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Practical no	Aim	Date
1	Write a python program to perform translation operation on rectangle by taking initial coordinates from user.	
2	Write a python program to perform scaling operation on triangle by taking initial coordinates from user.	
3	Write a python program to perform reflection operation on polygon by taking initial coordinates from user.	
4	Write a python program to rotate right angle triangle by 45 degree by taking initial coordinates from user.	
5	Write a python program to perform shearing on rectangle in positive direction of x-axis by taking initial coordinates from user.	
6	Write a python program to create below shape and perform reflection about parallel to y-axis, followed by translation and scaling operation on it.	
7	Implement space invader game in python using pygame module.	
8	Implement Snake game in python using pygame module.	
9	Implement 2D UFO game using unity.	
10	Implement 3D roll ball game using unity.	

Practical No9:

Aim: Implement 2D UFO game using unity

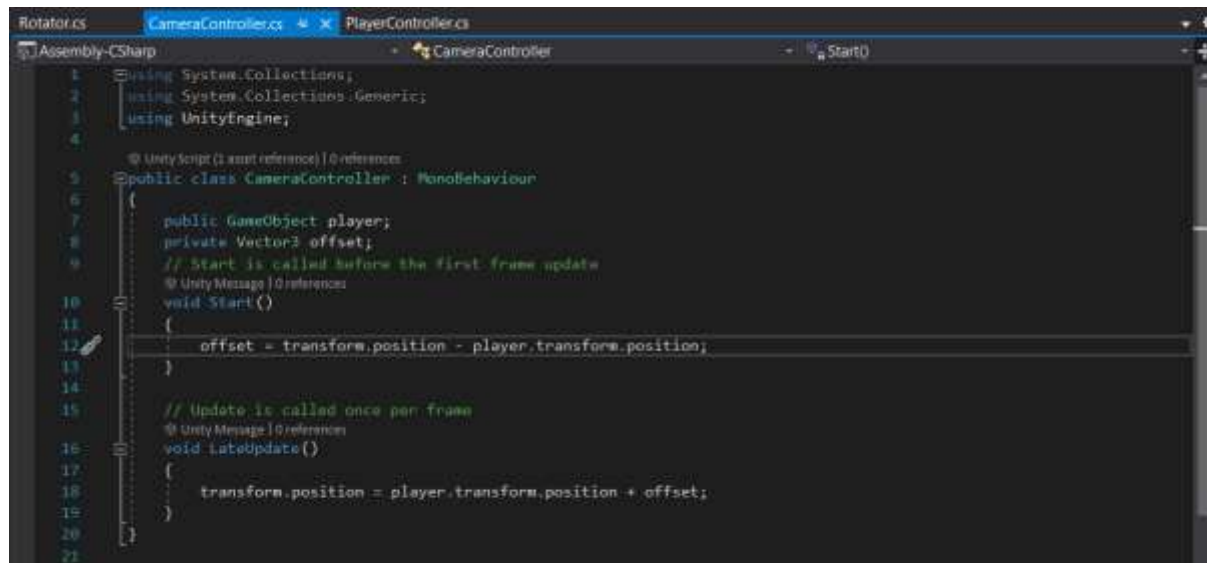
Code:

PlayerController.cs

```
Rotator.cs CameraController.cs PlayerController.cs SetCountText()
Assembly-CSharp PlayerController
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4 using UnityEngine.UI;
5
6 [UnityScript (1 asset reference) 0 references]
7 public class PlayerController : MonoBehaviour
8 {
9     public Text winText;
10    public Text countText;
11    public int count = 0;
12    private Rigidbody2D rbd;
13    public float speed;
14    // Start is called before the first frame update
15    [UnityMessage (0 references)]
16    void Start()
17    {
18        rbd = GetComponent<Rigidbody2D>();
19    }
20    // Update is called once per frame
21    [UnityMessage (0 references)]
22    void FixedUpdate()
23    {
24        float moveHorizontal = Input.GetAxis("Horizontal");
25        float moveVertical = Input.GetAxis("Vertical");
26        Vector2 movement = new Vector2(moveHorizontal, moveVertical);
27        rbd.AddForce(movement*speed);
28    }
29    [UnityMessage (0 references)]
30    void OnTriggerEnter2D(Collider2D other)
31    {
32        if(other.tag=="PickUp")
33        {
34            other.gameObject.SetActive(false);
35            count++;
36        }
37    }
38    [UnityMessage (0 references)]
39    void SetCountText()
40    {
41        countText.text = "Score" + count.ToString();
42        if (count == 7)
43        {
44            winText.text = "You Win!";
45        }
46    }
47 }
```

```
34 SetCountText();
35 }
36 }
37 [UnityMessage (0 references)]
38 void SetCountText()
39 {
40     countText.text = "Score" + count.ToString();
41     if (count == 7)
42     {
43         winText.text = "You Win!";
44     }
45 }
46 }
```

