CS 6334.001 Virtual Reality

3D Virtual Environment (10 points)

Submission due by Sunday, September 9 at 11:59pm CT.

Purpose

Learn how to use Unity and the 5UDE to develop a 3D virtual environment appropriate for VR.

Directions

1. Create a new Unity 2018.1.4 project and name it "3D Virtual Environment."

2. Download and import the "SteamVR Plugin" package from the Unity Asset Store.

3. Download and import the "5UDE" package from eLearning under Software > 5UDE.

4. Drag the "Vive" prefab from the 5UDE > Systems folder into the hierarchy of your scene and set the new "Vive" GameObject's position to the origin (0, 0, 0).

5. Delete the default "Main Camera" GameObject from your scene's hierarchy.

6. Create a realistic virtual environment with a minimum of ten unique virtual objects (e.g., a chair, a table, a car, a street lamp). The imported models can be created by you or imported from another source (e.g., Unity Asset Store, TurboSquid.com, CGTrader.com).

7. Use the Unity Cube primitive to measure and scale your virtual objects and environment to realistic proportions (1 unit = 1 meter). Remove these Cubes from your scene when you are finished measuring and scaling.

8. Use the "Vive" prefab's "Real World Simulator" to ensure that your virtual objects and environment have realistic scales and can be viewed with the HTC Vive.

Submission

1. Clean up your Unity project by removing any unnecessary assets from the "Assets" folder and deleting the project's automatically generated "obj" and "Temp" folders. Your submission must be **250 MB or less**.

2. Create a "Source" document (.doc, .docx, or .pdf) that provides a unique URL for where you obtained each virtual object within your project.

3. Create a "ReadMe" document (.doc, .docx, or .pdf) that explains which Unity scene contains your realistic virtual environment.

4. Create a "Team" document (.doc, .docx, or .pdf) that lists the names of your two team members and describes what each member contributed to the assignment.

5. Create a zip file (**.zip**) that contains your **entire** "3D Virtual Environment" Unity project folder, your "Source" document, your "ReadMe" document, and your "Team" document. Do **NOT** use any compression file types (e.g., .rar, .7z, .tar) other than .zip. Such submissions will **NOT be graded**, which will result in **0 points**.

6. **Every team member must submit** the zip file on eLearning under Homework > HW #1 3D Virtual Environment.

Scoring

This assignment will be scored as indicated below. The maximum possible score is 10 points.

☐ Your virtual environment contains at least ten unique and realistic virtual objects. **1 point per object**

Deductions

Deductions will be applied as indicated below. The minimum possible score is 0 points.

☐ Your virtual environment contains inappropriately scaled or unrealistic virtual objects. **1 point per object**

☐ Your submission is late. **2 points per day late**

☐ Your submission is not a .zip file. **10 points**

☐ Your submission is larger than 250 MB. **1 point per 50 MB over**

☐ Your Unity project does not properly work during initial grading. **5 points**

☐ Your supplementary files are not of the specified formats or do not contain the specified information. **1 point per file**

☐ You did not follow the specified naming conventions. **0.5 point per file or folder**

☐ You did not make a significant contribution to the submission. **5 points**

☐ You did not make any contribution to the submission. **10 points**

Academic Integrity

This is a two-person assignment. Pairs of students are expected to complete their own work. If found guilty of academic dishonesty, you will receive 0 points on this assignment.

These descriptions and timelines are subject to change at the discretion of the professor.