



## TUGAS PERTEMUAN: 10

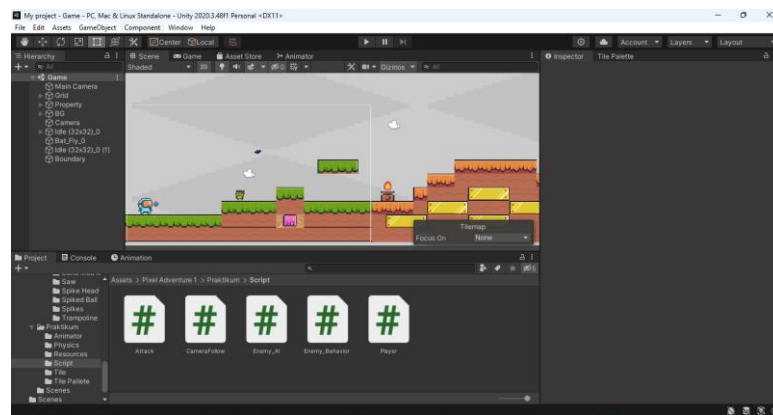
### RRESPAWN AND AI ENEMY ATTACK

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Kelas	:	B
Asisten Lab	:	Devina Dorkas Manuela (2218108)

#### 10.1 Tugas 10 : Membuat Karakter Beranimation

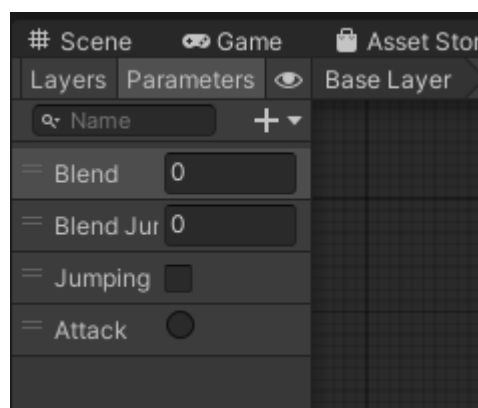
##### A. Membuat Attack

1. Buka Project Bab 9 Sebelumnya.



Gambar 10.1 Project Bab 9

2. Lalu pada menu Tab *Animator* Tambahkan Parameter Trigger, Rename Menjadi *Attack*



Gambar 10.2 Membuat Parameter Attack

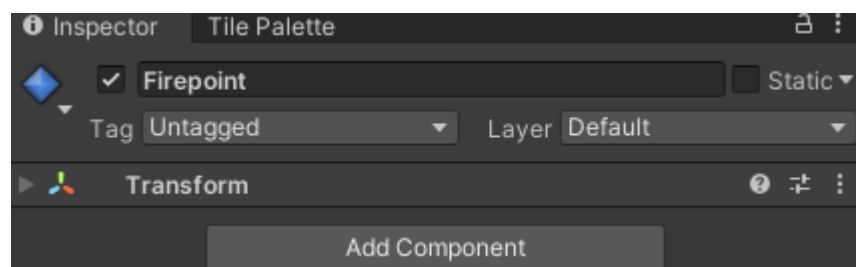


3. Kita membuat Layer *Game object* baru didalam Player Idle Fall, Klik kanan pilih *Create Empty* lalu Rename menjadi *Firepoint*