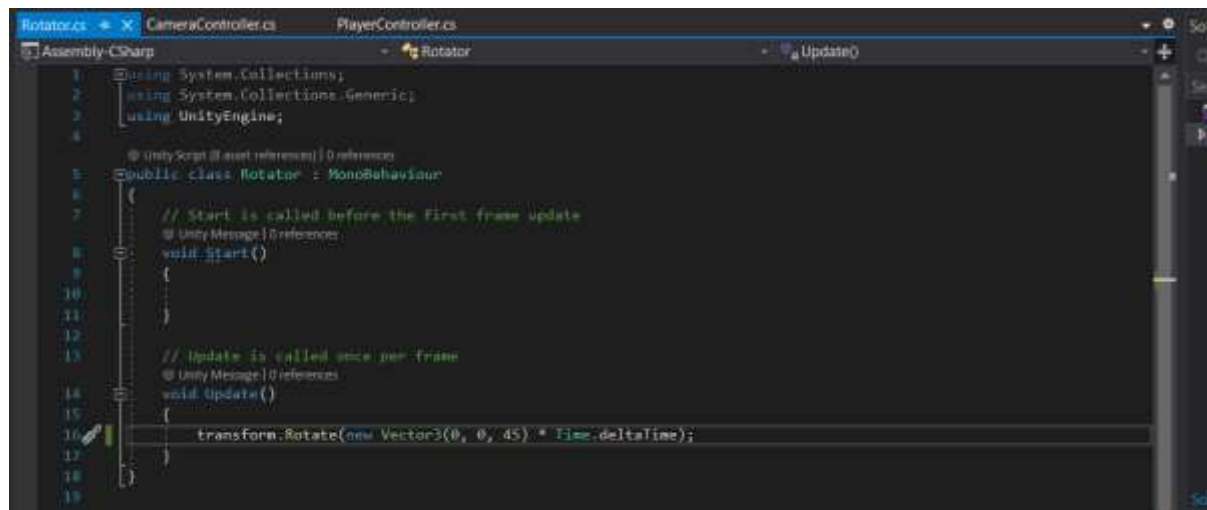
CameraController.cs



A screenshot of the Visual Studio code editor showing the `CameraController.cs` file. The file is part of the `Assembly-CSharp` project. It contains the following code:

```
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 // Unity Script (1 asset reference) 0 references
6 public class CameraController : MonoBehaviour
7 {
8     public GameObject player;
9     private Vector3 offset;
10    // Start is called before the first frame update
11    // Unity Message 0 references
12    void Start()
13    {
14        offset = transform.position - player.transform.position;
15    }
16
17    // Update is called once per frame
18    // Unity Message 0 references
19    void LateUpdate()
20    {
21        transform.position = player.transform.position + offset;
22    }
23 }
```

