TUTORIAL- CAMERA FOLLOWING AN OBJECT’S MOVEMENT USING UNITY

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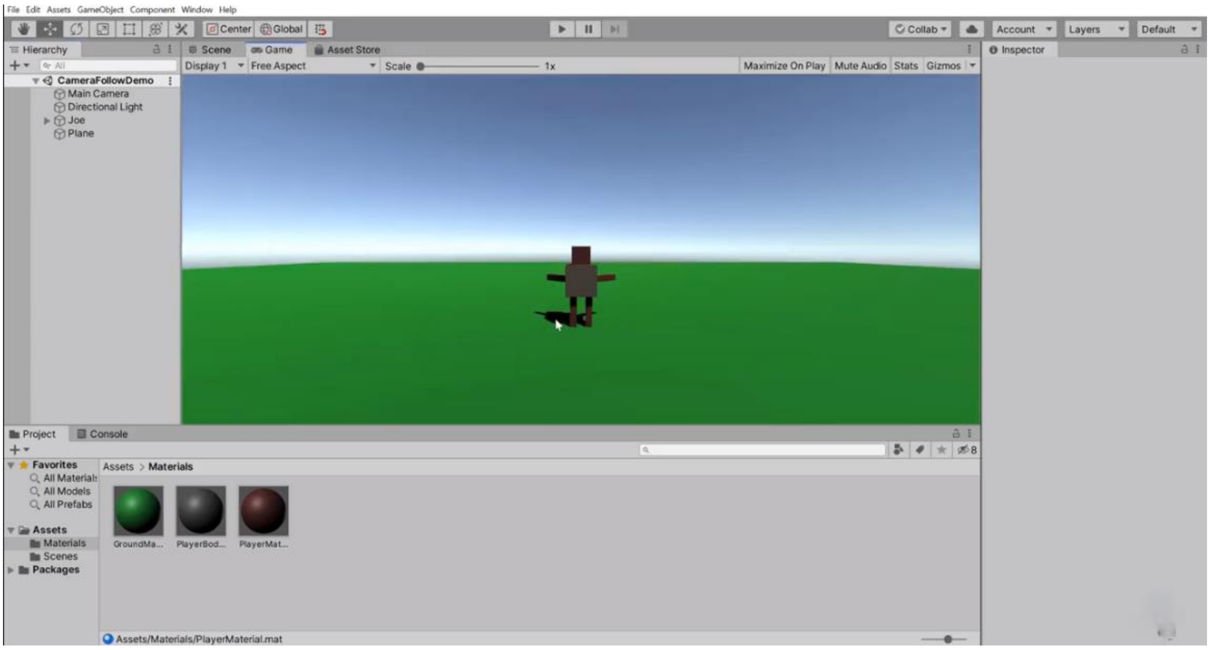
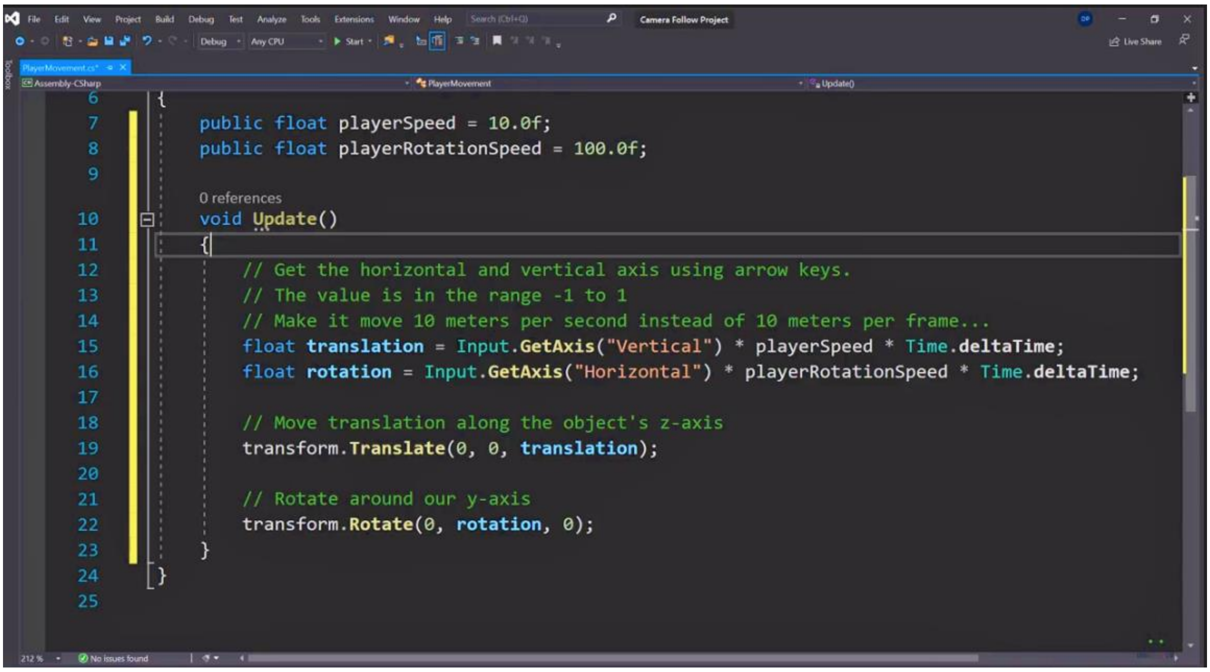
Creating an object and Plane surface.

