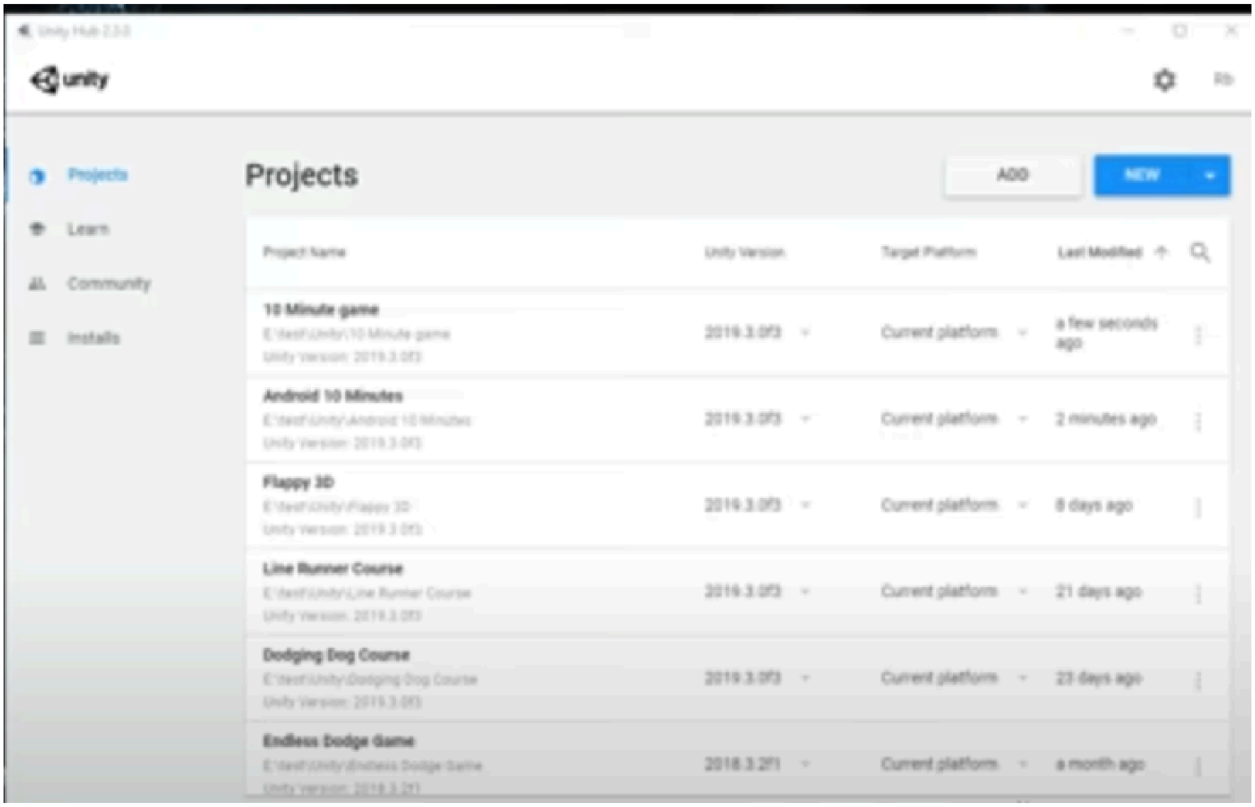
TYCS SEM 5

GAME PROGRAMMING

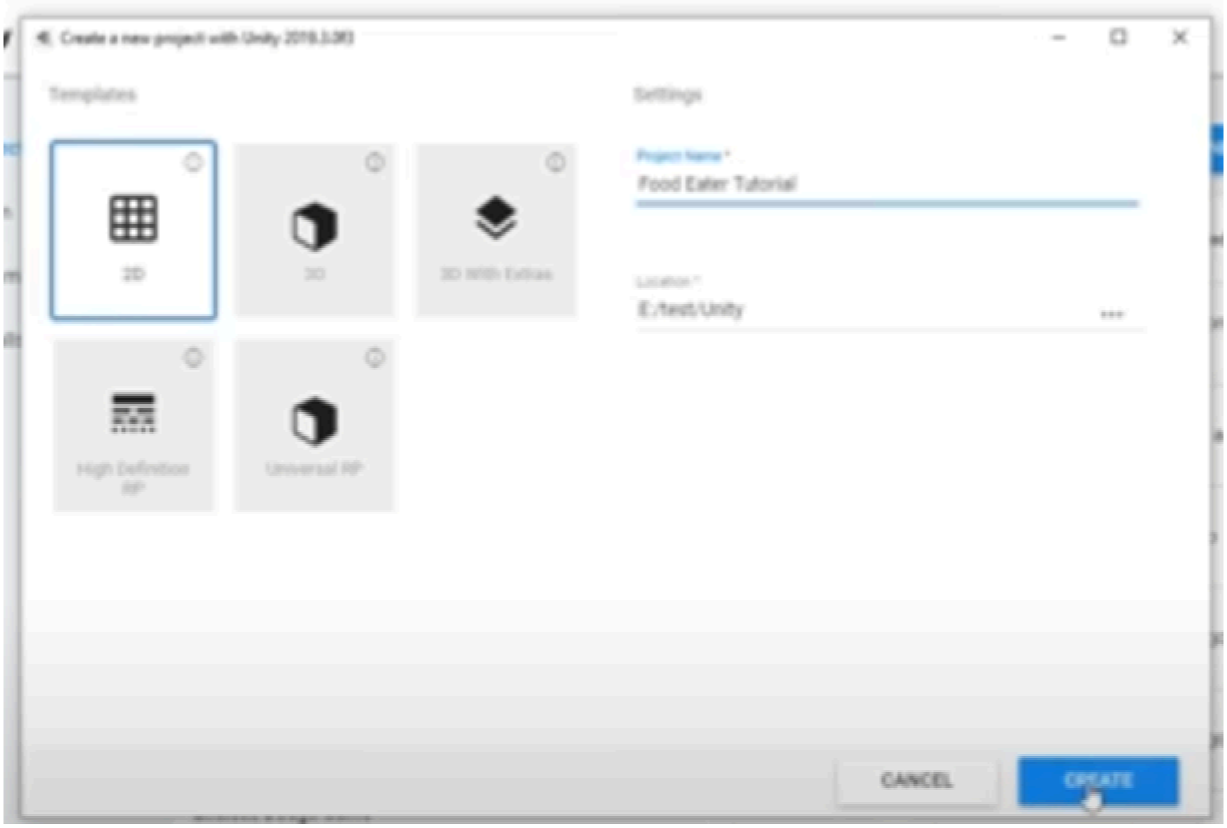
Practical no 9

AIM:Develop Android Game with Unity



Projects

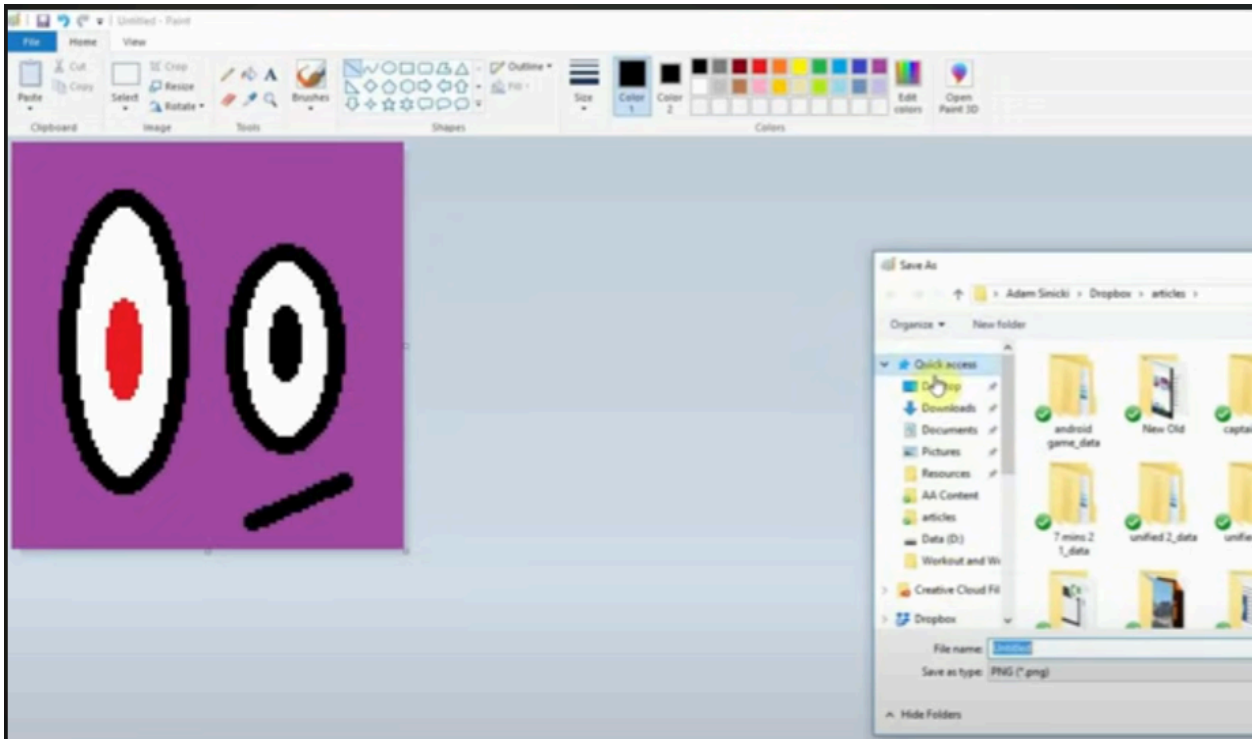
Project Name	Unity Version	Target Platform	Last Modified
10 Minute game E:\test\Unity\10 Minute game Unity Version: 2019.3.0f3	2019.3.0f3	Current platform	a few seconds ago
Android 10 Minutes E:\test\Unity\Android 10 Minutes Unity Version: 2019.3.0f3	2019.3.0f3	Current platform	2 minutes ago
Flappy 3D E:\test\Unity\Flappy 3D Unity Version: 2019.3.0f3	2019.3.0f3	Current platform	8 days ago
Line Runner Course E:\test\Unity\Line Runner Course Unity Version: 2019.3.0f3	2019.3.0f3	Current platform	21 days ago
Dodging Dog Course E:\test\Unity\Dodging Dog Course Unity Version: 2019.3.0f3	2019.3.0f3	Current platform	23 days ago
Endless Dodge Game E:\test\Unity\Endless Dodge Game Unity Version: 2018.3.2f1	2018.3.2f1	Current platform	a month ago



