# 8 Character and Camera Movement

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| **Kelas** | : | D |
| **Asisten Lab** | : | 2118004 - Bagas Anardi Surya W. |
| **Baju Adat** | : | Banjar Babaju Kubaya Panjang |
| **Referensi** | : | https://berita.99.co/wp-content/uploads/2023/08/banjar-babaju-kubaya-panjang.jpg |

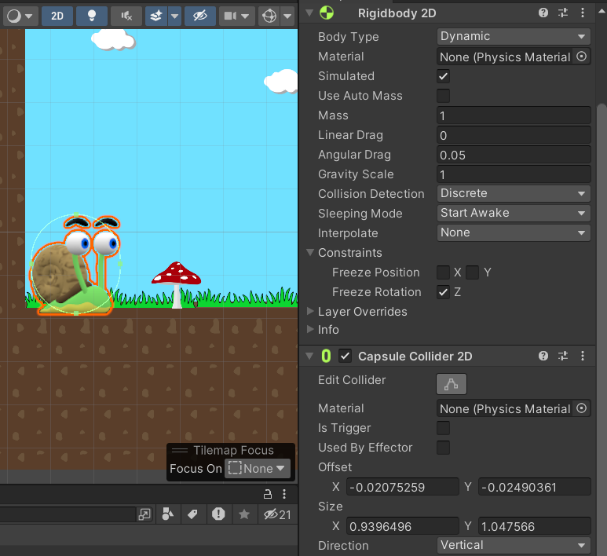
## Tugas 8: Menggerakkan Karakter dan Kamera

1. **Menggerakkan Karakter**
2. Buka proyek sebelumnya



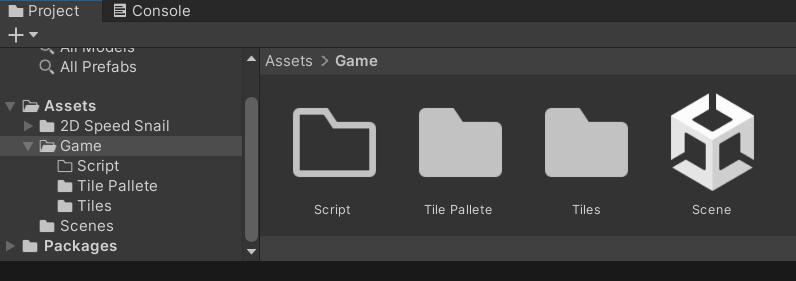
### 6.1 Proyek Sebelumnya

1. Pastikan komponen Siput hanya *Rigidbody 2D* dan *Capsule Collider 2D*



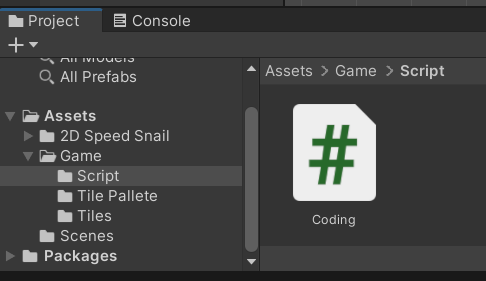
### 6.2 Komponen Karakter

1. Buat folder ‘Script’ di dalam *folder* Game



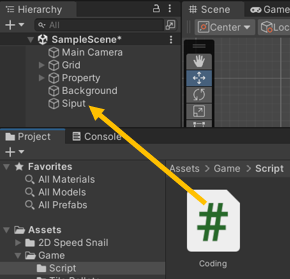
### 6.3 Membuat Folder ‘Script’

