**Pin Bowling Game**

1. Open **Unity Hub** and create a **new 3D project**.
2. Right-click on Main Camera in the **Hierarchy** and delete it.
   1. Right-click on Directional Light and delete it if you want to add custom lighting.
3. Go to **GameObject** → **Camera**.
4. Set its position to **(0, 5, -10)** and rotation to **(30, 0, 0)** for a top-down view.
5. Right-click in the **Hierarchy** → **3D Object** → **Cube**. Rename it Lane.
6. Set its **scale** to (2, 0.1, 10) to form a long rectangular bowling alley.Adjust its**position** to (0, 0, 0).
7. Right-click **Hierarchy** → **3D Object** → **Cube**.Rename it EndWall.
8. Set **scale** to (2, 1, 0.2). Position it at (0, 0.5, 4.8), at the end of the lane.
9. Go to **GameObject** → **3D Object** → **Cylinder**. Rename it BowlingPin. Set its **scale** to (0.2, 0.7, 0.2) and Position it at (0, 0.35, 3.5).
10. **Add Rigidbody to the Pin.** Select BowlingPin. In **Inspector**, click **Add Component** → **Rigidbody**.
11. Enable **Freeze Rotation on X and Z** to prevent unnecessary rolling.
12. **Duplicate the Pins to Make 6. For that s**elect BowlingPin and press **Ctrl + D** to duplicate.
13. Arrange them in a triangular formation: (0, 0.35, 3.5) (Front) and then (-0.3, 0.35, 3.8), (0.3, 0.35, 3.8)and then (-0.6, 0.35, 4.1), (0, 0.35, 4.1), (0.6, 0.35, 4.1)
14. **Group Pins in an Empty Object. For that** Right-click **Hierarchy** → **Create Empty**. Name it PinsHolder. Drag all **6 pins** inside this object for better organization.
15. **Crete the Ball.** Go to **GameObject** → **3D Object** → **Sphere**. Rename it BowlingBall. Set **scale** to (0.4, 0.4, 0.4). Position it at (0, 0.2, -4).
16. **Add Rigidbody to the Ball. For that** Select BowlingBall. In **Inspector**, click **Add Component** → **Rigidbody**. Set **Mass** to 5 (to knock down pins effectively). Set **Drag** to 0.2 (for smooth rolling). Set **Angular Drag** to 0.05 (for realistic physics).
17. **Create a New C# Script.** Go to **Assets** → **Right Click** → **Create** → **C# Script**. Name it BallController.

***using UnityEngine;***

***public class BallController : MonoBehaviour***

***{***

***public float force = 500f;***

***private Rigidbody rb;***

***private bool thrown = false;***

***void Start()***

***{***

***rb = GetComponent<Rigidbody>();***

***}***

***void Update()***

***{***

***if (Input.GetKeyDown(KeyCode.Space) && !thrown)***

***{***

***rb.AddForce(Vector3.forward \* force);***

***thrown = true;***

***}***

***}***

***}***

1. Select BowlingBall. Click **Add Component** → **BallController** (or drag the script onto the ball).
2. **Create a New C# Script.** Name it PinManager. **Open the Script and Add the Code**

***using UnityEngine;***

***public class PinManager : MonoBehaviour***

***{***

***private Vector3 initialPosition;***

***private bool isKnockedDown = false;***

***void Start()***

***{***

***initialPosition = transform.position;***

***}***

***void Update()***

***{***

***if (transform.position.y < 0.2f && !isKnockedDown)***

***{***

***isKnockedDown = true;***

***GameManager.instance.PinKnocked();***

***}***

***}***

***public void ResetPin()***

***{***

***transform.position = initialPosition;***

***transform.rotation = Quaternion.identity;***

***isKnockedDown = false;***

***}***

***}***

1. **Attach PinManager to Each Pin.** Select all **6 Pins**. Click **Add Component** → **PinManager**.
2. **Create a New C# Script.** Name it GameManager. **Open the Script and Add the Code**

***using System.Collections;***

***using UnityEngine;***

***public class GameManager : MonoBehaviour***

***{***

***public static GameManager instance;***

***private int score = 0;***

***public GameObject ball;***

***void Awake()***

***{***

***if (instance == null)***

***instance = this;***

***}***

***public void PinKnocked()***

***{***

***score++;***

***Debug.Log("Score: " + score);***

***StartCoroutine(ResetAfterDelay());***

***}***

***IEnumerator ResetAfterDelay()***

***{***

***yield return new WaitForSeconds(3);***

***score = 0;***

***ball.transform.position = new Vector3(0, 0.2f, -4);***

***}***

***}***

1. **Create an Empty GameObject.** Name it GameManager. Attach the GameManager script to it.