Create a new project with Unity 2018.3.0f3

Project Name * Food Eater Tutorial

Location * E:/test/Unity



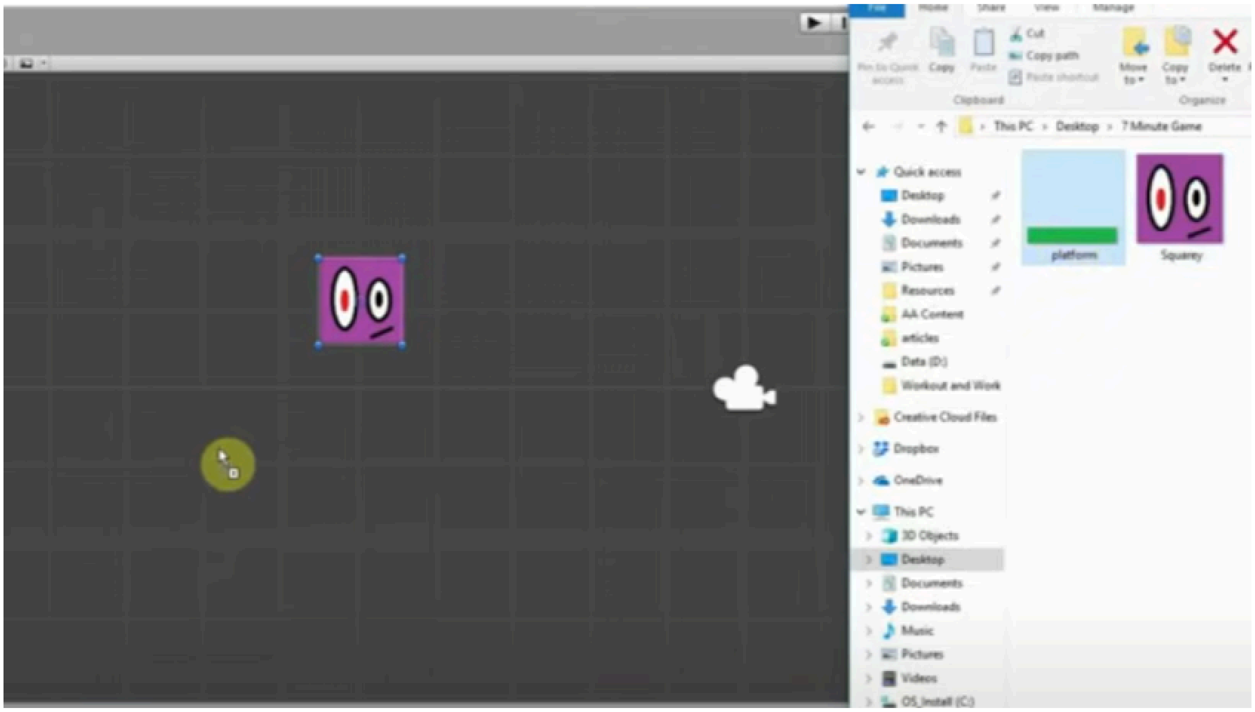
Untitled - Paint

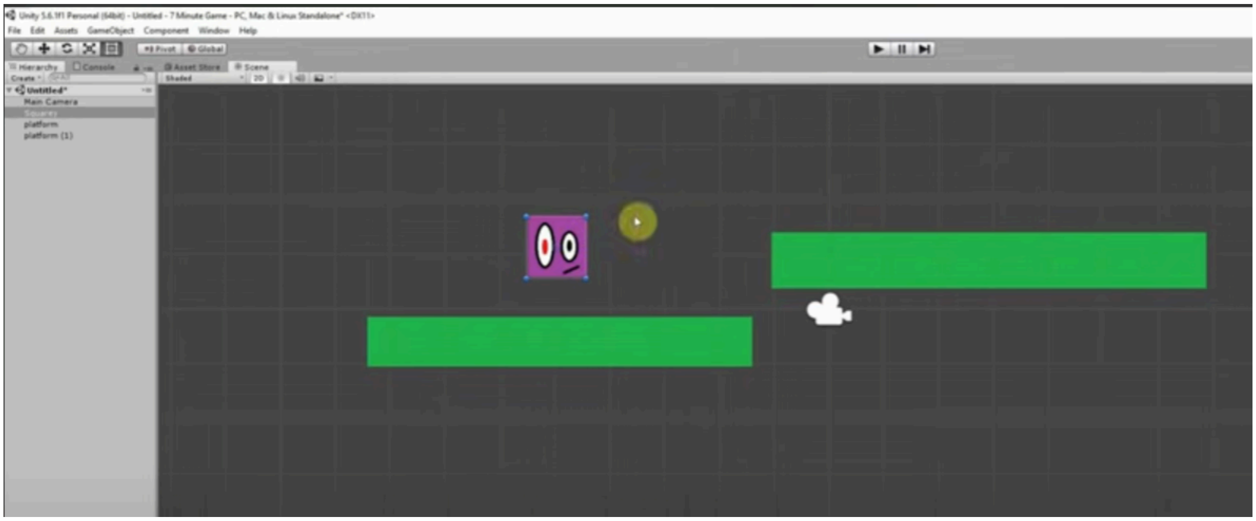
Save As

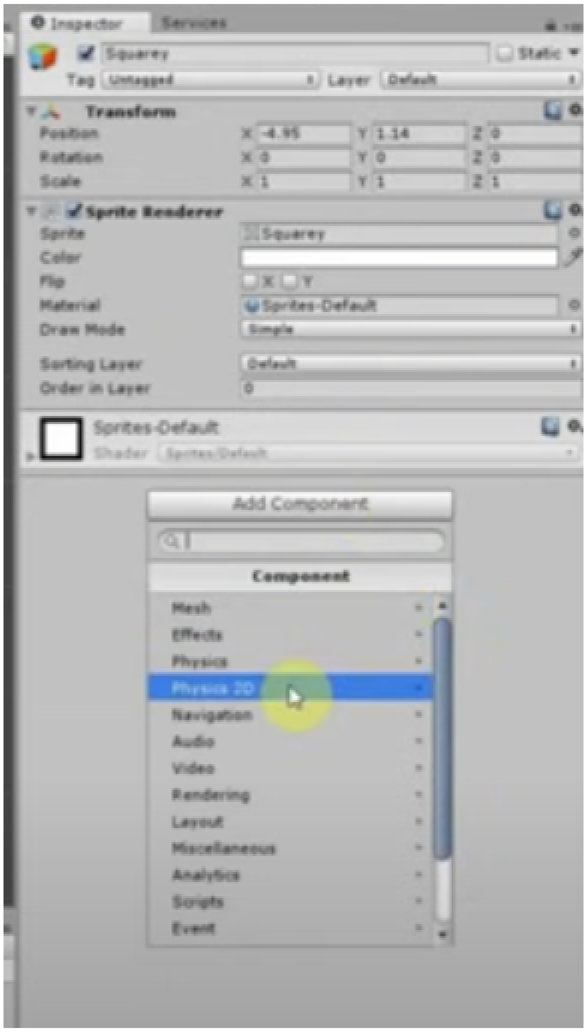
Adam Sinicki › Dropbox › articles ›

File name: Untitled

Save as type: PNG (*.png)


File
Home
Share
View
Manage
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Organize
This PC > Desktop > 7 Minute Game
Quick access
Desktop
Downloads
Documents
Pictures
Resources
AA Content
articles
Data (D:)
Workout and Work
Creative Cloud Files
Dropbox
OneDrive
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
OS_Install (C:)
platform
Squarey


Unity 5.6.1f1 Personal (64bit) - Untitled - 7 Minute Game - PC, Mac & Linux Standalone* <DX11>
File
Edit
Assets
GameObject
Component
Window
Help
Pivot
Global
Hierarchy
Console
Asset Store
Scene
Create
Shaded
2D
Untitled*
Main Camera
Squarey
platform
platform (1)

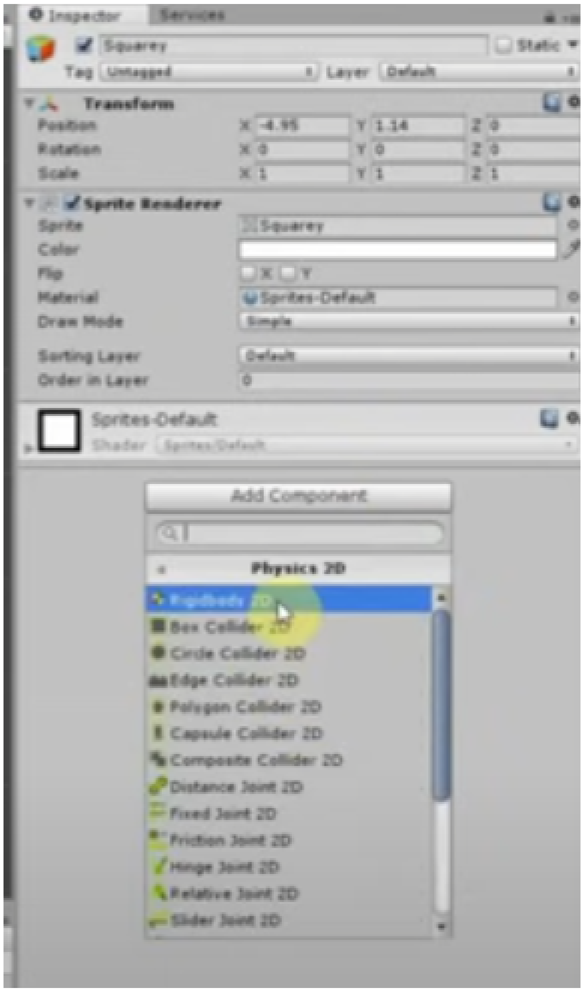


Squarey
Tag: Untagged Layer: Default

Transform
Position X -4.95 Y 1.14 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

