Basic First-Person Movement Tutorial

New Scene

Once in a new scene you first want to create a new terrain object in the hierarchy on the left by right clicking > 3D Object > Terrain– this is important as it will prevent the player character from falling over.

Next create a capsule object by once again right clicking the hierarchy and selecting 3D Object > Capsule. Rename the object Player Object. Then position the main camera where you want the player's head to be. Drop the camera object in the player object in the hierarchy which should turn the camera into a child object of the capsule. Then, create a new parent object called Player and drop the Player Object in it.

Script

The first script we will write is the wasd movement. First create a new script by going to the project window, right clicking and selecting Create > C# Script. Then, write down this:

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using UnityEngine.EventSystems;

1 asset usage
public class wasdMovement : MonoBehaviour
{
    CharacterController characterController;
    public float MovementSpeed = 1;  "10"
    public float Gravity = 9.81f;  Unchanged
    //float velocity = 0;
    private Vector3 moveDirection = Vector3.zero;
    public Transform cameraTransform;  Main Camera (Transform)
    // Start is called before the first frame update
    Event function
    void Start()
    {

    }

    // Update is called once per frame
    Event function
    void Update()
    {
        characterController = GetComponent<CharacterController>();
        if (characterController.isGrounded)
        {
            moveDirection = new Vector3( x: Input.GetAxis("Horizontal"),  y: 0,  z: Input.GetAxis("Vertical"));
            moveDirection = cameraTransform.TransformDirection(moveDirection);
            moveDirection *= MovementSpeed;
        }

        moveDirection.y -= Gravity * Time.deltaTime;
        characterController.Move( motion: moveDirection * Time.deltaTime);

    }
}
```

Make sure you add ’using UnityEngine.EventSystem;’

Then create another script which will let you control the direction of the movement with mouse controls. The write down this:

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

1 asset usage
public class PlayerMovement : MonoBehaviour
{
    public float horizontalSpeed = 1f;  "10"
    public float verticalSpeed = 1f;  "-10"
    float xRotation = 0.0f;
    float yRotation = 0.0f;
    Camera cam;
    // Start is called before the first frame update
    Event function
    void Start()
    {
        cam = Camera.main;
    }

    // Update is called once per frame
    Event function
    void Update()
    {
        float mouseX = Input.GetAxis("Mouse X") * horizontalSpeed;
        float mouseY = Input.GetAxis("Mouse Y") * verticalSpeed;

        yRotation += mouseX;
        xRotation += mouseY;
        xRotation = Mathf.Clamp( value: xRotation,  min: -90,  max: 90);

        cam.transform.eulerAngles = new Vector3 (xRotation, yRotation,  z: 0.0f);
    }
}
```

Inspector

Then, add the scripts to the game object titled Player in the hierarchy. Both scripts should then appear in the inspector when Player is selected.

All that's left is to input values and the camera game object into the inspector, which should look like this:


Player Movement (Script)
Script
PlayerMovement
Horizontal Speed
10
Vertical Speed
-10
Wasd Movement (Script)
Script
wasdMovement
Movement Speed
10
Gravity
9.81
Camera Transform
Main Camera (Transform)