

# Game project 1

## 2020

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MAY 4

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COMPANY NAME

Authored by: Your Name



Logo  
Name

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# Title Heading

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# Player Controller

This is the Player Controller Script that controls the character in my game

```
using UnityEngine;
using UnityEngine.AI;
[RequireComponent(typeof(NavMeshAgent))]
@ Unity Script | 0 references
public class PlayerController : MonoBehaviour
{
    // Fields
    // Start is called before the first frame update
    @ Unity Message | 0 references
    void Start()
    {
        if(PlayerHead == null)
            PlayerHead = this.transform.GetComponentInChildren<SphereCollider>().gameObject;
        if (Animator == null)
            Animator = this.GetComponentInChildren<Animator>();
    }
    // Update is called once per frame
    @ Unity Message | 0 references
    void Update()
    {
        navMeshAgentF = this.GetComponent<NavMeshAgent>();
        ScreenPointScanner = Camera.main;
        if(PlayerCamera==null)
            PlayerCamera = this.GetComponentInChildren<Camera>();
        Vector2 mouseInfo = new Vector2(Input.GetAxisRaw("Mouse X"), Input.GetAxisRaw("Mouse Y"));
        movePlayer(CalculateRunspeed());
        Ismoving();
        animatorController();
        SetActiveCamPosition(ISFPSCam = SetCamPerspective(ISFPSCam),ThridPersonPointer,FirstPersonPointer,CharacterHeight);
        if (ISFPSCam)
            ActivateFPSCameraController(MaxClampFPS, MinClampFPS, mouseInfo);
        if (!ISFPSCam)
            CameraZoom(zoomSpeed, minZoom, maxZoom);
        if (Input.GetMouseButtonDown(2))
            Cursor.visible = !Cursor.visible;
        MoveToPoint(maxScreenDistancetoPoint, navMeshAgentF);
    }
    // Update is called once per frame just after the update method
    @ Unity Message | 0 references
```

```

using UnityEngine;
using UnityEngine.AI;
[RequireComponent(typeof(NavMeshAgent))]
// Unity Script | 0 references
public class PlayerController : MonoBehaviour
{
    // Fields
    // Start is called before the first frame update
    // Unity Message | 0 references
    void Start()
    {
        if(PlayerHead == null)
            PlayerHead = this.transform.GetComponentInChildren<SphereCollider>().gameObject;
        if (Animator == null)
            Animator = this.GetComponentInChildren<Animator>();
    }
    // Update is called once per frame

```

```

void Update()
{
    navMeshAgentF = this.GetComponent<NavMeshAgent>();
    ScreenPointScanner = Camera.main;
    if(PlayerCamera==null)
    {
        PlayerCamera = this.GetComponentInChildren<Camera>();
    }
    Vector2 mouseInfo = new Vector2(Input.GetAxisRaw("Mouse X"), Input.GetAxisRaw("Mouse Y"));
    movePlayer(CalculateRunspeed());
    Ismoving();
    animatorController();
    SetActiveCamPosition(ISFPSCam = SetCamPerspective(ISFPSCam),ThridPersonPointer,FirstPersonPointer,CharacterHeight);
    if (ISFPSCam)
    {
        ActivateFPSCameraController(MaxClampFPS, MinClampFPS, mouseInfo);
    }
    if (!ISFPSCam)
    {
        CameraZoom(zoomSpeed, minZoom, maxZoom);
    }
    if (Input.GetMouseButtonDown(2))
    {
        Cursor.visible = !Cursor.visible;
    }
    MoveToPoint(maxScreenDistancetoPoint, navMeshAgentF);
}

```



```
///<summary>
///this is the method that makes the character sprint
///</summary>
///<param name="playerVector">this is the player's current movement vector</param>
///<param name="Sprintmultiplier">this is how fast the character sprints use decimal values please</param>
1 reference
private void Sprint(Vector3 playerVector,float Sprintmultiplier)
{
    if (Input.GetKey(KeyCode.Leftshift))
    {
        Vector3 newVector3 = playerVector;
        newVector3.x = newVector3.x * Sprintmultiplier;
        this.transform.Translate(newVector3);
    }
}
```

```

· #endregion
· #region FPScontrolsScheme
· /// <summary>
· /// this activates the firstperson camera controls
· /// </summary>
· /// <param name="max">this set how far the character can look up</param>
· /// <param name="min">this set how far the character can look down</param>
· /// <param name="mouseInfo">this tracks the mouse movements in a vector 2</param>
· 1 reference
· private void ActivateFPSCameraController(float max, float min, Vector2 mouseInfo)

```

```

· 2 reference
· private void ActivateFPSCameraController(float max, float min, Vector2 mouseInfo)
· {
·     Vector2 MouseVectors = new Vector2(mouseInfo.x * Sensitivity, mouseInfo.y * Sensitivity);
·     mouseDelta += MouseVectors;
·     float YClamp = Mathf.Clamp(mouseDelta.y, min = IsIdle ? -90 : -60, max = 30);
·     PlayerHead.transform.localRotation = Quaternion.Euler(-YClamp, 0, 0);
·     this.transform.localRotation = Quaternion.Euler(0, mouseDelta.x, 0);
· }

```



```

..#endregion
..FPScontrolsScheme
..3rd PersonScheme
..#region switchCam
..///<summary>
..///this set the camera perspective when v is pressed
..///</summary>
..///<param name="isFPSPerspective">the value that indicates if the camera is 1st or 3rd person</param>
..///<returns></returns>
1 reference
private bool SetCamPerspective(bool isFPSPerspective) => isFPSPerspective = Input.GetKeyDown(KeyCode.V) ? !isFPSPerspective : isFPSPerspective;

```

This here below is what is shown above just zoomed in.

```

1 reference
private bool SetCamPerspective(bool isFPSPerspective) =>
... isFPSPerspective = Input.GetKeyDown(KeyCode.V) ? !isFPSPerspective : isFPSPerspective;
..///<summary>

```

```

.../// <summary>
.../// this method changes the position of the camera
.../// </summary>
.../// <param name="perspective">the value that indicates if the camera is 1st or 3rd person</param>
.../// <param name="thridCamPosition">the position that the cam should assume for this perspective</param>
.../// <param name="fpsCamPosition">the position that the cam should assume for this perspective</param>
.../// <param name="characterHeight">the height of the character</param>
1 reference
1 reference
private void SetActiveCamPosition(bool perspective, Transform thridCamPosition,
... Transform fpsCamPosition, float characterHeight)
{
... if (!perspective)
... {
...     PlayerCamera.transform.position = thridCamPosition.position;
...     PlayerCamera.transform.parent = null;
...     PlayerCamera.transform.localRotation = thridCamPosition.localRotation;
...     PlayerCamera.transform.LookAt(this.transform.position + Vector3.up * characterHeight);
... }
... if (perspective)
... {
...     PlayerCamera.transform.parent = fpsCamPosition;
...     PlayerCamera.transform.position = fpsCamPosition.position;
...     PlayerCamera.transform.localRotation = Quaternion.Euler(0f, 0f, 0f);
... }
... }
#endregion

```

```

·///·<summary>
·///·this·method·help·the·ai·system·for·movement·and·interaction
·///·</summary>
·///·<param·name="ScreenDistancetoPoint">where·the·user·click·on·screen</param>
·///·<param·name="navMeshAgent">the·ai·contoller</param>
1 reference

```

```

1 reference
·private·void·MoveToPoint(float·ScreenDistancetoPoint,·NavMeshAgent·navMeshAgent)
·{
·····Vector3·LastKnownPosistion = this.transform.position;
·····RaycastHit·raycastHit;
·····RightClick
·····LeftClick
·····if (navMeshAgent.transform.position.magnitude != navMeshAgent.pathEndPosition.magnitude)
·····{
·········if (Isrunning)
···········Animator.SetFloat("speedAnimationValue", 1f, .1f, Time.deltaTime);
·········else
···········Animator.SetFloat("speedAnimationValue", .5f, .1f, Time.deltaTime);
·······}
···}
·Object Targetting
·Animation and RunstatusSpeed Methods
·Original 3rd personSetactivecam code