Sprite Renderer
Sprite: Squarey
Flip: □ X □ Y
Material: Sprites-Default
Draw Mode: Simple
Sorting Layer: Default
Order in Layer: 0

Sprites-Default
Shader: Sprites/Default

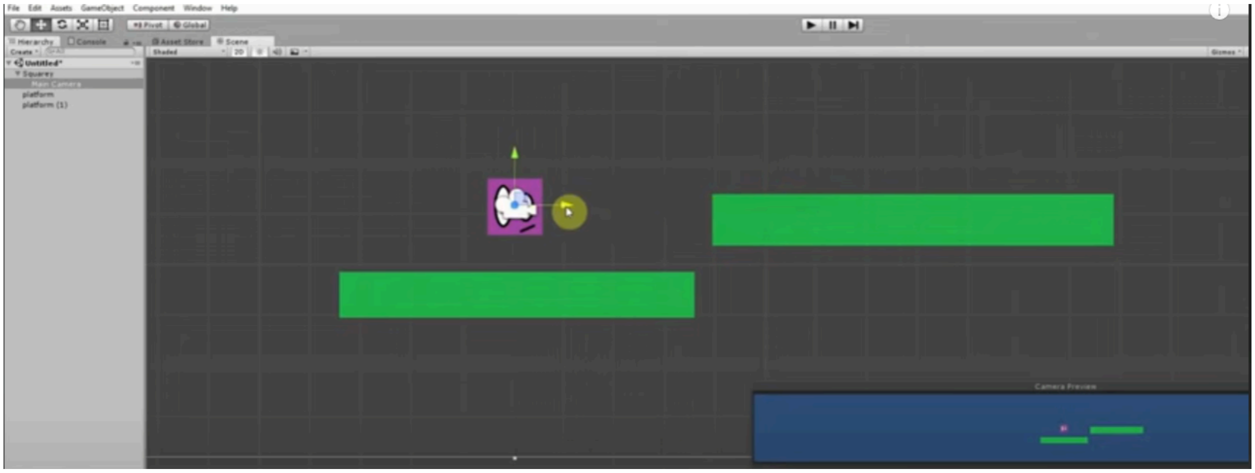


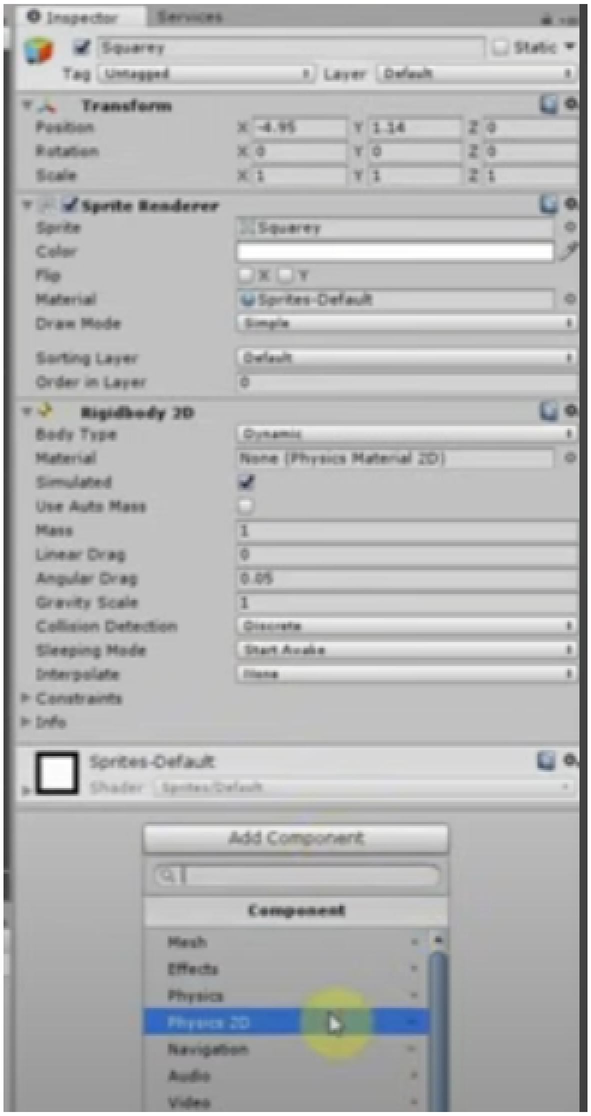
Squarey
Tag: Untagged Layer: Default

Transform
Position X -4.95 Y 1.14 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

Sprite Renderer
Sprite: Squarey
Flip: □ X □ Y
Material: Sprites-Default
Draw Mode: Simple
Sorting Layer: Default
Order in Layer: 0

Sprites-Default
Shader: Sprites/Default





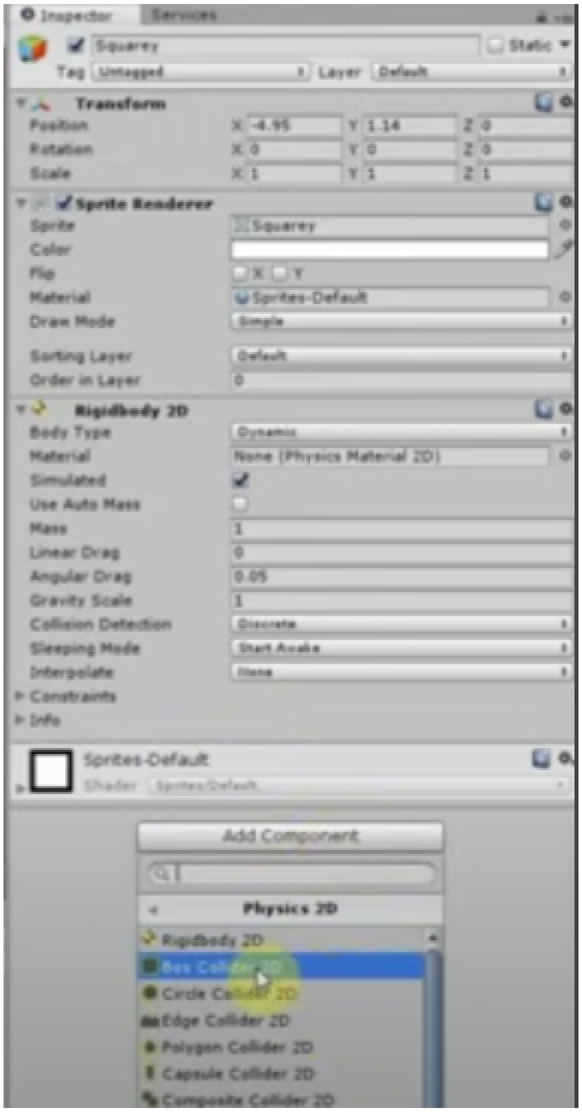
Squarey
Tag Untagged Layer Default

Transform
Position X -4.95 Y 1.14 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

Sprite Renderer
Sprite Squarey
Color
Flip □ X □ Y
Material Sprites-Default
Draw Mode Simple
Sorting Layer Default
Order in Layer 0

Rigidbody 2D
Body Type Dynamic
Material None (Physics Material 2D)
Simulated ☑
Use Auto Mass □
Mass 1
Linear Drag 0
Angular Drag 0.05
Gravity Scale 1
Collision Detection Discrete
Sleeping Mode Start Awake
Interpolate None

Sprites-Default
Shader Sprites/Default



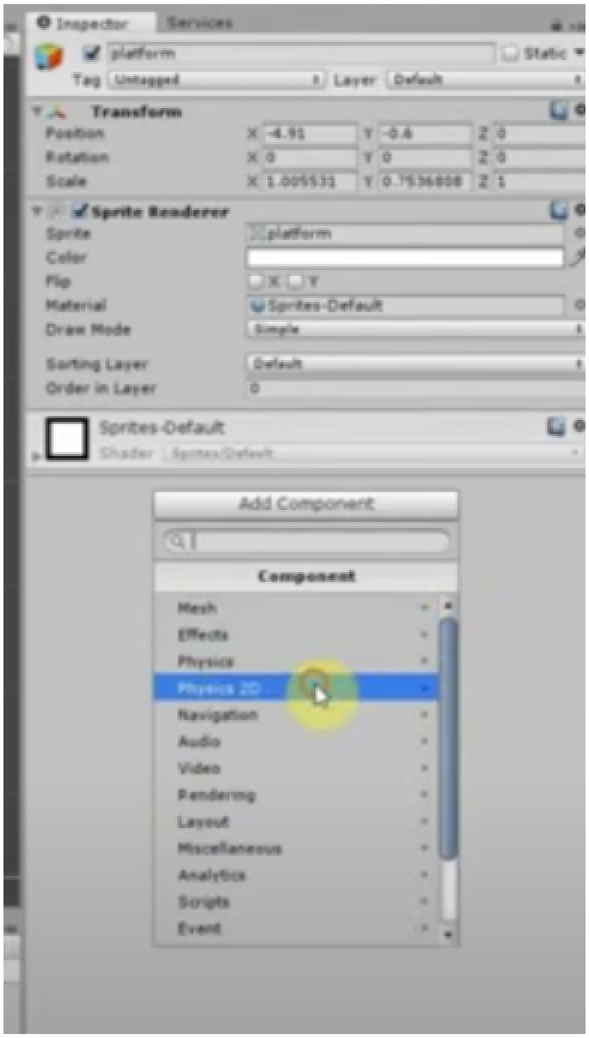
Squarey
Tag Untagged Layer Default

Transform
Position X -4.95 Y 1.14 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

Sprite Renderer
Sprite Squarey
Color
Flip □ X □ Y
Material Sprites-Default
Draw Mode Simple
Sorting Layer Default
Order in Layer 0

Rigidbody 2D
Body Type Dynamic
Material None (Physics Material 2D)
Simulated ☑
Use Auto Mass □
Mass 1
Linear Drag 0
Angular Drag 0.05
Gravity Scale 1
Collision Detection Discrete
Sleeping Mode Start Awake
Interpolate None