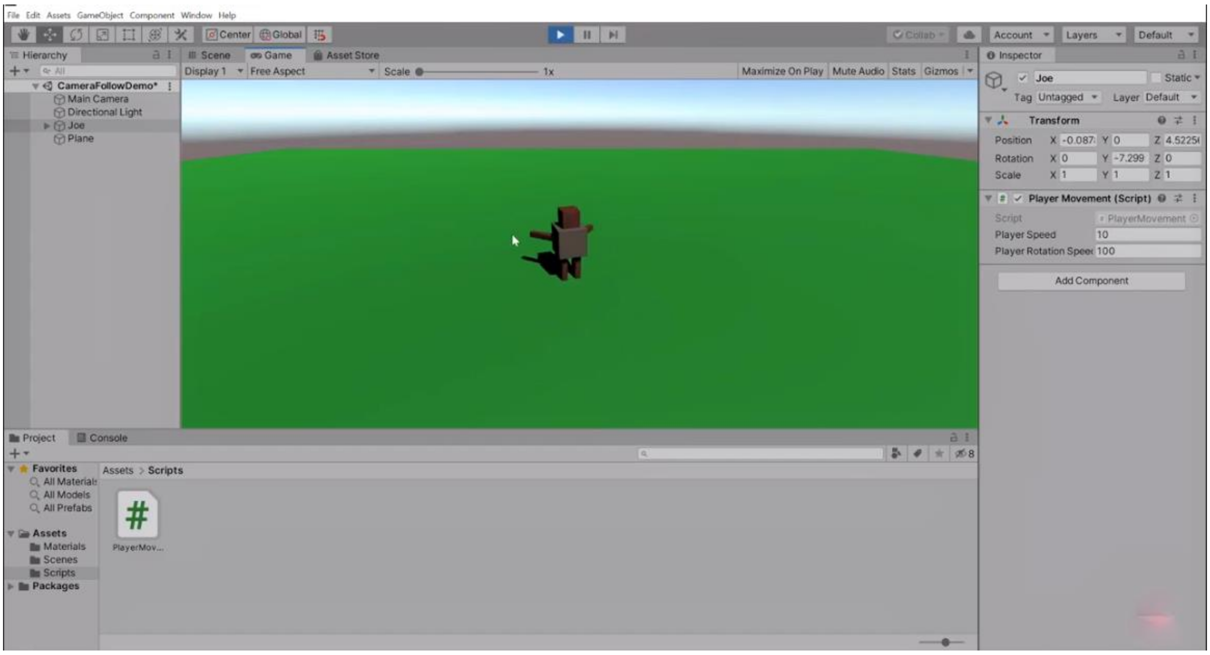


Codes for moving the object on the Plane created



```
{
    public float playerSpeed = 10.0f;
    public float playerRotationSpeed = 100.0f;

    void Update()
    {
        // Get the horizontal and vertical axis using arrow keys.
        // The value is in the range -1 to 1
        // Make it move 10 meters per second instead of 10 meters per frame...
        float translation = Input.GetAxis("Vertical") * playerSpeed * Time.deltaTime;
        float rotation = Input.GetAxis("Horizontal") * playerRotationSpeed * Time.deltaTime;

        // Move translation along the object's z-axis
        transform.Translate(0, 0, translation);

        // Rotate around our y-axis
        transform.Rotate(0, rotation, 0);
    }
}
```

Testing the object movement by looking at the X, Y, Z axis as the initial were (0,0,0)



