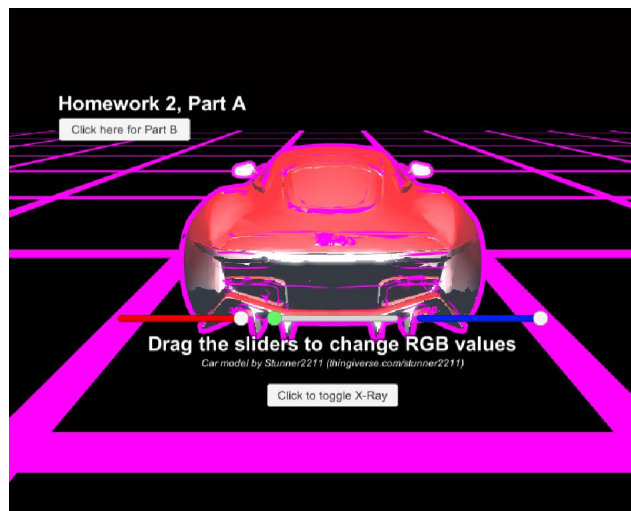


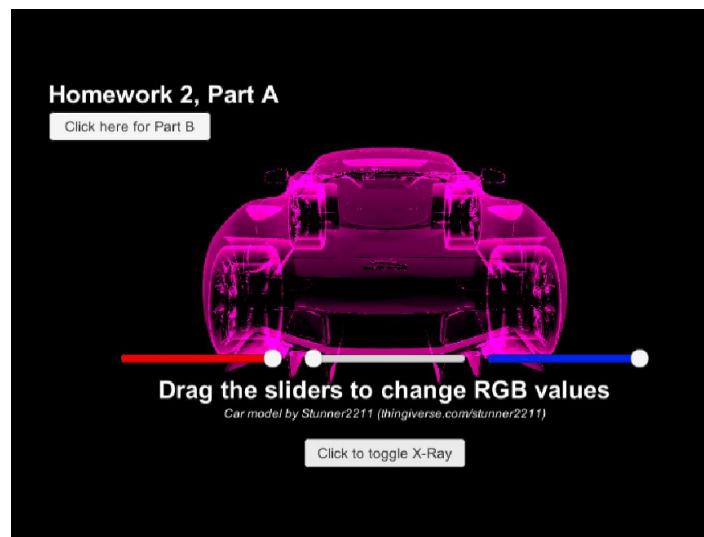
CMPM 163, Homework 2 Parts A and B

With this assignment, I got more advanced with my shader programming. The first part of this project involved making an effect similar to that of TRON, which would give a 3D mesh an outline and then produce a “bloom” effect of that outline. The 3D model I used is that of a sports car, and the bloom effect blurs and glows the outline on the car’s mesh.

I could not decide which color I liked best for the outline effect, so I let the player choose the RGB channels themselves.



I also put in a button that allows the player to toggle an X-ray effect, which brings a 2D plane down in front of the car. There is a replacement shader drawn specifically for when a pixel is drawn behind the plane to produce the X-ray.



For the second part of this assignment, I made a 3D scene in Unity that generates a terrain using Perlin Noise. A grid of tile prefabs are generated with y vertices that are tied to the Perlin Noise function, creating a seamless array of hills. I then put in a plane to simulate water, and created a shader that reflects the scene's custom skybox. The shader also produces an animated cartoon foam effect that I got from this tutorial:

<https://roystan.net/articles/toon-water.html>.

The UI lets the user change four variables: the amount of foam, the height of the water, the visibility of the hills underwater, and the transparency (alpha) of the water.