Sprites-Default
Shader Sprites/Default



☑ platform □ Static

Tag Untagged Layer Default

Transform

Position X -4.91 Y -0.6 Z 0

Rotation X 0 Y 0 Z 0

Scale X 1.005531 Y 0.7536808 Z 1

☑ Sprite Renderer

Sprite platform

Color

Flip □ X □ Y

Material Sprites-Default

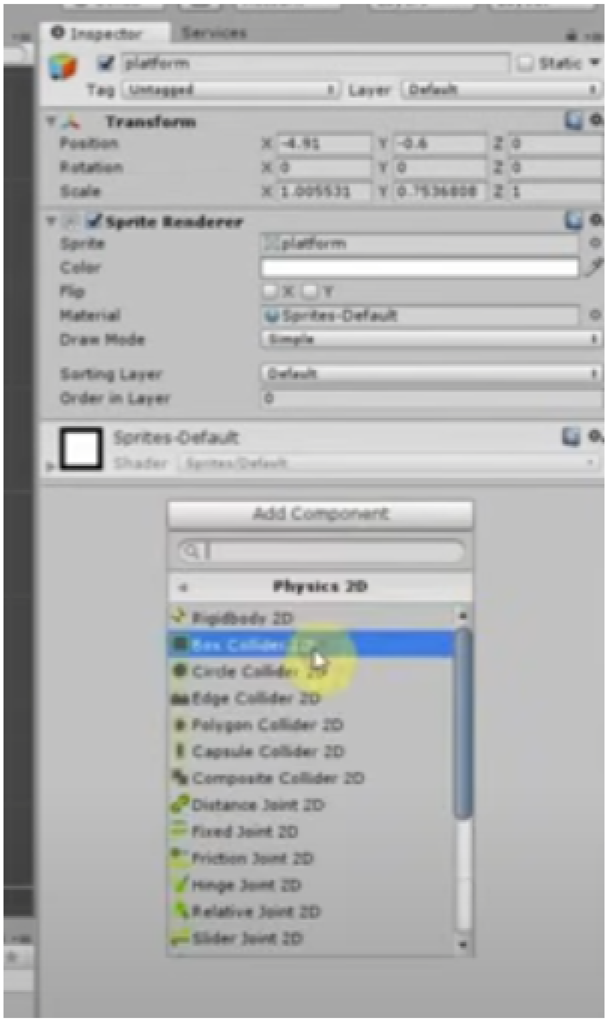
Draw Mode Simple

Sorting Layer Default

Order in Layer 0

Sprites-Default

Shader Sprites/Default



☑ platform □ Static

Tag Untagged Layer Default

Transform

Position X -4.91 Y -0.6 Z 0

Rotation X 0 Y 0 Z 0

Scale X 1.005531 Y 0.7536808 Z 1

☑ Sprite Renderer

Sprite platform

Color

Flip □ X □ Y

Material Sprites-Default

Draw Mode Simple

Sorting Layer Default

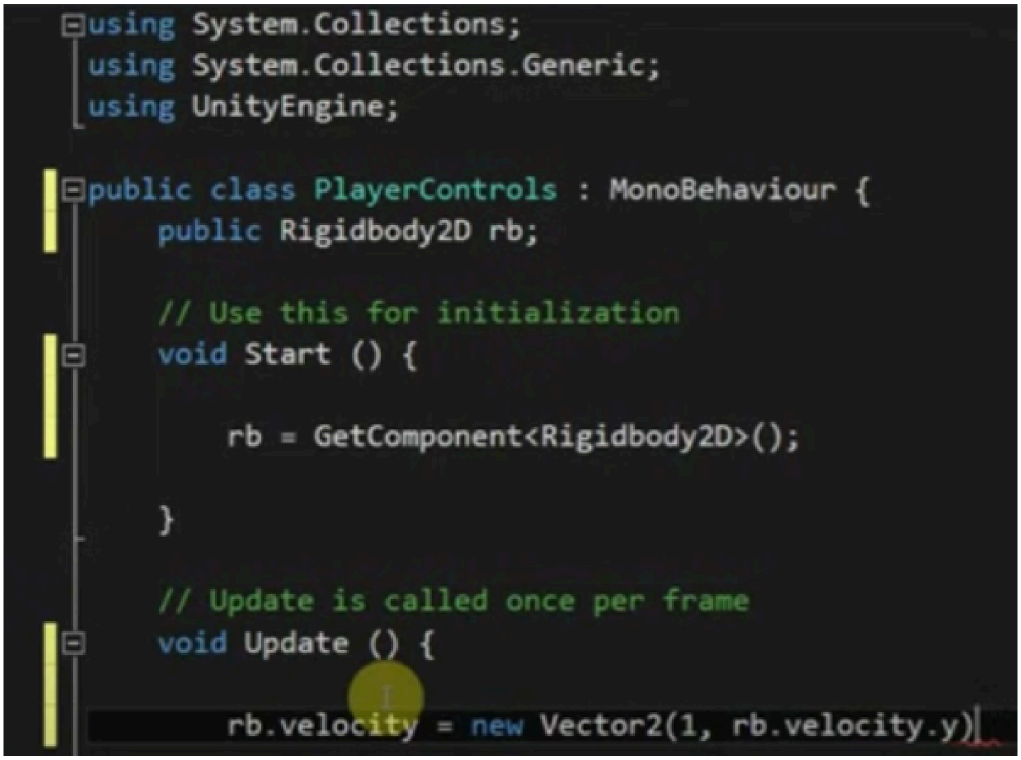
Order in Layer 0

Sprites-Default

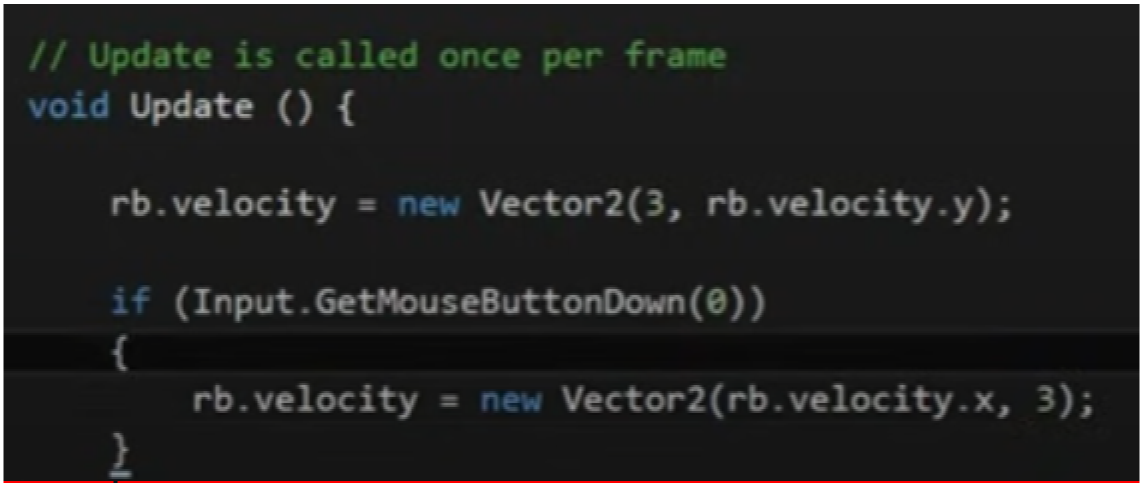
Shader Sprites/Default

SAME FOR ALL PLATFORM.

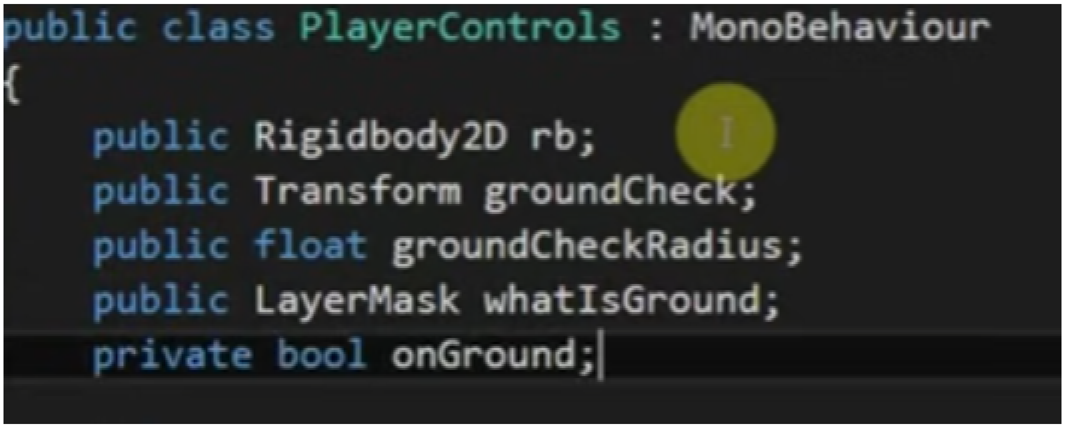
ADD THE SCRIPT



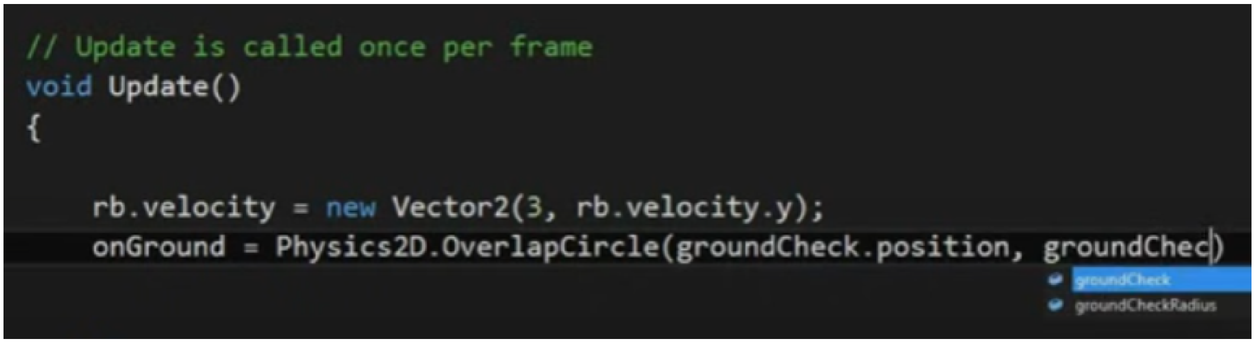
```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class PlayerControls : MonoBehaviour {
    public Rigidbody2D rb;

    // Use this for initialization
    void Start () {

        rb = GetComponent<Rigidbody2D>();

    }

    // Update is called once per frame
    void Update () {

        rb.velocity = new Vector2(1, rb.velocity.y)
```



