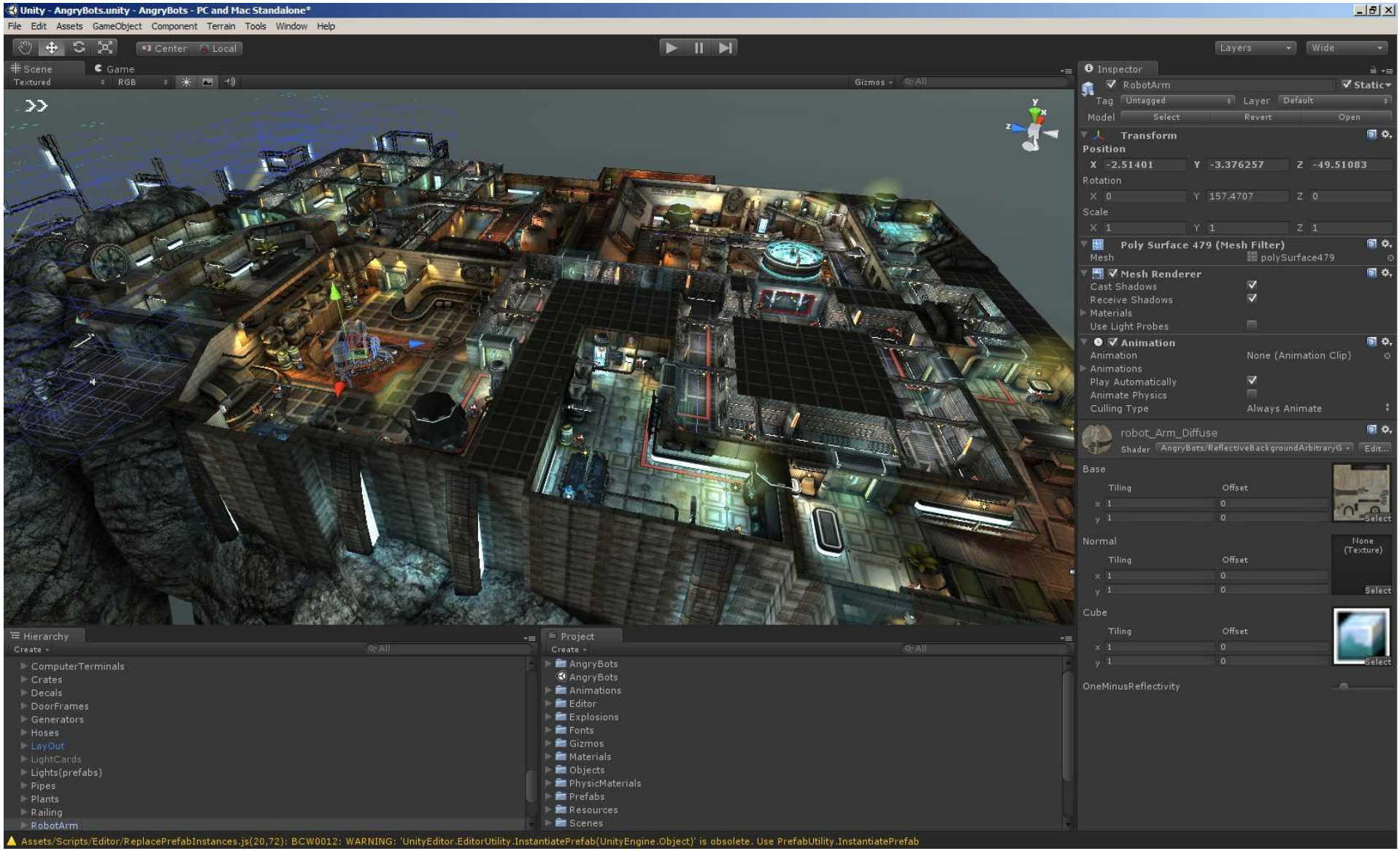
INTRO TO UNITY

SHADOWGUN Ingame screenshot
powered by unity
MADFINGER GAMES.COM

Unity Show Reel

- https://www.youtube.com/watch?v=8lWpnvNxs8k

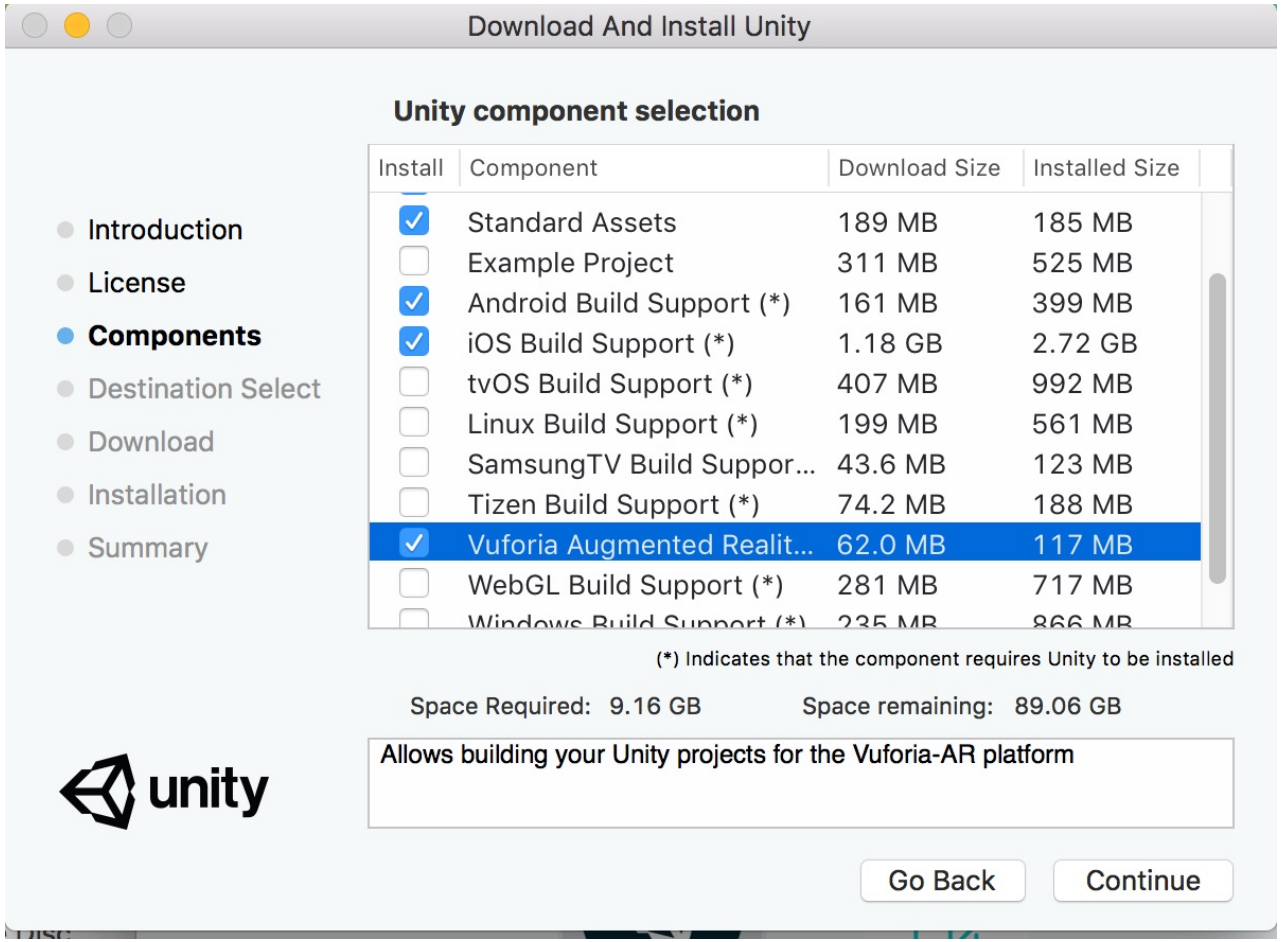
Unity 3D Game Editor



SETUP

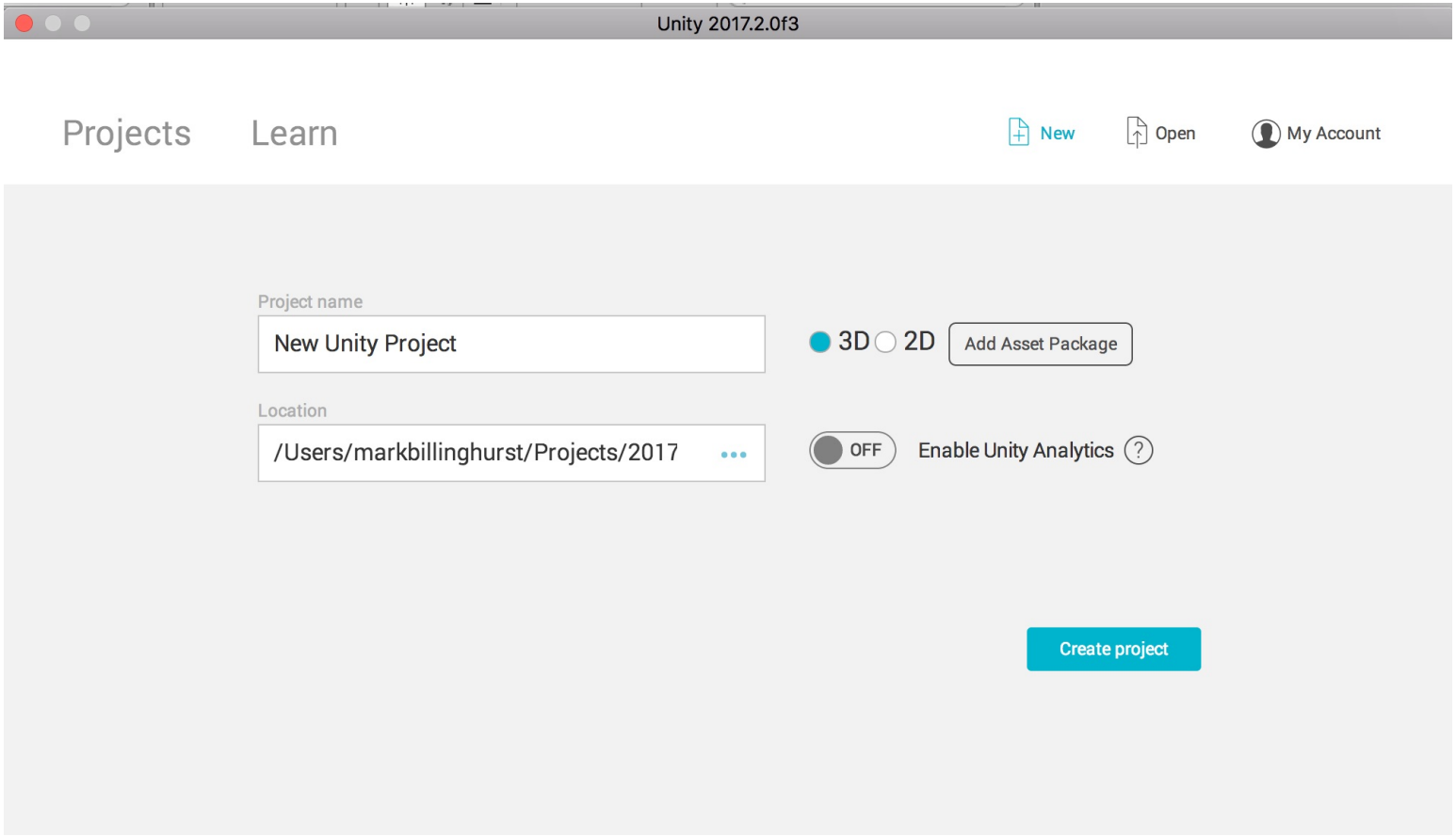
