

Quiz 2 Study Guide

Please know how to do the following from scratch in Unity. The best way to study for a quiz is by reading a prompt below and then practice doing it in Unity without help.

Rigid Bodies

- Adding a Rigidbody2D component to a game object
- [When to use each Rigidbody2D body type](#):
 - Dynamic (e.g., a ball — reacts to outside forces)
 - Kinematic (e.g., a moving platform — moves, but does not react to outside forces)
 - Static (e.g., floor — doesn't move)
- How to move a Rigidbody2D with code:
 - [velocity](#)
 - [AddForce](#)
 - [rotation](#)
- Here's an example of moving a kinematic rigidbody by setting its velocity in Start.

```
void Start()
{
    GetComponent<Rigidbody2D>().velocity = new Vector2(1f, 0);
}
```

- Here an example using AddForce to move a Rigidbody left and right. Know how to do this for up and down as well (W, S).

```
void Update()
{
    if (Input.GetKey(KeyCode.A))
    {
        GetComponent<Rigidbody2D>().AddForce(new Vector2(-10f, 0));
    }
    if (Input.GetKey(KeyCode.D))
    {
        GetComponent<Rigidbody2D>().AddForce(new Vector2(10f, 0));
    }
}
```

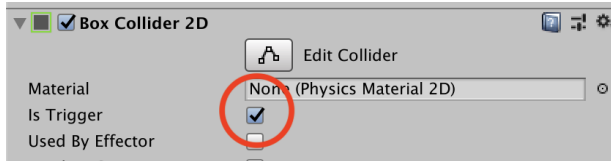
Collisions

- Adding 2d collider components to a game object
- When and how to detect a collision in code

```
private void OnCollisionEnter2D(Collision2D collision)
{
    GetComponent<SpriteRenderer>().color = Color.red;
}
```

Triggers

- When and how to use triggers on colliders

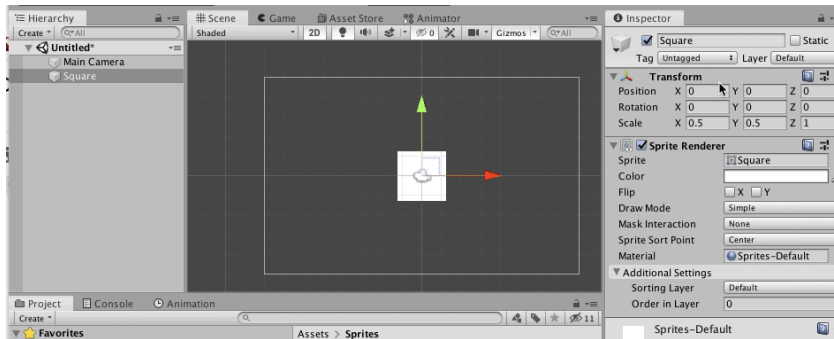


- How to detect a trigger in code (refer to chart above for necessary components)
- How to delete a Game Object

```
private void OnTriggerEnter2D(Collider2D collision)
{
    Destroy(gameObject);
}
```

Collision2D Objects and Tags

- How to use a Collision2D object in a collision or trigger function to figure out what is colliding
- How to add a tag to a GameObject



- How to check a tag using a conditional and the Collision2D object

```
private void OnCollisionEnter2D(Collision2D collision)
{
    if (collision.gameObject.tag == "Car")
    {
        GetComponent().color = Color.red;
    }
}
```

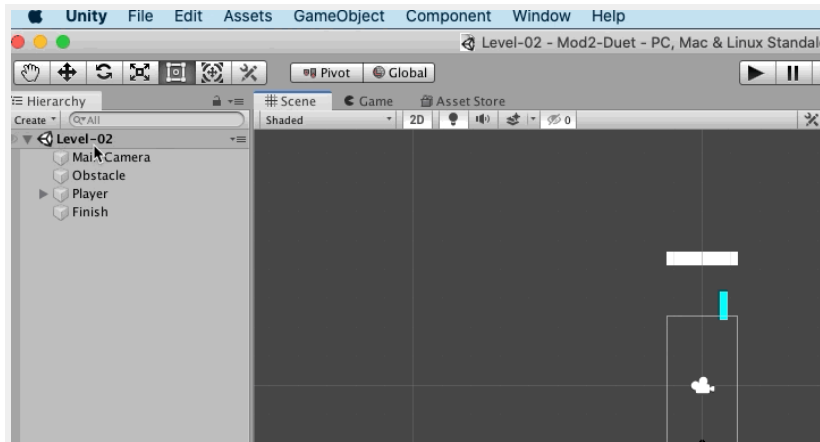
Scenes

- How to import the SceneManager library

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

public class LevelComplete : MonoBehaviour
```

- How to add Scenes to the build settings



- How to change scenes with code

```
private void OnTriggerEnter2D(Collider2D collision)
{
    SceneManager.LoadScene("Level-02");
}
```

Misc

- How to change the color of a SpriteRenderer

```
GetComponent<SpriteRenderer>().color = Color.blue;
```

- Review: Conditionals based on where an object is on the screen (i.e., transform.position)
- Review: Counters and conditionals (i.e., ct = ct + 1).