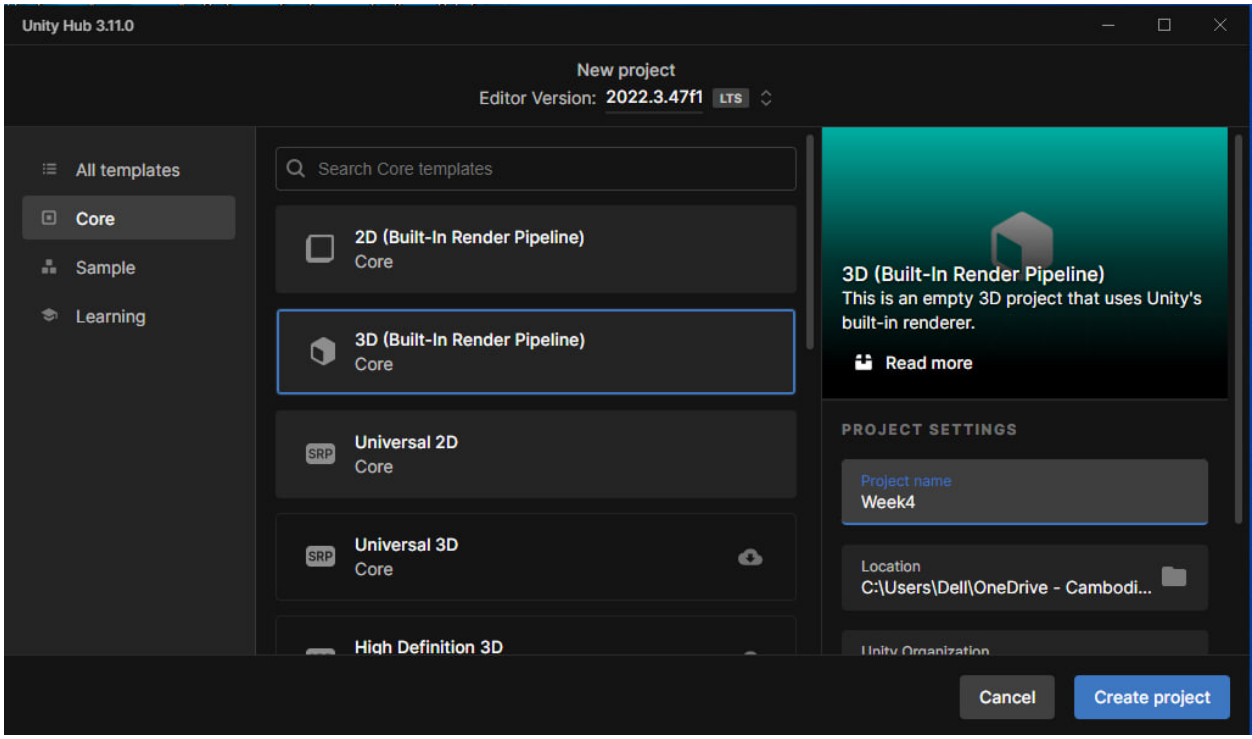
# Homework

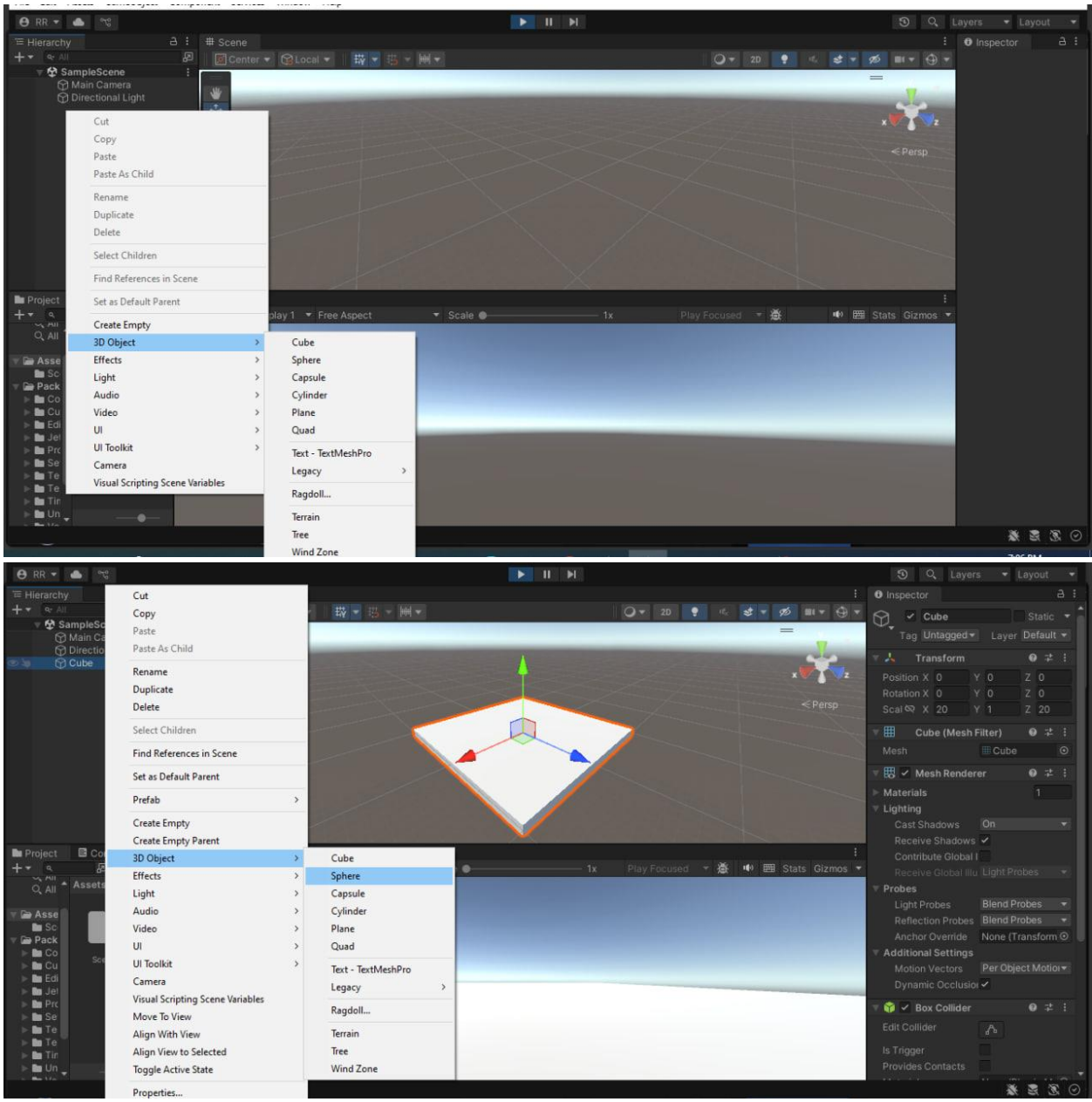
**Unity3D  Physics –Rigidbodies, Colliders, Trigger**