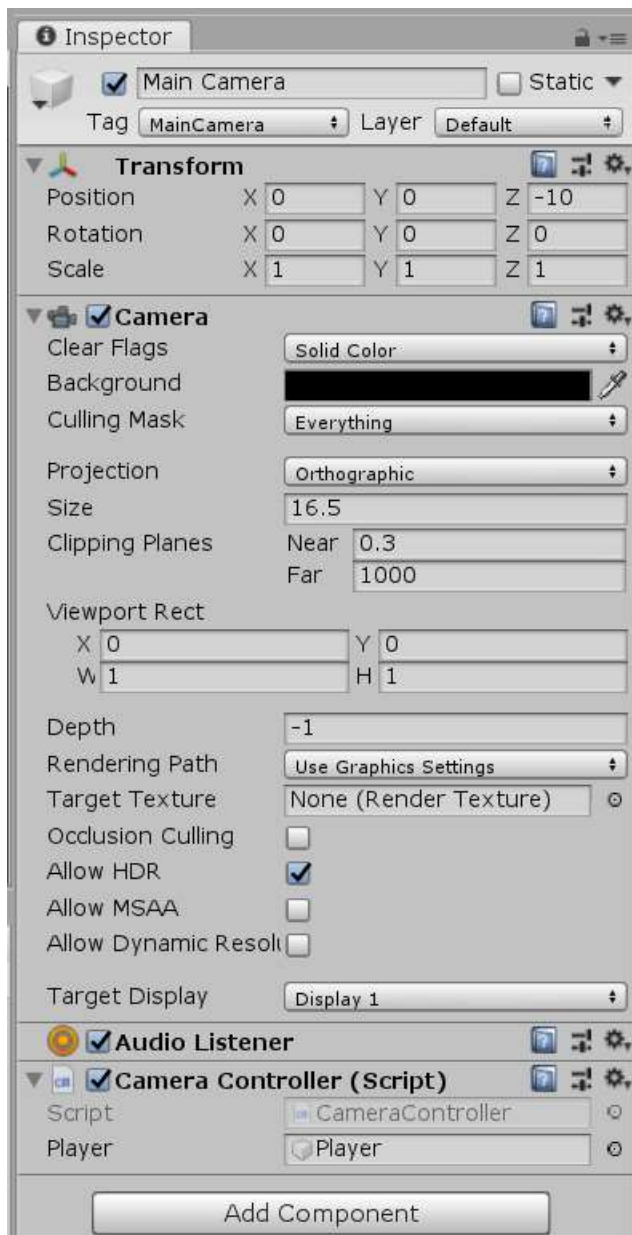
Rotator.cs



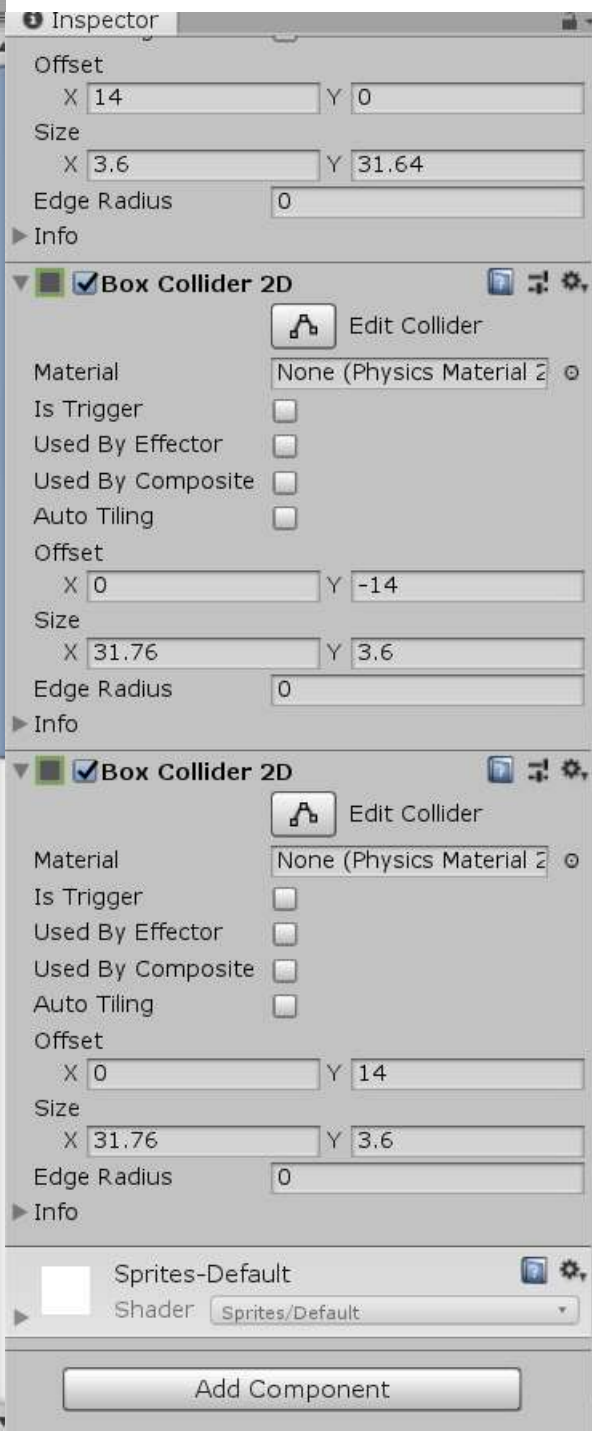
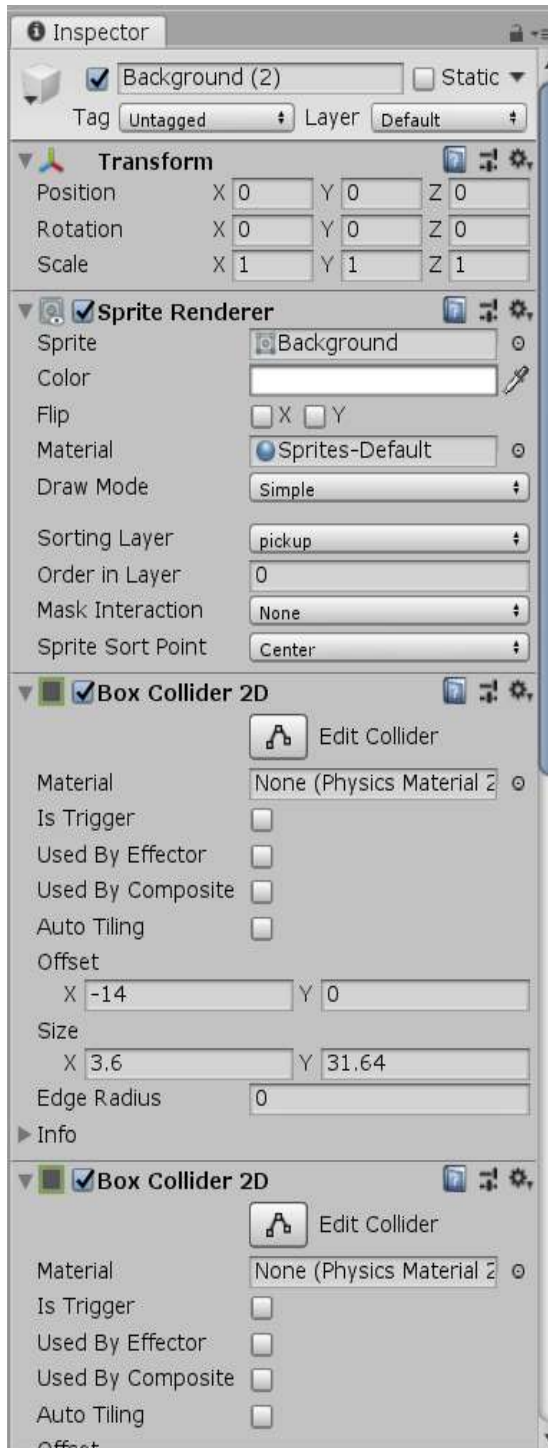
A screenshot of the Visual Studio code editor showing the `Rotator.cs` file. The file is part of the `Assembly-CSharp` project. It contains the following code:

```
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 // Unity Script (1 asset reference) 0 references
6 public class Rotator : MonoBehaviour
7 {
8     // Start is called before the first frame update
9     // Unity Message 0 references
10    void Start()
11    {
12    }
13
14    // Update is called once per frame
15    // Unity Message 0 references
16    void Update()
17    {
18        transform.Rotate(new Vector3(0, 0, 45) * Time.deltaTime);
19    }
20 }
```

Main Camera Inspector



Background Inspector



Player Inspector



Output:

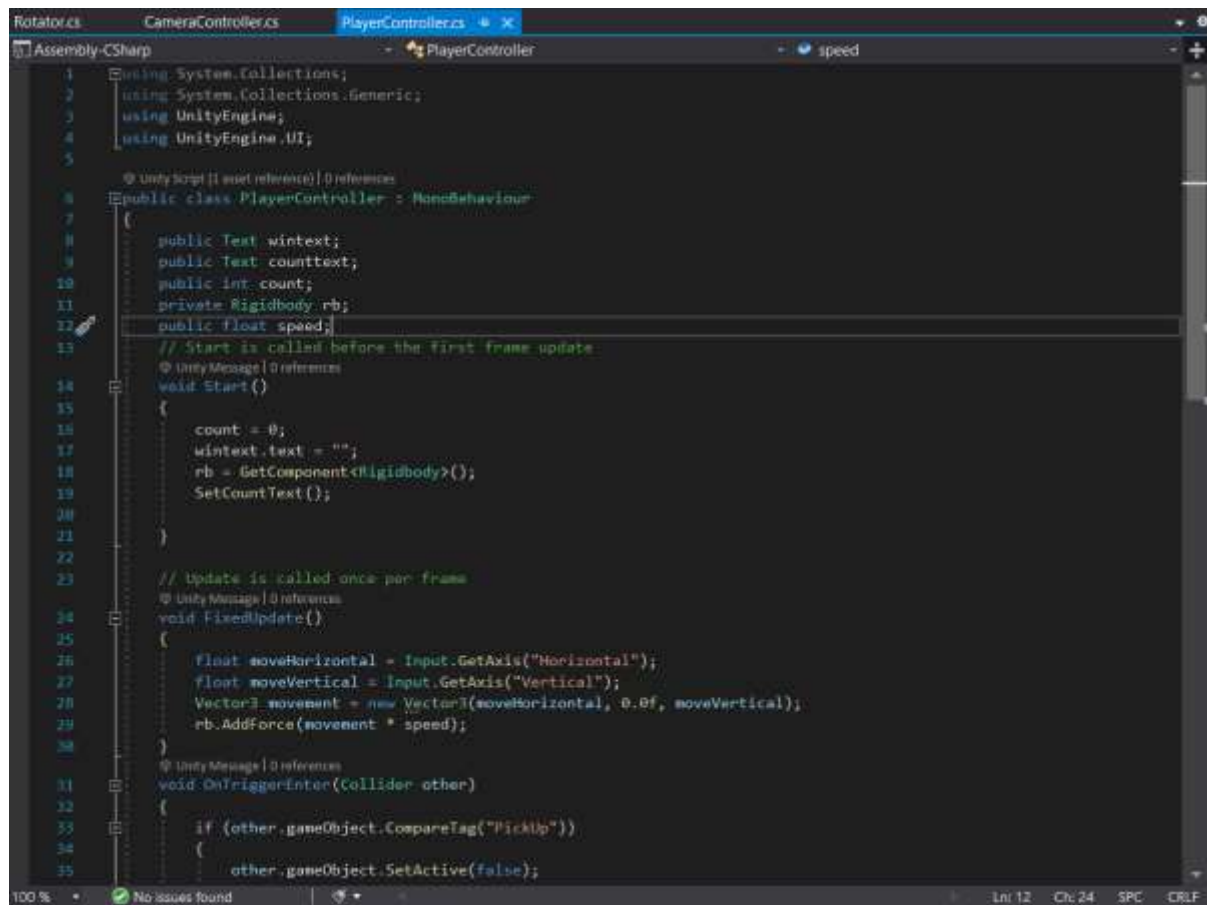


Practical No10:

Aim: Implement 3D roll ball game using unity.

Code:

PlayerController.cs



```
1  using System.Collections;
2  using System.Collections.Generic;
3  using UnityEngine;
4  using UnityEngine.UI;
5
6  [UnityScript (1 asset reference)] 0 references
7  public class PlayerController : MonoBehaviour
8  {
9      public Text wintext;
10     public Text counttext;
11     public int count;
12     private Rigidbody rb;
13     public float speed;
14
15     // Start is called before the first frame update
16     [UnityMessage] 0 references
17     void Start()
18     {
19         count = 0;
20         wintext.text = "";
21         rb = GetComponent<Rigidbody>();
22         SetCountText();
23     }
24
25     // Update is called once per frame
26     [UnityMessage] 0 references
27     void FixedUpdate()
28     {
29         float moveHorizontal = Input.GetAxis("Horizontal");
30         float moveVertical = Input.GetAxis("Vertical");
31         Vector3 movement = new Vector3(moveHorizontal, 0.0f, moveVertical);
32         rb.AddForce(movement * speed);
33     }
34
35     [UnityMessage] 0 references
36     void OnTriggerEnter(Collider other)
37     {
38         if (other.gameObject.CompareTag("PickUp"))
39         {
40             other.gameObject.SetActive(false);
41         }
42     }
43 }
```

```

36         count = count + 1;
37         SetCountText();
38     }
39 }
40 // reference
41 void SetCountText()
42 {
43     counttext.text = "Score:" + count.ToString();
44     if (count >= 10)
45     {
46         winText.text = "You Win!";
47     }
48 }
49

