

Unleash Your Inner Game Dev

ITE529 Free Online Course

Week 4

Collisions, Triggers, UI's and Metagame

Collisions - How colliders work in Unity

Triggers - Colliders that don't collide - they trigger!

UI - Linking up to the UI and triggering actions

Metagame - Loading from one level to another, keeping score

Collisions

- Colliders can be static or dynamic
- Dynamic colliders have Rigidbody(2D) components
- At least 1 object in a collision will need a Rigidbody
- Colliders can also be tagged as a 'trigger', which will not affect collisions/physics, but will trigger code instead

Complex collision systems can be built with simple primitive colliders, this is fast. The slowest collider type is the Mesh Collider.

Collision Performance

The primitive colliders are fast. The sphere and box collider are extremely good for performance.

Mesh colliders can be concave or convex, and it's not unrealistic in some circumstances to see the performance overhead for these colliders to be >25x a primitive collider.

Triggers

Examples of Triggers

- Lap markers
- Triggering of game events
- Triggering audio
- Save points
- Automatic Doors
- AI Events
- Resource Loading Queues

OnTrigger Triggering from isTrigger Triggers

When a rigidbody collider passes through a trigger, MonoBehaviour will run the OnTriggerEnter method..

```
using UnityEngine;
using System.Collections;

public class ExampleClass : MonoBehaviour {
    void OnTriggerEnter(Collider other) {
        Destroy(other.gameObject);
    }
}
```

Unity UI

Unity's new interface was introduced in 2015.

It works with animations, multiple cameras, layering. It can trigger public methods on other components and can even set basic variables on other components also.

Linking Elements with Unity UI

We will now link some methods and functionality together with the UI...

Metagame

- Meta game functionality is anything that isn't necessarily visible to the player but still impacts on gameplay
- This can be anything from save points, scores and character data
- Can be stored in binary formats, text formats or just in PlayerPrefs
- Static classes can also be used to store the data, and this data will be kept between scenes

Further Reading

Unity's Tutorials on User Interface

<https://unity3d.com/learn/tutorials/topics/user-interface-ui>

Learn about using Statics

<https://unity3d.com/learn/tutorials/modules/intermediate/scripting/statics>

Learn about Larger Unity Projects

<https://www.youtube.com/watch?v=q9aeNtKKXeo>

Homework

- Using art assets provided (or your own), build a game that takes at least 60 seconds to complete from start to end.
- Add a score display to the game
- Come up with a new trigger type
- Make a trigger item have a time limit (platforms that turn off, for example)