



Jurusan Teknologi Informasi Politeknik Negeri Malang

Tugas Minggu: Modul 3

Mata Kuliah Komputasi Multimedia

Pengampu:

Februari 2021

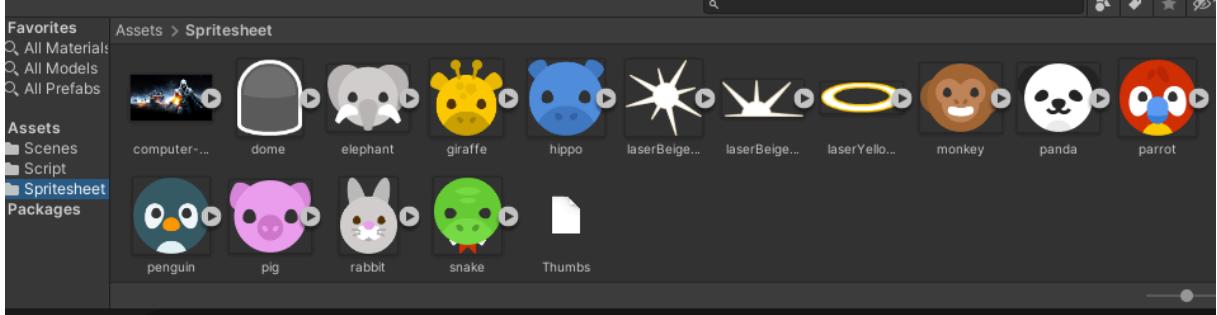
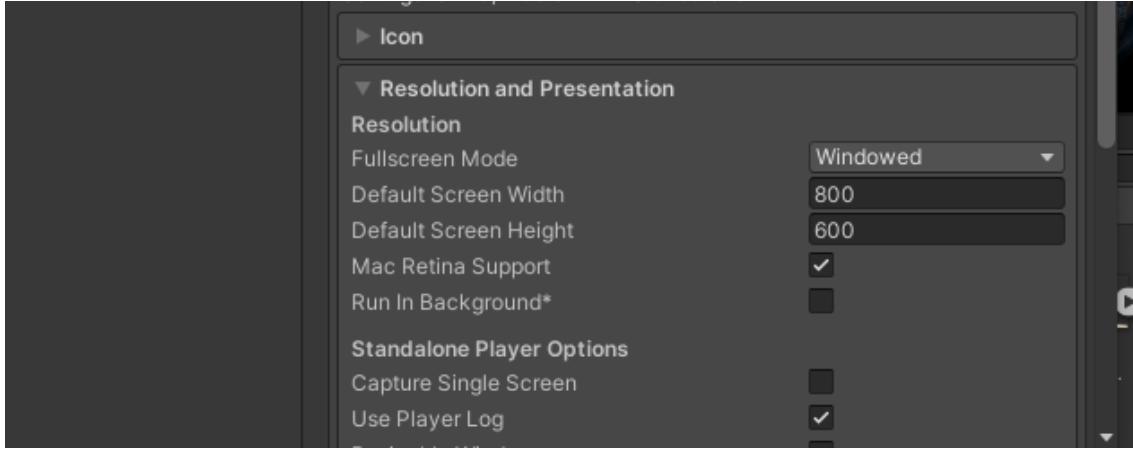
Nama : Muhammad Iqbaluddin Al Huda

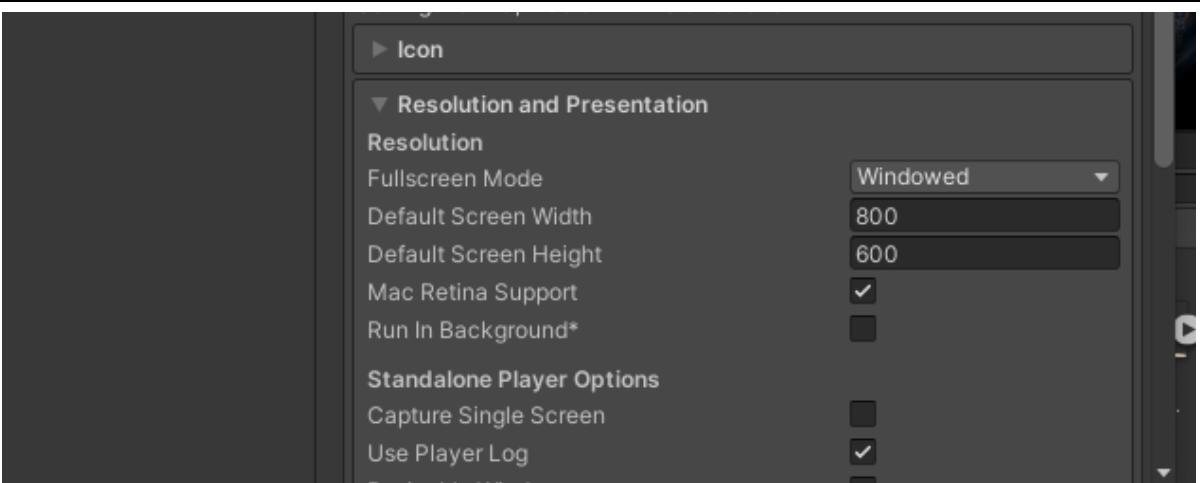
Kelas : TI-3E

NIM : 1841720013

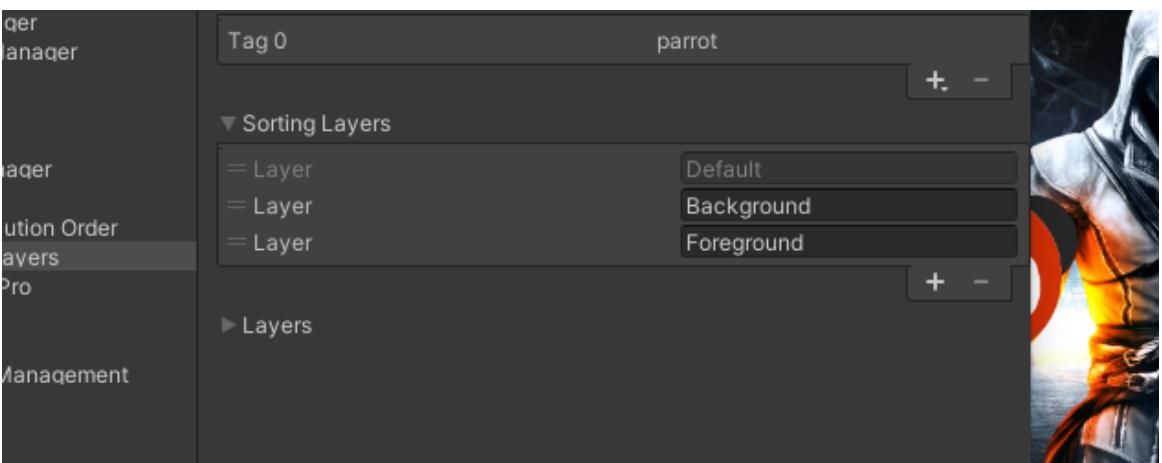
Tujuan

- Mahasiswa dapat menggunakan inventory GUI sebagai pengolah nilai variable dinamis
- menggunakan Unity
- Mahasiswa dapat menggunakan asset yang telah disediakan untuk membuat game di
- Unity
- Mahasiswa dapat membuat game sederhana untuk mengambil satu object dan
- menampilkan nilainya dalam bentuk teks maupun single icon
- Mahasiswa dapat mengambil satu object beberapa kali dan menampilkan hasilnya
- dalam bentuk total teks maupun multiple status icon

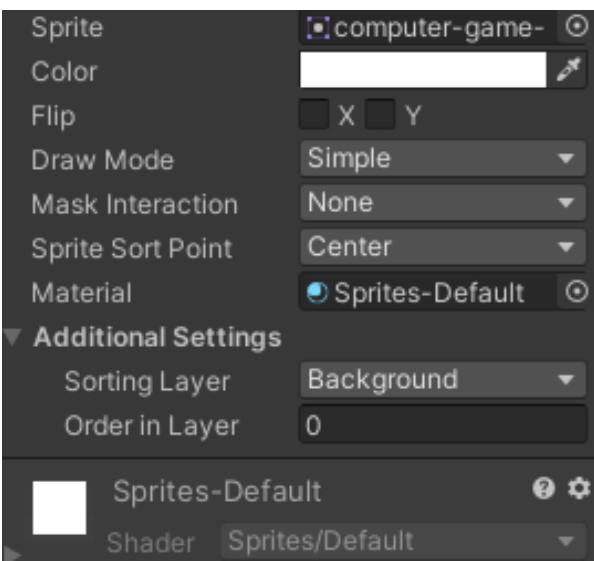
| Langkah | Keterangan |
|---------|--|
| 1 | <p>Import folder Sprites kedalam project anda.</p>  |
| 2 | <p>Set ukuran layar player menjadi 800 x 600. Edit -> Project Settings -> Player, pada opsi Resolution and Presentation, uncheck Default is Full Screen</p>  |
| 3 | Pilih panel Game, pilih Standalone (800 x 600) |