Download and Install

- Go to unity3d.com/download
- Use Download Assistant – pick components you want



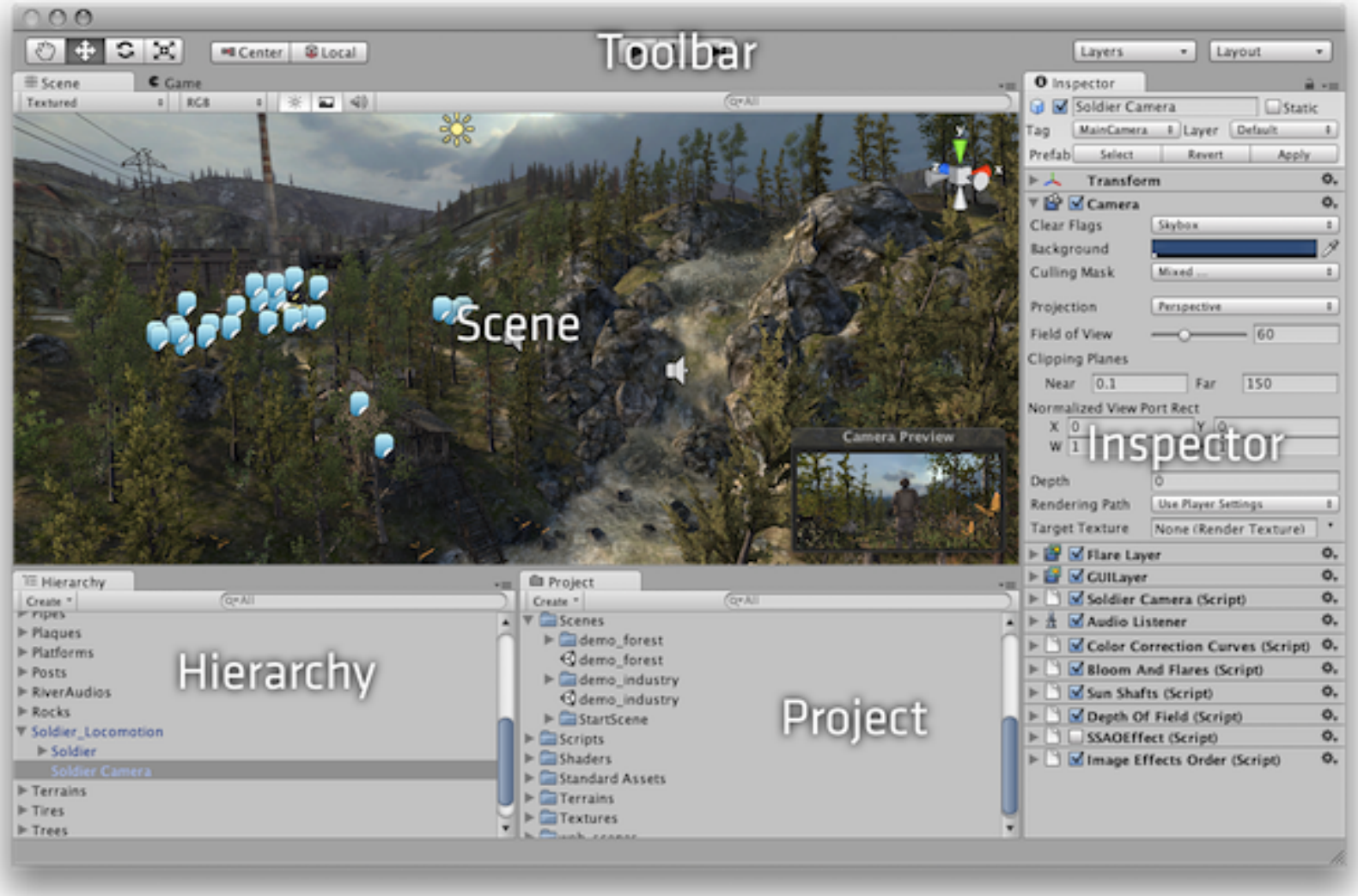
Getting Started

- First time running Unity you'll be asked to create a project
- Specify project name and location