1. Buat berkas C# di dalam folder Script



### 6.4 Membuat Berkas C# Coding

1. Sisipkan berkas Coding ke Siput dengan *drag drop*

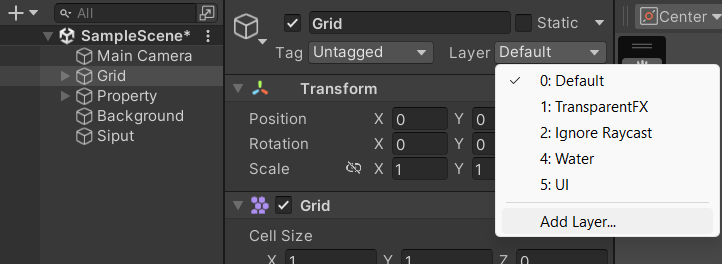


### 6.5 Menyisipkan Berkas Coding ke Siput

1. Buka berkas Coding dan sisipkan skrip di bawah ini

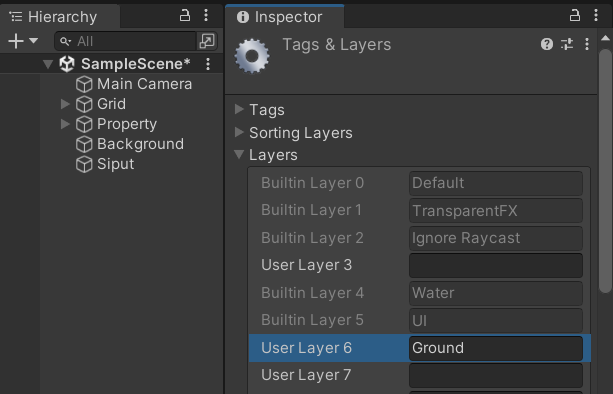
|  |
| --- |
| using System.Collections;  using System.Collections.Generic;  using UnityEngine;  public class Coding : MonoBehaviour{      Rigidbody2D rb;      [SerializeField] Transform groundcheckCollider;      [SerializeField] LayerMask groundLayer; // +      [SerializeField] float speed = 1;      [SerializeField] bool isGrounded; // +      [SerializeField] float jumpPower = 300; // ++      const float groundCheckRadius = 0.2f; // +      float horizontalValue;      bool facingRight;      bool jump; // ++      private void Awake(){          rb = GetComponent<Rigidbody2D>();}      void Update (){  horizontalValue = Input.GetAxisRaw("Horizontal");          if (Input.GetButtonDown("Jump"))              jump = true;          else if (Input.GetButtonUp("Jump"))              jump = false;}      void FixedUpdate(){          GroundCheck();          Move(horizontalValue, jump);}      void GroundCheck(){          isGrounded = false;          Collider2D[] colliders = Physics2D.OverlapCircleAll(groundcheckCollider.position, groundCheckRadius, groundLayer);          if (colliders.Length > 0)          isGrounded = true;}      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){  transform.localScale = new Vector3(-2, 2, 2);              facingRight = false;          } else if (!facingRight && dir > 0){  transform.localScale = new Vector3(2, 2, 2);              facingRight = true;}          #endregion}} |

1. Buka kembali Grid dan tambahkan *layer* baru



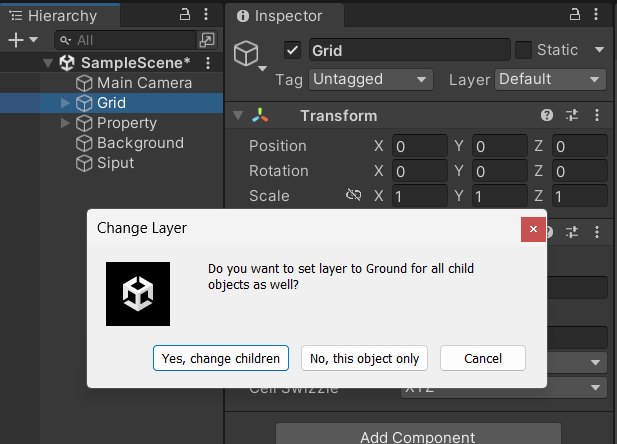
### 6.6 Membuat *Layer* Baru

1. Beri nama ‘Ground’ pada *layer* ke-6



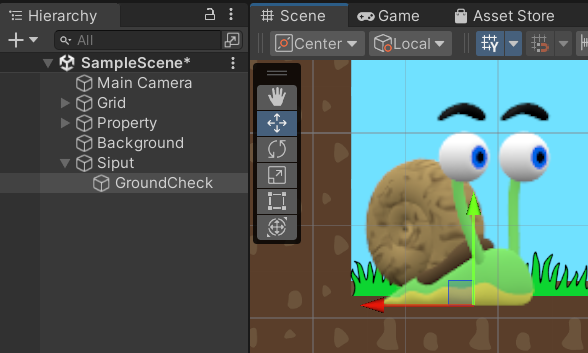
### 6.7 Memberi Nama Baru *Layer*

1. Kembali ke Grid dan ubah *layer* menjadi ‘Ground’. Ketika muncul notifikasi seperti ini, tekan ‘Yes’



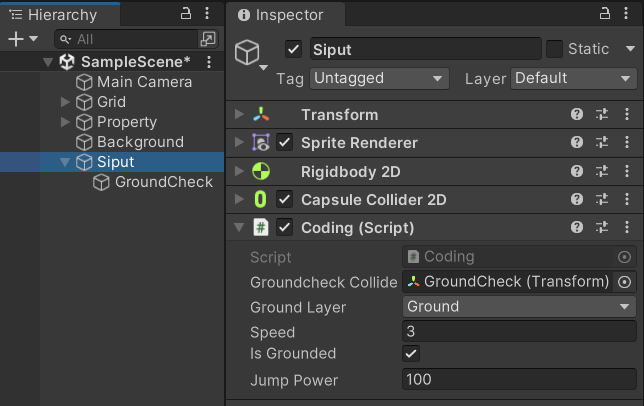
### 6.8 Mengatur *Layer* Grid

1. Buat hierarki baru di dalam Siput, beri nama ‘GroundCheck’



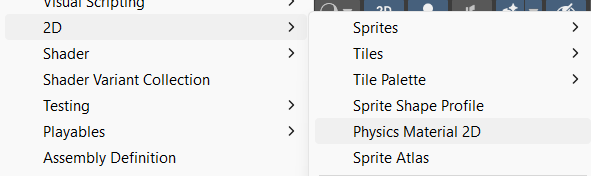
### 6.9 Menambahkan Hierarki ‘GroundCheck’

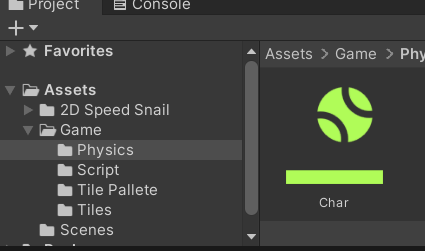
1. Atur komponen Siput bagian Coding seperti di bawah ini



### 6.10 Mengatur Komponen Siput bagian Coding

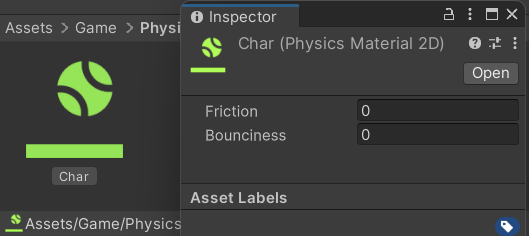
1. Buat folder ‘Physics’ dan buat *Physics Material 2D* baru





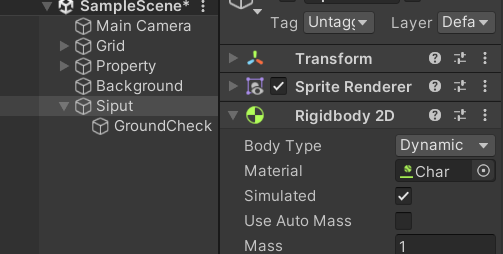
### 6.11 Membuat *Physics Material 2D* Baru

