Intro, Notes & Assets

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In This Section...

- Congratulations on your progress.
- What we'll be covering in this section.
- Multiplayer, you can use just one PC.
- We'll be using Unity Networking, local only.
- Section notes & assets are attached.

Game Design Document Creation

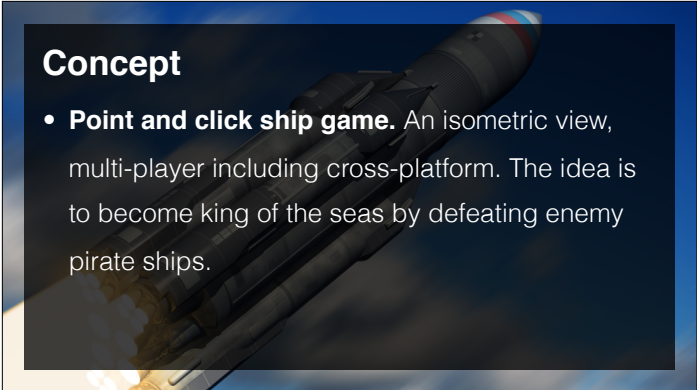@UnityCourse
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In This Video...

- Create a simple GDD live.
- Write a paragraph explaining the game concept.
- List the major game rules.
- Define the asset requirements.
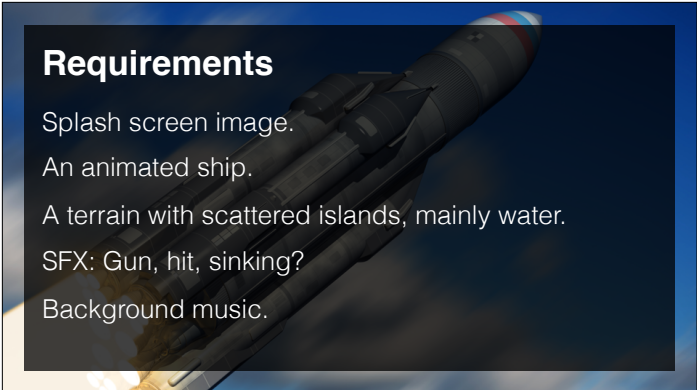- Think about how we may monetise this game.

Concept

- **Point and click ship game.** An isometric view, multi-player including cross-platform. The idea is to become king of the seas by defeating enemy pirate ships.

Rules

- You start with 100 health.
- Getting shot reduces health.
- Move in range of other ships to shoot them.
- Guns can only fire in 90 deg arc either
- You score for killing the enemy.
- You lose score for being killed.

Requirements

Splash screen image.

An animated ship.

A terrain with scattered islands, mainly water.

SFX: Gun, hit, sinking?

Background music.

Monetisation

- This will be free game, designed to play with our friends to learn more about networking.

Testing Network Games Locally

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In This Video...

- An overview of the development process.
- Unity Editor against local build.
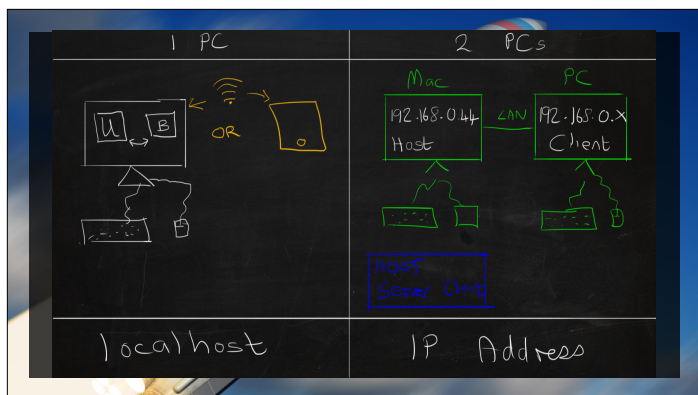- Testing between two different machines on LAN.
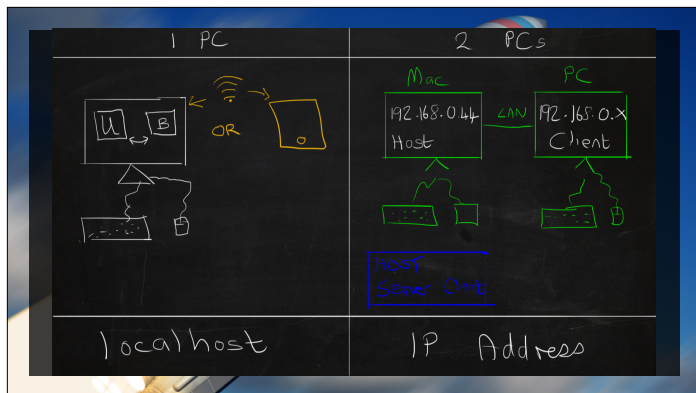
Arrange Your Environment

- See if you can access a 2nd machine.
- Ask in the discussions. Include time zone.
- If not, then consider building to mobile.
- Worst case build to a PC / Mac / Linux stand-alone.