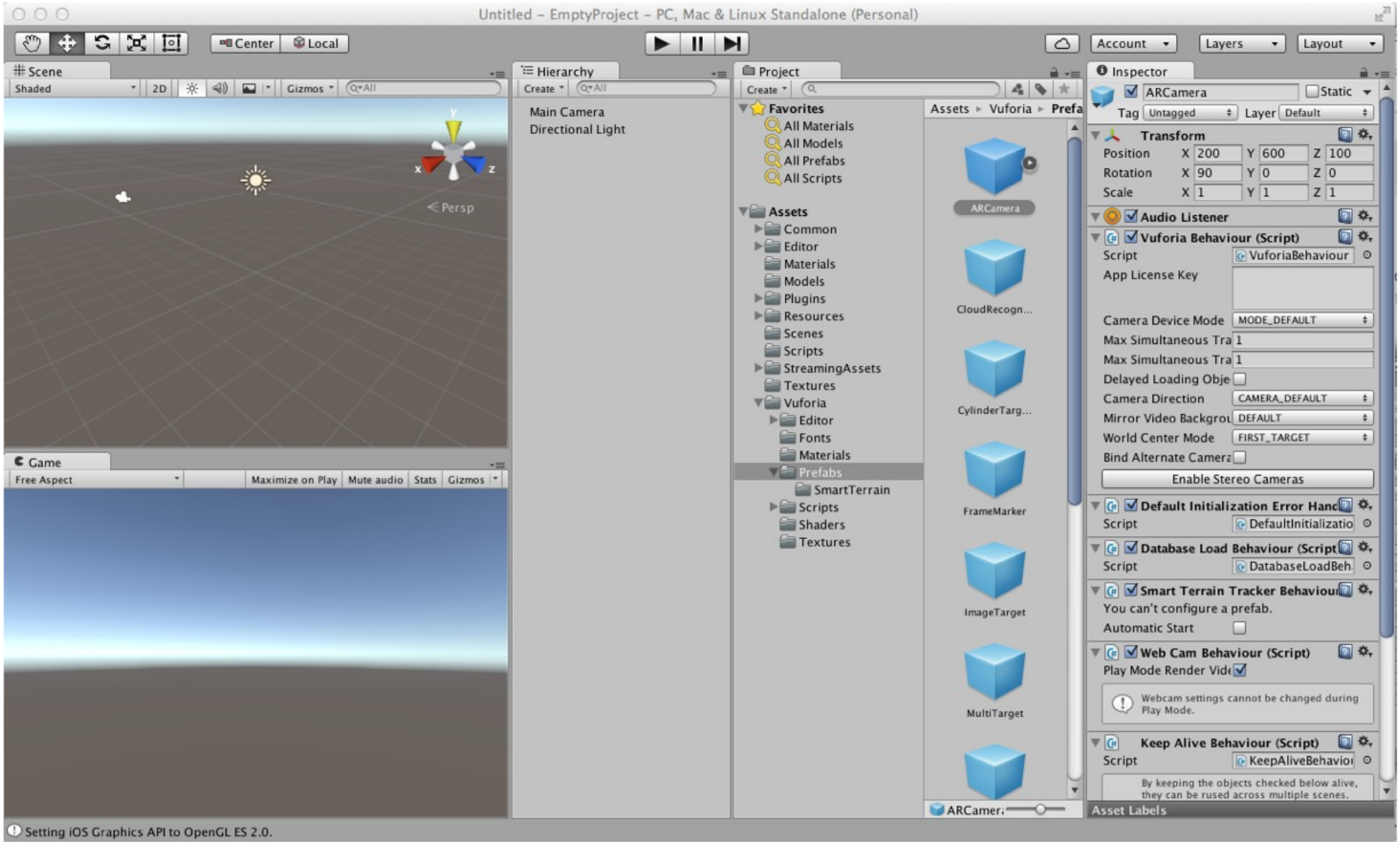


Unity Interface

- Toolbar, Scene, Hierarchy, Project, Inspector



Customizable Interface

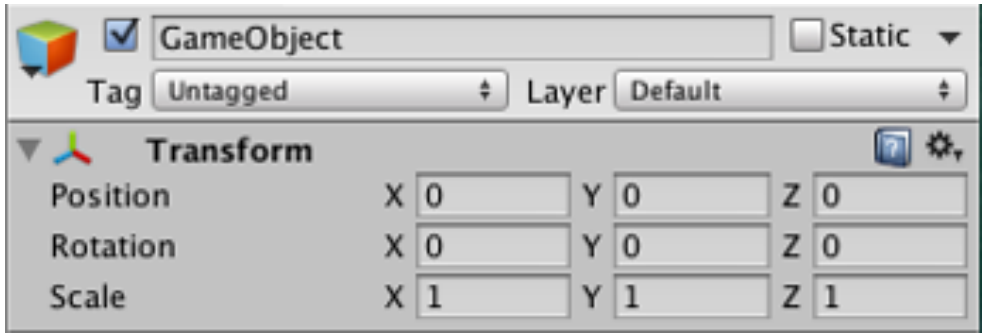


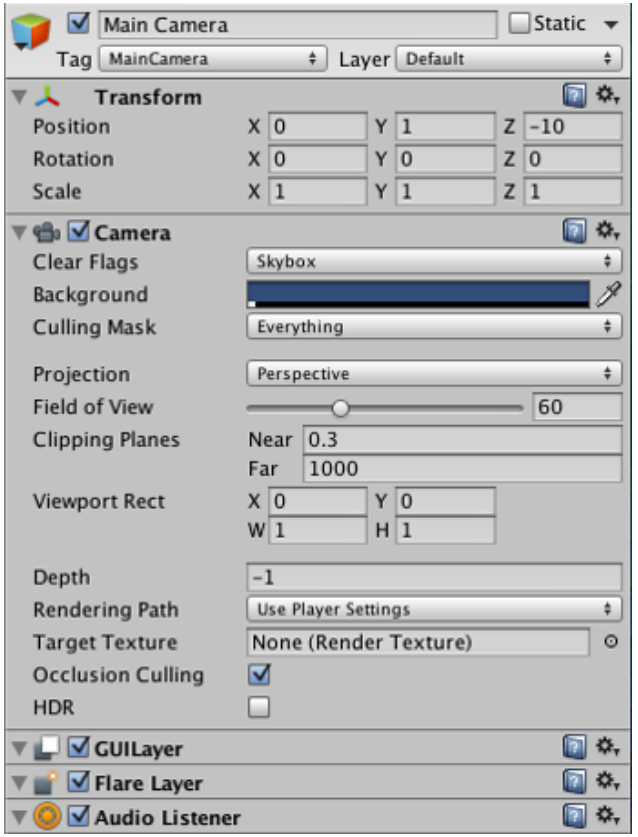
Building Scenes

- Use GameObjects:
  - Containers that hold different components
    - Eg 3D model, texture, animation
- Use Inspector
  - View and edit object properties and other settings
- Use Scene View
  - Position objects, camera, lights, other GameObjects etc
- Scripting
  - Adding interaction, user input, events, etc

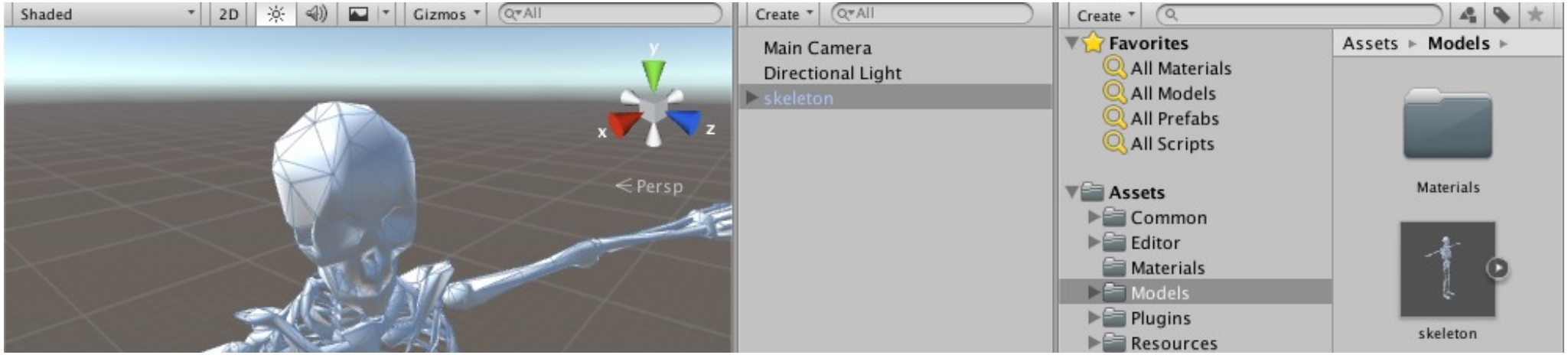
GameObjects

- Every object in Scene is a GameObject
- GameObjects contain Components
  - Eg Transform Component, Camera Component



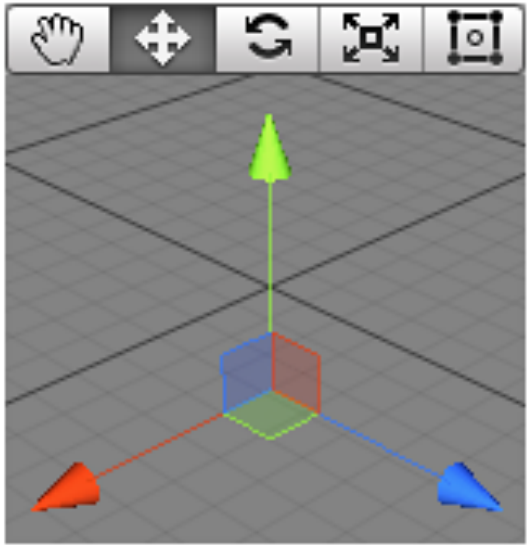


Adding 3D Content

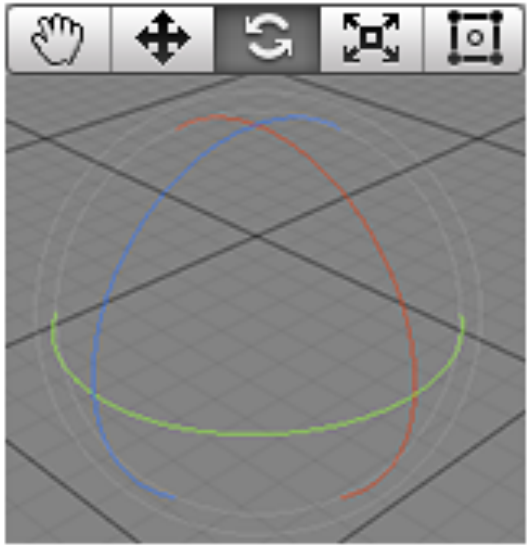


- Create 3D asset using modeling package, or download
  - Fbx, Obj file format for 3D models
- Add file to Assets folder in Project
- When project opened 3D model added to Project View
- Drag mesh from Project View into Hierarchy or Scene View
  - Creates a game object