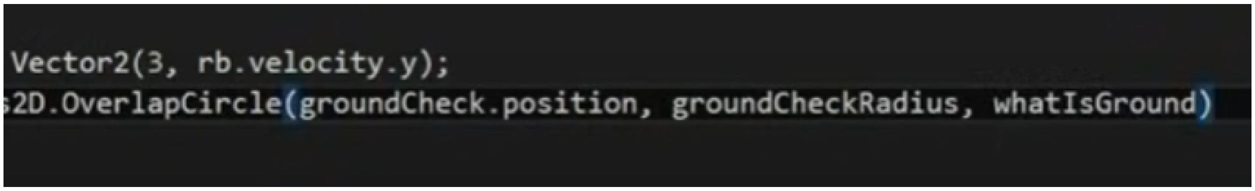
```
// Update is called once per frame
void Update () {

    rb.velocity = new Vector2(3, rb.velocity.y);

    if (Input.GetMouseButtonDown(0))
    {
        rb.velocity = new Vector2(rb.velocity.x, 3);
    }
```



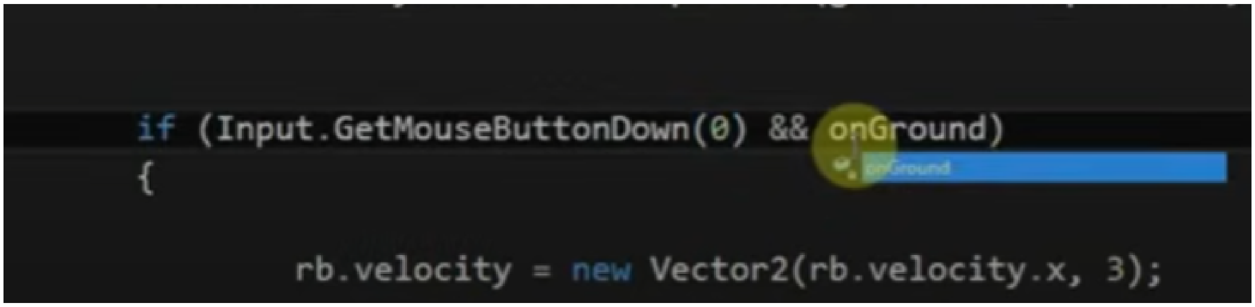
```
public class PlayerControls : MonoBehaviour
{
    public Rigidbody2D rb;
    public Transform groundCheck;
    public float groundCheckRadius;
    public LayerMask whatIsGround;
    private bool onGround;
```



```
// Update is called once per frame
void Update()
{

    rb.velocity = new Vector2(3, rb.velocity.y);
    onGround = Physics2D.OverlapCircle(groundCheck.position, groundChec)
```



```
Vector2(3, rb.velocity.y);
s2D.OverlapCircle(groundCheck.position, groundCheckRadius, whatIsGround)
```



```
    if (Input.GetMouseButtonDown(0) && onGround)
    {

            rb.velocity = new Vector2(rb.velocity.x, 3);
```

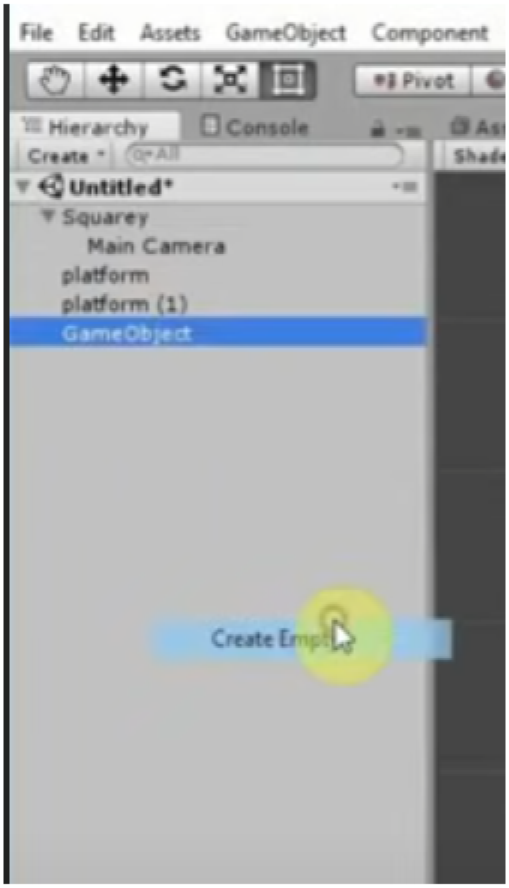
class player

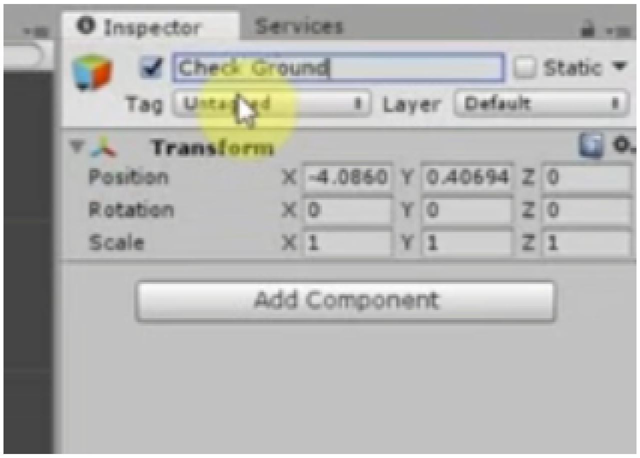
{

public Rigidbody2D rb;

public Transform groundCheck;

```
public float groundCheckRadius;
public LayerMask whatIsGround;
private bool onGround;
void start()
{
rb=GetComponent<Rigidbody2D>();
}
void update()
{
rb.velocity = new Vector(1,rb.velocity.y);
onGround =Physics2D.OverLapCircle(groundCheck.position
,groundCheckRadius, whatIsGround);
if(Input.GetMouseButton(0) && onGround)
{
rb.velocity = new Vector2(rb.velocity.x , 3);
}
```



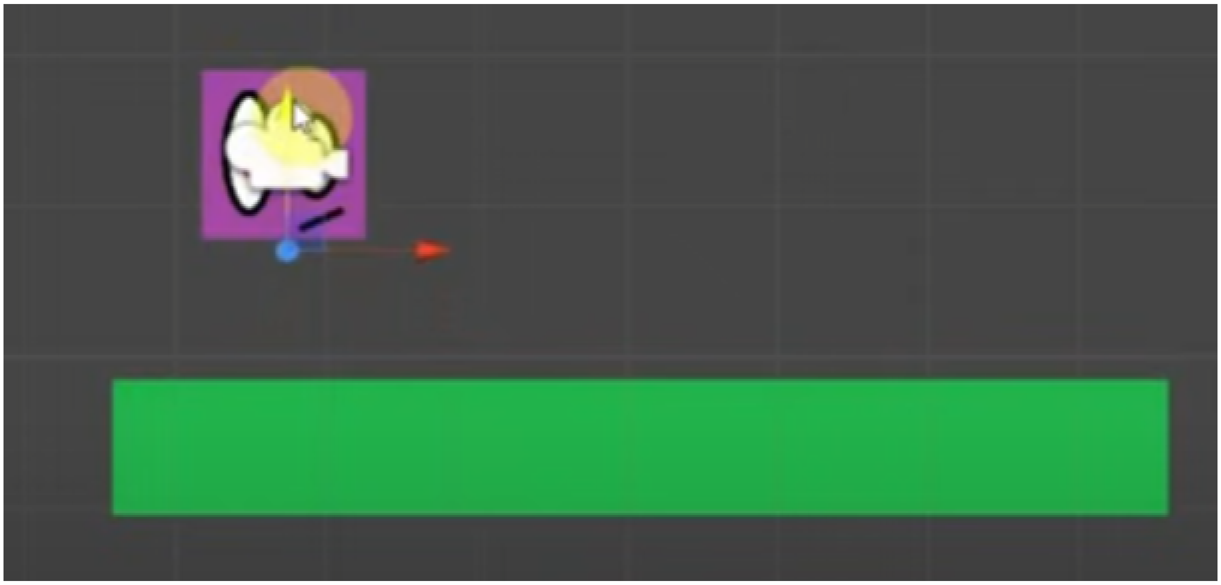


☑ Check Ground

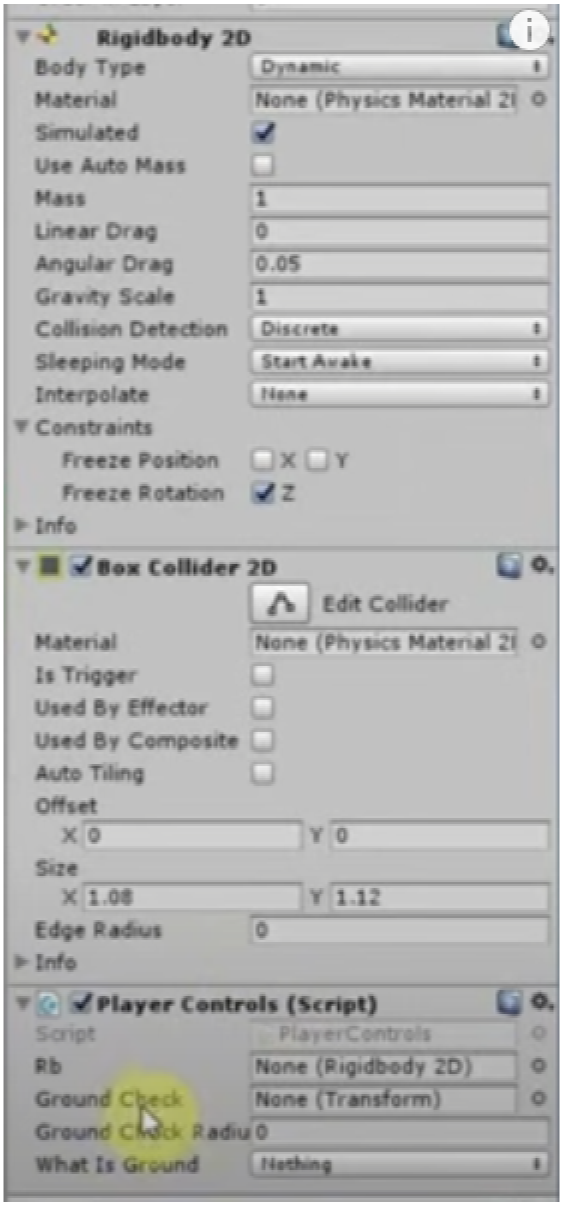
Tag Untagged

Layer Default

Position	X	-4.0860	Y	0.40694	Z	0
Rotation	X	0	Y	0	Z	0
Scale	X	1	Y	1	Z	1



MOVE THE GAME OBJECT TO SQUAREY .



