Hogan's ARcade Revenge

Luka Banovic, Victoria Markova

November 19, 2024

Game Documentation

In **Hogan's ARcade Revenge**, a new AR-based shooting game, Hogan takes his mission to the next level, determined to eliminate his enemies once and for all. Armed with a special revolver given to him by his new ally, the **Angel**, Hogan faces a new enemy, the **Devil**, who threatens the battlefield. Players aim to maximize their score in 60 seconds by shooting the Devil to earn points while dodging the Angel to prevent penalties.

How to Play:

Start the Game:
Launch the game, developed using **Unity (2022.3.52f1)**.

Target Specifics:

The Angel:

- **Wings**:Provide divine protection and are harmless if hit, sparing from penalties.
- **Top and Bottom Body**: Shielded by celestial energy, making them invulnerable, and hence, sparing from penalties.
- **Middle Body**: The spiritual core; hitting this accidentally results in penalties.

The Devil:

- **Trident**: Indestructible and has no effect if hit.
- **Top and Bottom Body**: Reinforced by dark magic, making them immune to damage.
- **Middle Body**: The weak spot; hitting it ensures a kill and earns Hogan a point.

So to succeed, players must aim carefully at the Devil's middle body to score points, targeting the yellow-eyed, furious Devil with precision while using the "Watch-out" mechanic to protect the Angel and avoid hitting ineffective areas of the Devil.

Objective:

Hogan's mission is not just about shooting. It's about precision. Players must aim for the **middle body** of enemy to make their shots count:

- Shoot the Devil's middle body to earn **+1 point**.
- Avoid hitting the Angel's middle body, as it deducts **-1 point**.

Hitting other parts, such as the Angel's wings, or the Devil's tridents, or top/bottom areas, is harmless and doesn't affect the score.

The real-time UI keeps track of the remaining time and your score.

Controls:

Use the **left mouse button** to fire bullets.

Gameplay Timer:

The game runs for **60 seconds**. The goal is to score as many points as possible within the time limit.

End of Game:

The game ends automatically when the timer reaches 0 seconds. The final screen displays:

- **Time Remaining**: Shows "0 s" when the game ends.
- **Points**: Your total score at the end of the game.
- **Game Over! Kills**: A log of actions, such as when an **Ally** was hit, including timestamps (e.g., "Enemy killed at 14.371207 s").
- **Restart Prompt**: The text **"Press R to Restart the Game"** is displayed to allow replay.

Logs Overview:

During gameplay, a **kill_logs.txt** file is created on the **desktop**, recording key events:

- **Game Start**: Logs the start of the game and initializes the score to **0**.

- **Events**: Includes timestamps for NPC appearances and disappearances (e.g., "Enemy appears at 23.013446 s"), player actions (e.g., "Ally killed at 44.371109 s"), and score updates (e.g., "Updated number of points: 4").
- **Endgame Details**: Notes when time is up and displays the final score (e.g., "Game over! Points: +9").

The timestamps refer to the 60-second gameplay window, capturing everything that happens during the game.

Project Structure Overview

Game Scene Description

The game features a single game scene where all gameplay elements are integrated, including:

- The Devil and Angel Prefabs: Interactive NPCs serving as targets (Devil) and non-targets (Angel).
- Revolver and Bullet Mechanics: The revolver controlled by the player for shooting bullets.
- UI Elements:
  - A live score tracker to display the player's current score.
  - A countdown timer starting at 60 seconds to track remaining game time.
  - Logs: Provide a summary of actions during gameplay, including kills and timestamps, displayed on-screen at the end of the game and saved as a file on the desktop.

Prefabs Overview

(Located in the Assets/Prefabs Folder)

- **Angel.prefab**: Represents the Ally (non-target).
- **Devil.prefab**: Represents the Enemy (target).
- **Bullet.prefab**: Defines the projectile fired by the player.
- **Revolver.prefab**: Includes the player's weapon.

Scripts Overview

(Located in the Assets/Scripts Folder)

The scripts control core game mechanics and interactions:

- **CameraController.cs:** Updates the camera once per frame and manages the speed and rotation settings.
- **BulletController.cs**: Manages bullet movement and collision with NPCs.
- **GunController.cs**: Handles shooting mechanics for the player's revolver.
- **NPCController.cs**: Handles the spawning, visual representation, and behavior logic of Angels and Devils.
- **NPCDisapearLogger.cs:** Logs the moment when a game object disappears without being killed.
- **DisableChildColliders.cs**: Ensures accurate hit detection by disabling all child colliders and enabling only a single collider on the root game object for the complex, multilevel structures of the Angel and Devil.
- **KillTracker.cs**: Logs key events, including NPC appearances, disappearances, kills (when and what was hit), and score updates throughout the gameplay,, and also handles the functionality for restarting the game.
- **TimeRemaining.cs**: Tracks and displays the countdown timer for the 60-second gameplay.

These prefabs and scripts are structured within the **Assets** folder to facilitate gameplay development and interaction.

Go, go, Hogan! Let the revenge begin!