Joe

Tag Untagged Layer Default

Position X -0.087 Y 0 Z 4.5225

Rotation X 0 Y -7.299 Z 0

Scale X 1 Y 1 Z 1

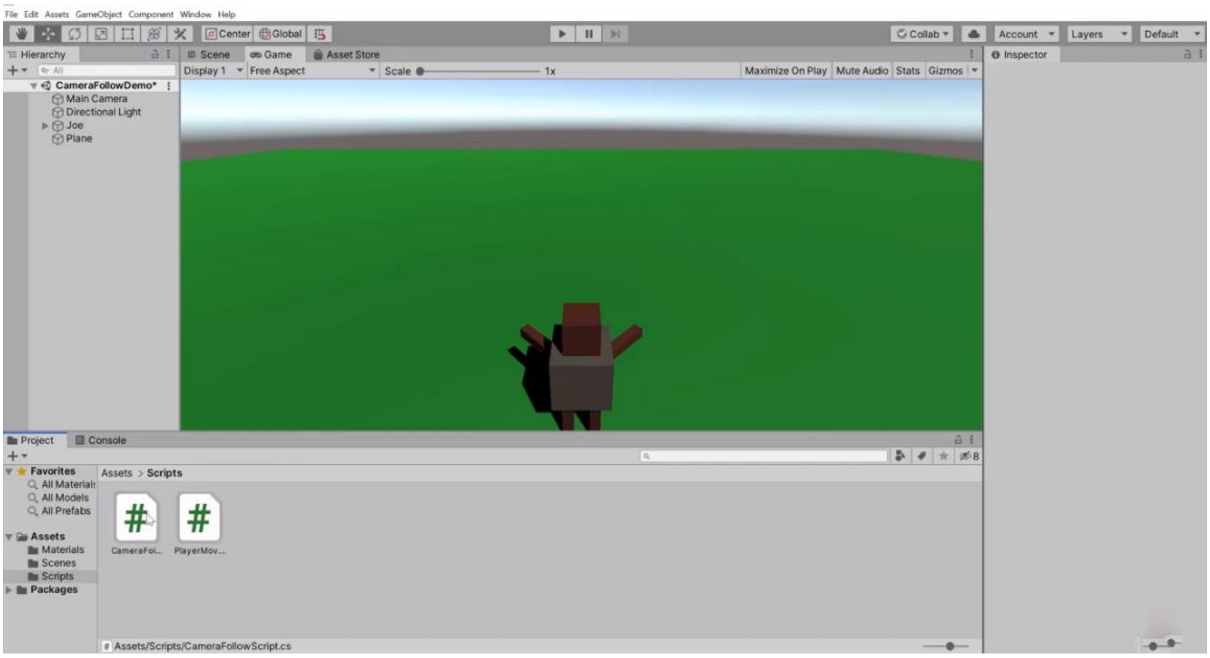
Player Movement (Script)

