



# Greetings!

## @codeliberation

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# Who are we?

Alice/Judy



# Who am you?

Spill the beans!



# Today

Unity UI

Interaction





# Resources

## Unity UISystem Reference

<https://docs.unity3d.com/Manual/UISystem.html>

## Project Download

[https://github.com/CodeLiberation/CLF-slides/tree/master/Classes\\_and\\_Workshops/V%26A\\_Workshops/V%26A\\_session\\_3\\_unity\\_ui](https://github.com/CodeLiberation/CLF-slides/tree/master/Classes_and_Workshops/V%26A_Workshops/V%26A_session_3_unity_ui)



# A Quick Refresh

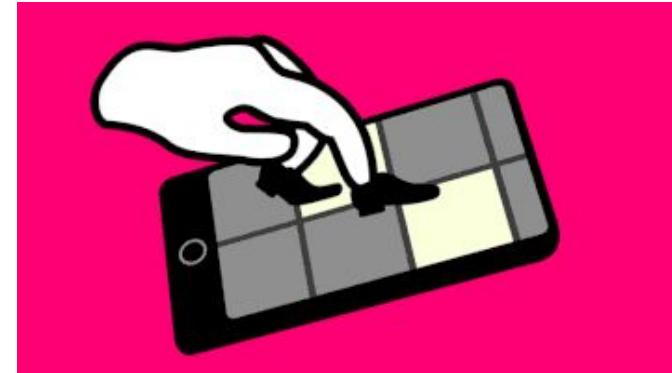
What did you learn last time?



# User Interface

How a user interacts  
with a computer system  
or piece of software

Including, but not  
limited to buttons,  
menus, sliders, graphs  
etc!





# GUI vs CLI

## Graphical User Interface



## Command Line Interface

```
total, 1.0m 0.8m 0.8m
9.0ms, 4.5%sy, 0.0%id
47800k total, 3896636k used,
0k total, 0k used, 0k free
0.00 0.00 0.00 0.00 0.00 0.00
TIME+ - - - - -
USER PR NI VIRT RES SHR S %CPU %MEM TIME+
0 root 15 0 88828 13m 2612 S 3.0 0.3 0:00.09 cprsvd->-
0 root 10 -5 0 0 0 0 1.6 0.0 4:07.85 events/0
0 root 16 0 10252 640 540 S 1.0 0.0 18:19.12 hald-addon-stor
54 root 15 0 105m 6868 1204 S 1.0 0.0 207:10.16 lvestats-server
52 root 16 0 13164 1612 820 R 1.0 0.0 0:00.13 top
305 root 18 0 87784 11m 1508 S 0.7 0.3 0:35.50 cprsvd-ssl
135 root 15 0 875m 373m 5256 S 0.7 9.4 755:30.52 mysqld
2784 mysql 15 0 168m 81m 1836 S 0.7 0.7 2.1 0:00.53 httpd
2713 nobody 15 0 168m 0 0 Z 0.7 0.0 0:00.42 httpd
12714 nobody 15 0 168m 81m 1824 S 0.7 0.7 2.1 0:00.20 httpd
016024 nobody 18 0 119m 16m 1580 S 0.7 0.0 0:04.19 lfd
033206 root 15 0 10368 616 516 S 0.0 0.0 0:19.15 init
1 root 39 19 0 0 0 S 0.0 0.0 0:38.69 migration/
2 root RT -5 0 0 0 S 0.0 0.0 0:00.00 ksoftirqd
5 0 0 0 S 0.0 0.0 0:10.26 migration/
5 0 0 0 S 0.0 0.0 0:00.00 ksofti
5 0 0 0 S 0.0 0.0 0:00.05 migrati
5 0 0 0 S 0.0 0.0 0:00.00 ksofti
5 0 0 0 S 0.0 0.0 0:06.69 migrati
5 0 0 0 S 0.0 0.0 0:00.00 ksofti
```