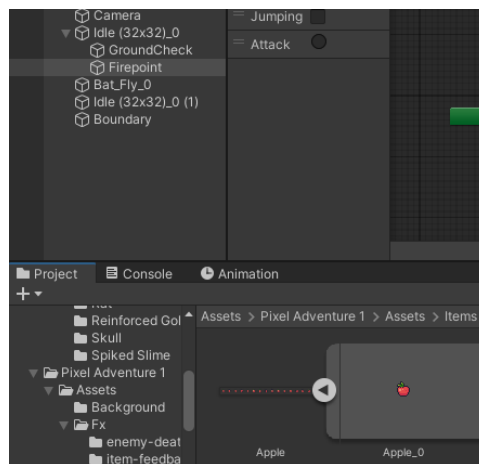
Gambar 10.3 Create Empty Firepoint

4. Di *Hierarchy* Pilih *Firepoint* setting pada Inspector, Ubah *Icon* Menjadi titik, atur letak titik didepan player



Gambar 10.4 Mengubah Icon Player

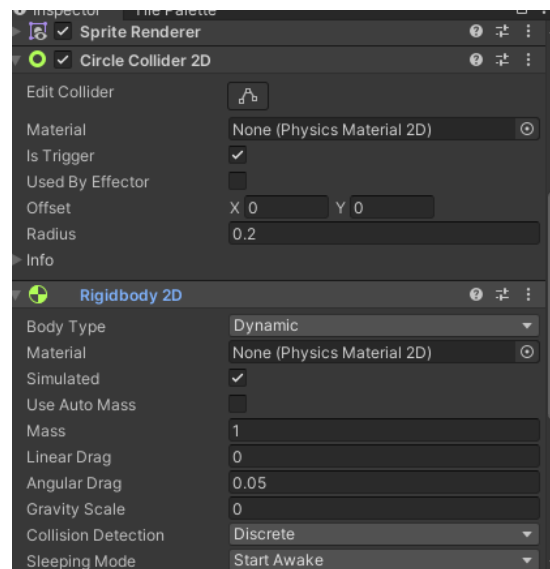
5. Kemudian tambahkan apple, di folder Assets Lalu items lalu fruits Ubah nama menjadi *fireball*



Gambar 10.5 Menambakan apple

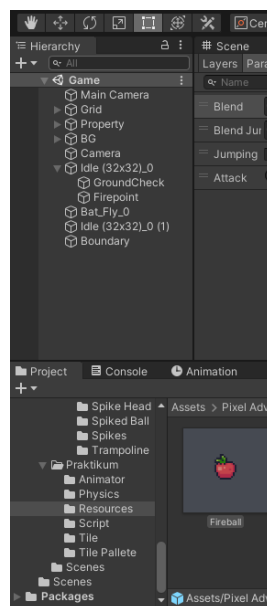


6. Klik apple dengan tambah *Component Circle Collider 2d* dan *Rigidbody 2D*, Setting sesuai gambar dibawah ini



Gambar 10.6 Menambah Komponen

7. Buat Folder baru *Resources* di menu Project, drag and drop fireball kedalam folder Resources, dan hapus *fireball* pada *Hierarchy*



Gambar 10.7 Menghapus fireball di hierarchy



## 8. Masukkan *Script Player* Sebagai Berikut

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

public class Player : MonoBehaviour
{
    public Animator animator;
    public GameObject bullet;
    public Transform firePoint;
    public int nyawa;
    public bool play_again;

    Rigidbody2D rb;

    [SerializeField] Vector3 respawn_loc;

    [SerializeField] Transform groundcheckCollider;

    [SerializeField] LayerMask groundLayer;

    const float groundCheckRadius = 0.2f; // +

    [SerializeField] float speed = 1;

    [SerializeField] float jumpPower = 150;

    float horizontalValue;

    [SerializeField]
    bool isGrounded; // +

    bool facingRight;

    bool jump;

    // [SerializeField] float speed = 1;
    // float horizontalValue;
    // bool facingRight;
    private void Awake()
    {
        rb = GetComponent<Rigidbody2D>();
        animator = GetComponent<Animator>();

        respawn_loc = transform.position;
    }
    void playagain()
    {
        if (play_again == true)
        {
            nyawa = 3;
            transform.position = respawn_loc;
            play_again = false;
        }
    }

    void Update() {
        if (Input.GetKeyDown(KeyCode.C))
```



```
{
    StartCoroutine(Attack());
}

horizontalValue =
Input.GetAxisRaw("Horizontal");
if (Input.GetButtonDown("Jump"))
{
    animator.SetBool("Jumping", true);
    jump = true;
}
else if (Input.GetButtonUp("Jump")) jump =
false;

if (nyawa < 0)
{
    playagain();
}

if (transform.position.y < -10)
{
    play_again = true;
    playagain();
}
}
void FixedUpdate()
{
    GroundCheck();
    Move (horizontalValue, jump);
    animator.SetFloat("Blend",
Mathf.Abs(rb.velocity.x));
    animator.SetFloat("Blend    Jump",
rb.velocity.y);
}
IEnumerator Attack()
{
    animator.SetTrigger("Attack");
    yield return new WaitForSeconds(0.25f);

    float direction = 1f;

