using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class Attractor : MonoBehaviour

{

private Rigidbody rb;

public const float G = 0.025f;

public Vector3 OrbitNormal;

public Vector3 Initvelocity;

public Attractor target = null;

public static List<Attractor> attractors = new List<Attractor>();

private void Awake()

{

rb = GetComponent<Rigidbody>();

attractors.Add(this);

}

private void Start()

{

if (target != null && Initvelocity == Vector3.zero)

{

SetOrbitalVelocity(OrbitNormal);

}

}

private void FixedUpdate()

{

foreach (Attractor attractor in attractors)

{

if (attractor != this) Attract(attractor);

}

}

public void Attract(Attractor obToAttract)

{

Rigidbody rbToAtrract = obToAttract.rb;

Vector3 direction = rb.position - rbToAtrract.position;

float distance = direction.magnitude;

float forceMagnitude = (G \* rb.mass \* rbToAtrract.mass) / Mathf.Pow(distance, 2);

Vector3 force = direction.normalized \* forceMagnitude;

rbToAtrract.AddForce(force);

}

void SetOrbitalVelocity(Vector3 normal)

{

Vector3 direction = rb.position - target.rb.position;

float distance = direction.magnitude;

Vector3 unitTangent = Vector3.Cross(normal, direction);

Vector3 InitVelocity = Mathf.Sqrt(G \* target.rb.mass / Mathf.Pow(distance, 3)) \* unitTangent;

Debug.Log(InitVelocity);

this.rb.velocity = InitVelocity;

}

}