Flappy Stallion Code

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Main Menu Script

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

using UnityEngine.SceneManagement;

public class MainMenu : MonoBehaviour {

public void Awake()

{

}

public void PlayGame()

{

SceneManager.LoadScene(SceneManager.GetActiveScene().buildIndex + 1);

}

public void QuitGame ()

{

Debug.Log("Quit");

Application.Quit();

}

}

Game Controller Script

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

using UnityEngine.SceneManagement;

using UnityEngine.UI;

using UnityEngine.Audio;

public class GameControl : MonoBehaviour {

public static GameControl Instance;

public float scrollSpeed = -1.5f;

public bool isGameOver = false;

public bool isGamePaused = false;

public bool isGameunPaused = false;

private int score = 0;

public int hscore;

public Text HighScore;

public Sound[] msounds;

public Text scoreText;

public GameObject gameOverText;

public GameObject gameOverMenu;

public GameObject Instructions;

// Use this for initialization

void Awake ()

{

if (Instance == null)

{

Instance = this;

}

else if (Instance != this)

{

Destroy(gameObject);

}

HighScore.text = PlayerPrefs.GetInt("HighScore", 0).ToString();

}

// Update is called once per frame

void Update ()

{

}

public void Score()

{

if (isGameOver) { return; }

score++;

scoreText.text = "Score: " + score;

if (score > PlayerPrefs.GetInt("HighScore",0))

{

PlayerPrefs.SetInt("HighScore", score);

HighScore.text = score.ToString();

hscore = score;

}

Debug.Log(hscore);

Debug.Log(PlayerPrefs.GetInt("HighScore"));

}

public void Die()

{

isGameOver = true;

gameOverText.SetActive(true);

gameOverMenu.SetActive(true);

}

public void Pause()

{

Debug.Log("Game is now Paused");

isGamePaused = true;

Instructions.SetActive(true);

}

public void unPause()

{

Debug.Log("Game is now unPaused");

isGameunPaused = true;

Instructions.SetActive(false);

}

}

This script controls various functions such as, player death, scoring, pausing/unpausing.

Audio Manager Script

using UnityEngine.Audio;

using System;

using UnityEngine;

public class AudioManager : MonoBehaviour {

public AudioClip deathclip;

public AudioClip flapclip;

public AudioSource deathsource;

public AudioSource flapsource;

// Use this for initialization

void Awake ()

{

deathsource.clip = deathclip;

flapsource.clip = flapclip;

}

}

This script just creates audio sources for the various sounds. The actual triggering of the sounds are done where the triggers are created.

Stallion Script

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class Stallion : MonoBehaviour

{

public float upForce = 200f;

public bool isDead = false;

public bool isPause = false;

public int highscore;

private Rigidbody2D rb2d;

private Animator anim;

// Use this for initialization

void Start ()

{

highscore = PlayerPrefs.GetInt("HighScore");

rb2d = GetComponent<Rigidbody2D>();

anim = GetComponent<Animator>();

if (highscore < 5)

{

isPause = true;

rb2d.simulated = false;

GameControl.Instance.Pause();

}

if (highscore > 5)

{

isPause = false;

GameControl.Instance.unPause();

}

}

// Update is called once per frame

void Update ()

{

if (isDead) { return; }

if(isPause == true)

{

if (Input.GetKeyDown(KeyCode.Escape))

{

rb2d.bodyType = RigidbodyType2D.Dynamic;

rb2d.simulated = true;

isPause = false;

GameControl.Instance.unPause();

}

}

if (Input.GetMouseButtonDown(0) && isPause == false)

{

rb2d.velocity = Vector2.zero;

rb2d.AddForce(new Vector2(0, upForce));

anim.SetTrigger("Flap");

FindObjectOfType<AudioManager>().flapsource.Play();

if (Input.GetKeyDown(KeyCode.Escape))

{

rb2d.bodyType = RigidbodyType2D.Dynamic;

isPause = false;

GameControl.Instance.unPause();

Debug.Log(highscore);

}

}

}

void OnCollisionEnter2D()

{

if (isDead == true)

return;

isDead = true;

rb2d.velocity = Vector2.zero;

anim.SetTrigger("Die");

GameControl.Instance.Die();

FindObjectOfType<AudioManager>().deathsource.Play();

}

}

In this script we manage the start conditions of the game, as well as controlling the stallion and collision detection.