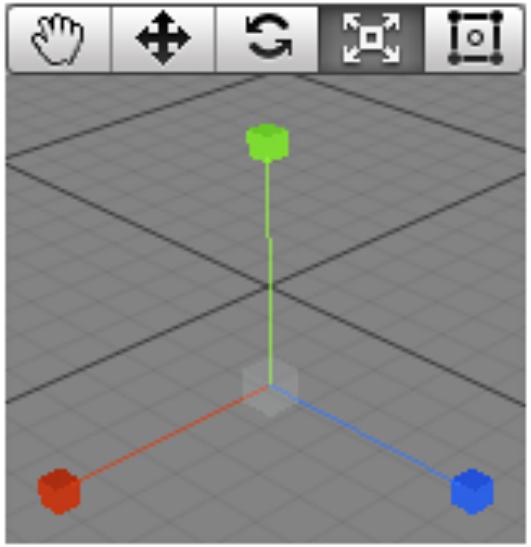
Positioning/Scaling Objects



Translate (W)



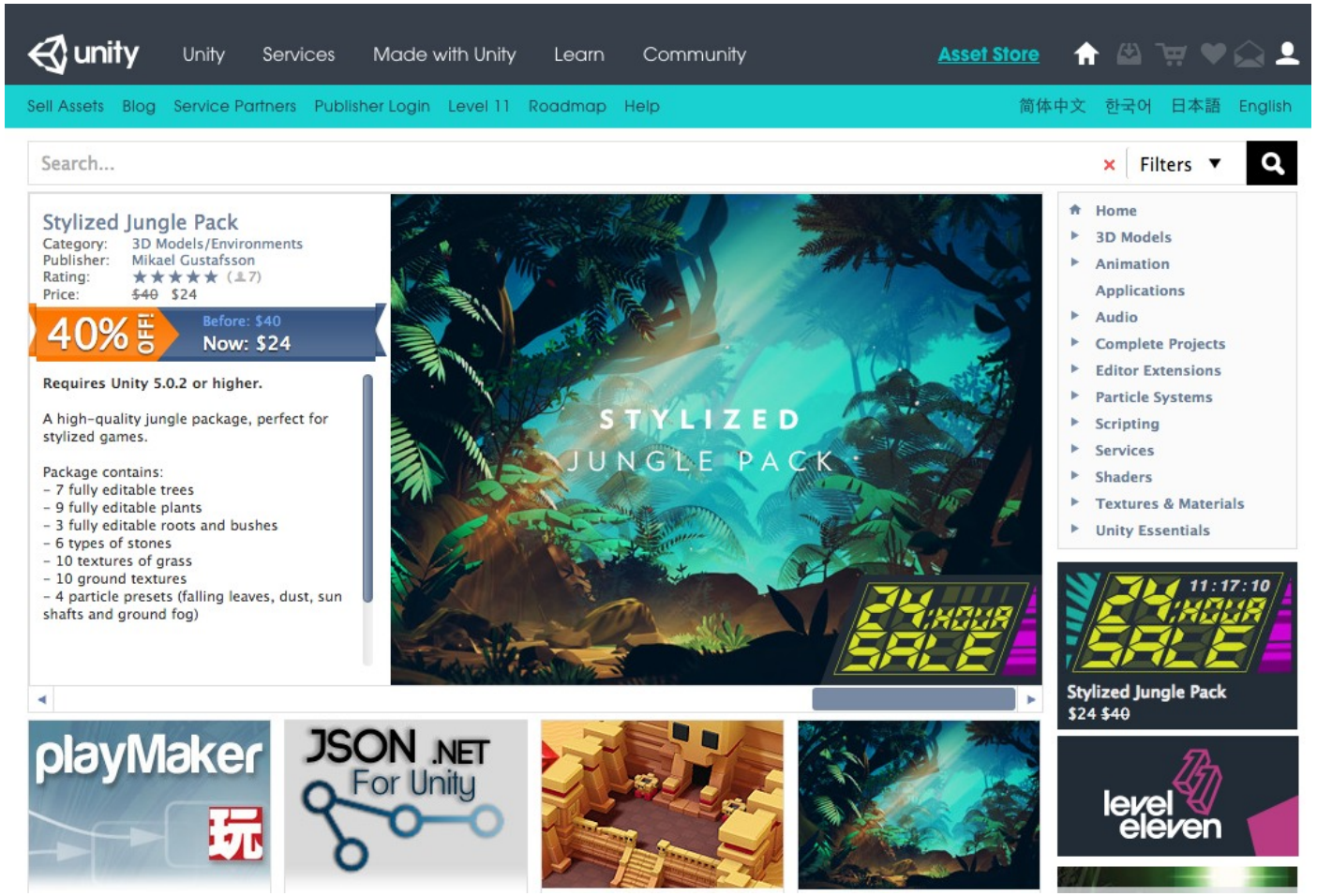
Rotate (E)



Scale (R)

- Click on object and choose transform

Unity Asset Store



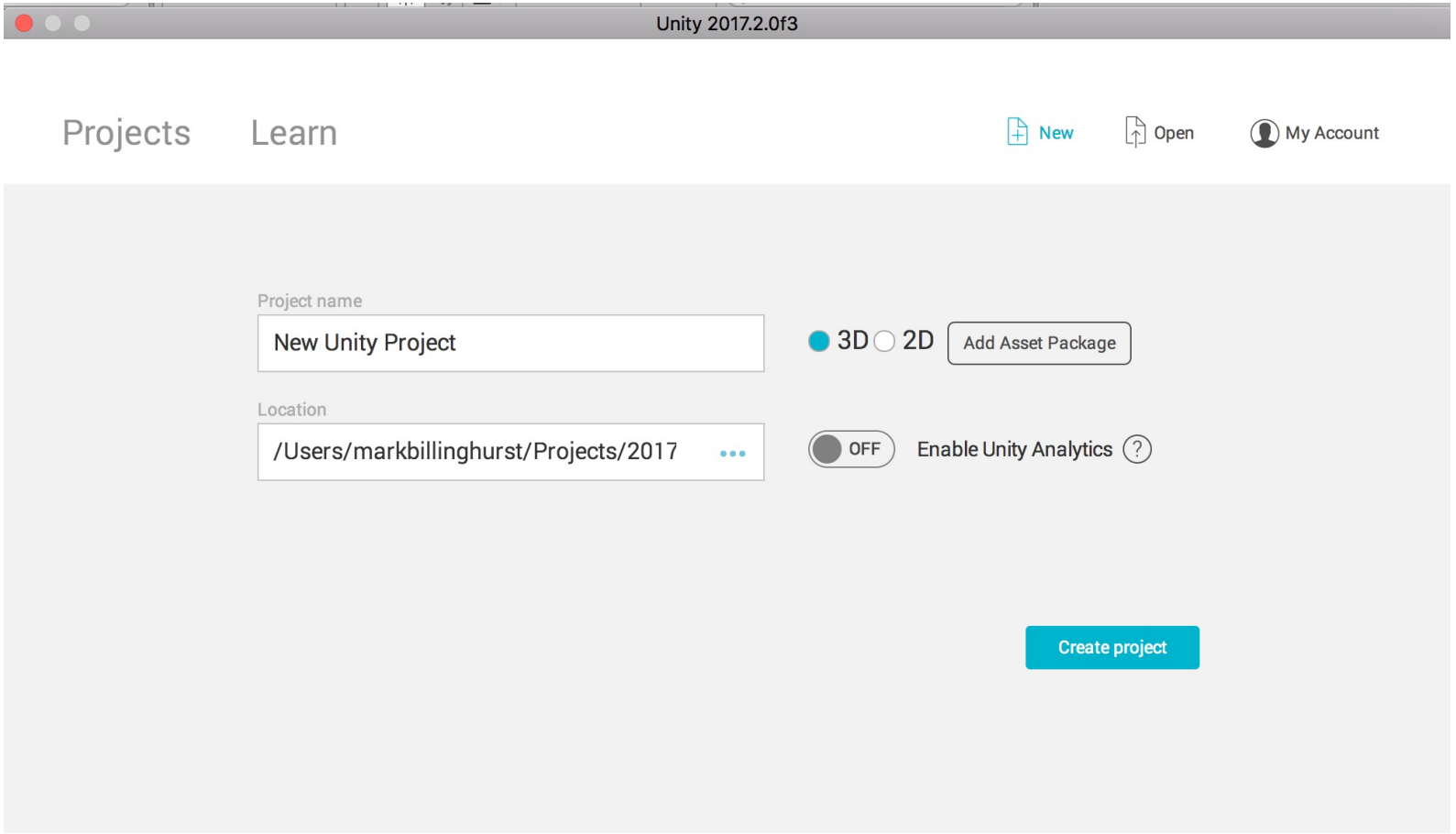
- Download thousands models, scripts, animations, etc
- https://www.assetstore.unity3d.com/

