

A Taster of Computing
[[VERSION – Unity 2D – C# language]]

Gravity Guy 2D (2014) - a little computer game...

Part 6a – timers

1.1 In many games there is some form of countdown or countup timer ...

Examples of timers in games include:

- Lose life if level not complete before countdown timer gets to zero
- Pick up a shield of invulnerability, that lasts for 2 seconds
- Drop a bomb that will explode in 5 seconds
- Survive as long as possible during a bonus mini-level, and for each 10 seconds you survive you get an extra life / more money etc.
- And so on...

1.2 The CountdownTimer.cs script

Add an instance of the provided CountdownTimer.cs script to the Main Camera:

- Select the **Main Camera** in the **Hierarchy**
- Drag a copy of the **CountdownTime** script to the **Inspector** (or directly onto the **Main Camera**)

1.3 The GameGUI display of seconds remaining

Write the following for your GameGUI script, so the user can see the seconds remaining for the countdown timer component:

```
using UnityEngine;
using System.Collections;

public class GameGUI : MonoBehaviour {

    private CountdownTimer myTimer;

    private void Start()
    {
        myTimer = GetComponent<CountdownTimer>();
    }

    private void OnGUI()
    {
        int secondsLeft = myTimer.GetSecondsRemaining();
        string timeMessage = "seconds left = " + secondsLeft;
        GUILayout.Label(timeMessage);
    }
}
```

1.4 The GameManager

Our GAME GUI-HUD needs to read the number of seconds left, to display to the user

Sometimes there are responsibilities that are separate to the Player or GameGUI, for this we can place such logic into a special 'GameManager' script, (or LevelManager).

Create a new C# script named GameManager, containing the following code, and add a copy of this to the Main Camera:

```
using UnityEngine;
using System.Collections;

public class GameManager : MonoBehaviour
{
    public int timeForLevel = 20;
    private CountdownTimer myTimer;

    private void Start()
    {
        myTimer = GetComponent<CountdownTimer>();
        myTimer.ResetTimer(timeForLevel);

        print ("Timer started");
    }

    private void Update()
    {
        CheckGameOver();
    }

    // GAME OVER if seconds < 0 !!!!!
    private void CheckGameOver()
    {
        int secondsLeft = myTimer.GetSecondsRemaining();

        if(secondsLeft < 0)
        {
            int gameOverLevelIndex = 2;
            Application.LoadLevel(gameOverLevelIndex);
        }
    }
}
```