INFT3960 – Game Production

Week 02

Module 2.1

Unity Development Environment

Course Overview

Lec	Date	Modules	Assignments
1	Tuesday 30 Jul	Mod 1.1, Mod 1.2	
2	Tuesday 5 Aug	Mod 2.1, Mod 2.2, Mod 2.3, Mod 2.4	
3	Tuesday 12 Aug	Mod 3.1, Mod 3.2, Mod 3.3	⭐ Assign 1 12 Aug, 11:00 pm
4	Tuesday 19 Aug	Mod 4.1, Mod 4.2	
5	Tuesday 26 Aug	Mod 5.1, Mod 5.2	
6	Tuesday 3 Sep	Mod 6.1, Mod 6.2, Mod 6.3	
7	Tuesday 10 Sep	Mod 7.1, Mod 7.2	⭐ Assign 2 12 Sep, 11:00 pm
8	Tuesday 17 Sep	Mod 8.1	
9	Tuesday 24 Sep	Mod 9.1	
10	Tuesday 15 Oct	Mod 10.1, Mod 10.2	
11	Tuesday 22 Oct	Mod 11.1, Mod 11.2	⭐ Assign 3 24 Oct, 11:00pm
12	Tuesday 29 Oct	Mod 12.1, Mod 12.2	

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:00 - 9:00		INFT3960 Lecture ATG 25			
9:00 – 10:00	Math2005 Lecture SRG09		COMP4110 Lecture/Lab ICT328		
10:00 - 11:00		Consult 3960 ICT3.20			
11:00 - 12:00		INFT3960 **Lab 1** ICT 325 Nathan			
12:00 - 1:00					
1:00 - 2:00					
2:00 - 3:00		INFT3960 **Lab 1** ICT 325 Nathan			
3:00 - 4:00					
4:00 - 5:00					
5:00 - 6:00		INFT3960 **Lab 4** ICT 325 Nathan			
6:00 - 7:00					
7:00 - 8:00					
8:00 - 9:00					

Lab 3 CT 311

INFT3960 – Game Production

Course schedule / roadmap diagram

Legend:
- Course Details
- Game Design
- Unity 3D and C#
- Development Process
- Core Game Concepts
- Assignments

Course Details (green):
- Course Overview
- Course Review and Exam

Game Design (yellow):
- Design Process
- Puzzles
- Guiding the Player

Unity 3D and C# (blue):
- Unity3D Introduction
- Introduction C#
- Variables and Components
- Hello World
- Booleans
- Loops
- Lists and Arrays
- Functions and Parameters
- Debugging
- Classes

Development Process (purple):
- Testing
- Risks and Prototypes
- Object Oriented
- Agile Processes

Core Game Concepts (red):
- Game Physics
- AI for Games
- Game Interfaces
- Storytelling in Games
- Graphics Pipeline
- Animation in Games
- Networked Games

Assignments (black):
- Assign 1
- Assign 2
- Assign 3

Timeline: Lec 1, Lec 2, Lec 3, Lec 4, Lec 5, Lec 6, Lec 7, Lec 8, Lec 9, Lec 10, Lec 11, Lec 12

IDE – (Chapter 16)

INTRODUCING OUR
DEVELOPMENT
ENVIRONMENT: UNITY

Unity3d Introduction – Topics

Downloading Unity

Why Choose Unity?

Why Choose C#?

Running Unity for the First Time

Unity Demo Project: AngryBots

Unity Features Shown in AngryBots

Setting Up the Unity Window Layout

Understanding the Unity Window Panes

Downloading Unity

Unity is available under different licensing arrangements (including a free one) from Unity's official website:

https://unity3d.com/get-unity/download

Download Unity

Welcome! You're here because you want to download Unity, the world's most popular development platform for creating 2D and 3D multiplatform games and interactive experiences.

Before you download choose the version of Unity that's right for you.

Choose your Unity + download   Download Unity Hub

Learn more about the new Unity Hub here.

