Workshop Flappy Bird

PRESENTATION

The goal of this workshop is to create a clone of Flappy Bird in several steps.

The steps are:

- The player
- Obstacles
- Collisions
- Game Manager
- Bonuses

GETTING STARTED

For starters create a new Unity project and select the 2D template. The unity editor version doesn't really matter as long as you do not choose a very very old version.

Then, add to the project the Scripts and Resources folders.

THE PLAYER

First you will need to create a GameObject of the player and add the following components to it:

- A Rigidbody 2D
- A Circle Collider 2D
- The Player script

For this project you can make the rigidbody kinematic.

hint: to create a GameObject drag your player (bird) in the scene.

You can now open the Player script and fill it the best you can.

OBSTACLES

We will first create the infinite looping of the background.

Drag the Background prefab into your scene.

Open the Parallax script and fix it.

You can now apply it to the Background object and see what appens.

Next we will create our ground object. The only differences with the background object is the material and the position, that should be enough information for you to create it.

Now the pipes. Create a Pipes GameObject containing a top pipe and a bottom pipe leaving a gap in between. Now for that use the pipe sprite and add a boxCollider 2D that you will set to is Trigger. This is used to detect collisions. And lastly add an empty GameObject that will be filling the gap, like the pipe add a boxCollider with the Is Trigger this will detect the Scoring.

After that drag your pipes game object in your asset folder to create the prefab.

It should be looking something like this :

You can now open the Spawner script and fix it.

Create an empty GameObject spawner and place it to the right end of the background.
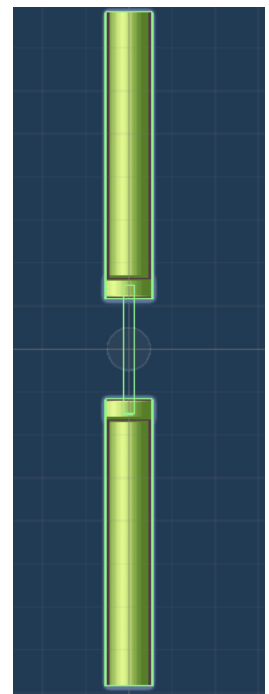
Add the Spawner script to it.

This will be used to spawn in our pipes.

You can see that right now our pipes are not moving.

Let's fix that !

Open the Pipes script and fix it.

Add it to the pipes prefab and it should work as intended.

COLLISIONS

Let's add some tag to our objects to detect what the player ran into.

Add the tags "Obstacle" and "Scoring".

In the Pipes prefab, set the top and bottom pipe to Obstacle and Scoring to Scoring.

Also set the ground to Obstacle.

You can now in the player script uncomment the OnTriggerEnter2D method and detect collisions with obstacle and scoring objects. For now you can just print something when the collision happens. We will add the logic later.

GAME MANAGER

Now we need something to interact with the game, start it, count the score…

For this we will create an empty gameObject and call it GameManager.

You can add the GameManager script onto it.

Now we want to create the UI of the game (play button, score…)

For that, create a canvas. Inside of which we will add a Text for the score, an Image for the Game Over screen and a button for the play button.
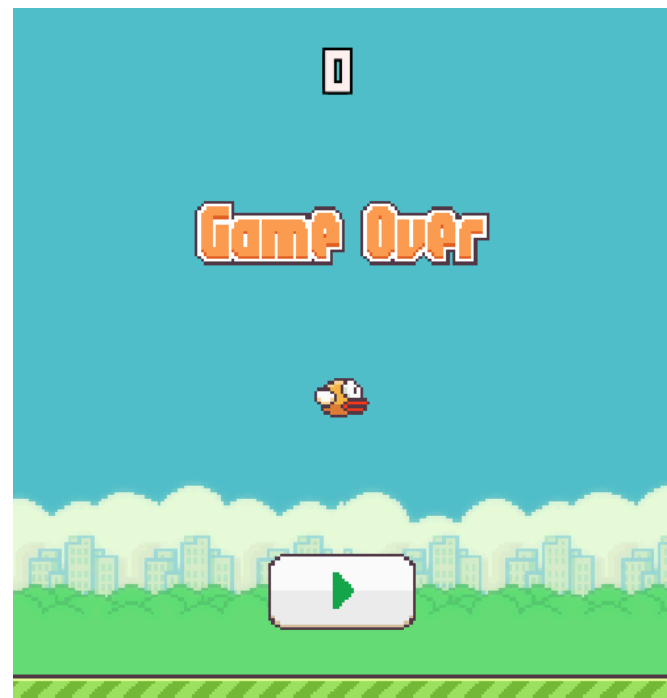
Using the given assets it should look something like this:

Now we will use this UI in the game manager script, open it and fix it.

Don't forget to hook up the button.

You can now go back to the player script and implement the collision logic.

After that the game is done !

BONUSES

Now that the game is done you can try and build it to whatever platform you want. You will need to adjust the size of the game depending if you are building it for a phone or a computer use.

You can also try and add sound to your game, for example an ambient music, a sound every time you click, a game over sound…