Character Controller Setup Tool Documentation

This tool simplifies the process of setting up a player controller in Unity. With a single click, it automatically adds the necessary components (CharacterController, AdvancedPlayerController script, Animator) to your player model, creates an Animator Controller, and sets up a basic camera system. The setup also includes a ground check system and adjustable parameters for smooth movement, jumping, and camera follow.

# 1. Setup Process

To begin, ensure your player character model is selected in the Unity hierarchy. Follow these steps:

1. \*\*Select Your Player Model\*\*

- Ensure your player model is a 3D GameObject in the hierarchy.

2. \*\*Run the Setup Tool\*\*

- Navigate to \*\*Tools > Character Setup > Setup Player Controller\*\* in the Unity editor.

- This will automatically add the necessary components to your selected player model.

3. \*\*What Happens Behind the Scenes\*\*

- \*\*CharacterController\*\* component is added (if not already present).

- \*\*AdvancedPlayerController\*\* script is added to handle movement, jumping, and animation.

- \*\*Animator\*\* component is added (if not already present).

- A new \*\*AnimatorController\*\* is created and assigned.

- A \*\*ground check\*\* system is implemented via an empty GameObject as a child of your player model.

- A \*\*ThirdPersonCamera\*\* is set up to follow the player from a fixed distance and height.

## 2. Customize the Ground Check

To ensure proper ground detection, create an empty GameObject under your player’s model, positioned at the feet or mid-section.

1. Create an empty GameObject under your player model.

2. Name it `GroundCheckPoint`.

3. Assign this empty GameObject to the \*\*GroundCheckPoint\*\* field in the \*\*AdvancedPlayerController\*\* script.

## 3. Configure Layers

For proper collision handling and grounded checks, create a new layer (e.g., Ground) and assign all ground objects to this layer.

1. Create a new \*\*Layer\*\* (e.g., `Ground`).

2. Assign all ground objects to this layer.

3. Select the \*\*Ground Mask\*\* field in the \*\*AdvancedPlayerController\*\* and assign your newly created layer.

## 4. Adjust CharacterController

Adjust the `Height`, `Radius`, and `Center` values in the \*\*CharacterController\*\* component to match the size of your character.

# 1. Setting Up Animation States

The tool will automatically add basic animation states (Idle, Walk, Run, Jump, Fall) to the Animator Controller. Here’s how you can modify or add new animations:

1. \*\*Add New Animation Clips\*\*:

- Import your animation clips into the Unity project.

- Select the \*\*Animator Controller\*\* created by the tool and open the Animator window.

- Drag and drop your animation clips into the Animator window.

2. \*\*Create New Animation States\*\*:

- In the Animator window, right-click to create a new \*\*State\*\*.

- Link the new animation clip to this state.

3. \*\*Add Transitions\*\*:

- Right-click on an animation state (e.g., `Idle`) and select \*\*Make Transition\*\* to create a flow.

- Set the transition conditions, such as parameters for speed or jump status.

## 2. Editing Existing States

To edit the existing animation states (Idle, Walk, Run, etc.), follow these steps:

1. Open the \*\*Animator Controller\*\*.

2. Right-click on an existing state (e.g., `Run`), and you can modify transitions or change the animation clip.

3. To modify parameters, click on the \*\*Parameters\*\* tab in the Animator window to edit conditions.

# 1. Adding New Features

You can extend the \*\*AdvancedPlayerController\*\* script to add additional features such as Crouch, Swimming, and Climbing.

For example, to add a crouch system, modify the script with a `HandleCrouch()` function and adjust player height.

# 1. Adjust Camera Settings

The \*\*ThirdPersonCamera\*\* script is automatically assigned to the camera. You can modify the following properties:

1. \*\*Distance\*\*: Adjust the distance between the camera and the player.

2. \*\*Height\*\*: Change the height at which the camera follows the player.

3. \*\*Rotation Speed\*\*: Modify the speed of camera rotation based on mouse input.

4. \*\*Vertical Clamp\*\*: Set the minimum and maximum vertical angles for camera rotation.