Name:
Ret Raksmey
Tep Pisey

**Step 1: We need to create a project**



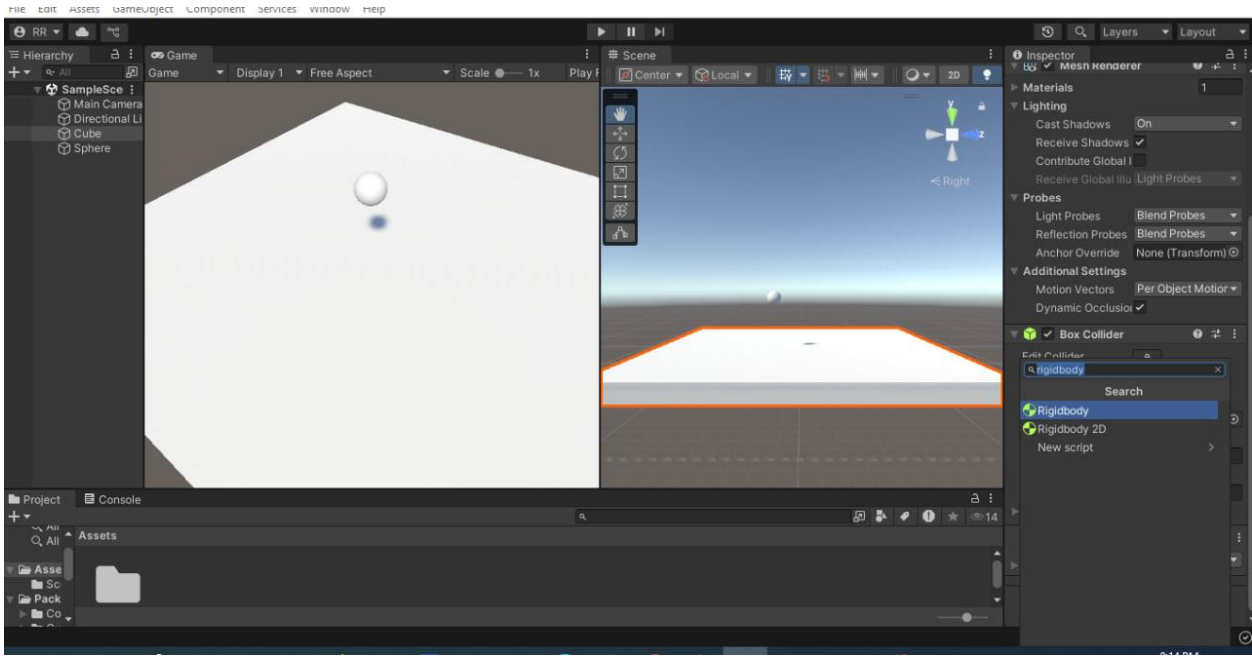