UNITY BASICS

Making a Simple Scene

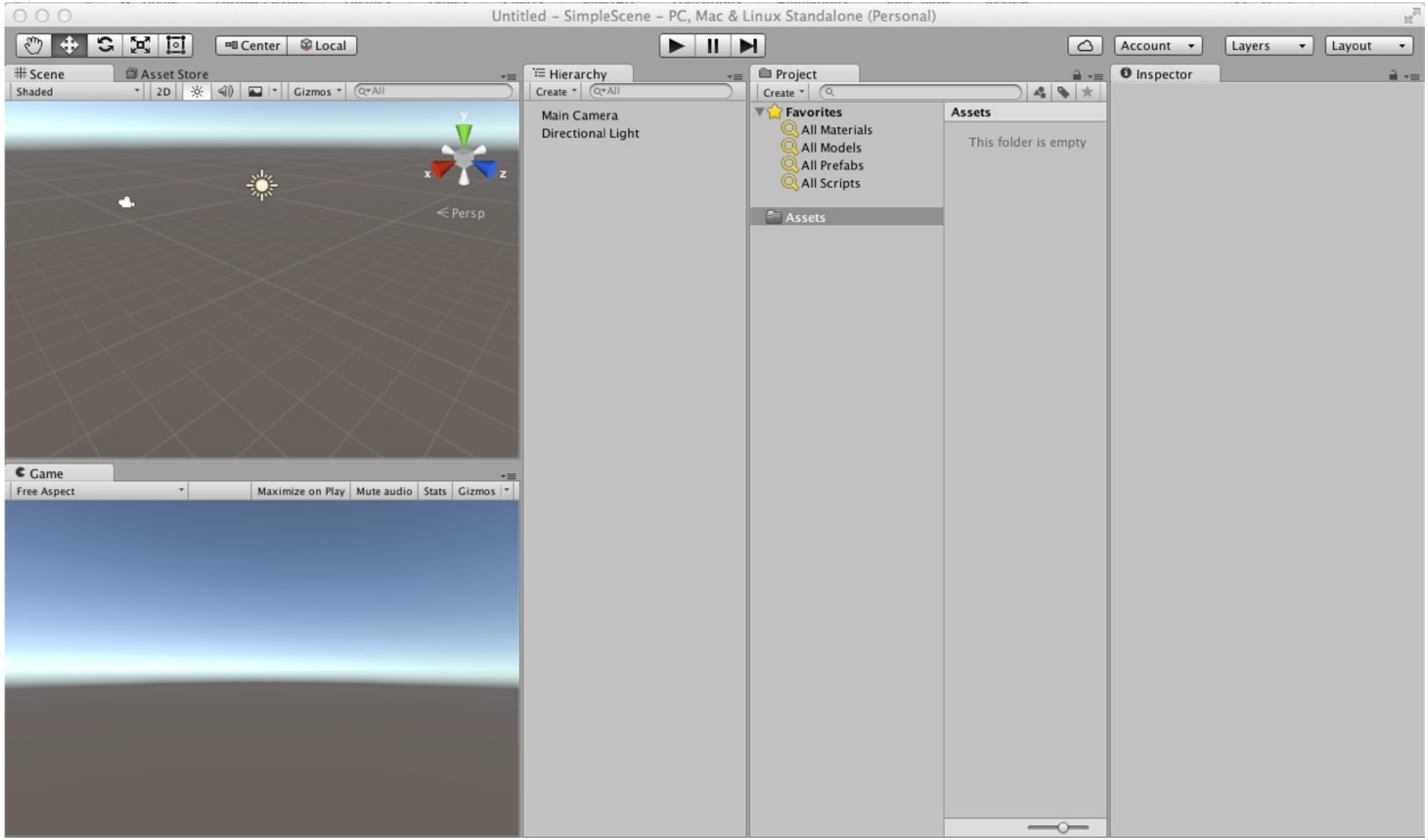
1. Create New Project
2. Create Game Object
3. Moving main camera position
4. Adding lights
5. Adding more objects
6. Adding physics
7. Changing object materials
8. Adding script behaviour

