Third Person Character Engine
Manual

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Publisher: Infinite Dawn
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Contents

1. Introduction

Third Person Character Engine is the most powerful platform on which you can easily create games from a third person. The main feature of Third Person Character Engine is that it has a large number of built-in functions and not sharpened certain genres is a clean engine for creating any third-person games.

Quality. Third Person Character Engine is constantly expanding, regular updates that improve performance, and new features are constantly added.

Support. We are always glad to our clients and we maintain constant contact with them, answer all questions and even help in the development of their projects, help write scripts, etc., our support is one of the best in the Asset Store.

Updates. We release only free updates, we are adherents of the principle "Once you pay and use". Absolutely all major updates and additions to the functionality will be free.

2. Getting Start

2.1 Scenes

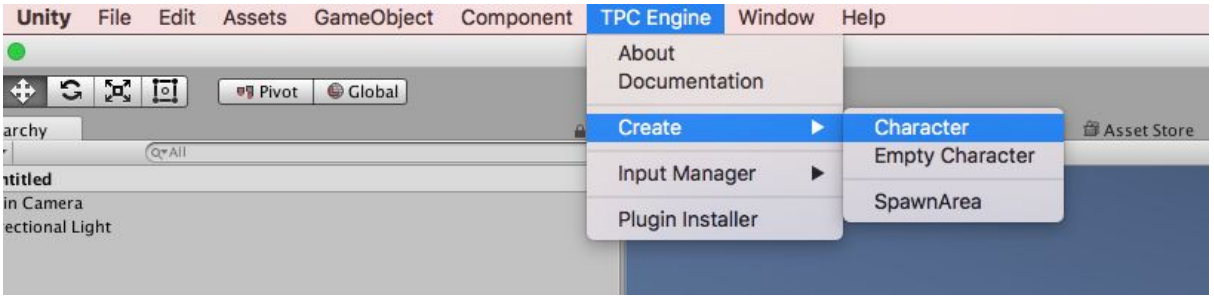
//TODO

3. Character

3.1 Create

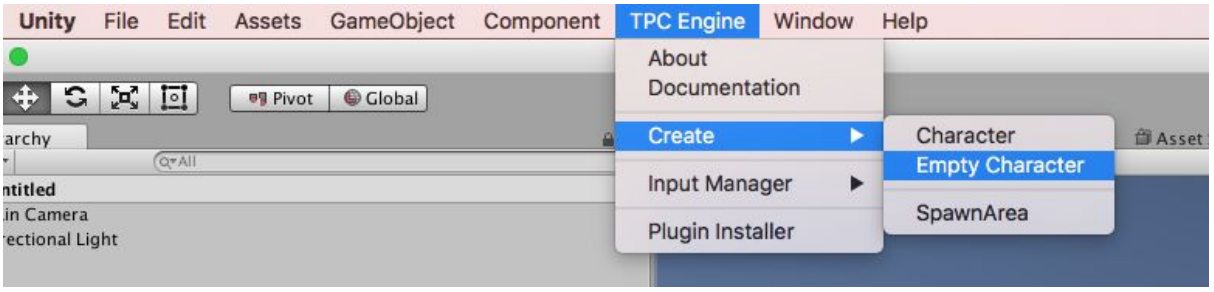
For create new character go to the tab:

TPCEngine ➔ Create ➔ Character



For create your own character go to the tab:

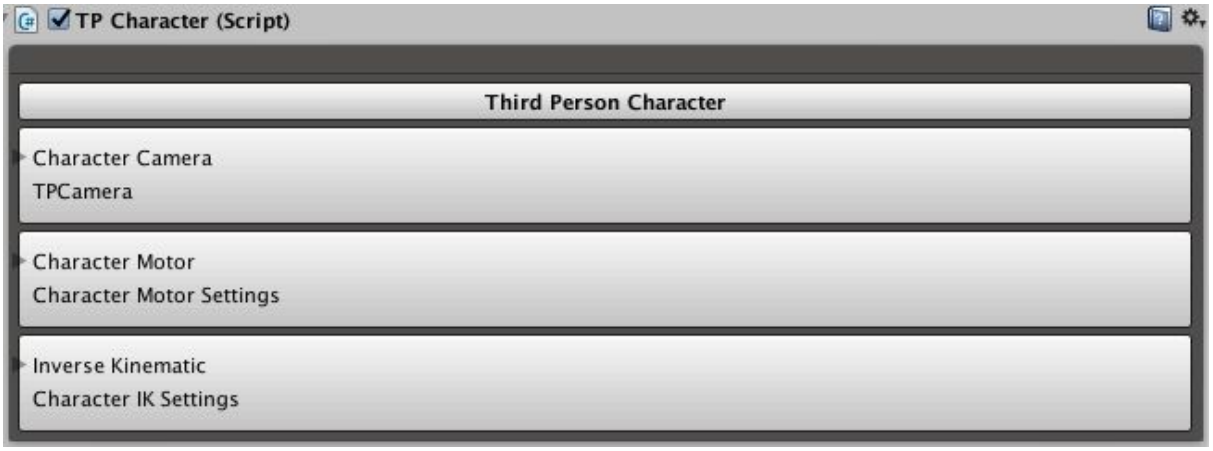
TPCEngine ➔ Create ➔ Empty Character



After the character was created drag you character model on the scene and move all of its child objects to empty character.

3.2 Components

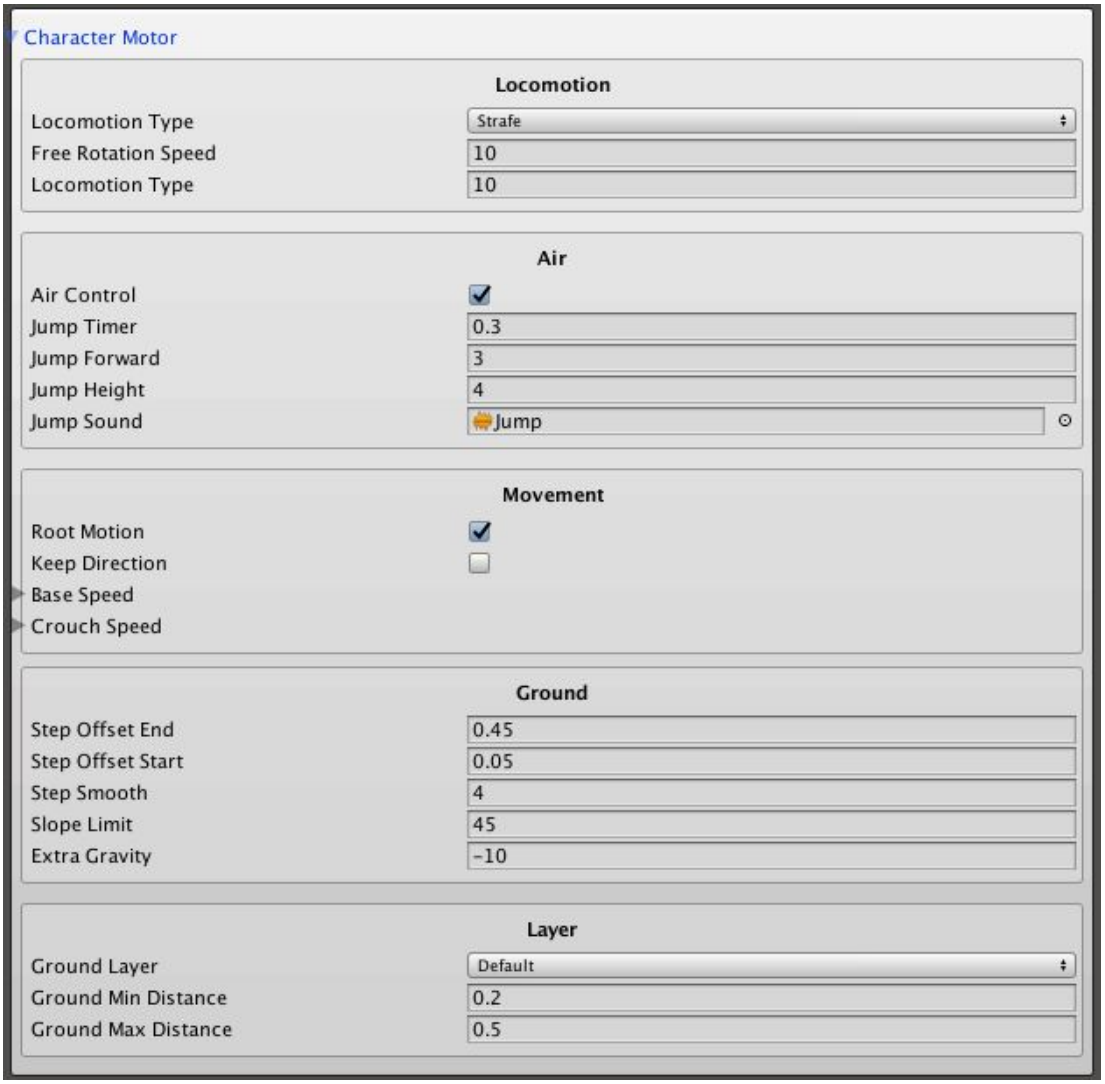
3.2.1 TPCharacter



Character Camera:

TPCamera - Add there TPCamera component

Character Motor:



Locomotion

Locomotion Type -

Strafe - The character moves forward, backward, left, right with a specific animation.

