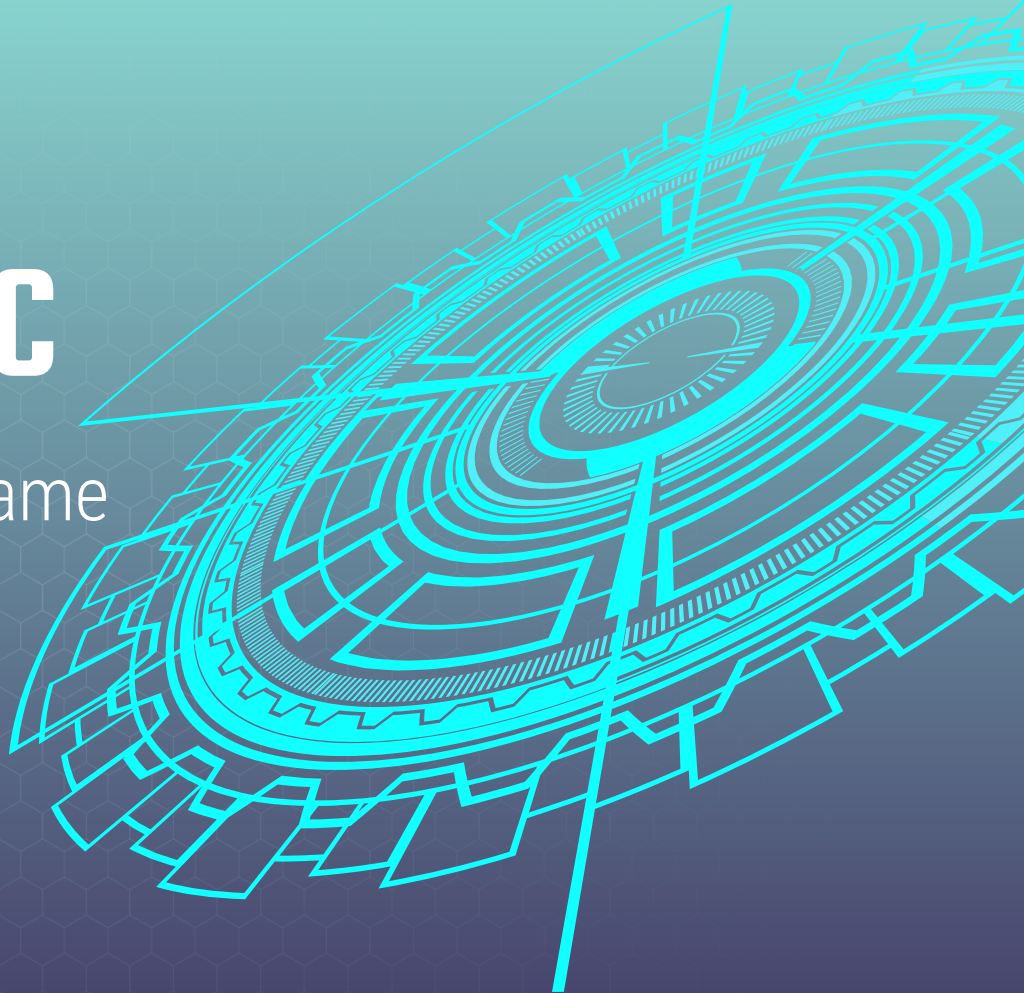


# Week 16 GWC

Tutorials and More with Game  
Design



**Katie Tooher and Carmen Seda**

# Women In Tech Shout-Out of the Week:

## Evelyn Boyd Granville

- 2nd African American woman to receive a PhD in mathematics in America
  - Graduated from Yale in 1949
- Taught at Fisk University for 2 years
- Worked at IBM as a computer programmer
- Awarded an honorary doctorate by Smith College in 1989
- 1st given by an American institution to an African-American woman mathematician





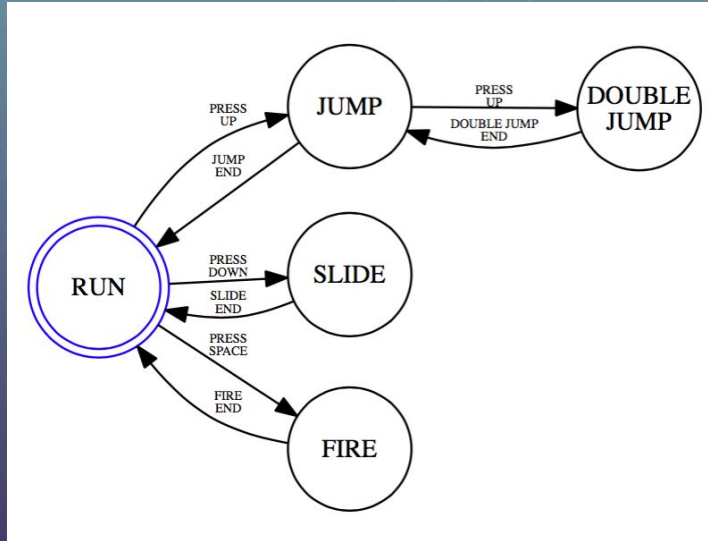
# Warm-up

- Compute the sum of the digits of an integer

Ex: user input = 12  $\rightarrow$  1 + 2 = 3  $\rightarrow$  print 3

# 2D Game Design

- 2D games are programs that create graphics only using 2 dimensions
  - Games are essentially just movable graphics on a computer screen that can change based on different “Game States”