1. Konfigurasi Char di inspector dengan nilai 0 semua



### 6.12 Konfigurasi Char

1. Ganti material pada komponen *Rigidbody 2D* Siput dengan Char



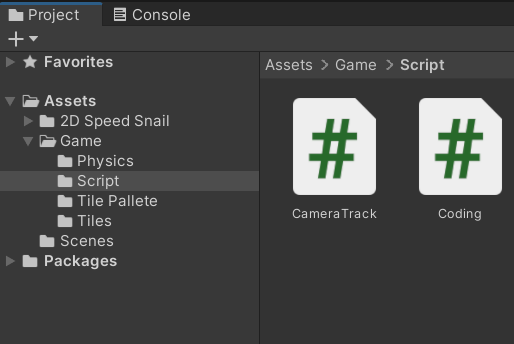
### 6.13 Mengganti Material *Rigidbody 2D*

1. Jalankan proyek dan coba untuk lompat dengan spasi



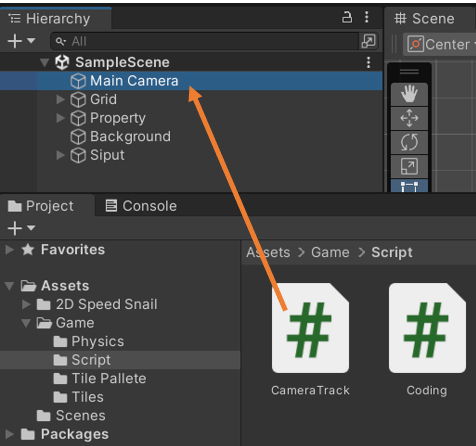
### 6.14 Uji Coba Lompat

1. **Menggerakkan Kamera**
2. Unduh dan pasang aplikasi Unity Hub



### 6.15 Buat berkas C# baru untuk Kamera

1. Sisipkan CameraTrack ke Main Camera

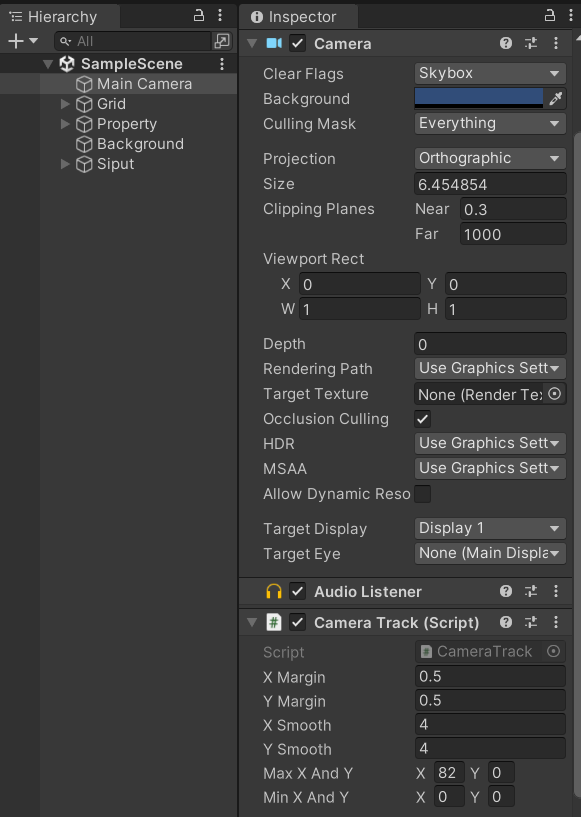


### 6.16 Menyisipkan CameraTrack ke Kamera

1. Masuk ke berkas CameraTrack dan masukkan skrip di bawah ini

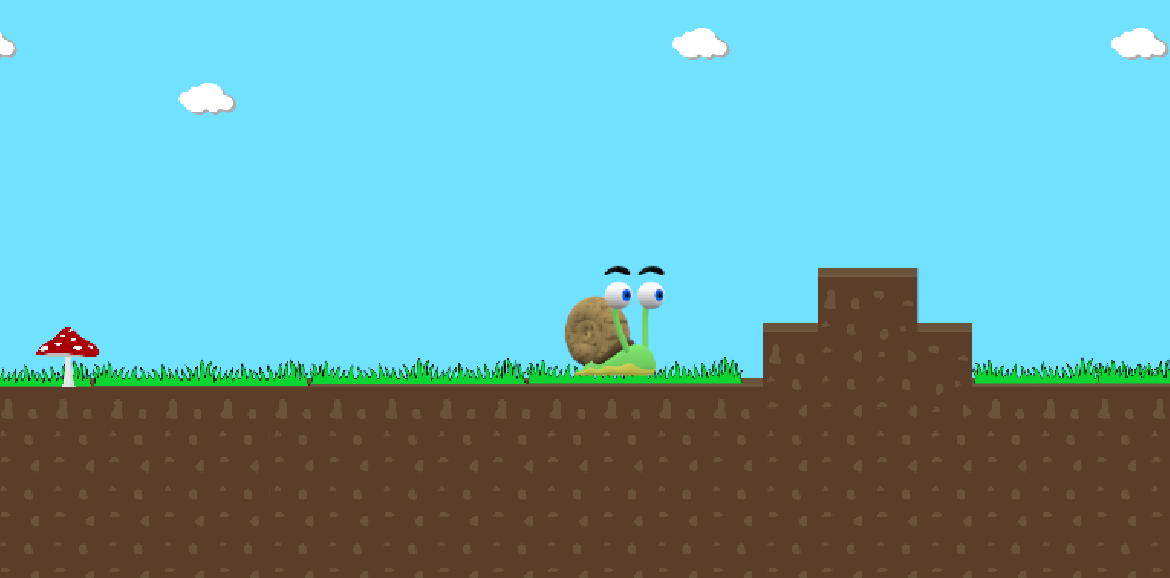
|  |
| --- |
| using System.Collections;  using System.Collections.Generic;  using UnityEngine;  public class CameraTrack : MonoBehaviour{      public float xMargin = 0.5f;      public float yMargin = 0.5f;      public float xSmooth = 4f;      public float ySmooth = 4f;      public Vector2 maxXAndY;      public Vector2 minXAndY;      private Transform player;      void Awake(){          player = GameObject.FindGameObjectWithTag("Player").transform;      }      bool CheckXMargin(){          