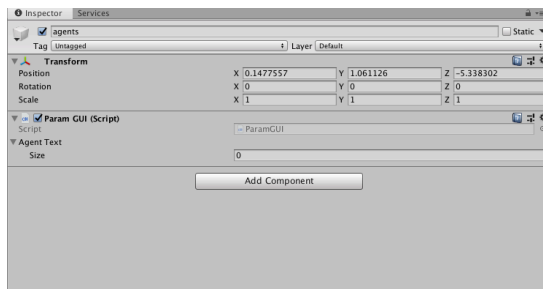


Scene Hierarchy

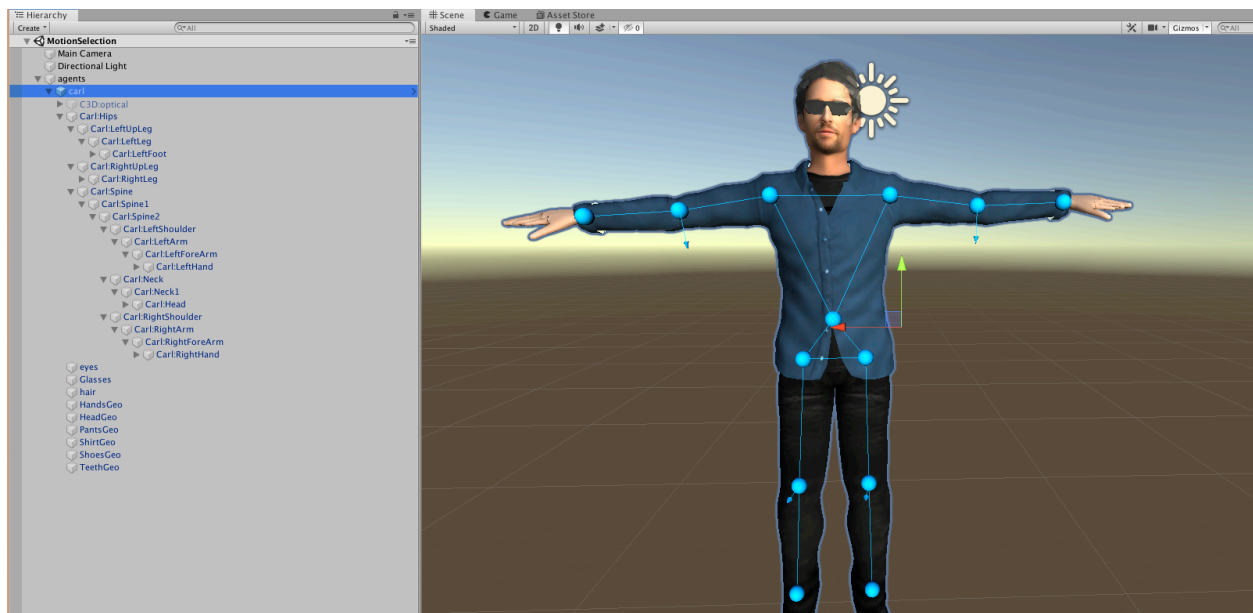
All the characters must be placed under a parent GameObject. In this case, the parent game object is called “agents”, but it can take any name.



The GUI script to assign the personality parameters is attached to “agents”.

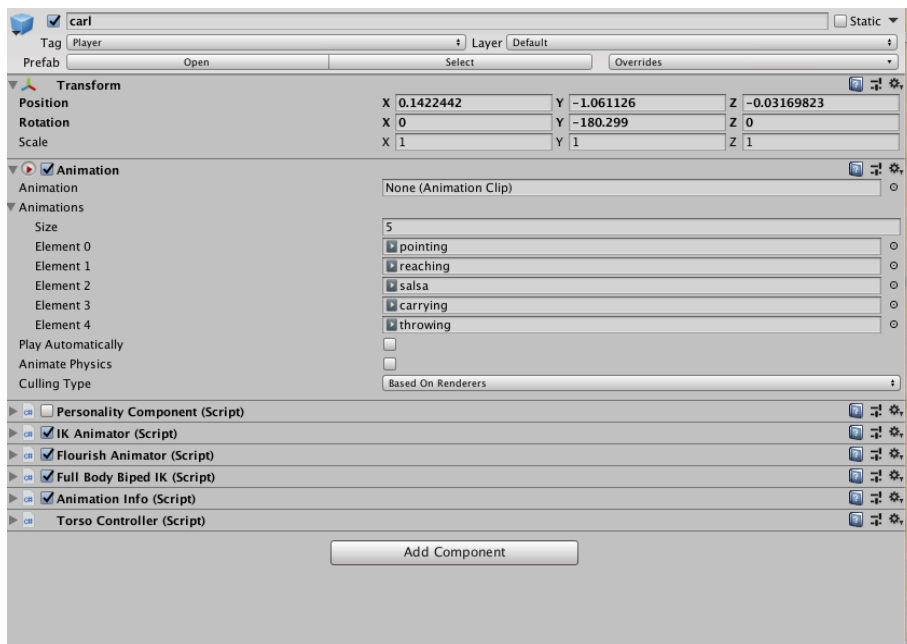


In this scene, we have one character, named as “carl”.