# 2D Game Design

- 2D games are built from images called “sprites” -- kind-of like flat cardboard cutouts that move around the screen
- In 2D games you don't need to worry about lighting as much (unless you make a game with more specific lighting) because usually you just light the whole scene
- The main functionality you need in 2D games is Collision
- Collision: when two sprites or objects intersect each other, you will code collisions or events to happen
  - In unity collision detection and physics is built in for simple situations



# 2D Game Collisions

- **We will talk more about coding collisions next class, but if you are curious to learn before then you can learn more about collisions in unity from this API :**

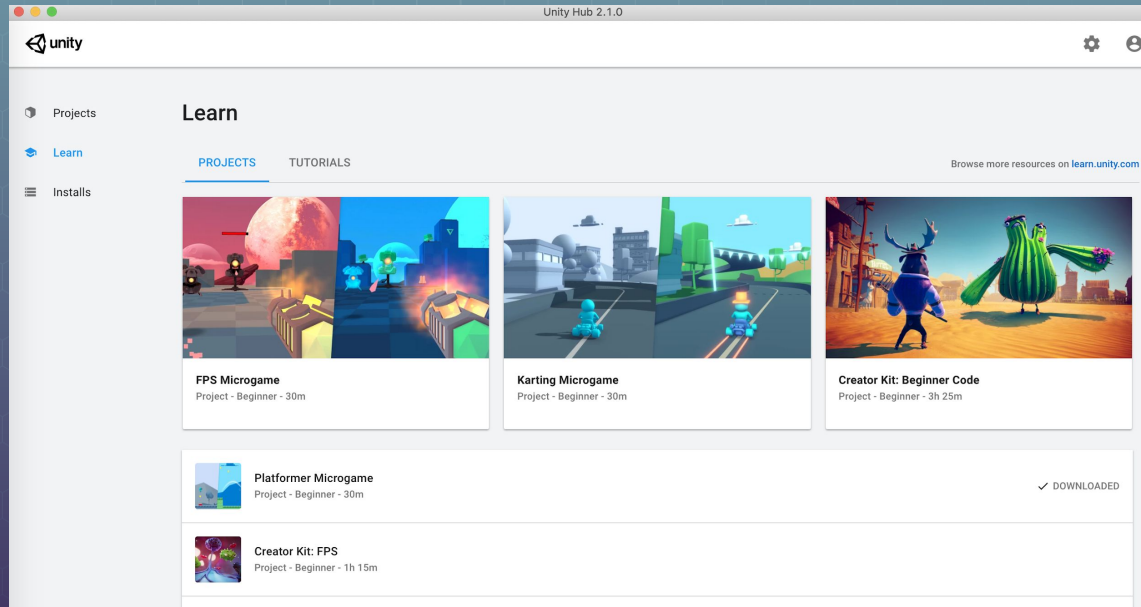
<https://docs.unity3d.com/ScriptReference/Rigidbody-collisionDetectionMode.html>

- **Here is a good video explanation of Game Collision Detection:**

<https://www.youtube.com/watch?v=aTbw71EpamY>

# Tutorials

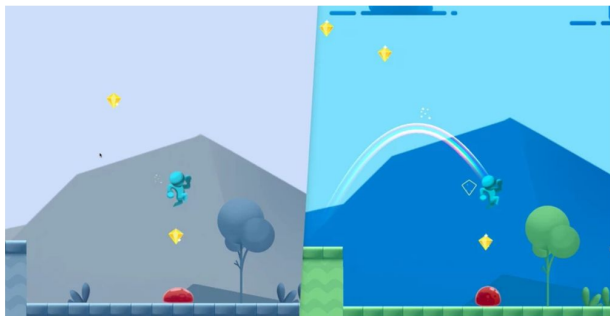
- Today we will continue with unity tutorials -- we will work on the 2D platformer microgame and then 2D Game Kit tutorials
- The 2d Platformer has been downloaded to all the GWC laptops, but there is an easy way to access these tutorials from unity hub.





# Tutorials

## Platformer Microgame



Project - Beginner - 30m

✓ DOWNLOADED

This Microgame Template is a classic 2D platform game that you can mod and make your own. Check out the Creative Mods to tweak the project and add your own levels, while learning the basics of Unity. Viewing from the Learn tab in the Unity Hub? Click Download Project > Open Project to automatically open it in Unity. Viewing from the Unity Learn website? Simply go to the Learn tab in the Unity Hub and search for this Microgame, or manually import it via the Asset Store link below.

[OPEN PROJECT](#)

[VIEW TUTORIALS](#)

## 2D Game Kit



Project - Beginner - 1h 55m

SIZE: 314.39 MB

The Explorer: 2D is a collection of mechanics, tools, systems and assets to hook up gameplay without writing any code. To show how these elements can be used we've also created a game example using these systems. If you need some quick information on components, take a look at the reference guide and advanced topics this can also be found in the Documentation folder within the project.

[DOWNLOAD PROJECT](#)

[VIEW TUTORIALS](#)