return Mathf.Abs(transform.position.x - player.position.x) > xMargin;      }      bool CheckYMargin(){          return Mathf.Abs(transform.position.y - player.position.y) > yMargin;      }      void FixedUpdate(){          TrackPlayer();      }      void TrackPlayer(){          float targetX = transform.position.x;          float targetY = transform.position.y;          if (CheckXMargin())              targetX = Mathf.Lerp(transform.position.x, player.position.x,              xSmooth \* Time.deltaTime);          if (CheckYMargin())              targetY = Mathf.Lerp(transform.position.y, player.position.y,              ySmooth \* Time.deltaTime);              targetX = Mathf.Clamp(targetX, minXAndY.x, maxXAndY.x); targetY =              Mathf.Clamp(targetY, minXAndY.y, maxXAndY.y); transform.position = new Vector3(targetX, targetY, transform.position.z);      }  } |

1. Atur komponen di Main Camera seperti ini



### 6.17 Menyesuaikan Komponen di Main Camera

1. Jalankan proyek dan coba untuk bergerak lebih jauh hingga kamera bergerak



### 6.18 Uji Coba Pergerakan Kamera

1. **Link Github Pengumpulan**

https://github.com/EsaAryaMahardika/PraktikumAnimasiGame/tree/main/Pertemuan%208