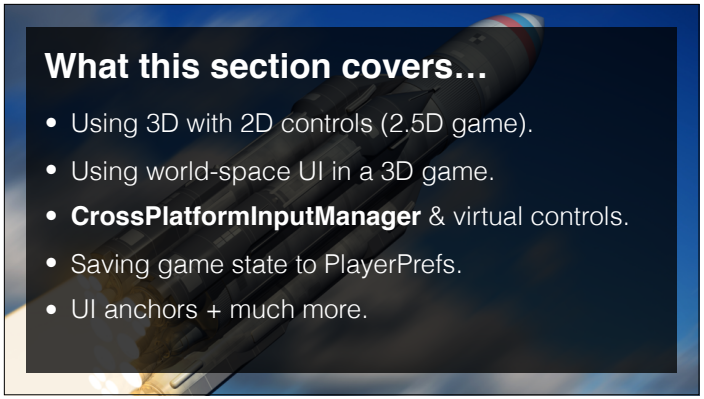

Introduction To Twin Stick


What this section covers…
• Using 3D with 2D controls (2.5D game).
• Using world-space UI in a 3D game.
• **CrossPlatformInputManager** & virtual controls.
• Saving game state to PlayerPrefs.
• UI anchors + much more.


Introducing Version Control
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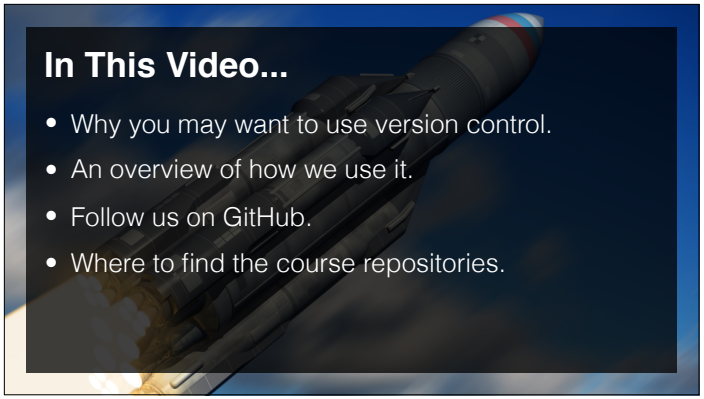
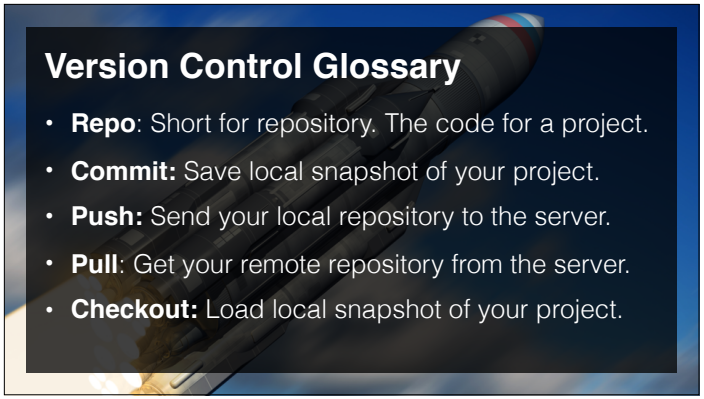
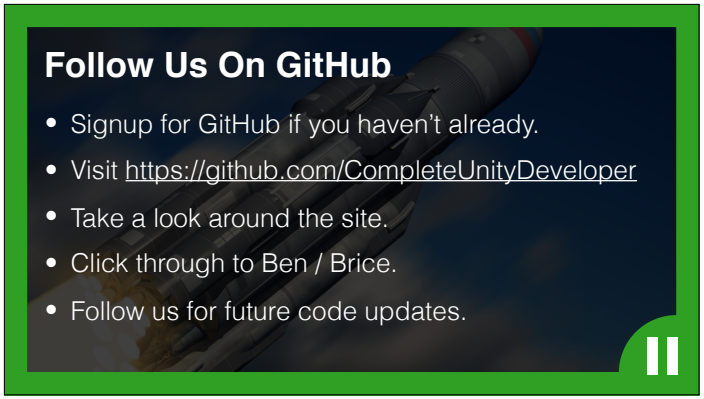

In This Video...
• Why you may want to use version control.
• An overview of how we use it.
• Follow us on GitHub.
• Where to find the course repositories.


