Introduction to Unity 3D



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Introduction to Unity3D





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What is Unity3D

- An extremely popular, cross-platform game engine
 - Currently 21 platforms are supported!

Very popular for independent (indie) development teams

Also used by larger studios



Made with Unity 3D



Supported Platforms

- iOS
- Android
- Windows Phone 8
- Tizen
- Windows
- Mac
- Linux
- Web Player
- WebGL
- PS3
- PS4

- PSVita
- XBOX One
- XBOX 360
- Wii U
- Android TV
- Samsung SMART TV
- Oculus Rift
- Gear VR
- Microsoft Hololens
- Project Morpheus



About Unity3D

- Originally built only for OSX in 2005
- Unity has grown a lot in the past few years
- The growing list of supported platforms is one of its main advantages
- Current version is Unity 5.0, released March 3, 2015
- In Japan, Unity has its own mascot (called Yuniti-chan)

Unity's Interface

The Unity interface has a few major sections

 Most of the time you will be using the interface to position objects in the game world to build a scene

From now we will discuss the different parts of the interface



Scene

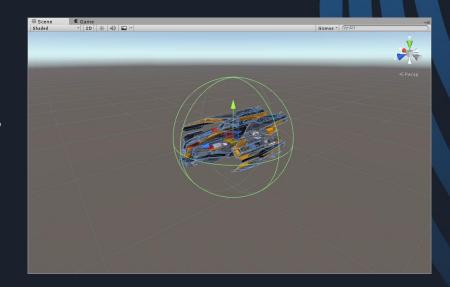
← Unity Education (64bit) - Untitled - NetworkGame - PC, Mac & Linux Standalone* < DX11> - 0 X File Edit Assets GameObject Component Mobile Input Window Help ⊕ S 🔀 🔟 👓 Pivot 🕯 Local **▶** || **▶**| △ Account → Layers → Layout → Tierarchy Create * Or € Game - 2D 🔆 🗐 🖬 -Hierarchy Shaded Gizmos * (SciFi Fighter AKS Tag Player Layer Default Main Camera Apply Directional Light Transform Y 958.9987 Z -17.62 X -11.31 Rotation X O Y O Z 0 Z 1 Scale Sci Fi_Fighter_AK5 (Mesh Filter) **□** �. SciFi_Fighter_AK5 ■ Mesh Renderer 🔻 🔡 🗹 Animator None (Runtime Animator Controller) Controller SciFi_Fighter_AK5Avatar Avatar Apply Root Motion Update Mode Normal Culling Mode Always Animate ! Not initialized **□** ♦. 🙏 Rigidbody Mass Drag Angular Drag Use Gravity Is Kinematic Interpolate None Collision Detection Constraints □x **☑**Y □z Freeze Position $\square x \square y \square z$ Freeze Rotation 🥌 🗹 Sphere Collider **□** \$. & Edit Collider Is Trigger Collapse Clear on Play Error Pause Material None (Physic Material) Favorites Assets ► Prefabs Center X O Z 0 All Materials 9.9116 Missile Radius All Models SciFi_Fighter_AK5 Network Identity (Script) All Prefabs Server Only All Scripts Local Player Authority assets Scenes ▶ Editor ► Models Scripts ▶ Skyboxes

Inspector



Unity Scene Window

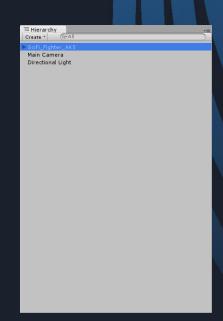
- The central area in Unity
- Where you place and manipulate objects
- Use right mouse button + 'WASD' to fly around the scene
- You can select objects and move, rotate, scale and delete them
- You can split your project up into different scenes
 - Each level can be a different scene





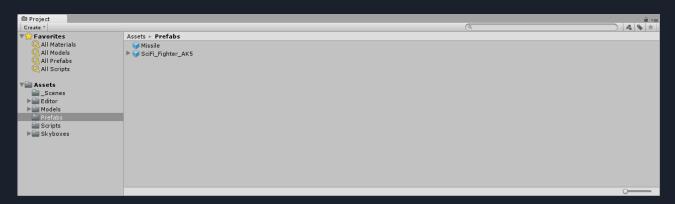
Unity Hierarchy

- Lists every object in your scene
- This list shows a hierarchy of objects
 - You can 'parent' one object to another
 - When you move / rotate / scale the parent,
 changes are applied to the child too
 - (think of a player holding a sword)
- Selecting objects in the hierarchy highlights them in the scene (and vice versa)





Unity Project



- Lists all the assets (files) your project.
- You can create and delete new assets such as
 - Meshes
 - Scripts
 - Prefabs

- Textures
- Materials
- Animations



Unity Inspector

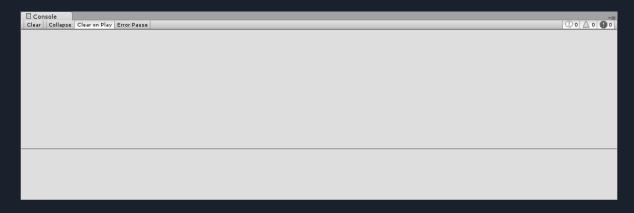


- Shows all the modifiable settings for the currently selected object
- You can add more components to an object, like
 - Colliders
 - Physics (Rigidbodies)
 - Custom scripts
 - And many more



Unity Console

- A very useful window!
- Displays any errors in your game scripts
- Can also display debug information as your game runs





Everything is a GameObject

 All the entities that exist in a Unity scene are GameObjects

 When you manipulate or change something in a scene, you are changing a GameObject

At its core, all a scene is, is a collection of GameObjects



Creating new GameObjects

- Unity provides a few ways to make new GameObjects'
 - Via the GameObject menu on the toolbar, and
 - Via the 'Create' menu in the Hierarchy
- You can create empty GameObjects, or choose a ready-made object
 - These include primitives like spheres, cubes, planes, and a number of other types of objects
- Once you create a GameObject, it will appear in your scene
 - You can then modify it using the mouse or by editing its properties in the Inspector

Components

- Components add extra functionality to GameObjects
 - To render (draw) a GameObject, it needs a renderer component
 - To detect collisions, it needs a collider component
 - To be affected by gravity, it needs a rigidbody component
- If we want to add our own functionality, we can write a script and attach it as a component
 - This is how we could control the player using the keyboard



Adding Components to GameObejcts

- You can view and modify a GameObject's components in the Inspector
- At the bottom of the Inspector is a button called 'Add Component'
 - This displays a list of components you can add to the GameObject



GAMES ANIMATION & FILM VEX

Summary

- Unity3D is a popular game engine
- It can be used to make games for many popular platforms
- To build games in unity, we create scenes consisting of GameObjects
- GameObjects have many properties we can edit
 - We can also add more functionality to GameObjects by adding Components



Extra Reading

http://unity3d.com/unity - What is Unity? (Video)

 http://unity3d.com/learn/tutorials/topics/interfaceessentials - Unity Interface & Essentials (Video)

 http://docs.unity3d.com/Manual/UnityOverview.ht ml - Unity Manual: Unity Overview



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