

CS 485 HW Assignment 4 – Character Controller (100 pts)

Due: September 30th 12:00pm, 2020

1. Objective

Develop a 2D/3D game using a game engine. Be familiar with the user interface of Unity3D. Learn C# or JavaScript scripting for player control and camera movement. Gain experience in game design.

2. Submission

- a. **Upload a screen video of your game on Youtube, then submit the Youtube link on cougar course. If you cannot upload your video to Youtube, you can also submit your screen video file on cougar course directly. The size of the screen video should be less than 20 MB. You can google free screen capture software. Powerpoint can do screen capture as well.**

3. Requirements

Develop your own third person controller game using Character Controller. In your game, the user should be able to control the movement of an object by using the keyboard. The object moves (walks) on a plane (or terrain). The object should be able to jump as well. An example can be found at <https://github.com/xye-csusm/SampleProject1.git>. Don't make your game look exactly like this example. Design your own game.

To use Character Controller to move your object, you can:

1. Create an object.
2. Add "Component->Physics->Character Controller" to the object as a component.
3. Write a C# script to control the movement of your object.
4. In the script, you can use "direction.x = Input.GetAxis("Horizontal"); direction.z = Input.GetAxis("Vertical");" to receive user input from the keyboard.
5. Then "velocity = direction * speed".
6. Then you can use "controller.Move(velocity * Time.deltaTime);" to move the object.
7. To make your object jump, you can do this:

```
if(Input.GetButtonDown("Jump")) {  
    fallingVelocity.y = Mathf.Sqrt(gravity * jumpHeight);  
} //gravity can be 9.8, jumpHeight can be 3 or something.  
controller.Move(fallingVelocity * Time.deltaTime);
```
8. More details can be found on <https://github.com/xye-csusm/SampleProject1.git>.

Note: Do not use Rigidbody while you're using CharacterController.

ACADEMIC HONESTY: *Please read the academic honesty policy on the syllabus. Remember that this assignment is to be done individually. If you use any resources (3D models, 2D pictures, sound clips, videos, scripts, libraries, tools, etc.) from others, reference the original sources explicitly in your project report.*

WARNING: *This assignment will catch you off guard if you leave it to the last minute. Make sure you are getting enough time and learning for the assignment. This assignment is critical for your knowledge of Unity and basic game programming concepts.*