Step 2: Create cube and shpere



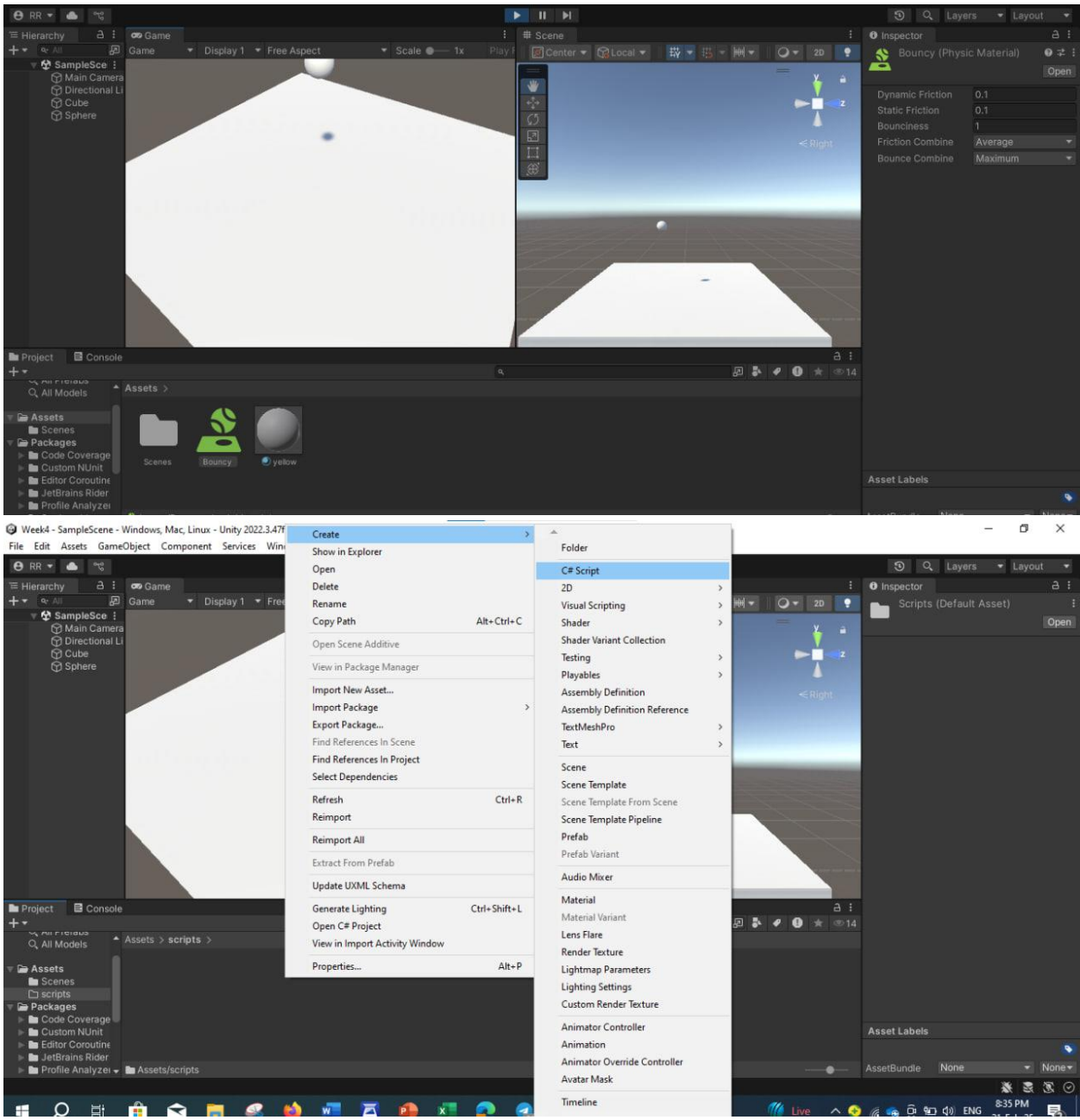




