



# Intro to Unity<sup>®</sup>

2D Platformer

acmForge

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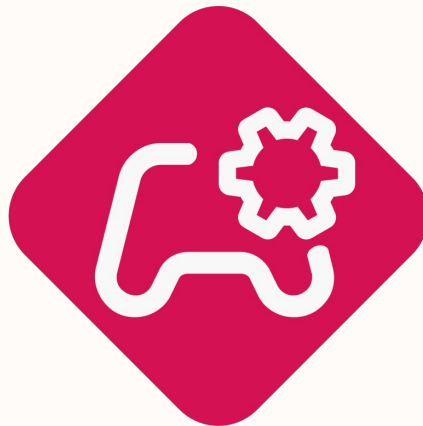
Steph P.



Jordan M.



# Meet the Squad 🕶️





# Setting up a Unity Repo

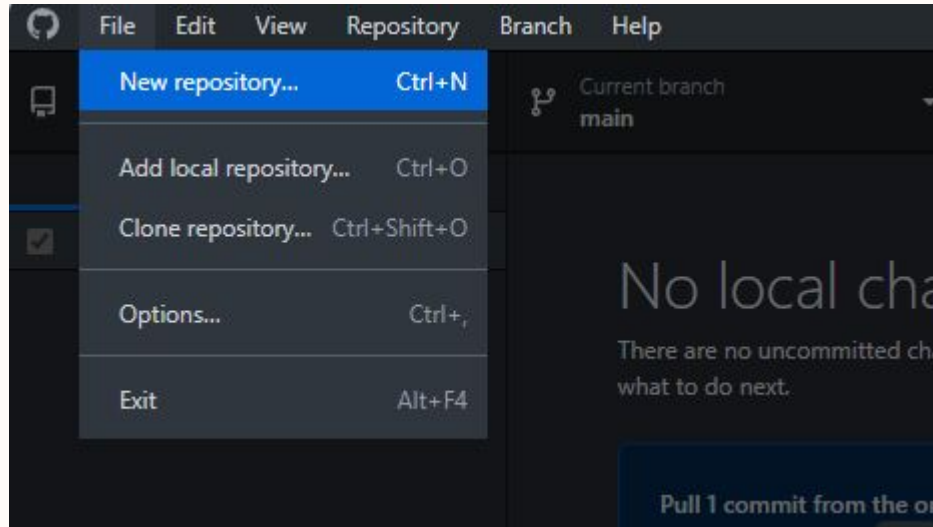
ACM Blog Tutorial

<https://acmcsuf.com/blog/813>

# Create a New Project

Open **GitHub Desktop** and select **File > New repository**

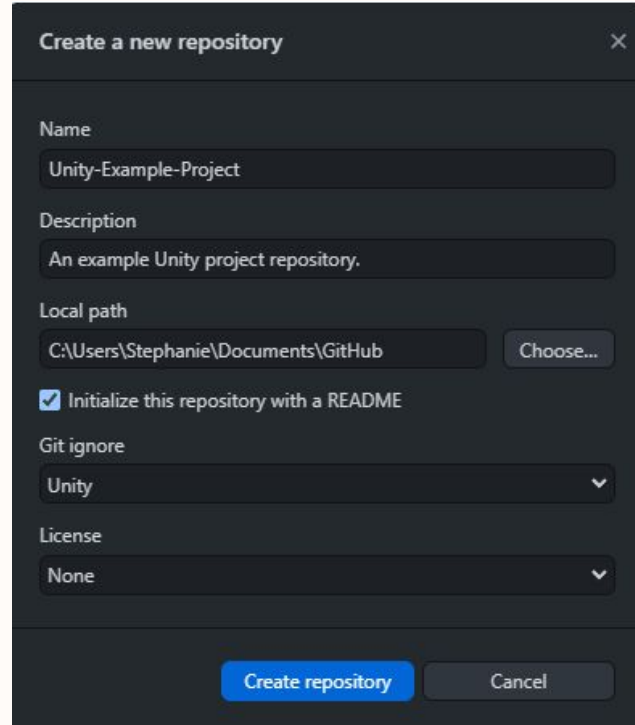
More detailed tutorial on [ACM Blog](#)