Deploying Our Game Locally

In This Video...

- How to deploy the same version to 2 machines.
- Version control is an option (Git, SVN, etc).
- You could use a shared folder.
- Set-up Dropbox sync between 2 PCs.
- Care to use one as master (also the host).

Get Your Client Copy Working

- Setup your client.
- This can be a build, or a different machine.
- Add a 2nd cube to the scene.
- Check this change propagates to the client.

Introducing Network Manager

In This Video...

- The concept of a stack of APIs.
- An overview of Unity's network stack.
- Finding out where to start with networking.
- Get our game running with networking enabled.

Create A Network Manager

- Add an empty game object, positioned anywhere.
- Add a Network Manager component.
- Add a Network Manager HUD component.
- Take a look around.
- Try and get the game to run without errors.

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Replacing Network Manager HUD

In This Video...

- Why we want to replace the default HUD.
- What the default HUD does for us.
- Create our own "Start Host" button.
- Where to find the API documentation.
- Wiring the button to script and testing.

Make Button Start Host

- In **MyStartHost()** method start the host.
- Log to the console with a meaningful time stamp.
- Leave inheriting from mono behaviour for now.

About The Override Keyword

In This Video...

- A recap of inheritance.
- What the **override** keyword does.
- Why we need to use it here.
- Explaining **public override void OnStartHost ()**
- Test the result.

A Recap Of Inheritance

Object
 Component
  Behaviour
   MonoBehaviour
    MyHUD
    NetworkManager
     MyNetworkManager

Refactor Your Script

- Remove the **GetComponent<>()**
- Change the call to **StartHost()**
- Re-wire the Player prefab.
- Test the logging works.
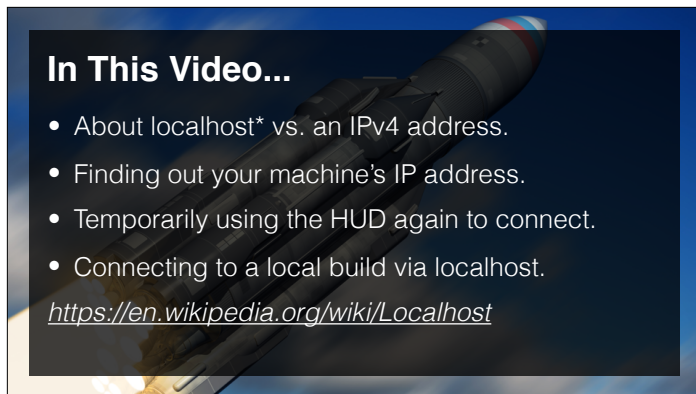- Ask yourself if you understand what happened.

Explain Override To Someone

- Call a geeky friend who would understand.
- Or simply explain in the discussions.

Logging Client Start Requests

In This Video...

- About localhost* vs. an IPv4 address.
- Finding out your machine's IP address.
- Temporarily using the HUD again to connect.
- Connecting to a local build via localhost.

https://en.wikipedia.org/wiki/Localhost

Invoke Dots!

- Make a . print in console until connected.
- Use **InvokeRepeating()**

Using NetworkTransform

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In This Video...

- What NetworkTransform does for us.
- About NetworkIdentity and why it's needed.
- Make movements travel over the network.
- Test this over the LAN, and with local build.
- Optionally: test this to a mobile too.

Test To A Local Build

- Create a local build of your game.
- Run this build as a client.
- Ensure the movement works.
- Bonus: create a mobile build.

Networked Player Movement

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In This Video...