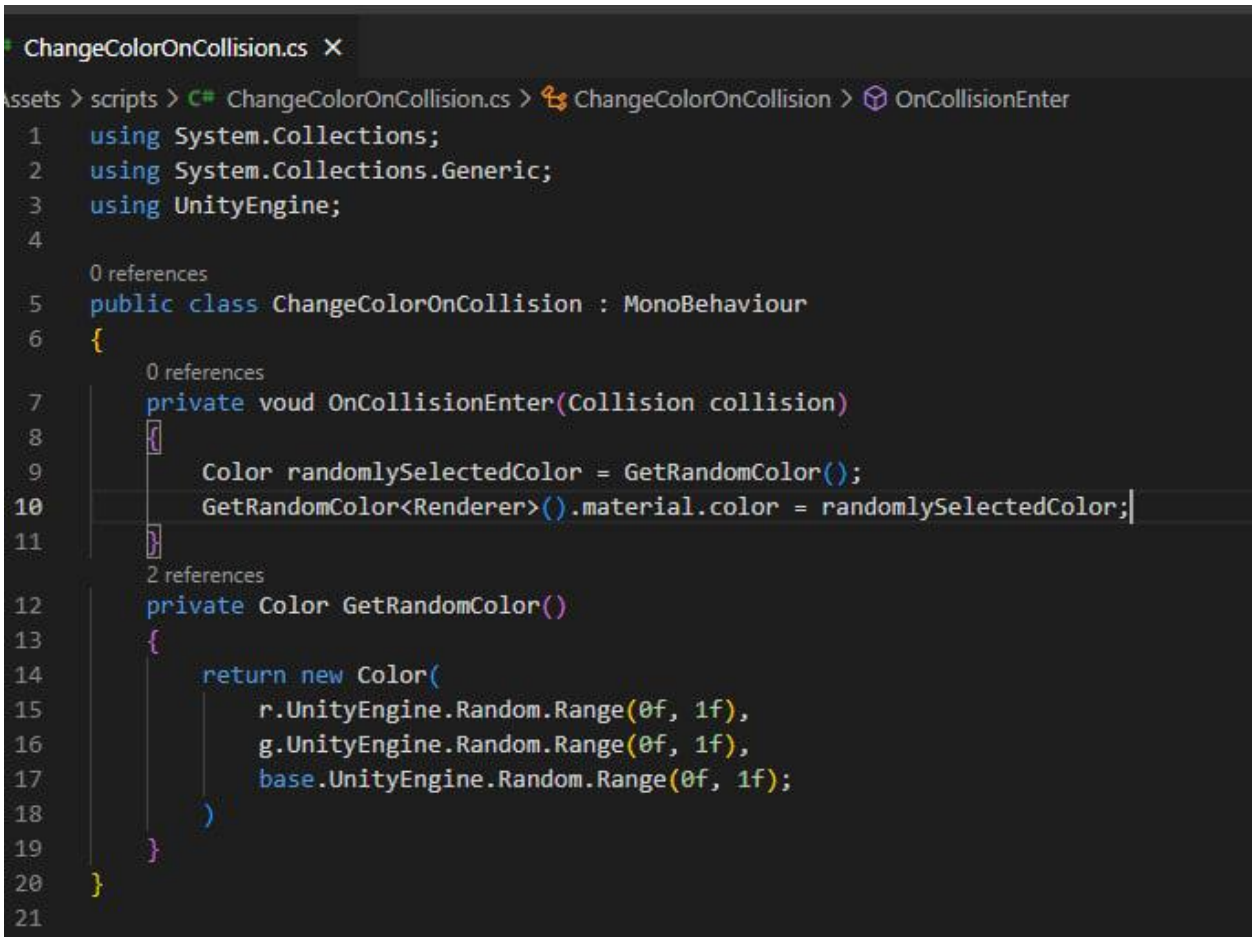
Step 3: We need to add component> Rigibody

