Challenge 4 - Environmental Interactions

Refer to “About the Challenges and Solutions” in Session 1 for more information about readings of this type.

Scenario

It's time to add some more obstacles to the scene and to make them and the existing Enemy robot actually sense the player.

Challenge

In this challenge, learners will implement a SecurityGate, a Desk panel to disable the SecurityGate, and automated SecurityCameras, as well as making the volumetric lights on the SecurityCameras and Enemy robot sense the player.

Security Gate - A laser grid

- If the Player Character walks through the grid before it is disabled, the grid should trigger Alert mode (which in later challenges will switch the EnemyBot into Chase mode and change the lighting of the scene).
- When the Player interacts with the Desk, the laser beam effect should be disabled.

Desk - A panel that the Player must find and activate to disable the SecurityGate

- The Desk should glows green when the Player is within a trigger attached to it.
- When the Player is within the trigger and presses the space bar, the Security Gate should be disabled.
- The Desk should glow green before the player disables the SecurityGate, but should not glow anymore after the the SecurityGate has been disabled.

Security Camera - A camera that pans back and forth, looking for the Player

- Implement the SecurityCamera's back and forth motion via a PlayableDirector and Timeline Playable.
- The SecurityCamera should make use of the same faux volumetric lighting cone that the EnemyBot uses.
- Read the code and comments for this LightCone to determine how to use it to sense when the Player is seen by the SecurityCamera.
- When the SecurityCamera sees the Player, the game should switch into Alert mode.

An InteractingPlayer Component has been added to the Player GameObject. This can make it very easy for Triggers she walks into to tell that they are colliding with the Player. Please make

use of it. Also, the AlertModeManager script mentioned in the video has already been written and attached to the _GameManager GameObject for you. Please make use of and expand the scripts contained in the __Scripts > Player Interaction folder. Watch the video for more information.

Tasks to Complete

Security Gate

- The Security Gate is already implemented.

Desk

- As described in the video, create a PlayerAction_DisableGameObject script that can deactivate another GameObject (in this case, the SecurityGateBeams child of the SecurityGate) when the action takes place (i.e., when the player presses the Triggering Key while within the DeskTrigger).

- When the Player is within the DeskTrigger, the green border of the Desk's SecurityRoomDesk Material should pulsate as described in the video (by adjusting the _Border float on the ToonShader).

Light Cones

- As described in the video, create a PlayerInteractable_LightCone subclass of PlayerInteractable that gets the RaycastHits from the LightCone and uses them to determine whether the any of the rays of the LightCone have hit the Player. This replaces the standard OnTriggerEnter() of PlayerInteractable to make the LightCones able to directly sense the Player.

- Attach this PlayerInteractable_LightCone Component to both the LightCone child of the SecurityCamera and the LightCone child of the Enemy ACS-17 robot.

- Also attach a PlayerAction_TriggerAlarm to both LightCones so that if the LightCone touches the Player, it will set off Alert Mode.

Security Camera

- Create a TimeLine Playable sequence on the Camera_Cam child of the Security so that it pans left to right in a looping animation as follows: 0:00-0:02 Rot.y=45, 0:06-0:08 Rot.y=-45, 0:12 Rot.y=45

Start by downloading the Unity project files for this Challenge available in the Session Resources. Download the zipped file, unzip it to a local folder, and open the project using Unity version 2017.4 LTS.

When you're finished, complete the Self-Evaluation coursework before continuing to the instructor's solution.