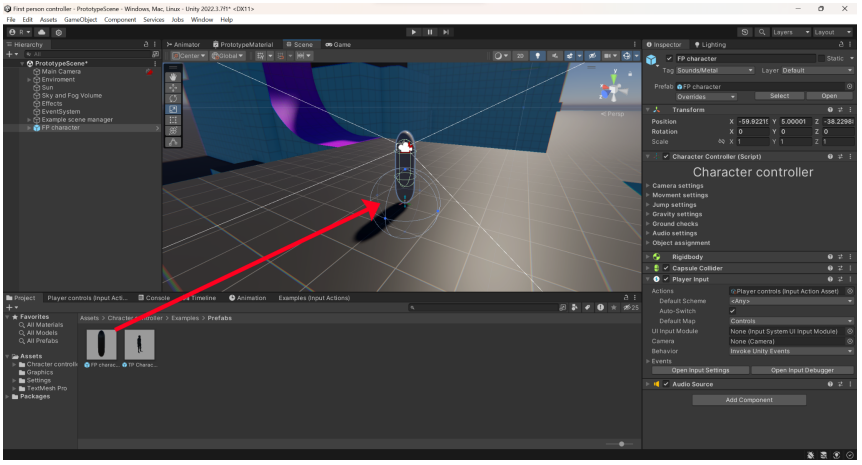
Complete Character Controller - Documentation

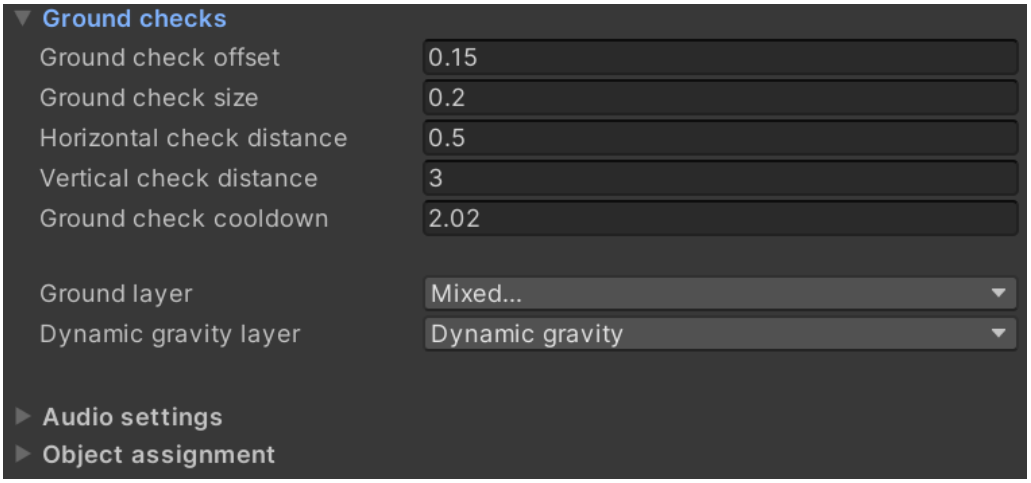
How to use

The easiest way to get started using the asset is to simply navigate to the folder “Assets/Character controller/ Examples/ Prefabs”

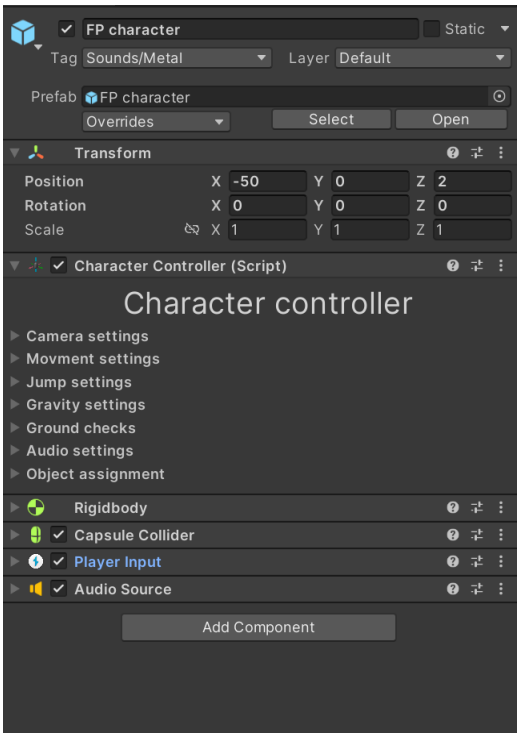
You can then just drag and drop one of the premade templates into the scene.