```

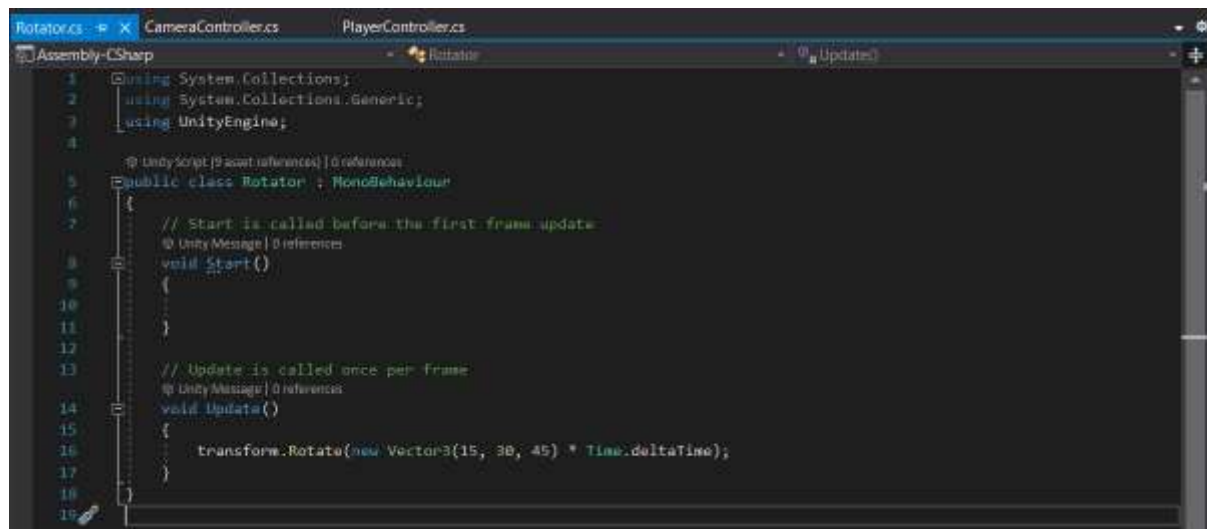
CameraController.cs

```

Rotator.cs CameraController.cs PlayerController.cs
Assembly-CSharp CameraController
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 // Unity script (1 script reference) 0 references
6
7 public class CameraController : MonoBehaviour
8 {
9     private Vector3 offset;
10    public GameObject player;
11    // Start is called before the first frame update
12    // Unity Message 0 references
13    void Start()
14    {
15        offset = transform.position - player.transform.position;
16    }
17
18    // Update is called once per frame
19    // Unity Message 0 references
20    void LateUpdate()
21    {
22        transform.position = player.transform.position + offset;
23    }
24 }