Script PlayerMovement

Player Speed 10

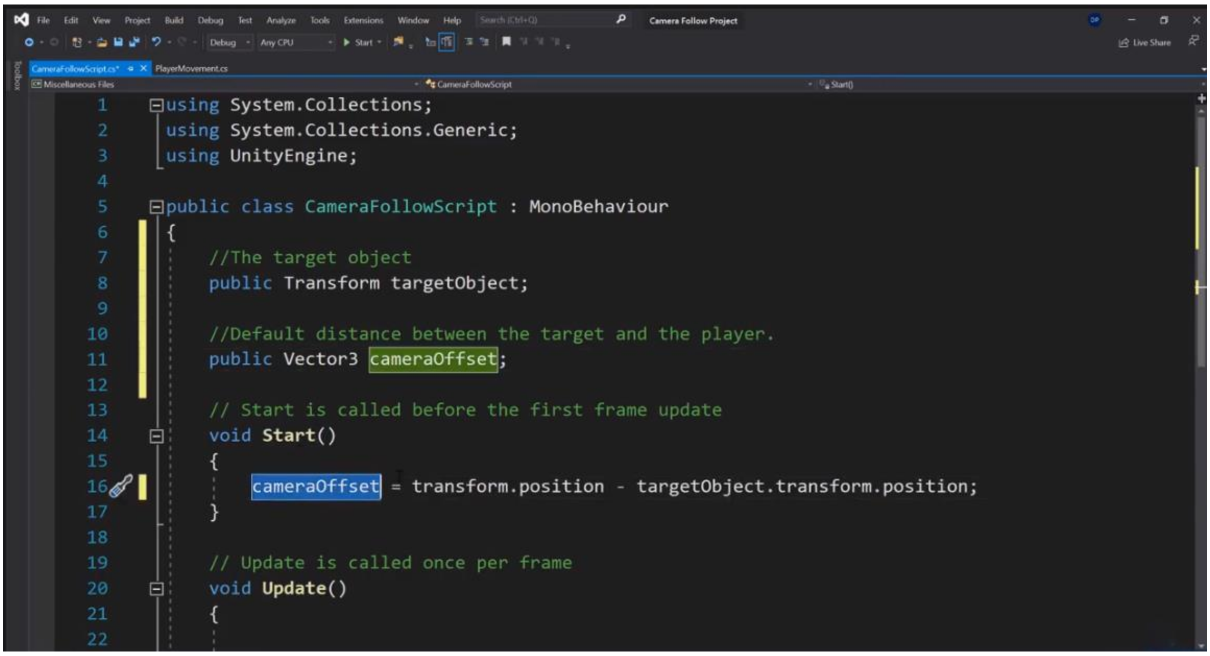
Player Rotation Speed 100

Adding a script for Camera

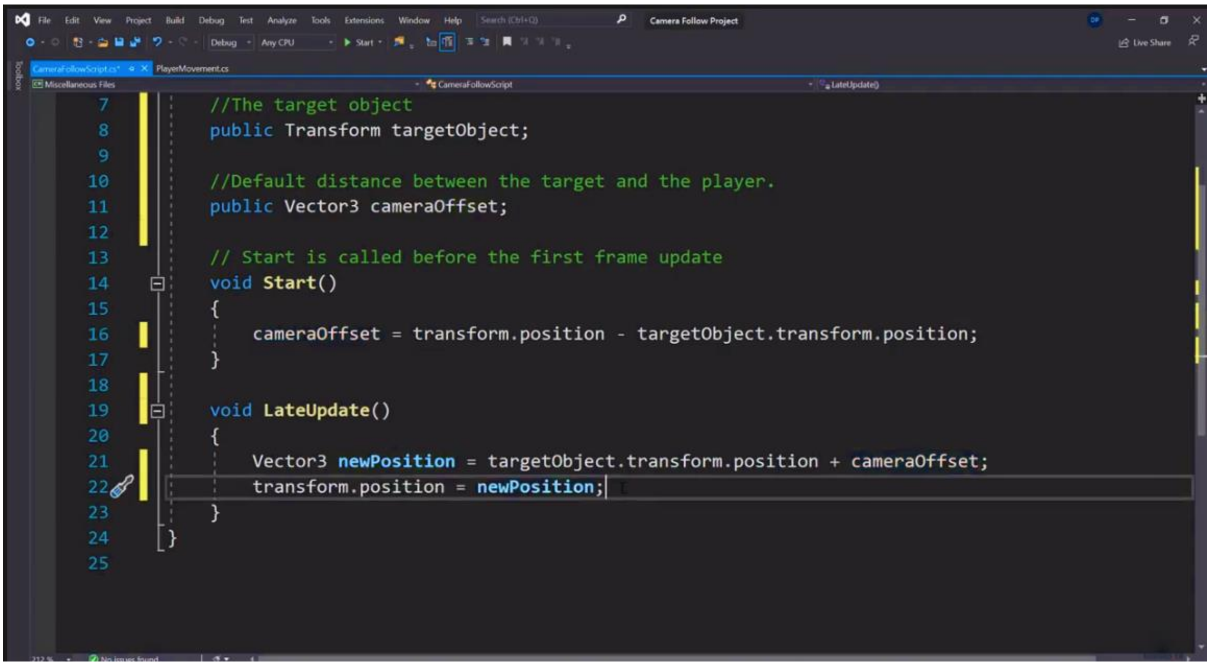


Assets/Scripts/CameraFollowScript.cs

Script for camera

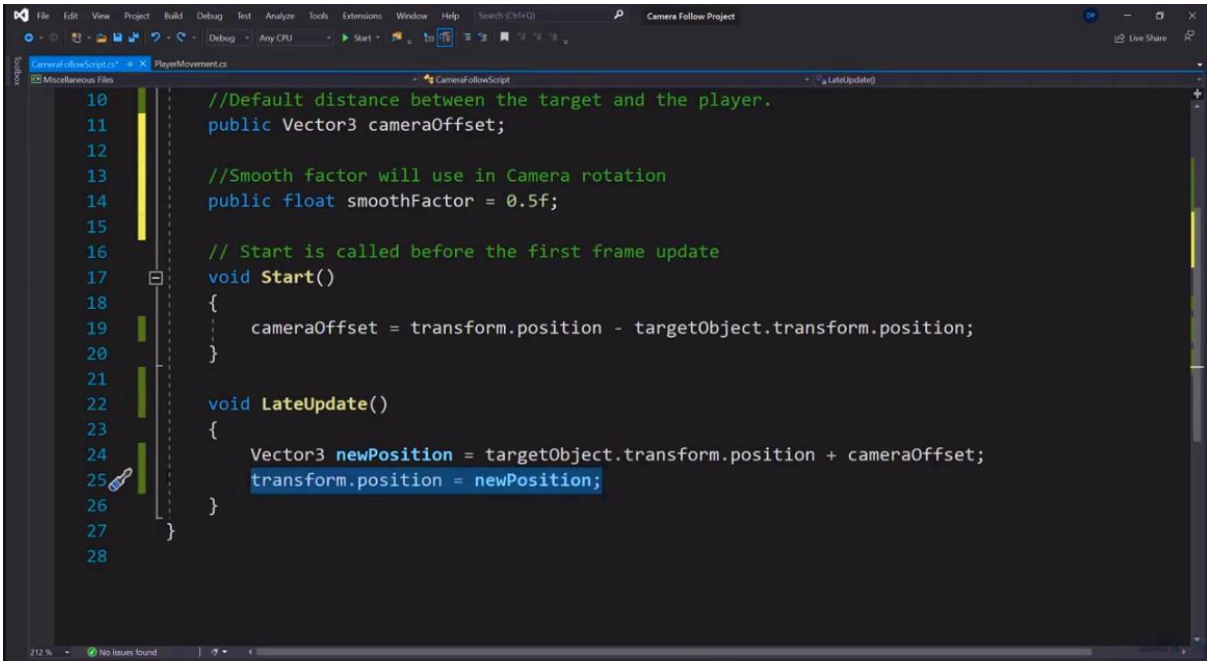


```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class CameraFollowScript : MonoBehaviour
{
    //The target object
    public Transform targetObject;

    //Default distance between the target and the player.
    public Vector3 cameraOffset;

    // Start is called before the first frame update
    void Start()
    {