    GameObject fireball = Instantiate(bullet,
firePoint.position, Quaternion.identity);
    fireball.GetComponent<Rigidbody2D>().velocity =
new Vector2(direction * 10f, 0);

    Destroy(fireball, 2f);
}
void GroundCheck()
{
    isGrounded = false;
    Collider2D[] colliders =
Physics2D
        .OverlapCircleAll(groundcheckCollider
.position,
        groundCheckRadius,
```

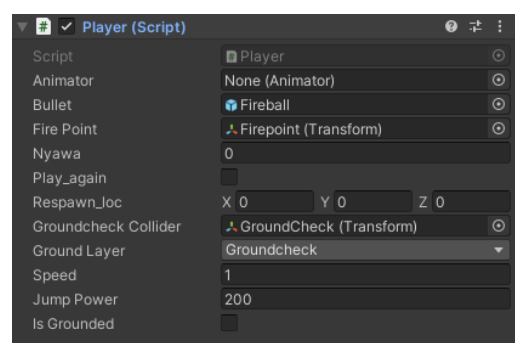


```
        groundLayer);
        if (colliders.Length > 0) isGrounded = true;
        animator.SetBool("Jumping", !isGrounded);
    }

    void Move(float dir, bool jumpflag)
    {
        #region gerak kanan kiri
        float xVal = dir * speed * 100 *
        Time.fixedDeltaTime;
        Vector2 targetVelocity = new Vector2(xVal,
        rb.velocity.y);
        rb.velocity = targetVelocity;

        if (isGrounded && jumpflag)
        {
            isGrounded = false;
            jumpflag = false;
            rb.AddForce(new Vector2(0f, jumpPower));
        }
        if (facingRight && dir < 0)
        {
            // ukuran player
            transform.localScale = new Vector3(-4, 4,
4);
            facingRight = false;
        }
        else if (!facingRight && dir > 0)
        {
            // ukuran player
            transform.localScale = new Vector3(4, 4,
4);
            facingRight = true;
        }
    }
    #endregion
}
```

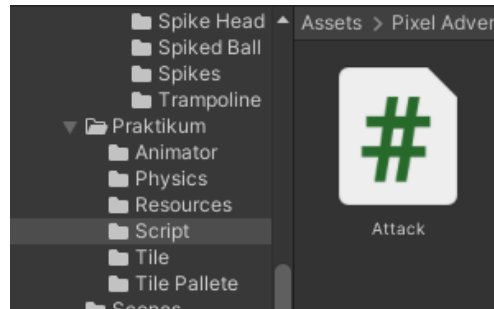
9. Di Inspector Player, Ubah *Bullet* berisi *object* menembak *firepoint* adalah titik tembak pertama



Gambar 10.8 Mengubah Bullet Player



10. Kemudian Kita Membuat *Script Attack* pada folder *Script*



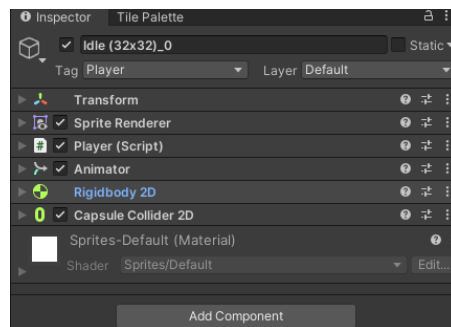
Gambar 10.9 Membuat Script Attack

11. Tambahkan Script Attack dibawah ini

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

public class Attack : MonoBehaviour
{
    private void OnTriggerEnter2D(Collider2D collision)
    {
        if (collision.gameObject.CompareTag("Enemy"))
        {
            Destroy(gameObject);
            Destroy(collision.gameObject);
        }
    }
}
```

