

CS 3160 – Game Programming

Project 2 – Animations

Learning Objectives

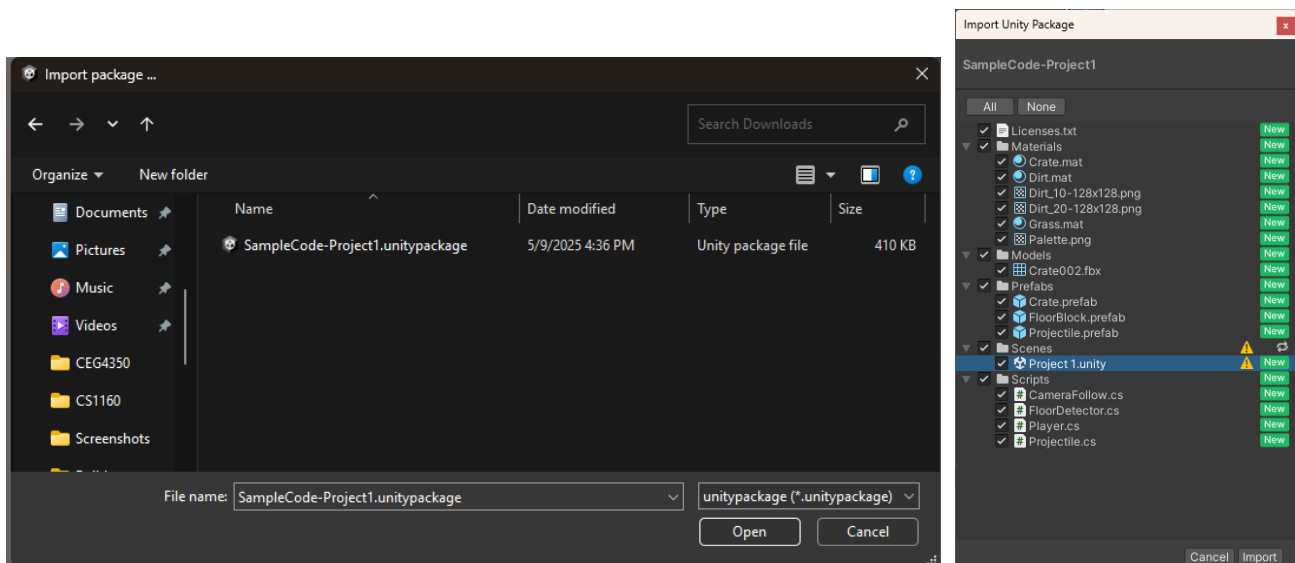
- Learn how to animate models in Unity

Overview

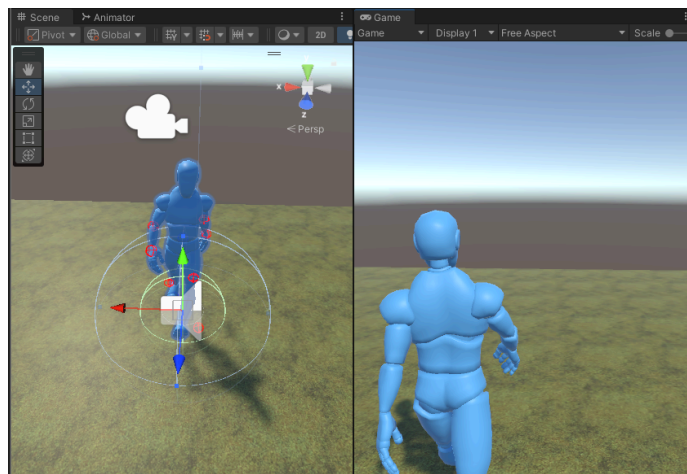
In this project you will become familiar with adding animations to characters in Unity using both in place animations and root motion animations.

Sample Code

To complete this project some sample code is required. This is provided in the form of a Unity Package. Download the “SampleCode-Project2” Unity Package from Pilot. First, create an empty Unity project using the “3D (Built-In Render Pipeline)” template. Then, go to “Assets” > “Import Package” > “Custom Package...” then locate “SampleCode-Project2.unitypackage” downloaded from Pilot and import all files:



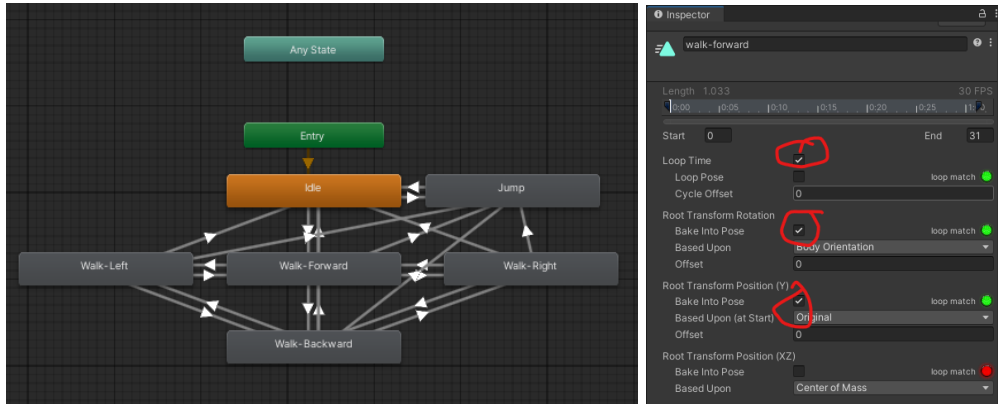
If importing was successful you should be able to load the “Project 2” Scene in the “Scenes” folder and you can test the game and walk forward:



NOTE: Importing a Unity Package does not import Layers, this breaks the jumping mechanic. To fix this, create a new Layer called “Floor” and set the “FloorBlock” prefab’s layer to the newly created layer.