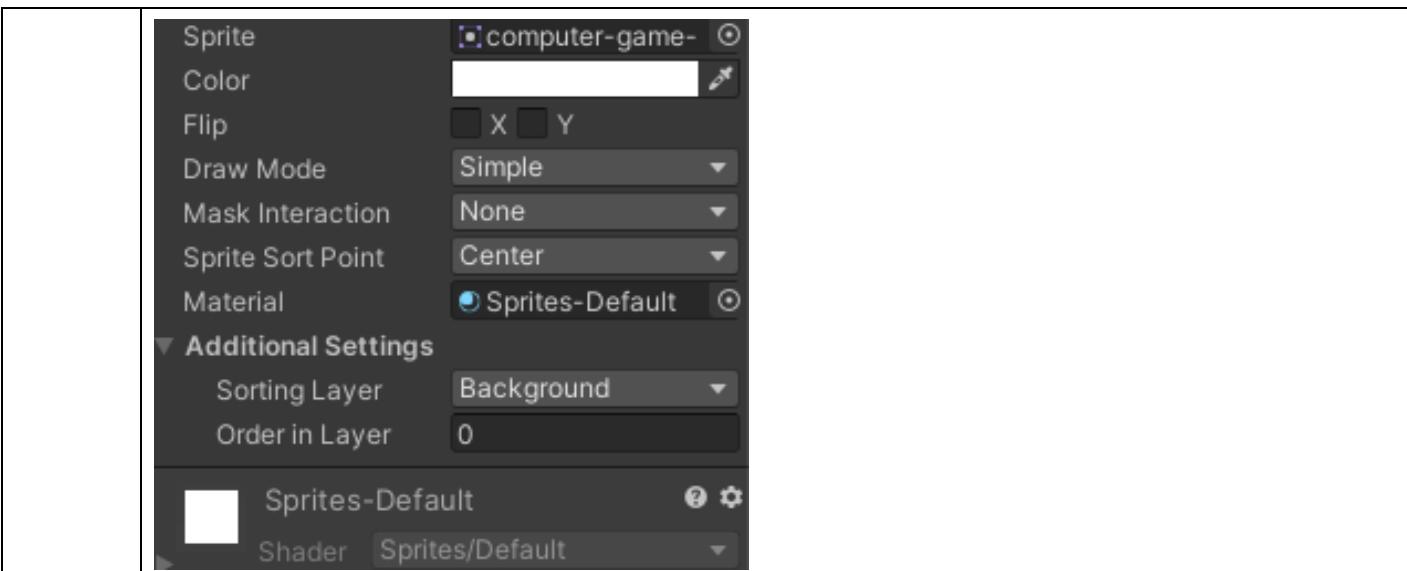
- 4** Tampilkan Tags & Layers dengan cara pilih Edit -> Project Settings -> Tags and Layers. Pada bagian Inspector, expand Sorting Layers. Gunakan tanda + pada Sorting Layers dan tambahkan dua layer baru dengan nama Background dan Foreground.



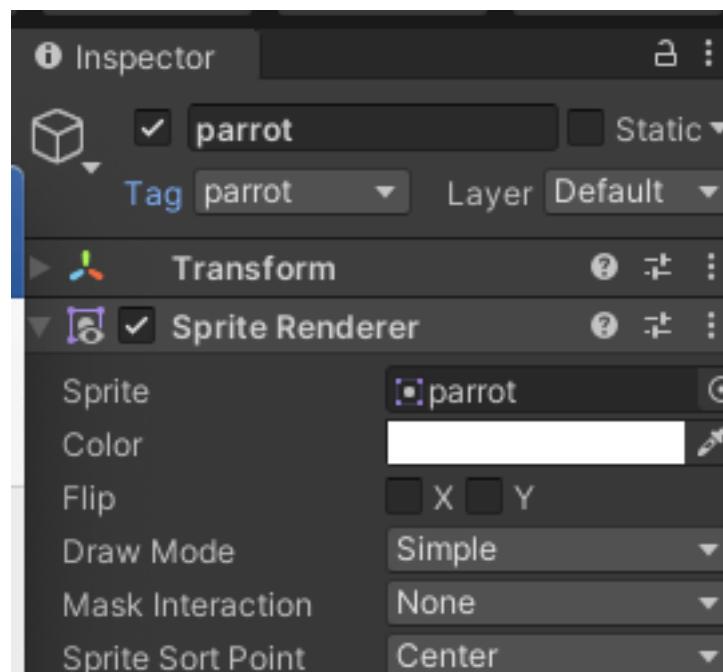
- Drag background-blue dari panel project kedalam Game atau Hierarchy untuk membuat gameObject.



- 5** Set Sorting Layer dari GameObject background-blue menjadi Background (pada komponen Sprite Renderer)
- 6** Set Sorting Layer dari GameObject background-blue menjadi Background (pada komponen Sprite Renderer)



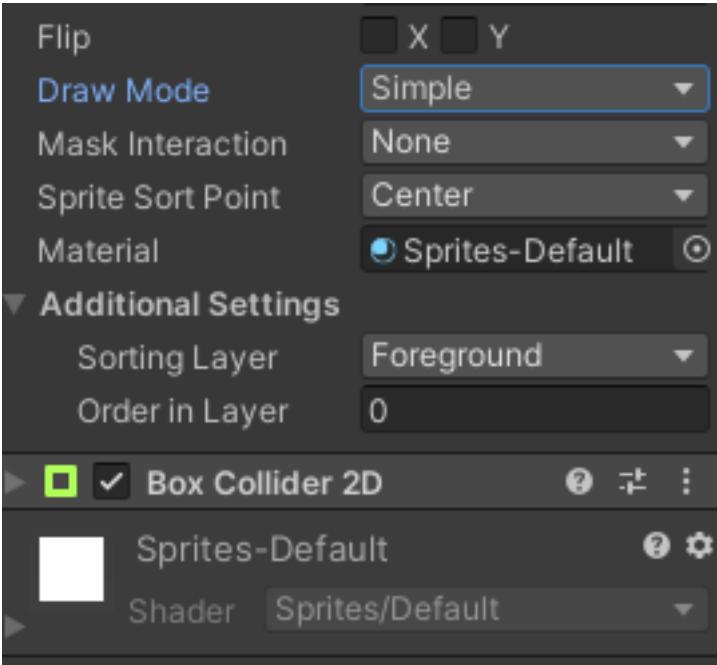
Drag Gambar Star ke GameObject. Tambahkan Tag Star pada Inspector Tags & layers. Set Tag dari Star Object menjadi Star.



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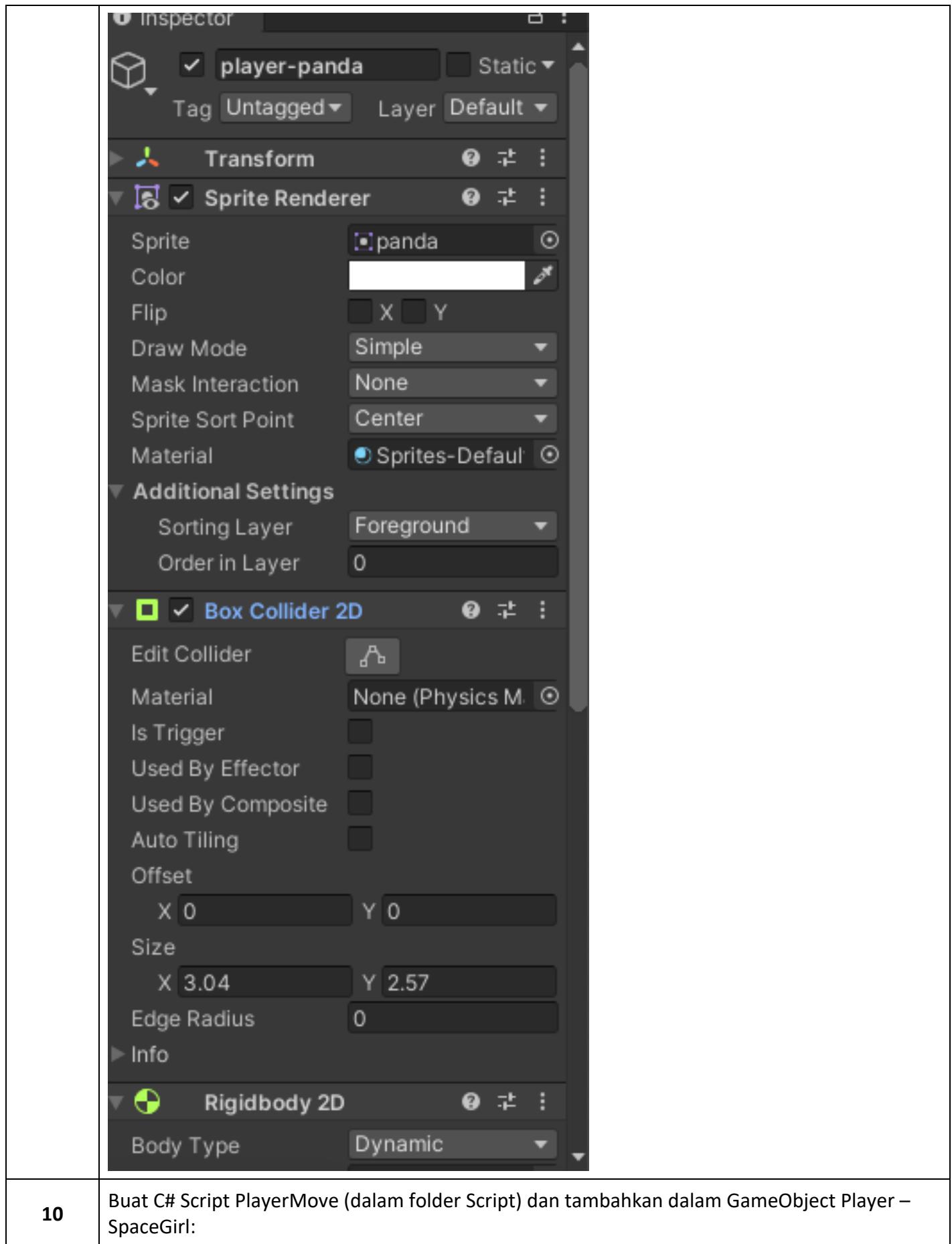
Tambahkan Box Collider 2D pada gameObject Star (Add Component -> Physics 2D -> Box Collider 2D) dan check pada Is Trigger.