# Create a New Project

Complete the fields in the pop up menu

**Important:** select **Unity** under **Git ignore**



The screenshot shows a dark-themed dialog box titled "Create a new repository" with a close button (X) in the top right corner. The dialog contains several input fields and checkboxes:

- Name:** A text field containing "Unity-Example-Project".
- Description:** A text field containing "An example Unity project repository."
- Local path:** A text field containing "C:\Users\Stephanie\Documents\GitHub" and a "Choose..." button to the right.
- Initialize this repository with a README:** A checked checkbox.
- Git ignore:** A dropdown menu with "Unity" selected.
- License:** A dropdown menu with "None" selected.

At the bottom of the dialog are two buttons: "Create repository" (highlighted in blue) and "Cancel".

# Create New Project in Unity

Open Unity Hub, select New project

Projects

Open



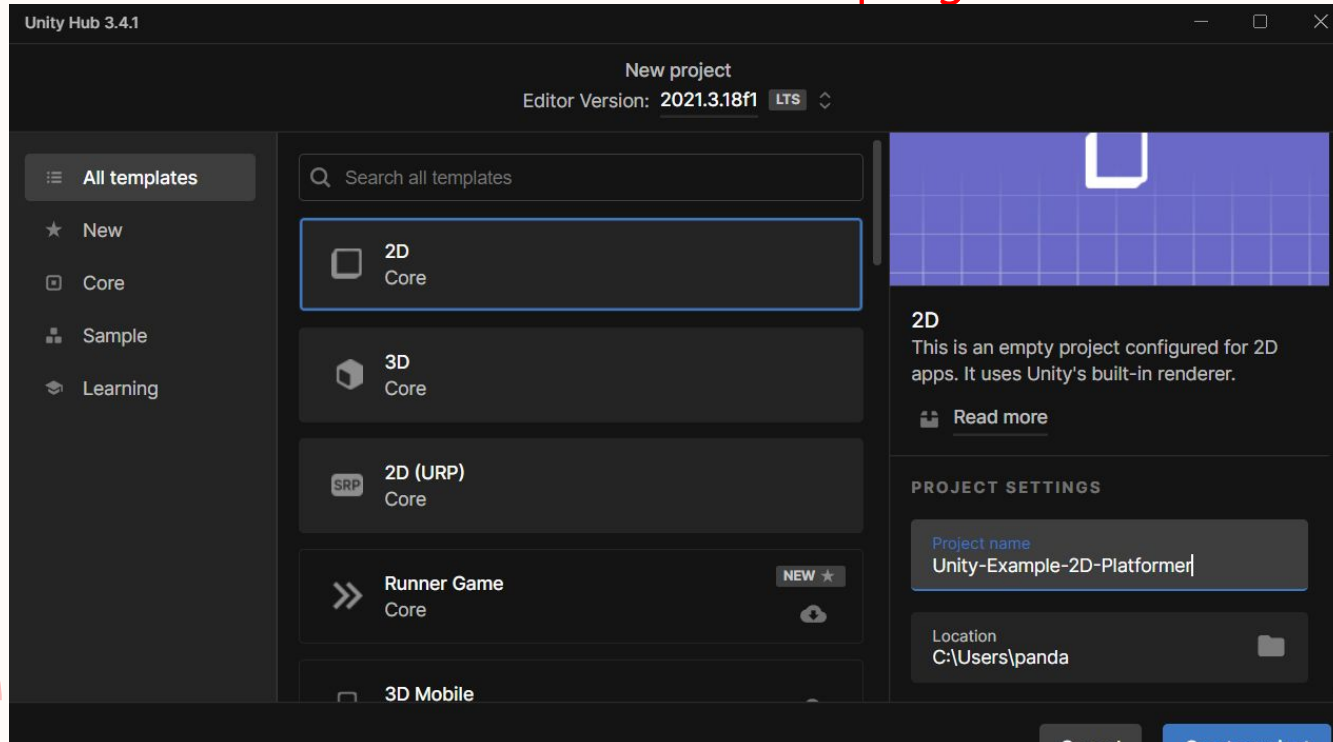
New project

🔍 Search...

