Week 2: Unity Basics (Part 1)

Welcome to Week 2

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Slides: Week 2: Unity Basics (Part 1)

2.1 – GameObjects

GameObjects are a fundamental part of the creating games or applications in Unity. It could be player, enemies, trees, buildings, etc. GameObjects can't do much without **Components**. Components define the behaviors and characteristics of GameObjects. Components can do things like handle physics, playing audio, or executing scripts.

Assets vs GameObjects

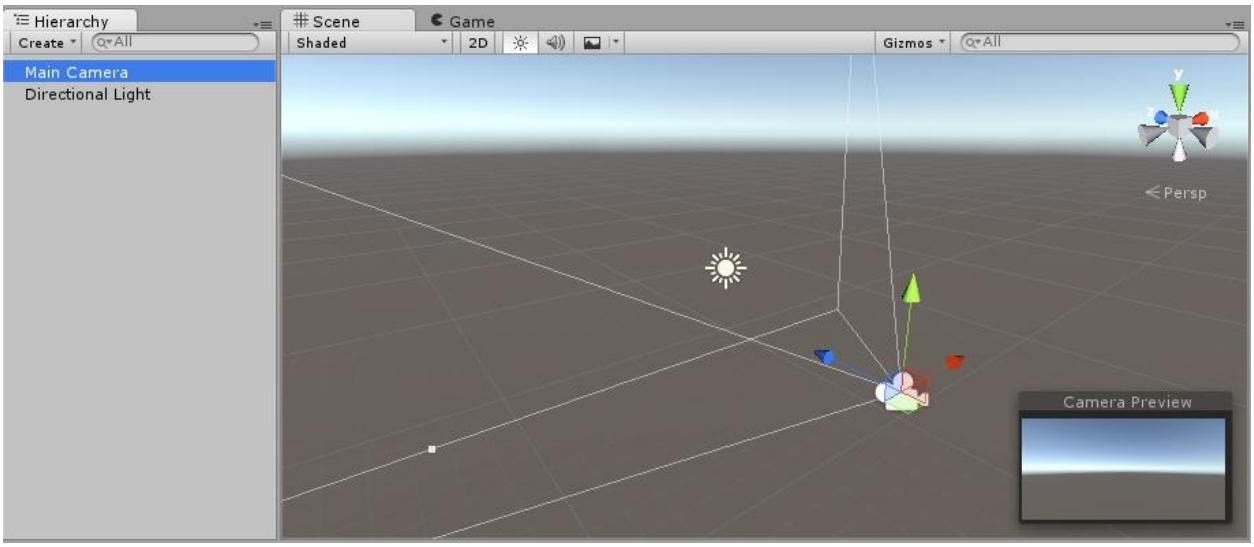
An **Asset** is the representation of any item that can be used in your game or project. An asset is a file created outside of Unity, such as a 3D model, an audio file, an image, or any of the other types of file that Unity supports. There are also some asset types that can be created within Unity, such as an Animator Controller, an Audio Mixer or a Render Texture.

Read more about assets here.

GameObjects are containers that hold components. Dragging an asset into your game can create a GameObject that uses that asset in its properties. For example, dragging a 2D image into your game can result in a GameObject with the property of looking like that image.

2.2 – Scenes

Scenes are where you work with content in Unity. They are assets that contain all or part of a game or application. For example, you might build a simple game in a single scene, while for a more complex game, you might use one scene per level, each with its own environments, characters, obstacles, decorations, and UI. You can create any number of scenes in a project. When you create a new project and open it for the first time, Unity opens a sample scene that contains only a Camera and a Light (*Figure 1*).



2.3 – Unity Interface

The Unity interface consists of many **Windows**. The windows that will be focused on in this workshop are listed below:

A) The Toolbar (not technically a window, but a part of the interface). **The Toolbar** contains controls for **Play mode**; Undo history; Unity Search; a layer visibility menu; and the Editor layout menu.

B) The Hierarchy window is a hierarchical text representation of every **GameObject** in the **Scene**. Each item in the **Scene** has an entry in **the hierarchy**, so the two windows are inherently linked. **The hierarchy** reveals the structure of how **GameObjects** attach to each other.

C) The Game view simulates what your final rendered game will look like through your **Scene Cameras.** When you click the Play button on **the Toolbar**, the simulation begins.