# That Looks Hard :(





# Don't Panic!

We got you  
covered

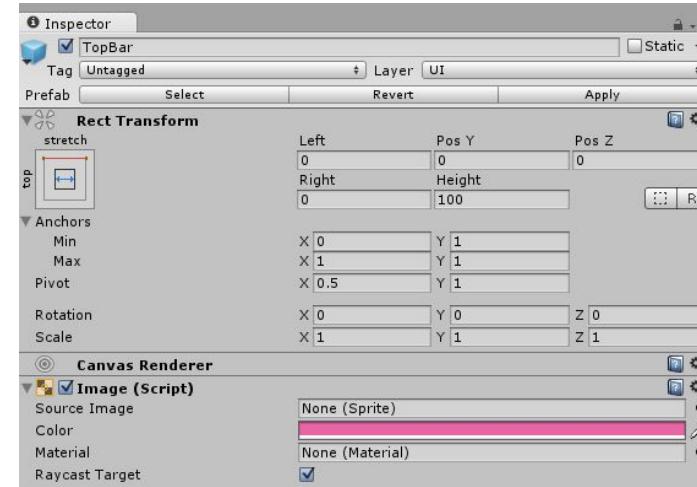




# Unity's UI Manager

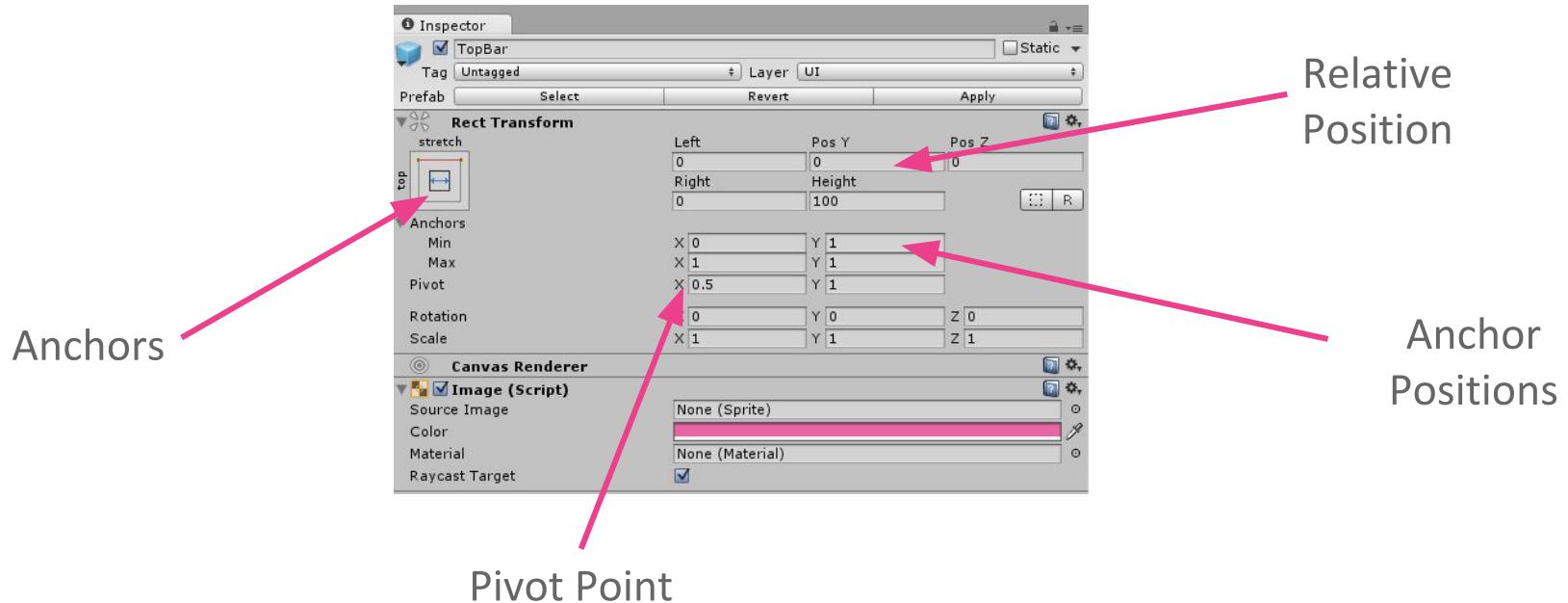
Unity has its own UI Manager!