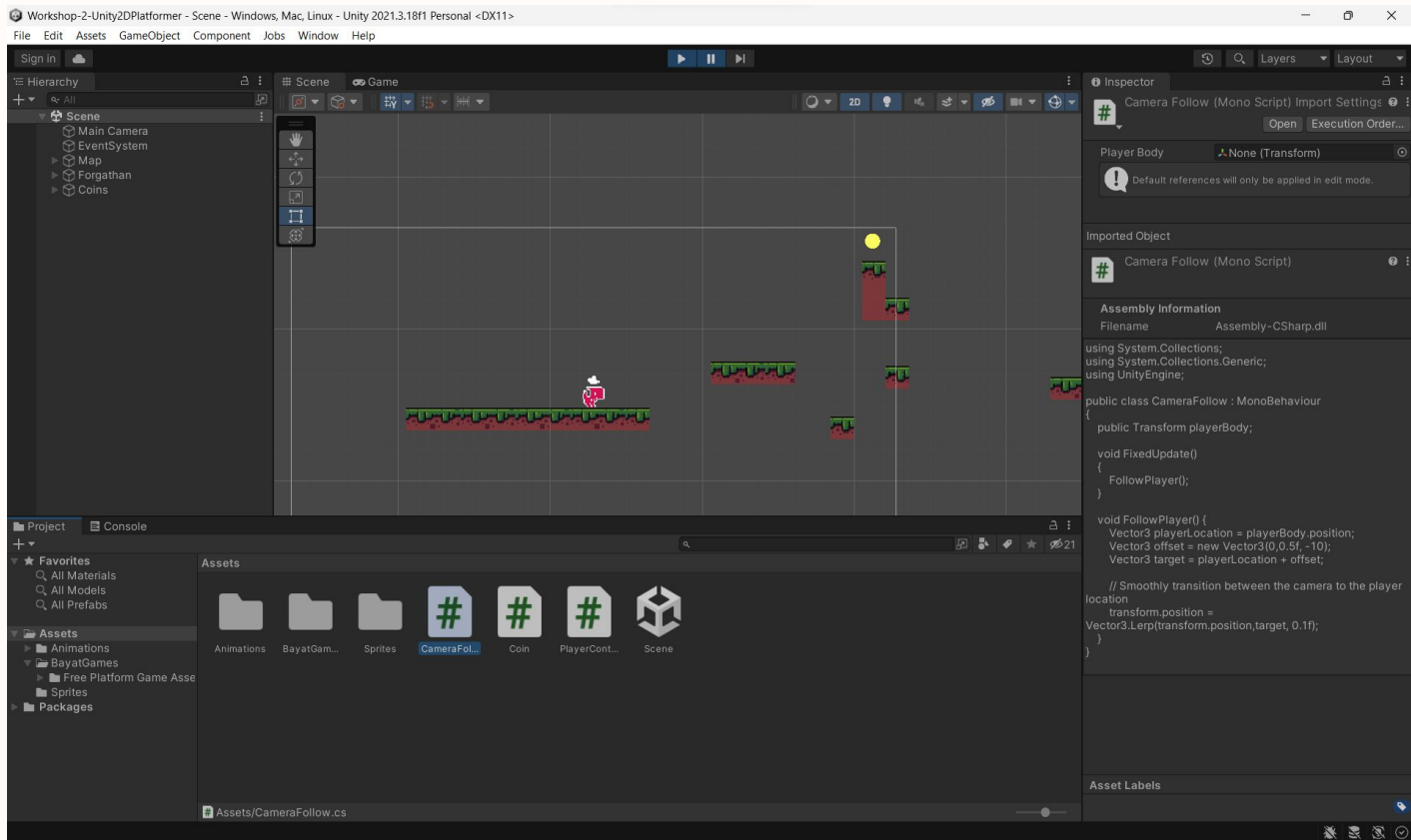
# Finalize New Unity Project

Ensure the Editor Version is **2021.3.18f1** for this workshop!