8



9

- . Tambahkan girl1 ke dalam gameObject, rename menjadi Player – SpaceGirl. Sorting layer ubah menjadi Foreground. Tambahkan Box Collider 2D. Tambahkan Rigidbody 2D (Add Component -> Physics 2D -> Rigidbody 2D). Set Gravity Scale menjadi 0 agar tidak jatuh kebawah layar karena simulasi gravitasi.

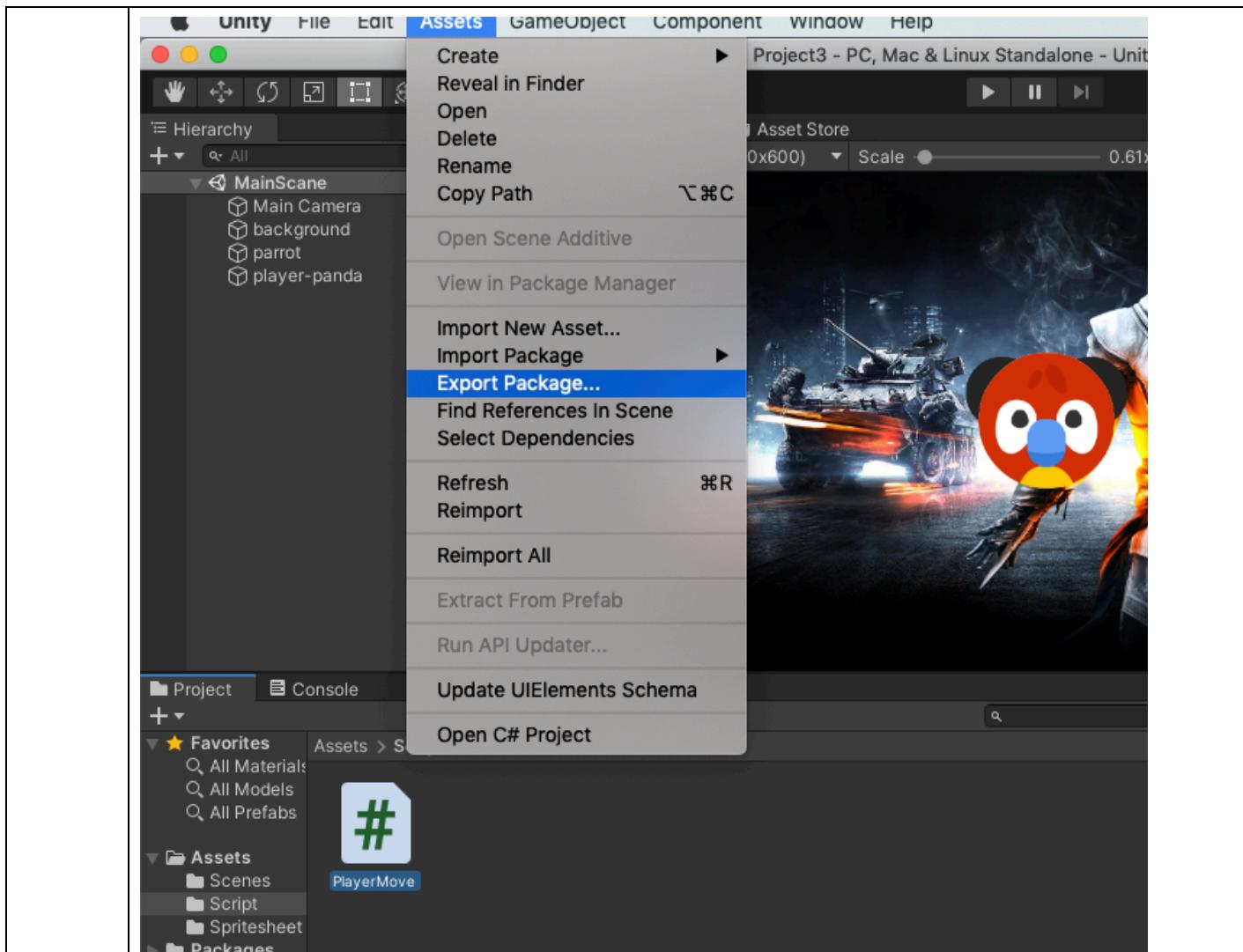


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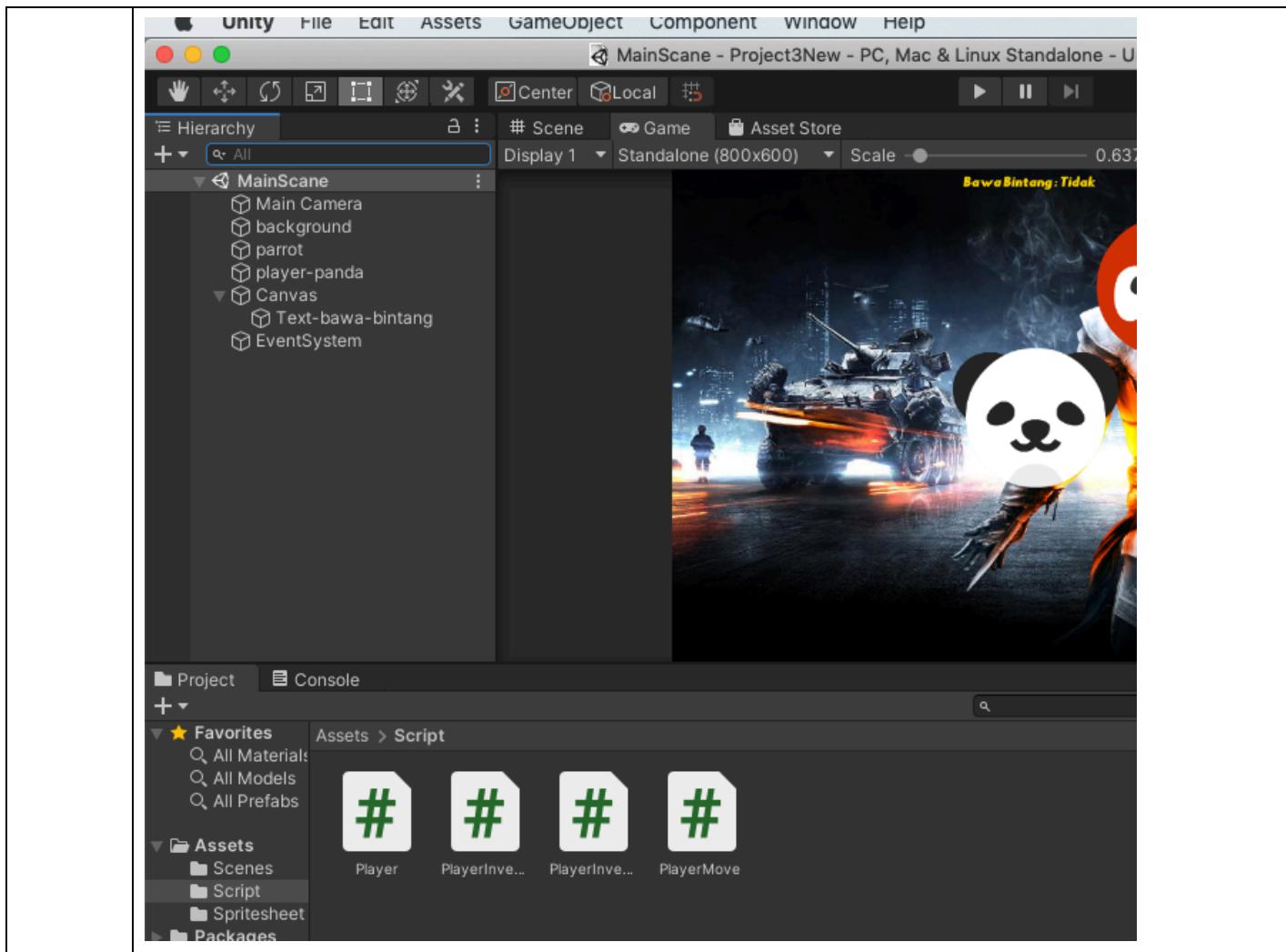
Buat C# Script PlayerMove (dalam folder Script) dan tambahkan dalam GameObject Player – SpaceGirl:

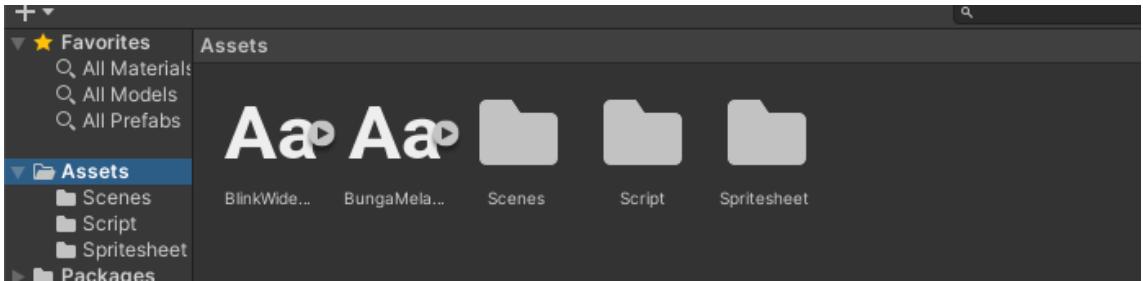
```
# Player.cs      C# PlayerMove.cs ×
Users > md1010 > Documents > Semester 6 > Komputasi Multimedia > Pertemuan Pertama-20210219 > Project3 >
1  using UnityEngine;
2  using System.Collections;
3
4  public class PlayerMove : MonoBehaviour {
5      public float speed = 10;
6      private Rigidbody2D rigidBody2D;
7
8      void Awake() {
9          rigidBody2D = GetComponent<Rigidbody2D>();
10     }
11
12     void FixedUpdate() {
13         float xMove = Input.GetAxis("Horizontal");
14         float yMove = Input.GetAxis("Vertical");
15         float xSpeed = xMove * speed;
16         float ySpeed = yMove * speed;
17         Vector2 newVelocity = new Vector2(xSpeed, ySpeed);
18         rigidBody2D.velocity = newVelocity;
19     }
20 }
```