Be sure to create layers and assign a ground layer so that the player does not fall into the level.



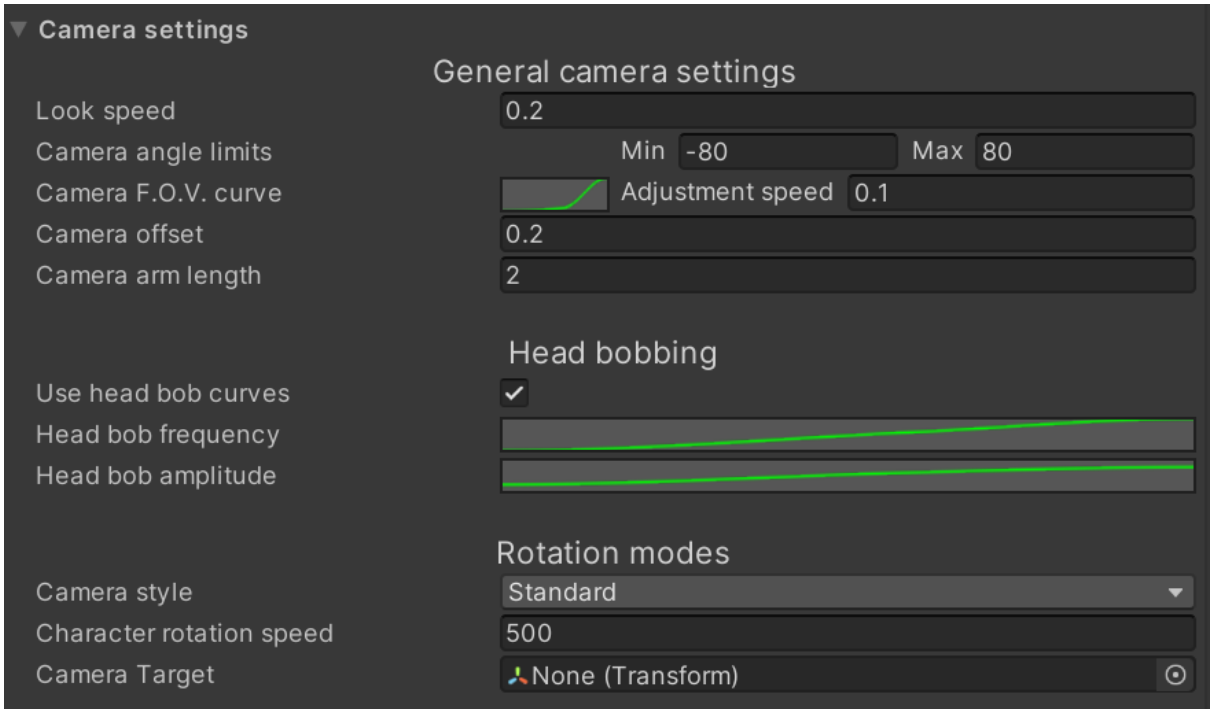
You can then edit the settings in the character controller script to your desire.



Variables

This is a list of every variable that the character controller currently offers, and what they do. Note that within Unity if you hover over any of these variables you will get a tooltip that also says what they do.

Camera settings



Look speed - The speed at which the player's camera rotates.

