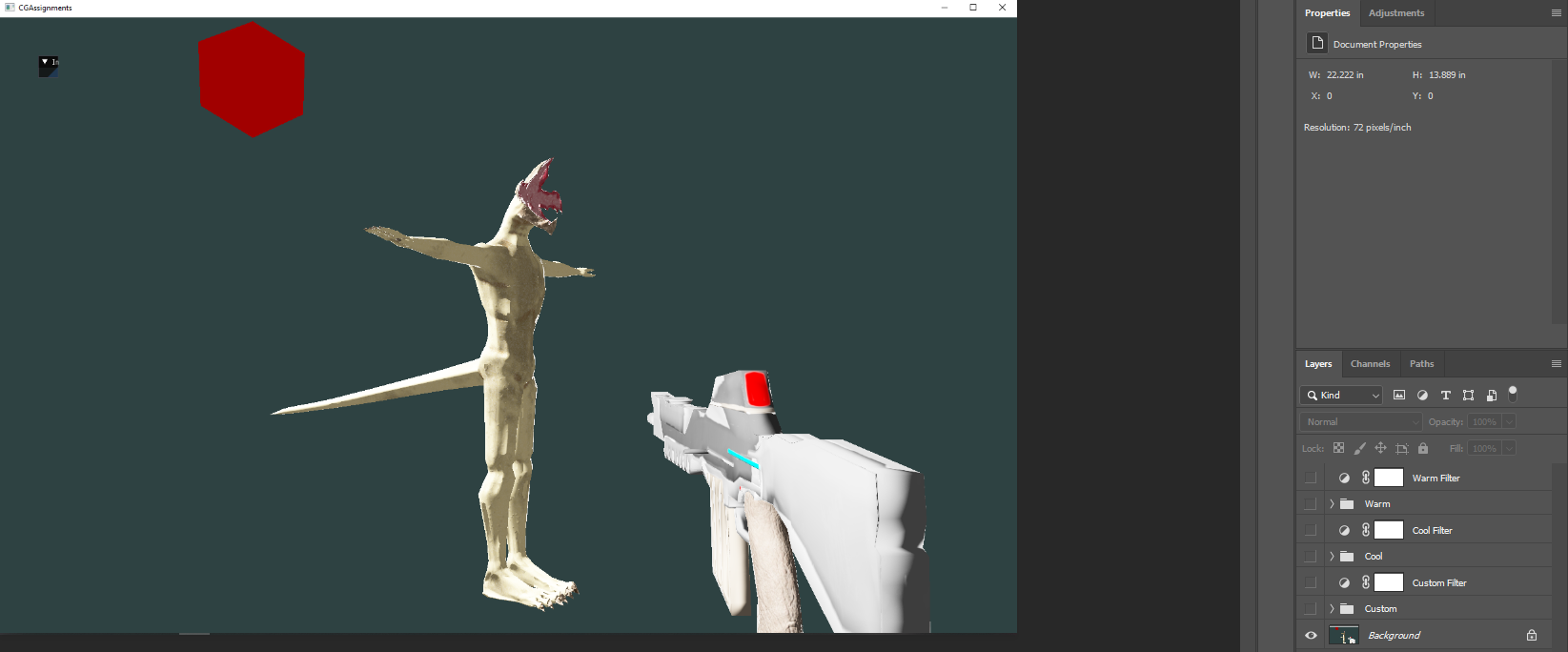
Specular Lighting Specular and Rim Lighting



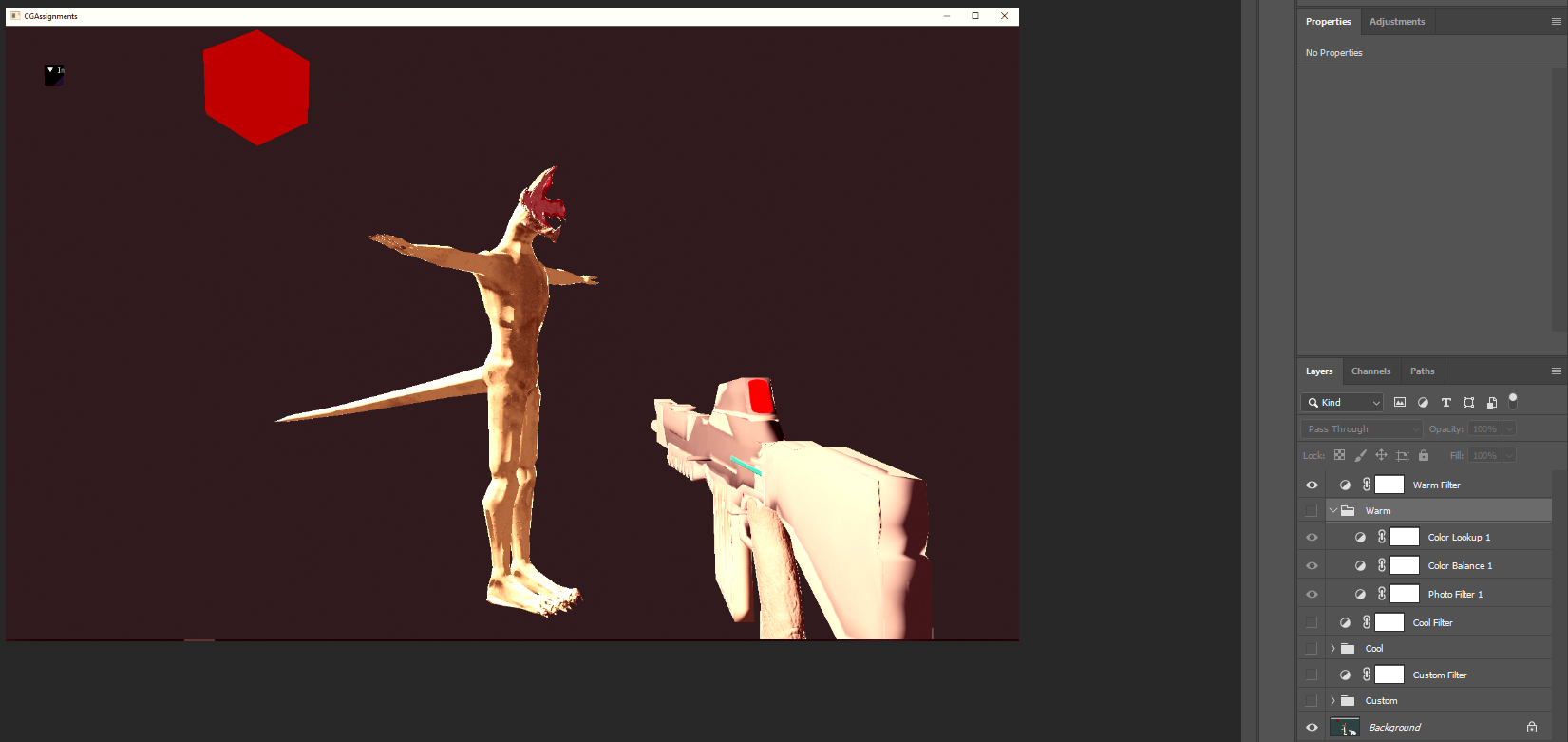
Specular, Rim, and Ambient Lighting Warm Colour Grading