D) The Scene view allows you to visually navigate and edit your **Scene**. **The Scene view** can display a 3D or 2D perspective, depending on the type of Project you are working on.

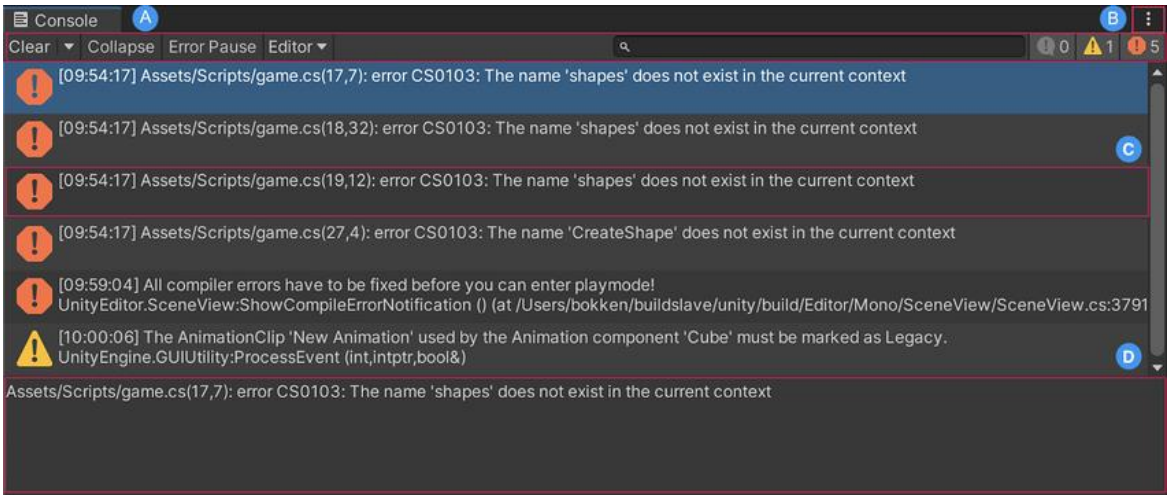
E) Overlays contain the basic tools for manipulating **the Scene view** and the **GameObjects** within it.

F) The Inspector window allows you to view and edit all the properties of the currently selected **GameObject**. Because different types of **GameObjects** have different sets of properties, the layout and contents of **the Inspector** window change each time you select a different **GameObject**.

G) The Project window displays your library of **Assets** that are available to use in your Project. When you import **Assets** into your Project, they appear here. (Sometimes this area is called your **Assets Folder.**)

H) The status bar provides notifications about various Unity processes, and quick access to related tools and settings.

Not pictured here, but still useful: The **Console** Window displays errors, warnings, and other messages the Editor generates. These errors and warnings help you find issues in your project, such as script compilation errors. They also alert you to actions the Editor has taken automatically, such as replacing missing meta files, which could cause an issue somewhere else in your project.



The Console Window displays errors, warnings, and other messages the Editor generates. (See Figure 3). These errors and warnings help you find issues in your project, such as script compilation errors. They also alert you to actions the Editor has taken automatically, such as replacing missing meta files, which could cause an issue somewhere else in your project.

A) The Console toolbar has options for controlling how to display messages, and for searching and filtering messages.

B) The Console window menu has options for opening Log files, controlling how much each message is visible in the list, and setting stack trace options.

C) The Console list displays an entry for each logged message. Select a message to display its entire text in the detail area. You can choose how many lines of each message to display here.

D) The display area displays the full text of the selected message.

This overview of Unity's interface was found here.

2.4 – Exercises

Reinforcement

The reinforcement section is used to check the understanding of the information that was presented in the powerpoint/document. Please answer the questions in your own words.

R—2.1 What is the difference between assets and GameObjects?

R—2.2 What are Scenes and what purpose do they serve in a game or application in Unity?

R—2.3 What does the default sample scene in a new Unity project contain when first opened?

R—2.4 What is the difference between the Hierarchy window and the Project window in Unity?

R—2.5 What types of information does the Console window provide, and why is it important for a Unity project?

Project

The project section's tasks are used in work toward creating the final Flying Bird game project for the end of the course.

P—2.1 Make a 2D Unity project titled "Flying Bird game" with the Unity version 6.

P—2.2 Create a new scene titled "Level Design Practice"