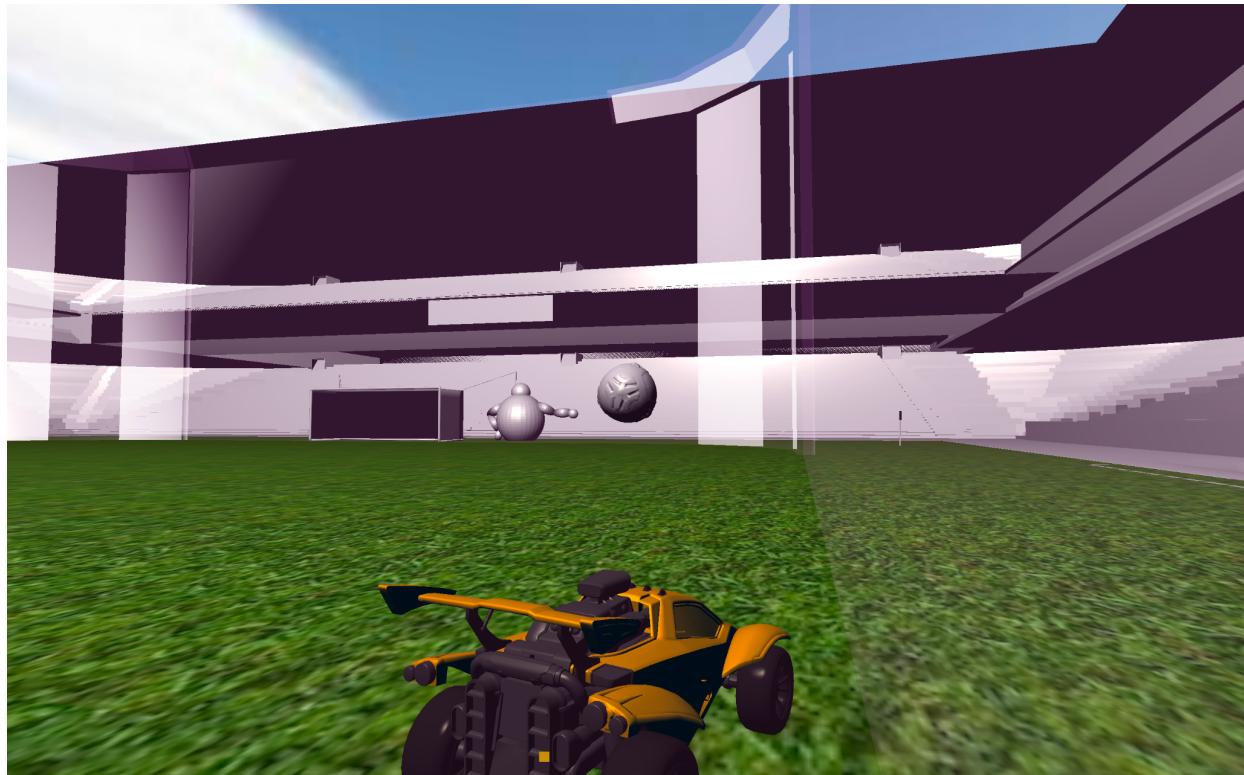


Rocket League Training Mode Simulation

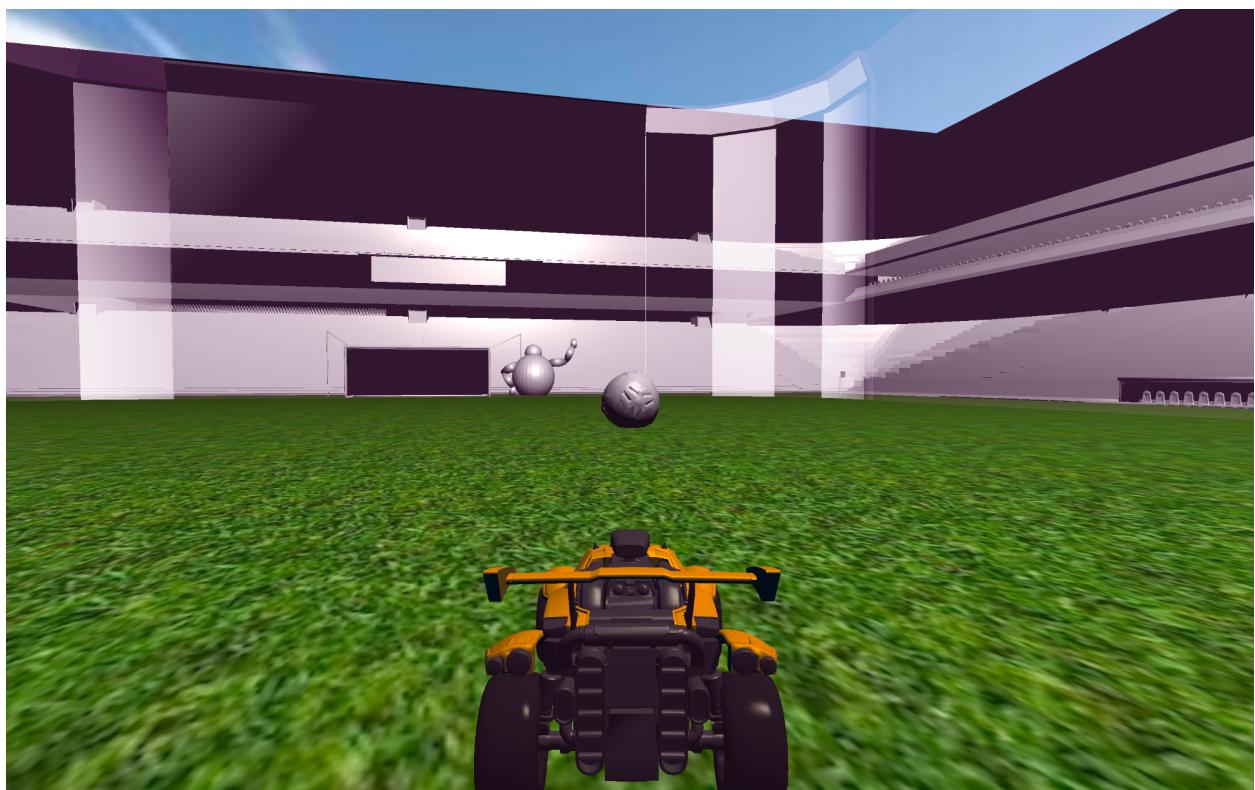
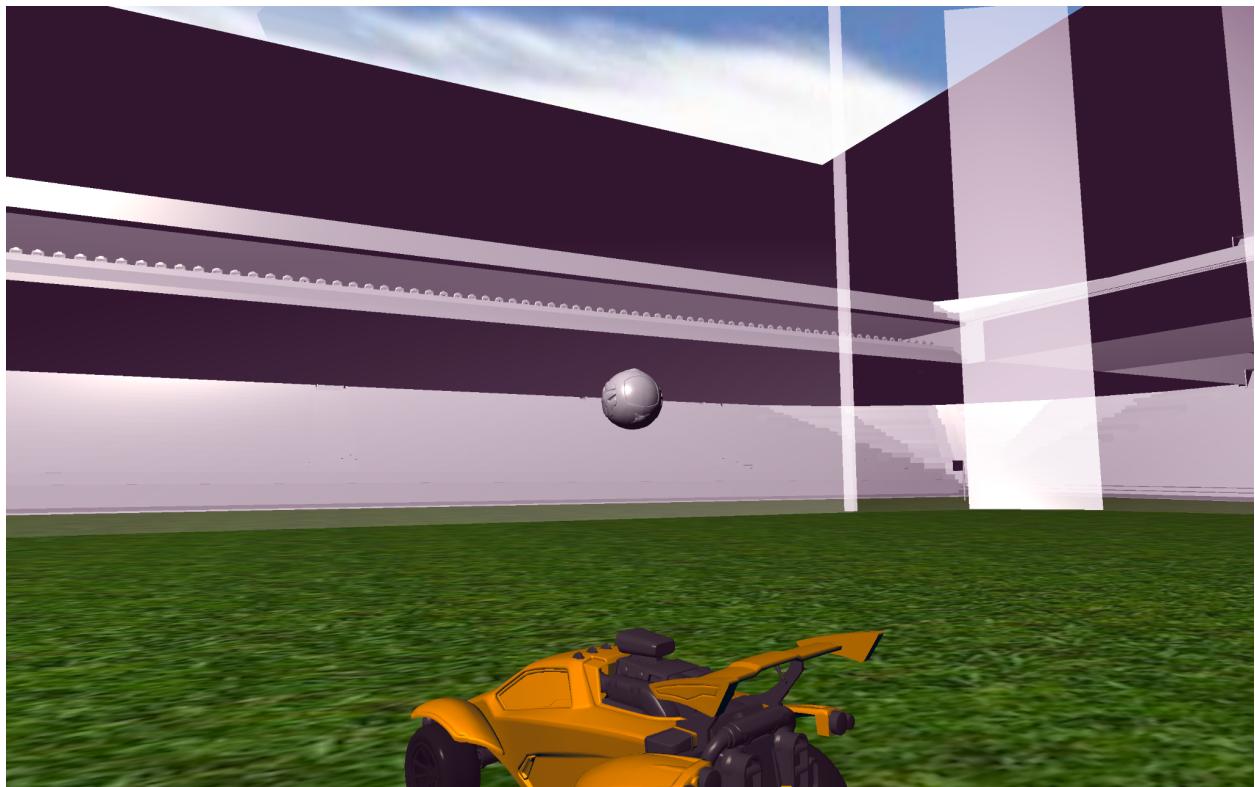
OVERVIEW

My project is a rudimentary version of the training mode in the video game Rocket League. The game involves playing soccer in an enclosed field with a car that the player controls. The training mode of this game puts the player's car in an empty field alone with a ball that can be scored in either goal. My program was an attempt to recreate this aspect of the game.

Some features from the game that are missing in this program include being able to flip the car and fly in the air. Aside from these discrepancies, you can control the car's movement on the ground with the w, s, and left shift keys, as well as the trackpad/scroll wheel. The camera is always focused on the ball no matter where the car is. The ball reacts to the car's movement upon impact and if the player scores a goal the program resets the ball and car to their respective starting positions. The ball physics are somewhat clunky but with more time I would love to spend a lot more effort to get them smoothed out.







TECHNOLOGIES

- Blinn-Phong Shading
- Hierarchical Model
- Collision Detection
 - camera and car
 - ball physics included
- Texture Mapping
- Particles
 - changed inputs to allow the particle stream to follow the car's path
- Camera Movement
 - kept camera focused on ball and behind car at all times
- Spline Path with Bezier Curves
 - cutscene

PROJECT 3 REPO

<https://github.com/csc123-poly/project3-DJump13>

REFERENCES & RESOURCES

- LearnOpenGL
- StackOverflow
- Kinematics equations
- Previous labs/projects