Free - The character moves in all directions, with the direction of the body in the direction of movement.

Free Rotation Speed - Speed of the rotation on free directional movement.

Strafe Rotation Speed - Speed of the rotation while strafe movement.

Air

Air Control - Check to control the character while jumping.

Jump Timer - How much time the character will be jumping.

Jump Forward - Add Extra jump speed, based on your speed input the character will move forward.

Jump Height - Add Extra jump height, if you want to jump only with Root Motion leave the value with 0.

Jump Sound - Jumping Sound.

Movement

Root Motion - Check to drive the character using Root Motion of the animation

Keep Direction -

Free Walk Speed - Add extra (free walk) speed for the locomotion movement.

Free Running Speed - Add extra (free running) speed for the locomotion movement.

Free Sprint Speed - Add extra (free sprint) speed for the locomotion movement.

Strafe Walk Speed - Add extra (strafe Walk) speed for the locomotion movement.

Strafe Running Speed - Add extra (strafe running) speed for the locomotion movement.

Strafe Sprint Speed - Add extra (strafe sprint) speed for the locomotion movement.

Free Crouch Walk Speed - Add extra (free crouch walk) speed for the locomotion movement.

Free Crouch Running Speed - Add extra (free crouch running) speed for the locomotion movement.

Free Crouch Sprint Speed - Add extra (free crouch sprint) speed for the locomotion movement.

Strafe Crouch Walk Speed - Add extra (strafe crouch Walk) speed for the locomotion movement.

Strafe Crouch Running Speed - Add extra (strafe crouch running) speed for the locomotion movement.

Strafe Crouch Sprint Speed - Add extra (strafe crouch sprint) speed for the locomotion movement.

Ground

Step Offset End - Offset height limit for steps.

Step Offset Start - Offset height origin for sters, make sure to keep slight above the floor.

Step Smooth - Higher value will result jittering on ramps, lower values will. have difficulty on steps

Slope Limit - Max angle to walk.

Extra Gravity - Apply extra gravity when the character is not grounded.

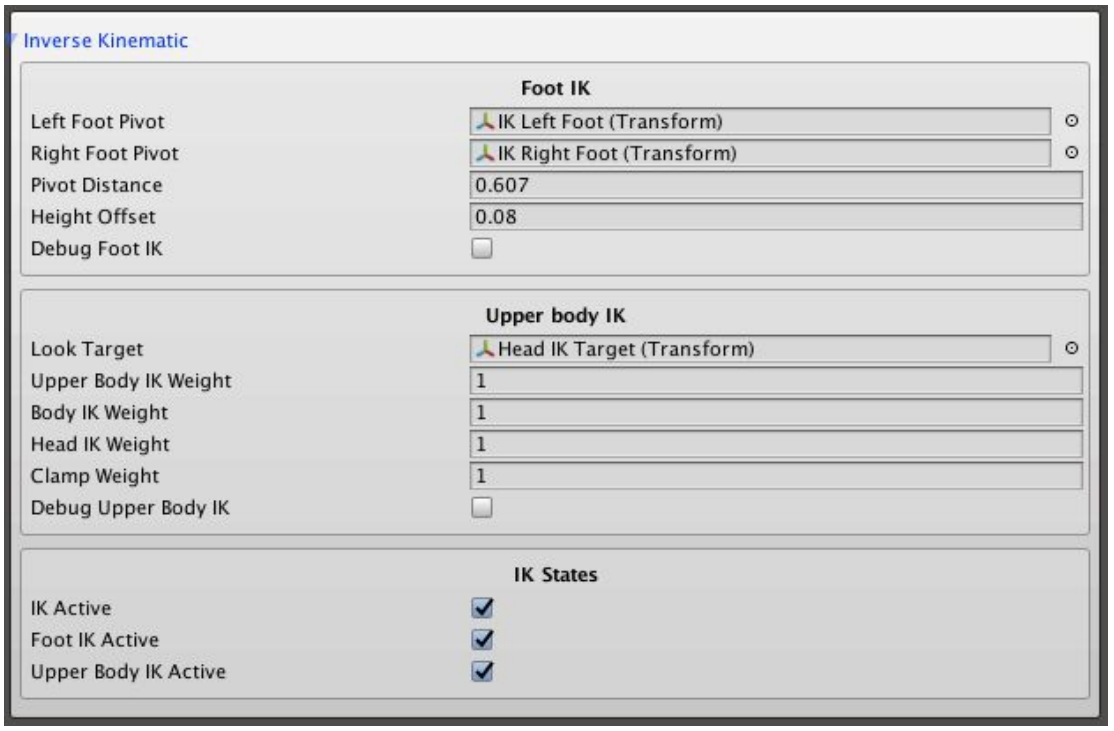
Layer

Ground Layer - Layers that the character can walk on.

Ground Min Distance - Distance to became not grounded.

Ground Max Distance - Distance to became not grounded.

Inverse Kinematic:



Foot IK

Left Foot Pivot - Position from where the ray of the left foot will emanate.

Right Foot Pivot - Position from where the ray of the right foot will emanate.

Pivot Distance - Distance between pivots and ground

Height Offset - Height Offset between legs and ground

Debug Foot IK - Debugging IK Pivots. *(Editor Only)*

Upper body IK

Look Target - The position to look at.
Upper Body IK Weight - Global Upper Body IK Weight

Body IK Weight - Determines how much the body is involved in the LookAt.
Head IK Weight - Determines how much the head is involved in the LookAt.
Clamp Weight - 0.0 means the character is completely unrestrained in motion, 1.0 means he's completely clamped (look at becomes impossible), and 0.5 means he'll be able to move on half of the possible range (180 degrees).

Debug Upper Body IK - Debugging IK Look Target.

IK States

IK Active - Sets Global IK system active state

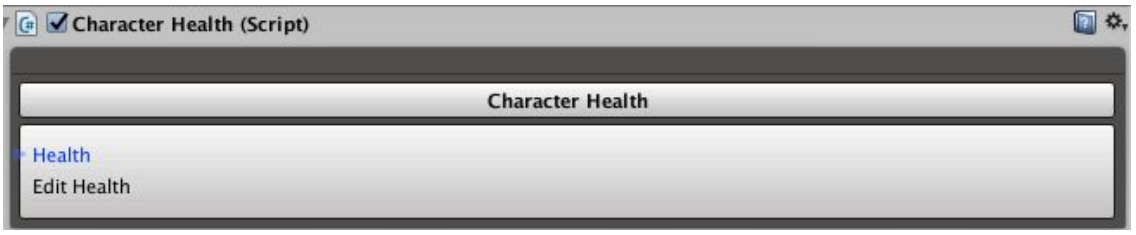
True: IK system is active, however, subsystems can be disabled.

False: Completely disables the IK system and all its subsystems

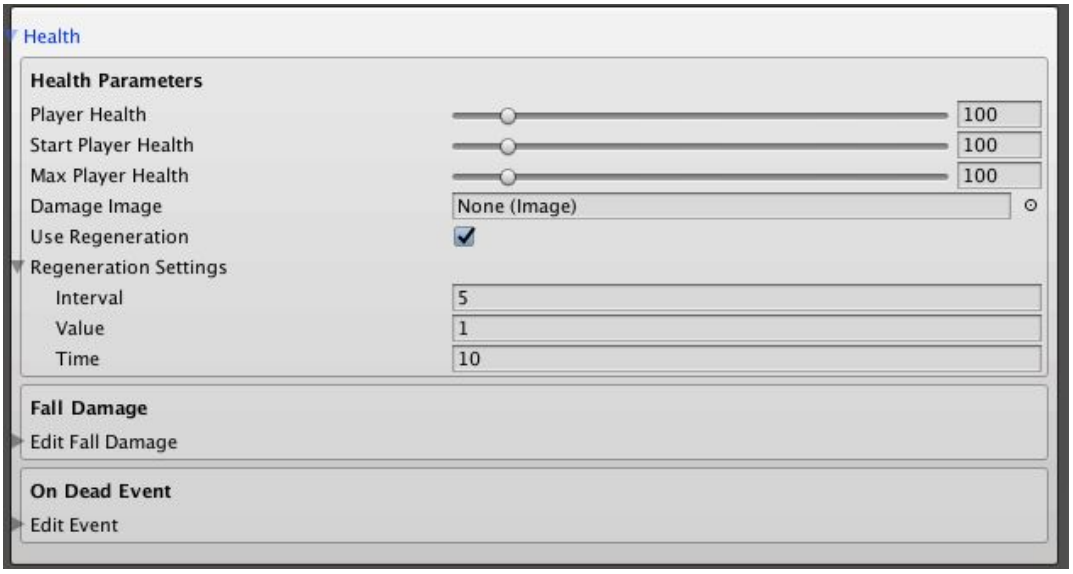
Foot IK Active - Foot IK state.