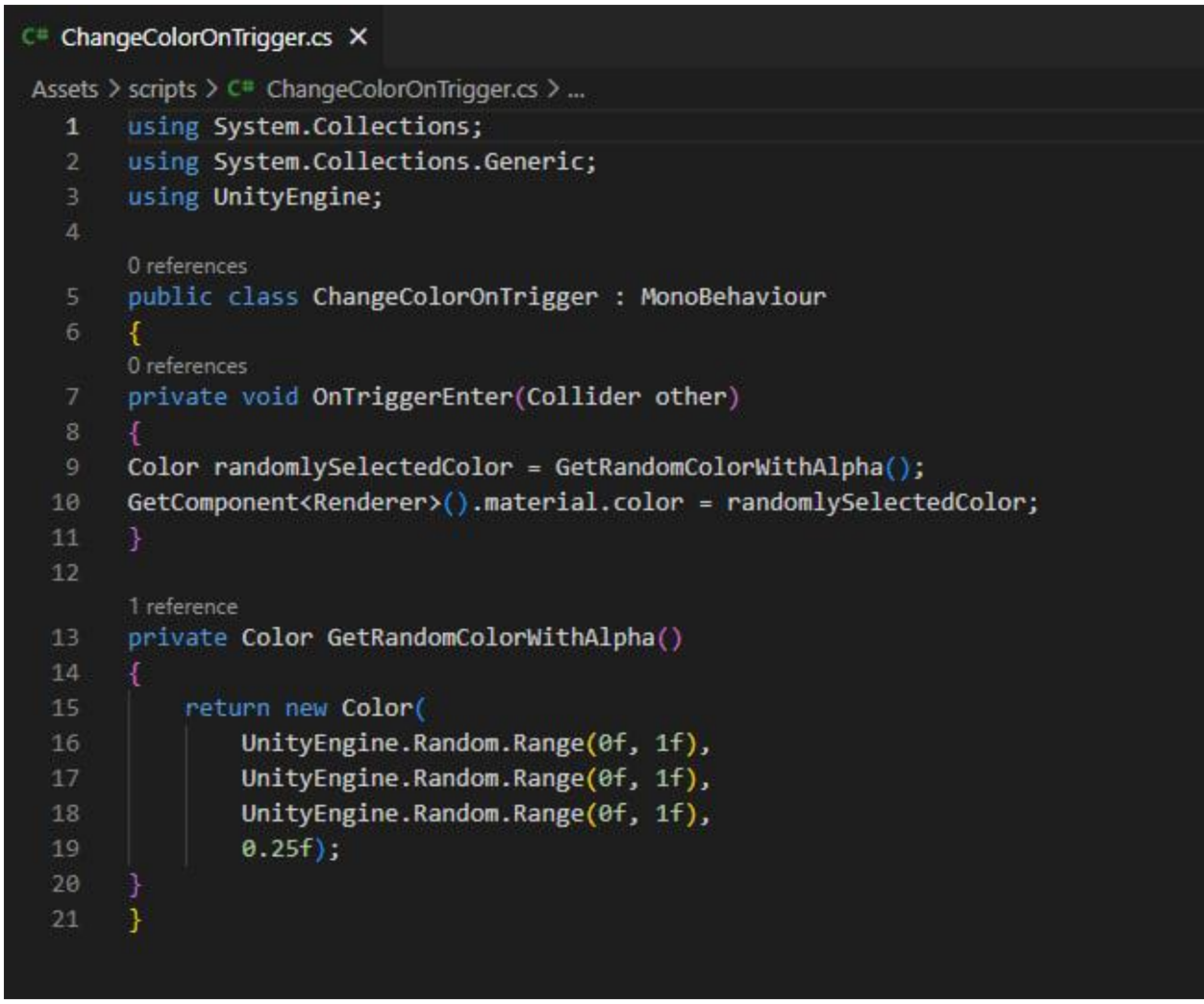


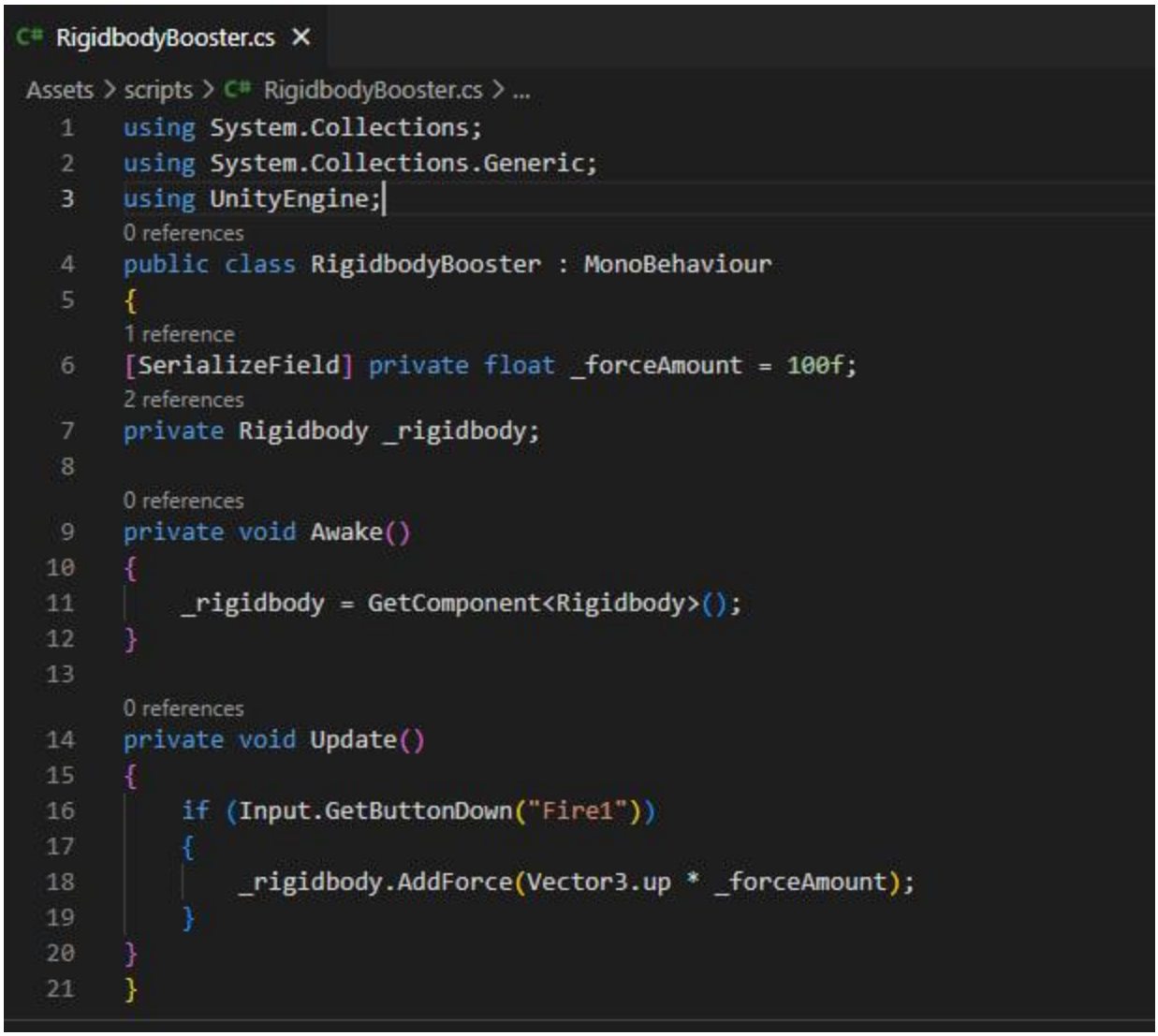

Step 4: we need to make bouncy and make script




Step 5: This is our code in script


ChangeColorOnCollision.cs
Assets > scripts > C# ChangeColorOnCollision.cs > ChangeColorOnCollision > OnCollisionEnter
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
0 references
public class ChangeColorOnCollision : MonoBehaviour
{
0 references
private voud OnCollisionEnter(Collision collision)
{
Color randomlySelectedColor = GetRandomColor();
GetRandomColor<Renderer>().material.color = randomlySelectedColor;
}
2 references
private Color GetRandomColor()
{
return new Color(
r.UnityEngine.Random.Range(0f, 1f),
g.UnityEngine.Random.Range(0f, 1f),
base.UnityEngine.Random.Range(0f, 1f);
)
}
}


ChangeColorOnTrigger.cs
Assets > scripts > ChangeColorOnTrigger.cs > ...
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
0 references
public class ChangeColorOnTrigger : MonoBehaviour
{
0 references
private void OnTriggerEnter(Collider other)
{
Color randomlySelectedColor = GetRandomColorWithAlpha();
GetComponent<Renderer>().material.color = randomlySelectedColor;
}
1 reference
private Color GetRandomColorWithAlpha()
{
return new Color(
UnityEngine.Random.Range(0f, 1f),
UnityEngine.Random.Range(0f, 1f),
UnityEngine.Random.Range(0f, 1f),
0.25f);
}
}


RigidbodyBooster.cs
Assets > scripts > RigidbodyBooster.cs > ...
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
0 references
public class RigidbodyBooster : MonoBehaviour
{
1 reference
[SerializeField] private float _forceAmount = 100f;
2 references
private Rigidbody _rigidbody;
0 references
private void Awake()
{
_rigidbody = GetComponent<Rigidbody>();
}
0 references
private void Update()
{
if (Input.GetButtonDown("Fire1"))
{
_rigidbody.AddForce(Vector3.up * _forceAmount);
}
}
}

ShowDebugDataOnCollision.cs

Assets > scripts > ShowDebugDataOnCollision.cs > ShowDebugDataOnCollision > OnCollisionEnter

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

0 references
public class ShowDebugDataOnCollision : MonoBehaviour
{
    0 references
    private void OnCollisionEnter(Collision other)
    {
        Debug.Log("Impacted at " + other.contacts[0].point);
        float rayDrawDistance = 5f;