Animator Controller

First, modify the existing Animator Controller to add walking left, right, and backwards, and jumping. The easiest way to do this is to use two “Float Parameters” to tell the animator what direction the player wants to move. These float parameters can correspond to the x and y axis of the player’s input. You must be able to transition to walk forward, left, right, backward, and jump from any of the animations. Notice, this gets quite messy:

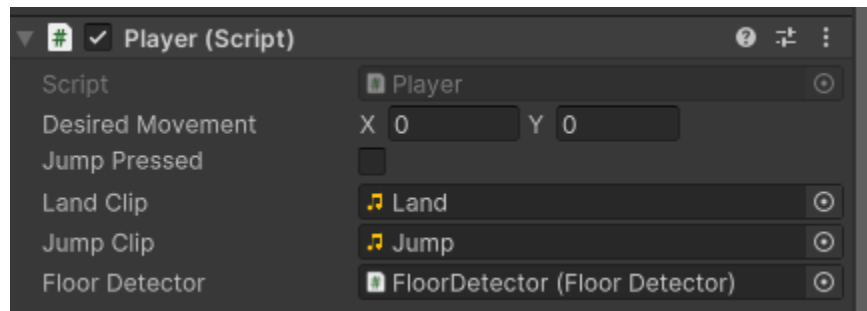


NOTE: Some animations might have to be set to loop and have root motion baked, see the walk-forward animation (above) for details.

Player Script

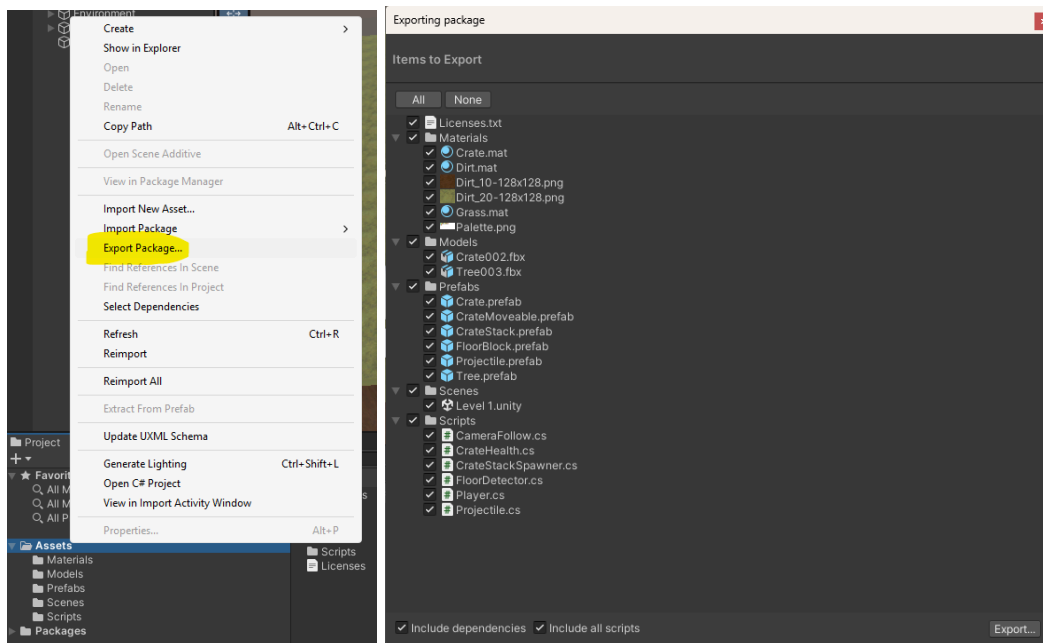
We need a way of controlling all directions and jumping. Also, we’ll add our first sound effect We will add this to the Player script:

- private FixedUpdate()
 - Set bools, floats, and triggers of the animator of the Player based on the Player’s input.
 - If the player jumps, play the “Jump” sound clip
 - When the player lands, play the “Land” sound clip
 - HINT: For sounds, use an AudioSource component and provide a clip to the audio source like this: `audioSource.PlayOneShot(jumpClip);`
 - “jumpClip” can be provided to the script by dragging and dropping an AudioClip



How to Submit

To submit your code, you must pack your project into a Unity Package. To create a Unity Package first right click on the “Assets” folder inside of the Unity Editor, select all items and hit Export. Lastly, name your file “YourLastName-Project2” where “YourLastName” is your actual last name, and submit this file to the Pilot dropbox:



Grading

This lab is worth 5.00 points, distributed as follows:

Task	Points
There are no build or runtime errors	1.00
Modified the Animator Controller for walking in more directions	1.00
Modified the Animator Controller to allow for jumping	1.00
Modified Player script to set animator parameters	1.00
Modified Player script to allow for jumping and sound effects	1.00
Total	5.00