Camera angle limits - The minimum and maximum angle that the player's camera can look up or down.

Camera F.O.V. curve - The 'field of view' of the player's camera at certain speeds, The 'X' axis being the player speed and the 'Y' axis being the FOV at the point.

Adjustment speed - The speed that the FOV will adjust to the new target FOV for smoother transitions.

Camera offset - This setting adjusts the height of the camera. The height is offset from the current player height.

Camera arm length - The distance the camera will try to maintain away from the player.

Use head bob curves - Whether or not the head bob should use curves as its source for the frequency and amplitude.

Head bob frequency - The speed at which the camera will oscillate. The 'X' axis being the speed of the player and the 'Y' axis being the frequency, unless ‘use head bob curves’ are disabled, Then there is a single value to adjust.

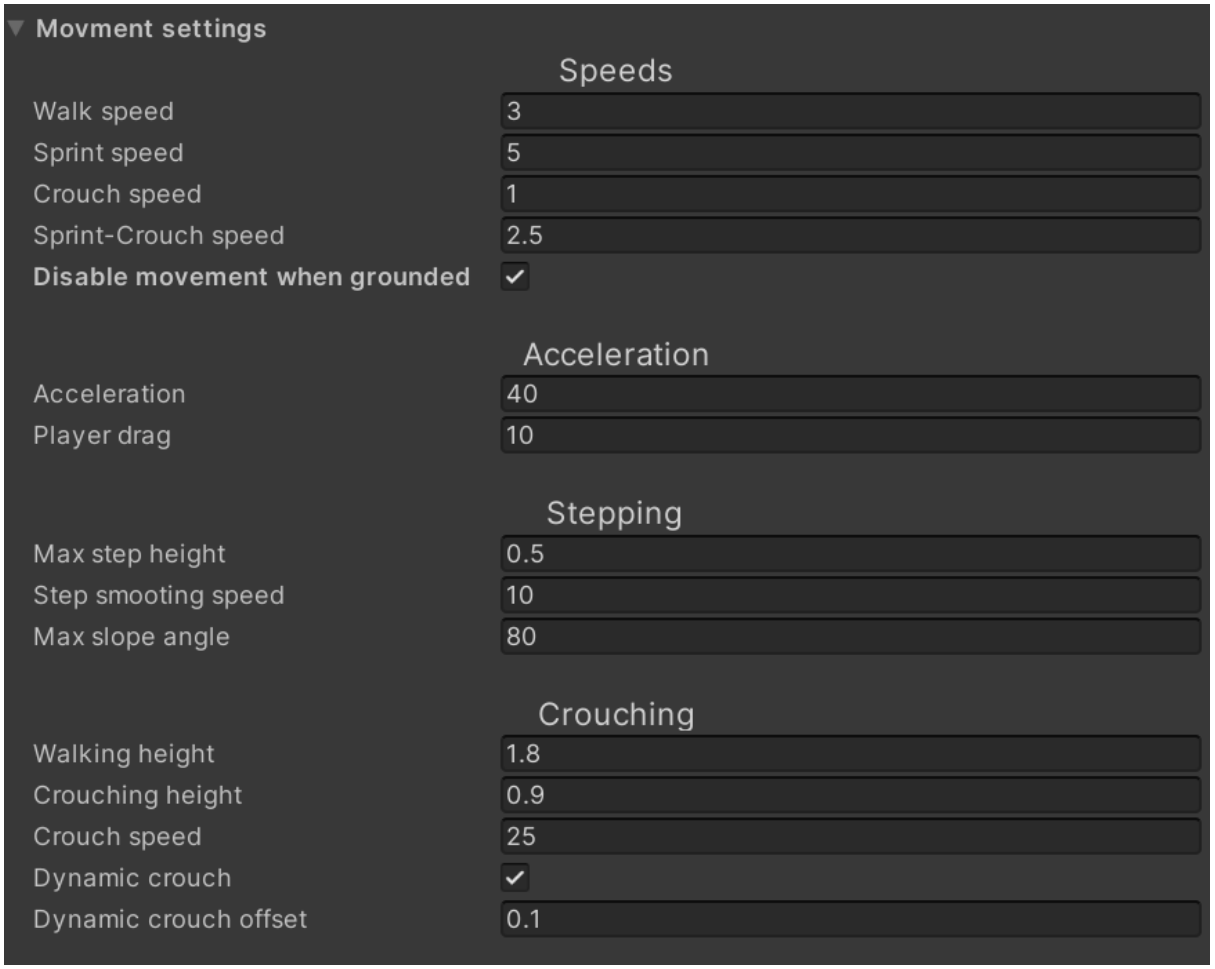
Head bob amplitude - The strength at which the camera will oscillate. The 'X' axis being the speed of the player and the 'Y' axis being the amplitude, unless ‘use head bob curves’ are disabled, Then there is a single value to adjust.

