Lab 11 Part 2 - 3D Animation

Starting point

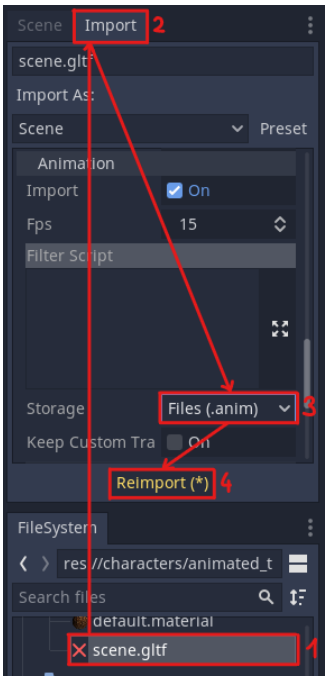
Start with a brand new project. Extract into it this triceratops model.

(source, glTF format)

Steps

Task 1 - Import the 3D animated character

The character was exported already rigged and animated which makes things easier. Everything is imported automatically after copying all files into the project's directory. You can reimport the animation separately:



Re-importing the model with animations stored separately (allows changing them later to loops).

After that, create an inherited scene from scene.gltf called Triceratops, and place it into a Scene. Add a Camera node.

Opening the character model after the import.

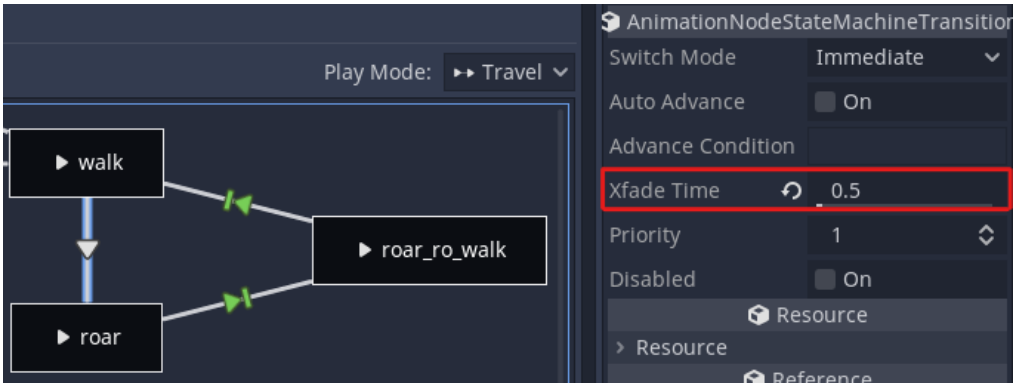
Triceratops.tscn - The imported model saved as a scene.
Scene.tscn - The imported model placed in a scene with Camera node, which is mandatory for 3D scenes.

Task 2 - Add AnimationTree

Add an AnimationTree node to the scene. The Editable Children option is enabled for the Triceratops scene so that it is possible to connect its AnimationPlayer to the AnimationTree. The AnimationTree is marked as Active and a new AnimationStateMachine is created for it.

Task 3 - Create the animation state machine

An animation state machine is created out of the available animations, some transitions have cross-fade time set to 0.5 (to smoothly transition between states), states are renamed. Animations “Armature|IdleGround” and “Armature|Walk” are set to loop in the AnimationPlayer.



Cross-fade time between states.

Task 4 - Controlling the animation state from code

Create controls in code that allow you to control your triceratops (make him roar, fall and rise up).

There are two general options on how to control the animation tree from code, suitable in different conditions.

One is to use parameters, that you allow different animations from:

```gdscript
@onready var animTree = $AnimationTree

func _unhandled_input(event):
    if event.is_action_pressed("roar"):
        animTree.set("parameters/conditions/roar", true)
```

In the AnimationTree, you need to add condition for the animation transition.

The second is to use
animTree.get(“parameters/playback”) and it’s travel method.

Add code to be able to rotate the camera around Triceratops.

Bonus Task - Use BlendTree

Instead of root AnimationNodeStateMachine, try to do everything in AnimationNodeBlendTree.

Useful resources

Introduction to 3D — Godot Engine (stable) documentation in English
Using AnimationTree — Godot Engine (stable) documentation in English (detailed)
Importing 3D scenes — Godot Engine (stable) documentation in English (supported formats, import options, animation options)
Character animation — Godot Engine (stable) documentation in English (AnimationPlayer)
Intro to 3D :: Godot 3 Recipes (kidscancode.org)
3D models to download:

- Popular 3D models - Sketchfab
- 3D Models for Free - Free3D.com

Assets sources

Animated triceratops skeleton - Download Free 3D model by Zacxophone (@Zacxophone) [06cb55f] (sketchfab.com)