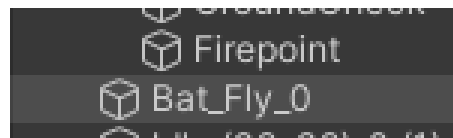
12. Lalu Tambah *Script Attack* di Prefab fireball, Pencet *fireball* kemudian pada menu Inspector arahkan *Script Attack* kedalam *Inspector*.



Gambar 10.11 Memasukkan Script Attack

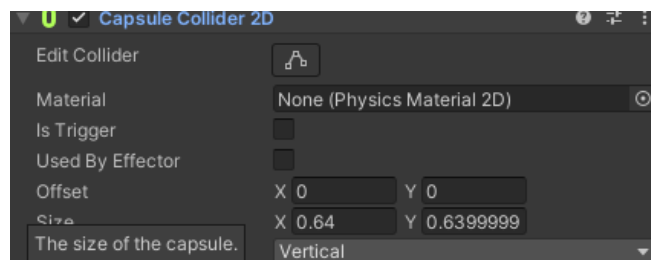


13. Setelah Itu, Tambah Enemy Bat\_Fly\_0 pada hierarchy di folder Sprites, eagle



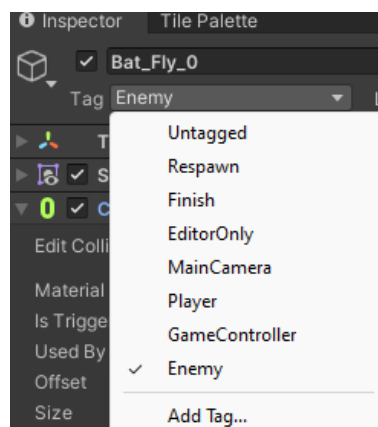
Gambar 10.12 Menambahkan Enemy Bat Fly

14. Kemudian Pencet Bat\_Fly\_0, Di inspector tambahkan *Capsule collider 2D*.



Gambar 10.13 Menambahkan Komponen Capsule Collider 2D

15. Lalu Tag Enemy dengan cara Pilih Add Tag, kemudian add tag to the list, Tuliskan Enemy



Gambar 10.14 Mengganti Tag Enemy





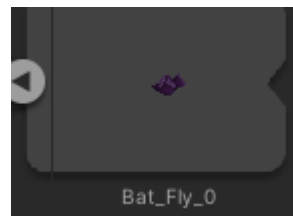
16. Tembak Enemy dengan menekan Tombol C untuk menghancurkan musuh



