Part 2: Unity Flappy Bird Tutorial

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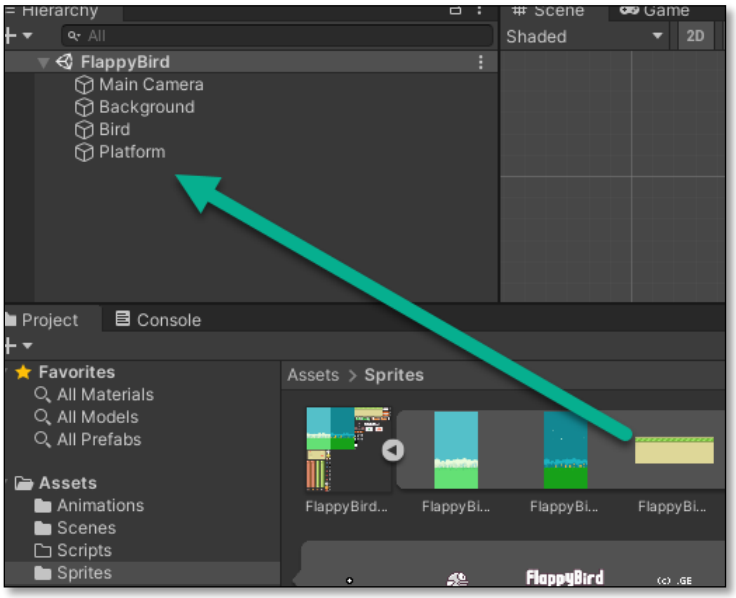
The Platform

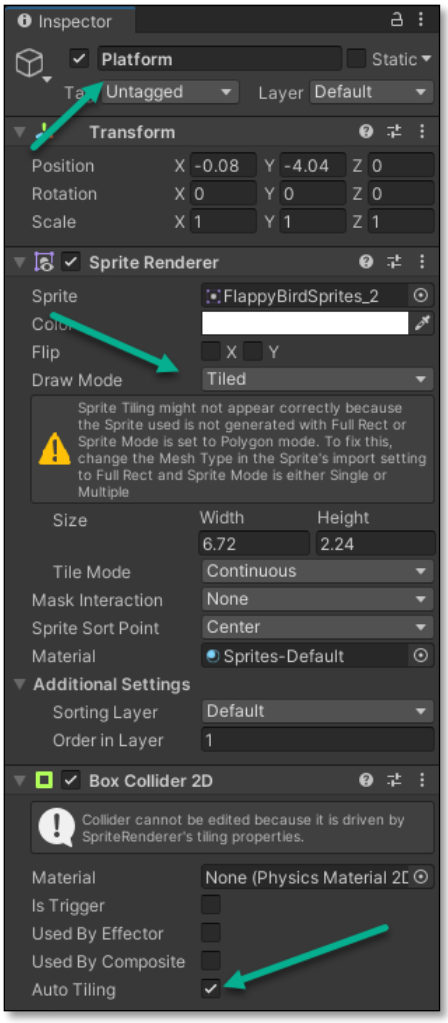
The next game object that we need is the platform.

1. Go to **Assets** → **Sprites** → Drag and drop the Platform sprite onto the **Hierarchy**. It is the 3rd sprite as shown below.



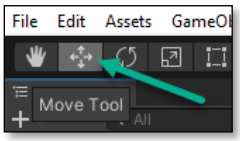
2. In the **Inspector** as shown below:
    a. **Name**: Platform
    b. **Draw Mode:** Tiled
    c. **Order in Layer**: 1

3. At the bottom of the **Inspector** → **Add Component**.
4. Search for **Box Collider 2D**
5. Click to add the component.
6. Enable **Auto Tiling** as shown.