Unity Hub – managing versions
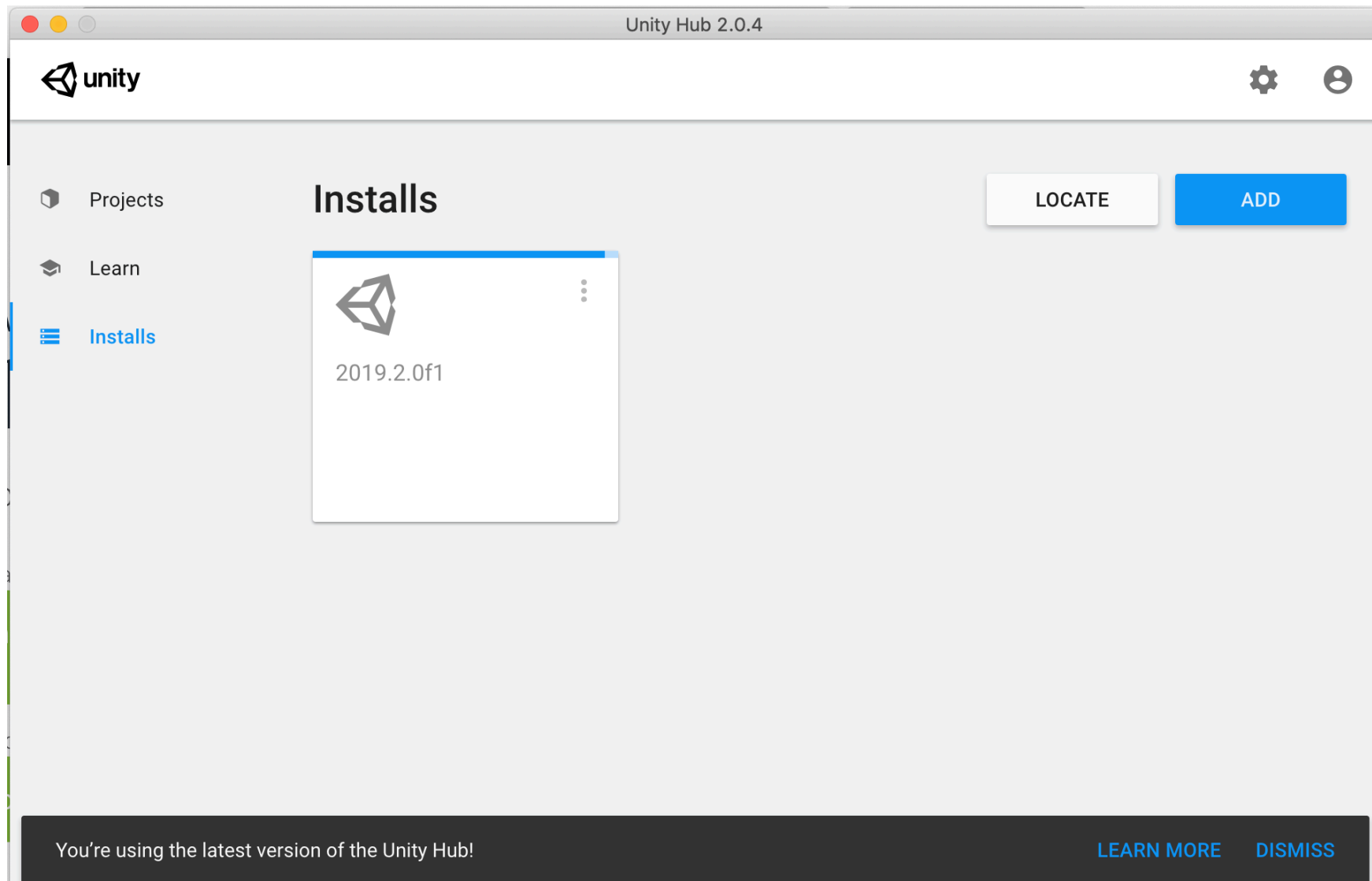
Downloading Unity

FOR BEGINNERS

Personal

Available to use if your revenue or funding (raised or self-funded) does not exceed $100K per year.

