ENEMY HUNT: CLUSTER ANALYSIS FOR DECISION MAKING

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Goals and Objectives

The objective of this project is to create a game that can easily convey the idea behind cluster analysis and its role in decision making. The game is also meant to be fun as well as beneficial. The goal of this game is to navigate through the environment and kill as much enemy (either zombie or spider).

Modeling

The environment resembles somewhat an abandoned bunker in the wilderness. The indoor is like a bunker and holds the main part of the game such as the gun, ammo and the player. The outdoor environment includes the zombies, spiders and abandoned houses. There isn't any use of these abandoned houses as they are there to just add aesthetic feel to the game. Although the environment is mostly a wilderness, it also includes some trees, grasses and rocky places to create a more realistic feel.

Lighting

I added a skybox and point light to the environment. To increase its depth, I removed the directional light. I also added a reflection probe to give a realistic feel to the environment and objects in the game. By doing so, the player can see the wall and ceiling shining and reflecting as they change position.
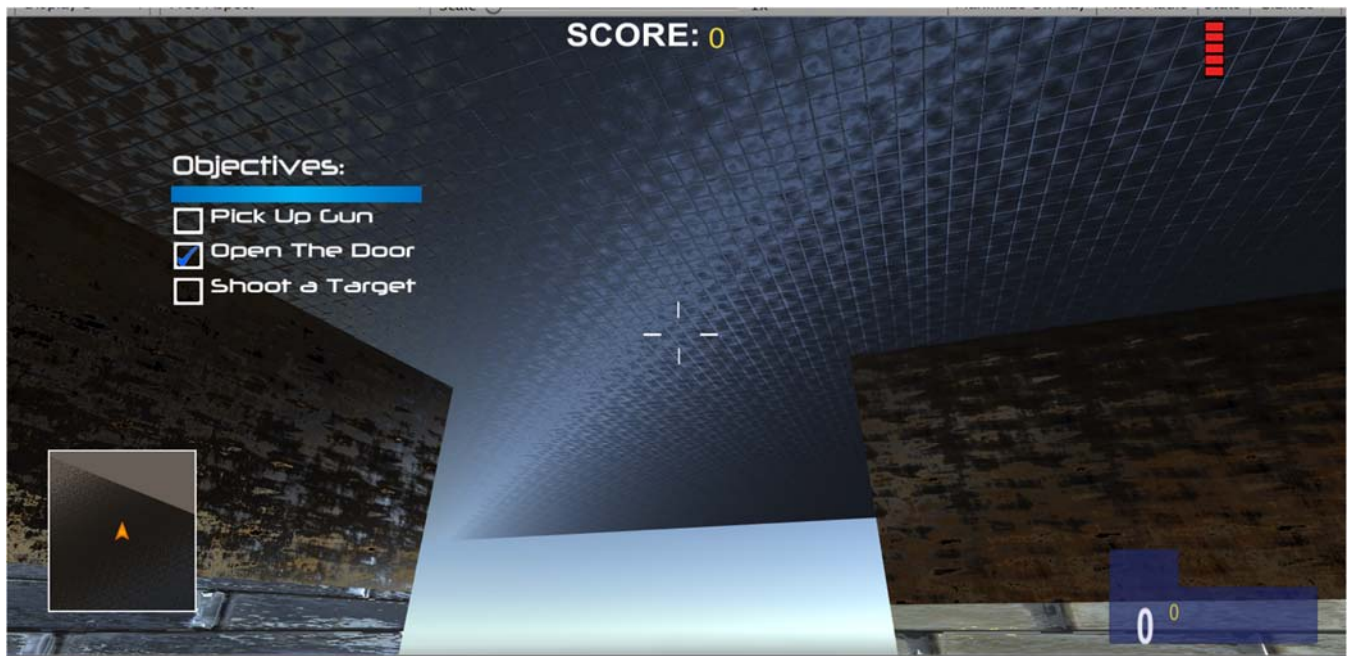
Sensors