Select the location of the repo you made



# Unity Editor Walkthrough

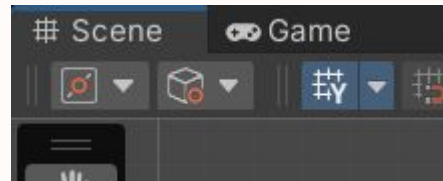




# Scene/Game

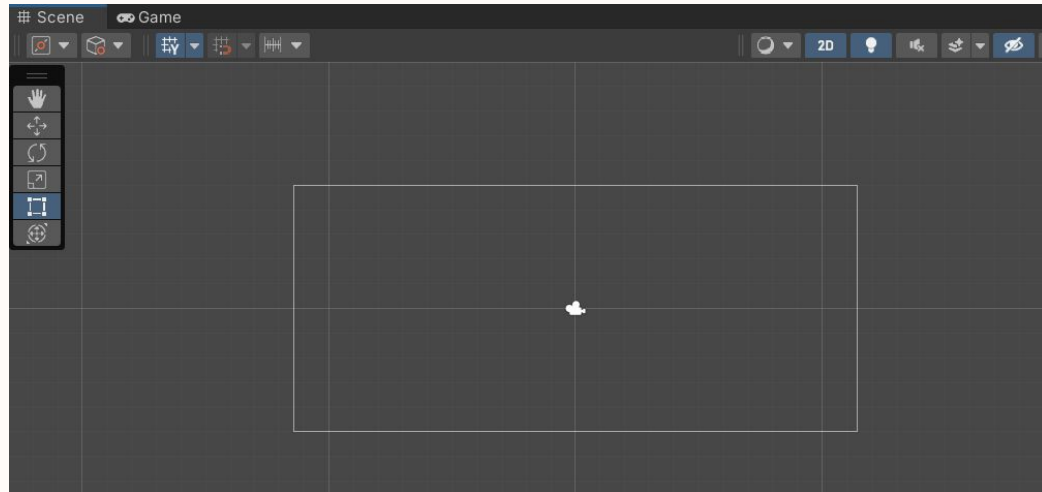
## Game

- Shows actual game view (what player will see)



