

CMPM 164 F2019

Game Engines

Homework 2

All code will be uploaded to GitHub (or another repo), each repo should include a short "readme" describing the project, along with one or more screenshots of the project. Assignment B should also include clear instructions for how to run your ray tracer.

You are encouraged to help each other, but you must submit the homework individually to the TA Montana Fowler (mocfowle@ucsc.edu), cc'ing me (angus@ucsc.edu) with "CMPM 164: Homework 2" as the subject line. Please use this exact subject line.

A. Create a simple 3D scene in Unreal 4.23 (20 pts, due Sunday 10/6 at 11:59pm)

- Create an animated 3D scene of your choice using the Unreal Engine
- Generate a short video (~30 seconds or so) or series of screenshots to be shown in class on 10/7

B. Create a Whitted-style ray tracer (80 pts, due Tuesday 10/15 at 11:59pm)

- Implement a "classic" recursive ray tracer that draws a simple scene made up of at least two different kinds of shapes. Experiment with different material properties (solid, reflective/mirrored, or transparent/glass surfaces) and multiple lights.
- Options: (1) Use C++ and write to a PPM file; (2) Use GLSL or HLSL to write to a fullscreen quad
- Generate a nice image demonstrating your work to be shown in class on 10/16