Camera style - When set to standard the player model will rotate to the direction of movement while only using 1 dimension of the animation graph (Forward and idle), and when set to locked the player will maintain the direction they are looking and use the full set of animations.

Character rotation speed - The speed that the player model will rotate to the new rotation.

Camera Target - If left as 'null' then nothing will happen but if there is a selected transform then the camera will remain focused on the object.

Movement settings



Walk speed - The speed the player will walk.

Sprint speed - The speed the player will move while sprinting.

Crouch speed - The speed the player will move while crouching.

Sprint-Crouch speed - The speed the player will move while both sprinting and crouching.

Disable movement when grounded - This setting will disable the velocity based movement when grounded. This is useful if you are using root motion and still want velocity based movement when in the air.

Acceleration - The rate that the player accelerates.

Player drag - The amount of drag the player feels when grounded.

Max step height - The maximum height that a player can step up too.

Step smoothing speed - The speed of the step interpolation.

Max slope angle - The maximum slope detection angle.

Walking height - The height that the player is when walking.

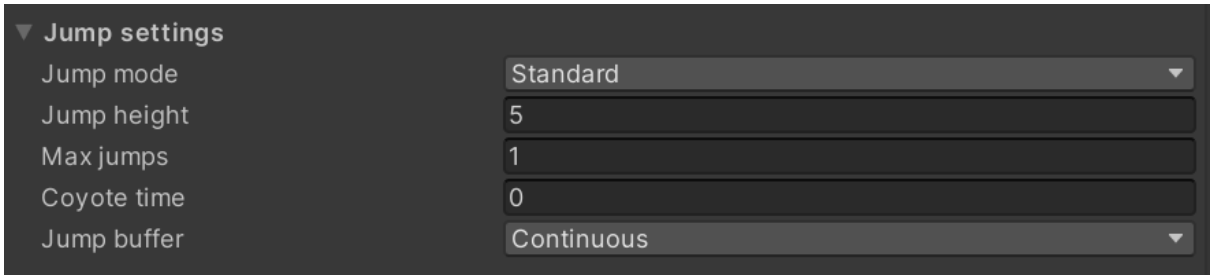
Crouching height - The height that player is when crouched.

Crouch speed - The speed that the player will crouch.

Dynamic crouch - When enabled the player will be able to incrementally stand up as opposed to waiting till the player has the full head room to stand up.

Dynamic crouch offset - The amount of extra clearance given to the players head when using dynamic crouch.

Jump settings



Jump mode - Changes the style of jumping between various modes.

Jump height - This is the height that the player will jump. Note that due to the way the physics system works within unity the player will always reach just under this height.

Jump charge curve - The height that the player will jump too depending on how long they hold the jump button. The 'X' axis represents the time and the 'Y' axis represents the height (Only enabled if jump mode is set to Charge).

Jump power - This is the force applied to the player every frame (Only enabled if jump mode is set to hold).