```

```

1 reference
private void MoveToPoint(float ScreenDistancetoPoint, NavMeshAgent navMeshAgent)
{
    Vector3 LastKnownPosistion = this.transform.position;
    RaycastHit raycastHit;
    #region RightClick
    if (Input.GetMouseButtonDown(1))
    {
        if (Physics.Raycast(ScreenPointScanner.ScreenPointToRay(Input.mousePosition), out raycastHit,
            ScreenDistancetoPoint, groundMask))
        {
            navMeshAgent.updateRotation = true;
            navMeshAgent.SetDestination(raycastHit.point);
            if (focus != null)
            {
                DeFocus();
            }
        }
    }
    #endregion

    #region LeftClick
    if (Input.GetMouseButtonDown(0))
    {
        if (Physics.Raycast(ScreenPointScanner.ScreenPointToRay(Input.mousePosition), out raycastHit,
            ScreenDistancetoPoint, interactableMask))
        {
            SetFocus(raycastHit.collider.GetComponent<Interactable>());
        }
    }
    #endregion

    if (navMeshAgent.transform.position.magnitude != navMeshAgent.pathEndPosition.magnitude)
    {
        if (Isrunning)
        {
            Animator.SetFloat("speedAnimationValue", 1f, .1f, Time.deltaTime);
        }
        else
        {
            Animator.SetFloat("speedAnimationValue", .5f, .1f, Time.deltaTime);
        }
    }
}

```

```

-#region Object Targetting
-///<summary>
-///the method that targets objects in the world (ai method)
-///</summary>
-///<param name="newFocus">the new target</param>
  1 reference
-private void SetFocus(Interactable newFocus)
-{
-    if (newFocus != null)
-        focus = newFocus;
-    focus.IsFocused = true;
-    FollowTarget();
-    Debug.Log("focused");
-    focus.HasInteracted = false;
-}
}

```

```

-///<summary>
-///un-target something (ai method)
-///</summary>
  1 reference
-private void DeFocus()
-{
-    if (focus != null)
-    {
-        focus.IsFocused = false;
-        focus.HasInteracted = false;
-        focus = null;
-        if (target != null)
-            target = null;
-        navMeshAgentF.stoppingDistance = 0f;
-    }
-}
}

```

```

·///·<summary>
·///·follow·targetted·object·(ai·method)
·///·</summary>
1 reference
·private·void·FollowTarget()
·{
·····if (focus·!=·null)
·······target = focus.transform;
·····if (target·!=·null)
·····{
·······navMeshAgentF.stoppingDistance = focus.Radius·*·0.9f;
·······navMeshAgentF.updateRotation = false;
·······navMeshAgentF.SetDestination(target.position);
·······Vector3 direction = (this.transform.position - target.position).normalized;
·······this.transform.rotation = Quaternion.Slerp(this.transform.rotation,
·········Quaternion.LookRotation(new Vector3(direction.x, 0f, direction.z)), Time.deltaTime * 5f);
·····}
·}
·#endregion

```

## Object Targetting

### #region Animation and RunstatusSpeed Methods

///  
///<summary>

/// this method check to see if the player wants to walk or run

///</summary>

///<param name="isrunning">tracks if the is player set to running or walking</param>

1 reference

private void ToggleRun(bool isrunning) => Isrunning = Input.GetKeyDown(KeyCode.CapsLock) ? !isrunning : isrunning;

///  
///<summary>

/// this method set the speed for the character

///</summary>

///<returns>run or walk speed</returns>

1 reference

private float CalculateRunspped()

{

... float speed = 0f;

... ToggleRun(Isrunning);

... return speed = Isrunning ? runSpeed : walkSpeed;

}

```

-///<summary>
-///check if character is moving or idle
-///</summary>
1 reference
-private void Ismoving() =>
-.....IsIdle = Input.GetAxis("Vertical") != 0 || Input.GetAxis("Horizontal") != 0 ? false : true;
-///<summary>
-///this method is the animation controller
-///</summary>
1 reference
-private void animatorController()
-
-.....if(IsIdle)
-.....Animator.SetFloat("speedAnimationValue", 0f, .1f, Time.deltaTime);
-.....else
-.....if(Isrunning)
-.....Animator.SetFloat("speedAnimationValue", 1f, .1f, Time.deltaTime);
-.....else
-.....Animator.SetFloat("speedAnimationValue", .5f, .1f, Time.deltaTime);
-}
-#endregion

```



# Intractable class

```
using UnityEngine;
Unity Script | 6 references
public class Interactable : MonoBehaviour
{
    [SerializeField]
    private GameObject player;
    [SerializeField]
    private float radius = 2f;
    private bool isFocused = false;
    private bool hasInteracted = false;
    2 references
    public float Radius { get => radius; }
    3 references
    public bool IsFocused { get => isFocused; set => isFocused = value; }
    6 references
    public bool HasInteracted { get => hasInteracted; set => hasInteracted = value; }
```

```

· · · · · <summary>
· · · · · draws in editor a sphere for the objects radius
· · · · · </summary>
· · · · · Unity Message | 0 references
· private void OnDrawGizmosSelected()
· {
· · · · · Gizmos.color = Color.green;
· · · · · Gizmos.DrawWireSphere(this.transform.position, Radius);
· }
· 6 references
· public virtual void Interact()
· {
· · · · · float distance = Vector3.Distance(player.transform.position, this.transform.position);
· · · · · if (IsFocused && !HasInteracted)
· · · · · {
· · · · · · · · · HasInteracted = distance <= radius ? true : false;
· · · · · }
· }

```

# Item pickup class

```
Unity Script | 0 references
public class ItemPickUp : Interactable
{
    [SerializeField]
    private Item newItem;
    Unity Message | 0 references
    void Update() => Interact();
    6 references
    public override void Interact()
    {
        base.Interact();
        if (HasInteracted)
        {
            if (Inventory.instance.AddItemToInventory(newItem))
            {
                Destroy(gameObject);
                Inventory.instance.UpdateInventory();
            }
        }
    }
}
```

# Item class

```
using UnityEngine;
[CreateAssetMenu(fileName = "New Item", menuName = "GameItem/New Item")]

public class Item : ScriptableObject
{
    ... [SerializeField]
    ... new private string name = "NewItem";
    ... [SerializeField]
    ... private Sprite image;
    ... [SerializeField]
    ... private GameObject itemObject;

    ... public Sprite Image { get => image; set => image = value; }

    ... public string Name { get => name; set => name = value; }
    ... 0 references
    ... public GameObject ItemObject { get => itemObject; set => itemObject = value; }
}
```

## Gold pickup class

```
using UnityEngine;

UnityScript | 0 references

public class GoldPick : Interactable
{
    [SerializeField]
    private Gold Gold;
    Unity Message | 0 references
    void Update() => Interact();
    6 references
    public override void Interact()
    {
        base.Interact();
        if (HasInteracted)
        {
            Inventory.instance.MoneyAmount.text = Gold.Amount.ToString();
            Destroy(gameObject);
        }
    }
}
```

# Inventory Slots

```
using UnityEngine;
using UnityEngine.UI;
    Unity Script | 2 references
public class InventorySlots : MonoBehaviour
{
    Item item;
    public Image icon;
    // Start is called before the first frame update
    1 reference
    public void addIcon(Item newitem)
    {
        item = newitem;
        icon.enabled = true;
        icon.sprite = item.Image;
    }
    1 reference
    public void noneAdded()
    {
        icon.sprite = null;
        icon.enabled = false;
    }
}
```

# Inventory

```
using UnityEngine;
using UnityEngine.UI;
using System.Collections.Generic;
    Unity Script | 4 references
public class Inventory : MonoBehaviour
{
    + Instancing
    [SerializeField]
    private GameObject self;
    [SerializeField]
    private int maxSpace = 21;
    [SerializeField]
    private Transform SlotsParent;
    private int space = 0;
    private List<Item> items = new List<Item>();
    private InventorySlots[] Slots;
    [SerializeField]
    private Text moneyAmount;
    1 reference
    public Text MoneyAmount { get => moneyAmount; set => moneyAmount = value; }
    1 reference
```

```

- [SerializeField]
- private Text moneyAmount;
  1 reference
- public Text MoneyAmount { get => moneyAmount; set => moneyAmount = value; }
  1 reference
- public bool AddItemToInventory(Item item)
- {
-     ... space = items.Count;
-     ... if(space >= maxSpace)
-     ... {
-     ...     ... return false;
-     ... }
-     ... else
-     ... {
-     ...     ... items.Add(item);
-     ...     ... return true;
-     ... } ...
- }

```

```

  0 references
- public void RemoveItemToInventory(Item item) => items.Remove(item);
  0 references
- public void ClearInventory()
- {
-     ... items.Clear(); //spawn bag
- }

```



1 reference

```
public void UpdateInventory()  
{  
    Slots = SlotsParent.GetComponentsInChildren<InventorySlots>();  
    for(int i = 0; i < Slots.Length; i++)  
    {  
        if(i < items.Count) //check  
        {  
            Slots[i].addIcon(items[i]);  
            Slots[i].icon.color = Color.white;  
        }  
        else  
        {  
            Slots[i].noneAdded();  
            Slots[i].icon.enabled = false;  
        }  
    }  
}
```