Upper Body IK Active - Upper body IK State.

3.2.2 Character Health



Health Parameters:



Health - Current health points.
Start Health - Health point that's set on Start.
Max Health - Max health points.
Damage Image - Damage screen *(Optional).*

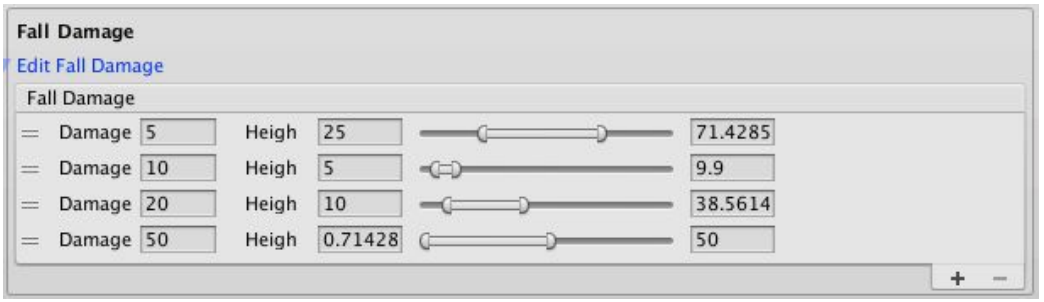
Use Regeneration - Regeneration System state.

Interval - Interval of adding health points in sec.

Value - The amount of health added in one interval.

Time - After how much time after the damage, start regeneration.

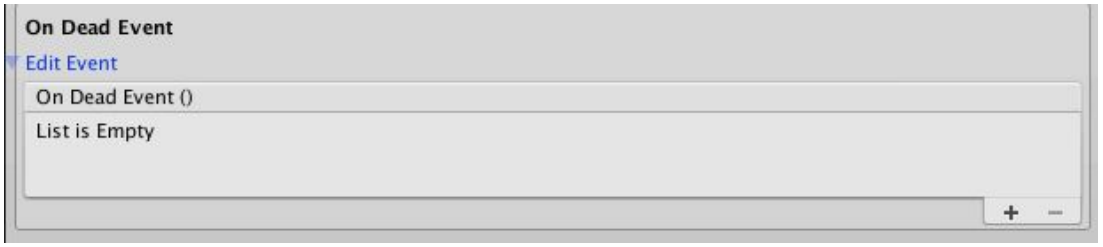
Fall Damage:



Damage - Amount take damage.
Min - Minimum height.
Max - Maximum height.

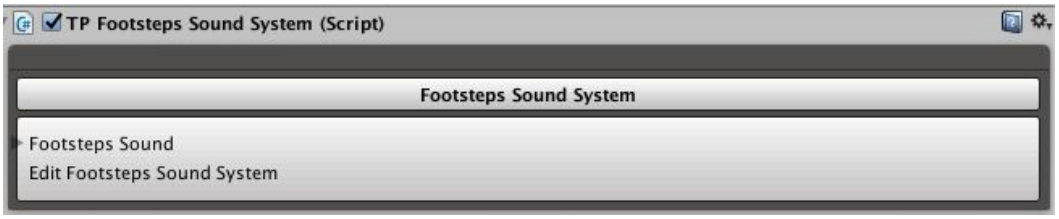
*Note: If the character starts to fall from a height between values **Min** and **Max** then he will take damage **Damage**.*

On Dead Event:

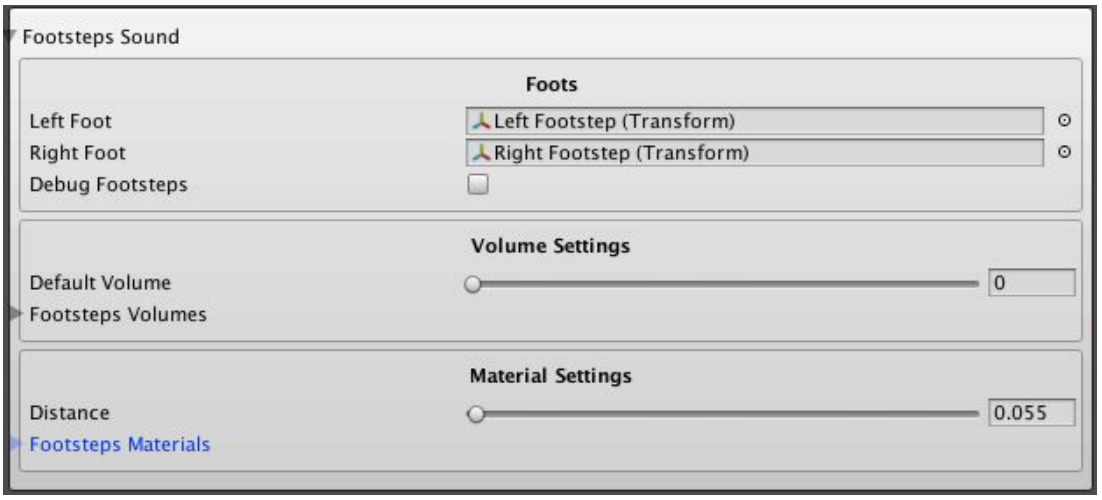


You can add here custom events that run after the death of the character.

3.2.3 Footsteps Sound System



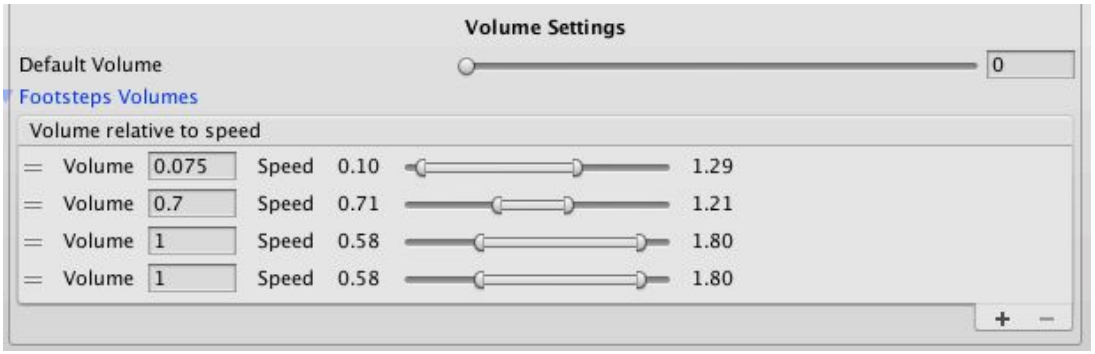
Foots



Left Foot - Left foot position of the character.
Right Foot - Right foot position of the character.
Distance - Distance between ground and foot.
Debug Footsteps - Debugging footsteps position.

Note: Footsteps Sound System physics based, footsteps are played by touching the foot with the surface.