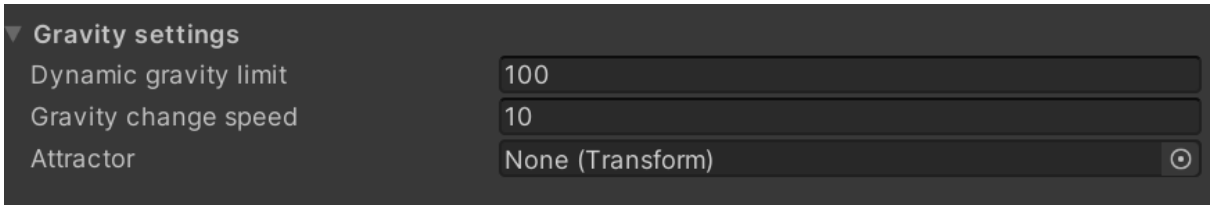
Max jumps - If this number is more than one the player will be able to complete that amount of jumps before landing again. If this value is set to 1 then it will enable 'Coyote time'.

Coyote time - The amount of time after the player falls off a ledge where they can still jump. Note this is only enabled when the 'Max jumps' is set to 1.

Jump buffer - When jump buffer is enabled, the player will be able to press the jump button before landing and it will cache the jump to be used straight away after landing.

Max jump buffer - The maximum amount of time before landing where a jump will be added to the buffer.

Gravity settings

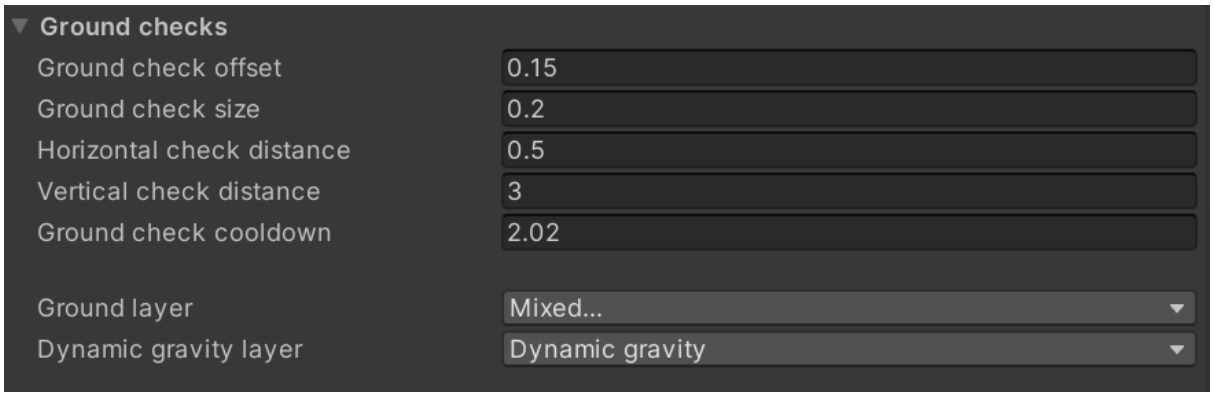


Dynamic gravity limit - The maximum angle in degrees that the player will attempt to adjust their rotation. Note that because of floating point precision error it sometimes may be necessary to give a slight extra margin of a degree or so.

Gravity change speed - The speed that the player will rotate to the new gravity direction.

Attractor - If an attractor is assigned a transform it will change the gravity to face in the direction of the origin of the object. This is useful for things such as planets.

Ground check settings



Ground check offset - The distance off the ground the check will be tested from.

Ground check size - The size of the check performed. The bigger this value, the further away the player will attempt to step up onto something

Horizontal check distance - The distance checked in the horizontal direction. This is used for testing if a player can walk up a wall.