Get started for free

https://unity3d.com/get-unity/download

Unity Learn

Downloading Unity

System Requirements for Unity version Unity 2019.2.0

Released: 30 July 2019

OS: Windows 7 SP1+, 8, 10, 64-bit versions only; macOS 10.12+

GPU: Graphics card with DX10 (shader model 4.0) capabilities.

https://unity3d.com/get-unity/download

Downloading Unity

We run an appropriate education copy of Unity3d in the lab.

Ensure Unity Hub is started first

Then open Unity projects from here: new/existing
You may be prompted for admin rights, just cancel these

If Unity Hub shows any issues not being able to find the Unity executable, then open Unity application from the Applications folder (this is what the admin rights is trying to link)

This seems to resolve the issues

Why Choose Unity?

Unity is widely available

Write once, deploy anywhere
- PC, Mac, Linux,
- Web,
- iOS, Android, and other mobile devices
- Various game consoles

Great support
- Documentation
- Dev community

Ease of use

Why Choose C#?

Unity can use C#, Mono

Mono is forgiving and simple
- But this means that it allows a lot of sloppy behavior
- And this sloppiness makes coding slower in the long run

C# is a modern language with the capabilities of Java and the syntax of C++
- Extremely flexible and robust
- Enforces good coding practices
- Leads to greater student confidence and proficiency

Running Unity for the First Time

If you Install the free version of Unity

- Download on a fast network to avoid waiting
- You should first download the Unity Hub (recent feature)
- This lets you download the version of Unity you want and you also run Unity etc from this
- It's pretty easy

Licensing

- When you first launch Unity, you'll need to register for your personal license – so you will need to sign up
- You can use this login on your machine and in the lab

Setting Up Unity Layouts

Unity allows lots of flexibility in the layout of its window
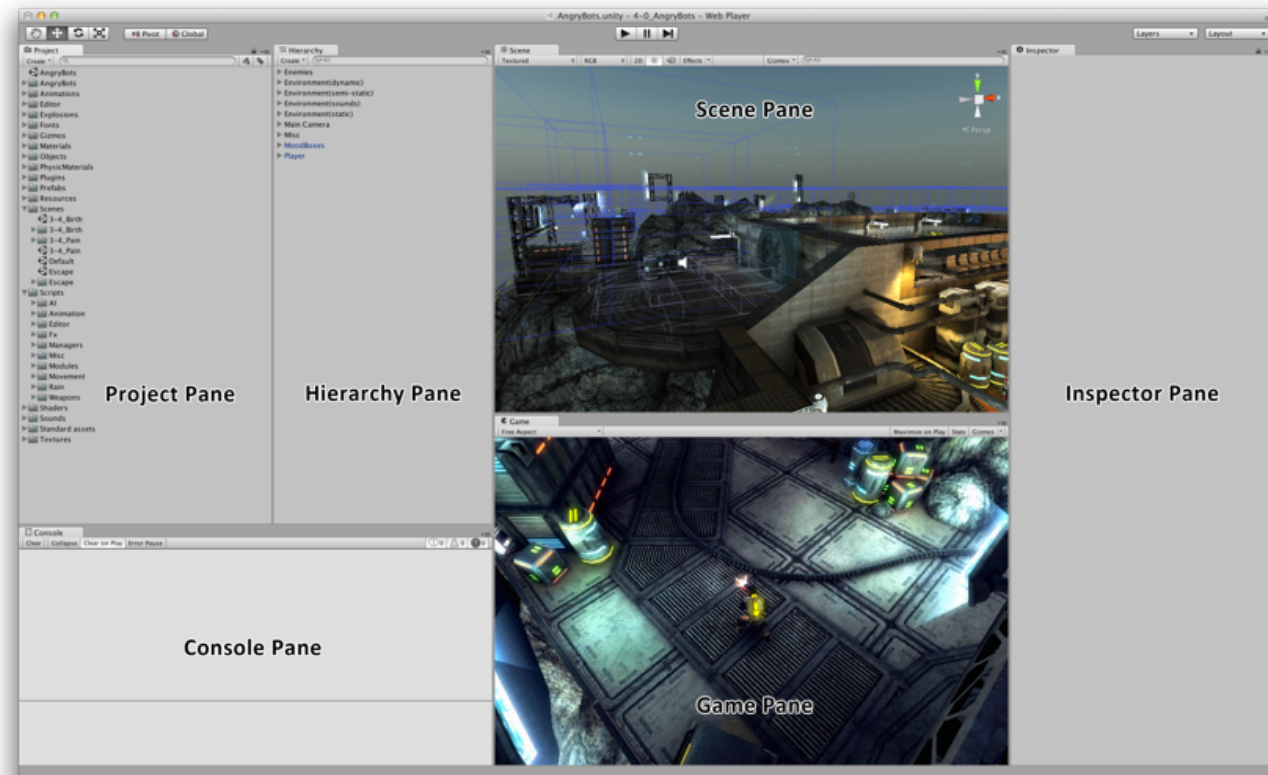
Try the layout menu – when using the the textbook and online demos you may see different layouts – if it is confusing you can rearrange these window panes.