        cameraOffset = transform.position - targetObject.transform.position;
    }

    // Update is called once per frame
    void Update()
    {
```



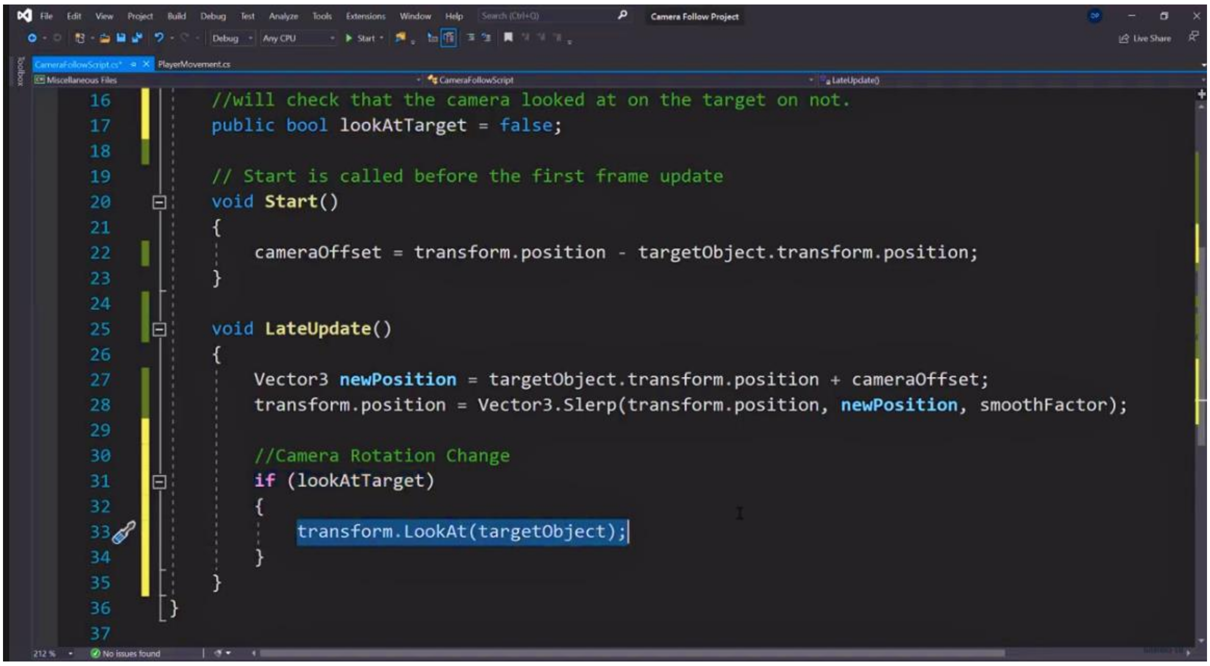
```
    //The target object
    public Transform targetObject;

    //Default distance between the target and the player.
    public Vector3 cameraOffset;

    // Start is called before the first frame update
    void Start()
    {
        cameraOffset = transform.position - targetObject.transform.position;
    }

    void LateUpdate()
    {
        Vector3 newPosition = targetObject.transform.position + cameraOffset;
        transform.position = newPosition;
    }
}