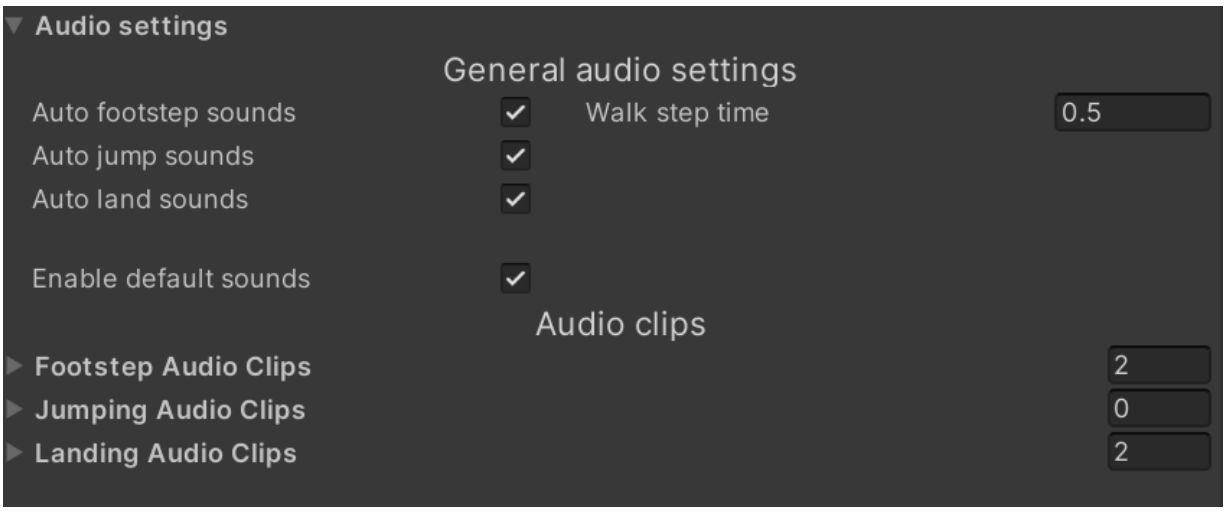
Vertical check distance - The distance checked in the vertical direction. This is used for testing if a player can be realigned to a new dynamic gravity face.

Ground check cooldown - The amount of time after not being grounded that the player will check if it is grounded again. This is used for not immediately setting the player as grounded for the few frames where the player is still in range of the ground checks.

Ground layer - The layer that will be used for testing if the player is standing on something.

Dynamic gravity layer - The layer that will be used for testing if the player is touching a dynamic gravity surface.