        Debug.DrawRay(
            other.contacts[0].point,
            other.contacts[0].normal * rayDrawDistance,
            Color.red,
            1f
        );
    }
}
```

TillController.cs

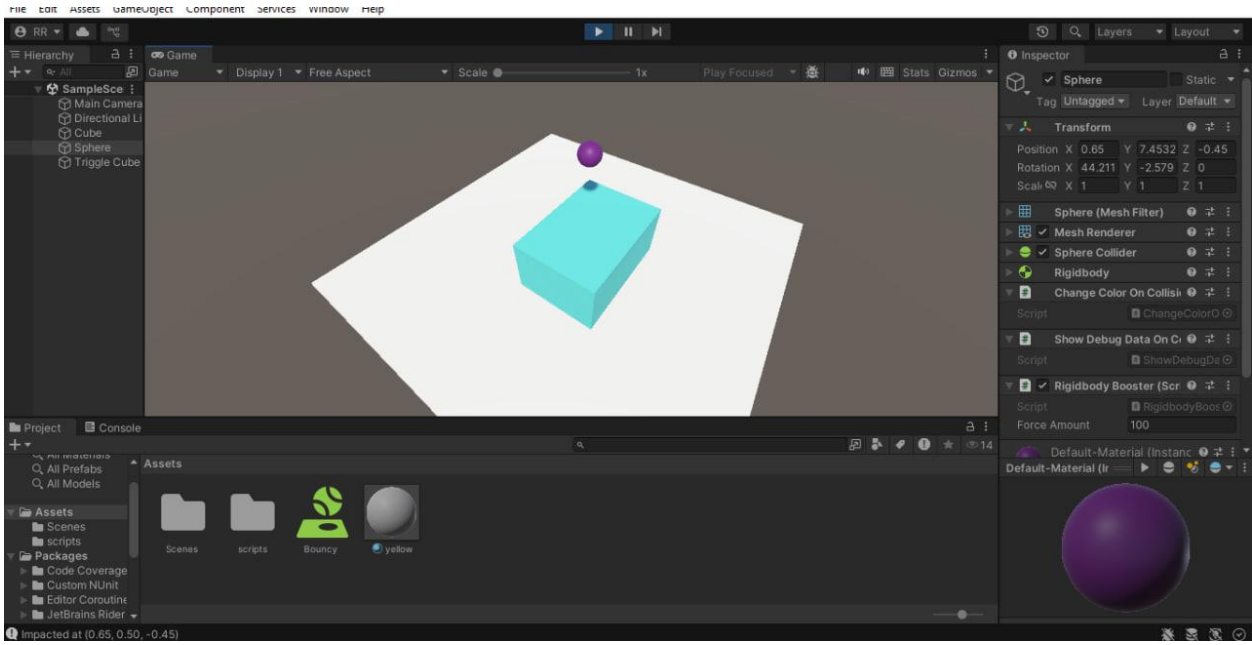
Assets > scripts > TillController.cs > TiltControl

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

0 references
public class TiltControl : MonoBehaviour
{
    1 reference
    [SerializeField] private float _tiltSpeed = 5f;

    0 references
    private void Update()
    {
        float horizontal = -Input.GetAxis("Horizontal");
        transform.Rotate(Vector3.forward, horizontal * Time.deltaTime * _tiltSpeed);
    }
}
```

Step 6: This is our result


File Edit Assets GameObject Component Services Window Help
RR
Layers
Layout
Hierarchy
SampleSce
Main Camera
Directional Li
Cube
Sphere
Triggle Cube
Game
Display 1
Free Aspect
Scale
1x
Play Focused
Stats
Gizmos
Inspector
Sphere
Static
Tag Untagged
Layer Default
Transform
Position X 0.65 Y 7.4532 Z -0.45
Rotation X 44.211 Y -2.579 Z 0
Sphere (Mesh Filter)
Mesh Renderer
Sphere Collider
Rigidbody
Change Color On Collisi
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Packages
Code Coverage
Custom NUnit
Editor Coroutine
JetBrains Rider
Assets
Scenes
scripts
Bouncy
yellow
Impacted at (0.65, 0.50, -0.45)