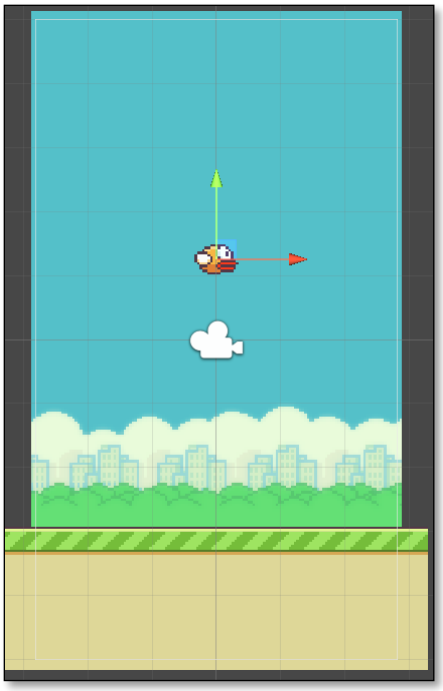
Let's do some arranging of our sprites.

7. In the **toolbar** → Click the **Move Tool** as shown below. The Move Tool helps move the Game Objects around vertically and horizontally.



8. In the **Hierarchy** → Click the **Platform** Game Object. Notice that there are now two directional arrows.
9. Click the vertical arrow. Drag the **Platform** down to the bottom of the screen as shown below.
10. Click the **Bird**. Notice the arrow sticking out from behind the camera. Grab that and drag the Bird up.

Example layout:



Bird Physics

For this game to work properly, we will apply physics to our Bird.

1. In the **Hierarchy** → Select the **Bird** Game Object
2. In the **Inspector** window → Click **Add Component** → Search for and add **Rigidbody 2D**.
3. Click the **Add Component** again → Search for and add **Capsule Collider 2D**.
4. Set the Capsule Collider 2D **Direction** to **Horizontal**.

Bird Script

We're going to create a script to make our player jump as soon as we press our Up Cursor key.

1. **Assets** → **Scripts** → Right-click → **Create** → **C# Script**
2. Name the script **BirdScript**
3. Drag the script to the **Bird** Game Object in the **Hierarchy**.
4. In the **Scripts** folder→ Double-click the script to open it with Visual Studio Community 2022.

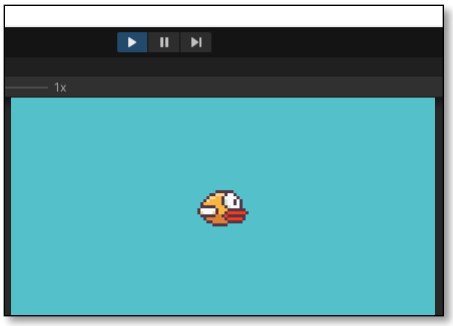
5. Enter and save the following code.

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

public class Bird : MonoBehaviour
{
    // Variable to set the Bird vertical velocity
    public float velocity;
    // Create a reference to the Rigidbody2D object
    // This allows us to get and set the Bird's movements
    private Rigidbody2D rb;

    // Start is called before the first frame update
    void Start()
    {
        // Create a Rigidbody2D object
        rb = GetComponent<Rigidbody2D>();
    }

    // Update is called once per frame
    void Update()
    {
        // If the up arrow/Cursor key is pressed
        if (Input.GetKeyDown(KeyCode.UpArrow))
        {
            // Make the bird jump by moving up
            rb.velocity = Vector2.up * velocity;
        }
    }
}
```

6. Save the script.
7. Go back to the **Unity Editor**. When you go back, Unity will compile and test your script. If there are errors, you will not be able to play the game until they are fixed.
8. Select the **Bird** Game Object → **Inspector** → Scroll down to **BirdScript (Script)** → **Velocity**: 3

Time to try out our Game.

1. At the top of the Unity Editor → Click the **Play** button as shown below.
2. Flappy Bird should start flapping and dropping. Press the **Up arrow** key to make the Bird jump up.
3. If the Bird is not flapping or moving up when you press the **Up arrow** key, go back through the previous steps to check for errors.



Assignment Submission

A Unity project is at least 200 MB. That is too big to be submitted.

Please attach a screenshot of your project to the assignment in Blackboard.