

Daydreaming about Cardboards

Virtual Reality in Android



- 🔑: headless CMS: contentful.com
- 🐦: [@MarioBodemann](https://twitter.com/MarioBodemann)
- 📄: bit.ly/mbvrberlin
 - Please interrupt 🚫 🗑️ !

Agenda

- Daydreaming about Cardboards**
Virtual Reality in Android
- contentful**
 - [CMS: contentful.com](#)
 - [@MarioBodermann](#)
 - [bit.ly/mvrbberlin](#)
 - Please interrupt
- Cardboard**

Cardboard
- Google Cardboard**
 - easy to produce
 - available from different companies
 - in different styles/interactions
 - You just need a phone™
- How does Cardboard work?**
 - use 3D data and movement to draw two images
 - one for the left and right eye
 - contains Lenses to move things away
 - brain combines image to 3D scene
- How do I write a Unity App?**

Prerequisites

 - clone Googles github for unity
<https://github.com/googlevr/gvr-unity-sdk> repository
 - install and open Unity
 - <https://store.unity.com/>
 - <http://forum.unity3d.com/threads/unity-on-linux-release-notes-and-known-issues.350256/>
- Daydream**

Daydream
- Daydream SDK features**
 - Same as Cardboard SDK
 - Controlling the controller
 - orientation/acceleration
 - input (Clickpad: xy, clicked, App Button, Vol+/-)
 - spatial audio engine



Cardboard

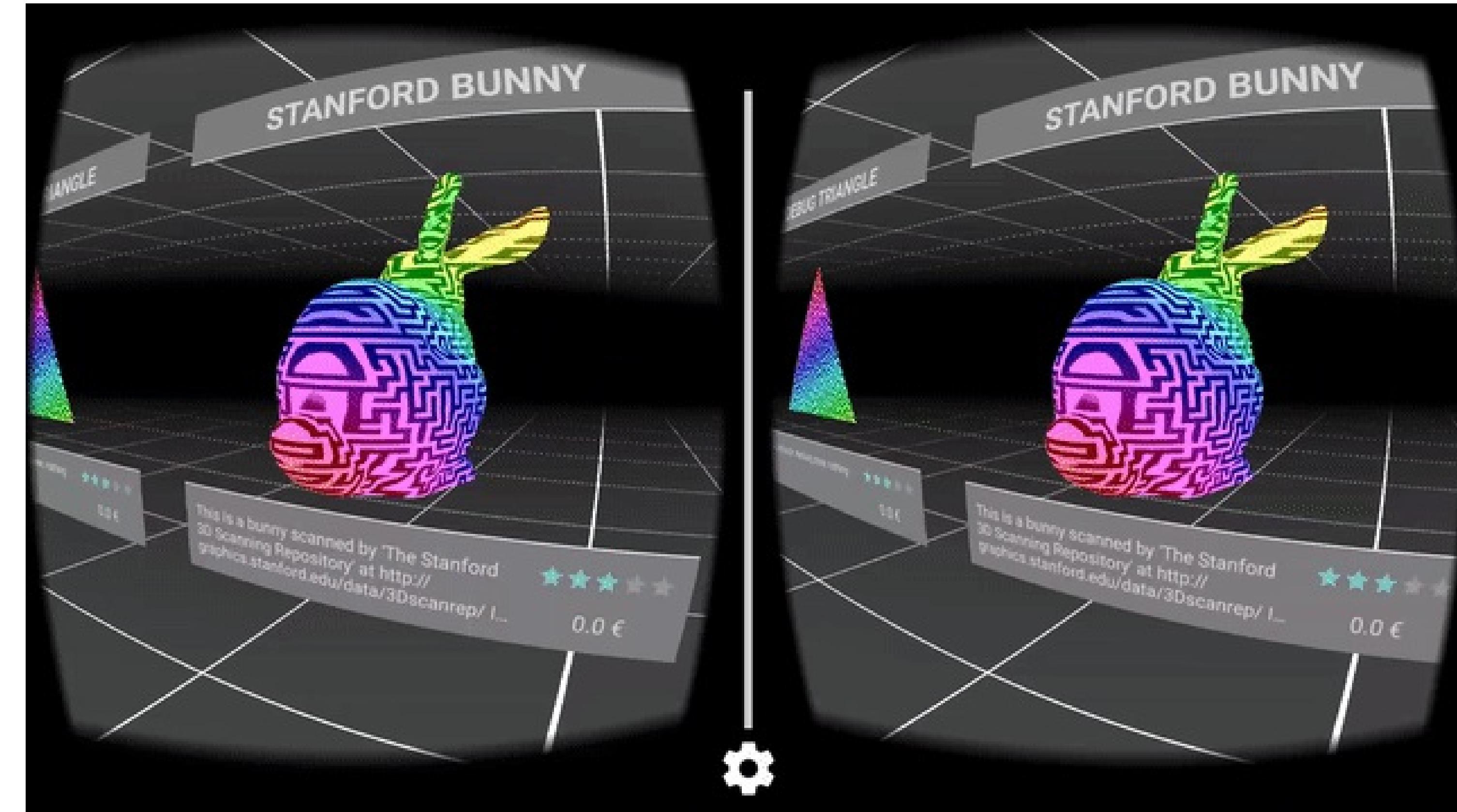
Google Cardboard

- easy to produce
- available from different companies
- in different styles/interactions
- You just need a phone™



How does Cardboard work?