Gambar 10.15 Hasil Akhir

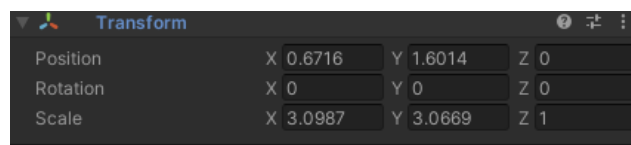
## B. Membuat Enemy AI

1. Kita Akan Membuat Enemy Terbang Yang Namanya Bat\_Fly\_0.



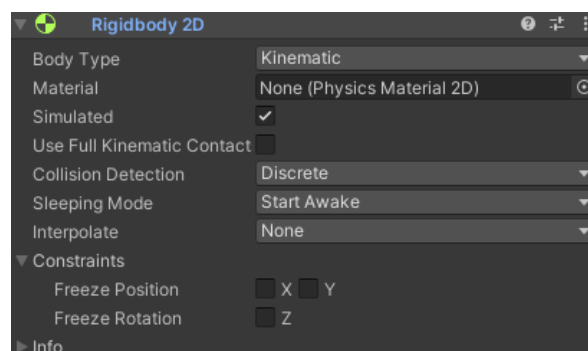
Gambar 10.16 Enemy Bat\_Fly

2. Pada inspector atur transform scale menjadi seperti berikut



Gambar 10.17 Mengatur Transform

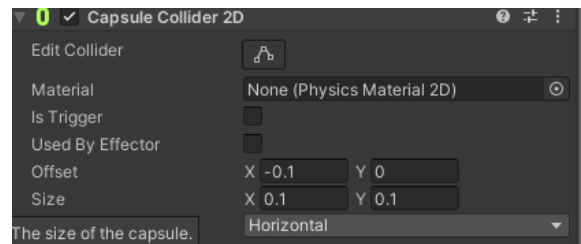
3. Tambah komponen Rigidbody 2D dalam inspector Bat\_Fly\_0.



Gambar 10.18 Komponen Rigidbody 2D

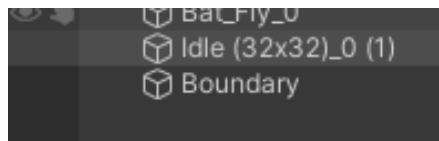


4. Lalu Kita Atur *collider* 2D tersebut seperti ukurannya diubah jika terlalu besar.



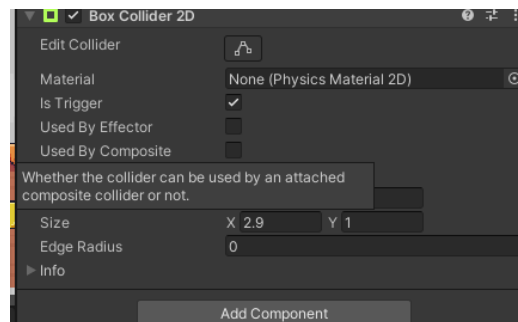
Gambar 10.19 Mengatur Collider 2D

5. Create Empty object pada Hierarchy, Rename Menjadi *Boundary*



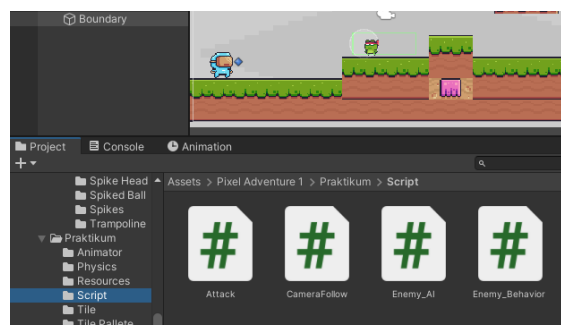
Gambar 10.20 Membuat Empty Boundary

6. Tambah *Box Collider 2d* pada *Boundary*, centang *Is Trigger* lalu atur sesuai keinginan pada size dan offside



Gambar 10.21 Komponen Box Collider 2D

7. Kita Membuat *script* didalam folder *Script* beri nama “Enemy\_Behavior”, kemudian drag dan masukkan ke dalam Bat\_Fly\_0.



Gambar 10.22 Drag And Drop Scirpt



8. Tambahkan Script dibawah ini

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

public class Enemy_Behavior : MonoBehaviour
{
    [SerializeField] float moveSpeed = 1f;
    Rigidbody2D rb;

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

    void Update()
    {
        if (isFacingRight())
        {
            rb.velocity = new Vector2(moveSpeed, 0f);
        }
        else
        {
            rb.velocity = new Vector2(-moveSpeed, 0f);
        }
    }

    private bool isFacingRight()
    {
        return transform.localScale.x < Mathf.Epsilon;
    }

    private void OnTriggerEnter2D(Collider2D collision)
    {
        transform.localScale = new Vector2(-
transform.localScale.x, transform.localScale.y);
    }
}
```

9. Setelah Itu Kita Bisa Jalankan Programnya.



Gambar 10.23 Hasil Akhir



### C. Respawn

1. Pertama, Buka file Player.cs Menambahkan Variabel nyawa Sebagai Berikut.