Use it to manage all of your UI elements





# Overview of UI Manager





# UI Elements in Unity

Text - Text that doesn't interact with the game

Button - Can trigger an action with code

Canvas - A container for other UI elements



# UI Recap



# Break!



# On to the hard stuff

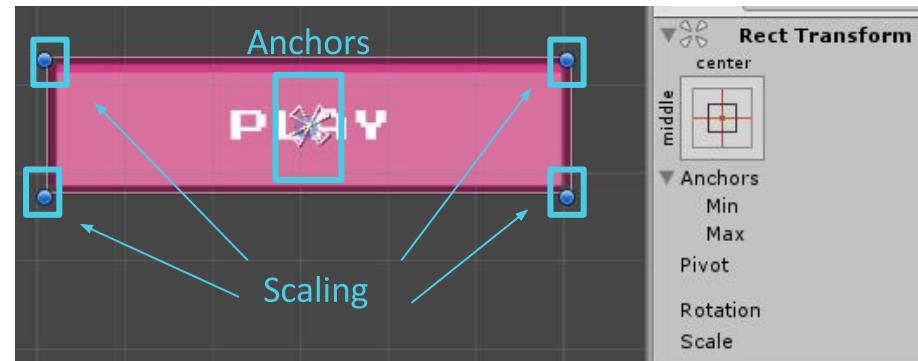
Anchors, Pivots, and  
Scaling





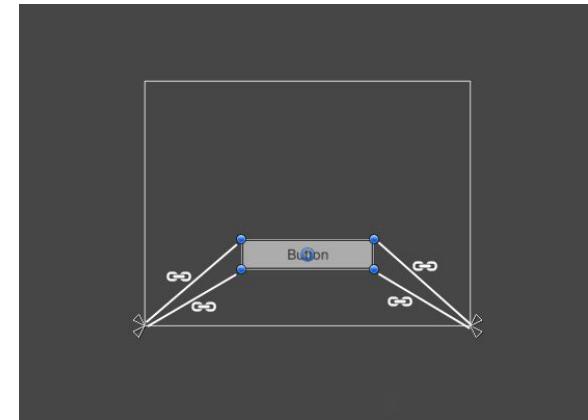
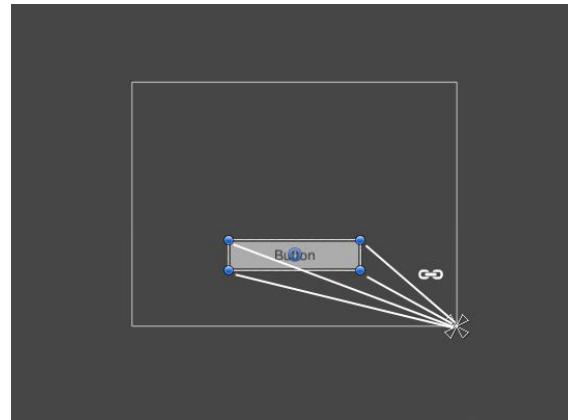
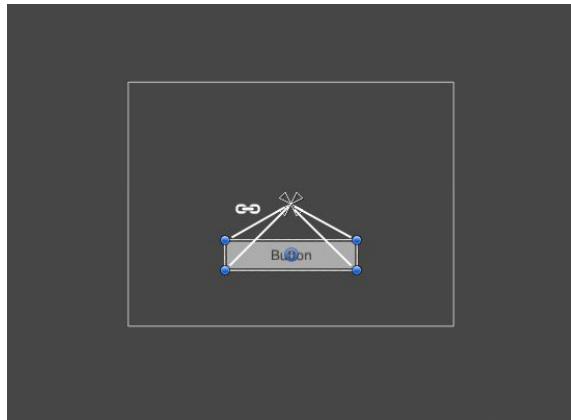
# Rect Layout

Every element in Unity's UI uses a rectangle as a point of reference.