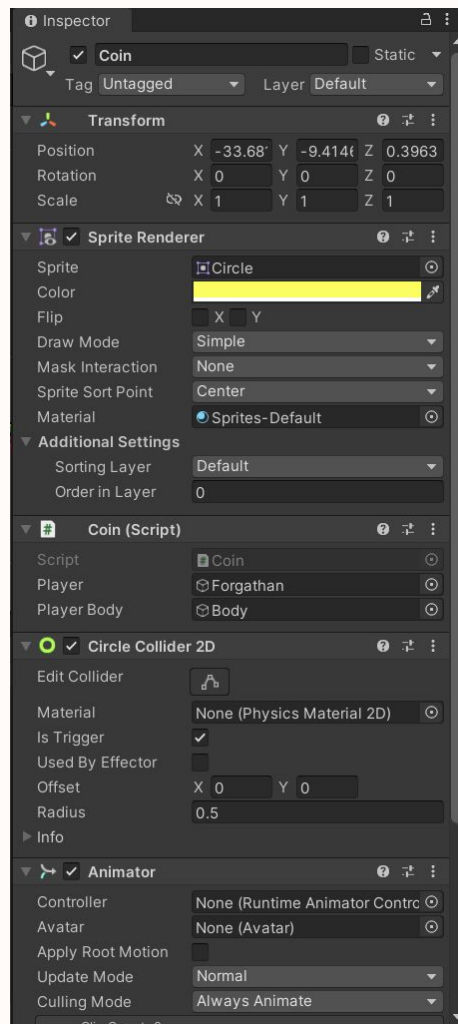
## Scene

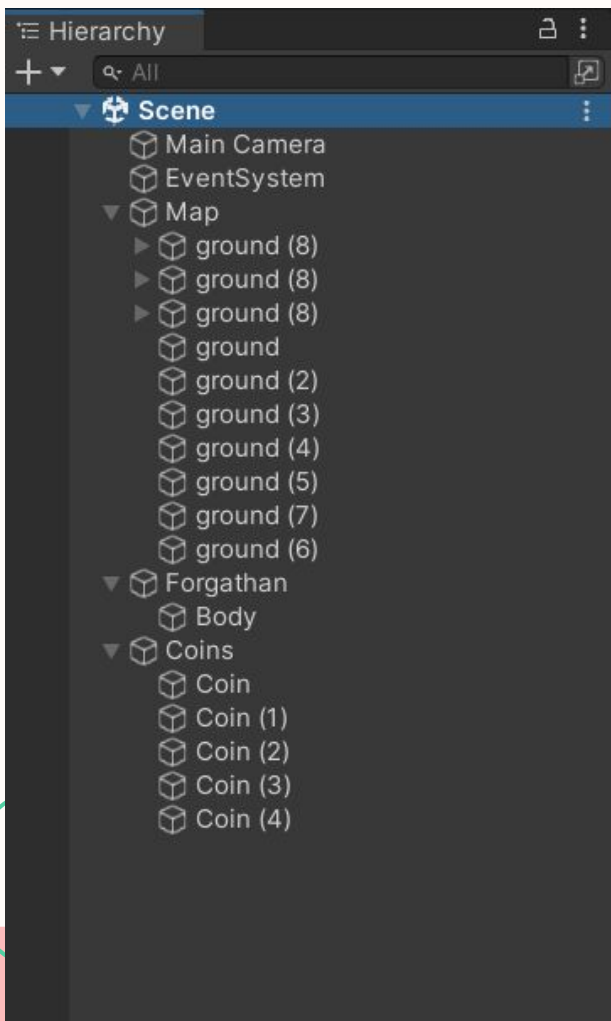
- Window you will build the game in



# Inspector

- Allows you to **view and edit** properties/settings
- Appears when selecting **any object or asset** in Scene view
- Click Main Camera in your hierarchy to see an example





