Final Project: FPS Training Tool

Documentation

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Description:

In this project, I developed a first-person shooter (FPS) training game using the Godot game engine. The game immerses the player in a first-person perspective, simulating head movements through camera motion. Players can shoot bullets, and a button on the board initiates a 15-second timer. During this time, shooting targets in the arena earns points, causing the targets to respawn randomly. The platform features invisible walls to prevent falling, but players can choose to jump over them to their demise.

Development Process:

To build the game, I extended concepts learned from various tutorials, especially Andy's basic FPS tutorial and the 'collisions in Godot' tutorial. I incorporated target boxes that continuously respawned and introduced a scoring system, transforming the game into an FPS training tool.

The development process involved creating scenes for essential elements such as the main scene, player, floor, bullets, boxes, targets, walls, and HUD. Static bodies were used for the floor and walls, while kinematic bodies were employed for the player, bullet, and target. Mesh and collision siblings were added to most elements, and the player, featuring a collision shape, also included a camera, 'head,' and 'gun.' Scenes were instantiated in the main scene, accompanied by audio players for shoot and hit sound effects, as well as a scoreboard label.

Scripts were then added to the bullet and player. The player script managed input controls, while the bullet script handled collision information, triggering the respawn of a new target upon detection. A global script tracked the score. I addressed issues of bullets sticking to invisible walls by adjusting collision layers and masks for each scene element.

Additionally, I incorporated a button, timer, and score editing. The button, a static body, initiated a timer in the bullet script upon collision, challenging players to hit as many targets as possible within the given timeframe.

Learning Experience:

This project proved instrumental in consolidating my understanding of Godot. Having lacked confidence in my 2D Godot skills previously, this experience enhanced my grasp of the engine's functionality and game engine logic. Despite time constraints due to other academic commitments, I am satisfied with the project's outcome, appreciating the newfound confidence and comprehension I gained in the process.

Link to Game:

https://jct6.itch.io/final-project