⊞ Unity Message | 0 references

`void Update()`

```
{  
    if (Input.GetKeyDown(KeyCode.I))  
    {  
        self.SetActive(!self.activeSelf);  
    }  
}
```

0 references

`public void Close()`

```
{  
    self.SetActive(false);  
}
```

# Health and mana system

```
using UnityEngine;
using UnityEngine.UI;
    Unity Script | 0 references
public class HealthSys : MonoBehaviour
{
    #region HealthFields
    [SerializeField]
    private int health = 10;
    [SerializeField]
    private int numOfHearts = 10;
    [SerializeField]
    private Sprite fullHealthUp;
    [SerializeField]
    private Sprite fullHealthDown;
    [SerializeField]
    private Sprite emptyHealthUP;
    [SerializeField]
    private Sprite emptyHealthDown;
    [SerializeField]
    private Image[] imageArray;
    [SerializeField]
    private GameObject UI;
    #endregion
    //-----
```

```

- #region ManaFields
- [SerializeField]
- private int Mana = 10;
- [SerializeField]
- private int numOfMana = 10;
- [SerializeField]
- private Sprite fullManaUp;
- [SerializeField]
- private Sprite fullManaDown;
- [SerializeField]
- private Sprite emptyManaUP;
- [SerializeField]
- private Sprite emptyManaDown;
- [SerializeField]
- private Image[] imageManaArray;
- #endregion

```

⊕ Unity Message | 0 references

```

- void Update()
- {
-     - - - CheckPlayerHealth();
-     - - - UpdatePlayerHealthArray(0);
-     - - - CheckPlayerMana();
-     - - - UpdatePlayerManaArray();
- }
- Health
- //-----
- Mana

```

```
--#region Health
--///<summary>
--/// loads player health and manage the player if the player takes damage or gains health
--///</summary>
--1reference
--public void UpdatePlayerHealthArray(float dmg)
--{
--    for (int i = 0; i < imageArray.Length; i++)
--    {
--        //float healthRemaining = i*(health-dmg)/(health-dmg); //check of healthRemaining 0 is
--        if (i > health)
--        {
--            imageArray[i].sprite = i % 2 == 0 ? emptyHealthDown : emptyHealthUp;
--        }
--        else
--        {
--            imageArray[i].sprite = i % 2 == 0 ? fullHealthDown : fullHealthUp;
--        }
--        if (i < numOfHearts)
--        {
--            imageArray[i].enabled = true;
--        }
--        else
--        {
--            imageArray[i].enabled = false;
--        }
--    }
--}
--///<summary>
```

```

    }

    #region Mana
    /// <summary>
    /// check to see if health does not exceed the health container size
    /// </summary>
    1 reference
    public void CheckPlayerMana()
    {
        if (Mana > numOfMana)
        {
            Mana = numOfMana;
        }
    }
    /// <summary>
    /// loads player health and manage the player if the player takes damage or gains health
    /// </summary>
    1 reference
    public void UpdatePlayerManaArray()

```

```
1 reference
public void UpdatePlayerManaArray()
{
    for (int i = 0; i < imageManaArray.Length; i++)
    {
        if (i > Mana)
        {
            imageManaArray[i].sprite = i % 2 == 0 ? emptyManaUp : emptyManaDown;
        }
        else
        {
            imageManaArray[i].sprite = i % 2 == 0 ? fullManaUp : fullManaDown;
        }
        if (i < numOfMana)
        {
            imageManaArray[i].enabled = true;
        }
        else
        {
            imageManaArray[i].enabled = false;
        }
    }
}

//
```

```

..#endregion
..///<summary>
..///Updates Mana field
..///</summary>
..///<param name="mana"></param>
..///<returns></returns>
    0 references
..public float UpdateMana(double mana) => Mana = (int)mana;
..///<summary>
..///Updates health field
..///</summary>
..///<param name="health1"></param>
..///<returns></returns>
    0 references
..public float UpdateHealth(double healthAmount) => health = (int)healthAmount;

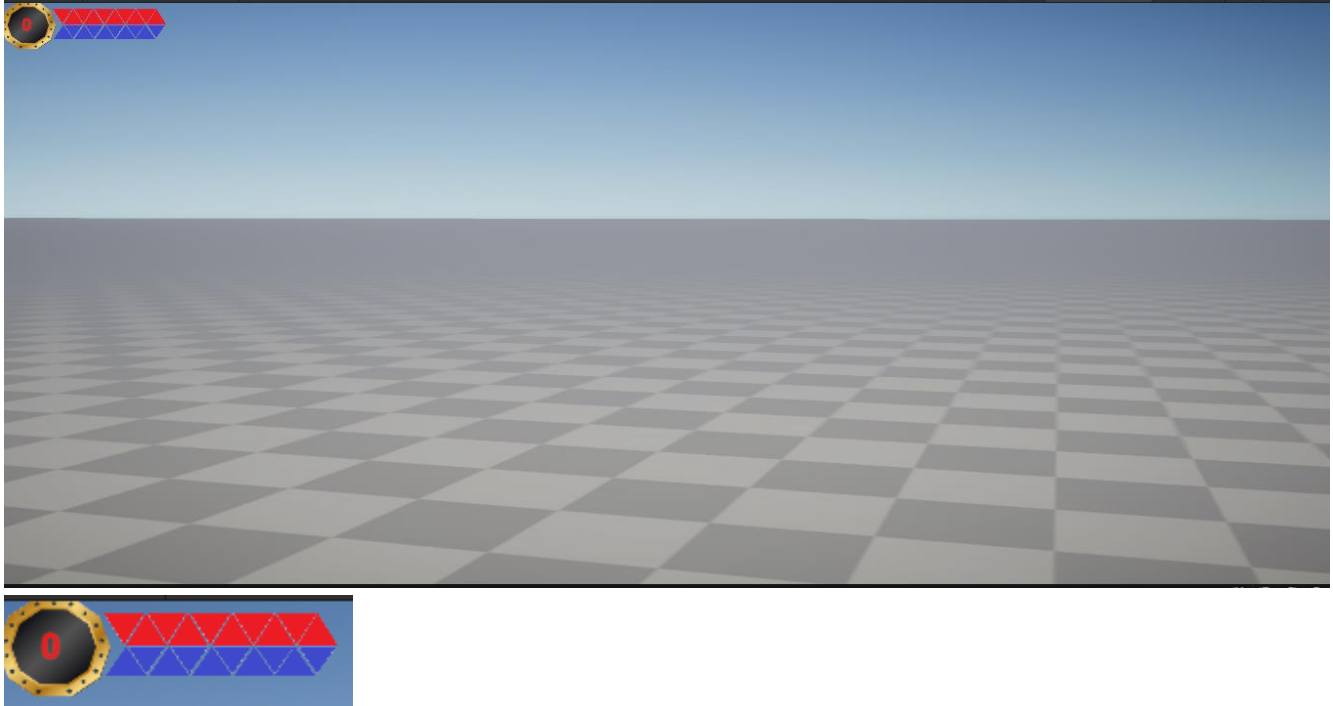
```



