Lesson 3

Game Interaction and Collectables
Collectathon Games

1996

2003

2017
Today's Topics

1. Use colliders to detect when we collect a collectable.
2. Use a game manager singleton to track progress.
3. Unlock door after collection number is reached.
4. Scene switching and data persistence.
1. Detecting Collection
Not a Trigger:

- Does interact with physics
- Uses OnCollision
- Usually tight to the model

Trigger:

- Does not interact with physics
- Uses OnTrigger
- Usually bigger than the model
private void OnTriggerEnter(Collider other)
{
    Debug.Log("Collected!");
    Destroy(this.gameObject);
    // Using "this.gameObject" and not just "this" is important!
}
2. Game Manager
The Singleton Pattern.

GameController.cs

private static GameController _instance;

void Awake()
{
    _instance = this;
}
private static int coins = 0;

public static void CollectCoin()
{
    coins = coins + 1;
    Debug.Log("Collected coin!");
}
public GameObject player;

public static GameObject GetPlayer()
{
    return _instance.player;
}
Back in Collectable.cs

Collectable.cs

```csharp
private void OnTriggerEnter(Collider other)
{
    if (other.gameObject == GameController.GetPlayer())
    {
        GameController.CollectCoin();
        Destroy(this.gameObject);
    }
}
```
3. Conditional Doors
public static int GetCoins()
{
    return coins;
}
private const int RequiredCoins = 2;

private void OnTriggerEnter(Collider other)
{
    if (other.gameObject == GameController.GetPlayer() && GameController.GetCoins() >= RequiredCoins)
    {
        Destroy(this.gameObject);
    }
}
4. Scene Switching
`GameController.cs`

```csharp
void Awake()
{
    _instance = this;
    DontDestroyOnLoad(this.gameObject);
}
```

`DontDestroyOnLoad` prevents Unity from deleting that object when a scene is changed.
private void OnTriggerEnter(Collider other)
{
    if (other.gameObject == GameController.GetPlayer() && GameController.GetCoins() >= RequiredCoins)
    {
        // Destroy(this.gameObject);
        SceneManager.LoadScene("Scene2");
    }
}