AG231

Lab4 Rev4

**OVERVIEW**

This lab focuses on building HUD’s that display properly within VR. For our purposes, the hud will be rendered in relation to our headset.

**IN-CLASS ASSIGNMENT**

* **You must use the PCs in Little 231 for this assignment**
* **This is an in-class assignment that is due by the end of the lab.**
* Setup the Odyssey with two controllers via the HMD Portal
* Start this assignment with your Lab03 project, and import the Lab04 Package.
  + Use the scene provided from Lab03, and import the Lab04 Package. Copy and rename the copied Lab03 scene to Lab04Scene.
* Demonstrate to your instructor:
  + A canvas that moves with the headset
    - Display displaying an icon of your choice
    - Display “Hello VR” in the top center section of the hud

**Project Proposal**

* Your next assignment is a project where you will use the skills and techniques learned in the previous labs.
  + See the project documents for more information
* Talk to your instructor about potential concepts
  + You will be required to submit a proposal document
  + You cannot start this project unless your proposal has been approved by your instructor.

**LAB REQUIREMENTS**

* **Create a singleton to represent the player**
  + Have a static reference to itself
  + Has a member to hold a Score
* **Create a Score Zone Entity** 
  + Add Multiple score locations to the scene
  + When a Grabbable Object enters a trigger
    - Remove the object
    - Give the player 1 point
    - Points are stored in their Score member.
* **Create a Hud to display the game state**
  + Use a new Canvas
    - Use the same technique in the in-lab assignment
  + Your HUD will display the following information:
    - Score indicating number of boxes successfully transported
    - Icons for the following when:
      * Left controller is in active teleport mode
      * Right controller is in active teleport mode
      * Left controller is holding box
      * Right controller is holding box
* If the box falls into the kill zone destroy it
* If the player falls into the kill zone, teleport them to their starting position.
* Have means to exit via the controller.
  + From the standalone project
  + While in the Unity editor

Extra Credit Considerations

* Make it a timed game
  + Display time remaining on the HUD
  + Have a Pre\Post Game state
    - Have the means to start or restart the timed game
    - Show game stats
      * This can be in-world on another object or on the Hud itself
* Remove points if the player, or a box falls into the kill zone.
* For extra points allow the user to throw his grabbed box to a score location that they can’t get to. Consider this throwing ability as an add on to the basic requirements, not a replacement for them.
  + Consider structuring the extra points awarded to be based on distance from the target location. For example, 10 meters counts for two extra points, 15 meters for three, etc.
* Create a Mini-map
* Require players to send objects to specific scoring locations
  + Have the means to display this to the user
    - You will need to label the scoring locations
      * By Number works well here
  + Pick the next target locations at random after the player scores.

**SUBMISSION**

Submit to Canvas a zip file with the following

* Remove the old Lab03 standalone (installable) build folder from your prior lab
  + The size of your project will quickly get unwieldly if you don’t remove this folder.
* Structure your submission folder as follows  
   ***You turn in folder  
   |--- Standalone, installable Lab04 build (Only latest version)  
   |--- Unity project ready to build and run from within Unity***
* Remove files that can be rebuilt from the Unity project to reduce the size of the project folder
* Name you zipfile like this <YourName>\_AG231\_Lab4