Create Project

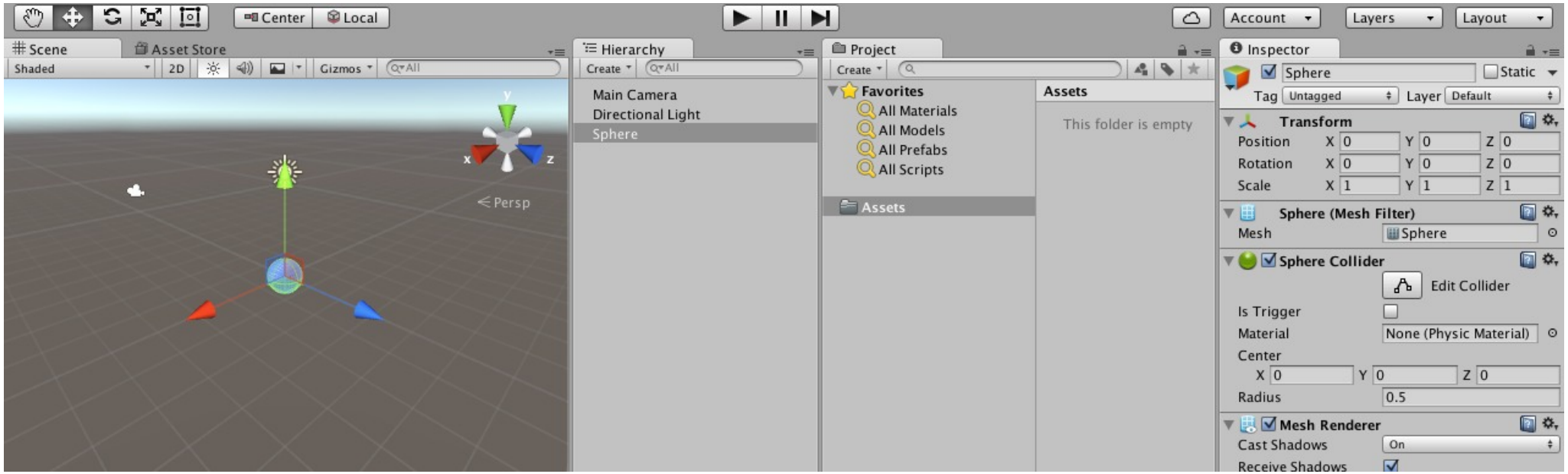


- Create new folder and project

New Empty Project

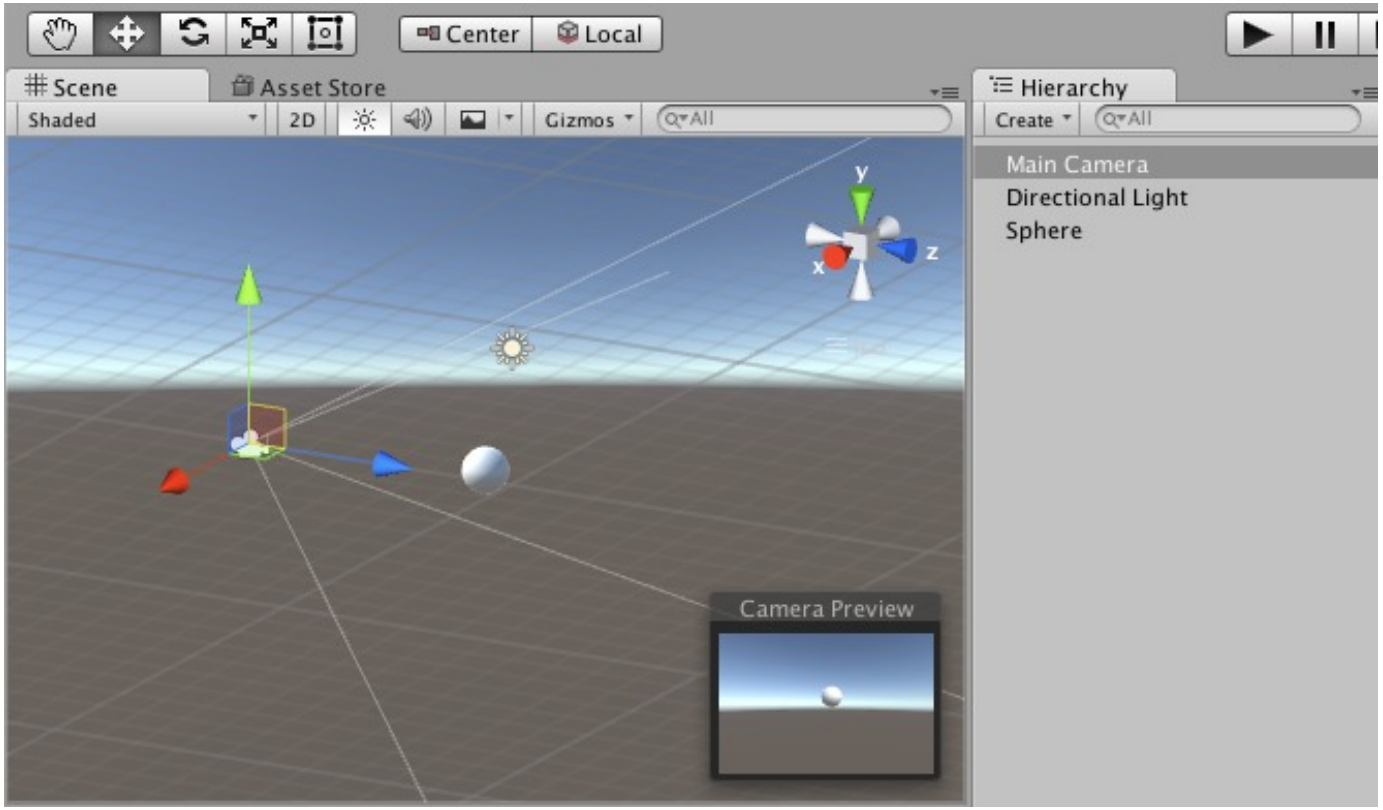


Create GameObject



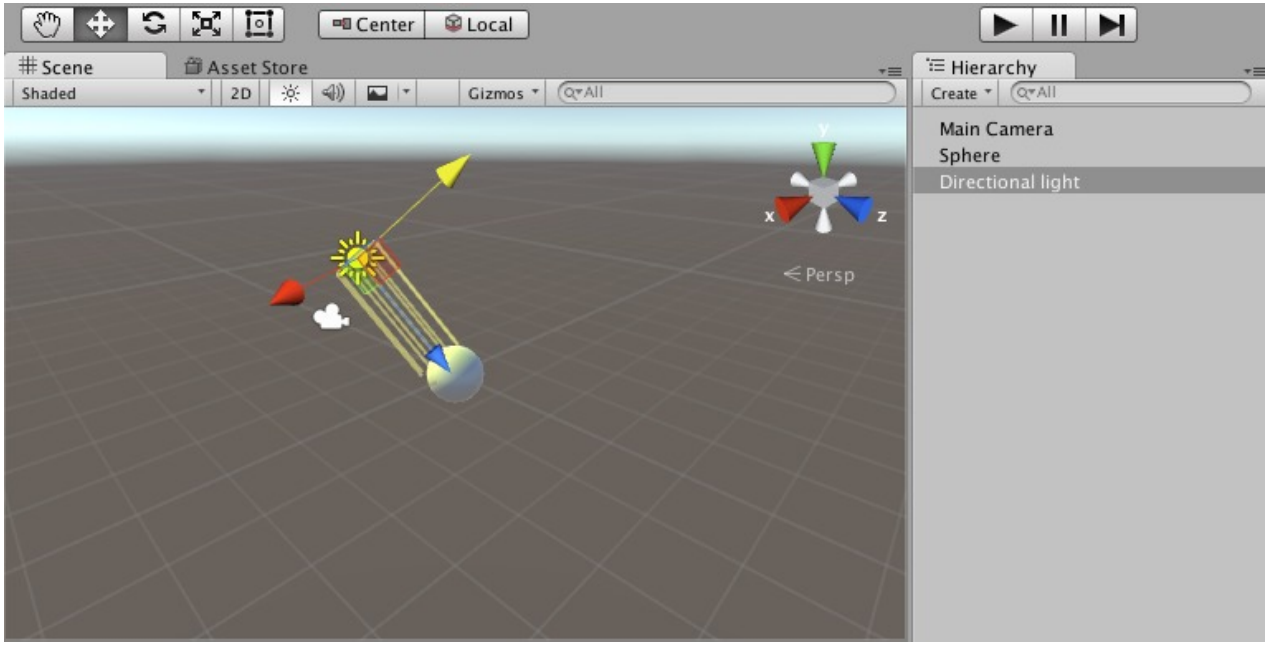
- Load a Sphere into the scene
- GameObject -> 3D Object -> Sphere