Version Control Glossary
• Repo: Short for repository. The code for a project.
• Commit: Save local snapshot of your project.
• Push: Send your local repository to the server.
• Pull: Get your remote repository from the server.
• Checkout: Load local snapshot of your project.


Follow Us On GitHub
• Signup for GitHub if you haven't already.
• Visit https://github.com/CompleteUnityDeveloper
• Take a look around the site.
• Click through to Ben / Brice.
• Follow us for future code updates.

In This Video...

- How Git can help you share your project.
- How we use Git for the course.
- What's different about how you may use it.
- Read Dan's blog post*

http://leereilly.net/2012/11/29/hosting-games-on-github.html

Open Our Project Prototype

- Visit https://github.com/CompleteUnityDeveloper
- Find the 10-TwinStick "repo".
- Download the latest commit from the **pt** branch.
- Open the project in Unity to test it works.

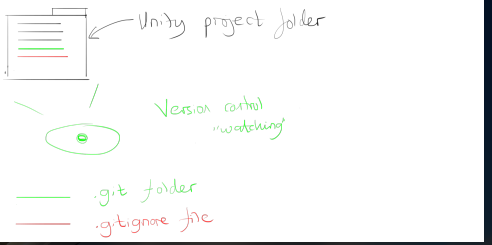
In This Video...

- Download SourceTree
- Creating local & remote repos.
- Using a **.gitignore** file for Unity.
- Connect to GitHub (or BitBucket).
- Share your repo in the discussions.

Bitbucket vs GitHub

GitHub	BitBucket
+ Very well known, great support on web.	- Less well known.
+ Plays well with SourceTree.	- Can have problems with SourceTree!
- Private repos are paid.	+ Private repos are free.

Ecosystem Overview



Share Your Repo

- Put a secret message in your scene.
- Push your repo to GitHub (or SourceTree).
- Share it in the Discussions.
- Challenge people to find the message.
- Celebrate, you're now a real coder!

Using CrossPlatformInputManager

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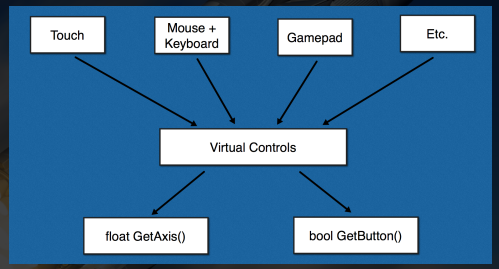
In This Video...

- What is **CrossPlatformInputManager**.
- How a virtual control layer works.
- Setting-up and reading control values.

Virtual Control Layer



Using CrossPlatformInputManager

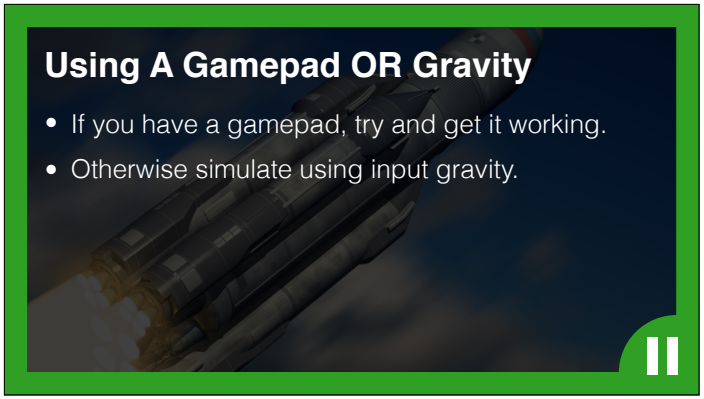
1. Assets > Import Package > CrossPlatformInput
2. using UnityStandardAssets.CrossPlatformInput;
3. Use **CrossPlatformInputManager.** to access.

