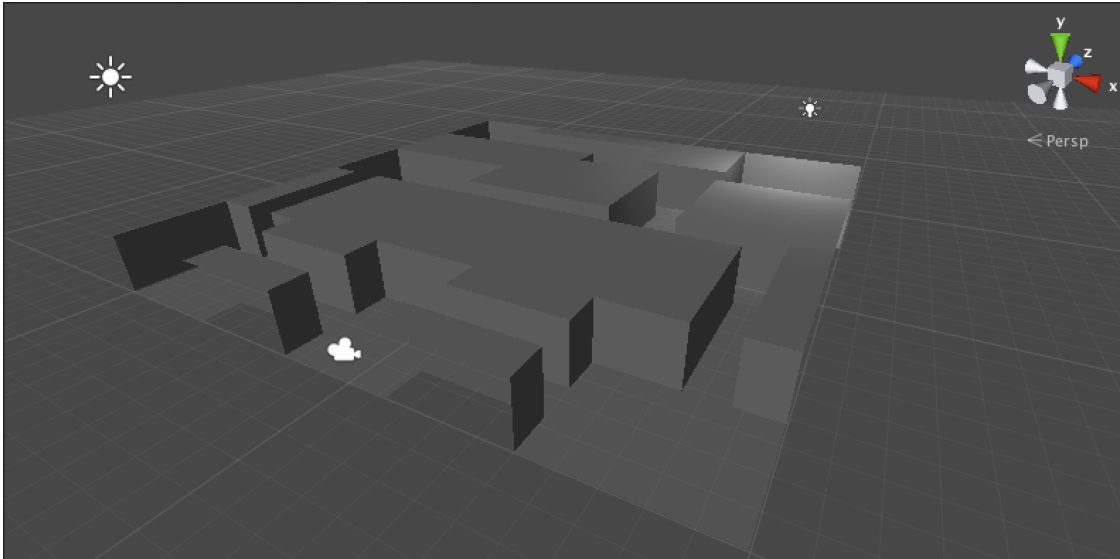# Assignment 1: Create a Scene in Unity

CS 248 Winter 2017-2018

Due Date: Tuesday, 16 January by 7:00pm

Introduction This assignment consists of creating a simple scene in Unity. You will create and/or import geometry, set textures, and adjust lighting and camera settings in your scene. In doing so, you will begin to familiarize yourself with Unity, a third party game engine that we will be using throughout this course. The final product for this assignment will be a screenshot of one particular view of your designed scene, which you will show to the CAs during the scheduled grading session.

Background The goal of this assignment is for you to investigate the Unity game engine and begin to use some of its features to create a scene. The game engine can be downloaded online at https://unity3d.com/unity/download. Choose the "personal" version, which can be installed for free.

Each student will be required to use Unity for this course, unless you have **strong** reasons for why you should be allowed to use a different game engine (as mentioned in class). Please talk to the CAs ahead of time if the latter applies to you, though they will most likely deny your request.

In addition to Unity, it is recommended that you become familiar with a 3D modeling tool. These will help you create your own assets or modify assets that you find online (e.g. creating geometry from scratch, texturing models found online, etc.). Several popular modeling tools include:

- Blender - a free, open-source tool. http://www.blender.org/download/
- Maya - an Autodesk product that is freely available to students. http://www.autodesk.com/education/free-software/maya
- 3ds Max - another Autodesk tool, also free to students. http://www.autodesk.com/education/free-software/3ds-max

Implementation   You are not required to write any code for this assignment. Instead, you will use the Unity editor to create a new scene. You will add objects and lights to the scene, and adjust their properties in the editor's "inspector" panel. You will also add a camera to your scene. You may incorporate other assets into your scene by importing them into your Unity project. Unity supports the standard .obj and .fbx file types as well as a number of application-specific file types for more well-known tools (e.g. .blend and .max files). Your final result will be a screenshot of your scene that you take through your camera's viewport (by pressing the "play" button in the editor). **Note that the scene you create must be 3D.**

Resources   A large number of both official and unofficial Unity resources are available online. Some potentially helpful links are given here:

- Official tutorials, documentation, and other resources: http://unity3d.com/learn
- Simple game tutorial: http://unity3d.com/learn/tutorials/projects/roll-a-ball
- FPS tutorial, including an interesting technique to quickly design a maze-like level: https://www.youtube.com/watch?v=mbm9lPB5GPw

Grading   Students will present their scene screenshots during the grading session from 4:30 pm to 7:00 pm on **Tuesday**, January 16 (due to MLK weekend) in Gates 205, 207, and 208. **Note that the usual grading sessions will be on Mondays.** Students may show their screenshots to any of the four CAs within the time window and do not need to stay for the entire grading session. More details about grading policy may be found on the course website.

This assignment will be graded out of 5 points according to the following criteria:

- 1 point: Scene contains geometry added via the Unity editor
- 1 point: Scene contains a camera, and a screenshot of the scene can be captured
- 1 point: Scene incorporates at least one texture
- 1 point: Scene incorporates at least two different types of light (e.g. a directional light and a point light)
- 1 point: Scene includes at least one object imported from another source (e.g. made in Blender, downloaded online, etc. Anything *not* created in Unity)