Unity Windows Panes

Project Pane: Collection of all assets in the Unity project: everything from models to C# code, images, and sounds.
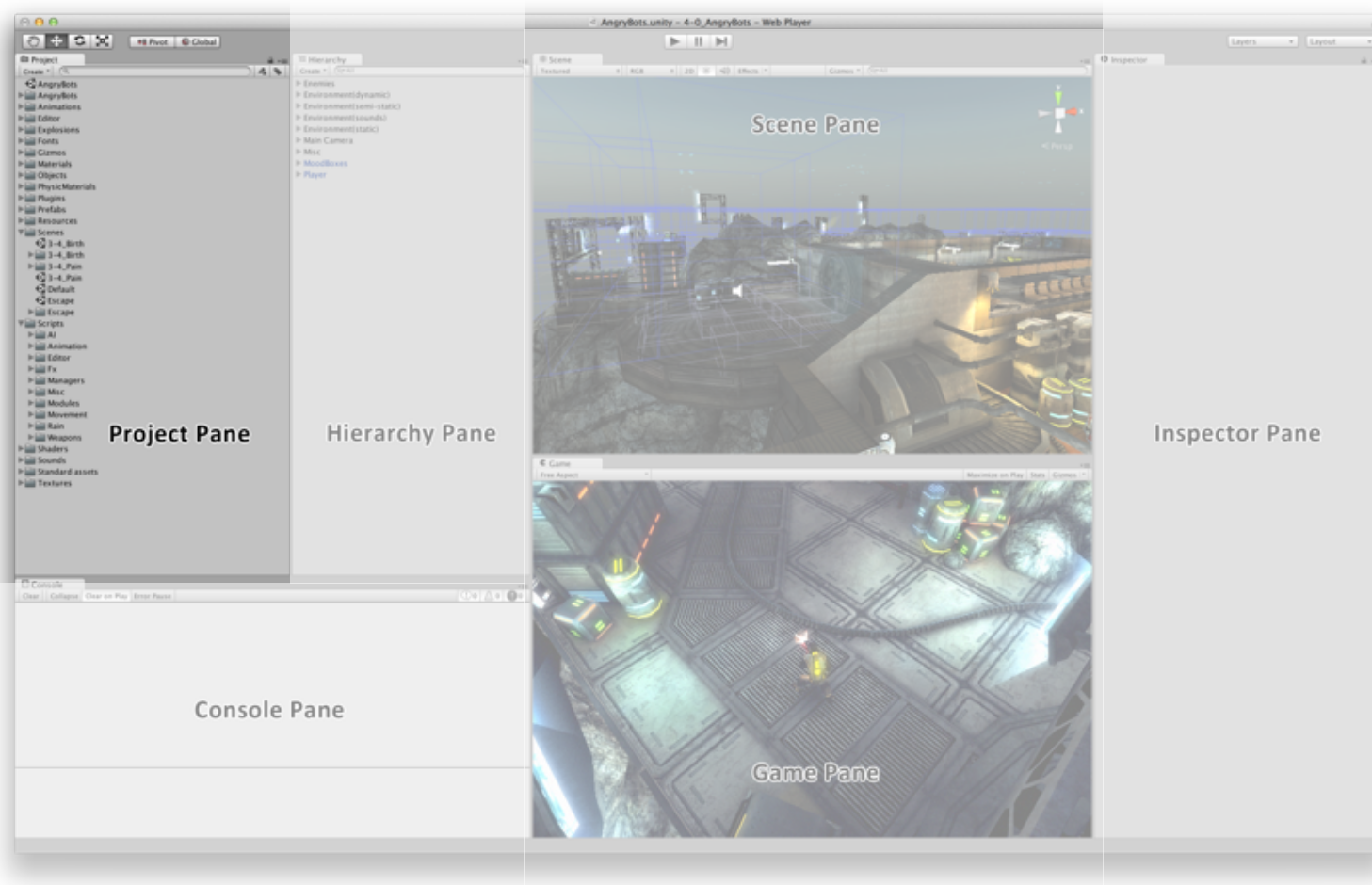
Unity Windows Panes

