



ÇANKAYA UNIVERSITY

SENG 216 Introduction to Game Design and Development

Lab Assignment 1

In this assignment you will create an introductory mini 2D game consisting of primitive objects. You will learn:

- How to create basic objects.
- Basic scripting (coding) to add some interaction to the game.
- How to record a sample video of the gameplay.

The rules of the game will be very basic:

- There will be N **objects** laying around.
- The player should move around and touch these boxes.
- When the player touches an object, the object should change its color to **green**.
- When all of the objects are turned to **green**, game will finish.

You can check sample pictures below to get an idea about the game.



Figure 1 – Sample initial position of the game. The circle corresponds to the initial starting position of the player.

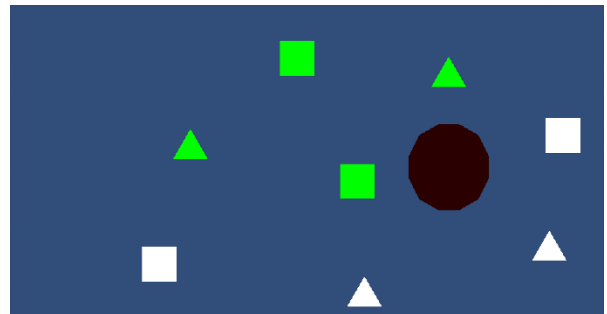


Figure 2 – As the player moves around and touches the objects, they should change their color to green.



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Create a new 2D project and start applying the following statements:

- Add a “**Circle**” object to the game, name it as “Player”.
- Create a new “material”, name it as “PlayerMaterial” and make its color as **red**.
- Attach PlayerMaterial to the Player object.
- Add “**Rigidbody2D**” component to Player, set “**Gravity**” of the component to zero.
- Add “**CircleCollider2D**” component to the Player for collision detections.
- Create a new script, name it as “PlayerScript” and attach it to the Player. You will edit this script file later.

Now for the last part, you must add more objects to the game and do some coding to add interaction to the objects using the “PlayerScript” file you have created before. Remember the rules are:

- There should be N **objects** where you can decide on N whatever number you want.
- The player should be able to move in 4 directions: up, down, left, right.
 - Hint: to move object in left direction:

```
if ( Input.GetAxisRaw( "Horizontal" ) == -1 ) {  
    gameObject.transform.Translate(  
        new Vector3(-10.0f,0,0) * Time.deltaTime  
    );  
}
```

- The boxes should change color to **green** on player touch.
 - Hint: you can make use of the **OnCollisionEnter2D** method.

```
OnCollisionEnter2D (Collider2D col) {  
    ...  
}
```

- Hint: you can access and edit the renderer object color with:

```
col.gameObject.GetComponent<Renderer>().material.color = Color.blue;
```

- Hint: you can make use of static type variables to count number of touched boxes

- When all N boxes are turned to **green**, game should end with a message on console such as “You Win”

You should submit one zip file name as “**YourNameSurname_Lab1.zip**” and containing:

- The PlayerScript.cs file you have written.
- A short recording (no more than 30 seconds) of the gameplay.