```
public int nyawa;  
public bool play_again;  
[SerializeField] Vector3 respawn_loc;
```

2. Lalu Tambah kode untuk mengganti posisi respawn dengan Mulai Game.

```
private void Awake()  
{  
    rb = GetComponent<Rigidbody2D>();  
    animator = GetComponent<Animator>();  
  
    respawn_loc = transform.position;  
}
```

3. Setelah Itu, kode dibawah ini di dalam void update Player.cs, Jadi nyawa player dibawah 0 maka akan respawn.

```
if (nyawa < 0)  
{  
    playagain();  
}
```

4. Tambahkan juga kode berikut dibawah code sebelumnya agar ketika player jatuh dibawah platform akan melakukan respawn

```
if (transform.position.y < -10)  
{  
    play_again = true;  
    playagain();  
}
```

5. Tambahkan fungsi playagain() dalam script Player.cs

```
void playagain()  
{  
    if (play_again == true)  
    {  
        nyawa = 3;  
        transform.position = respawn_loc;  
        play_again = false;  
    }  
}
```



6. Tambahkan file script (Enemy\_Attacked.cs) dan isikan source code dibawah ini.

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

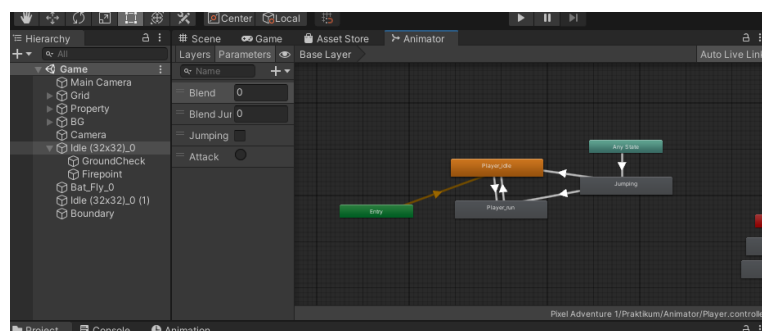
public class Enemy_attacked : MonoBehaviour
{
    [SerializeField] private Player Object;

    void Start()
    {
        if (Object == null)
        {
            Object =
GameObject.FindWithTag("Player").GetComponent<Player>
();
        }
    }

    void OnTriggerEnter2D(Collider2D other)
    {
        if (other.CompareTag("Player"))
        {
            Object.nyawa--;

            if (Object.nyawa < 0)
            {
                Object.play_again = true;
            }
        }
    }
}
```

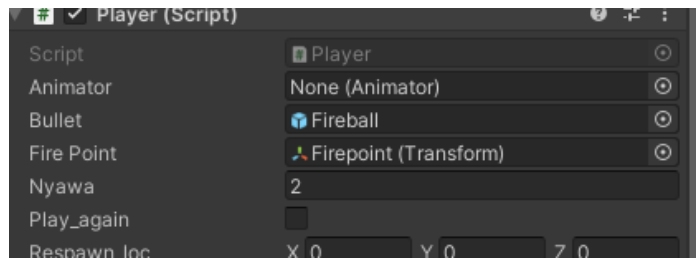
7. Pada hierarchy Bat\_Fly\_0 Tambahkan Script enemy attack, arahkan object pada player-idle-1



Gambar 10.24 Enemy Attack



8. Klik game object Player, pergi ke Inspector dan ubah nilai Nyawa menjadi 3 pada Player(Script)



Gambar 10.25 Mengubah Nilai Nyawa

9. Jika di play, Player mengenai atau menyentuh opossum-1 sebanyak 3 kali maka nyawa akan berkurang 1 dan jika nyawa kurang dari 0 maka akan respawn ke titik awal



Gambar 10.26 Hasil Akhir

#### D. Link Github Pengumpulan

[https://github.com/Varellewaldo/2118072\\_PRAK\\_ANIGAME](https://github.com/Varellewaldo/2118072_PRAK_ANIGAME)