Volume Settings

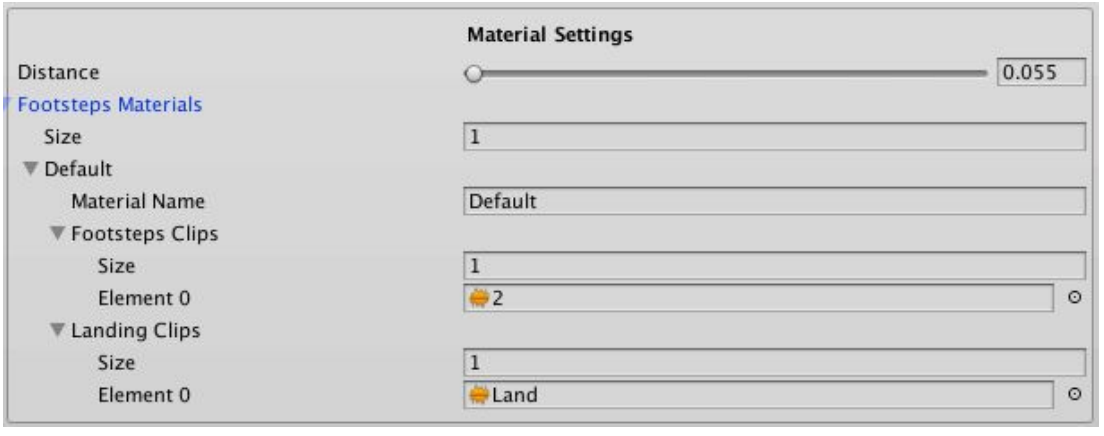


Default Volume - Default footsteps volume state then character idle.
Volume - Volume value.
Speed Min - Speed value.
Speed Max - Speed value

Note: You can adjust the volume of the sound depending on the speed of movement. For example, if the speed of the character >= ***Min Speed*** *and <* ***Max Speed*** *the volume will be equal to* ***Volume****.*

Note: Unity Audio Source volume takes values (0.0 to 1.0). For convenience, in the Footsteps Sound System component you can set the values (0.0 to 1.0) and from (0.0 to 100.0), Footsteps Sound System automatically converts the value.

Material Settings



Name - Material Name.
Footsteps Clips - Footstep sounds which played when character move on current material *(Playing Random)*.
Landing Clips - Landing sounds which play when character landing on current material *(Playing Random)*.

3.2.4 TPCInput Controller

In this component handling TPC Engine Input

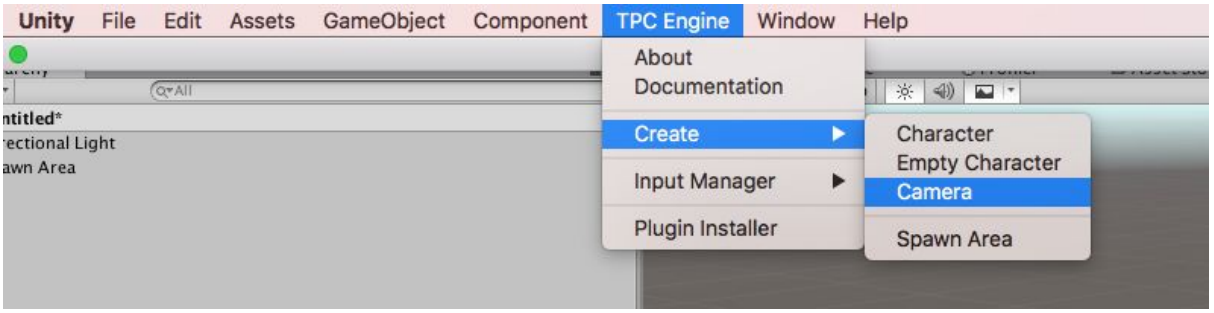
Note: The name depends on the name of the controller.

4. Character Camera

4.1 Create

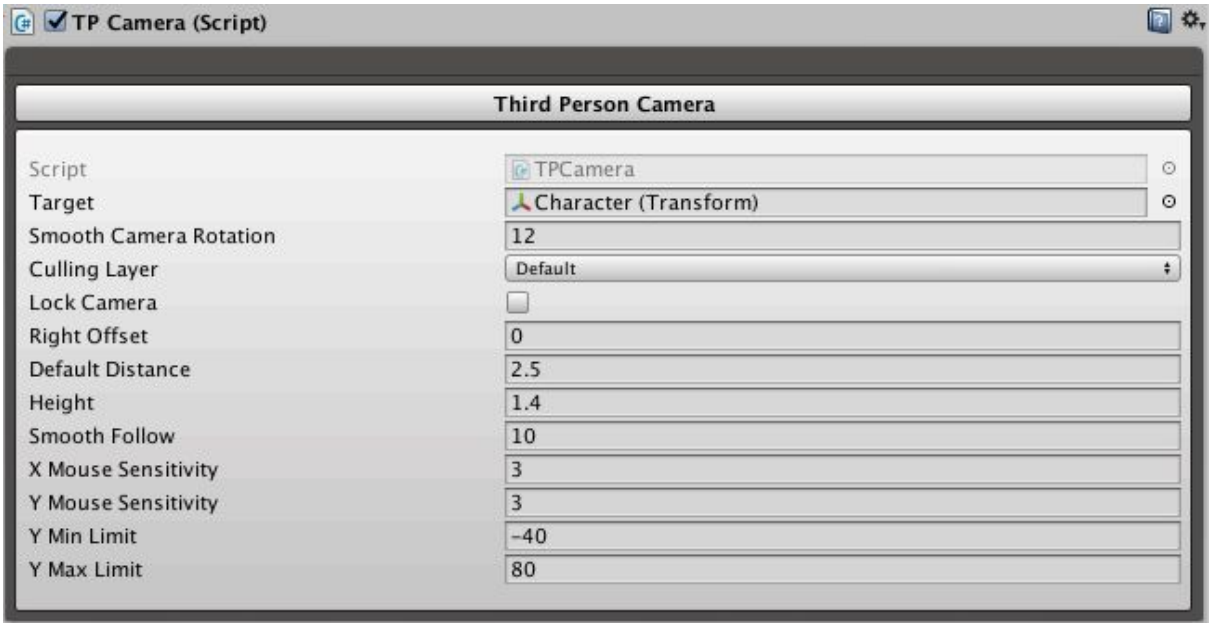
For create new character camera go to the tab:

TPCEngine ➜ Create ➜ Camera



4.2 Components

4.2.1 TPCamera



Target - The target of which will be followed by the camera
Smooth Camera Rotation - Smooth force when camera rotation
Culling Layer - Culling layer.
Lock Camera - Lock camera.

Right Offset - Right camera offset.

Default Distance - Camera default distance.

Height - Camera height.

Smooth Follow - Smooth force when camera follow.

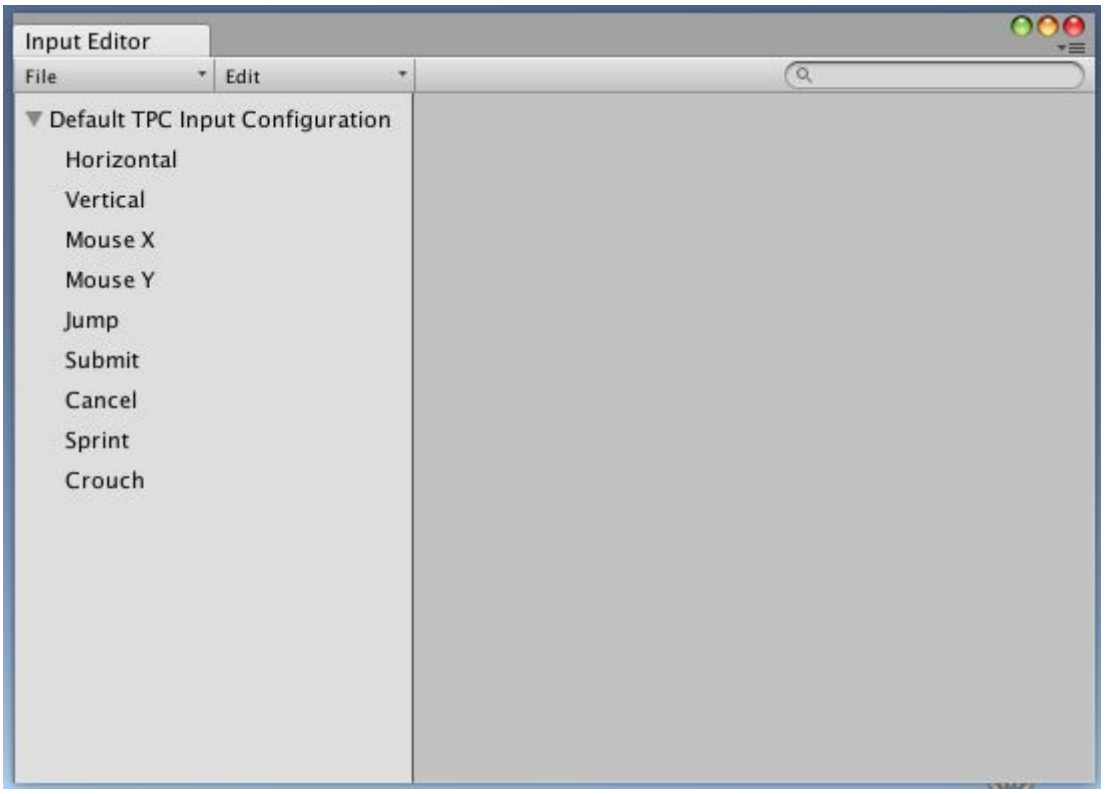
X Mouse Sensitivity - Mouse sensitivity by X axis.