- Understanding players in multiplayer games.
- Getting players working on clients.
- Filter input with **NetworkBehaviour.isLocalPlayer**

Get The Player Moving

- Use cross-platform input.
- Test the player moves on the Host.
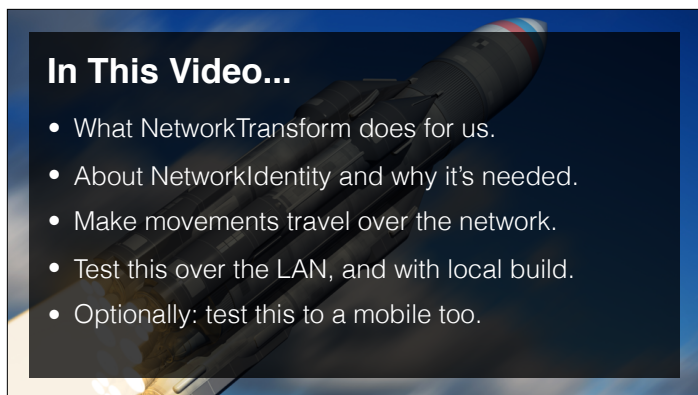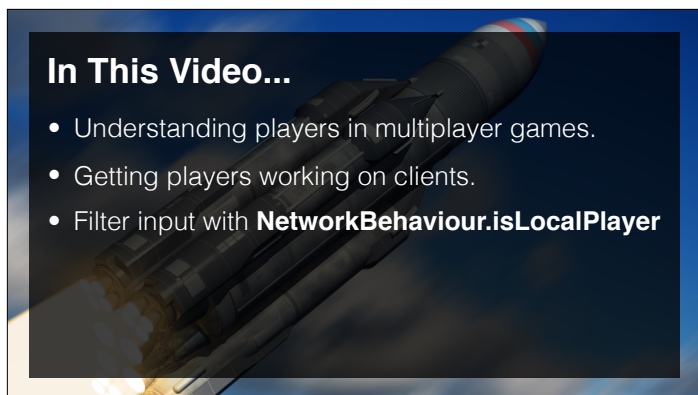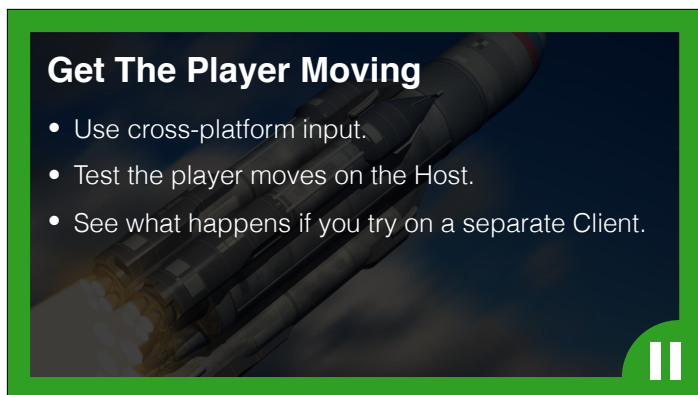- See what happens if you try on a separate Client.

Filter Non-Local Input

- Use **NetworkBehaviour.isLocalPlayer**
- Consider changing your script's parent.
- Test that input only controls the local player.

Multiple Players With Local Authority

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In This Video...

- Adding a Network Transform to our player.
- Re-introducing Local Player Authority.
- Testing 3-way player movement.

Get Player Movement Syncing

- Use the NetworkTransform component.

- Read about Local Player Authority*

- Bonus: discover effect of this setting.

http://docs.unity3d.com/Manual/UNetConcepts.html

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MultiPlayer Cameras

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In This Video...

- Add a camera as a child of Player.

- What is causing our camera issue.

- One simple way of solving it.

- Care with disabling camera object vs. component.

- Don't use deprecated NetworkView component.

Disable All But Player's Camera

- Suggest inside **Player.cs**
- Consider **OnStartLocalPlayer()** method.
- Care with it's signature, it's an override again.

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Network Recap & What's Next

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In This Video...

- Talk through Unity's Network System Concepts*
- Ask "What's not fun about this game".
- Challenge you to make a basic game.
- Please thank @MarcoValeKaz for the ship.

http://docs.unity3d.com/Manual/UNetConcepts.html

Make A Basic Game

- Use everything you've learnt so far.
- Integrate some player assets.
- Create simple gameplay.
- See what MP specific challenges your face.
- Share the challenges in the discussions.

Section Wrap-Up

In This Video...

- About the course taper structure.
- You have everything you need.
- Keep testing, keep asking, keep learning.
- I'm committed to maintaining this course.
- That includes adding to this section if needed.