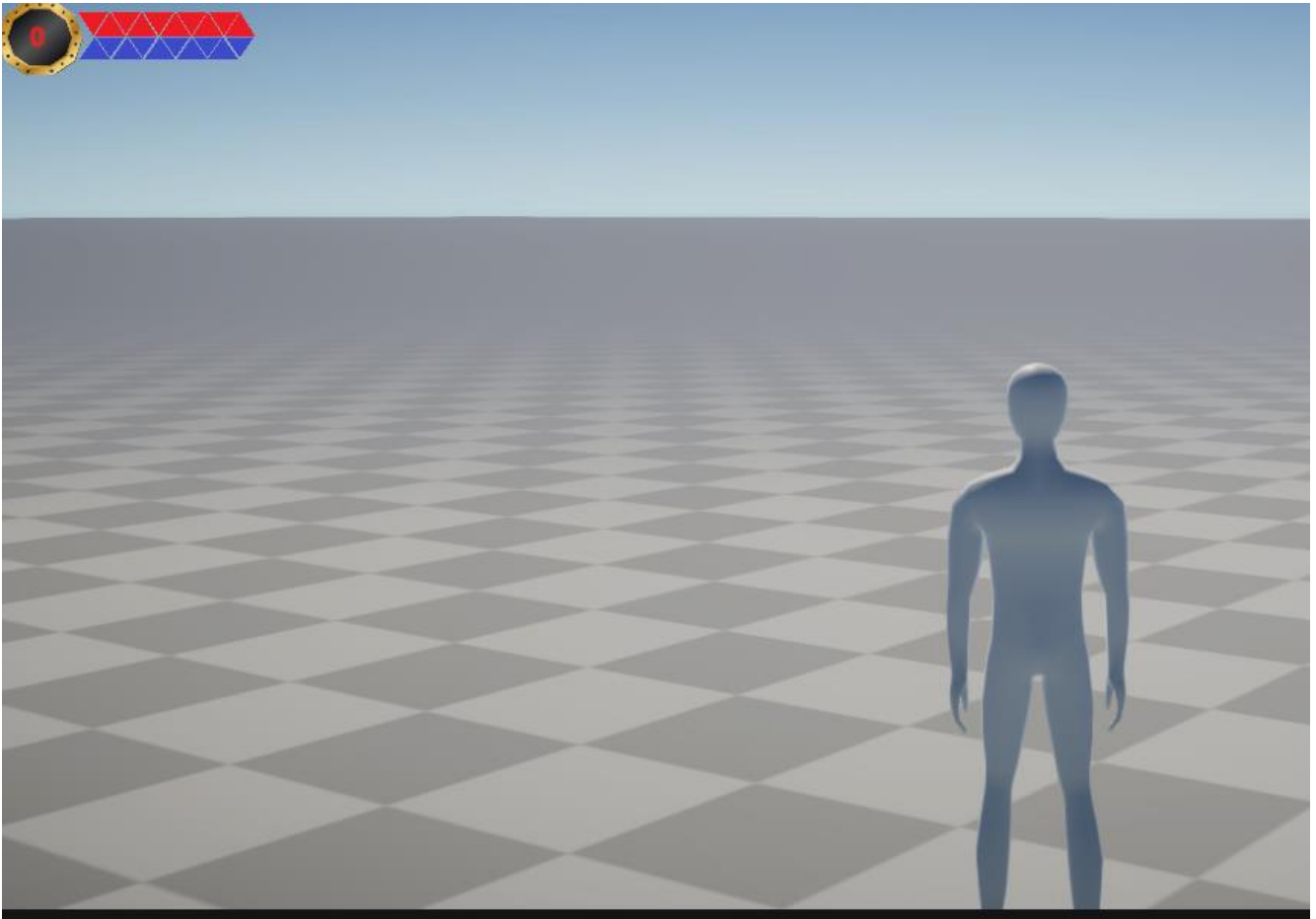
---

# Images of game

Fps Mode



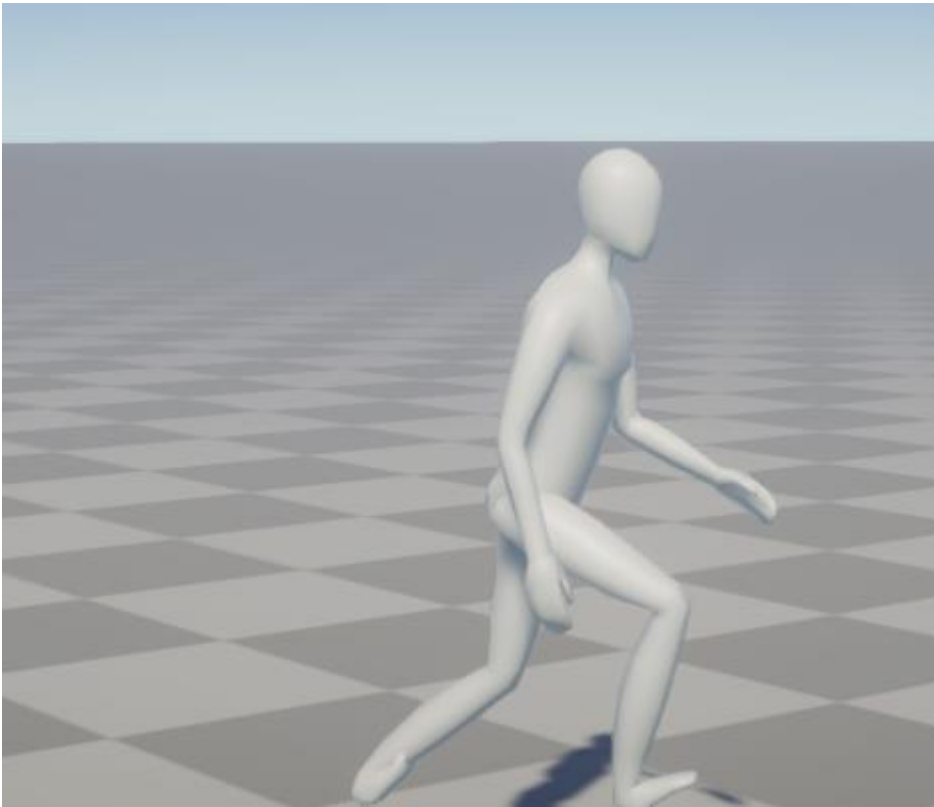
## Third Person Mode

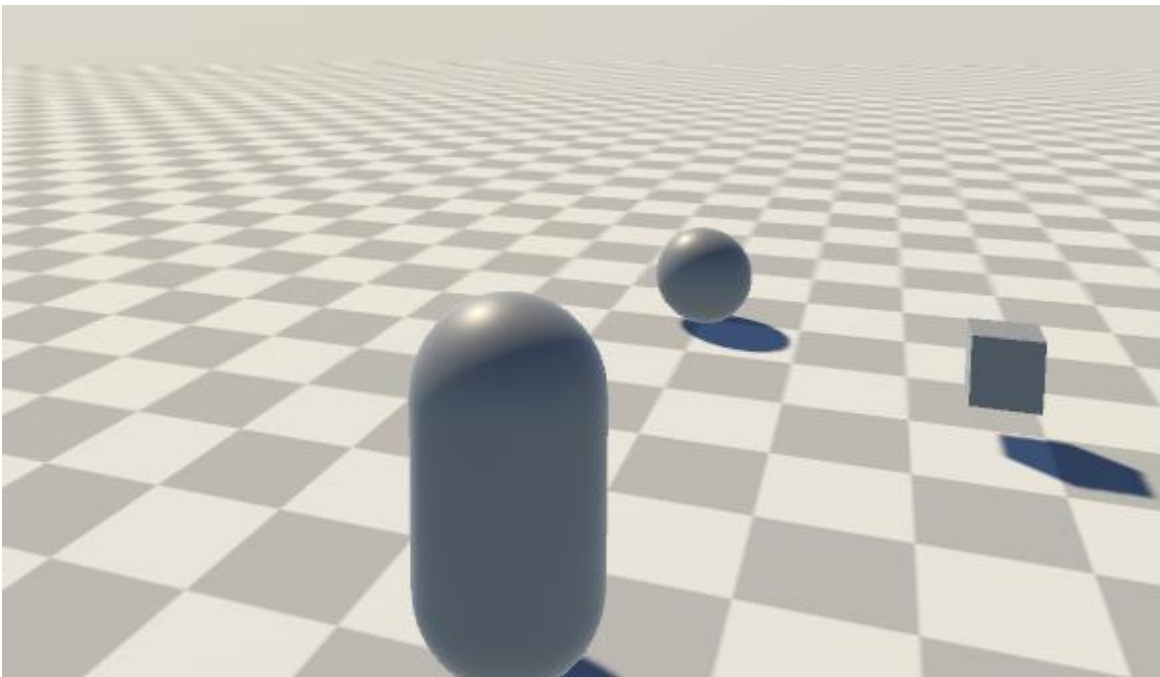
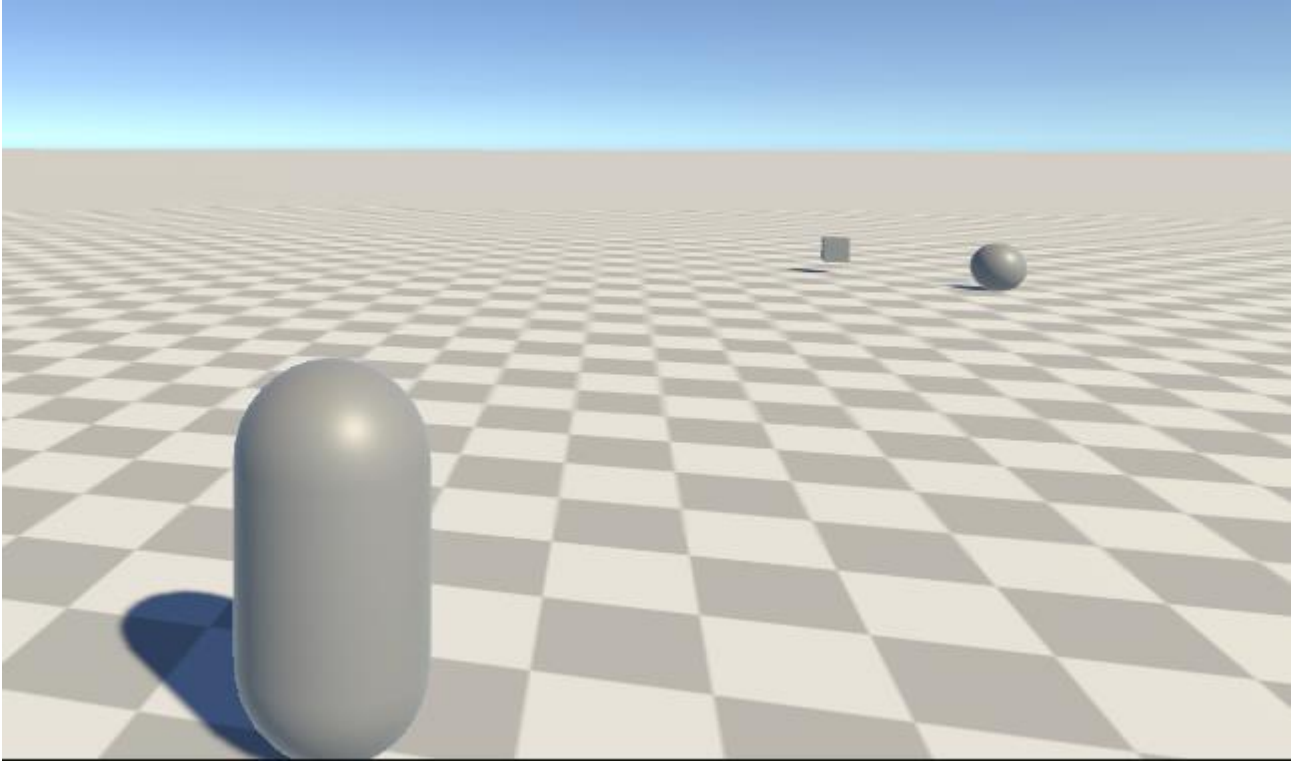