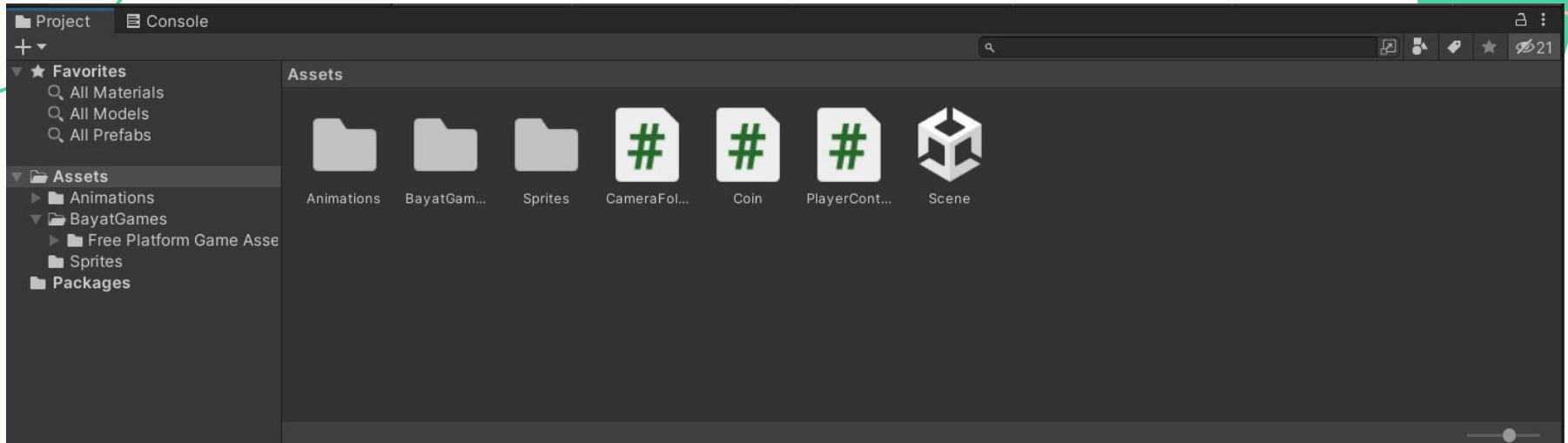
# Hierarchy

- Displays every object in a scene
  - Models
  - Cameras
  - Prefabs
- It is used to **sort and group objects together**, as well as to **add/delete objects from a scene**
- **Important to keep organized!**

# Project/Console

**Project** is where you'll find **all the files, assets, sprites**, etc related to your game

**Console** displays any **errors or warnings** that the Editor catches



# Script Editor



- Unity uses Visual Studio 2019/2022 by default
  - You can change it to VSCode
- First opening a C# script after changing to VSCode will show a BUNCH of new files
  - Creates mess of workspace
  - Follow this guide to have VSCode disregard unimportant files

# Assets

Go to [this google drive link](#) for the **free assets!**



# Vector2 vs Vector3

Functionally the same... with a few differences 😊

Boils down to **camera angles** being used in game view!

## Vector2

- Usually for 2D
- Use x/y axis

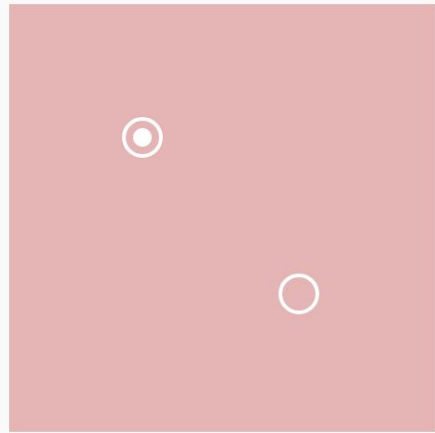
## Vector3

- Usually for 3D
- x/y/and z axis



# Linear Interpolation

- Smoothly animate from one coordinate to another
- Example in **FollowPlayer** function in **CameraFollow.cs**
  - Instead of statically attaching camera, we **track, and offset, Forgathan's position in real time**
  - Use linear interpolation to glide the camera, frame by frame, to Forgathan's coords



Notice how the camera just slightly lags behind Forgathan!



# Time.deltaTime

## Without Using Time.deltaTime

Pseudocode:

Speed = 10

Player.position.x += speed

The player moves 10 pixels every **frame**.

10 fps - your character will move really slow!

2000 fps - your character will move fast!



30 vs 10 fps

## With Using Time.deltaTime

Pseudocode:

Speed = 10

Player.position.x += speed \*  
**Time.deltaTime**

The player moves 10 pixels every **second**.