- use 3D data and movement to draw two images
 - one for the left and right eye
- contains Lenses to move things away
- brain combines image to 3D scene



How do you program for it?

Googles SDK are available for

- Android (OpenGL)
- IOS (Objective C)
- Unity Engine (C# /JS) x ( , G,  , )

What do those SDKs provide?

- lens distortion correction
- spatial audio
- head tracking
- 3D calibration
- side-by-side rendering

What else do they provide?

- stereo geometry configuration
- user input event handling
- see developer.google.com/vr/android/

How do I write a Unity App?



Prerequisites

- clone Googles github for unity
<https://github.com/googlevr/gvr-unity-sdk> repsoitory
- install and open Unity
 -  / https://store.unity.com/
 - : <http://forum.unity3d.com/threads/unity-on-linux-release-notes-and-known-issues.350256/>

Home



Projects

Getting started



NEW



OPEN



MY ACCOUNT

Create a project

New project

Home X

Projects Getting started [!\[\]\(ba218b8bc7f0c42a9b13f44068c96eb1_img.jpg\) NEW](#) [!\[\]\(0fed360cfcf5740e19977519b65dbe34_img.jpg\) OPEN](#) [!\[\]\(87a34fc17dd3210c87169e511b89bf86_img.jpg\) MY ACCOUNT](#)

Project name* 3D 2D [Add Asset Package](#)

Location* [ON](#) [Enable Unity Analytics](#) 

Organization* [Cancel](#) [Create project](#)

File Edit Assets GameObject Component Help Window



Hierarchy

Create Untitled
Main Camera
Directional Light



Scene Game Asset Store

Shaded 2D 3D Audio

Gizmos

Cloud Account Layers Layout

i Inspector Services

Go to Dashboard



Cardboard Sample

SERVICES

Unity provides you a suite of integrated services for creating games, increasing productivity and managing your audience.

[SERVICES](#) [MEMBERS](#) [AGE DESIGNATION](#) [SETTINGS](#)

Collaborate

Create together seamlessly

In-App Purchasing

Simplify cross-platform IAP

Ads

Monetize your games

Multiplayer

Easily implement multiplayer

Analytics

Discover player insights

Performance Reporting

Discover app errors

Cloud Build

Build games faster

Project Console

Create

Favorites

- All Materials
- All Models
- All Prefabs
- All Scripts

Assets

This folder is empty

Assets

Shaded | 2D | ☼ | ⌛ | 🔍 | Gizmos | Qt All



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This folder is empty

Cardboa SERVICES

Unity provides you
increasing productivit

SERVICES

Collaboration
Create together se

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Simplify cross-plat

Ads
Monetize your game

Multiplayer
Easily implement m

Analytics
Discover player insig

Performance
Discover app errors

Cloud Bu

File Edit Assets GameObject Component Help Window

Create Empty Shift+Ctrl+N
Create Empty Child Shift+Alt+N
3D Object
2D Object
Light
Audio
UI
Particle System
Camera
Center On Children
Make Parent
Clear Parent
Apply Changes To Prefab
Break Prefab Instance
Set as first sibling
Set as last sibling
Move To View Ctrl+Alt+F
Align With View Shift+Ctrl+F
Align View to Selected
Toggle Active State Shift+Alt+A

GameObject menu open, showing options for creating 3D objects like Cube, Sphere, Capsule, Cylinder, Plane, Quad, Ragdoll..., Terrain, Tree, Wind Zone, and 3D Text. The "Plane" option is selected.

Game View: A 3D scene with a sun icon and a small white cloud icon. A 3D grid is visible in the background. A camera and directional light are present in the Hierarchy panel.