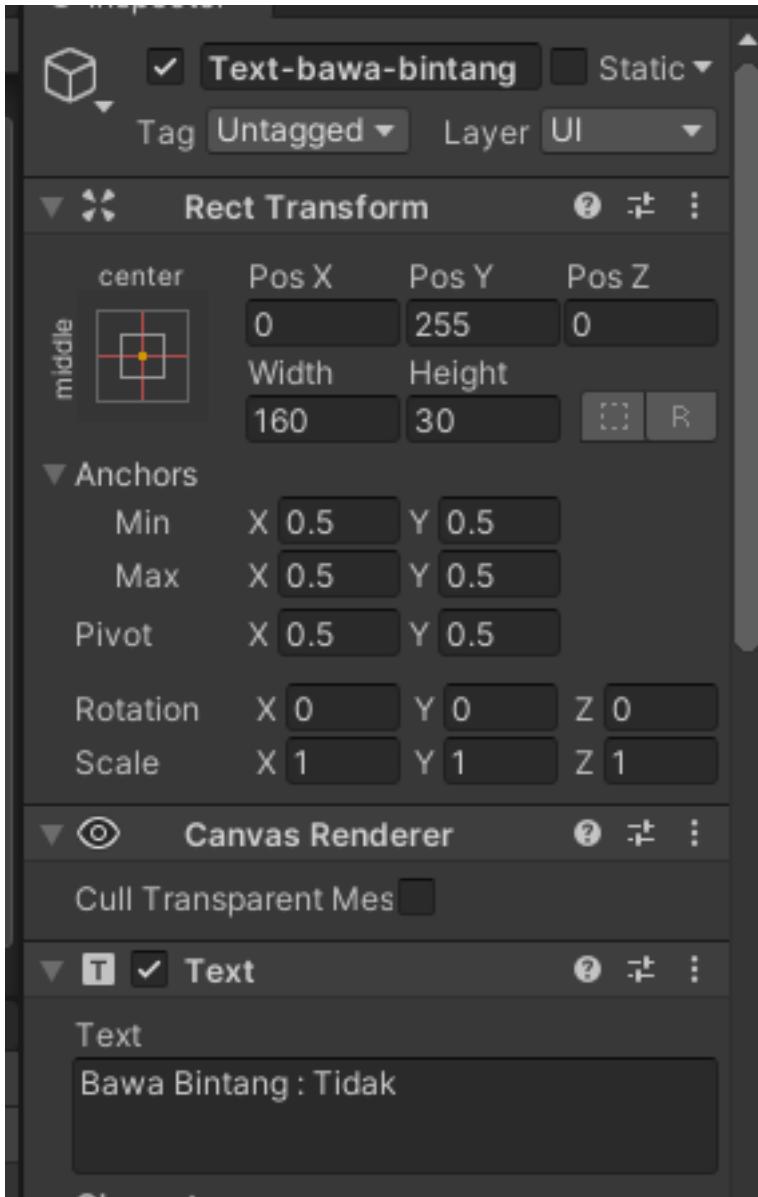
- 11 . Karena akan membuat 4 skenario mini game seperti yang telah dituliskan pada dasar teori, maka export package scene yang telah dibuat dan beri nama sembarang (Asset -> Export Package.



| | |
|----|--|
| 12 | <p>2. Tampilkan pengambilan objek tunggal dengan teks “membawa” atau “tidak membawa” 1. Buat New Project 2D kosong. Import Package dari Scene yang telah dibuat sebelumnya (Asset -> Import Package -> Custom Package). Set Ukuran layar 800 x 600. Set Game aspect ratio juga di 800 x 600. Pilih Scene utama. Jangan lupa buat sorting layer Background dan Foreground, dan set sorting layer tiap gameObject sesuai layernya (star disorting layer foreground, dsb)</p> |
| 13 | <p>Tambahkan UI Object Text (Create -> UI -> Text). Ubah namanya menjadi Text-bawabintang. Kemudian ubah isi textnya menjadi Bawa Bintang : Tidak.</p> |



| | |
|----|--|
| 14 | <p>Import Font dari folder 1362_02_02 kedalam project. Set font dari Text-bawa-bintang menjadi Xolonium-Bold, warna kuning, ukuran 32, tinggi 50.</p>  <p>The Project panel shows the "Assets" folder expanded. Inside "Assets" are subfolders: Scenes, Script, Spritesheet, and Packages. To the right, there are four items: "BlinkWide..." (a folder icon), "BungaMeta..." (a folder icon), "Scenes" (a folder icon), "Script" (a folder icon), and "Spritesheet" (a folder icon). The "Assets" folder is highlighted with a blue border.</p> |
| 15 | <p>Pada Anchor Presets, pilih pivot dan posisi (Shift+Alt) top-stretch.</p> |



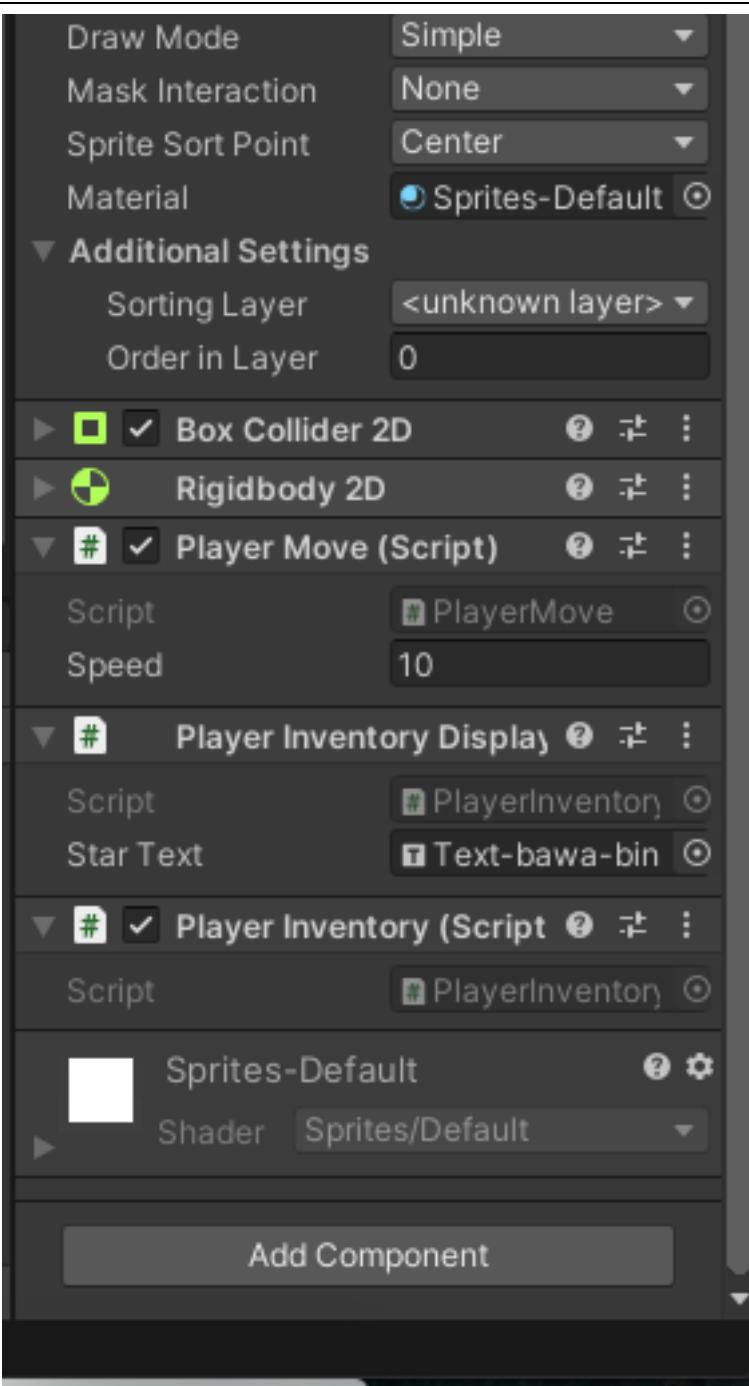
16

Buat Script Player kedalam game object Text-bawa-bintang.

```
Users > md1010 > Documents > Semester 6 > Komputasi Multimedia > Pertemuan Pertama-20210219 > Project3New >
1  using UnityEngine;
2  using System.Collections;
3  using UnityEngine.UI;
4
5  public class Player : MonoBehaviour {
6
7      public Text starText;
8      private bool carryingStar = false;
9
10     void Start() {
11         UpdateStarText();
12     }
13
14     void OnTriggerEnter2D(Collider2D hit) {
15         if (hit.CompareTag("Star")) {
16             carryingStar = true;
17             UpdateStarText();
18             Destroy(hit.gameObject);
19         }
20     }
21
22     private void UpdateStarText() {
23         string starMessage = "Tidak Bawa Bintang :(";
24         if (carryingStar) starMessage = "Bawa Bintang :-)";
25         starText.text = starMessage;
26     }
27 }
```