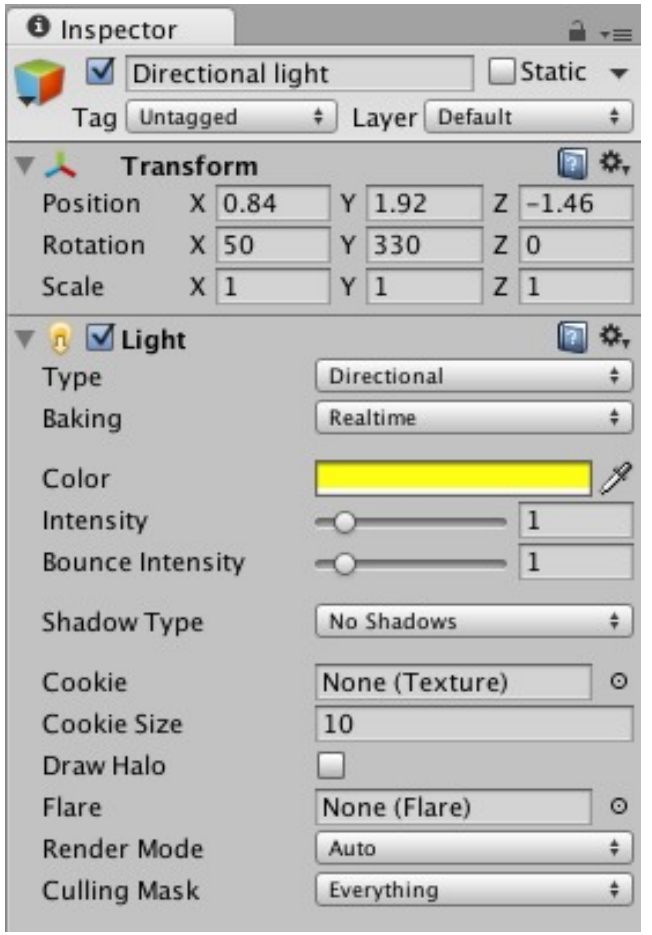
Moving main camera



- Select Main Camera
- Select translate icon
- Move camera

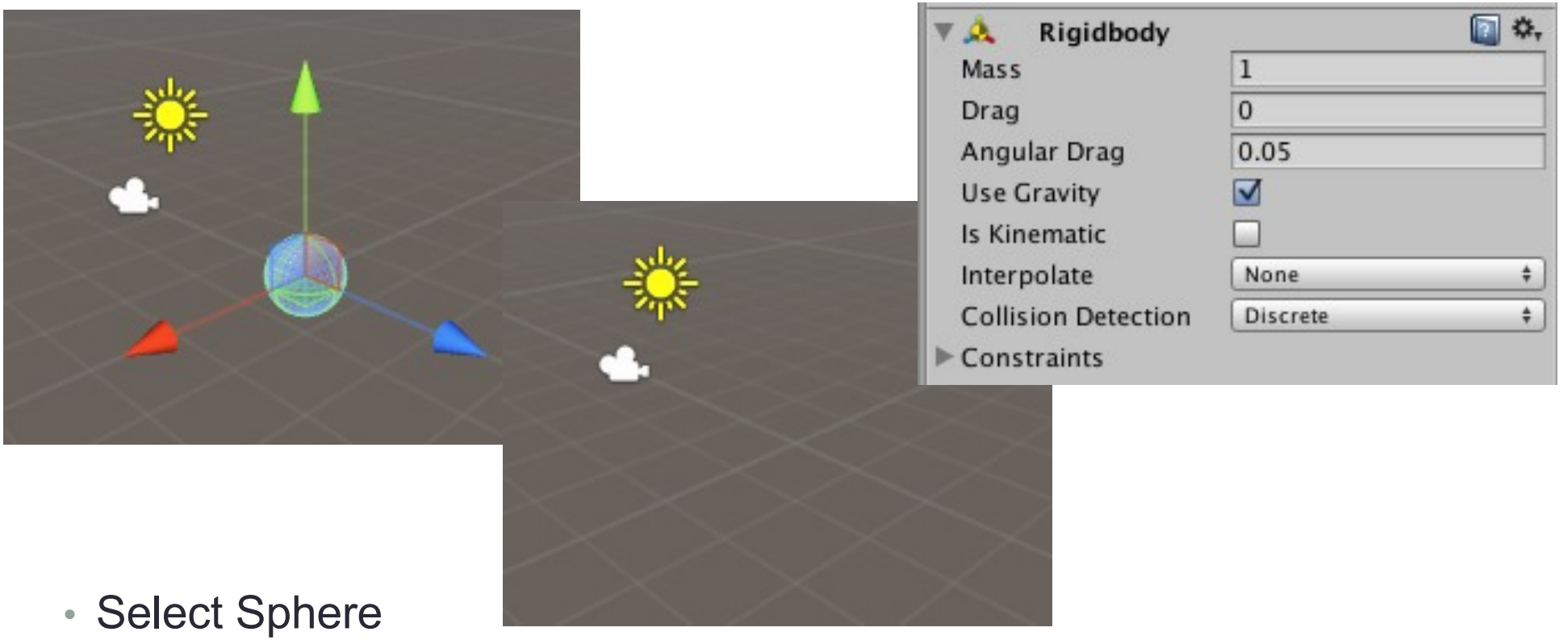
Add Light





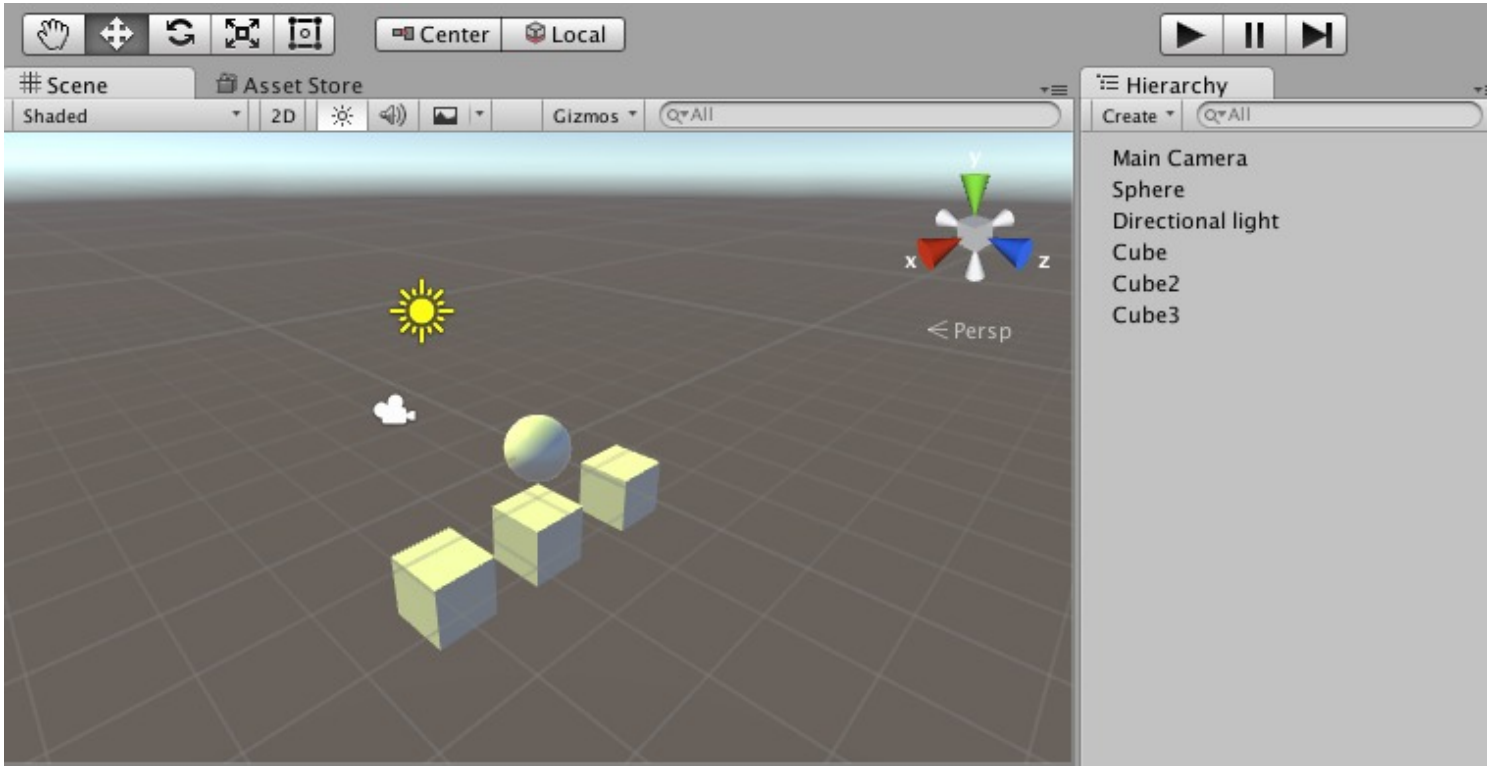
- GameObject -> Light -> Directional Light
- Use inspector to modify light properties (colour, intensity)

Add Physics



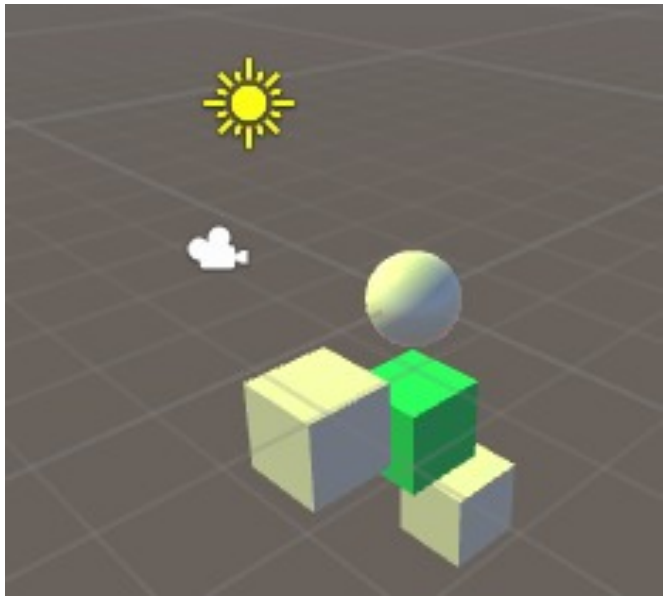
- Select Sphere
- Add Rigidbody component
  - Add Component -> Physics -> RigidBody
  - or Component -> Physics -> RigidBody
- Modify inspector properties (mass, drag, etc)

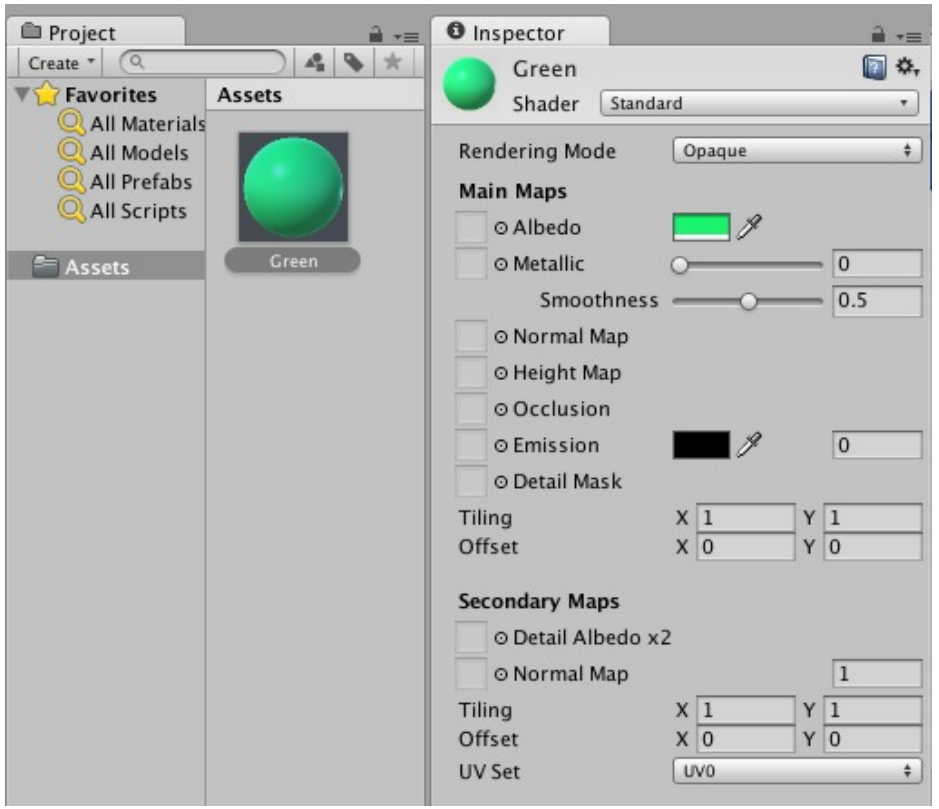
Add More Objects



- Add several cubes
  - GameObject -> 3D Object – Cube
- Move cube
- Add Rigid Body component (uncheck gravity)