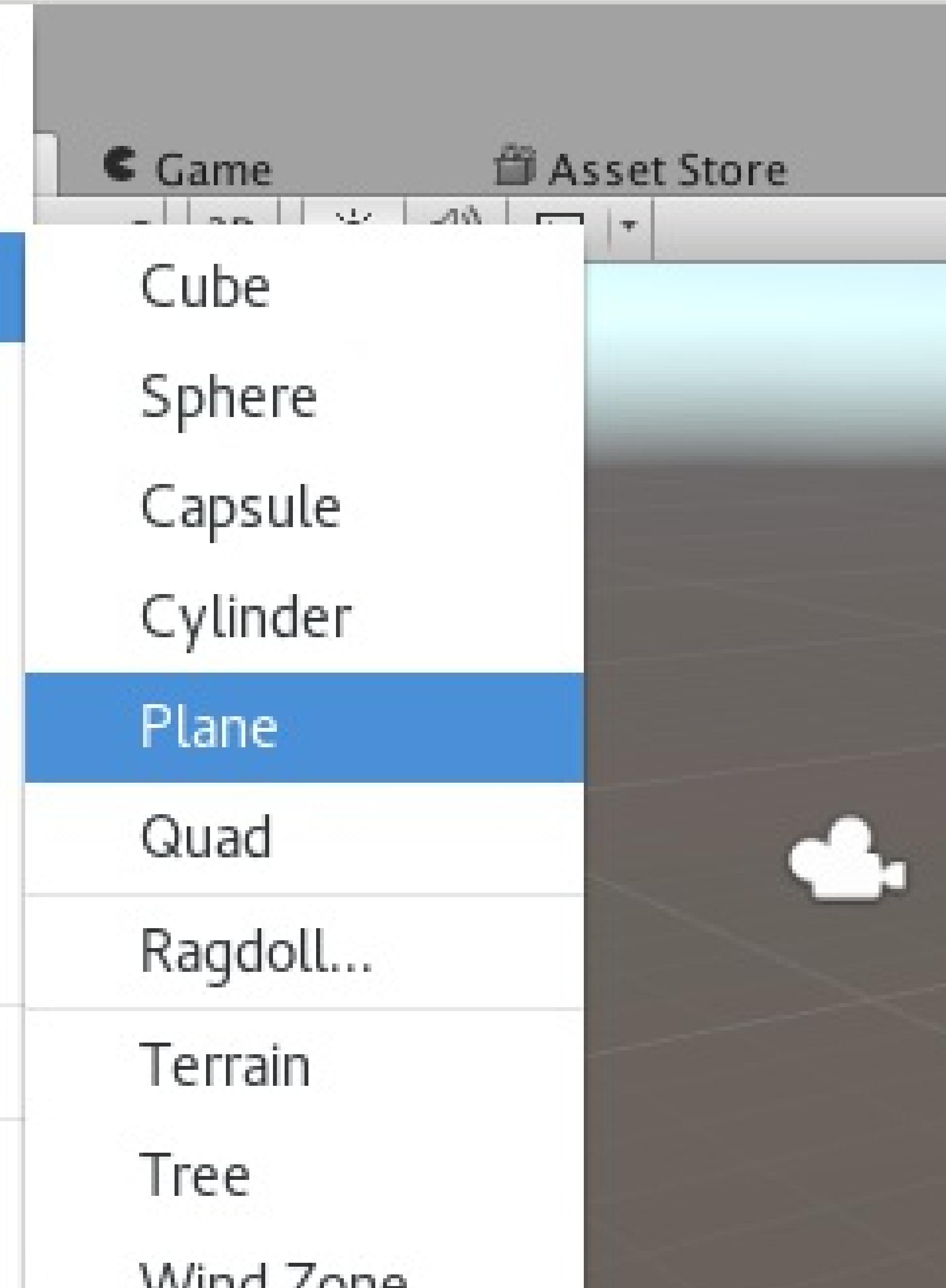
Project View: Favorites folder containing All Materials, All Models, All Prefabs, and All Scripts. An empty Assets folder is also present.

Asset Store: Game tab selected, showing Game, Asset Store, and Gizmos tabs. A search bar and filter buttons are at the top.

Inspector: Services tab selected, showing integrated services: Collaborate (OFF), In-App Purchasing (OFF), Ads (OFF), Multiplayer (ON), Analytics (ON), Performance Reporting (OFF), and Cloud Build (OFF). A "Cardboard Sample" section is also present.



- Create Empty Shift+Ctrl+N
- Create Empty Child Shift+Alt+N
- 3D Object**
- 2D Object
- Light
- Audio
- UI
- Particle System
- Camera
- Center On Children
- Make Parent
- Clear Parent



File Edit Assets GameObject Component Help Window



Hierarchy

Create Untitled*

Main Camera
Directional Light
Plane



Scene Game Asset Store

Gizmos

All

Shaded

2D

Lights

Sounds

Materials

Textures

Prefabs

Scriptable Objects

Plugins

Build Settings

Project Settings

Editor Settings

Help

Log

Output

Console

Find

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File Edit Assets GameObject Component Help Window