Log Virtual Control Values

- Lookup how you read input using **Input.**
- Replace with **CrossPlatformInput.**
- Import the appropriate namespace.
- Print control values to the console.

In This Video...

- About using gamepad input.
- Setting up a PS4 controller on a Mac.
- Using an Xbox controller on a PC.
- Using the input gravity setting.
- Other input settings such as sensitivity.


Using A Gamepad OR Gravity
• If you have a gamepad, try and get it working.
• Otherwise simulate using input gravity.


Using The RollerBall Prefab
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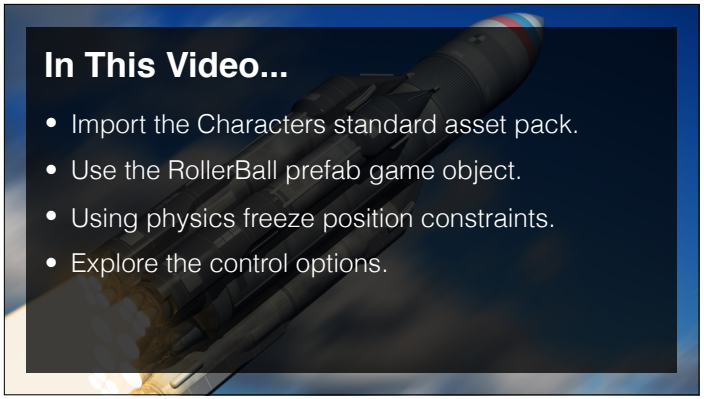
In This Video...
• Import the Characters standard asset pack.
• Use the RollerBall prefab game object.
• Using physics freeze position constraints.
• Explore the control options.

Explore The RollerBall

- Explore the RollerBall for your 2.5D game.
- Try all the control settings.
- Look at the scripts, see if you can modify them.
- Ask any questions in the discussions.

In This Video...

- An overview of replay systems.
- Deterministic vs. non-deterministic replays.
- An overview of how we will do things.
- Introducing a circular (ring) buffer.

Deterministic Event Storage Replay

- Store all starting state (seeds, AI, etc etc).
- Reproduce all player input.
- Less storage, but simulation must run perfectly.
- Hard to do a rewind.

Non-Deterministic State Storage

- Store entire game state every frame.
- Larger file sizes, but allows random access.
- Allows rewind easily too.

Research replay solutions

- Search for “saving replay Unity” or similar.
- Write-down the outline of a solution.
- Continue the video, and I’ll introduce my idea.

In This Video...

- Why we're not using Unity's **Keyframe** struct*
- Comparing **class**es and **struct**s as options.
- Creating our own **MyKeyframe** struct.

http://docs.unity3d.com/ScriptReference/Keyframe.html

Write A MyKeyFrame Class

- In the **Replay.cs** as a helper class.
- Define as a class (not struct) for now.
- Try and provide a "constructor", so you can say **keyFrame = new MyKeyFrame (time, pos, rot)** elsewhere in your code. Bonus marks!


Creating A Replay System
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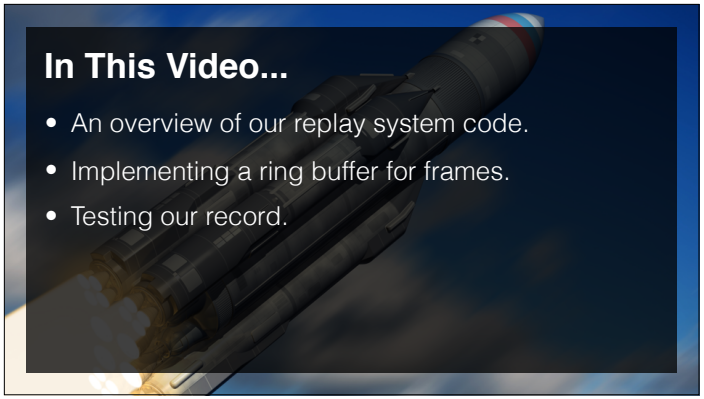
In This Video...
• An overview of our replay system code.
• Implementing a ring buffer for frames.
• Testing our record.