# What Do Anchors Do?



Depending on where the element is attached to the canvas, it will act in different ways



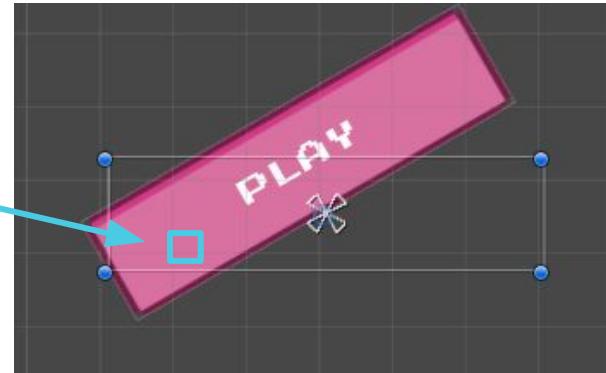
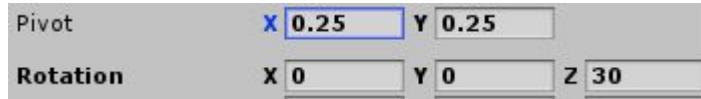
# Pivots

Rotations about  
a given point





Object rotates  
about point set in  
rectangle





# Scaling

Relative size of an object compared to its surroundings





Size of the  
object  
doesn't  
change

Only its scale!

Scale X 1 Y 1



Scale X 2 Y 2



# RectTransform Recap



# Break!



You're doing  
great <3





# UI Elements



# Different types

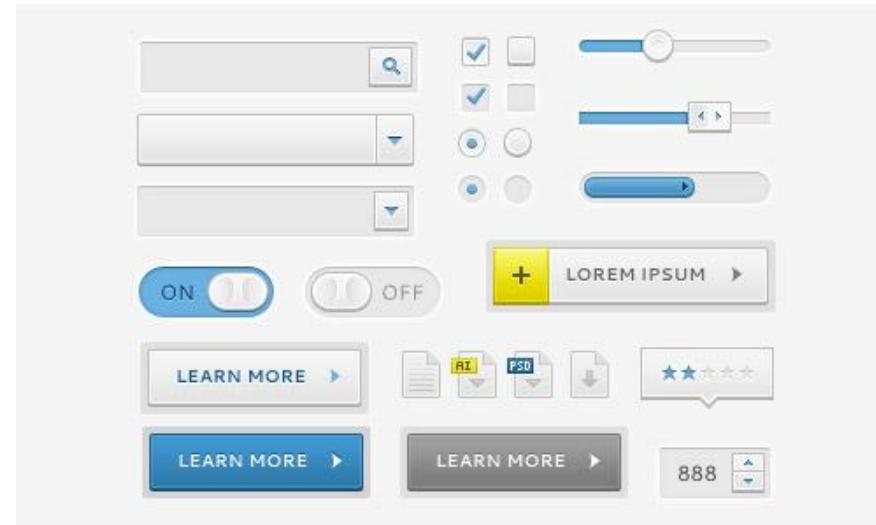
Buttons

Checkboxes

Images

Sliders

Text





# Discussion

Important UI Elements

How and why we use them

Context





# Onwards to the game!

Shall we actually like, build a project now?





# First thing's first

Lets add a start screen to our game!

File/New Scene creates an empty scene for us to play with



# What UI Element Element should start our game?





# But first...

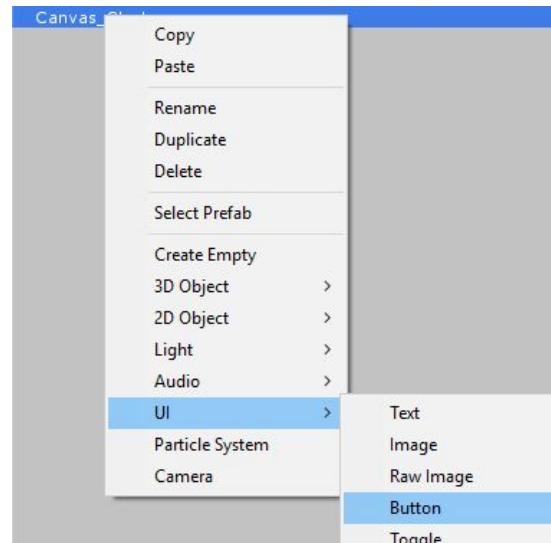
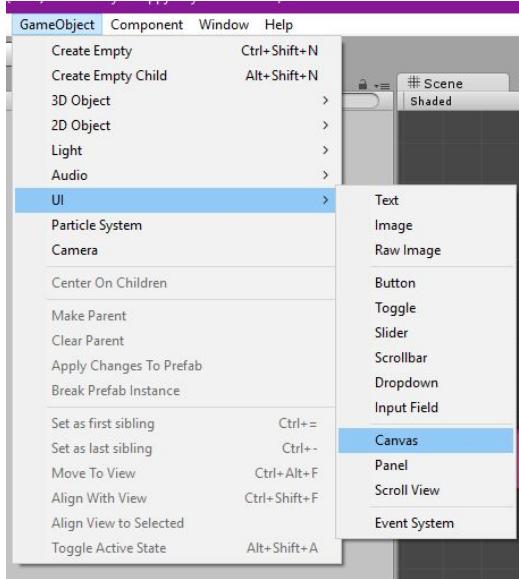
## What is a canvas?