Center

Local



Cloud Account Layers Layout

Hierarchy

Create

Q>All

Untitled*

Main Camera

Directional Light

Plane

Scene Game Asset Store

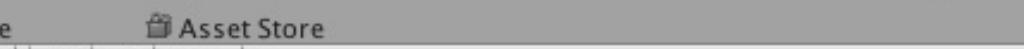
Shaded

2D

3D

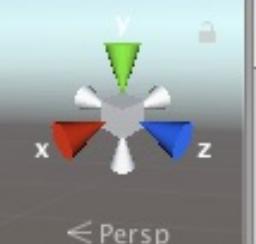
Gizmos

Q>All

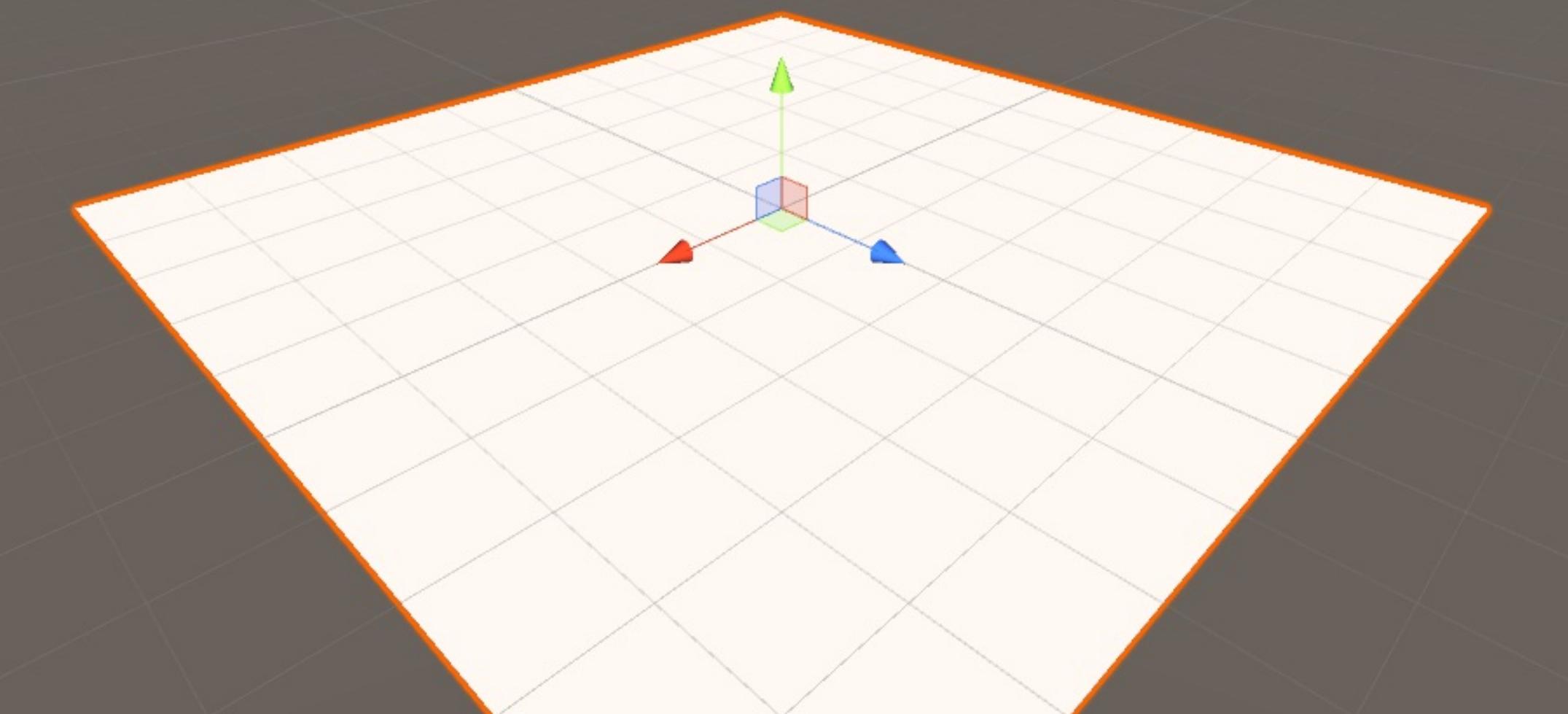


Gizmos

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Project

