ScriptableObjects

- ScriptableObjects derive from the base Unity object but, you can not attach a ScriptableObject to a GameObject.
  - You need to save them as Assets in your Project.
  - To use a Scriptable Object you need a field in your script where the Scriptable Object can be attached to
- A ScriptableObject is a data container.
  - Save large amounts of data that can be used for project Settings, default Prefab properties, Instantiated Instances, etc
  - Share information between objects for example
    - In your coin script each time you pick up a coin you increment the gold amount, then in your ui script you can update the gold text by using the same gold field of the scriptable object.
  - Hold references to objects that are shared between scenes
- This is useful if your Project has a Prefab that stores unchanging data in attached MonoBehaviour scripts**.**
  - Think of how cards are represented
    - Each Scriptable Object will have a Suit and Value
- When you use the Editor, you can save data to ScriptableObjects while editing and at run time because ScriptableObjects use the Editor namespace and Editor scripting.
- You can use Scriptable Objects to store data of you game as you play and then Serialize that Data (Save) to some storage either locally or on the Cloud. You can then later Deserialize the data you saved locally or on the cloud to recreate your Scriptable Object and populate its data with the previously saved information.
- ScriptableObjects are written to disk and is therefore persistent between Editor sessions

▼ Example

Scriptable Object Example

```
using UnityEngine;

[CreateAssetMenu(fileName = "GameDataSo", menuName = "ScriptableObjects/GameData", order = 1)]
public class GameDataSo: ScriptableObject
{
    public string Username;
    public int Gold;
}
```

How to use the Scriptable Object in your MonoBehaviour

```
using UnityEngine;

public class CoinItem: MonoBehaviour
{
    // An instance of the ScriptableObject.
    public GameDataSo GameDataSo;

    public int CoinValue = 1;

    private void OnTriggerEnter(Collider other)
    {
      // This will increment the Gold Variable of the ScriptableObject
      // Each time a coin is collected by the player
      if(other.CompareTag("Player") GameDataSo.Gold += CoinValue;
    }
}
```

```
using UnityEngine;

public class HudUI: MonoBehaviour
{
    // An instance of the ScriptableObject.
    public GameDataSo GameDataSo;

    public TMP_Text CoinText;

    private void UpdateCoinText()
    {
      // Each time you call this Method, the Coin Text will update with the
      // latest Gold Amount
      CoinText.SetText($"{GameDataSo.Gold}");
    }
}
```