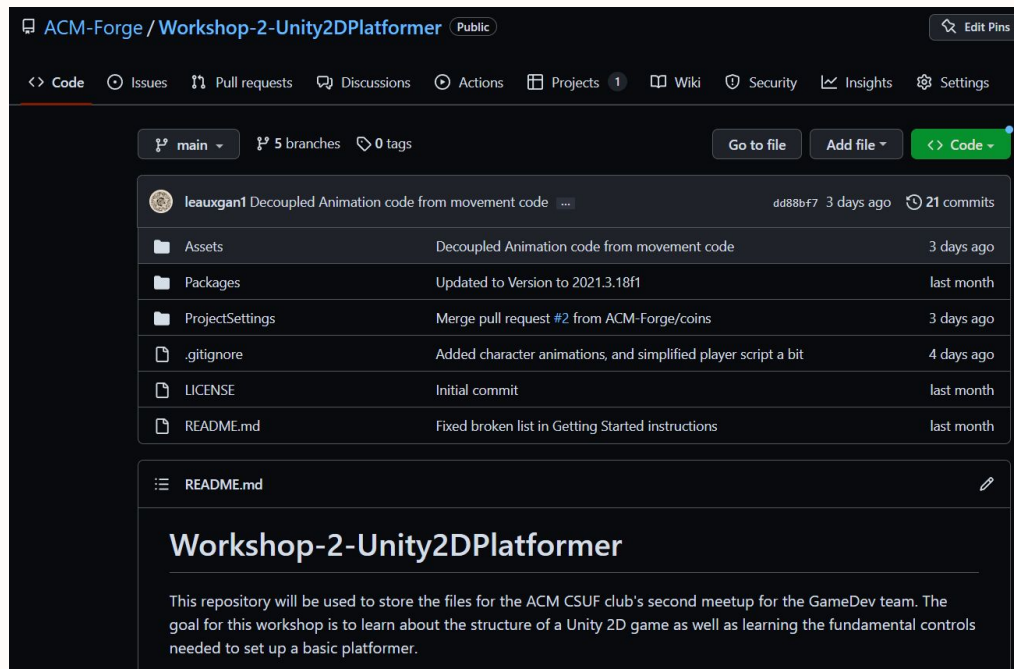
Character will always move at **consistent speed!**



30 vs 10 fps

# Follow Along at Home!

<https://github.com/ACM-Forge/Workshop-2-Unity2DPlatformer>  
Or use this [link](#)



The screenshot shows the GitHub repository page for `ACM-Forge / Workshop-2-Unity2DPlatformer`. The repository is public and has 5 branches and 0 tags. The main branch is selected. The repository contains several files and folders, including `Assets`, `Packages`, `ProjectSettings`, `.gitignore`, `LICENSE`, and `README.md`. The `README.md` file is open, showing the title `Workshop-2-Unity2DPlatformer` and the description: "This repository will be used to store the files for the ACM CSUF club's second meetup for the GameDev team. The goal for this workshop is to learn about the structure of a Unity 2D game as well as learning the fundamental controls needed to set up a basic platformer."

ACM-Forge / Workshop-2-Unity2DPlatformer Public

<> Code Issues Pull requests Discussions Actions Projects 1 Wiki Security Insights Settings

main 5 branches 0 tags Go to file Add file <> Code

leauxgan1 Decoupled Animation code from movement code dd88bf7 3 days ago 21 commits

Assets	Decoupled Animation code from movement code	3 days ago
Packages	Updated to Version to 2021.3.18f1	last month
ProjectSettings	Merge pull request #2 from ACM-Forge/coins	3 days ago
.gitignore	Added character animations, and simplified player script a bit	4 days ago
LICENSE	Initial commit	last month
README.md	Fixed broken list in Getting Started instructions	last month

README.md

## Workshop-2-Unity2DPlatformer

This repository will be used to store the files for the ACM CSUF club's second meetup for the GameDev team. The goal for this workshop is to learn about the structure of a Unity 2D game as well as learning the fundamental controls needed to set up a basic platformer.



