Lab 3 – Mars, Moons and Asteroids

GameManagerScript

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class GameManagerScript : MonoBehaviour

{

public GameObject camera, mars;

public GameObject phobos, deimos, asteroid;

// Probability of spawning an asteroid per frame

public float asteroidSpawnProbability = 0.1f;

void Start()

{

camera.transform.position = new Vector3(0f, 0f, -200f);

camera.transform.LookAt(mars.transform);

mars.GetComponent<Rigidbody>().AddTorque(new Vector3(0f, 20f, 0f));

}

// Update is called once per frame

void Update()

{

phobos.transform.RotateAround(Vector3.zero, Vector3.up, 3f \* Time.deltaTime);

deimos.transform.RotateAround(Vector3.zero, Vector3.up, 2f \* Time.deltaTime);

// Check if a random number falls within the spawn probability

if (Random.Range(0f, 50f) < asteroidSpawnProbability)

{

// Spawn a new asteroid using Instantiate

GameObject newAsteroid = Instantiate(asteroid);

}

// NB we are using the camera's own coordinate system (rather than the global coordinate system) to specify the axis of rotation

if (Input.GetKey(KeyCode.LeftArrow))

camera.transform.RotateAround(Vector3.zero, camera.transform.up, 50f \* Time.deltaTime);

else if (Input.GetKey(KeyCode.RightArrow))

camera.transform.RotateAround(Vector3.zero, camera.transform.up, -50f \* Time.deltaTime);

if (Input.GetKey(KeyCode.UpArrow))

camera.transform.RotateAround(Vector3.zero, camera.transform.right, 50f \* Time.deltaTime);

else if (Input.GetKey(KeyCode.DownArrow))

camera.transform.RotateAround(Vector3.zero, camera.transform.right, -50f \* Time.deltaTime);

}

}

Asteroid Script

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class AsteroidScript : MonoBehaviour

{

public GameObject asteroid;

private void Start()

{

asteroid.GetComponent<Rigidbody>().AddForce(600,0,0);

transform.position = new Vector3(

-150,

Random.Range(-100f, 100f),

Random.Range(-100f, 100f)

);

}

// Called when the asteroid collides with another object

private void OnCollisionEnter(Collision collision)

{

GameObject.Destroy(this.gameObject);

}

private void OnBecameInvisible()

{

GameObject.Destroy(this.gameObject);

}

}