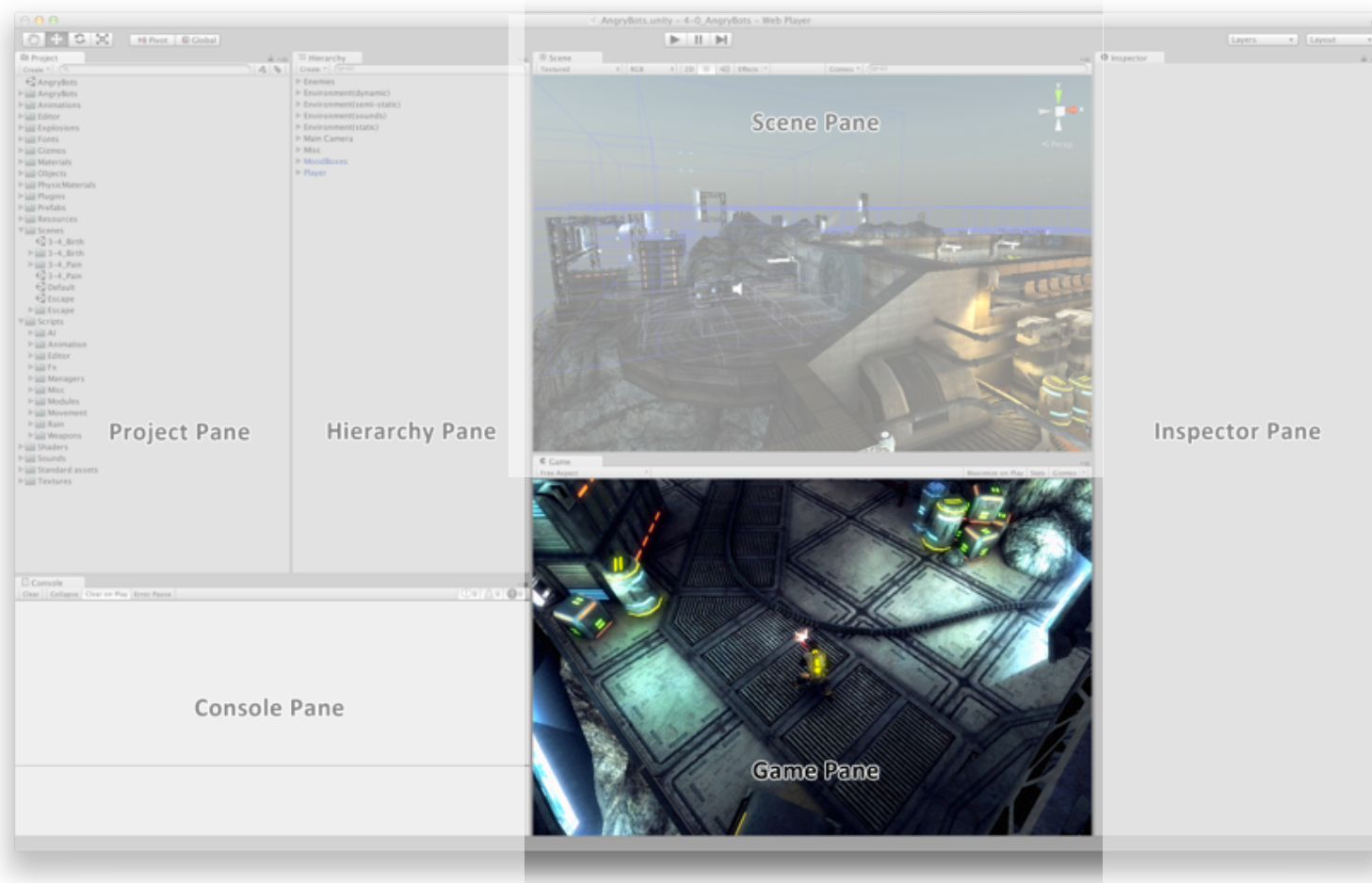**Console Pane:** Shows messages from Unity and from the C# scripts that you write.