It holds the UI  
elements in Unity!

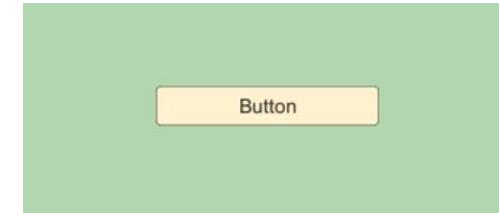




# Creating the canvas and button



Yay, a button! :D





# The buttons! They do nothing!

We have to tell it what to do with code

Create a new script in your assets folder, and delete the Start() and Update() functions.



# Lets write our own function!

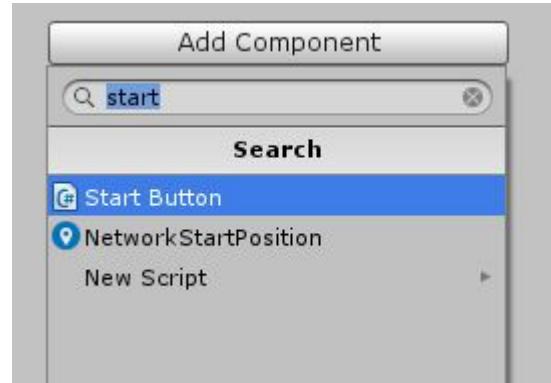
Add the following code to your new script

```
public void OnButtonClick() {  
    Application.LoadLevel ("Game");  
}  
}
```



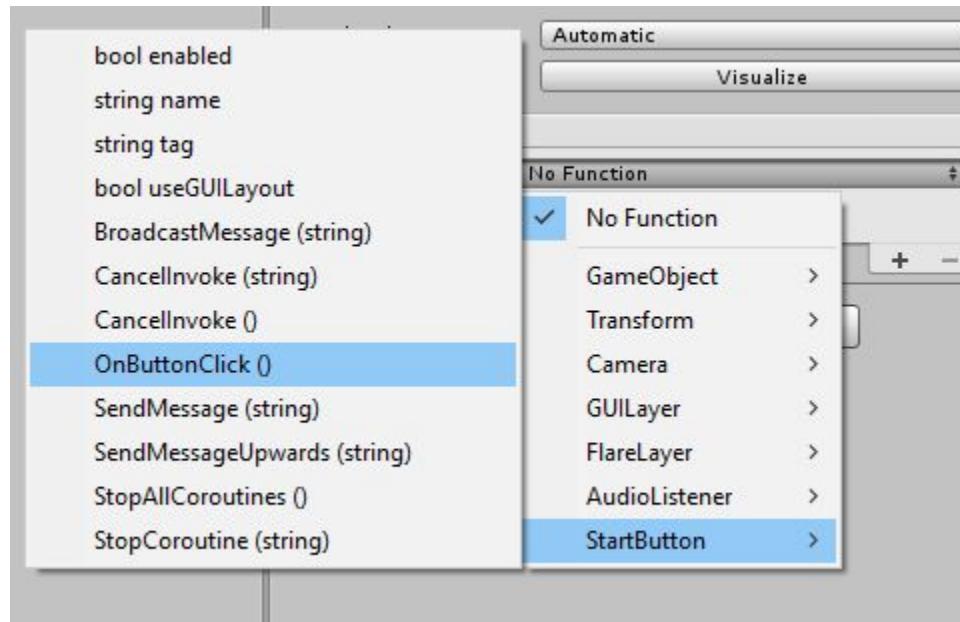
# Attach the script to an object

We want it to be globally available, so attach it to something global, the Main Camera.