Building A Game Manager
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In This Video...

- Create a simple Game Manager.
- Use it to keep track of recording / playback.
- Wire it to the **ReplaySystem.cs** script.
- Test playback.

Write GameManager.cs

- Create an empty game object.
- Attach **GameManager.cs**
- Have it keep track of **bool recording**.
- While holding “Fire1” button, is in playback.
- Otherwise in record mode (normal gameplay).

Make ReplaySystem.cs Read Mode

- Get your **ReplaySystem.cs** reading state.
- Ensure “Fire1” goes into playback (Ctrl key).
- Celebrate!


Touchscreen Joystick Control
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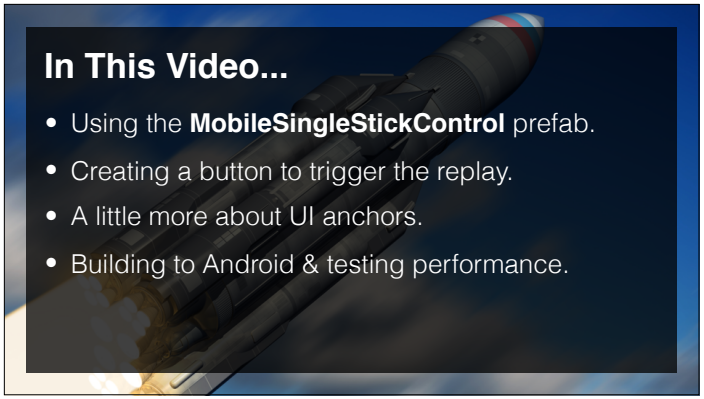
In This Video...
• Using the **MobileSingleStickControl** prefab.
• Creating a button to trigger the replay.
• A little more about UI anchors.
• Building to Android & testing performance.


Setup A Replay Button
• Make a replay button.
• Choose a relevant sprite (may need to rotate).
• Test this button triggers the replay.


Level Unlocks In Unity
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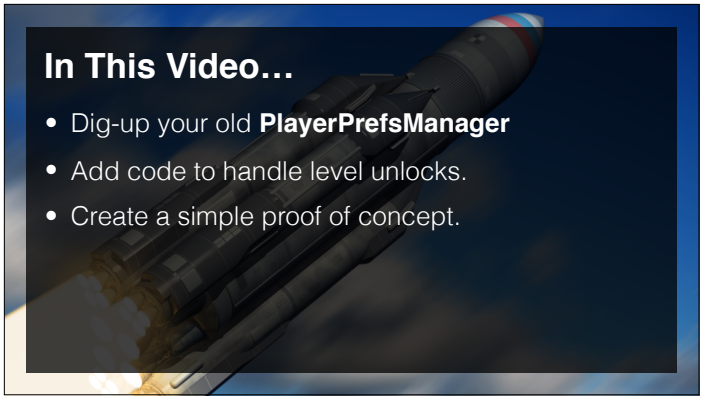
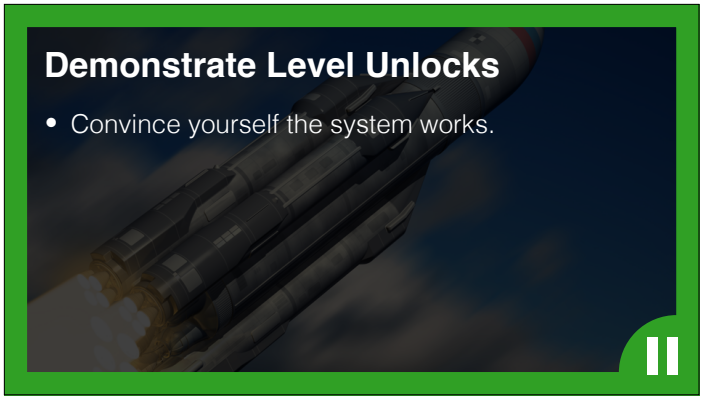

In This Video…
• Dig-up your old **PlayerPrefsManager**
• Add code to handle level unlocks.
• Create a simple proof of concept.