Unity Windows Panes

Scene Pane: Allows you to move around the 3D scene and select, move, rotate, and scale GameObjects.

Unity Windows Panes

Game Pane: Shows you a preview of the gameplay. Shows the view from the Main Camera in the scene.
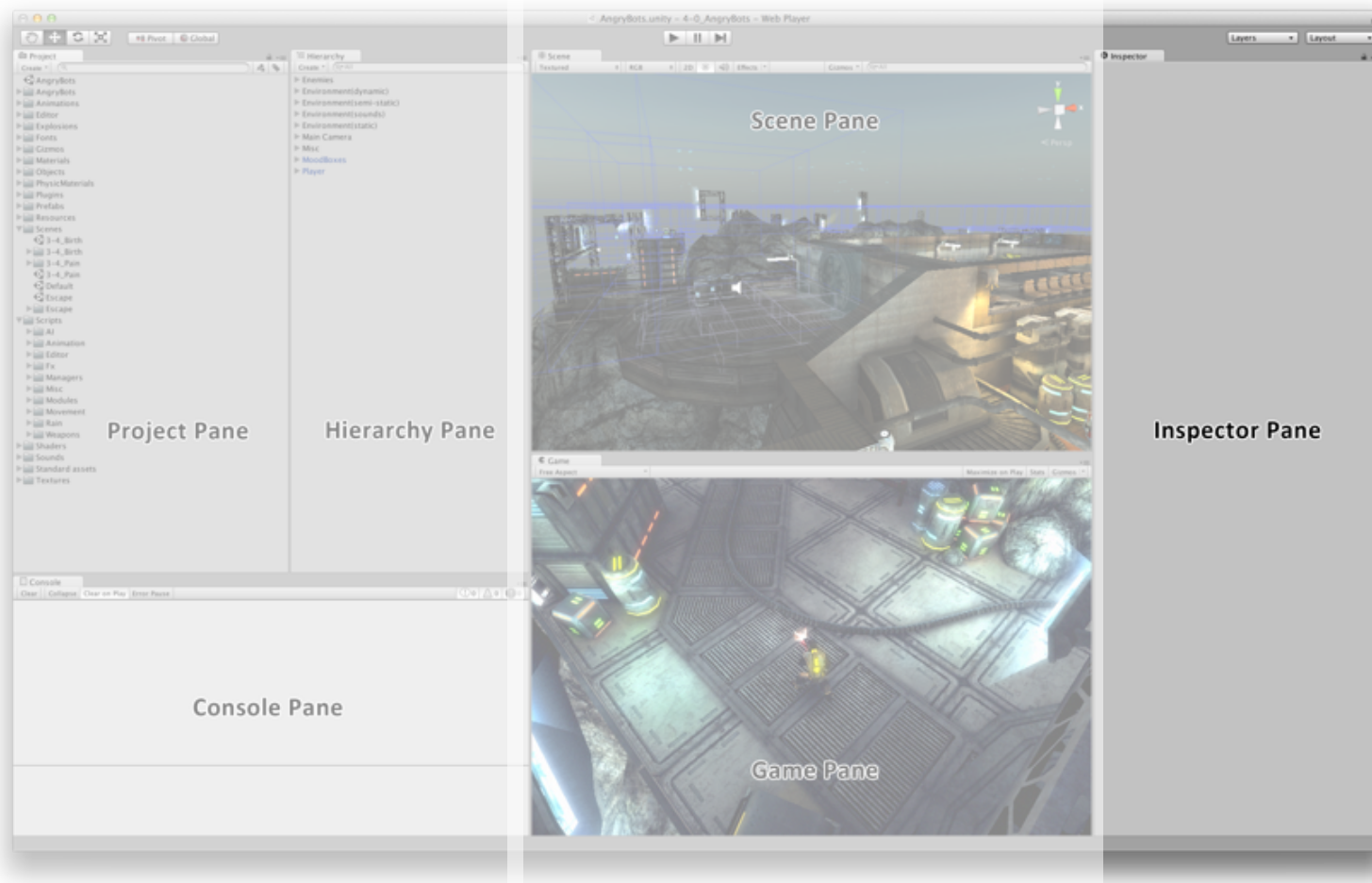
Unity Windows Panes