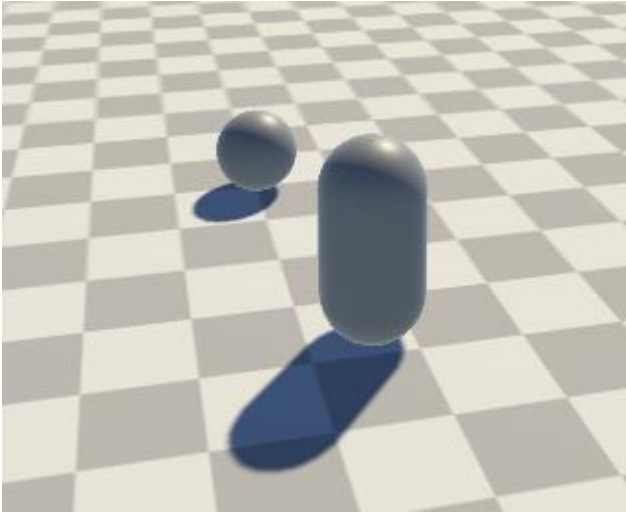
I am terrible at animation but hopefully I am good at programming.





---

Cube is an item to pick up in game (like a sword), in this test scenario

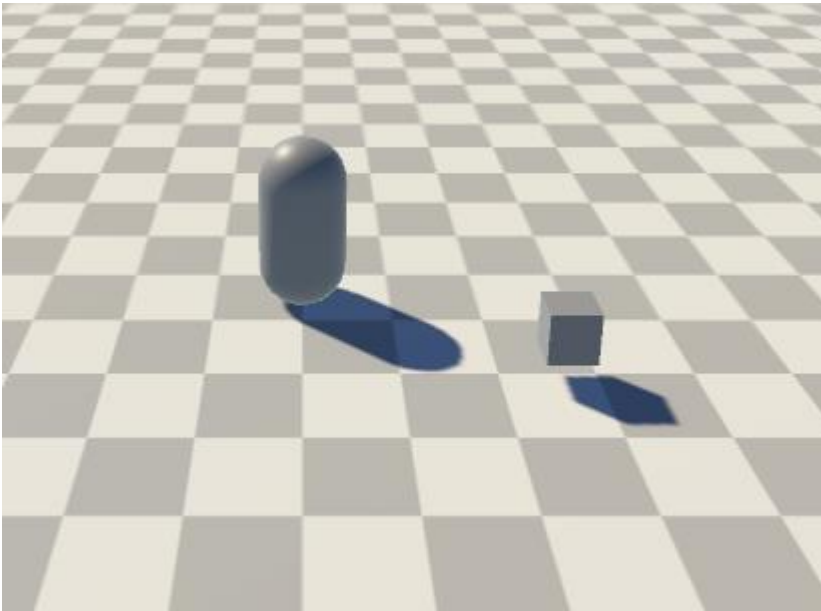


## Item pickup



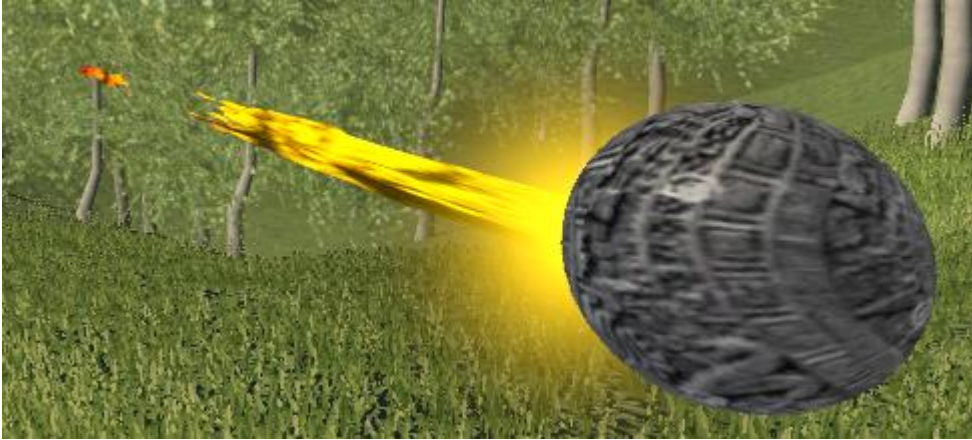


Ball is gold to Pick up in this test scenario







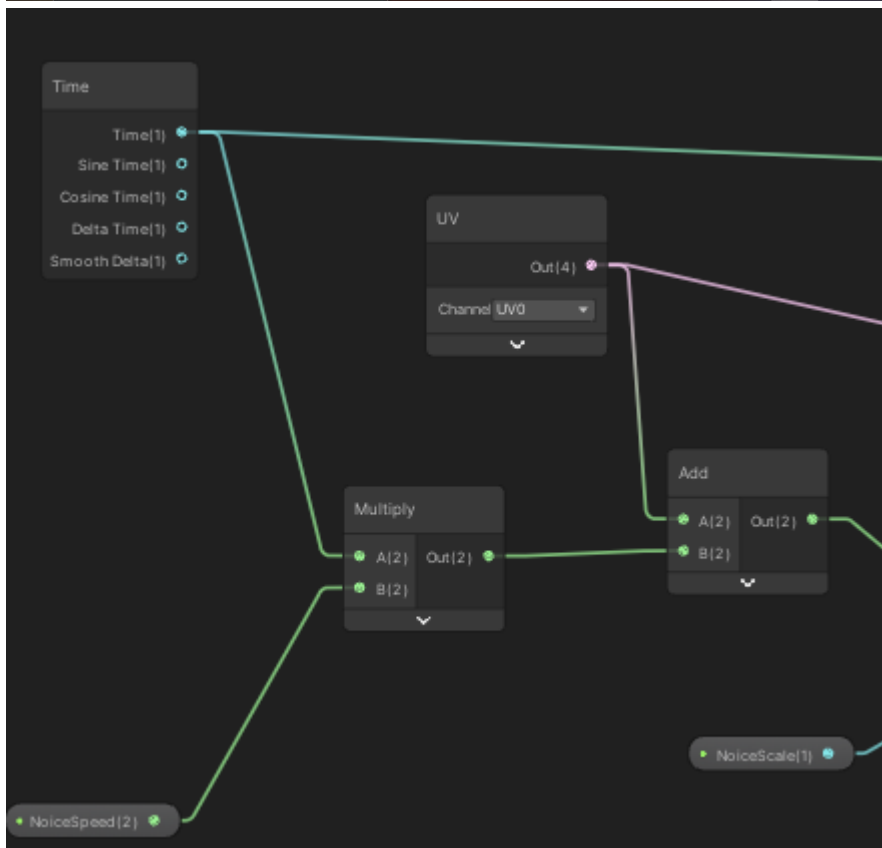
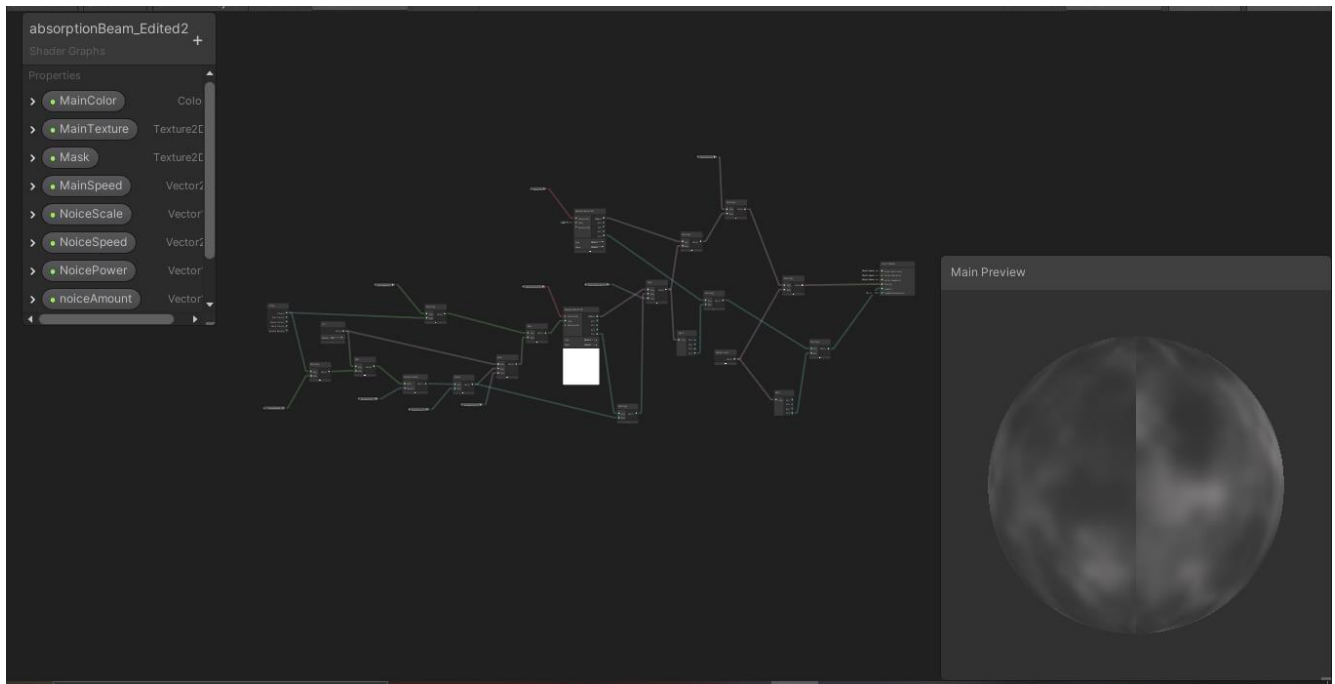