```

Adding a smooth factor



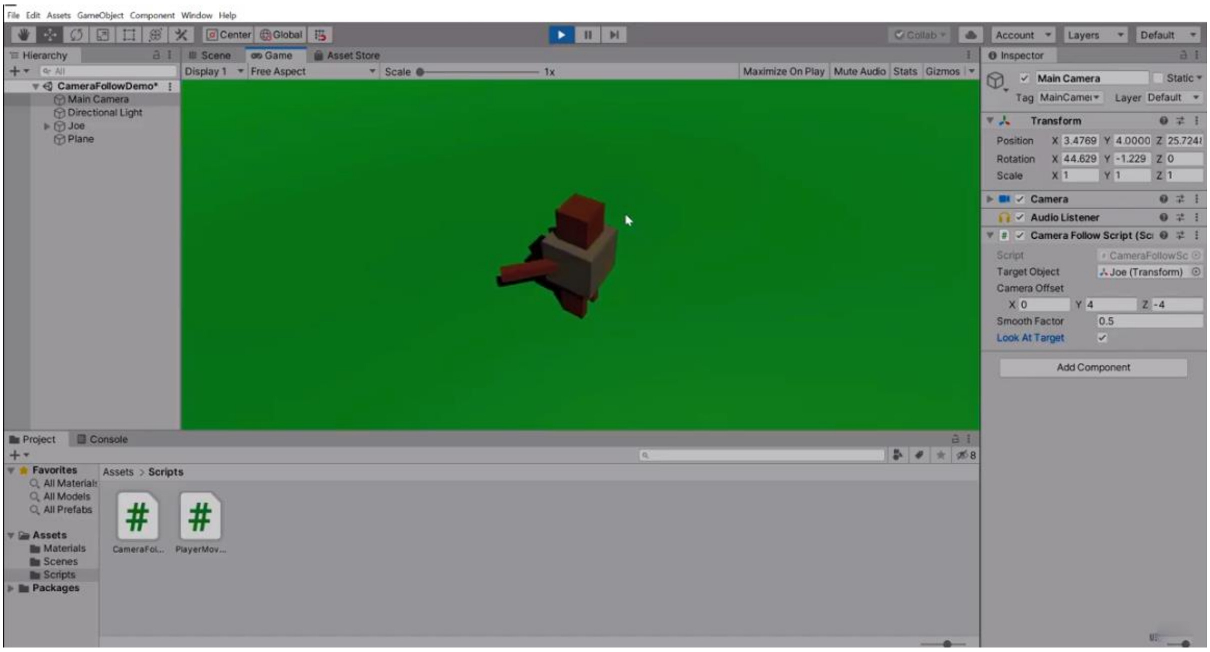
```
    //Default distance between the target and the player.
    public Vector3 cameraOffset;

    //Smooth factor will use in Camera rotation
    public float smoothFactor = 0.5f;

    // Start is called before the first frame update
    void Start()
    {
        cameraOffset = transform.position - targetObject.transform.position;
    }

    void LateUpdate()
    {
        Vector3 newPosition = targetObject.transform.position + cameraOffset;
        transform.position = newPosition;
    }
}
```

Adding a look at target object to minimise the jitter



```
    //will check that the camera looked at on the target on not.
    public bool lookAtTarget = false;

    // Start is called before the first frame update
    void Start()
    {
        cameraOffset = transform.position - targetObject.transform.position;
    }

    void LateUpdate()
    {
        Vector3 newPosition = targetObject.transform.position + cameraOffset;
        transform.position = Vector3.Slerp(transform.position, newPosition, smoothFactor);

        //Camera Rotation Change
        if (lookAtTarget)
        {
            transform.LookAt(targetObject);
        }
    }
}
```