Hierarchy Pane: A list of every GameObject in the scene. Maintains a hierarchy of parent and child GameObjects.

Unity Windows Panes

Inspector Pane: Shows details of any selected asset.
Allows you to edit the details of any GameObject.

Unity Windows Panes

Project Pane: Collection of all assets in the Unity project: everything from models to C# code, images, and sounds.

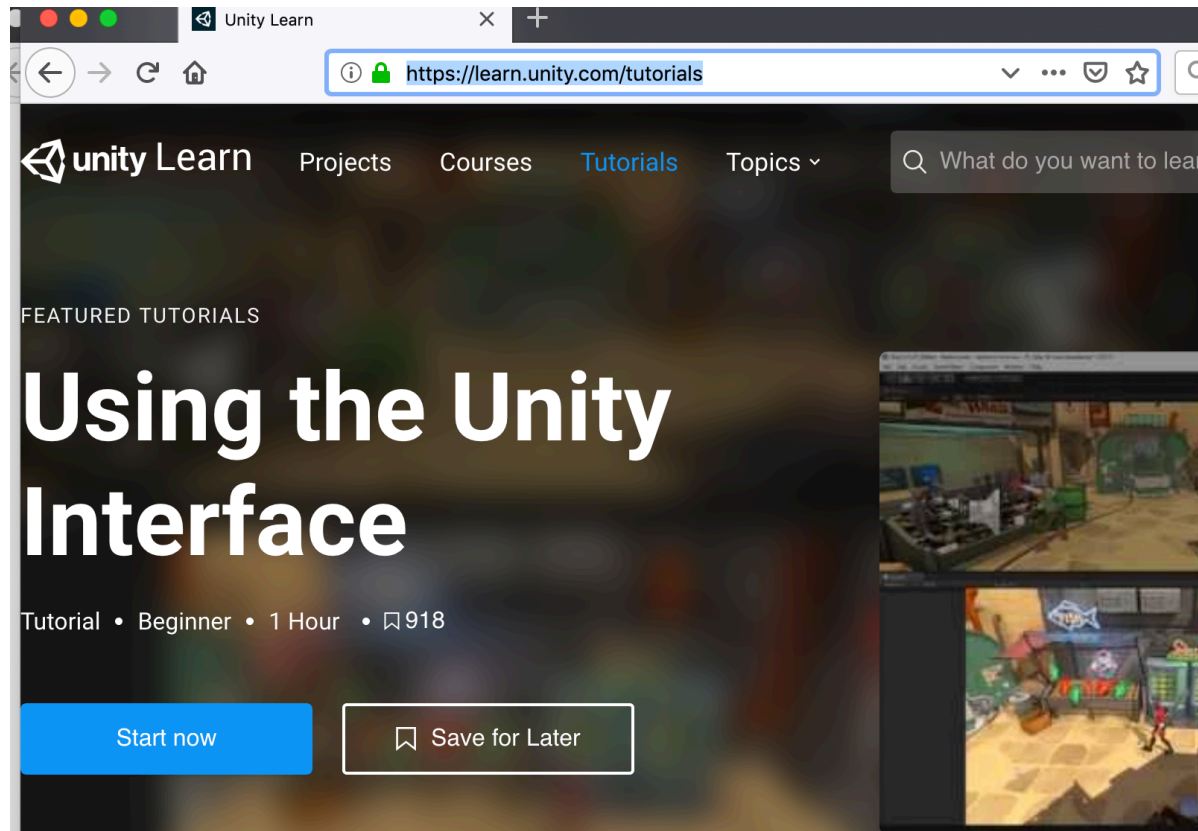**Console Pane:** Shows messages from Unity and from the C# scripts that you write.