Create

Favorites

All Materials

All Models

All Prefabs

All Scripts

Assets

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Assets

Inspector Services

Plane

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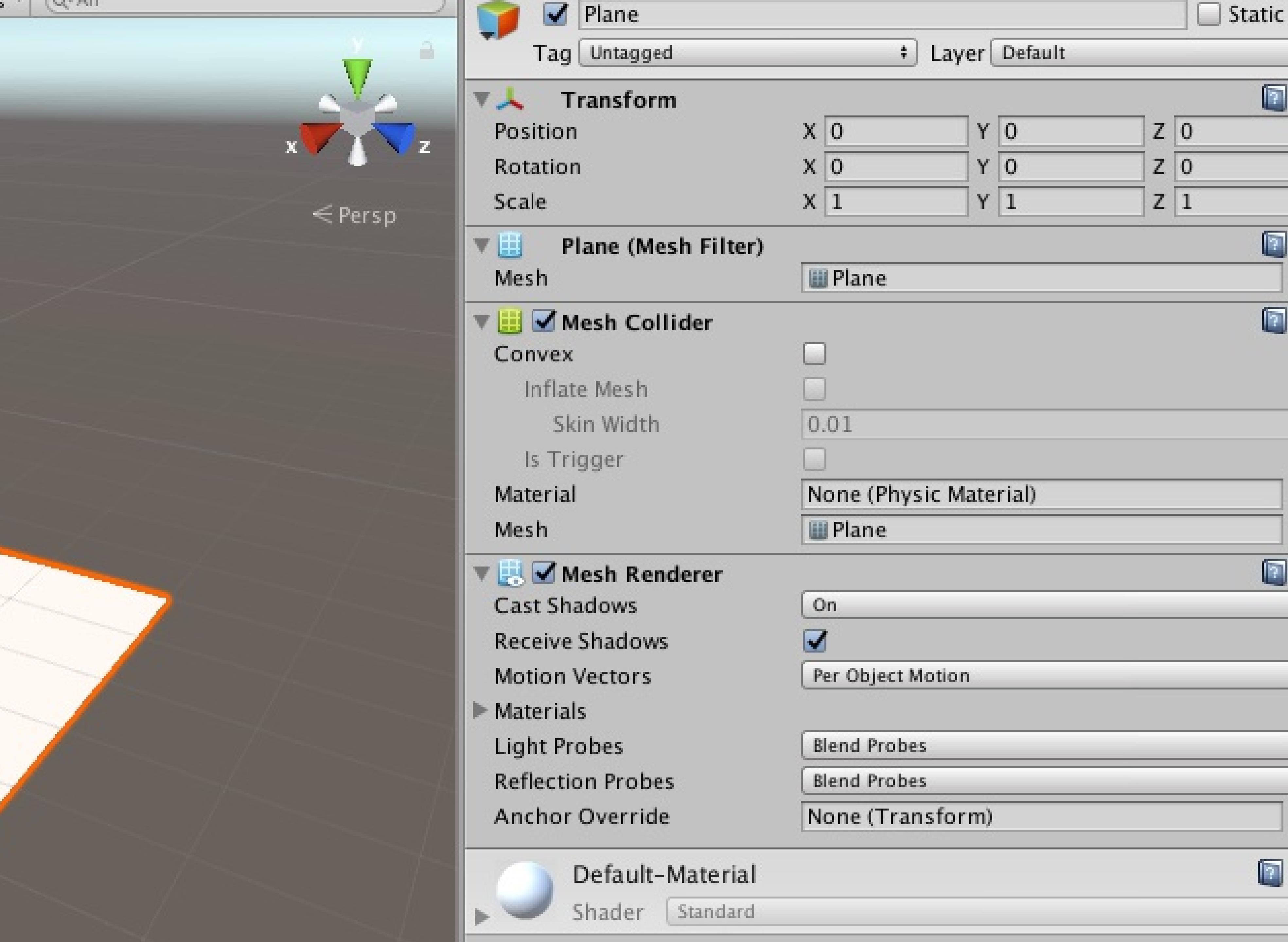
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File Edit Assets GameObject Component Help Window