This game is a simple game with only first-person shooter (FPS). Hence it solely depends on sensors to communicate with the environment. There are many sensors around the environment. The ammos have sensors around them so that the player can pick them up by walking through them. The guns also have sensors around them so that when the player gets close to the carte holding the gun, there appears a text notifying the player to pick up the gun. In addition, there are sensors on the player, sensors on the enemy and sensors on the floor to notify the player he/she is approaching an enemy territory.
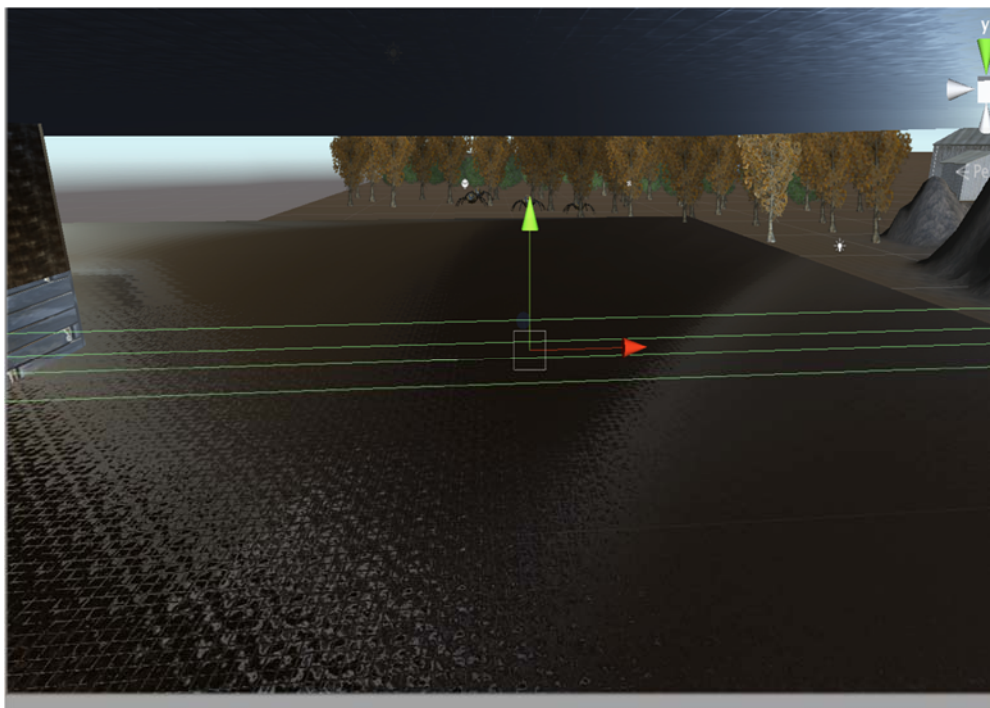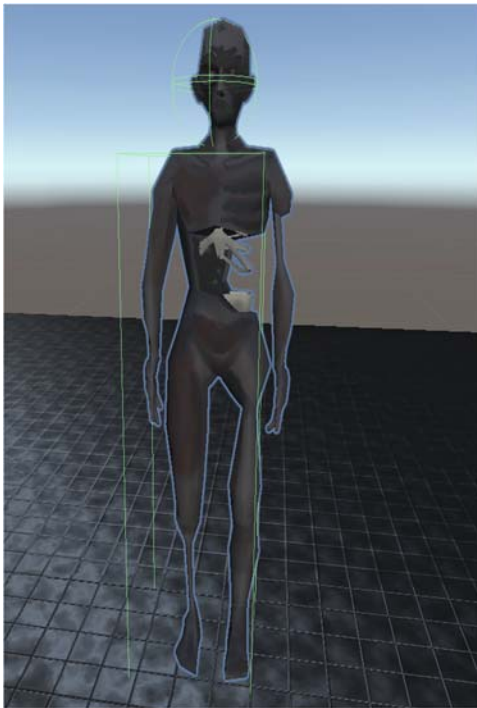
Sound

There are four major sound effects in the game. The first is a background music. It gives the game a realistic game vibe. There is also a gunshot sound, an explosion sound, gun reload sound and hurt sound. These sound effects give life to the game.

Avatars

There are mainly two kinds of avatars. Zombies and Spiders. The Zombie avatar is from an online source whereas the spider avatar is from Unity asset store. Both avatars act as an enemy in the game. The player uses the up, down, left and right cursor to move. The player uses "E" on the keyboard to fire, pickup, and open.

Animations

Like the sensors, there are also many animations in this game. The enemy, either the spider or zombie, has attack, idle and die animations. The first-person character, which is a gun, has a reload and shoot animation. The door has opening and closing animation. The target has a swinging animation.

Interactivity

The main form of interactivity is collecting ammo, picking up real gun and killing enemy. The player has a limited number of ammos hence use it wisely in order to kill all the enemies in the environment. If the player gets close to the enemies, they will start to follow and attack the player. The player has a limited health, displayed by the red bar, and if attacked continually, it will die.

Challenges

There were a couple of challenges I have faced while making this game. The biggest one was my project crashing while I was halfway done. It was really hard to debug since I am not used to Unity. The other challenge was working with the sensors. For instance, If an enemy gets into the

ammo sensors before the player, the enemy would attack the player, wherever the player is, and the game would glitch.