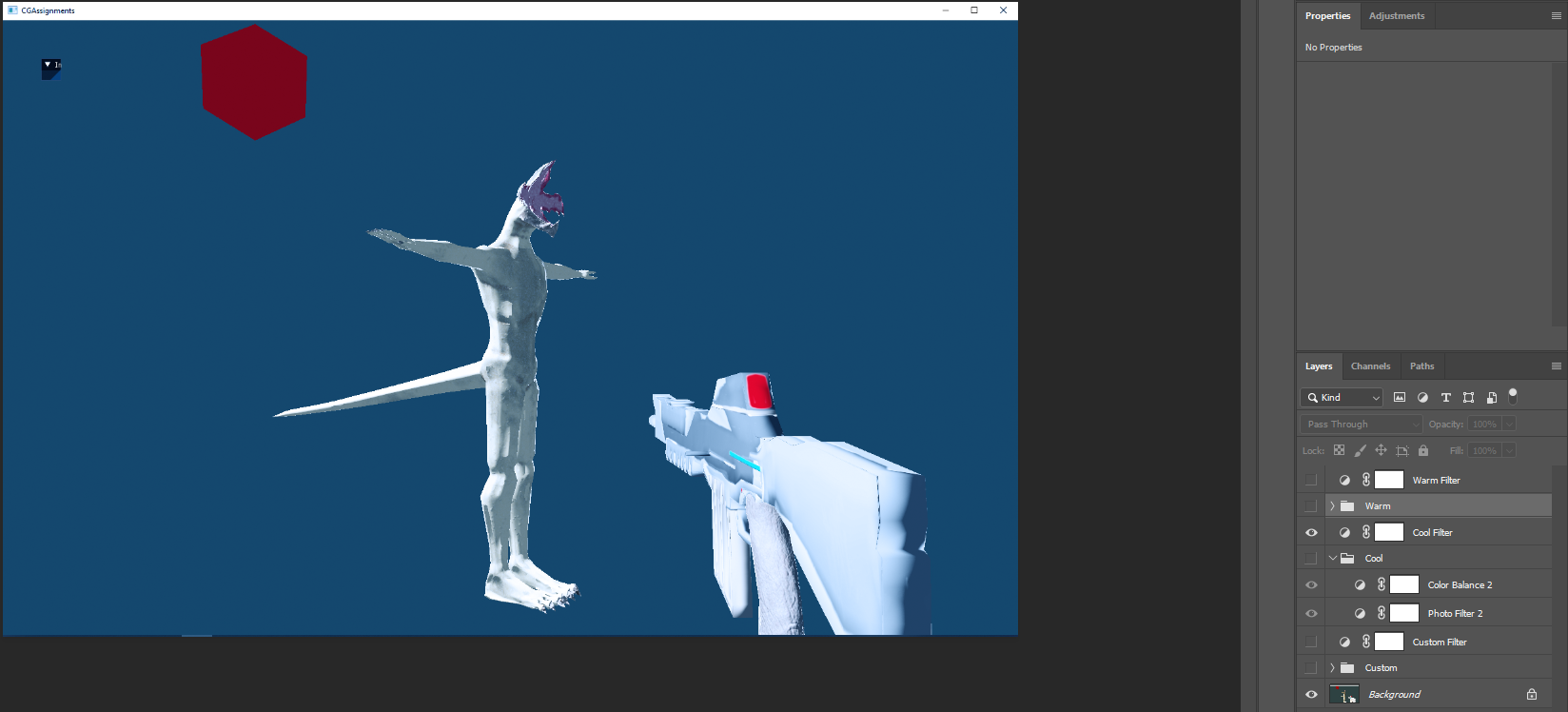
Cool Colour Grading Custom Colour Grading



Base



Warm LUT



Cool LUT



Custom LUT