Rigidbody 2D

Body Type: Dynamic

Material: None (Physics Material 2I

Simulated: ☑

Use Auto Mass: □

Mass: 1

Linear Drag: 0

Angular Drag: 0.05

Gravity Scale: 1

Collision Detection: Discrete

Sleeping Mode: Start Awake

Interpolate: None

Constraints

Freeze Position: □ X □ Y

Freeze Rotation: ☑ Z

Info

Box Collider 2D

Edit Collider

Material: None (Physics Material 2I

Is Trigger: □

Used By Effector: □

Used By Composite: □

Auto Tiling: □

Offset: X 0 Y 0

Size: X 1.08 Y 1.12

Edge Radius: 0

Info

Player Controls (Script)

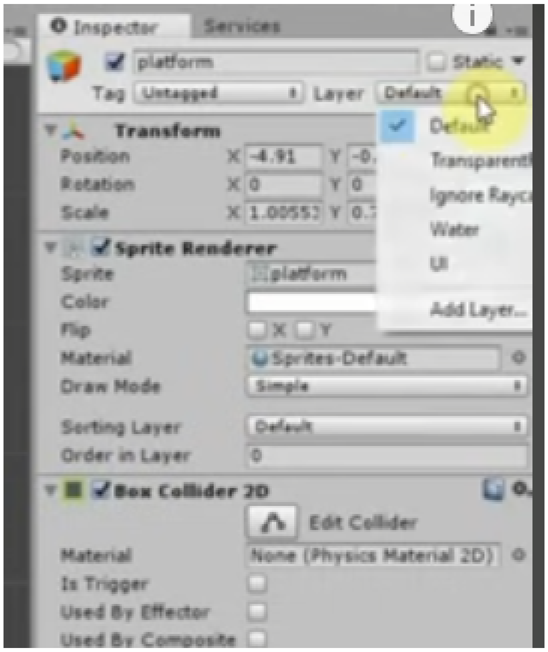
Script: PlayerControls

Rb: None (Rigidbody 2D)

Ground Check: None (Transform)

Ground Check Radiu: 0

What Is Ground: Nothing



Inspector Services

☑ platform □ Static

Tag: Untagged Layer: Default

Transform

Position: X -4.91 Y -0.

Rotation: X 0 Y 0

Scale: X 1.00553 Y 0.7

Sprite Renderer

Sprite: platform

Color:

Flip: □ X □ Y

Material: Sprites-Default

Draw Mode: Simple

Sorting Layer: Default

Order in Layer: 0

Box Collider 2D

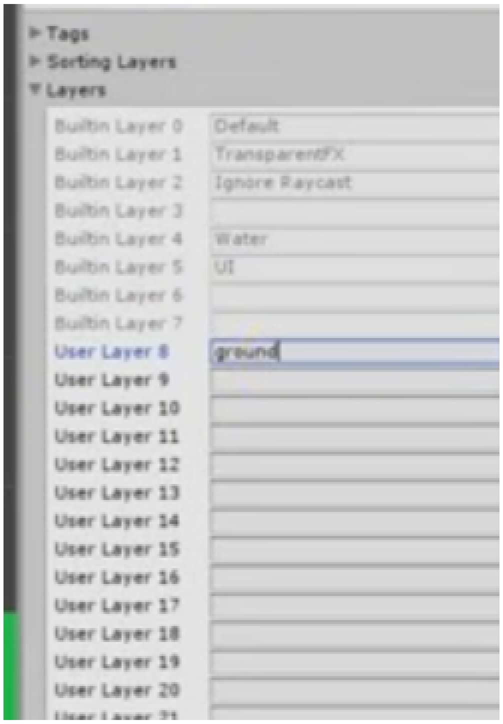
Edit Collider

Material: None (Physics Material 2D)

Is Trigger: □

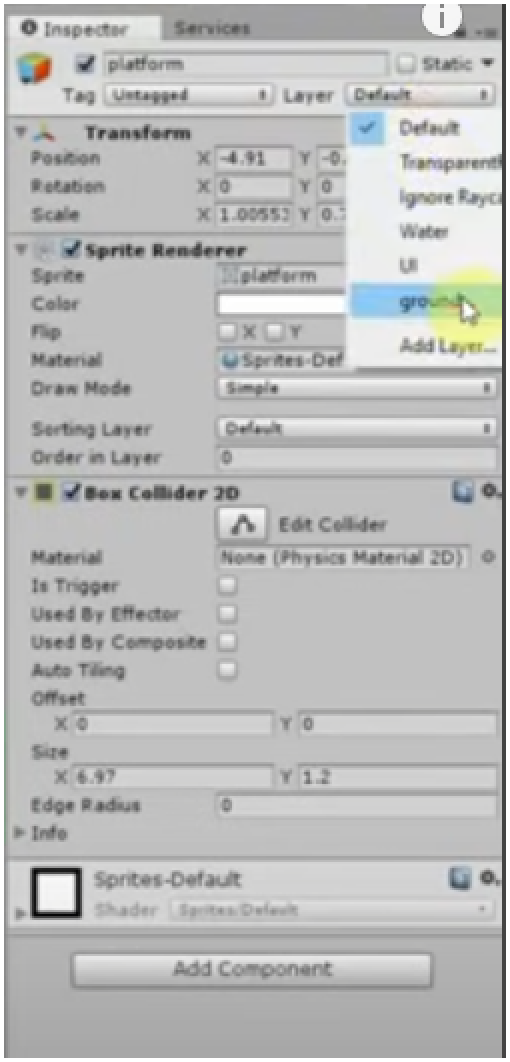
Used By Effector: □

Used By Composite: □



▸ Tags
▸ Sorting Layers
▾ Layers

Builtin Layer 0	Default
Builtin Layer 1	TransparentFX
Builtin Layer 2	Ignore Raycast
Builtin Layer 3	
Builtin Layer 4	Water
Builtin Layer 5	UI
Builtin Layer 6	
Builtin Layer 7	
User Layer 8	ground
User Layer 9	
User Layer 10	
User Layer 11	
User Layer 12	
User Layer 13	
User Layer 14	
User Layer 15	
User Layer 16	
User Layer 17	
User Layer 18	
User Layer 19	
User Layer 20	
User Layer 21	



Inspector | Services

☑ platform □ Static

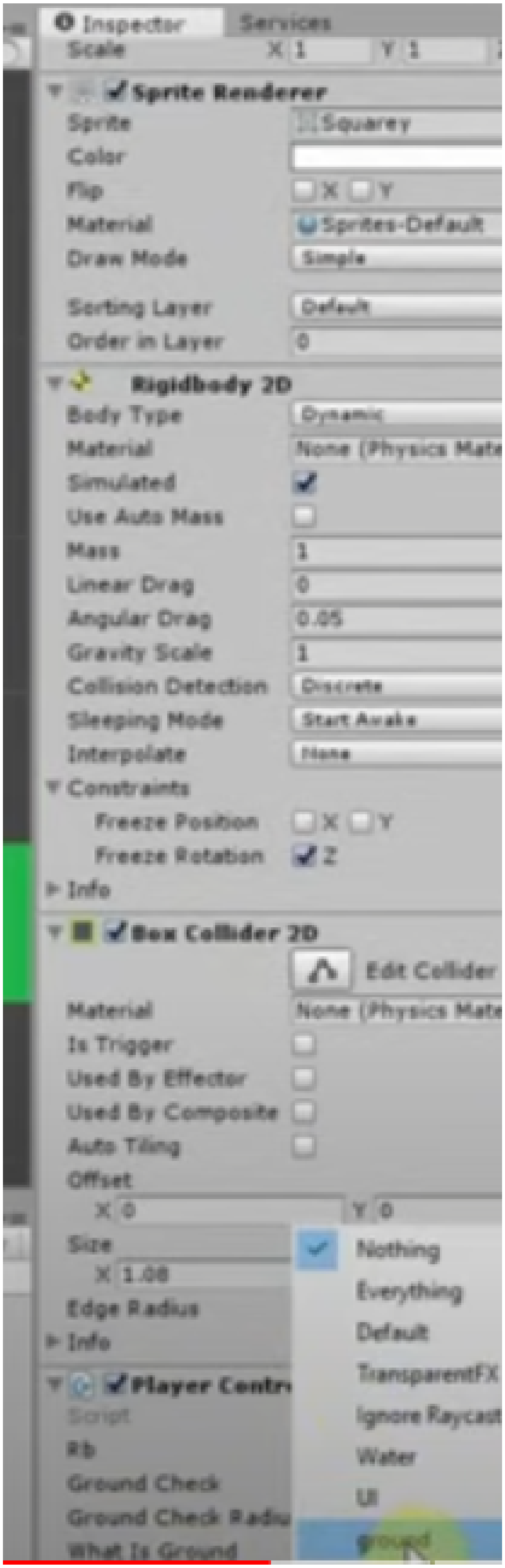
Tag Untagged Layer Default

▾ Transform
Position X -4.91 Y -0.
Rotation X 0 Y 0
Scale X 1.00553 Y 0.