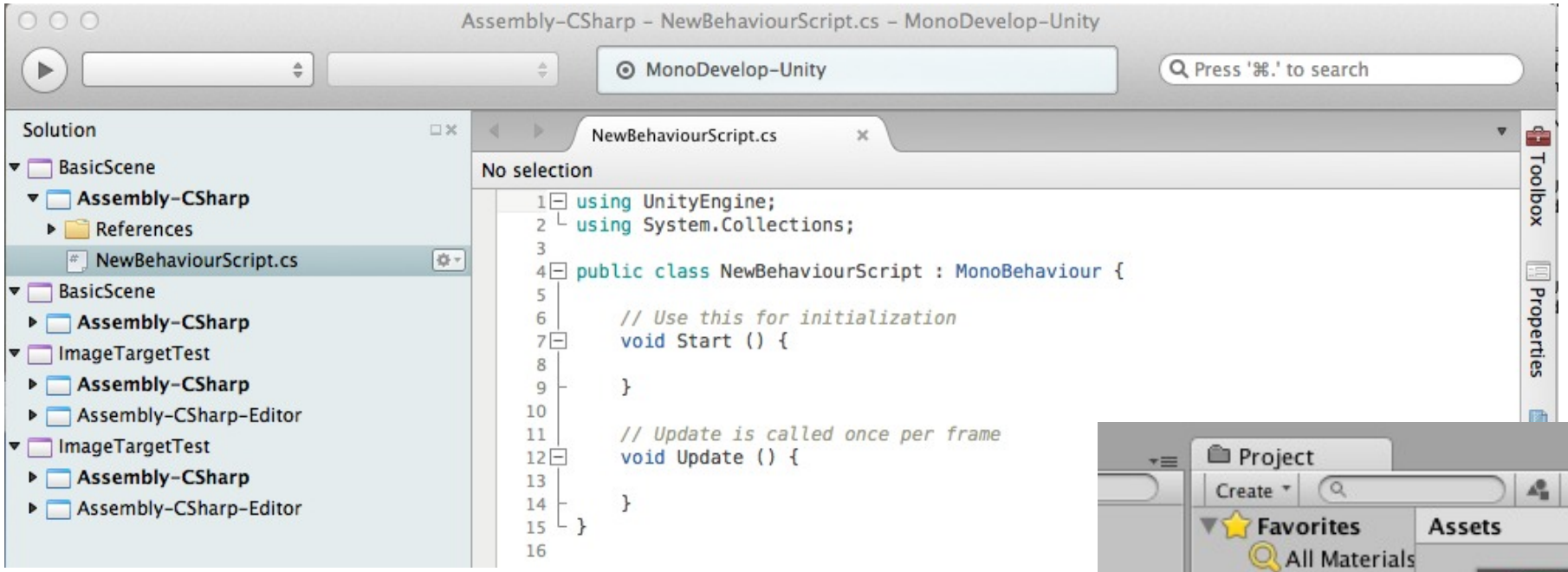
Add Material

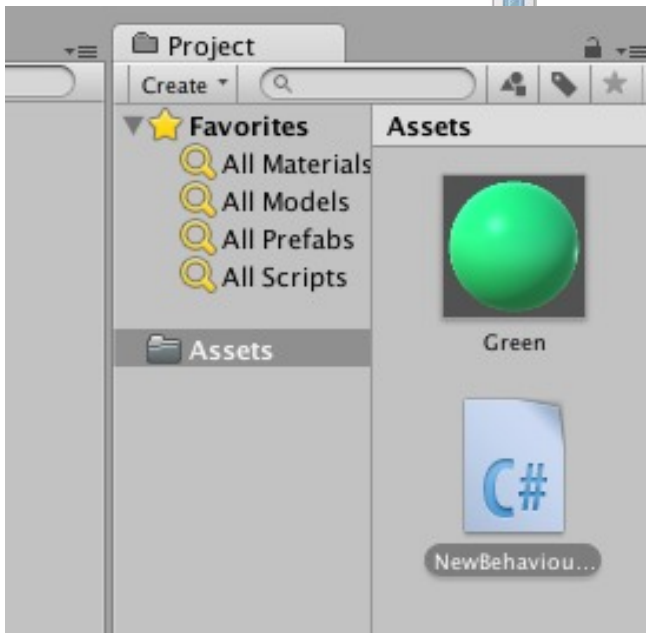




- Assets -> Create -> Material
- Click Albedo colour box in inspector
- Select colour
- Drag asset onto object to apply

Add Script





- Assets -> Create -> C# script
- Edit script using Mono
- Drag script onto Game Object

Example C# Script

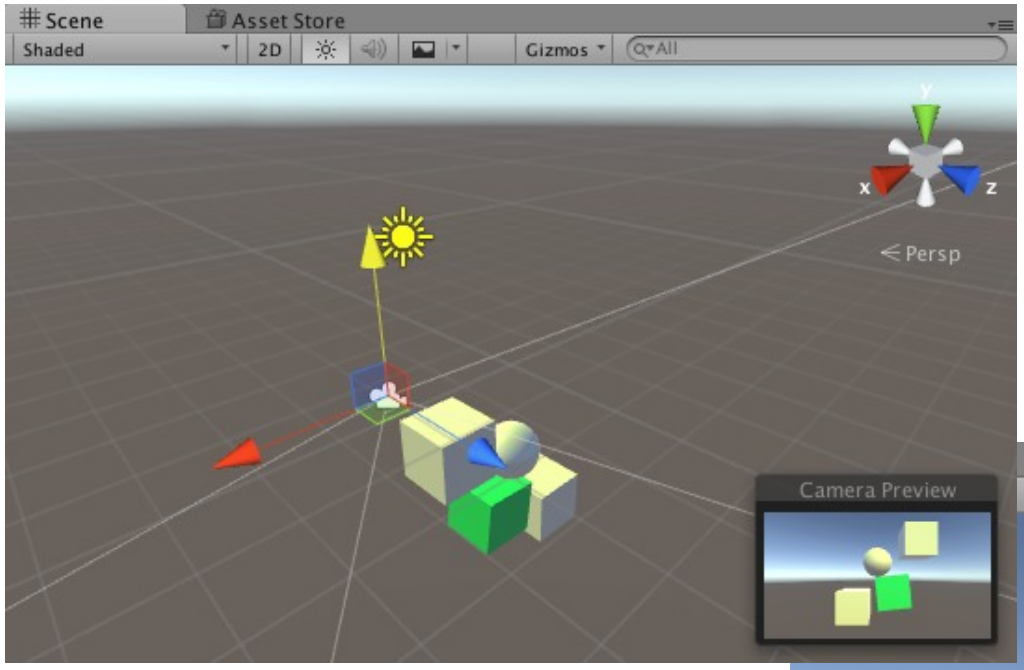
GameObject Rotation

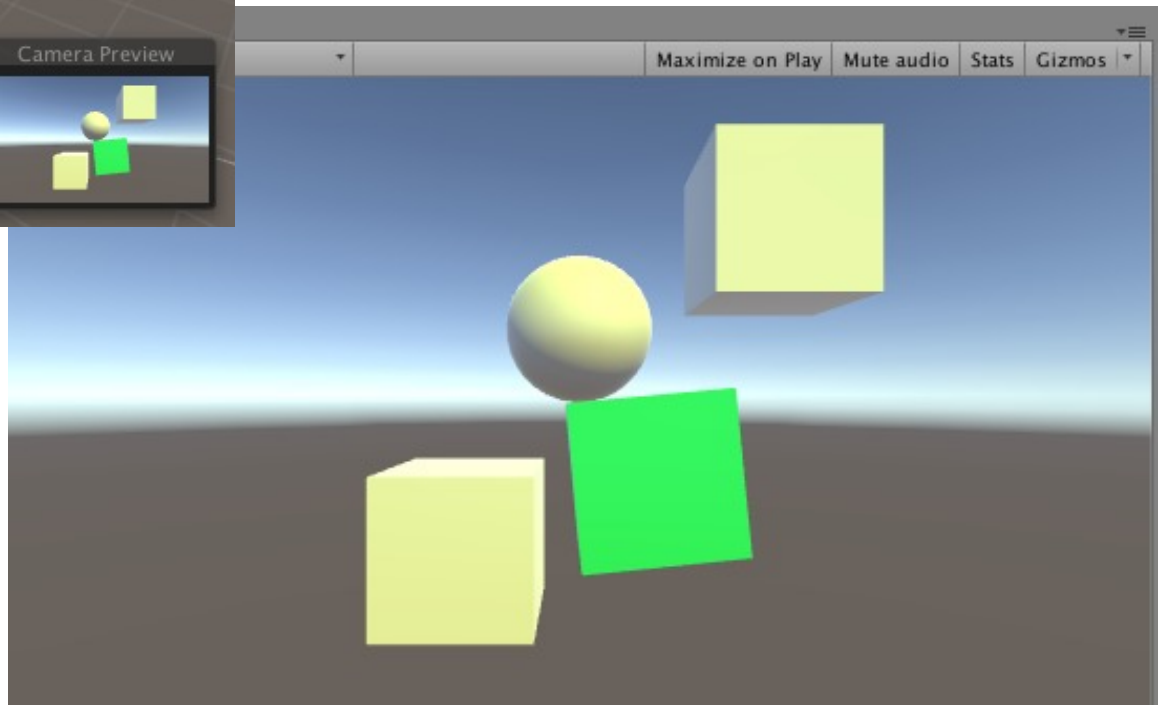
```
using UnityEngine;
using System.Collections;

public class spin : MonoBehaviour {

    // Use this for initialization
    void Start () {

    }

    // Update is called once per frame
    void Update () {
        this.gameObject.transform.Rotate(Vector3.up*10);
    }
}
```

Scripting C# Unity 3D

- void Awake():
  - Is called when the first scene is loaded and the game object is active
- void Start():
  - Called on first frame update
- void FixedUpdate():
  - Called before physics calculations are made
- void Update():
  - Called every frame before rendering
- void LateUpdate():
  - Once per frame after update finished

Final Spinning Cube Scene





Resources

- Unity Main site
  - http://www.unity3d.com/
- Holistic Development with Unity
  - http://holistic3d.com
- Official Unity Tutorials
  - http://unity3d.com/learn/tutorials
- Unity Coder Blog
  - http://unitycoder.com