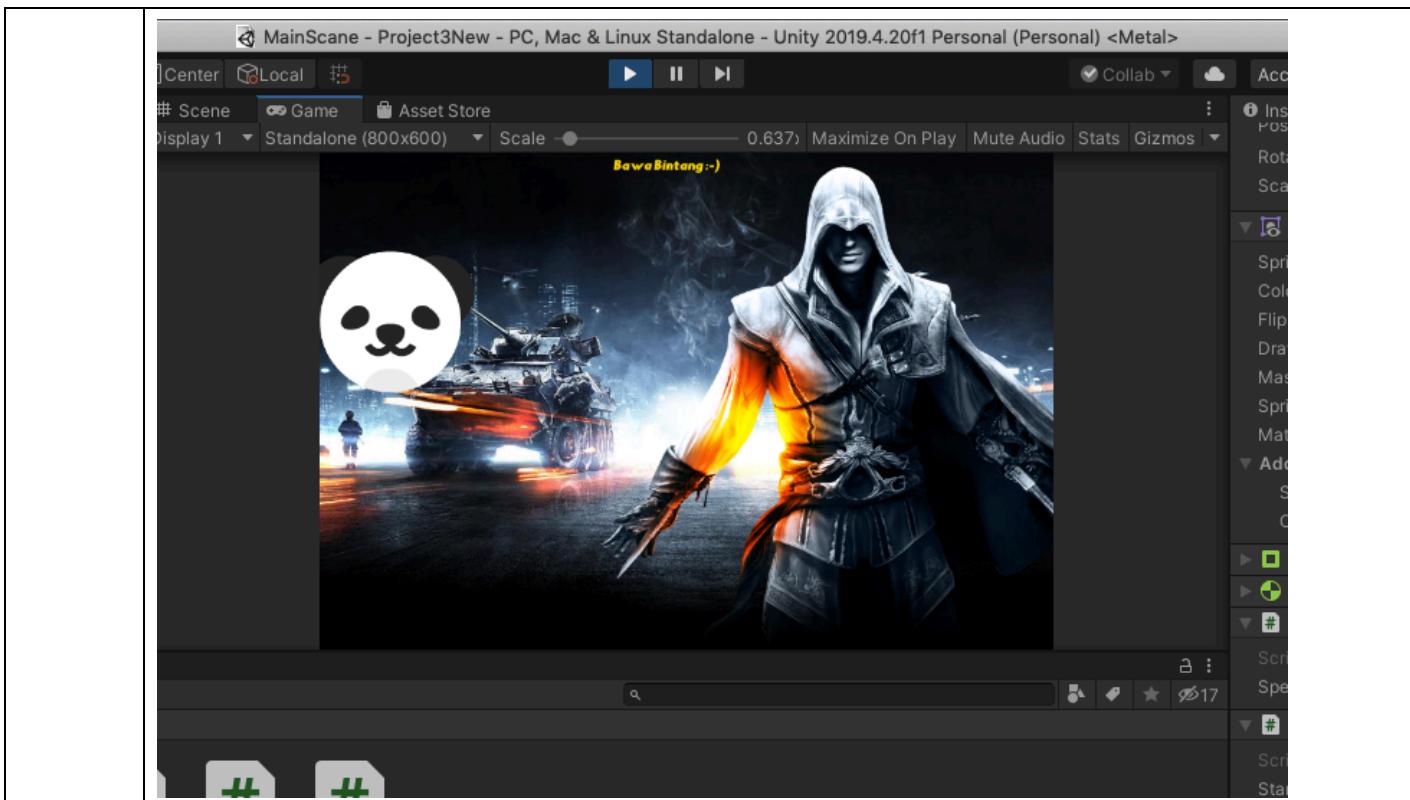
17

Pada Inspector Player dalam GameObject Player – SpaceGirl, pilih Star Text dan tunjuk Text-bawa-bintang



18

Jalankan scene-nya, jika anda melihat hasil seperti screenshot berikut maka anda telah berhasil. Pelajari Script Player dengan baik.



Buat Script PlayerInventoryDisplay untuk gameObject Player-SpaceGirl. Set StarText menjadi : Text-bawa-bintang

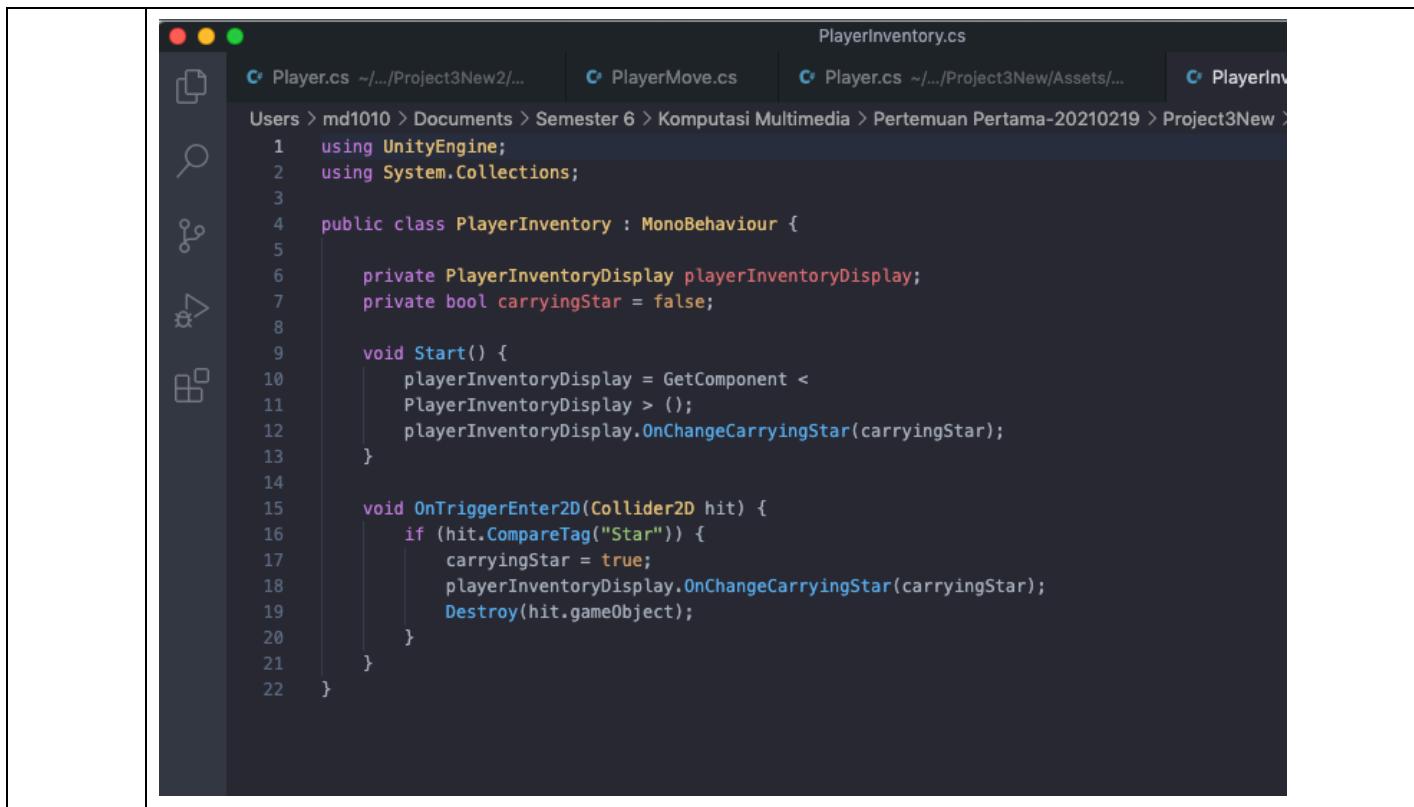
19

```

 1  using UnityEngine;
 2  using System.Collections;
 3  using UnityEngine.UI;
 4
 5  public class PlayerInventoryDisplay : MonoBehaviour {
 6
 7      public Text starText;
 8
 9      public void OnChangeCarryingStar(bool carryingStar) {
10          string starMessage = "Tidak Bawa Bintang :-(";
11
12          if (carryingStar) starMessage = "Bawa Bintang :-)";
13          starText.text = starMessage;
14      }
15  }

```

20 . Hapus component Player dari gameobject Player-SpaceGirl dan ganti dengan script baru PlayerInventory.