▾ ☑ Sprite Renderer
Sprite platform
Color
Flip □ X □ Y
Material Sprites-Def
Draw Mode Simple
Sorting Layer Default
Order in Layer 0

▾ ☑ Box Collider 2D
Edit Collider
Material None (Physics Material 2D)
Is Trigger □
Used By Effector □
Used By Composite □
Auto Tiling □
Offset
X 0 Y 0
Size
X 6.97 Y 1.2
Edge Radius 0
▸ Info

Sprites-Default
Shader Sprites/Default



Inspector   Services

Scale X 1 Y 1

☑ Sprite Renderer

Sprite: Squarey

Color:

Flip: □ X □ Y

Material: Sprites-Default

Draw Mode: Simple

Sorting Layer: Default

Order in Layer: 0

Rigidbody 2D

Body Type: Dynamic

Material: None (Physics Mate

Simulated: ☑

Use Auto Mass: □

Mass: 1

Linear Drag: 0

Angular Drag: 0.05

Gravity Scale: 1

Collision Detection: Discrete

Sleeping Mode: Start Awake

Interpolate: None

Constraints

Freeze Position: □ X □ Y

Freeze Rotation: ☑ Z

Info

☑ Box Collider 2D

Edit Collider

Material: None (Physics Mate

Is Trigger: □

Used By Effector: □

Used By Composite: □

Auto Tiling: □

Offset

X 0 Y 0

Size

X 1.08

Edge Radius

Info

☑ Player Contr

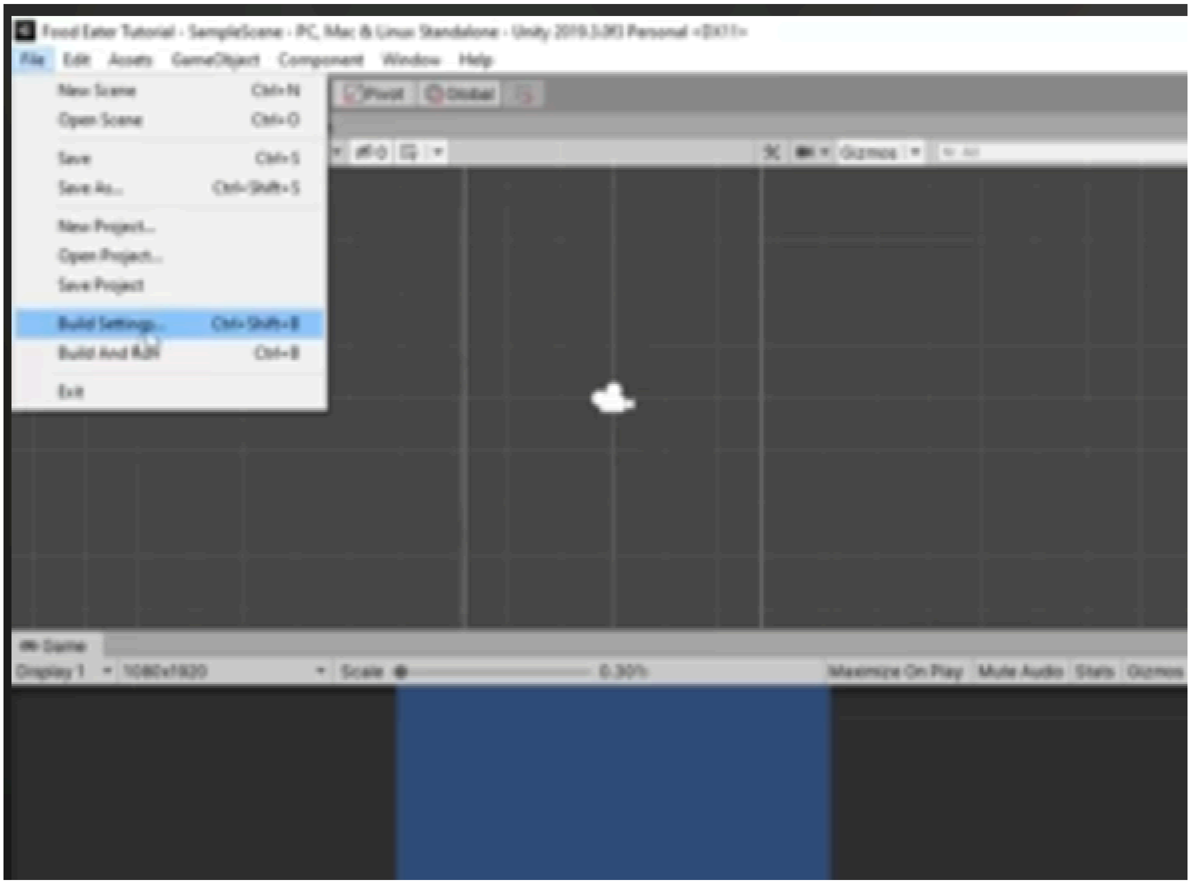
Script

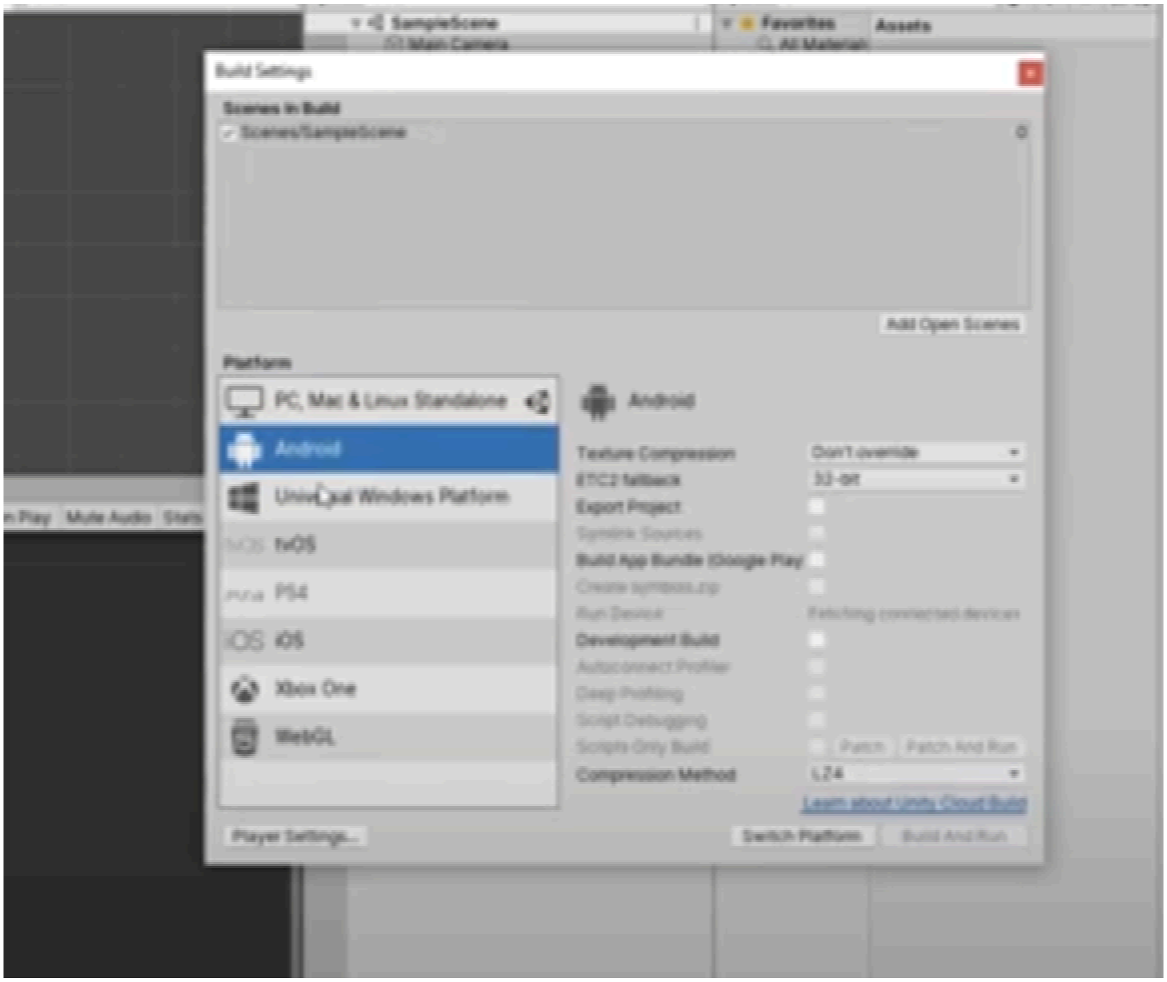
Rb

Ground Check

Ground Check Radiu

What Is Ground


Food Eater Tutorial - SampleScene - PC, Mac & Linux Standalone - Unity 2019.3.0f3 Personal <DX11>
File
Edit
Assets
GameObject
Component
Window
Help
New Scene Ctrl+N
Open Scene Ctrl+O
Save Ctrl+S
Save As... Ctrl+Shift+S
New Project...
Open Project...
Save Project
Build Settings... Ctrl+Shift+B
Build And Run Ctrl+B
Exit
Pivot
Global
Gizmos
All
Game
Display 1
1080x1920
Scale
0.30x
Maximize On Play
Mute Audio
Stats
Gizmos



Scenes/SampleScene 0

Texture Compression Don't override

ETC2 fallback 32-bit

Export Project

Symlink Sources

Build App Bundle (Google Play)

