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Project 2 Doc

Goal of Game and Gameplay:

My game is a 3d arena style shooter, where each of the players moves around firing on the other players, using the WASD keys to maneuver, the left mouse button to fire, space to jump and using the mouse to aim. The goal of the player is to reach 150 points, with each successful hit on the opponent worth 1 point. Before logging in players are able to adjust their name and the color of their avatar, between a couple different options.

Cheat: there is a line commented out in the score method(underneath the score++), which if uncommented will increase the score gained from each hit to increase to 15 (16 if the line above it isn’t commented out) which will dramatically speed up the game and allow for quick testing.

Program Design:

My program fires bullets through by spawning them and then using an rpc command to impart motion on them, in order to synchronize their movement. RPC commands are also used for score synchronization. The bullets themselves are sphere prefabs with rigidbodies for physics and a small amount of scripting attached.

Problem’s

Synchronization: making sure that the bullets are synchronized across instances became an ongoing challenge, and there are still some issues with it. I’ve gone through multiple iterations of synchronization, including try to spawn bullets with an RPC command, which failed. One of the biggest areas that this caused issues was with collision and scoring, so ultimately I just have an RPC command to increment score, and do the collision detection locally.

The other issues regarding bullets were having the bullets spawn within the players, which would send them off in random directions due to collisions, hence I added a new empty game object for them to spawn at, and having the bullets pass through the outer boundaries of the arena and go on infinitely, which would cause lag as they built up, so I created a function which removes bullets which have traveled beyond a certain distance.