```

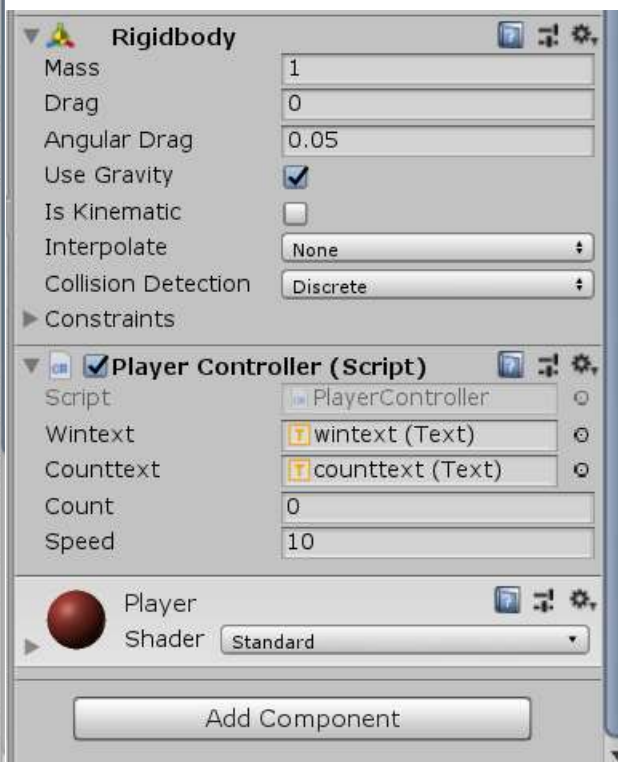
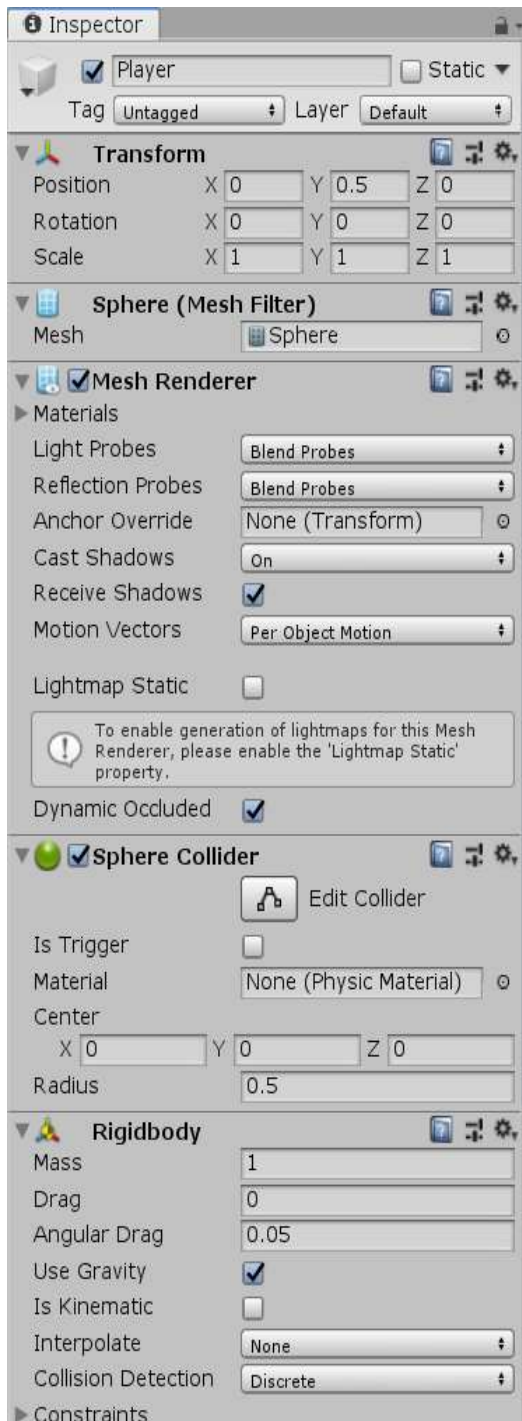
Rotator.cs