Demonstrate Level Unlocks
• Convince yourself the system works.


Pausing Your Game
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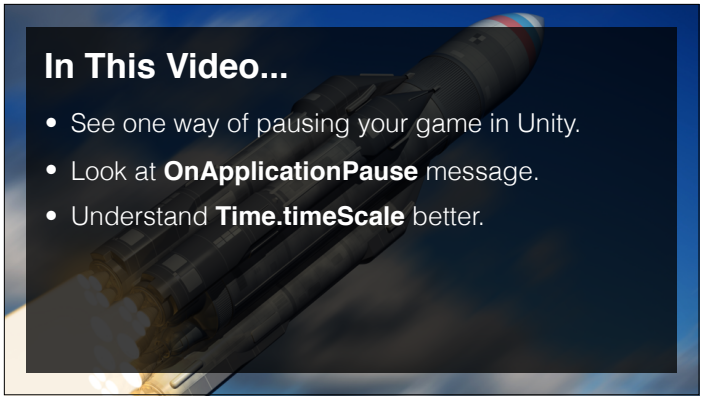
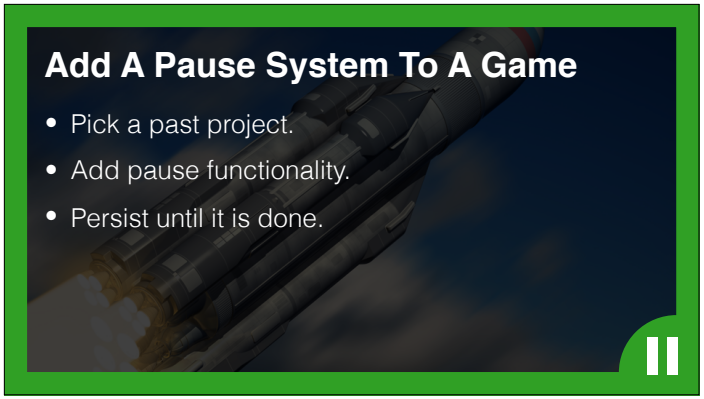

In This Video...
• See one way of pausing your game in Unity.
• Look at **OnApplicationPause** message.
• Understand **Time.timeScale** better.


Add A Pause System To A Game
• Pick a past project.
• Add pause functionality.
• Persist until it is done.


Reading From 2nd Stick
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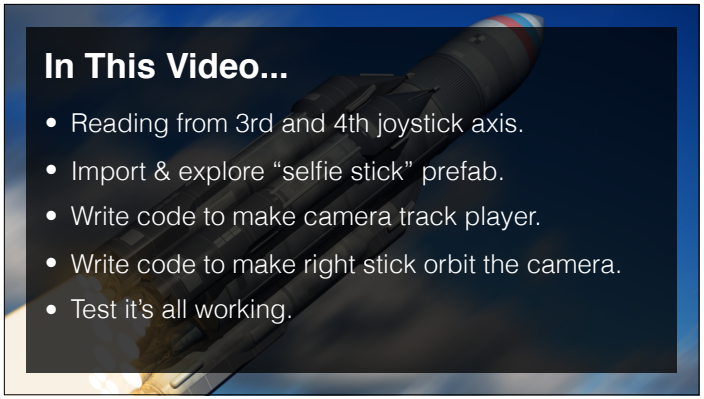
In This Video...
• Reading from 3rd and 4th joystick axis.
• Import & explore “selfie stick” prefab.
• Write code to make camera track player.
• Write code to make right stick orbit the camera.
• Test it’s all working.


Add Vertical Axis
• Get vertical axis logging to console.

Make Camera Point At Player

- Find the player by tag.
- Make camera LookAt the player every frame.
- Consider using **LateUpdate()**.

Make Vertical Pan Work

- Right stick vertical movement should work.
- Camera will move up and down, at same dist.
- See if you can do it in one line of code!