Create symbols.zip

Run Device Fetching connected devices

Development Build

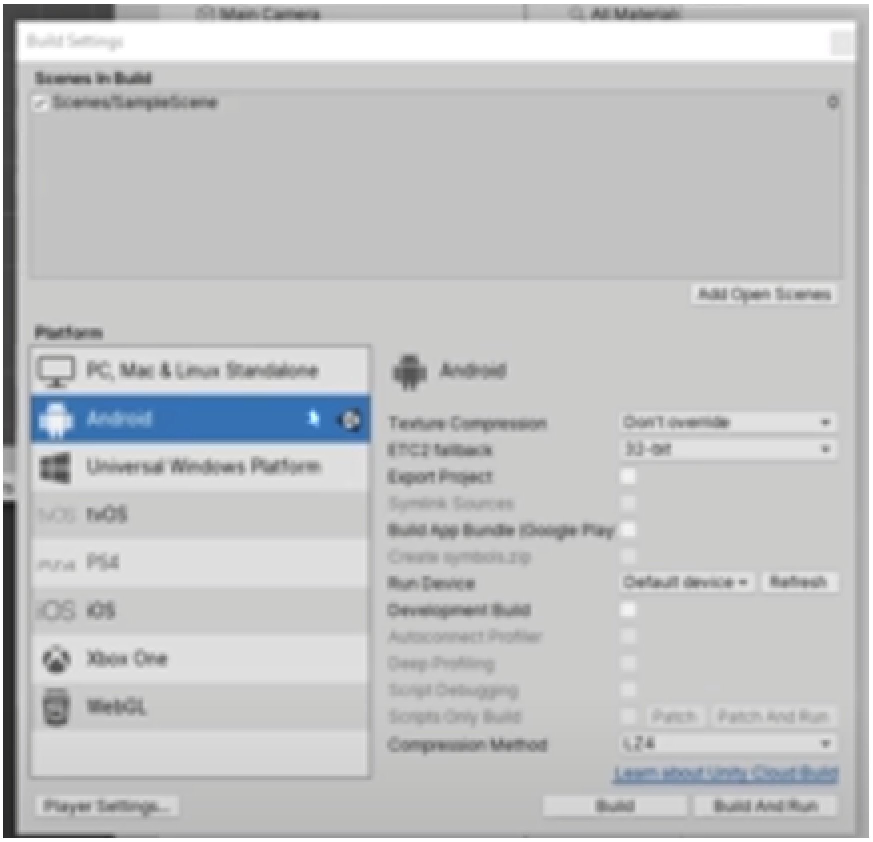
Autoconnect Profiler

Deep Profiling

Script Debugging

Scripts Only Build

Compression Method LZ4



Build Settings

Scenes In Build

☑ Scenes/SampleScene 0

Platform

Android

Texture Compression: Don't override

ETC2 fallback: 32-bit

Export Project ☐

Symlink Sources ☐

Build App Bundle (Google Play) ☐

Create symbols.zip ☐

Run Device: Default device

Development Build ☐

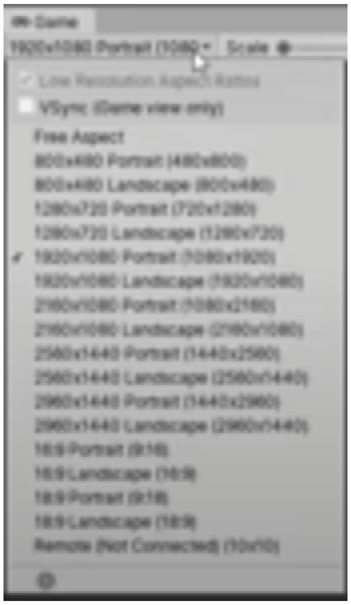
Autoconnect Profiler ☐

Deep Profiling ☐

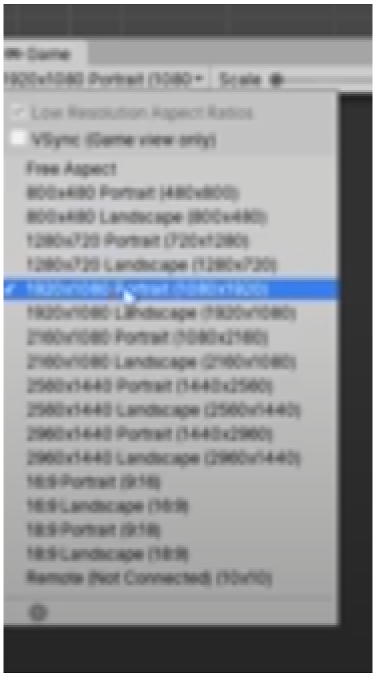
Script Debugging ☐

Scripts Only Build ☐

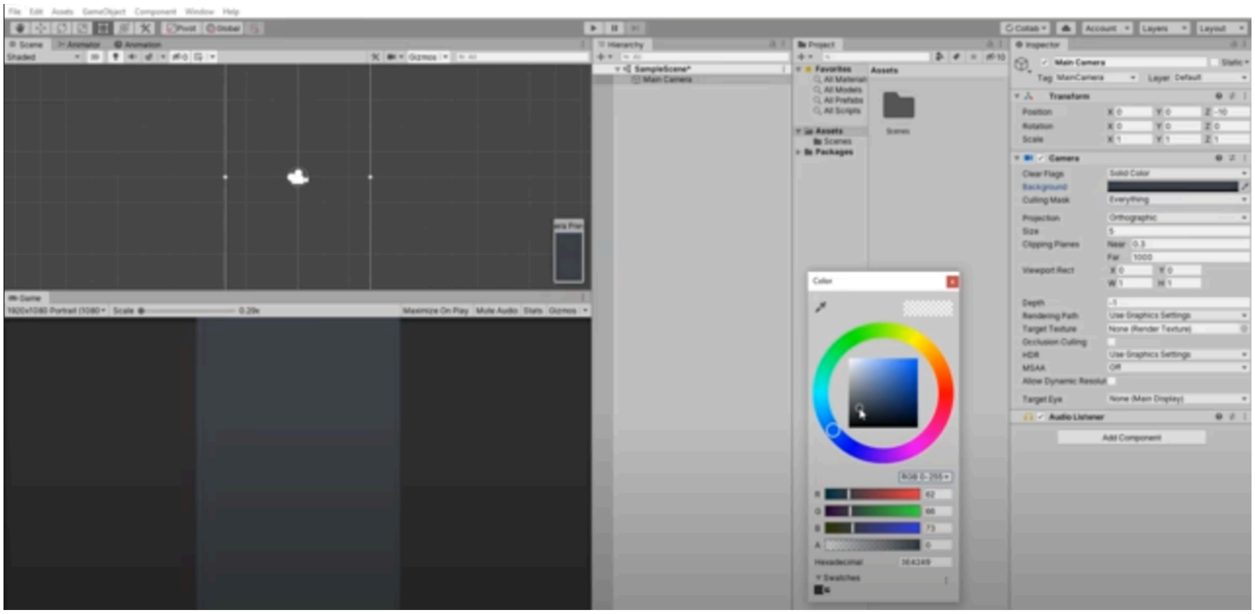
Compression Method: LZ4



Game
1920x1080 Portrait (1080
Scale
Low Resolution Aspect Ratios
VSync (Game view only)
Free Aspect
800x480 Portrait (480x800)
800x480 Landscape (800x480)
1280x720 Portrait (720x1280)
1280x720 Landscape (1280x720)
✓ 1920x1080 Portrait (1080x1920)
1920x1080 Landscape (1920x1080)
2160x1080 Portrait (1080x2160)
2160x1080 Landscape (2160x1080)
2560x1440 Portrait (1440x2560)
2560x1440 Landscape (2560x1440)
2960x1440 Portrait (1440x2960)
2960x1440 Landscape (2960x1440)
16:9 Portrait (9:16)
16:9 Landscape (16:9)
18:9 Portrait (9:18)
18:9 Landscape (18:9)
Remote (Not Connected) (10x10)



Game
1920x1080 Portrait (1080
Scale
Low Resolution Aspect Ratios
VSync (Game view only)
Free Aspect
800x480 Portrait (480x800)
800x480 Landscape (800x480)
1280x720 Portrait (720x1280)
1280x720 Landscape (1280x720)
✓ 1920x1080 Portrait (1080x1920)
1920x1080 Landscape (1920x1080)
2160x1080 Portrait (1080x2160)
2160x1080 Landscape (2160x1080)
2560x1440 Portrait (1440x2560)
2560x1440 Landscape (2560x1440)
2960x1440 Portrait (1440x2960)
2960x1440 Landscape (2960x1440)
16:9 Portrait (9:16)
16:9 Landscape (16:9)
18:9 Portrait (9:18)
18:9 Landscape (18:9)
Remote (Not Connected) (10x10)



Main Camera
Tag MainCamera Layer Default

Transform
Position X 0 Y 0 Z -10
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

Camera
Clear Flags Solid Color
Background
Culling Mask Everything
Projection Orthographic
Size 5
Clipping Planes Near 0.3 Far 1000
Viewport Rect X 0 Y 0 W 1 H 1
Depth -1
Rendering Path Use Graphics Settings
Target Texture None (Render Texture)
Occlusion Culling
HDR Use Graphics Settings
MSAA Off
Allow Dynamic Resolut
Target Eye None (Main Display)

Audio Listener

RGB 0-255
R 62
G 66
B 73
A 0
Hexadecimal 3E4249
Swatches

Create a script called `PlayerController.cs` and attach it to the player character GameObject.

```
 using UnityEngine;

public class PlayerController : MonoBehaviour
{
    public float moveSpeed = 5f;
    private Rigidbody2D rb;

    void Start()
    {
        rb = GetComponent<Rigidbody2D>();
    }

    void Update()
    {
        float horizontalInput = Input.GetAxis("Horizontal");

        // Move the player horizontally
        rb.velocity = new Vector2(horizontalInput * moveSpeed, rb.velocity.y);
    }
}
```

Set Up the Platform:

Create a platform GameObject using GameObject > Create Empty. Rename it to "Platform" and attach a Box Collider 2D component to it.

Create Ground Check:

Attach an empty GameObject as a child of the player character. Rename it to "GroundCheck" and place it just below the player's feet. Attach a Circle Collider 2D to it and set it to be a trigger.

Modify the PlayerController Script:

Update the `PlayerController.cs` script to handle jumping and checking for ground collision.

```
using UnityEngine;

public class PlayerController : MonoBehaviour
{
    public float moveSpeed = 5f;
    public float jumpForce = 10f;
    private Rigidbody2D rb;
    private bool isGrounded = false;

    public Transform groundCheck;
    public LayerMask groundLayer;

    void Start()
    {
        rb = GetComponent<Rigidbody2D>();
    }

    void Update()
    {
        float horizontalInput = Input.GetAxis("Horizontal");
        isGrounded = Physics2D.OverlapCircle(groundCheck.position, 0.1f, groundLayer);

        // Move the player horizontally
        rb.velocity = new Vector2(horizontalInput * moveSpeed, rb.velocity.y);

        // Jump
        if (isGrounded && Input.GetButtonDown("Jump"))
        {
            rb.velocity = new Vector2(rb.velocity.x, jumpForce);
        }
    }
}
```

Set Up Input:

Go to Edit > Project Settings > Input Manager. Add a new Input Axis for "Horizontal" and "Jump."

Attach Components:

Attach the PlayerController script to the player character GameObject.
Assign the GroundCheck transform and set the Ground Layer in the inspector.

https://www.youtube.com/watch?v=t-rdSI3-Hfk
https://www.youtube.com/watch?v=4BD3y0NYNqk