Center Local



Cloud Account Layers Layout

Hierarchy

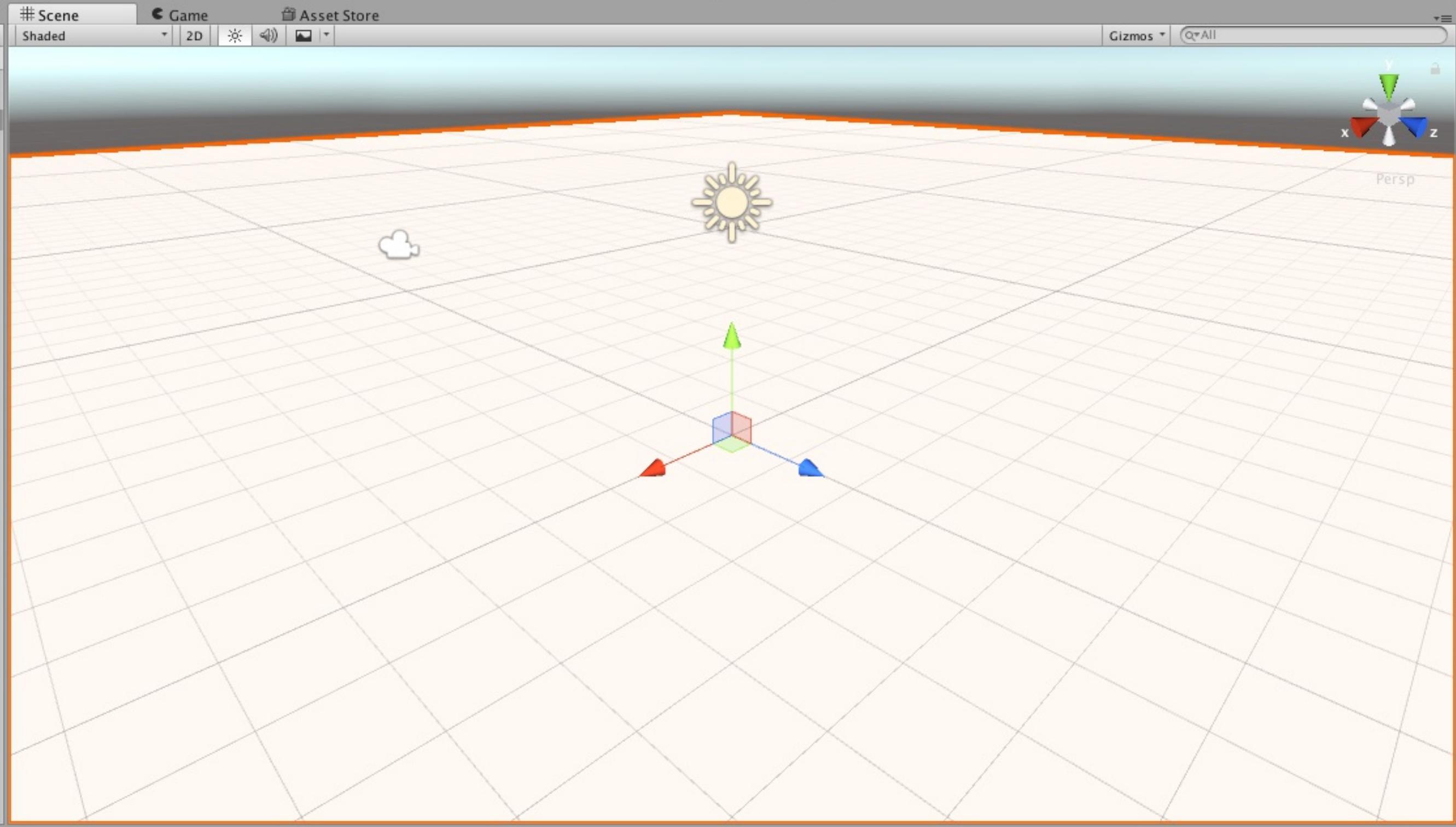
Create Q All

Untitled*

Main Camera

Directional Light

Plane



Inspector Services

Plane

Tag Untagged

Layer Default

Transform

Position X 0 Y 0 Z 0

Rotation X 0 Y 0 Z 0

Scale X 10 Y 1 Z 10

Plane (Mesh Filter)

Mesh Plane

Mesh Collider

Convex

Inflate Mesh

Skin Width 0.01

Is Trigger

Material None (Physic Material)

Mesh Plane

Mesh Renderer

Cast Shadows On

Receive Shadows

Motion Vectors Per Object Motion

Materials

Light Probes Blend Probes

Reflection Probes Blend Probes

Anchor Override None (Transform)

Default-Material

Shader Standard

Add Component

Project Console

Create

Favorites

All Materials

All Models

All Prefabs

All Scripts

Assets

Assets

This folder is empty

GameObject menu open, showing the "3D Object" submenu.

- Create Empty** (Shift+Ctrl+N)
- Create Empty Child** (Shift+Alt+N)
- 3D Object** (selected)
 - Cube**
 - Sphere**
 - Capsule**
 - Cylinder**
 - Plane**
 - Quad**
 - Ragdoll...**
 - Terrain**
 - Tree**
 - Wind Zone**
 - 3D Text**
- 2D Object**
- Light**
- Audio**
- UI**
- Particle System**
- Camera**
- Center On Children**
- Make Parent**
- Clear Parent**
- Apply Changes To Prefab**
- Break Prefab Instance**
- Set as first sibling**
- Set as last sibling**
- Move To View** (Ctrl+Alt+F)
- Align With View** (Shift+Ctrl+F)
- Align View to Selected**
- Toggle Active State** (Shift+Alt+A)

The Unity Editor interface includes:

- Hierarchy** panel (left): Shows the scene structure with Main Camera, Directional Light, and Plane objects.
- Game** view (center): A 3D perspective view showing a small cube at the origin, a sun-like sphere in the sky, and a cloud-like object.
- Inspector** panel (right): Shows the selected "Plane" object's properties. Position: X: 0, Y: 0, Z: 0; Scale: X: 10, Y: 1, Z: 10. Components include Transform, Mesh Filter (Plane), Mesh Collider (Convex), and Mesh Renderer (Cast Shadows checked).
- Project** panel (bottom-left): Favorites section shows All Materials, All Models, All Prefabs, and All Scripts.
- Assets** panel (bottom-right): Shows an empty Assets folder.