Scrolling Objects Script

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class ScrollingObject : MonoBehaviour {

public Rigidbody2D rb2d;

// Use this for initialization

void Start ()

{

rb2d = GetComponent<Rigidbody2D>();

}

// Update is called once per frame

void Update ()

{

if (GameControl.Instance.isGamePaused)

{

rb2d.velocity = Vector2.zero;

}

if (GameControl.Instance.isGameunPaused)

{

rb2d.velocity = new Vector2(GameControl.Instance.scrollSpeed, 0);

}

if (GameControl.Instance.isGameOver)

{

rb2d.velocity = Vector2.zero;

}

if (GameControl.Instance.isGameOver)

{

rb2d.velocity = Vector2.zero;

}

}

}

This script controls the leftward motion of objects in the game

Spawn Script

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class MoveLeft : MonoBehaviour {

[SerializeField]

private float speed = 1f;

[SerializeField]

private float randomOffset = .2f;

private void Update ()

{

transform.position += Time.deltaTime \* speed \* Vector3.left;

if (transform.position.x <= -20)

{

if (randomOffset == 0)

{

transform.position = new Vector3(20, transform.position.y, transform.position.z);

}

else

{

float randomHeight = UnityEngine.Random.Range(-randomOffset, randomOffset);

transform.position = new Vector3(20, randomHeight, transform.position.z);

}

}

}

}

This script was originally designed for the column spawning and scrolling but we later switched it to just controll some of the background objects spawning.

Column Pool Script

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class ColumnPool : MonoBehaviour

{

public float spawnRate = 4f;

public int columnPoolSize = 5;

public float columnYMin = -2f;

public float columnYMax = 2f;

private float timeSilenceLastSpawn;

private float spawnXPos = 10f;

private int currentColumn = 0;

public GameObject columnsPrefab;

private GameObject[] columns;

private Vector2 objectPoolPosition = new Vector2(-15, -25f);

// Use this for initialization

void Start ()

{

columns = new GameObject[columnPoolSize];

for(int i= 0; i< columnPoolSize; i++)

{

columns[i] = (GameObject)Instantiate(columnsPrefab, objectPoolPosition, Quaternion.identity);

}

}

// Update is called once per frame

void Update ()

{

timeSilenceLastSpawn += Time.deltaTime;

if(!GameControl.Instance.isGameOver && timeSilenceLastSpawn>= spawnRate)

{

timeSilenceLastSpawn = 0;

float spawnYPos = Random.Range(columnYMin, columnYMax);

columns[currentColumn].transform.position = new Vector2(spawnXPos, spawnYPos);

currentColumn++;

if(currentColumn >= columnPoolSize) { currentColumn = 0; }

}

}

}

This script controls the spawning and movement of the prefab columns.

Column Script

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class Column : MonoBehaviour

{

private void OnTriggerEnter2D(Collider2D other)

{

if(other.GetComponent<Stallion>() != null)

{

GameControl.Instance.Score();

}

}

}

This script is one of the more basic scripts it just takes the detected collision with the invisible object between the columns which calls the Score() function to add to the current score.

Main Menu Script

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

using UnityEngine.SceneManagement;

public class MainMenu : MonoBehaviour {

public void Awake()

{

}

public void PlayGame()

{

SceneManager.LoadScene(SceneManager.GetActiveScene().buildIndex + 1);

}

public void QuitGame ()

{

Debug.Log("Quit");

Application.Quit();

}

}

This script controls the main menu functions Play and Quit.

Game Over Script

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

using UnityEngine.SceneManagement;

public class GameOverMenu: MonoBehaviour {

public void start()

{

}

public void BacktoMenu()

{

SceneManager.LoadScene(SceneManager.GetActiveScene().buildIndex - 1);

}

public void Retry()

{

SceneManager.LoadScene(SceneManager.GetActiveScene().buildIndex);

}

}

This script controls the on death menu functions Back to main menu and Retry functions.