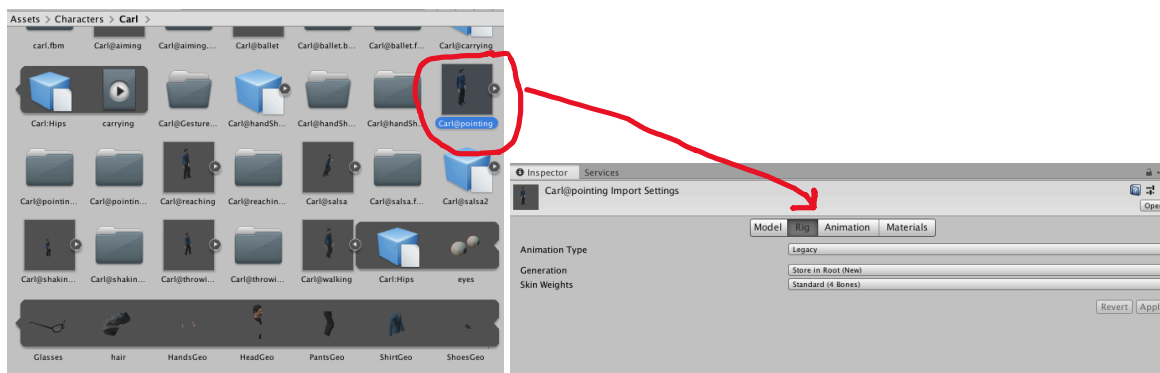
The character should have the following components and scripts:

- Transform
- Animation
- Personality Component
- IK Animator
- Flourish Animator
- Full Body Biped IK
- Animation Info
- Torso Controller



Animation

Animations can be any size. Just add them to the animations list. However, note that the animation rigs must be marked as legacy.



Full Body Biped IK

FullBodyBipedIK.cs is under Assets/RootMotion/IK Components/

The joints are automatically filled in; however, some parameters should be manually updated as follows:

The image displays the configuration for the FullBodyBipedIK component across five sections: Body, Left Arm, Right Arm, Left Leg, and Right Leg. Each section contains a list of parameters with corresponding sliders and dropdown menus.

Body

- Body Effector
 - Target: None (Transform)
 - Position Weight: 0
 - Use Thighs: ☒
- Chain
 - Spine Stiffness: 0.5
 - Pull Body Vertical: 1
 - Pull Body Horizontal: 1
- Mapping
 - Spine Iterations: 3
 - Spine Twist Weight: 1
 - Maintain Head Rot: 0

Left Arm

- Left Hand Effector
 - Target: None (Transform)
 - Position Weight: 1
 - Rotation Weight: 0
 - Maintain Relative Pos: 1
- Left Shoulder Effector
 - Target: None (Transform)
 - Position Weight: 1
- Chain
 - Pull: 0
 - Reach: 0.1
 - Push: 0
 - Push Parent: 0
 - Reach Smoothing: Exponential
 - Push Smoothing: Exponential
 - Bend Goal: None (Transform)
 - Bend Goal Weight: 0
- Mapping
 - Mapping Weight: 1
 - Maintain Hand Rot: 0

Right Arm

- Right Hand Effector
 - Target: None (Transform)
 - Position Weight: 1
 - Rotation Weight: 0
 - Maintain Relative Pos: 1
- Right Shoulder Effector
 - Target: None (Transform)
 - Position Weight: 1
- Chain
 - Pull: 1
 - Reach: 0.1
 - Push: 0
 - Push Parent: 0
 - Reach Smoothing: Exponential
 - Push Smoothing: Exponential
 - Bend Goal: None (Transform)
 - Bend Goal Weight: 0
- Mapping
 - Mapping Weight: 1
 - Maintain Hand Rot: 1

Left Leg

- Left Foot Effector
 - Target: None (Transform)
 - Position Weight: 1
 - Rotation Weight: 1
 - Maintain Relative Pos: 1
- Left Thigh Effector
 - Target: None (Transform)
 - Position Weight: 0
- Chain
 - Pull: 1
 - Reach: 0.1
 - Push: 0
 - Push Parent: 0
 - Reach Smoothing: Exponential
 - Push Smoothing: Exponential
 - Bend Goal: None (Transform)
 - Bend Goal Weight: 0
- Mapping
 - Mapping Weight: 1
 - Maintain Foot Rot: 1