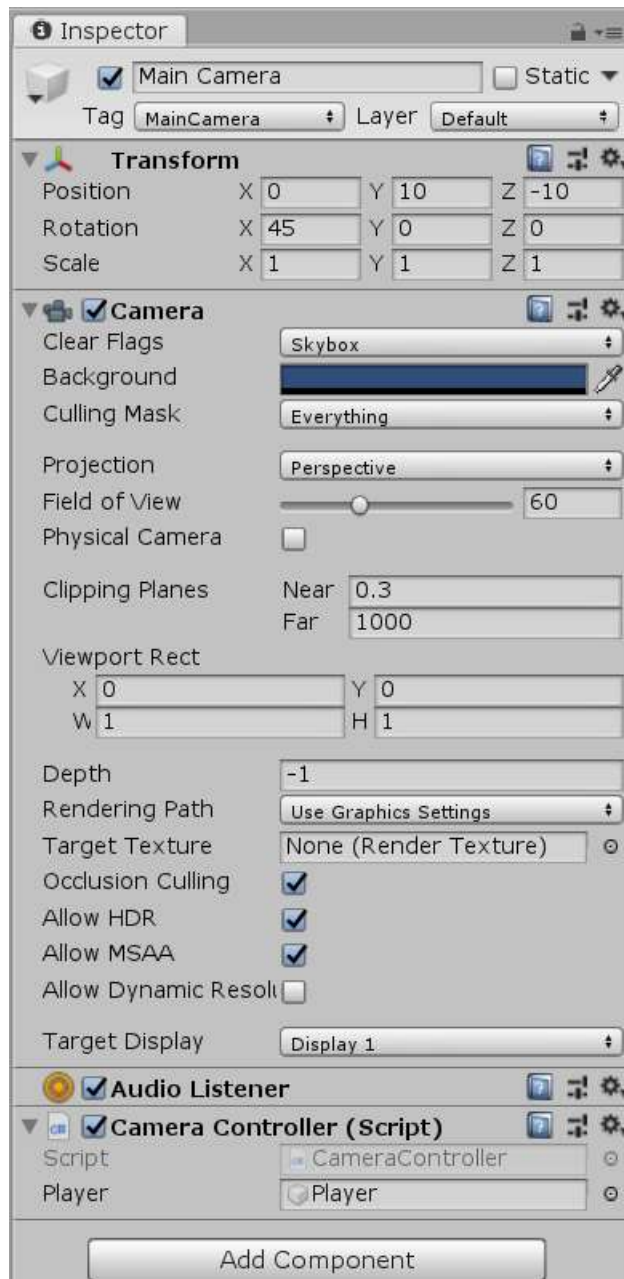
The image shows a screenshot of a Unity C# script editor. The top of the window displays three open files: Rotator.cs, CameraController.cs, and PlayerController.cs. The Rotator.cs file is the active script, and its content is as follows:

```
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 [AddComponentMenu("Rotator")]
6 public class Rotator : MonoBehaviour
7 {
8     // Start is called before the first frame update
9     [SerializeField]
10     void Start()
11     {
12     }
13
14     // Update is called once per frame
15     [SerializeField]
16     void Update()
17     {
18         transform.Rotate(new Vector3(15, 30, 45) * Time.deltaTime);
19     }
20 }
```

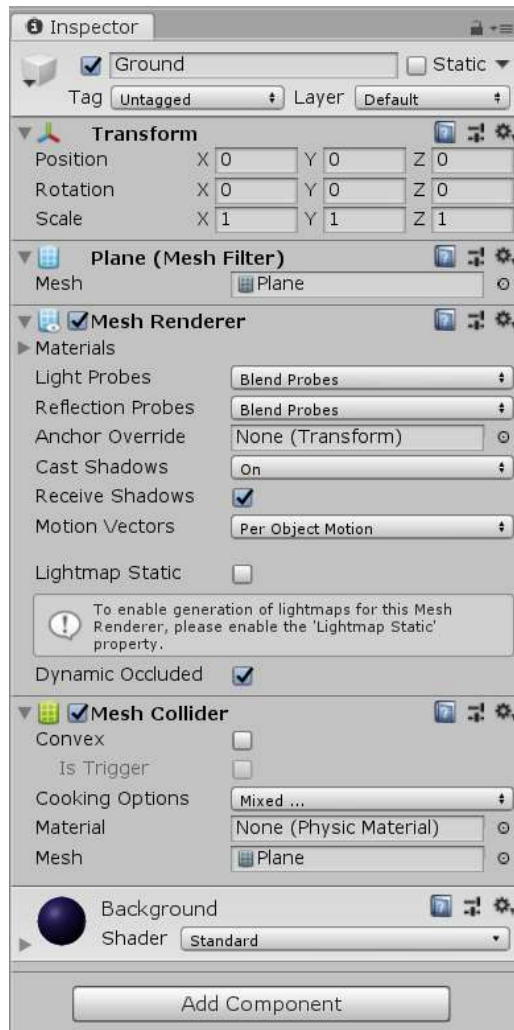
Player Inspector



Main Camera Inspector



Ground Inspector



Output:

