Lab 6: Niagara Part 2
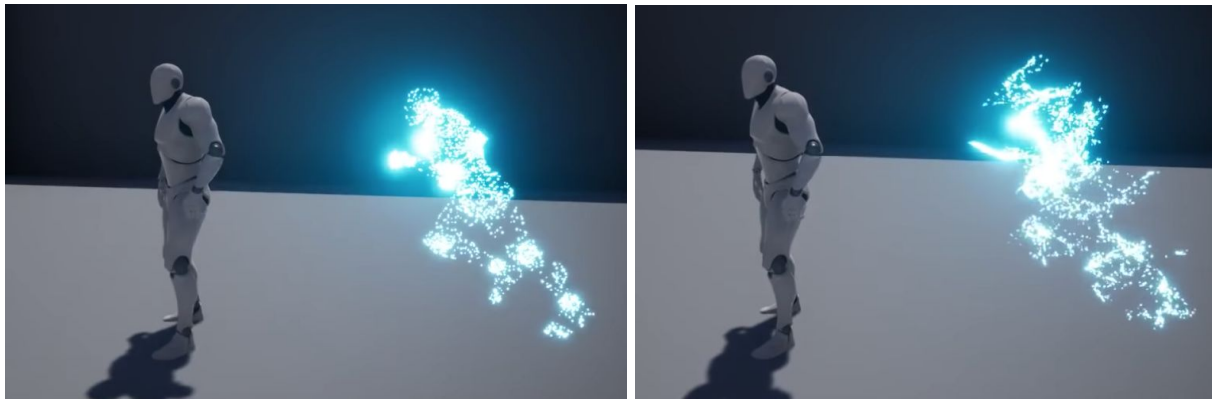
Due Friday, 11/22 by the end of class

[Description of Key Concepts in Niagara](#)

Tutorial Reference: https://www.youtube.com/watch?v=RWl3ySXTY2c

1. Start a Third Person Project & Enable the Niagara plugin. (Might require you to restart the engine)
2. Right click in the content folder to create a niagara emitter (fountain) & a niagara system (empty) from the FX menu
3. "The emitter allows us to set the default values and then the system will allow us to change the values to what we need." Open the emitter editor
4. Delete the Add Velocity section under Particle Spawn by clicking the little trash can icon
5. Delete the Particle Spawn/Acceleration Force section the same way (if it is there, not all versions will have it)
6. Delete the Emitter Update/Spawn Rate Section
7. Delete the Gravity Force Section
8. In the orange section click the plus next to Emitter Update search for and select Spawn Burst Instantaneous
   a. Change the Spawn count to 1000
9. Go to the Emitter Life Cycle Section and Set max loop count to 1
10. Uncheck Calculate Size By Mass
11. Under Sprite Attributes, check Sprite Size and set it to be (1, 1)
12. Compile and Apply
13. Open the Niagara's System editor
14. Add a track -> emitter (and pick our emitter)
15. Open the Emitter editor again
16. Under the Parameters window expand the particle section
17. Click the plus next to the title of the particle section and select Skeletal Mesh

