Pong Progress Report – Microgame #1

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1. Create project
2. Create 4 square sprites for the walls
3. Add box collider 2D to the walls
4. Create another square sprite for a paddle (player)
5. Add box collider 2D and rigidbody2D to the paddle

Graphical user interface

Description automatically generated

1. Create a PaddleController C# script and attach it to the Paddle
2. Drag the Paddle into your Prefabs folder to make a Prefab and then drag another on to the right side of the Game so you can have a RightPaddle
3. Create a circle sprite for our Ball
4. Add box collider 2D and rigidbody2D to the ball
5. Create a BallController Script and attach it to the ball
6. Create a text object for the score
7. Add an empty game object and name if GameController
8. Create a C# Script called GameController and attach it to the GameController object
9. Tag the paddles with a Player Tag, and tag the left and right walls with a Goal tag
10. Add an image and another text object to the scene for the GameOver screen

PaddleController.cs

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class PaddleController : MonoBehaviour

{

int leftUp, rightUp;

public float speed;

public bool leftPlayer;

Rigidbody2D rigidbody;

// Start is called before the first frame update

void Awake()

{

rigidbody = GetComponent<Rigidbody2D>();

}

// Update is called once per frame

void Update()

{

if(leftPlayer)

{

if (Input.GetKey(KeyCode.W))

leftUp = 1;

if (Input.GetKey(KeyCode.S))

leftUp = -1;

rigidbody.AddForce(Vector2.up \* leftUp \* speed \* Time.deltaTime);

}

else

{

if (Input.GetKey(KeyCode.UpArrow))

rightUp = 1;

if (Input.GetKey(KeyCode.DownArrow))

rightUp = -1;

rigidbody.AddForce(Vector2.up \* rightUp \* speed \* Time.deltaTime);

}

}

}

BallController.cs

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class BallController : MonoBehaviour

{

public float speed;

public float randomUp;

Rigidbody2D ballRigidbody;

GameController cont;

// Start is called before the first frame update

void Start()

{

ballRigidbody = GetComponent<Rigidbody2D>();

cont = FindObjectOfType<GameController>();

}

private void OnEnable()

{

Invoke("PushBall", 1f);

}

void PushBall()

{

int dir = Random.Range(0, 2);

float x, y;

if (dir == 0)

x = speed;

else

x = -speed;

y = Random.Range(-randomUp, randomUp);

ballRigidbody.AddForce(new Vector2(x, y));

}

// Update is called once per frame

void Update()

{

}

private void OnCollisionEnter2D(Collision2D collision)

{

if(collision.gameObject.CompareTag("Player"))

{

Vector2 vel;

vel.x = ballRigidbody.velocity.x;

vel.y = ballRigidbody.velocity.y / 2 + collision.collider.attachedRigidbody.velocity.y / 2;

ballRigidbody.velocity = vel;

}

}

private void OnTriggerEnter2D(Collider2D collision)

{

if(collision.gameObject.CompareTag("Goal"))

{

if (ballRigidbody.velocity.x > 0) //Right wall

{

cont.Score(true);

}

else if (ballRigidbody.velocity.x < 0) //Left wall

{

cont.Score(false);

}

else { }

ballRigidbody.velocity = Vector2.zero;

transform.position = Vector3.zero;

Invoke("PushBall", 2f);

}

}

}

GameController.cs

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

using UnityEngine.UI;

using UnityEngine.SceneManagement;

public class GameController : MonoBehaviour

{

int leftScore = 0;

int rightScore = 0;

public int maxScore = 3;

bool gameOver = false;

public Text scoreText;

public GameObject gameOverUI;

// Start is called before the first frame update

void Start()

{

}

public void Score(bool leftPlayerScored)

{

if(leftPlayerScored)

leftScore++;

else

rightScore++;

if(leftScore >= maxScore)

{

scoreText.text = "Left Player Wins!";

GameOver();

}

else if (rightScore >= maxScore)

{

scoreText.text = "Right Player Wins!";

GameOver();

}

else

scoreText.text = leftScore + " : " + rightScore;

}

void GameOver()

{

gameOver = true;

gameOverUI.SetActive(true);

Time.timeScale = 0f;

}

// Update is called once per frame

void Update()

{

if (gameOver)

if (Input.anyKeyDown)

Restart();

}

void Restart()

{

SceneManager.LoadScene("SampleScene");

Time.timeScale = 1f;

}

}