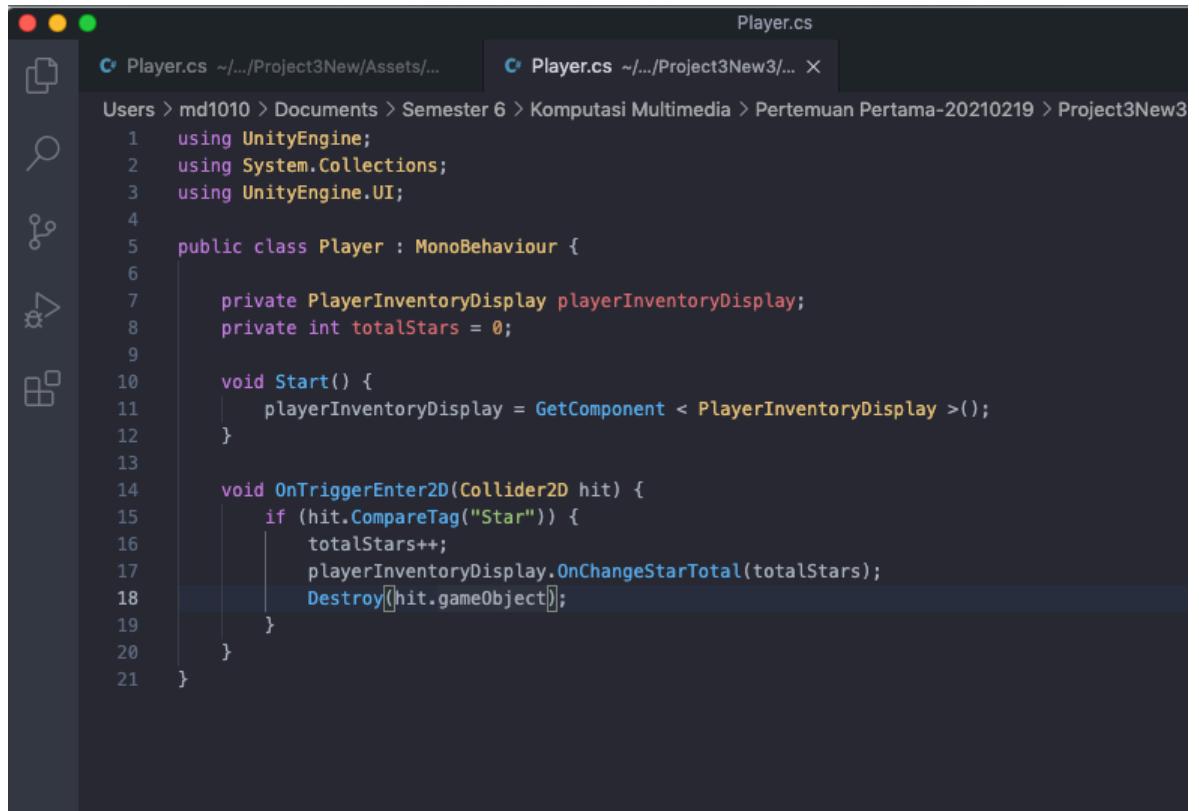


The screenshot shows a Unity code editor window titled "PlayerInventory.cs". The script content is as follows:

```
1  using UnityEngine;
2  using System.Collections;
3
4  public class PlayerInventory : MonoBehaviour {
5
6      private PlayerInventoryDisplay playerInventoryDisplay;
7      private bool carryingStar = false;
8
9      void Start() {
10         playerInventoryDisplay = GetComponent<
11             PlayerInventoryDisplay > ();
12         playerInventoryDisplay.OnChangeCarryingStar(carryingStar);
13     }
14
15     void OnTriggerEnter2D(Collider2D hit) {
16         if (hit.CompareTag("Star")) {
17             carryingStar = true;
18             playerInventoryDisplay.OnChangeCarryingStar(carryingStar);
19             Destroy(hit.gameObject);
20         }
21     }
22 }
```

Bagian 2: Membuat dan menjalankan program sederhana dengan Python

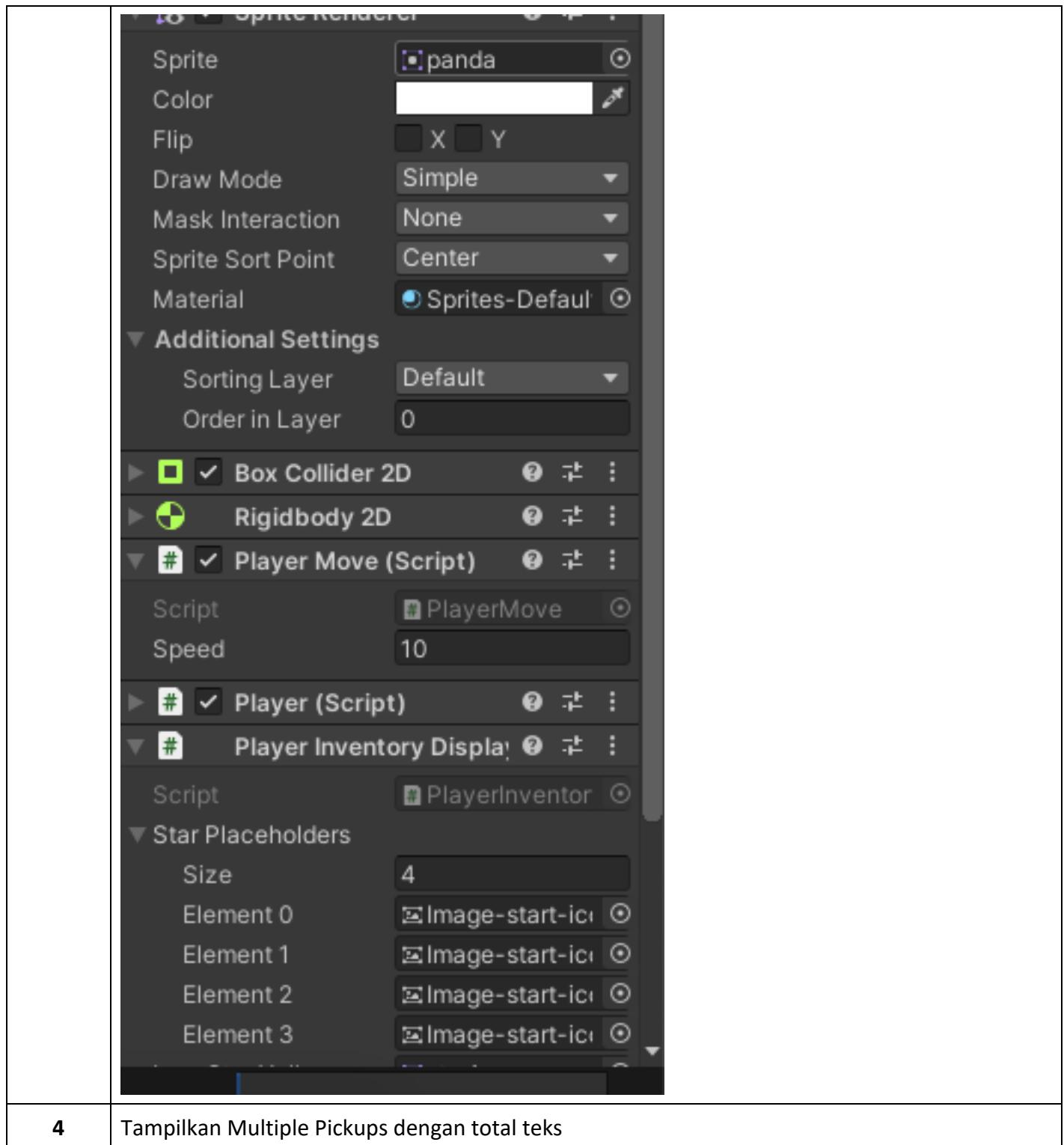
| Langkah | Keterangan |
|---------|---|
| 1 | Drag sprite icon_no_star_100 (di folder sprites) ke source image dari object Imagestar-icon. 4. Klik tombok Set Native Size pada component image. |
| 2 | Tambahkan script Player pada gameObject Player – SpaceGirl |



The screenshot shows the Unity Editor's code editor window with the file "Player.cs" open. The code is written in C# and defines a MonoBehavior for a player character. It includes logic to track total stars and destroy collected objects.

```
1  using UnityEngine;
2  using System.Collections;
3  using UnityEngine.UI;
4
5  public class Player : MonoBehaviour {
6
7      private PlayerInventoryDisplay playerInventoryDisplay;
8      private int totalStars = 0;
9
10     void Start() {
11         playerInventoryDisplay = GetComponent<PlayerInventoryDisplay>();
12     }
13
14     void OnTriggerEnter2D(Collider2D hit) {
15         if (hit.CompareTag("Star")) {
16             totalStars++;
17             playerInventoryDisplay.OnChangeStarTotal(totalStars);
18             Destroy(hit.gameObject);
19         }
20     }
21 }
```

| | |
|---|---|
| 3 | Pada Player Component dari Player-SpaceGirl, isikan object image-no-star pada Star Image field. Pada field Icon Star isikan dengan icon_star_100 dari folder Sprites, pada field Icon No Star isikan dengan icon_no_star_100 dari folder sprites. |
|---|---|



4

Tampilkan Multiple Pickups dengan total teks



Buat script Player, tambahkan kedalam component Player-SpaceGirl.