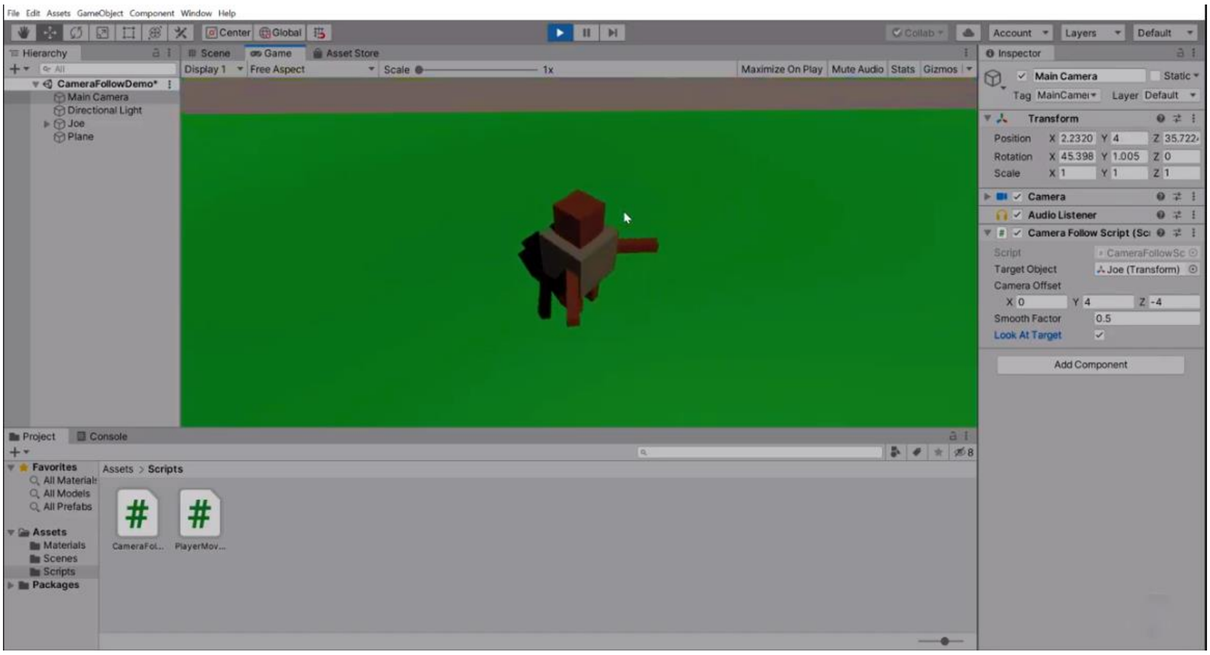
After adding the scripts: - movement of the object and the camera following the object.



☑ Main Camera □ Static
Tag MainCamera Layer Default

Transform
Position X 3.4769 Y 4.0000 Z 25.724
Rotation X 44.629 Y -1.229 Z 0
Scale X 1 Y 1 Z 1

☑ Camera
☑ Audio Listener
☑ Camera Follow Script (Sc
Script CameraFollowSc
Target Object Joe (Transform)
Camera Offset
X 0 Y 4 Z -4
Smooth Factor 0.5
Look At Target ☑