18. Call it Particles.SkeletalMesh (Copy the name, so that we can paste it later)
19. Drag the newly created Particles.SkeletalMesh parameter and drag it to the right where green boxes show up. It automatically makes a node for us to modify
20. Set the default mesh to the mannequin
21. Right Click on the Content Folder again, go to FX > Module Script
22. Open the Module Script
23. Under the Module Usage dropdown menu, uncheck everything so that it only has Module and Particle Spawn Script checked
24. Compile the Module Script
25. Under the Category, name it to be Lab 6 Category
26. Back in the emitter editor… Press the plus next to the particle spawn and look for the lab 6 category, add the module script that we just made!
27. Go back to the Module Script editor
    a. On the map get node select the + icon
    b. Click Particles -> Make New -> Skeletal Mesh
    c. Paste in the name "Particles.SkeletalMesh" you copied earlier
    d. Drag out from the dot next to "Particles.SkeletalMesh" and release to search for "Random Tri Coord"
    e. Drag out again from the dot next to "Particles.SkeletalMesh" and release to search for "Get TriPosition WS" (If that isn't an option, select "Get Skinned Triangle Data WS"
    f. Connect the Coord from Random Tri Coord to the coord of Get TriPosition WS
    g. On the Map Set node, press the plus icon and search for ParticlePosition
    h. Plug in Position from the Get TriPosition WS into the Map Set node
    i. Compile!
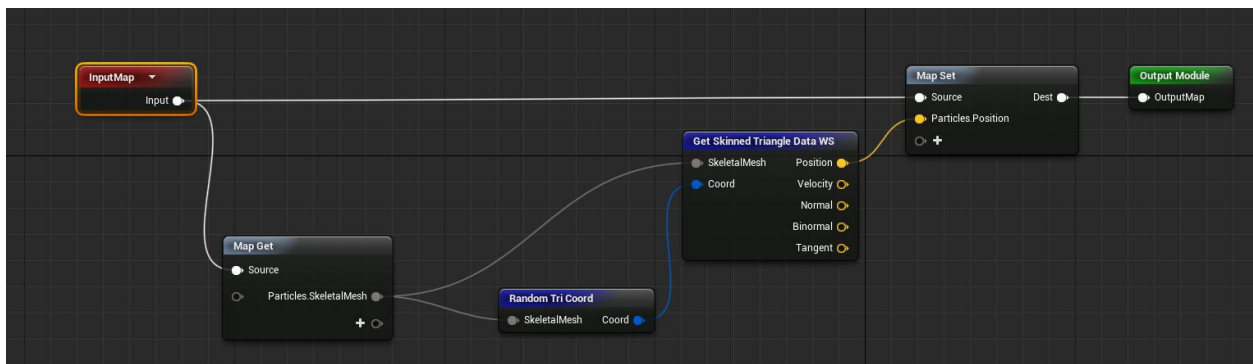
28. Go back to the emitter editor, and notice it now makes a shape of a mesh with the particles! (If you don't see it, double check you compiled the module script)
29. Underneath particle update press Plus and select a Curl Noise Force
    a. Click Fix Issue if there is an error in the order of dependencies
    b. Make the Noise Strength 1000
    c. Set the Frequency to 0.2
30. Under Particle Lifetime set both the min and max to 5
31. Next to Particle Update press the plus, search for color

    a. Click the downward facing triangle on the color attribute under the color menu and search for curve

    b. Right click on the strip of color (white fading out)

    c. Select Add Key to All Curves

    d. Double click on the little square on the top of the white strip

    e. Choose whatever color you want! (something electric!) You should type in colors higher than 1 in the RGB values to get the neon sign bloom effect

32. Under the Curl Noise header click the triangle dropdown next to the Noise Strength attribute.

    a. Search for float from curve

    b. Click the curve icon directly to the right of "Curve" header

    c. Click the lower diamond sitting on the x axis of the curve under the window showing the particle system. Set its values to go from 1 to 1000

    d. Right click and select "Add a new key…"

    e. Set it so that at 0.2 it is 0… this will delay the burst of particles from the mesh

33. Save and apply! It should be working in the system as well as the emitter. Try dragging the system into the scene to see how it works!

34. Now we need to make it so our character can spawn the system

    a. Click on the character in the scene, then in the World Outliner click "Edit ThirdPersonCharacter"

    b. Right click in open space and search for the keyboard e node

    c. Off of the Pressed attribute drag out, release, and search for Spawn System Attached

    d. Click the dropdown for System template and select the niagara system you made

    e. In the Components window drag the mesh to the left of this Spawn System Attached node

    f. Attach the mesh to the "attach to component" node of the Spawn System Attached Node

    g. Drag out from the mesh node again, release, and search for get world transform

    h. Right click on the return value of get world transform and select "Split Struct Pin"

    i. Connect the Rotation and Location outputs of the world transform node to the respective locations in the Spawn System Attached node
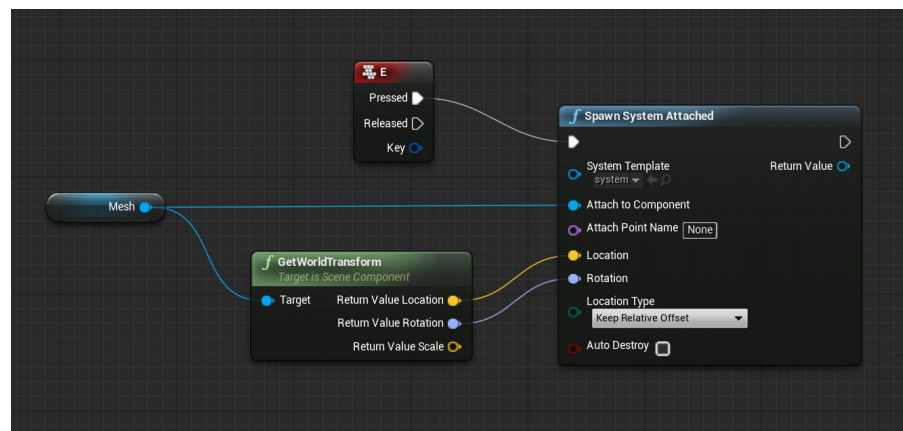
35. Save, Compile, & test your game! Whenever you press "e" the particles should spawn from the player. You are ready to get checked off!