Right Leg

- Right Foot Effector
 - Target: None (Transform)
 - Position Weight: 1
 - Rotation Weight: 1
 - Maintain Relative Pos: 1
- Right Thigh Effector
 - Target: None (Transform)
 - Position Weight: 0
- Chain
 - Pull: 1
 - Reach: 0.1
 - Push: 0
 - Push Parent: 0
 - Reach Smoothing: Exponential
 - Push Smoothing: Exponential
 - Bend Goal: None (Transform)
 - Bend Goal Weight: 0
- Mapping
 - Mapping Weight: 1
 - Maintain Foot Rot: 1

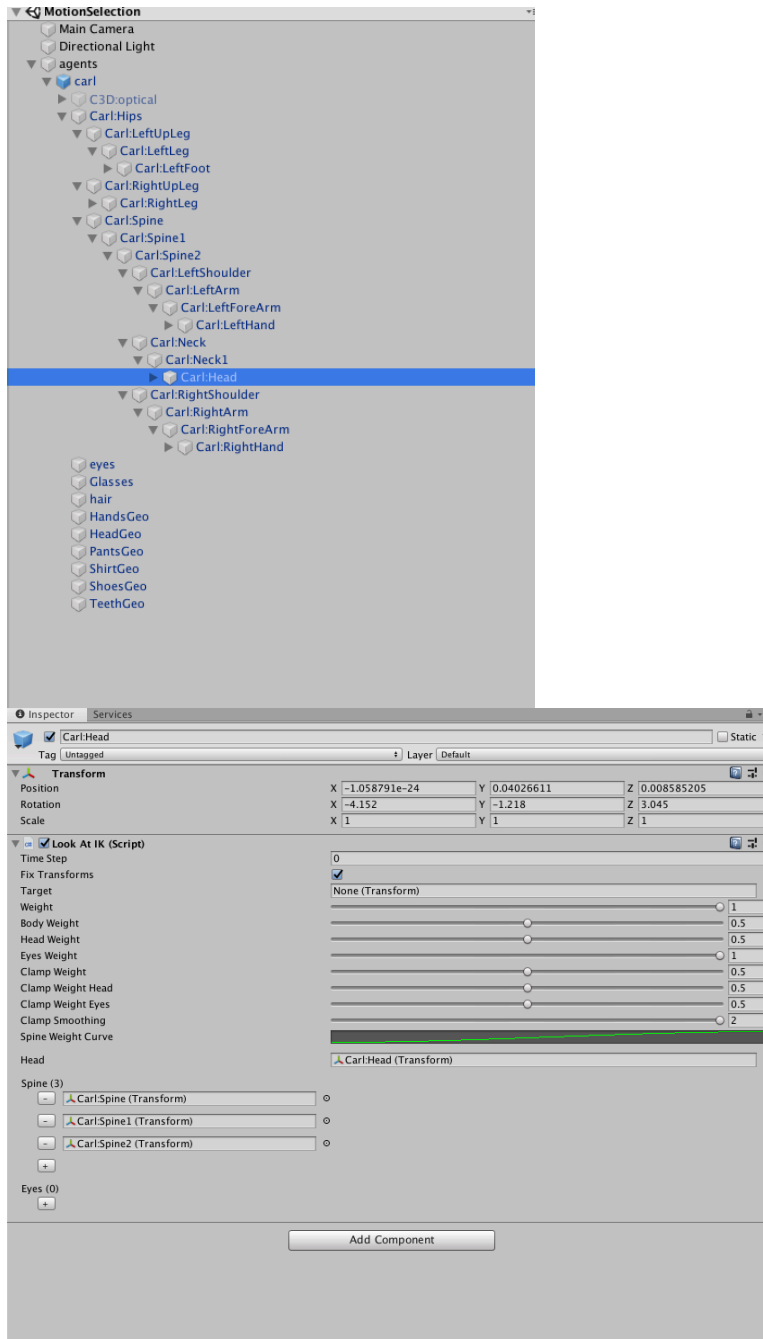
Torso Controller

TorsoController.cs is under Assets/Scripts

The joints need to be manually assigned for this script:

Torso Controller (Script)		TorsoController		
Script				
Body Chain				
Root		Carl:Hips (Transform)		
Neck		Carl:Neck (Transform)		
Head		Carl:Head (Transform)		
Spine		Carl:Spine (Transform)		
Spine 1		Carl:Spine1 (Transform)		
Spine 2		Carl:Spine2 (Transform)		
Clavicle		2		
Size				
Element 0		Carl:LeftShoulder (Transform)		
Element 1		Carl:RightShoulder (Transform)		
Shoulder		2		
Size				
Element 0		Carl:LeftForeArm (Transform)		
Element 1		Carl:RightArm (Transform)		
Pelvis		2		
Size				
Element 0		Carl:LeftUpLeg (Transform)		
Element 1		Carl:RightUpLeg (Transform)		
Elbow		2		
Size				
Element 0		Carl:LeftForeArm (Transform)		
Element 1		Carl:RightForeArm (Transform)		
Wrist		2		
Size				
Element 0		Carl:LeftHand (Transform)		
Element 1		Carl:RightHand (Transform)		
Knee		2		
Size				
Element 0		Carl:LeftLeg (Transform)		
Element 1		Carl:RightLeg (Transform)		
Foot		2		
Size				
Element 0		Carl:LeftFoot (Transform)		
Element 1		Carl:RightFoot (Transform)		
Toe		2		
Size				
Element 0		Carl:LeftToeBase (Transform)		
Element 1		Carl:RightToeBase (Transform)		
Toe End		2		
Size				
Element 0		Carl:LeftFootToeBase_End (Transform)		
Element 1		Carl:RightFootToeBase_End (Transform)		
Hips		Carl:Hips (Transform)		
Init Rot				
Init Pos				
Init Root Pos		X 0	Y 0	Z 0
Init Foot Pos		X 0	Y 0	Z 0
Init Toe Pos		X 0	Y 0	Z 0
Body Rot				
Body Pos				
Body Path				
Body Local Rot				
Body Local Pos				

In addition to FullBodyBipedIK, we assign LookAtIK to control the character's head orientation. LookAtIK.cs is under Assets/RootMotion/IK Components/ LookAtIK script should be added to the character's head as:



Project Structure and Other Dependencies

Assets/Libs:

An older version of Meta.Numerics package is used in the project. The required dll is under Assets/Libs/

Assets/Scripts:

All the scripts used in the project.

Assets/Scenes:

The demos are under this directory.

Assets/Characters:

All the characters, including their materials, animations and prefabs are under individual folders

Assets/Resources:

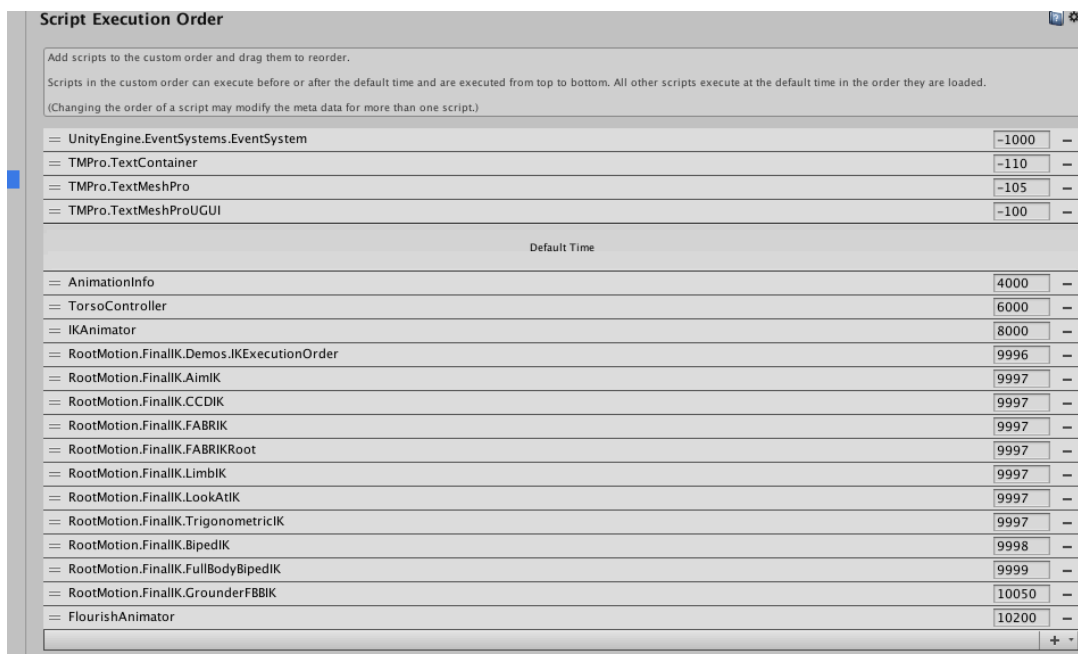
Text files used to read parameters from

Assets/RootMotion:

RootMotion IK libraries

Script Execution Order

Editor → Project Settings → Script Execution order



The order of the scripts should be as AnimationInfo < TorsoController < IKAnimator < FinalIK (both LookAtIK and FullBodyBipedIK) < FlourishAnimator