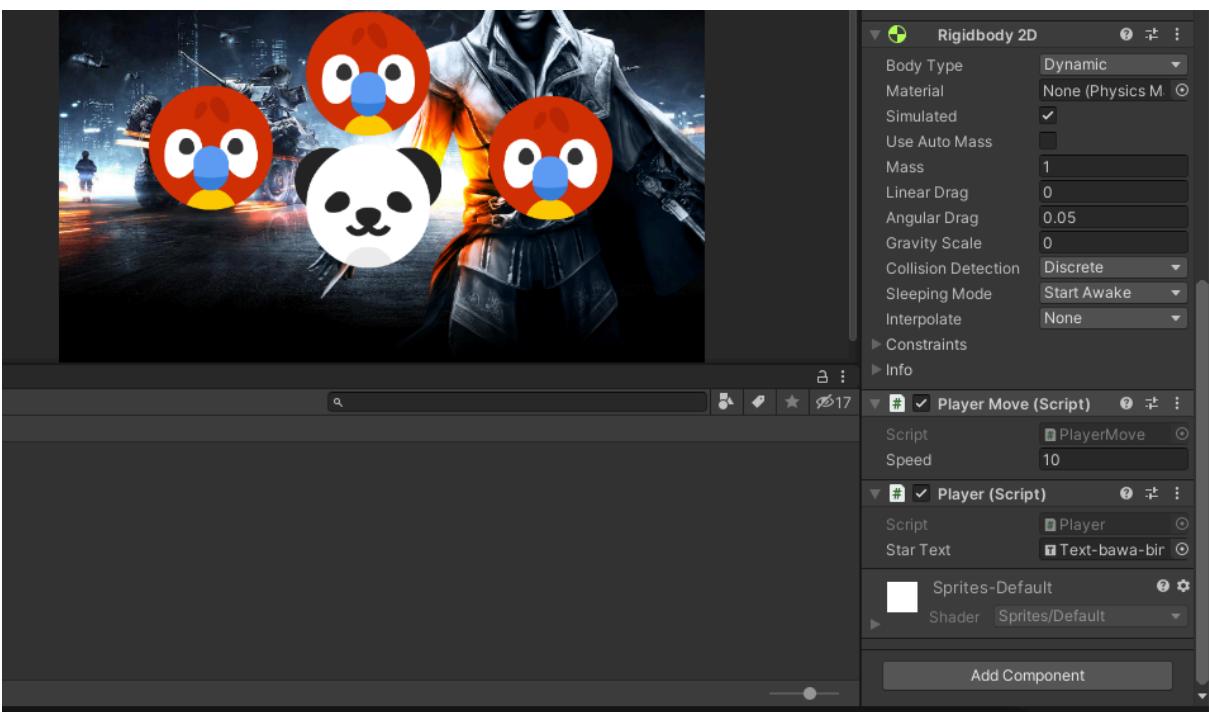
5

```
Player.cs
```

```

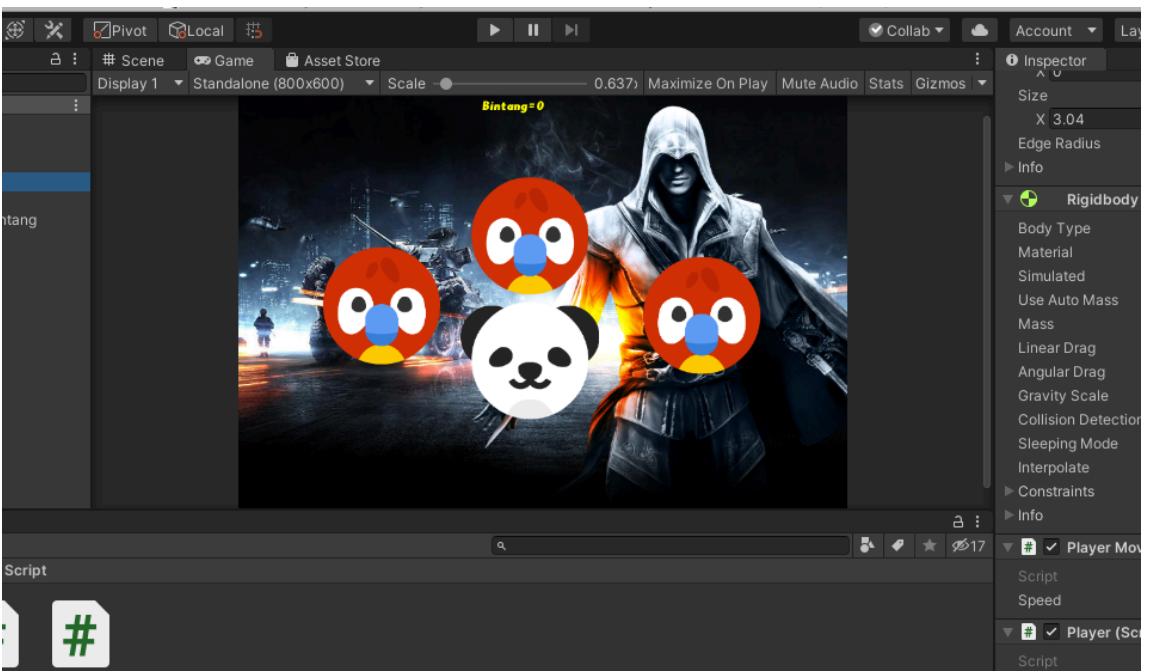
1  using UnityEngine;
2  using System.Collections;
3  using UnityEngine.UI;
4
5  public class Player : MonoBehaviour {
6
7      public Text starText;
8      private int totalStars = 0;
9
10     void Start() {
11         UpdateStarText();
12     }
13
14     void OnTriggerEnter2D(Collider2D hit) {
15         if (hit.CompareTag("star")) {
16             totalStars++;
17             UpdateStarText();
18             Destroy(hit.gameObject);
19         }
20     }
21
22     private void UpdateStarText() {
23         string starMessage = "stars = " + totalStars;
24         starText.text = starMessage;
25     }
26 }
```

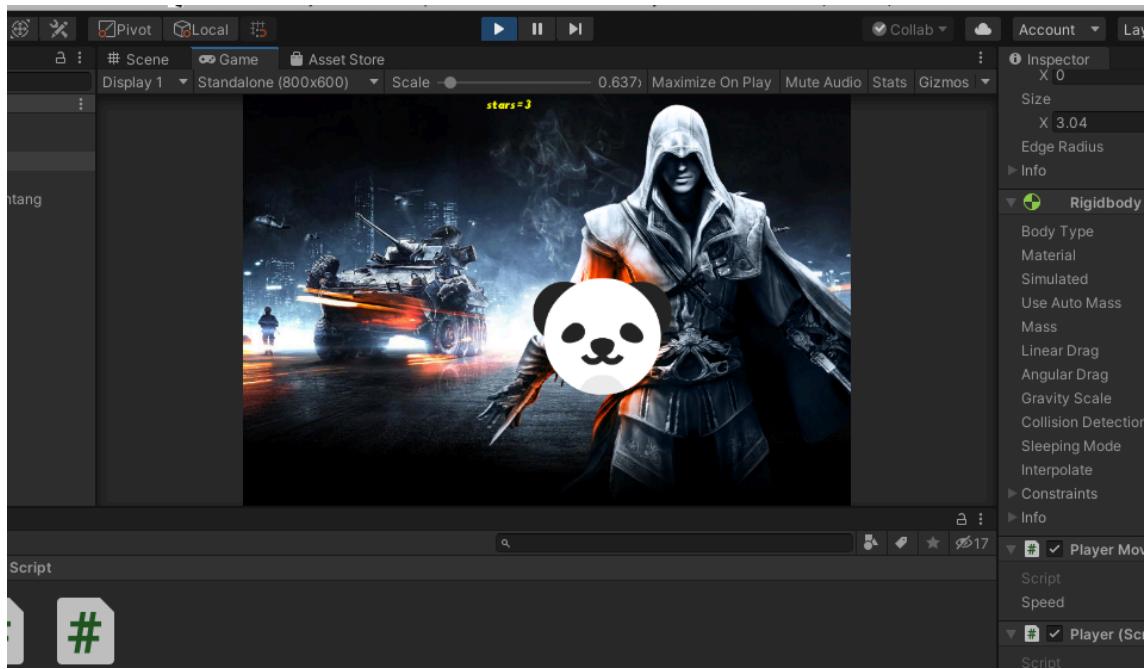
6 Pada field Star text di component Player pada gameObject Player-SpaceGirl, isikan Textbawa-bintang.



Duplicate gameObject sebanyak 3 kali dan tempatkan sesuai keinginan anda.

7



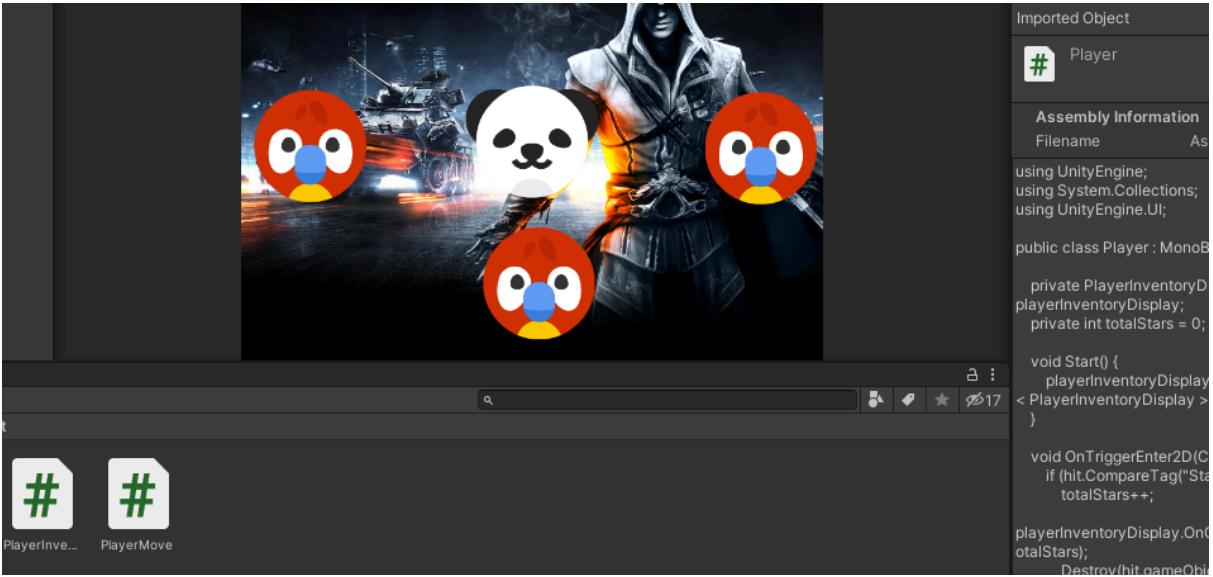


- 8 Tampilan Multiple Pickups dengan Multiple Status Icon Jika item yang akan diambil sudah terbatas dan tidak terlalu banyak

Buat New Project 2D kosong. Import Package dari Scene yang telah dibuat sebelumnya di E.1. (Asset -> Import Package -> Custom Package). Set Ukuran layar 800 x 600. Set Game aspect ratio juga di 800 x 600. Pilih Scene utama. Jangan lupa buat sorting layer Background dan Foreground, dan set sorting layer tiap gameObject sesuai layernya (star disorting layer foreground, dsb). 2. Tambahkan script player pada gameObject Player-SpaceGirl. Berikut scriptnya:

```
Player.cs x C PlayerInventoryDisplay.cs
Users > md1010 > Documents > Semester 6 > Komputasi Multimedia > Pertemuan Pertama-20210219 > Project3New3 > Assets > Script > C Player.cs
1  using UnityEngine;
2  using System.Collections;
3  using UnityEngine.UI;
4
5  public class Player : MonoBehaviour {
6
7      private PlayerInventoryDisplay playerInventoryDisplay;
8      private int totalStars = 0;
9
10     void Start() {
11         playerInventoryDisplay = GetComponent<PlayerInventoryDisplay>();
12     }
13
14     void OnTriggerEnter2D(Collider2D hit) {
15         if (hit.CompareTag("Star")) {
16             totalStars++;
17             playerInventoryDisplay.OnChangeStarTotal(totalStars);
18             Destroy(hit.gameObject);
19         }
20     }
21 }
```

- 10 Buat duplikat gameObject star sebanyak 3 dan tempatkan sesuai keinginan anda.