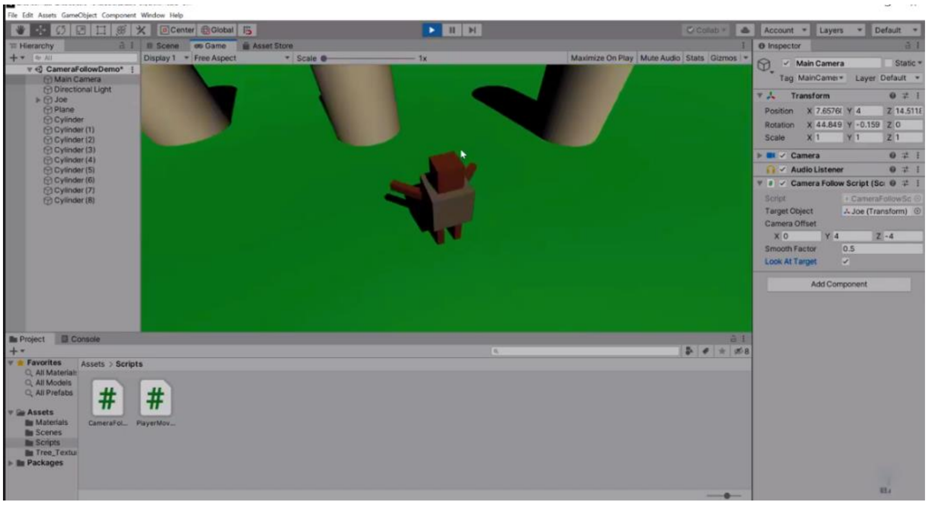


☑ Main Camera □ Static
Tag MainCamera Layer Default

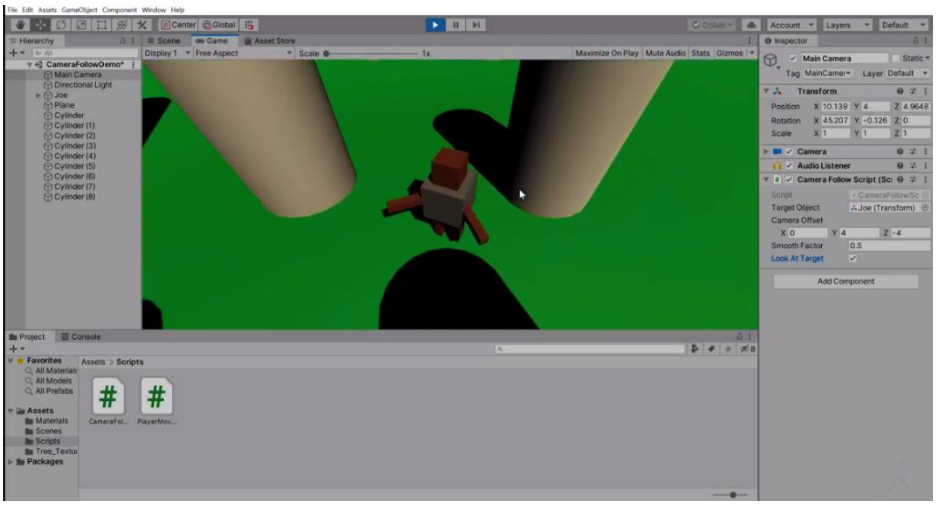
Transform
Position X 2.2320 Y 4 Z 35.722
Rotation X 45.398 Y 1.005 Z 0
Scale X 1 Y 1 Z 1

☑ Camera
☑ Audio Listener
☑ Camera Follow Script (Sc
Script CameraFollowSc
Target Object Joe (Transform)
Camera Offset
X 0 Y 4 Z -4
Smooth Factor 0.5
Look At Target ☑

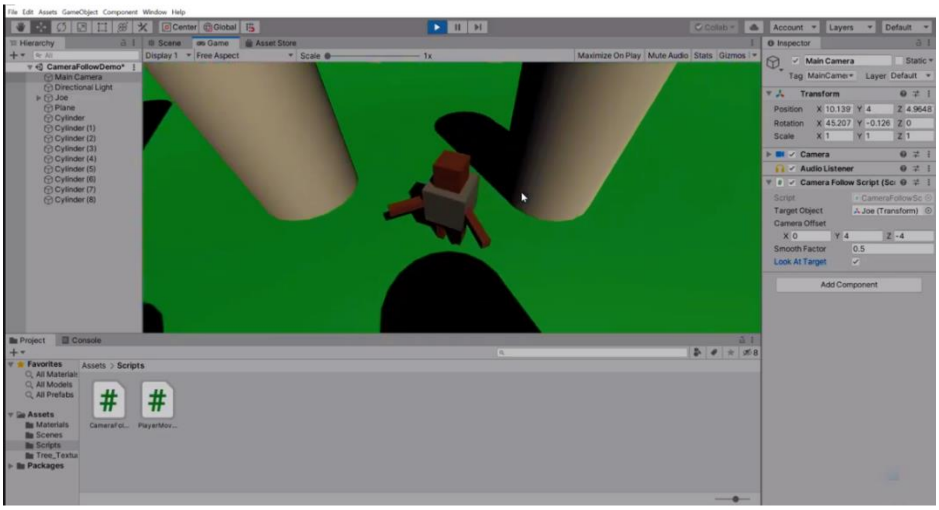
Movement after adding some obstacles



Main Camera Static
Tag MainCamera Layer Default
Position X 7.6576 Y 4 Z 14.5118
Rotation X 44.849 Y -0.159 Z 0
Scale X 1 Y 1 Z 1
Script CameraFollowSc
Target Object Joe (Transform)
Camera Offset
X 0 Y 4 Z -4
Smooth Factor 0.5
Look At Target ✓



Main Camera Static
Tag MainCamera Layer Default
Position X 10.139 Y 4 Z 4.9648
Rotation X 45.207 Y -0.126 Z 0
Scale X 1 Y 1 Z 1
Script CameraFollowSc
Target Object Joe (Transform)
Camera Offset
X 0 Y 4 Z -4
Smooth Factor 0.5
Look At Target ✓



Main Camera Static
Tag MainCamera Layer Default
Position X 10.139 Y 4 Z 4.9648
Rotation X 45.207 Y -0.126 Z 0
Scale X 1 Y 1 Z 1
Script CameraFollowSc
Target Object Joe (Transform)
Camera Offset
X 0 Y 4 Z -4
Smooth Factor 0.5
Look At Target ✓