

## Unity file Source link

<https://drive.google.com/file/d/12hlnPckbSYxuqdbv5QvT8blxPkC1gB10/view?usp=sharing>

# Tutorial Video Links

Tutorial 1 - Player movement
<a href="https://drive.google.com/file/d/14CWsuC0-56QejDXY2ULMtsagaqnym_Up/view?usp=sharing">https://drive.google.com/file/d/14CWsuC0-56QejDXY2ULMtsagaqnym_Up/view?usp=sharing</a>
Tutorial 2 - Third-person camera
<a href="https://drive.google.com/file/d/1GGWpAKAAolbDB4opuWV0UFeUzpv_oWal/view?usp=sharing">https://drive.google.com/file/d/1GGWpAKAAolbDB4opuWV0UFeUzpv_oWal/view?usp=sharing</a>
Tutorial 3 - Player animations
<a href="https://drive.google.com/file/d/1d9hKwTiKI94PwSxhsucElgxq4piWP8k-/view?usp=sharing">https://drive.google.com/file/d/1d9hKwTiKI94PwSxhsucElgxq4piWP8k-/view?usp=sharing</a>
Tutorial 4 - Gravity simulation, jump mechanic & animations
<a href="https://drive.google.com/file/d/1JhkK6pJTktxFww01Cv4JW88-kmTThGK2/view?usp=sharing">https://drive.google.com/file/d/1JhkK6pJTktxFww01Cv4JW88-kmTThGK2/view?usp=sharing</a>

# Learning Journal

10/10/2023 - <u>Player Movement</u>
<ul style="list-style-type: none"><li>- I created a player movement script using a character controller component, but when I used my horizontal and vertical inputs (WASD) my player was not facing the direction it was travelling in.</li><li>- To fix this, I created a reference to a targetAngle and equaled it to the MathF.Atan2 function and created a reference to my player's x and y directions.</li><li>- This fixed the issue of the player not facing the direction it was travelling in, but now my player instantly snaps into the direction it's facing.</li><li>- To fix this, I created a float and called it "turnSmoothTime" and another float within my "if statement" called "angle". I equaled my "angle" float to MathF.SmoothDampAngle and the input, the current angle and referenced to a variable that can hold the current smooth velocity.</li><li>- The variable that i created that can hold this, i named, "turnSmoothVelocity", i then input the smooth time into the "if statement" and my player was now facing the direction it was travelling in.</li></ul>
10/10/2023 - <u>Player third-person camera</u>
<ul style="list-style-type: none"><li>- I am using the cinemachine unity package to create a third-person camera for my player, but my player is now not travelling in the direction that my camera is facing.</li><li>- To fix this, i had to coordinate my camera with my player's direction, I first created a reference to a game object and named it "camera", and then calculated the target angle in my "If statement", then i added "camera.eulerAngles.y" into my script, and then i added the rotation of "camera" to the y.axis on top of "angle", this made it so my player would face the direction corresponding to the "camera".</li><li>- However, my player still does not move in the right direction, so i had to create a "Vector3" called "moveDirection" and qual it to "QuaternionEuler(0, target angle, 0)", but currently, this will give me a rotation, so to turn this into a direction i had to multiply the quaternion with a "Vector3.forward", this gave me the direction that needed to make my player move whilst facing away from the camera.</li><li>- Finally, I changed my previous variable called "direction" with my new variable "moveDirection" and then normalised it, this now makes my player move and face in the right direction.</li></ul>

16/10/2023 - Player animations

- I had quite the issue with my player animations, I have an idle and walking animation, and I was trying to figure out how to use a float parameter in the animator window that i called "speed", i put this parameter as the condition between the transitions from idle to walking and vise-versa, the problem was I didn't know how to set this parameter to my player's speed, i wanted it to transition it's animation's depending on the player's speed.
- Finally, I found a simple and easy solution, my previous movement script that used the character controller had a statement that determined if the player was moving, and i could take the speed from it and use it.
- So first, I created a float called "velocity" and set it to "0.0f" i will use this to update my "speed" float, i then used my "direction" Vector3 and checked if it was not equal to 0 in an "if statement" and then set the "velocity" to my "speed" float, else, if, it sets the velocity back to "0.0f" I can then set the animator "speed" parameter, and use simpleMove on my controller, normalise my "direction" and multiply it by "velocity" my player now has working animation transitions.