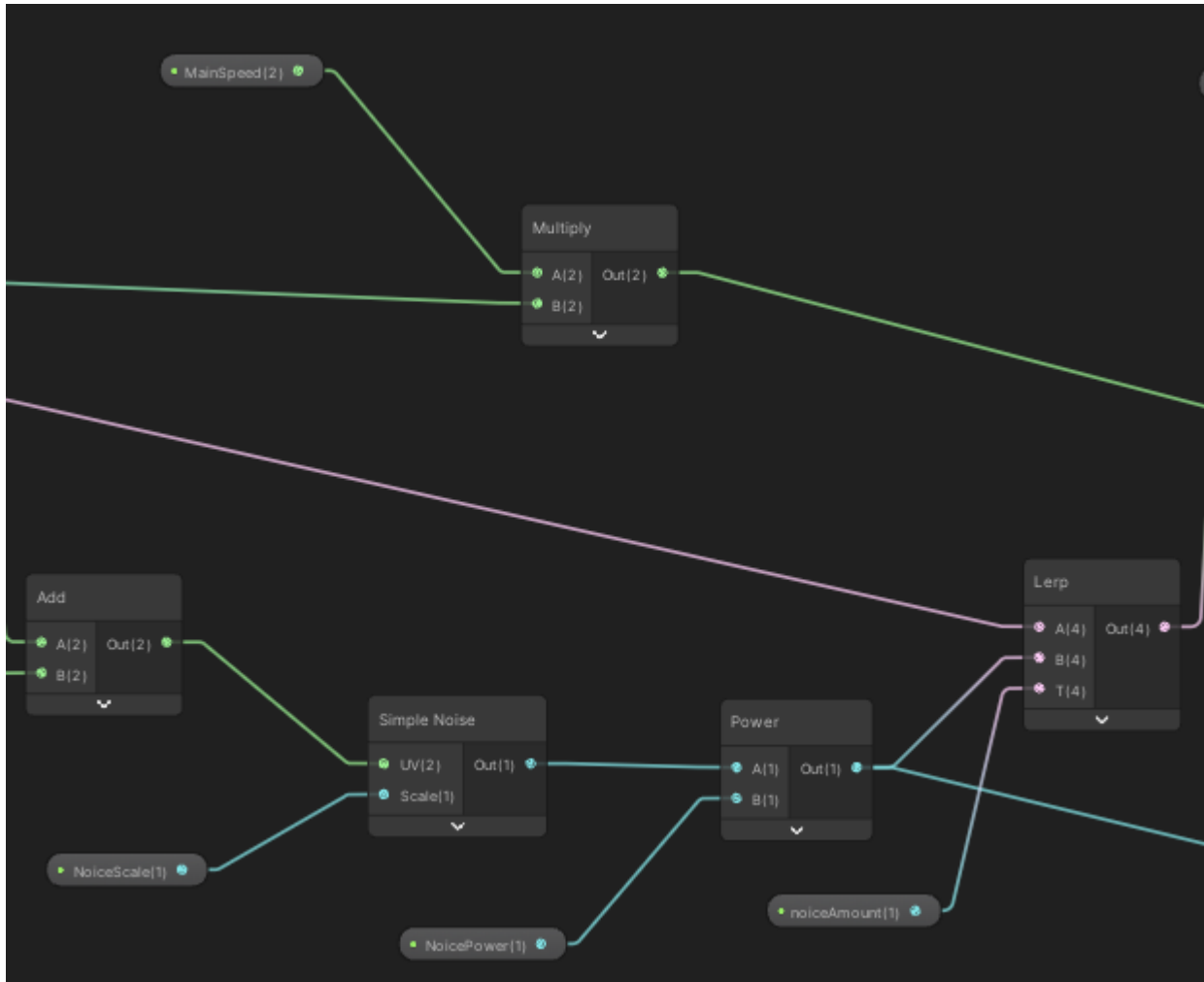
**Ugly Trees I Know Right? Burn it!**

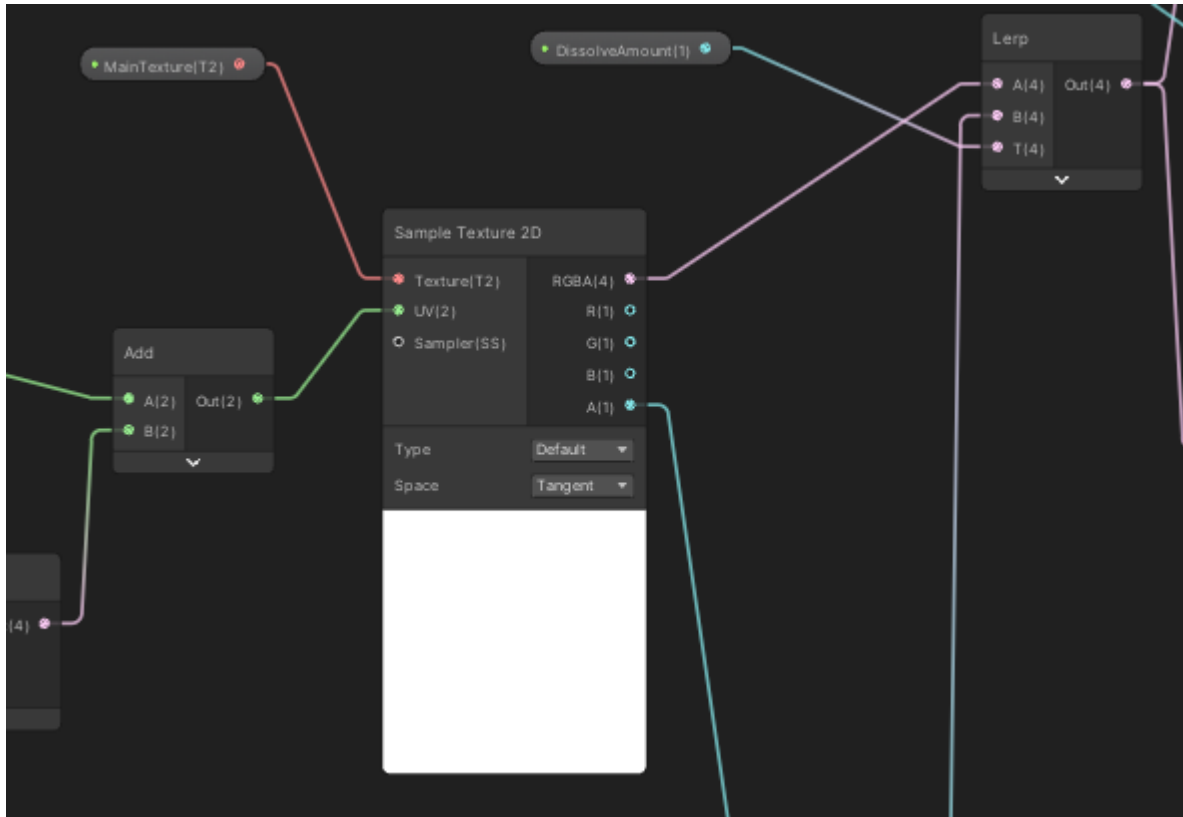


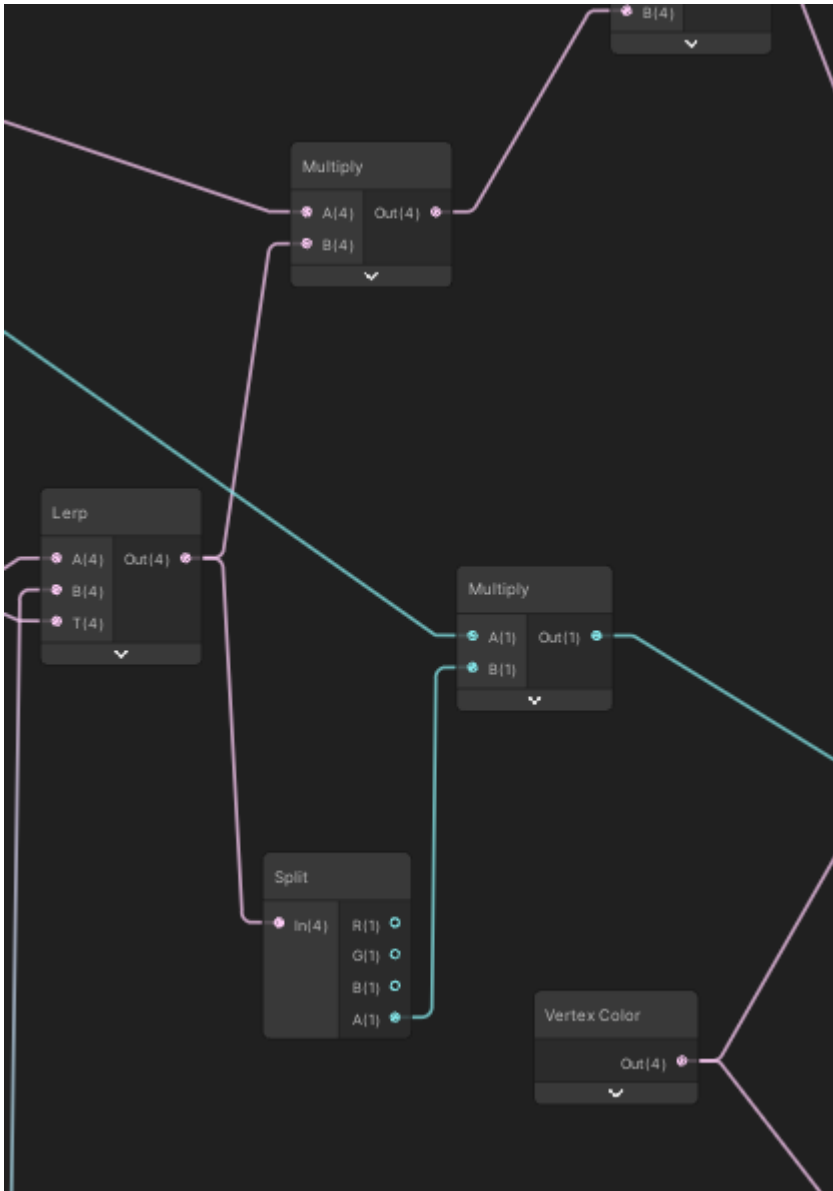


# Shader Graph

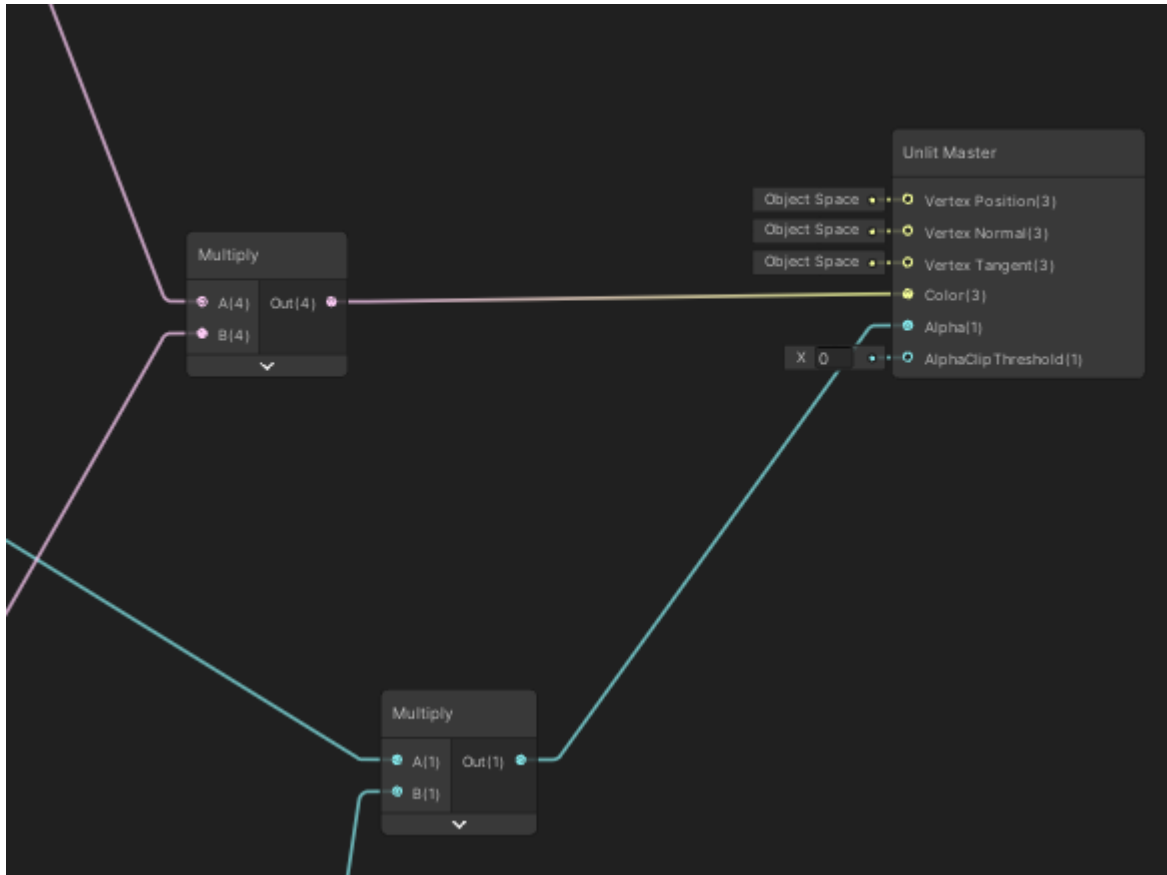