Scene Pane: Allows you to move around the 3D scene and select, move, rotate, and scale GameObjects.

Game Pane: Shows you a preview of the gameplay. Shows the view from the Main Camera in the scene.

Hierarchy Pane: A list of every GameObject in the scene. Maintains a hierarchy of parent and child GameObjects.

Inspector Pane: Shows details of any selected asset. Allows you to edit the details of any GameObject.
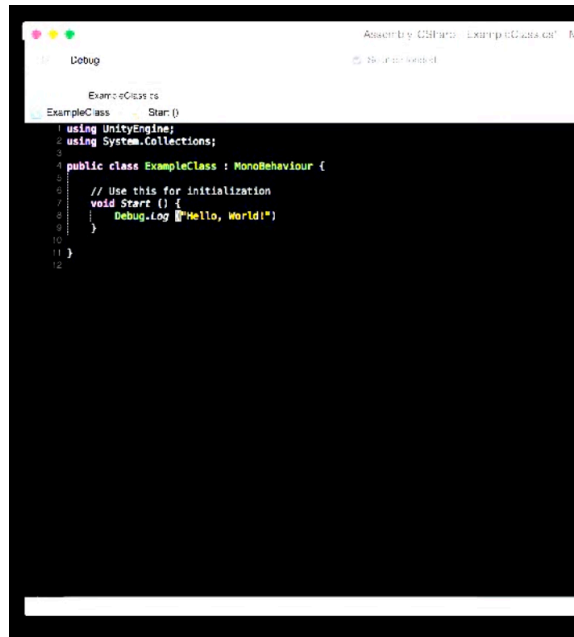
Unity Windows Panes

Learn more in tutorial

https://learn.unity.com/tutorials

Hello World

CH 19 Textbook


```
using UnityEngine;
using System.Collections;

public class ExampleClass : MonoBehaviour {

    // Use this for initialization
    void Start () {
        Debug.Log ("Hello, World!")
    }

}
```

https://www.youtube.com/watch?v=3gK3CRqMkvE

Unity Demo Templates

Game-ready Templates

3 ways we help you start creating your first game today:

Game-ready Templates

Creative Challenges

Share Your Game

Choose from 3 game-ready templates that are designed to help you create and share your first game in as little as 30 minutes!

To guide you on your way, each template comes with 5 simple walkthrough tutorials that will quickly have you modifying your game. You'll change colors, add objects, and build a playable version of your game on your PC.

Karting

Platformer

Team Sports

For Later

https://store.unity.com/download-nuo