Audio settings



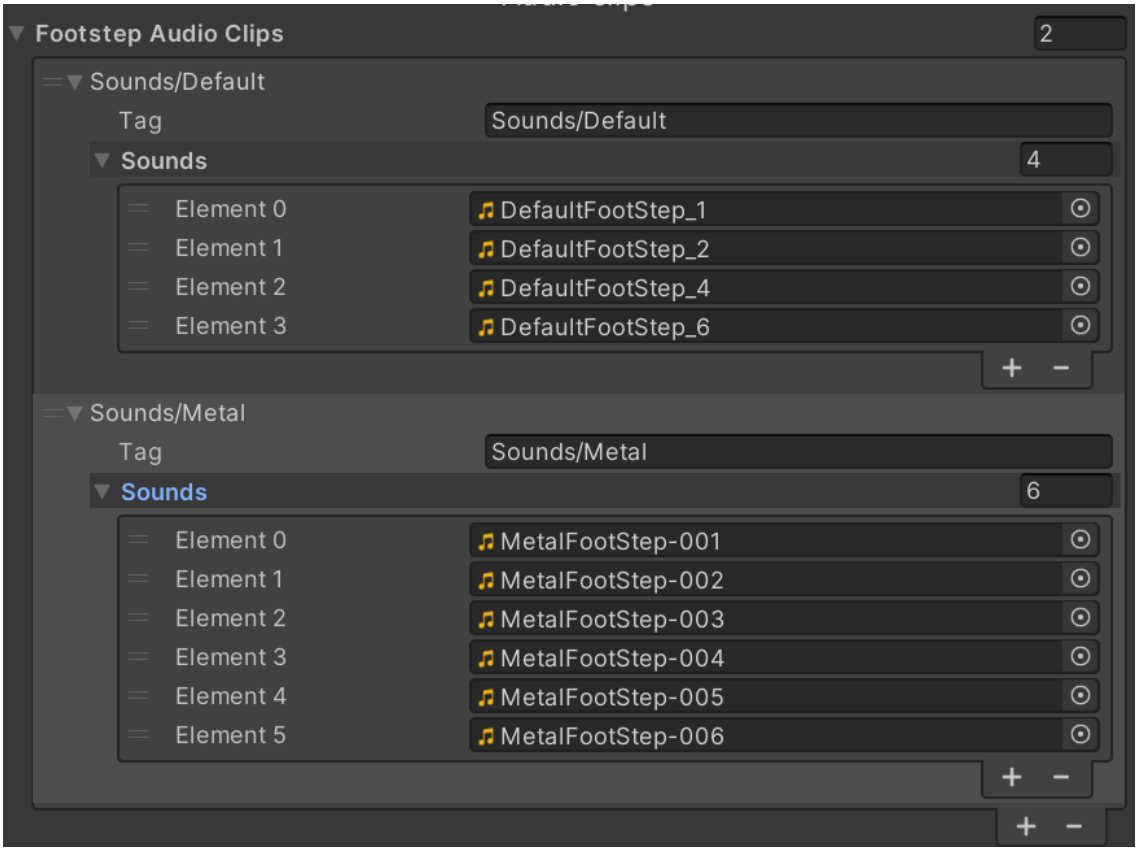
Auto footstep sounds - If enabled the sound manager will attempt to play a footstep sound every x seconds when walking. If you would instead like to control sounds using animation events leave this setting disabled.

Walk step time - The amount of time between each sound footstep at walking speed. The frequency on the footsteps will increase as the player's speed increases. This setting is only enabled if “Auto footstep sounds” is enabled.

Auto jump sounds - If enabled the sound manager will attempt to play a jump sound when jumping. If you would instead like to control sounds using animation events leave this setting disabled.

Auto land sounds - If enabled the sound manager will attempt to play a footstep landing sound when the player hits the ground. If you would instead like to control sounds using animation events leave this setting disabled.

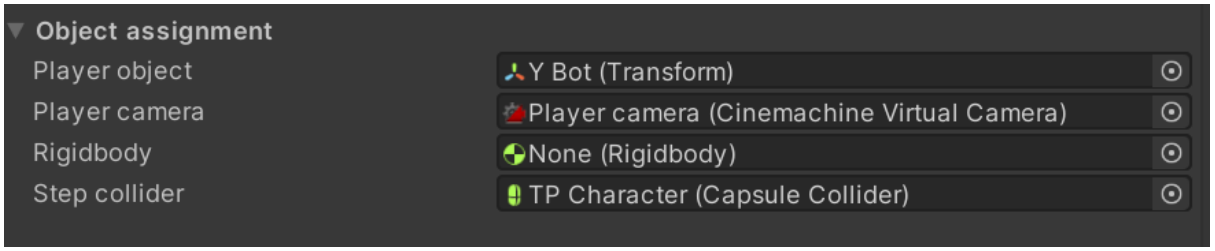
Enable default sounds - If the player is standing on an object with no tag match, The first set of sounds in the list will be used.



Tag - The tag that the ground check will be looking out for to determine what material the player is standing on.

Sounds - A list of sounds that will be randomly picked from and played.

Object assignment



Player object - The GameObject will be used for animations and directional rotation if enabled.

Player camera - A reference to the player's camera. This must be a Cinemachine camera.

Rigidbody - A reference to the players Rigidbody.

Step collider - A reference to the capsule collider used for detecting stepping.