File Edit Assets GameObject Component Help Window



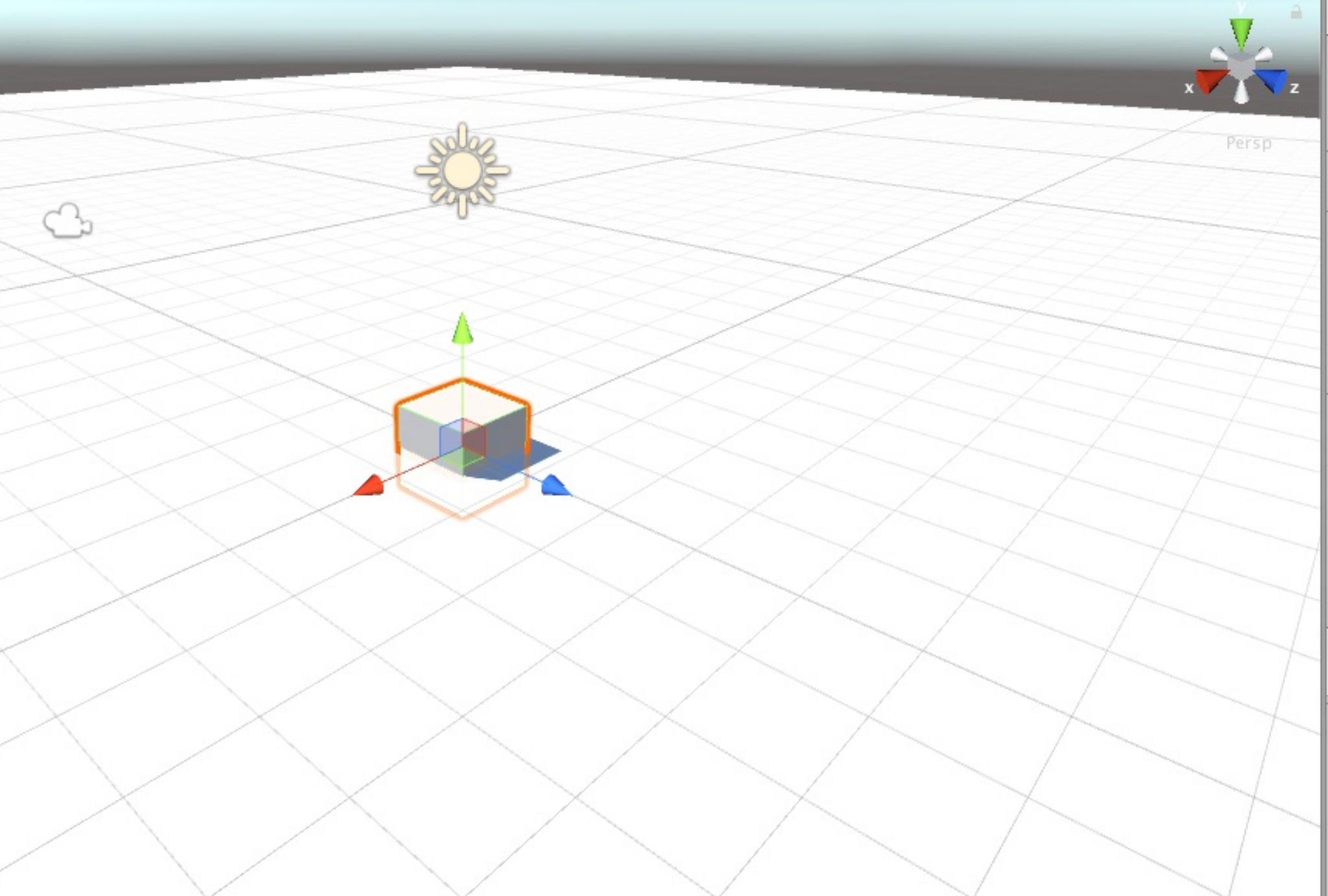
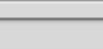
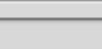
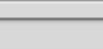
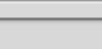
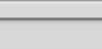
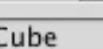
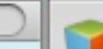
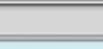
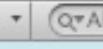
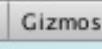
Hierarchy

Untitled*

- Main Camera
- Directional Light
- Plane
- Cube

Scene

Shaded 2D



Inspector

Cube

Tag Untagged

Layer Default

Transform

Position X 0 Y 0 Z 0

Rotation X 0 Y 0 Z 0

Scale X 1 Y 1 Z 1

Cube (Mesh Filter)

Mesh Cube

Box Collider

Edit Collider

Is Trigger

Material None (Physic Material)

Center X 0 Y 0 Z 0

Size X 1 Y 1 Z 1

Mesh Renderer

Cast Shadows On

Receive Shadows

Motion Vectors Per Object Motion

Materials

Light Probes Blend Probes

Reflection Probes Blend Probes

Anchor Override None (Transform)