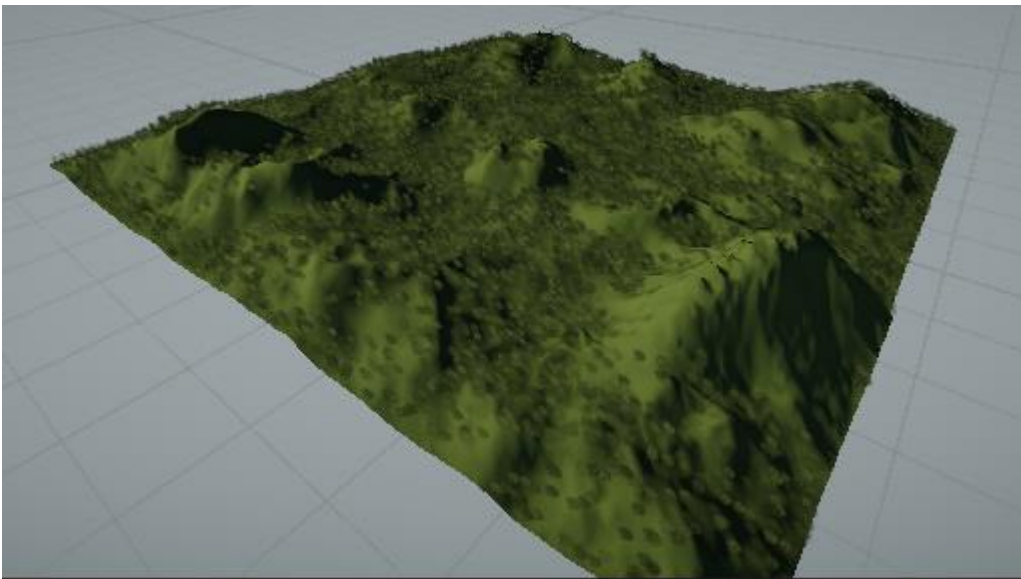
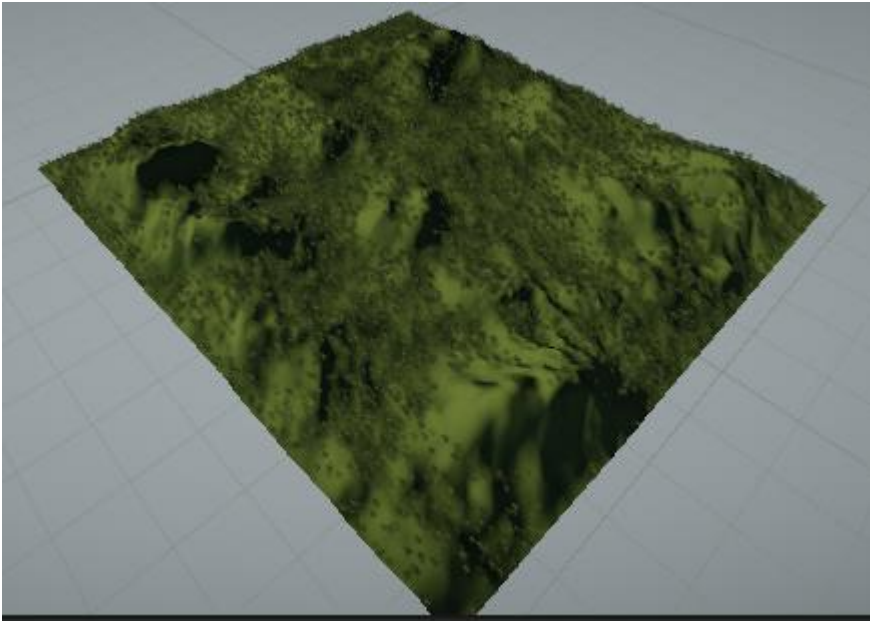


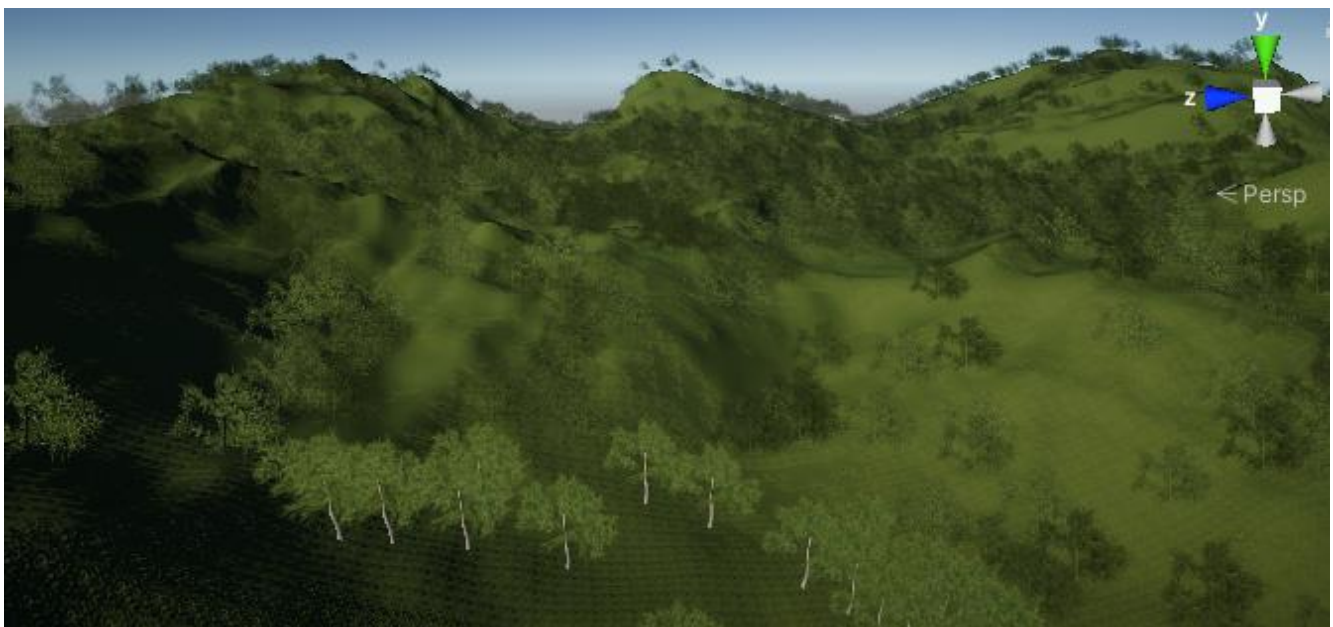
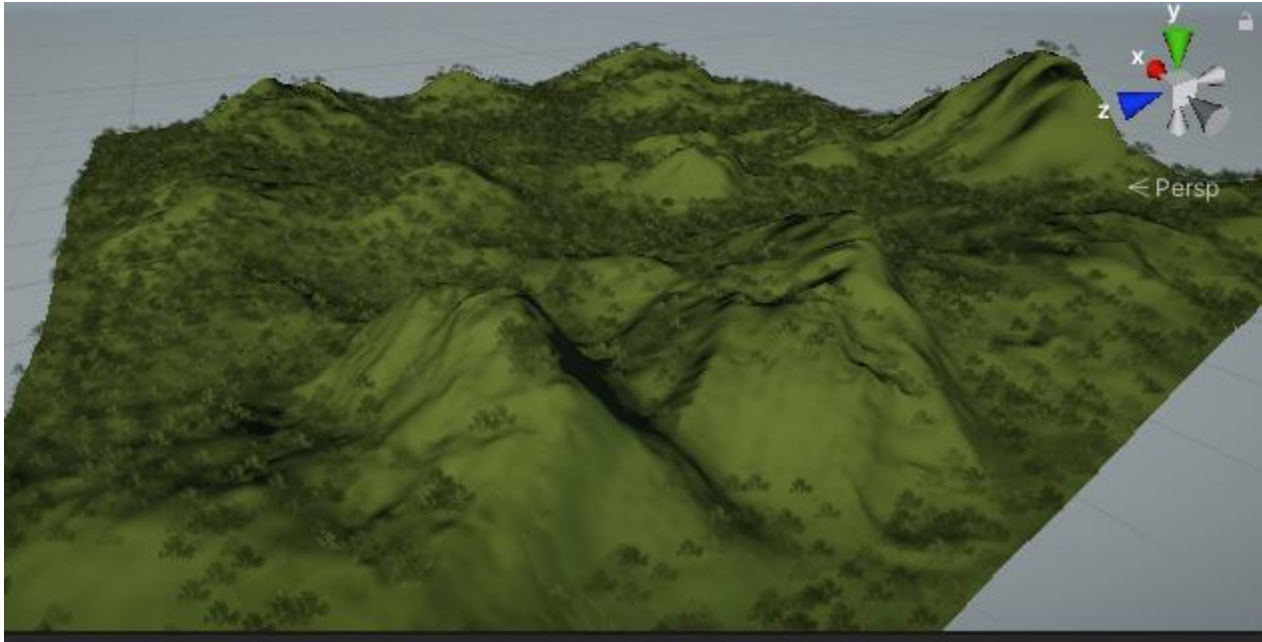


Shader Graphs	
> MainTexture	Texture2D
> Mask	Texture2D
> MainSpeed	Vector2
> NoiceScale	Vector2
> NoiceSpeed	Vector2
> NoicePower	Vector2
> noiceAmount	Vector2
> DissolveAmount	Vector2

---

# Level Design





## Level number 2

