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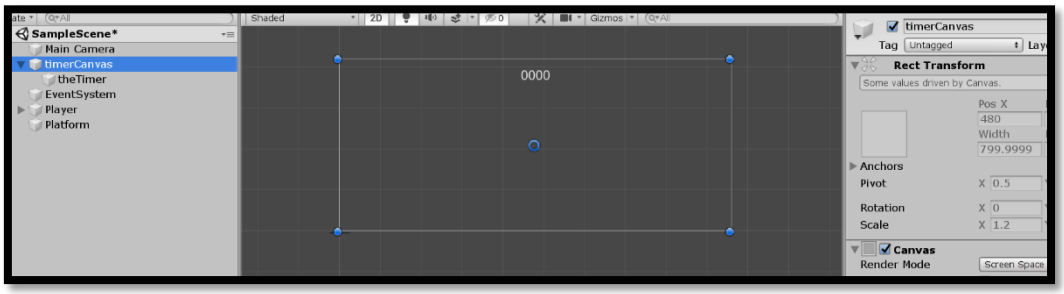
Programming Tutorial: Making a countdown timer in Unity

How to create a countdown timer in Unity:

1. Set up the scene

Add a canvas to the scene and name it “timerCanvas” and add text to the canvas. Change what’s written on the text to “0000”. This text will contain the numbers of the timer and will therefore be the timer itself so name it “theTimer”. Place the text wherever you want your timer to appear in the scene.

This should look like:



2. The main script

Create a script called “Timer” and add it to the ‘timerCanvas’ then open it. Before you type anything in, ensure that below “Using UnityEngine;” you type “Using UnityEngine.UI;” otherwise you cannot interact with UI within the scene via script.

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

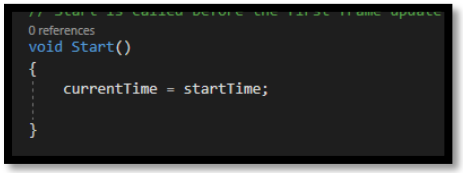
Within the “public class” section, make a reference to the text by writing “public Text theTimer;”, below this create a public float which will indicate what time your timer counts down from, to do this type “public float startTime” and make the start time any value you want by adding an equals symbol after “startTime” then the time in seconds with an f at the end (e.g. “= 120f;”). The f is added so that the script knows that the number is a float even if it has a decimal point.

After this, add a “currentTime” float as well which will be the current time the timer is at – “public float currentTime;”. By making these values public you are making them visible and adjustable in the unity project.

These should look like:

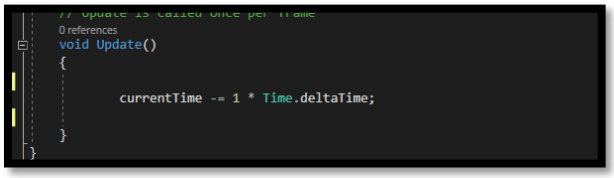
```
0 references
public class Timer : MonoBehaviour
{
    public Text theTimer;
    public float startTime = 50f;
    public float currentTime;
```

Once this is done, make the current time equal the start time at the start of the game, this will make it so that when the game starts, the current time is 120 seconds (or any value you put as the start time earlier). To do this type: “currentTime = startTime;” within the Start() function.



In the Update() function, create a script line which makes the time actually count down from the start time. For a countdown to occur, -1 will need to be subtracted from the start time value per real time second, therefore you will need to type “currentTime -= -1 * Time.deltaTime;”, the “-=” function subtracts the code on the right from the left and “Time.deltaTime” is used to ensure that the time is deducted at the same speed regardless of computer speed.

This should look like:



In order to stop the time from going into negative numbers, you will need to add an if function around the code mentioned above which ensures that the code within the brackets only happens if the current time is more than 0:

“if (currentTime >= 0)

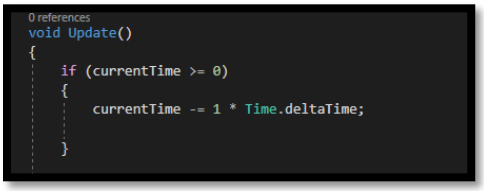
{

currentTime -= -1 * Time.deltaTime;

}

“

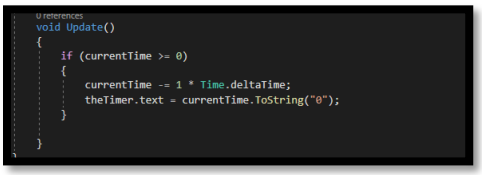
In the script, this looks like:



This will ensure that if the timer reaches 0, the timer will stay at 0.

Finally, you will need to connect the time to the timer text so that the text updates accordingly. To do this, within the if function created above, type “theTimer.text = currentTime.ToString(“0”);”. This will allow the text to update according to whatever the current time is and the “ToString” part of the code allows the script to convert the float to string form so that it could be visible as text. The “0” within the brackets indicate how many decimal places the timer should have, 0 means that there are none (the timer counts down in whole numbers) so if you would like your timer to have more, increase this number.

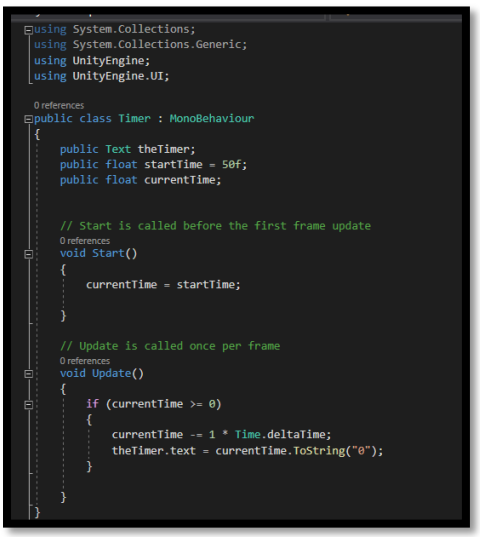
This will look like this:



```
0 references
void Update()
{
    if (currentTime >= 0)
    {
        currentTime -= 1 * Time.deltaTime;
        theTimer.text = currentTime.ToString("0");
    }

}
```

Which means the entire script should look like:



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

0 references
public class Timer : MonoBehaviour
{
    public Text theTimer;
    public float startTime = 50f;
    public float currentTime;


    // Start is called before the first frame update
    0 references
    void Start()
    {
        currentTime = startTime;

    }

    // Update is called once per frame
    0 references
    void Update()
    {
        if (currentTime >= 0)
        {
            currentTime -= 1 * Time.deltaTime;
            theTimer.text = currentTime.ToString("0");
        }

    }
}
```

Drag the ‘theTimer’ text into the public text box and press play, the timer should start to count down.