# Let's activate the button

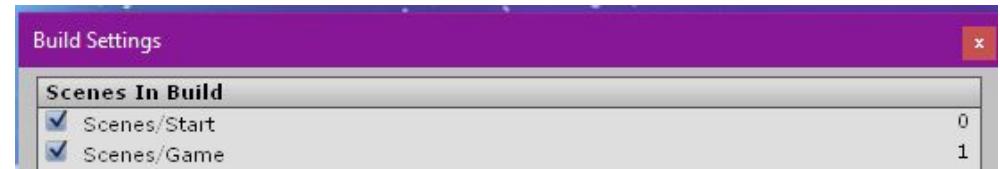




# Did it work?



# Don't worry, we can fix it!





Yay, now  
it works!





And now, the main event...



# UI Elements in “Happy Cat” Game

Score  
(Text)

Header (Image)

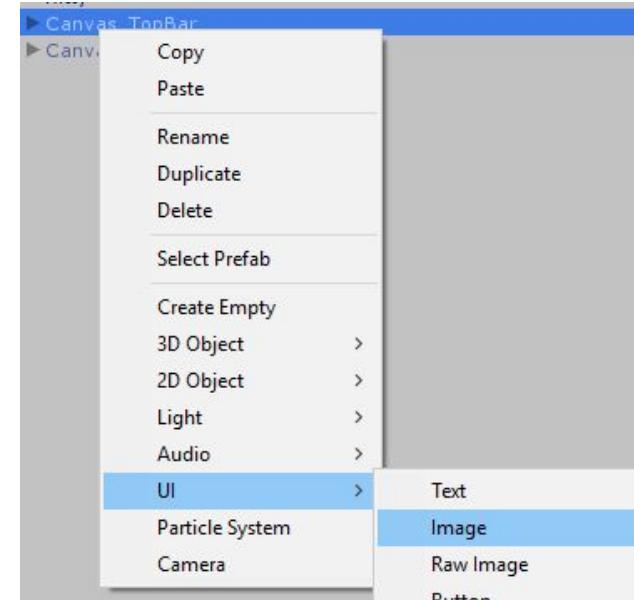


Timer Bar (Image)



# Top bar

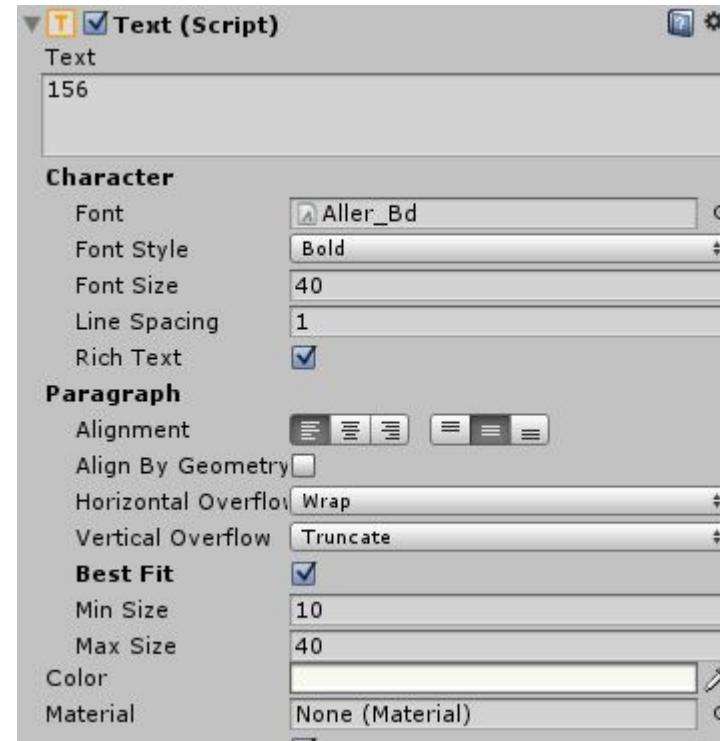
This one is easy.  
Let's create an  
image to go at the  
top of our screen





# Text parameters

Change what is written, the font, the size, etc! Best Fit is a good option for scaling





# Anchors?

Lets anchor that  
text to the top  
left of the top  
bar!