Buat script PlayerInventoryDisplay pada gameObject Player-SpaceGirl. Berikut scriptnya:

```

11  Player.cs          PlayerInventoryDisplay.cs
Users > md1010 > Documents > Semester 6 > Komputasi Multimedia > Pertemuan Pertama-20210219 > Project3New3 > Assets > Script > PlayerInventoryDisplay.cs
2  using System.Collections;
3  using UnityEngine;
4
5  public class PlayerInventoryDisplay : MonoBehaviour {
6      public Image[] starPlaceholders;
7      public Sprite iconStarYellow;
8      public Sprite iconStarGrey;
9
10     public void OnChangeStarTotal(int starTotal) {
11         for (int i = 0; i < starPlaceholders.Length; ++i) {
12             if (i < starTotal)
13                 starPlaceholders[i].sprite = iconStarYellow;
14             else
15                 starPlaceholders[i].sprite = iconStarGrey;
16         }
17     }
18 }
19
20

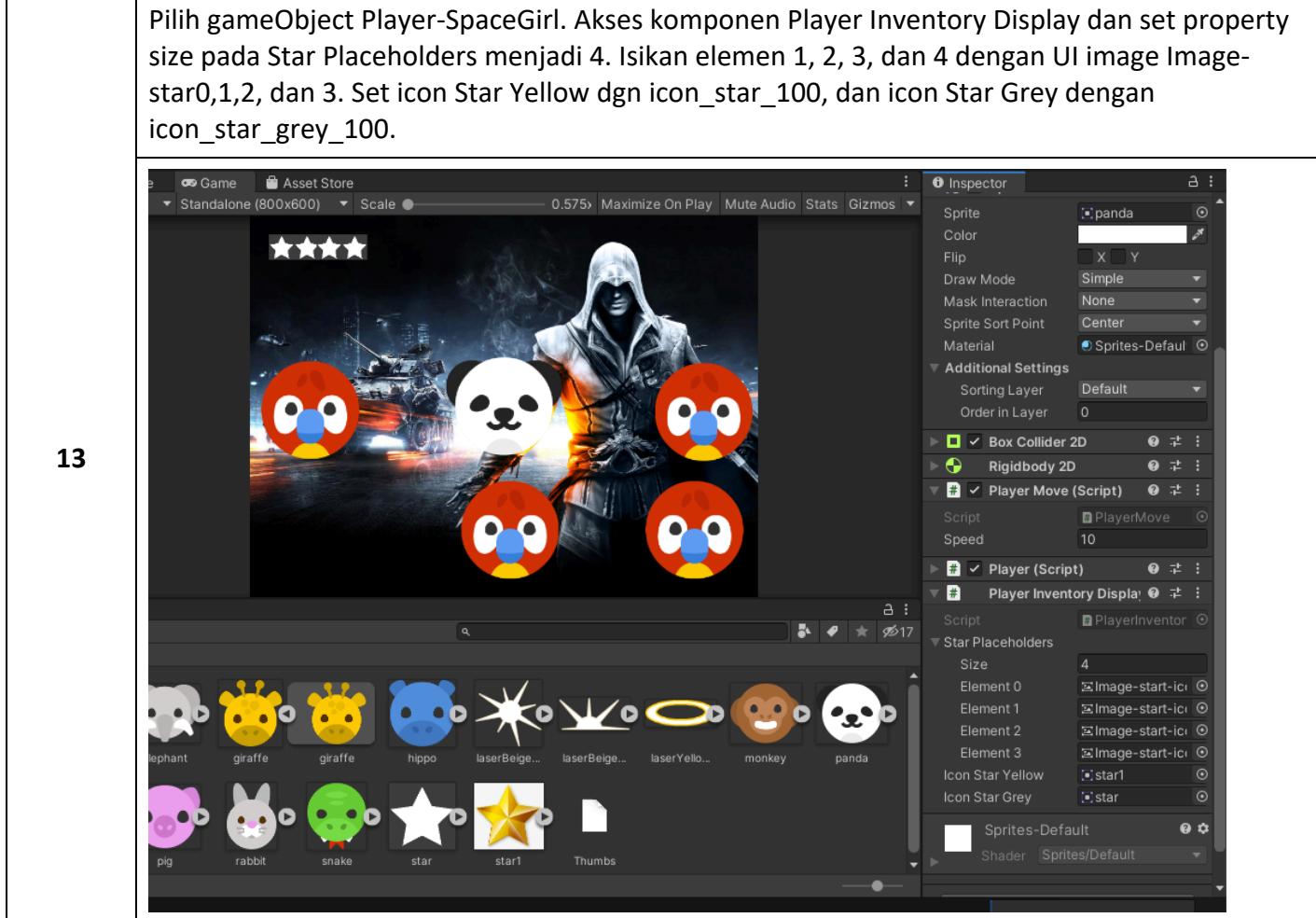
```

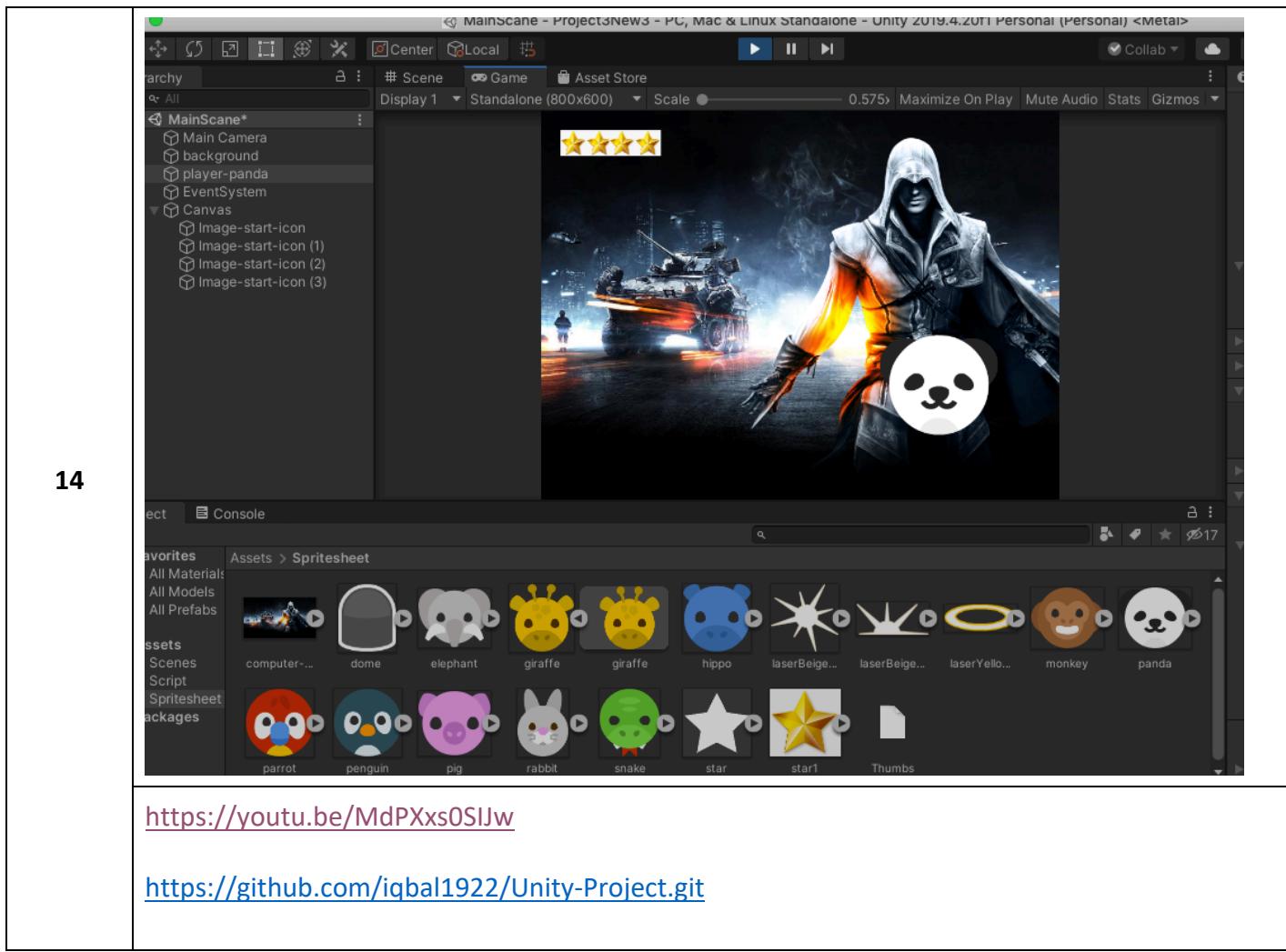
11

12 Duplicate Image-star0 menjadi tiga image lagi dengan nama Image-star1, Image-star2, dan Image-star3. Posisikan bersebelahan.



Pilih gameObject Player-SpaceGirl. Akses komponen Player Inventory Display dan set property size pada Star Placeholders menjadi 4. Isikan elemen 1, 2, 3, dan 4 dengan UI image Image-star0,1,2, dan 3. Set icon Star Yellow dgn icon_star_100, dan icon Star Grey dengan icon_star_grey_100.





-- Selamat Mengerjakan --