Y Mouse Sensitivity - Mouse sensitivity by Y axis.

Y Min Limit - Minimum limit by Y axis.

Y Max Limit - Maximum limit by Y axis.

5. Input Manager



Third Person Character Engine use very powerful Input Manager created by daemon3000.

5.1 Creating the input configurations

Go to the tab:

TPCEngine ➔ Input Manager ➔ Create Input Manager.

- In the inspector press the Input Editor button. The first time you open the *Input Editor* you will be prompted to overwrite your project's input settings. You can also do it from the File menu of the *Input Editor* at a later time.
- Use the options available in the Edit menu of the *Input Editor* to set up your input configurations.

It is recommended that you have only one *Input Manager* in your game. Add it in the first scene and enable Don't Destroy On Load in the inspector. You should also enable Ignore Timescale if you pause the game by setting the timescale to zero.

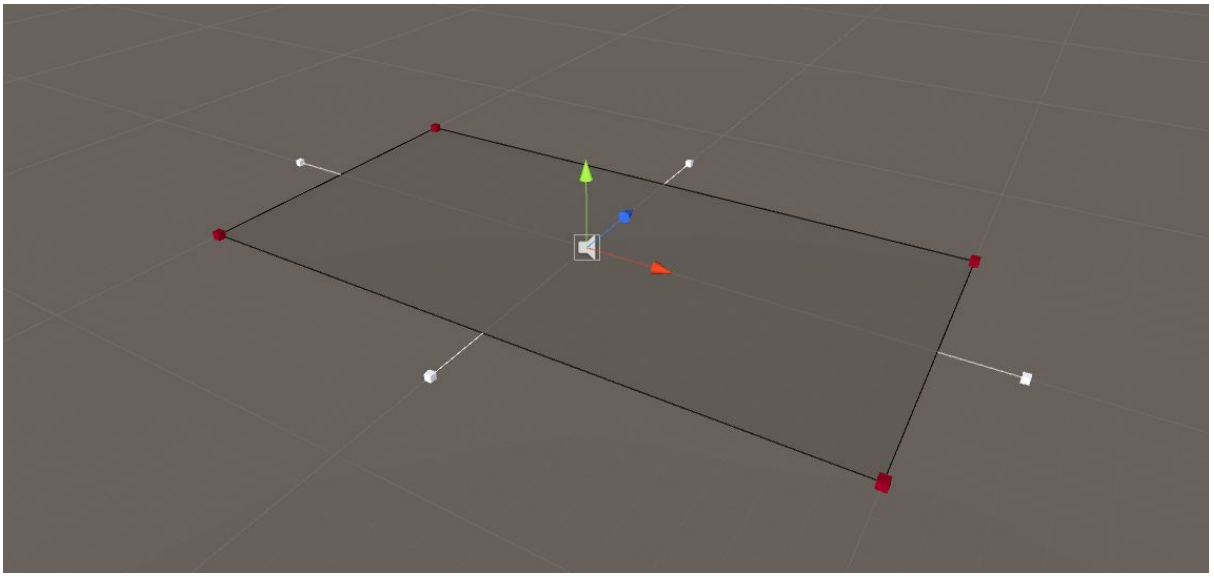
5.2 Save Play Mode Tweaks

To save tweaks made during play-mode press the *Create Snapshot* button located in the Inspector.

After you exit play-mode press the *Restore Snapshot* button to restore the changes.

For get more information go to link: Documentation

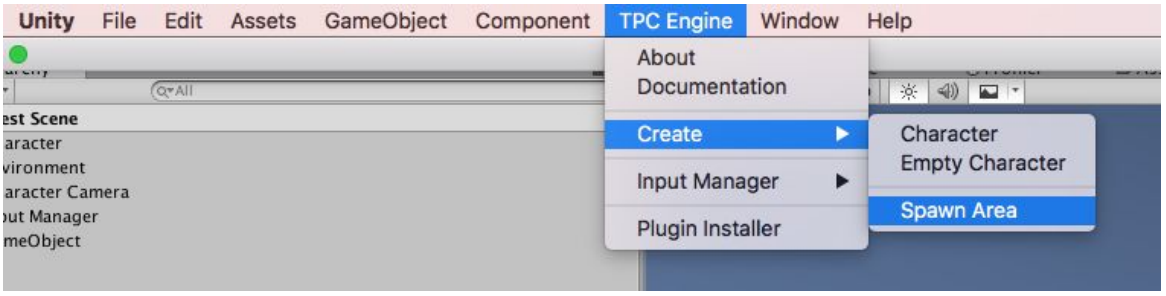
6. Spawn Area



6.1 Create

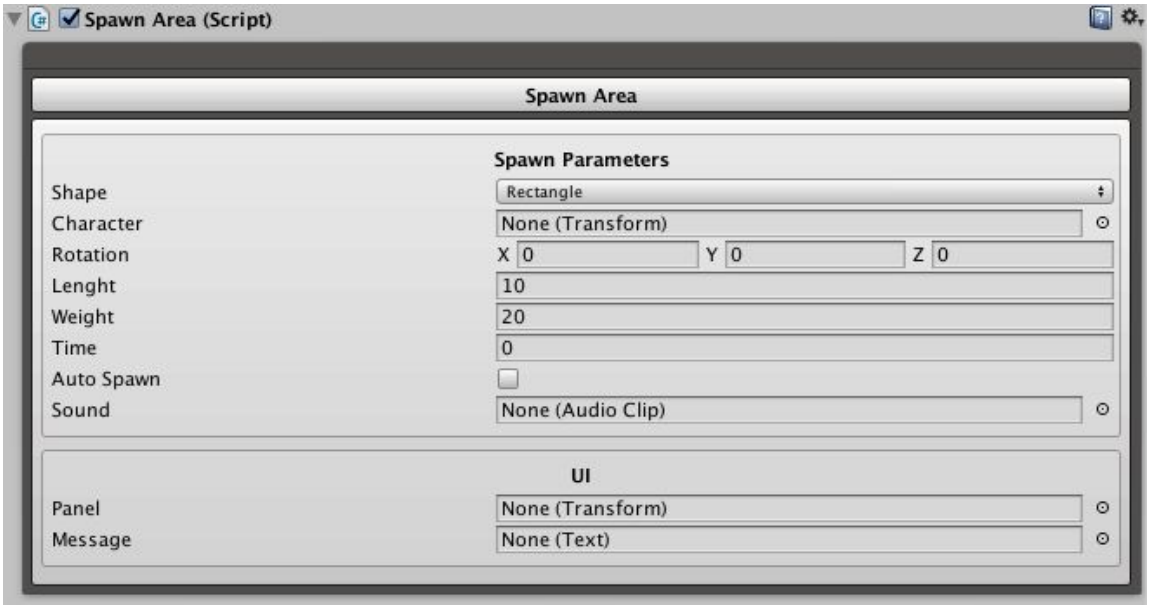
For create spawn manager go to the tab:

TPCEngine ➔ Create ➔ Spawn Area



6.2 Component

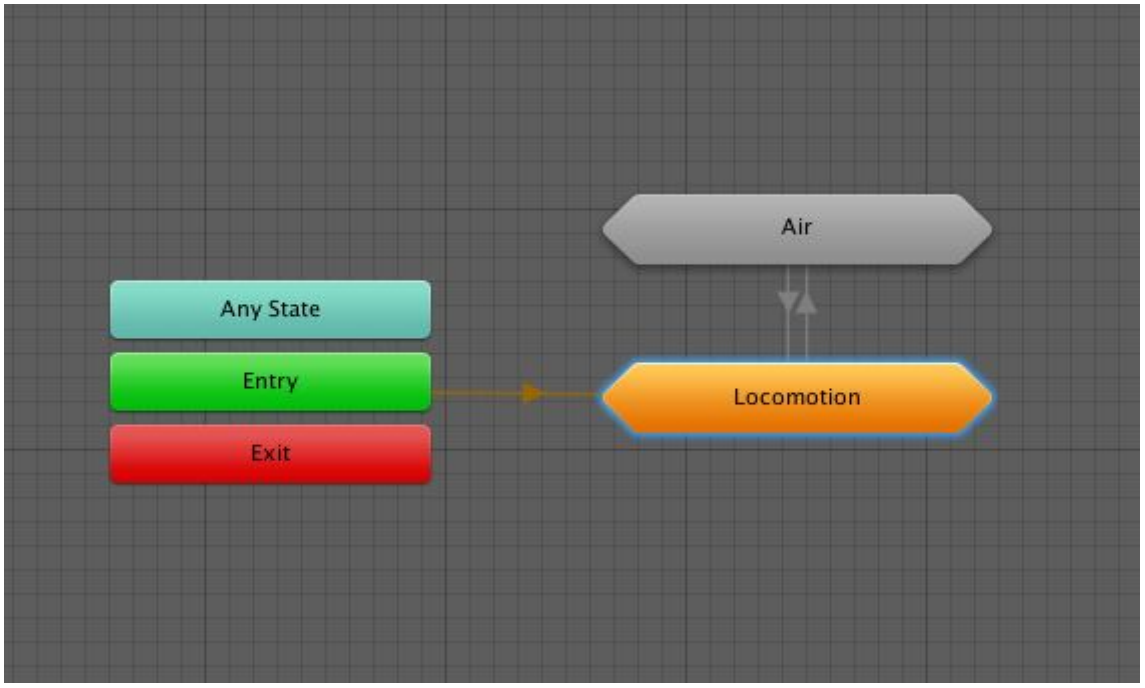
6.2.1 Spawn Area



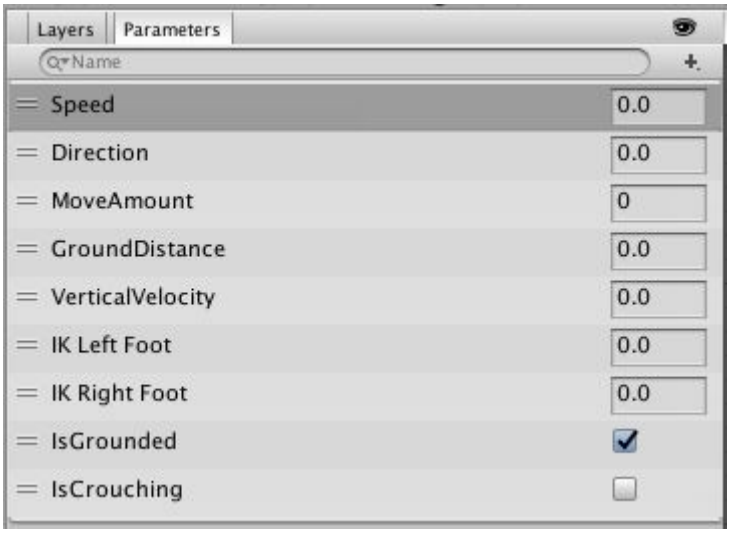
Shape - Area type, Rectangle or Circle.
Character - Character with component implemented IHealth (for Example Character Health).
Rotation - Character rotation when spawning.
Radius - Radius of the circle *(Only if selected circle shape)*.
Lenght - Lenght of the rectangle *(Only if selected rectangle shape)*.
Weight - Weight of the rectangle *(Only if selected rectangle shape)*.
Time - Time before spawn.
Auto Spawn - If True: Auto spawn without spawn key delay. If False: Spawn after pressed specific spawn key.
Spawn Key - Spawn after this key pressed, work only if auto spawn disabled.
Sound - Spawn sound.
Panel - Parent object of the message.
Message - Text component in which the timer will be displayed.

7. Animator

7.1 Base Animator Controller



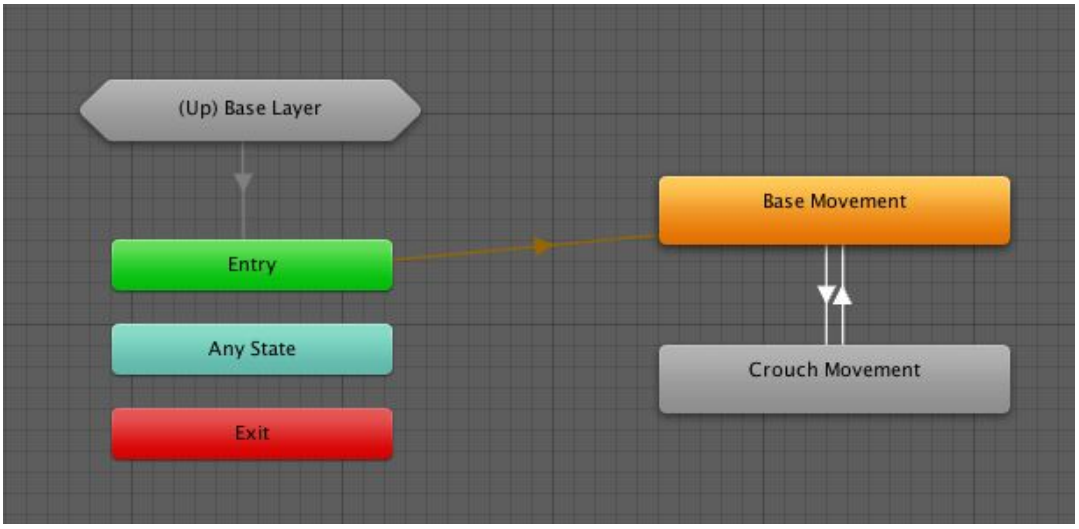
7.1.1 Parameters



Speed - Character move by Y axis (Vertical).
Direction - Character move by X axis (Horizontal).

MoveAmount - Average value between Speed and Direction.
GroundDistance - Distance between character and ground.
VerticalVelocity - Character vertical velocity.
IKLeftFoot - IK left foot weight.
IKRightFoot - IK right foot weight.
IsGrounded - Character is grounded.
IsCrouching - Character is crouching.

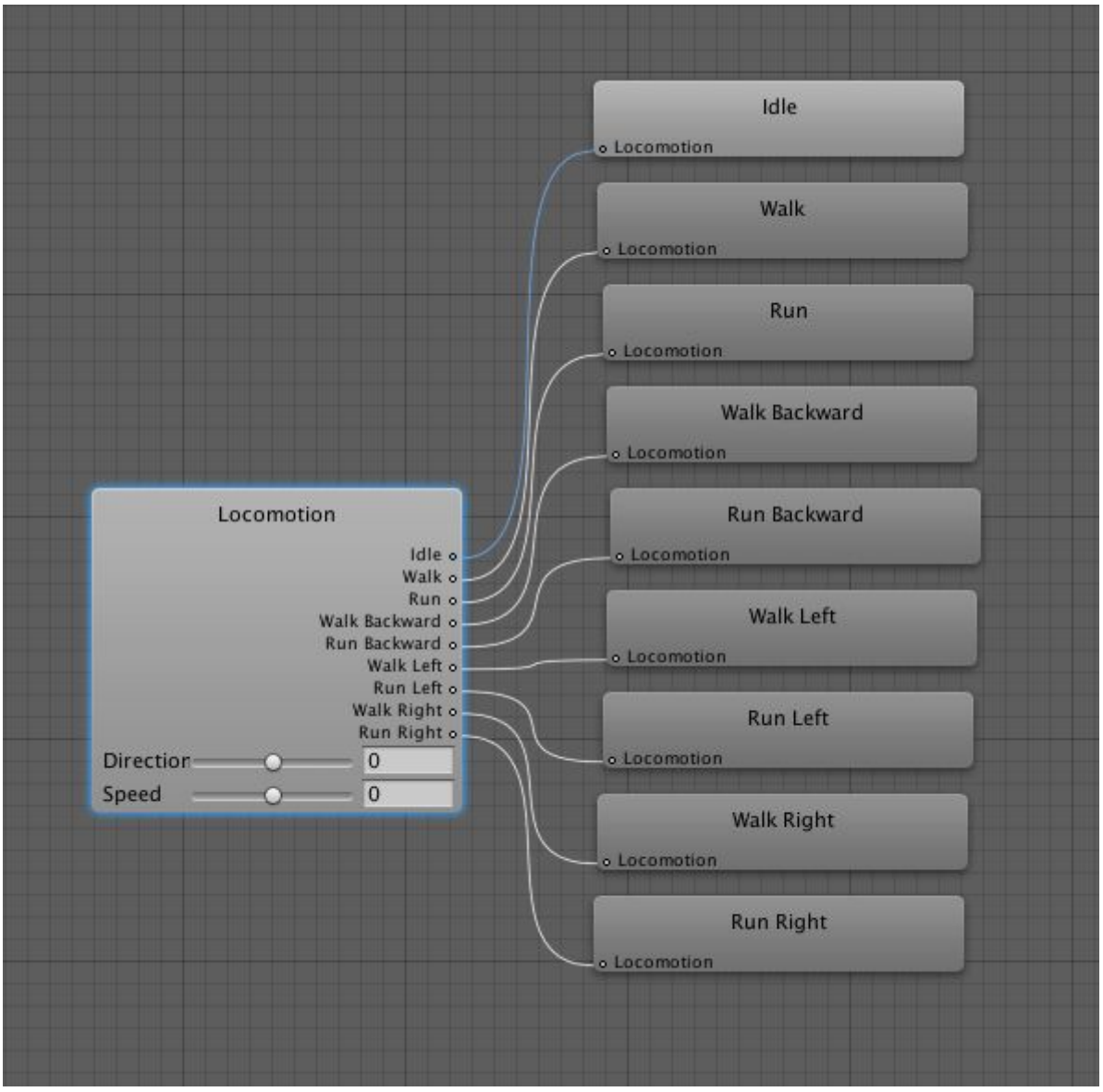
7.1.2 Add your own animations



For add your own movement animation open animator and go to:

Locomotion ➜ Base Movement

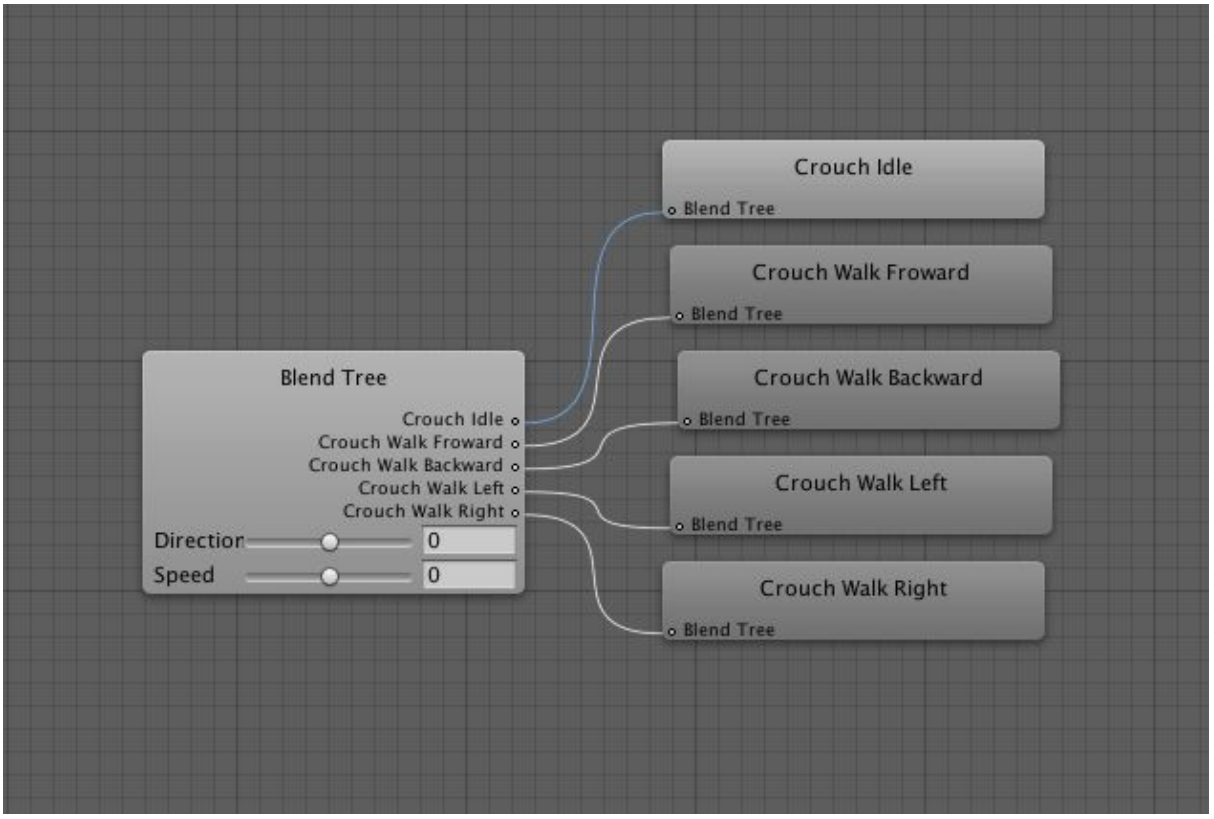
And change animations on your.



For add your own crouch movement animation open animator and go to:

Locomotion ➔ Base Crouch Movement

And change animations on your.



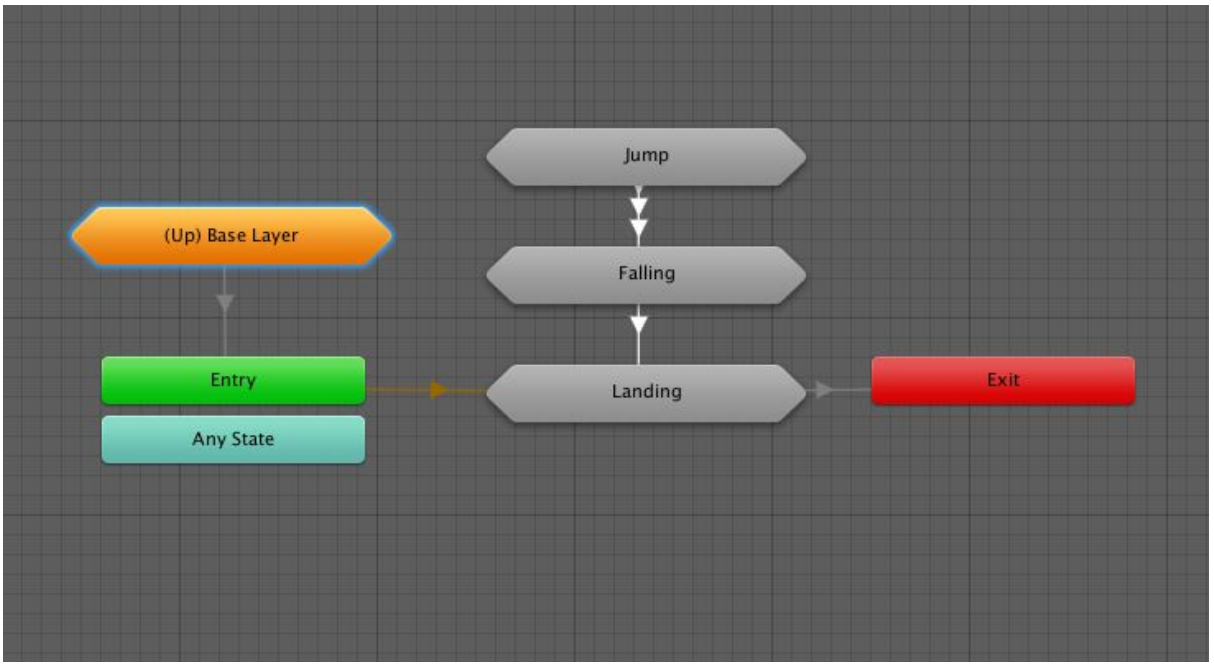
For add your own in air animation open animator and go to:

Air ➜ Jump

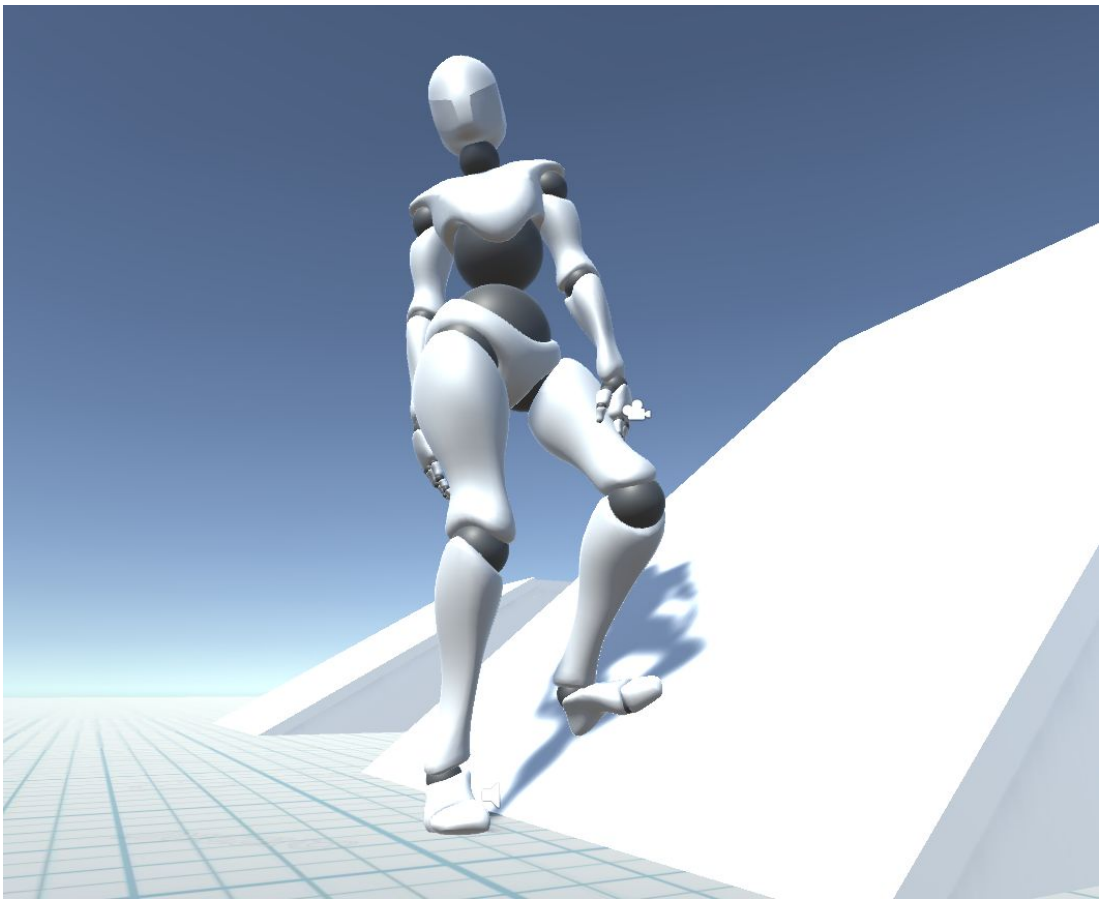
Air ➜ Falling

Air ➜ Landing

And change animations on your.

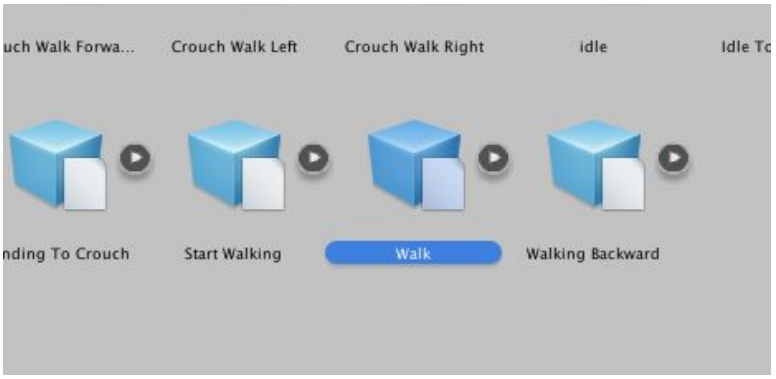


8. Inverse Kinematics (IK)

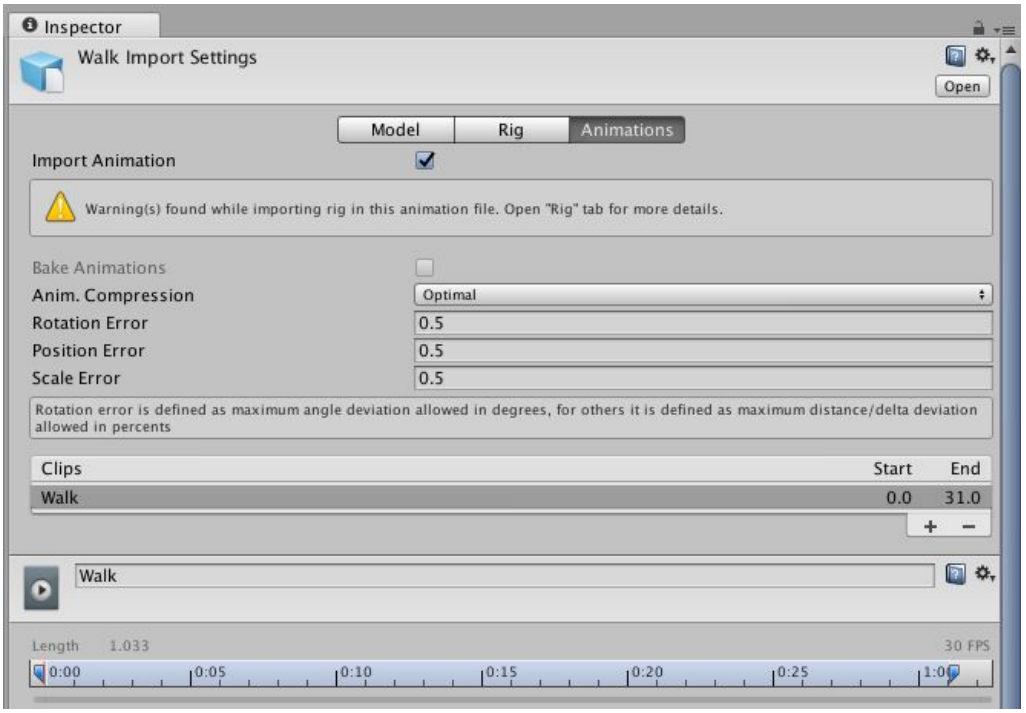


8.1 Add IK for Animation

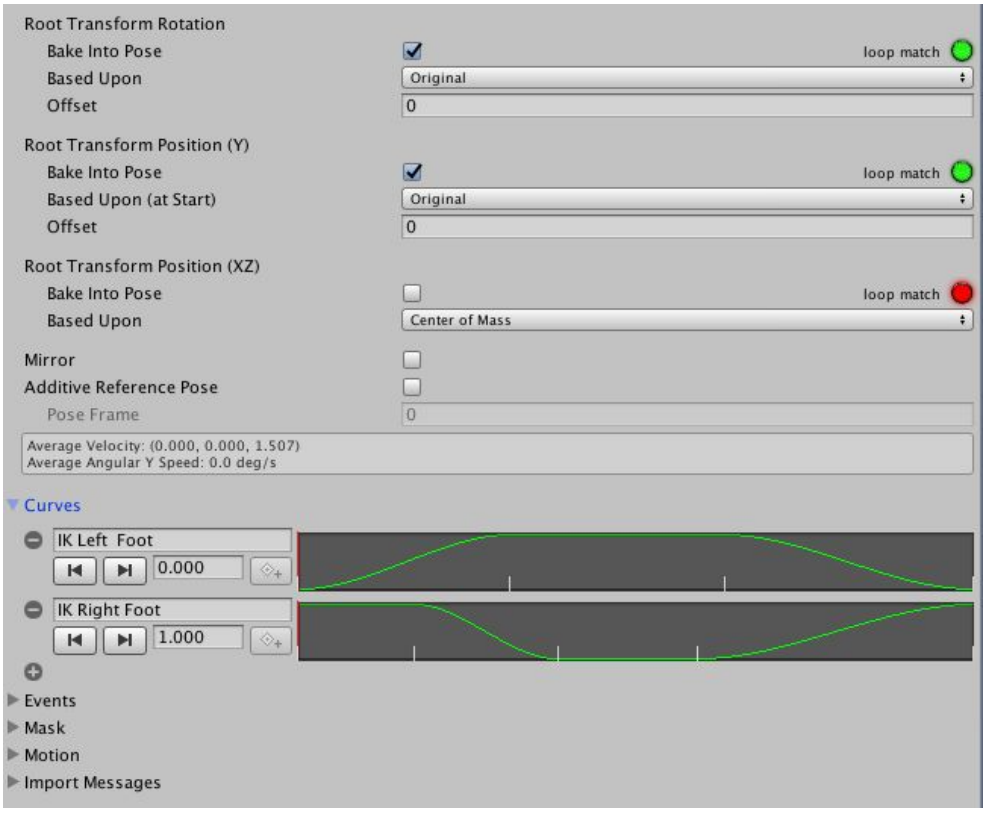
For add IK for animation select your animation



Go to the tab “Animation”



And add two new Curves, name it “IK Left Foot” and “IK right Foot”, for “IK Left Foot” set default value 1.0, for this press on “IK Right Foot” curve and select first curve preset.



Now set-up “IK Left Foot” and “IK Right Foot” curves respectively. Play the animation preview and when the foot is above the ground add new keyframe and set value 0.0 when foot is on the ground set value 1.0 and so on until the end of the animation for both foots.

In the end, you should get a similar schedule. However, there may be differences, it all depends on the animation.