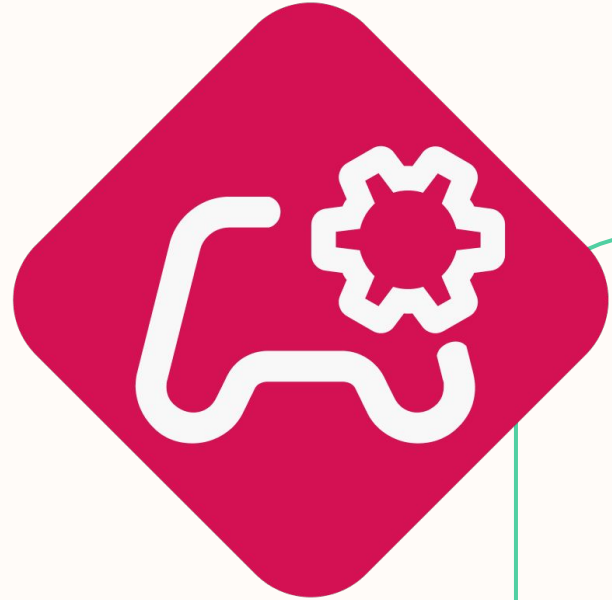
# Poll time!

## Unity Workshop Part 2

- 2D or 3D?
- What mechanics do you want to learn?
- Genres?

Vote on [menti.com](https://www.menti.com)

Code: 1587 1412



# March Madness: Mini Hackathon + Coding Challenge 1

Right after this workshop  
here in CS408!

2-Hour Hackathon

3 themes

- Productivity
- Visualization
- Monkey



# FullyHacks

CSUF's 24-hour hackathon

- For beginners and first-time hackers
- 100% in-person
- April 8th-9th
- **Deadline: April 1st**

Apply @  
<https://fullyhacks.acmcsuf.com/>

CSUF's first in-person hackathon

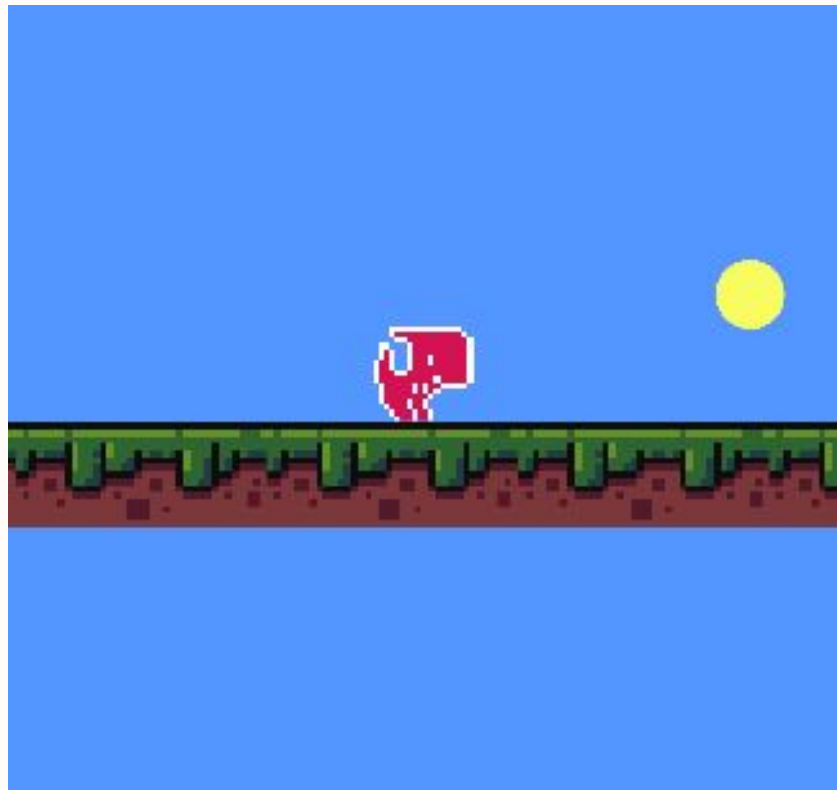
## FullyHacks 2023

### Apply Today!

deadline is until **April 1st**

more info: [\*\*fullyhacks.acmcsuf.com\*\*](https://fullyhacks.acmcsuf.com)





Thanks for coming!!