Assignment 3 - 3D Game Implementation

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Due Date: Monday, October 29th, end of day
Worth: 15% of your final grade

Overview

Space Harrier is a third person rail shooter released by Sega in 1985 on the Sega Master System and later became one of the most popular game in arcades around the world. The game is a 2.5D version of a Space Shooter.

Figure 1- Space Harrier (Sega Master System)

Your second assignment in Unity is to adapt the Space shooter implemented in Assignment 2, into a game that uses 3D gameplay inspired by Space Harrier.

Previous Game Modifications

- Change the perspective of the game, so the camera angle matches more or less Space harrier. You can add transparency to your space ship, so you can see through it when an enemy is behind. The controls also have to be adjusted accordingly so they feel smooth. If you feel the assignment is too easy, you can optionally add a steering mechanic such as in the game Star Fox.
- Enemy Ships modifications:
  - Enemy ships A: The 5 ships appear on the screen coming from the back and remain in static position in V formation until you kill all of them (Space invader style)
  - Enemy ships B: They come from the sides in 3 steps. There is a ~2 seconds pause between each step.
    - Step 1 – Appear from left – small size – disappear to the right
    - Step 2 – Appear from the right – Medium size – Shoot – disappear on the left
    - Step 3 – Appear from the left – Bigger size – Remain in static position and shoot (You can reverse the sides if you like from times to times)
- Add a scrolling ground to the play area. Your spaceship will get damage if it hits the ground. Upon damage, there will be a camera shake to let the player know of the damage.
- When an enemy ship is killed, it starts emitting smoke and falls on the ground with gravity where it collides with rigid body physics and finally explodes.
- There is a single mode for the game, you can keep the features of the bullet hell mode or not.
- The boss fight mechanic works the same way as in assignment 2, but in 3D this time.

Deliverables

Complete game project source code along data files and a README file explaining how to read the code, compile, run, and play the game on a PC with Unity. Please zip all your files into one archive and submit a single file.

Demo your game to the Lab Instructor and answer questions on your Unity programming skills/experience during lab hours the week following submission.

Evaluation

- Working implementation of all game play elements in 3D (60%)
- Setting and playability (User Interface, Controls, Enemies) (20%)
- Aesthetics and overall impression (10%)
- Q &A (to demonstrate understanding of Unity programming) (10%)

Ground Rules

You are welcome to discuss high-level implementation issues with your classmates and others, but you should avoid actually looking at other students' code as whole, and under no circumstances should you be copying any portion of another student's code or copying complete code from the Internet. However, seeking help from other students for debugging some portion of your code is reasonable. Basically, these "ground rules" are intended to prevent a student from "freeloading" off another student or from the Internet, even accidentally.