## Now, onto the timer...

Create a new image in the Top Bar canvas. Can you work it out yourself? We know you can!



## Set the image type to filled

This allows us to vary the amount the amount of the progress bar that can be seen





## Next, anchor the timer bar

Anchor the bar to the right of the screen like so

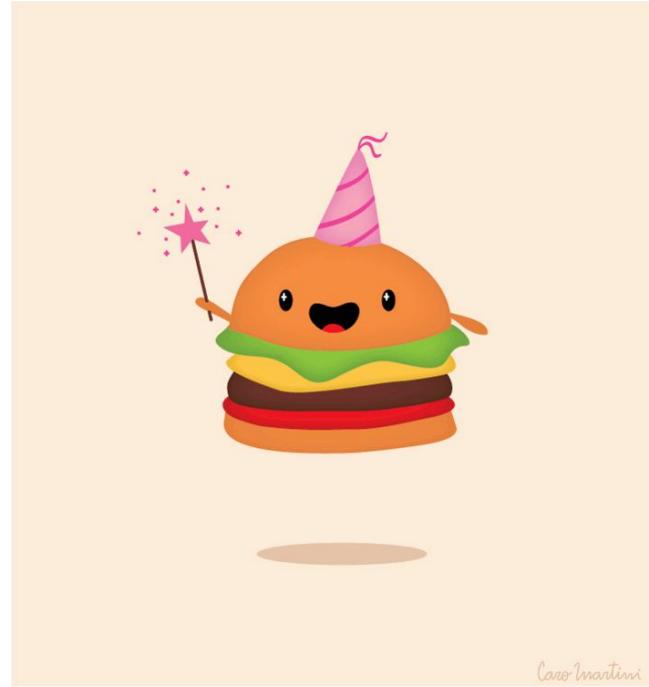




# Break



# Let's make some magic...





# Create a new script called “TopBar”

Now attach it to the object!



Add the Unity.UI  
namespace so that Unity  
knows to use UI elements

Declare the UI objects in  
the script

Find the Kitty!

Update the score and  
progress bar every frame

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

public class TopBar : MonoBehaviour {

    public Text pointsText;
    public Image progressBar;

    Kitty kitty;

    // Use this for initialization
    void Start () {
        kitty = FindObjectOfType<Kitty> ();
    }

    // Update is called once per frame
    void Update () {
        pointsText.text = kitty.points.ToString();
        progressBar.fillAmount = kitty.timeLeft / kitty.maxTime;
    }
}
```



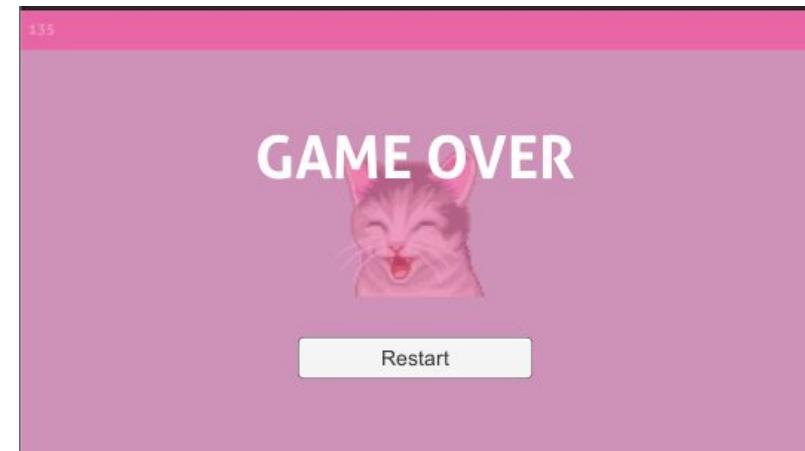
Congrats, you  
made a  
working game  
UI!





# Want an extra challenge?

Make a game over screen with a replay button, shown when the game timer runs out





## Helpful tips

Reset timeLeft and points on restart

Enable or disable objects like so:

```
gameObject.SetActive (true);  
gameObject.SetActive (false);
```



# Thank you for attending!

You did awesome things  
today