Default-Material

Shader Standard

Add Component

Project

Create

Favorites

- All Materials
- All Models
- All Prefabs
- All Scripts

Assets

Assets

This folder is empty

Assets

File Edit Assets GameObject Component Help Window



Center Local



Cloud Account Layers Layout

Hierarchy

Create Q All
Untitled*
Main Camera
Directional Light
Plane
Cube

Scene Game Asset Store

Gizmos Q All

Shaded

2D

Lights

Audio

Image

Model

Text

UI

Light Probes

Reflection Probes

Anchor

Material

Shader

Component

Script

Resource

Folder

Link

File

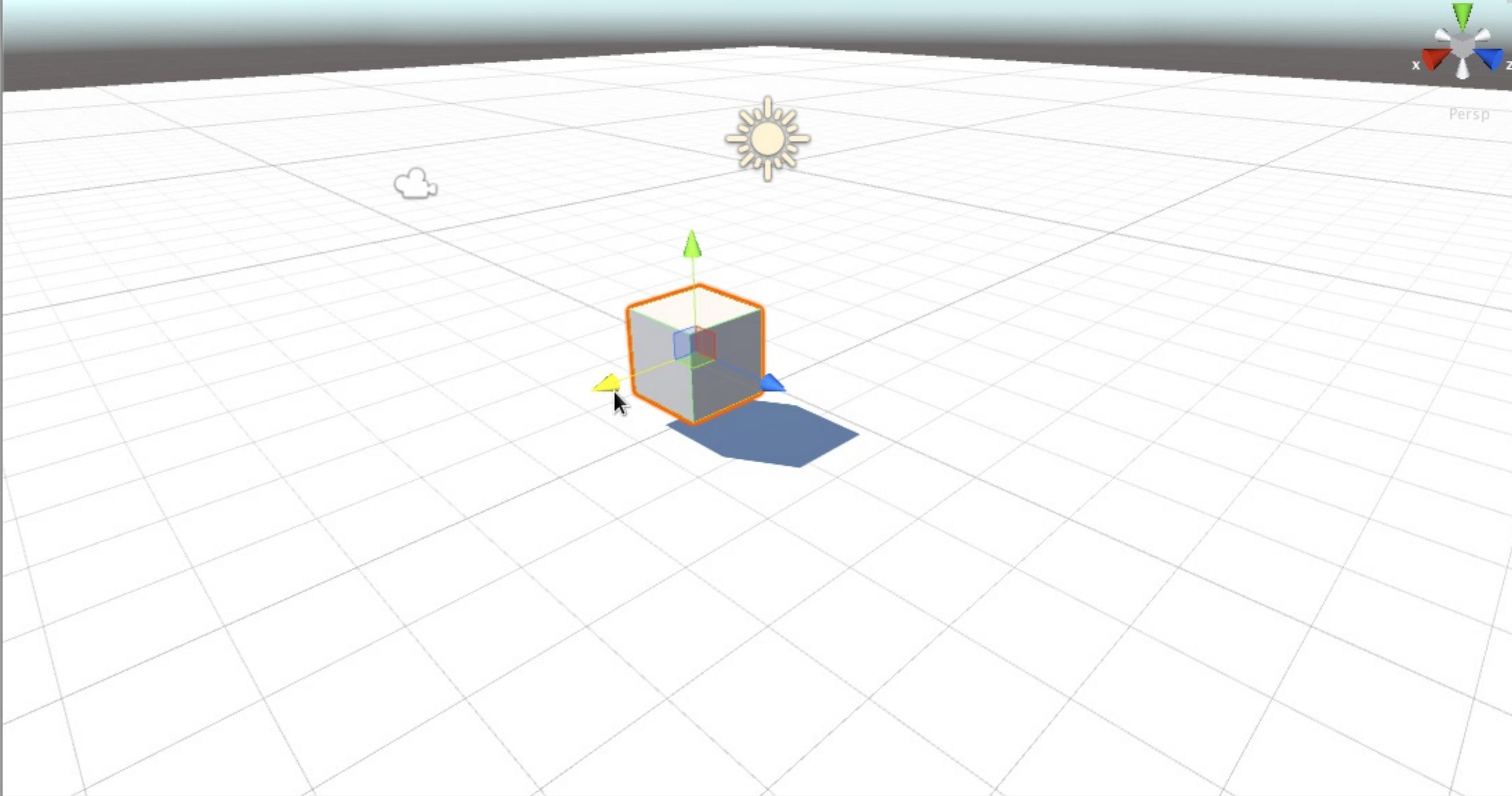
Import

Export

Find

Help

Window



Inspector Services

Cube

Tag Untagged

Layer Default

Static

Transform

Position X 1.22 Y 0.88 Z 0.11

Rotation X 0 Y 0 Z 0

Scale X 1 Y 1 Z 1

Cube (Mesh Filter)

Mesh Cube

Box Collider

Edit Collider

Is Trigger

Material None (Physic Material)

Center X 0 Y 0 Z 0

Size X 1 Y 1 Z 1

Mesh Renderer

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Reflection Probes Blend Probes

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Default-Material

Shader Standard

Add Component

Project Console

Create

Favorites

All Materials

All Models

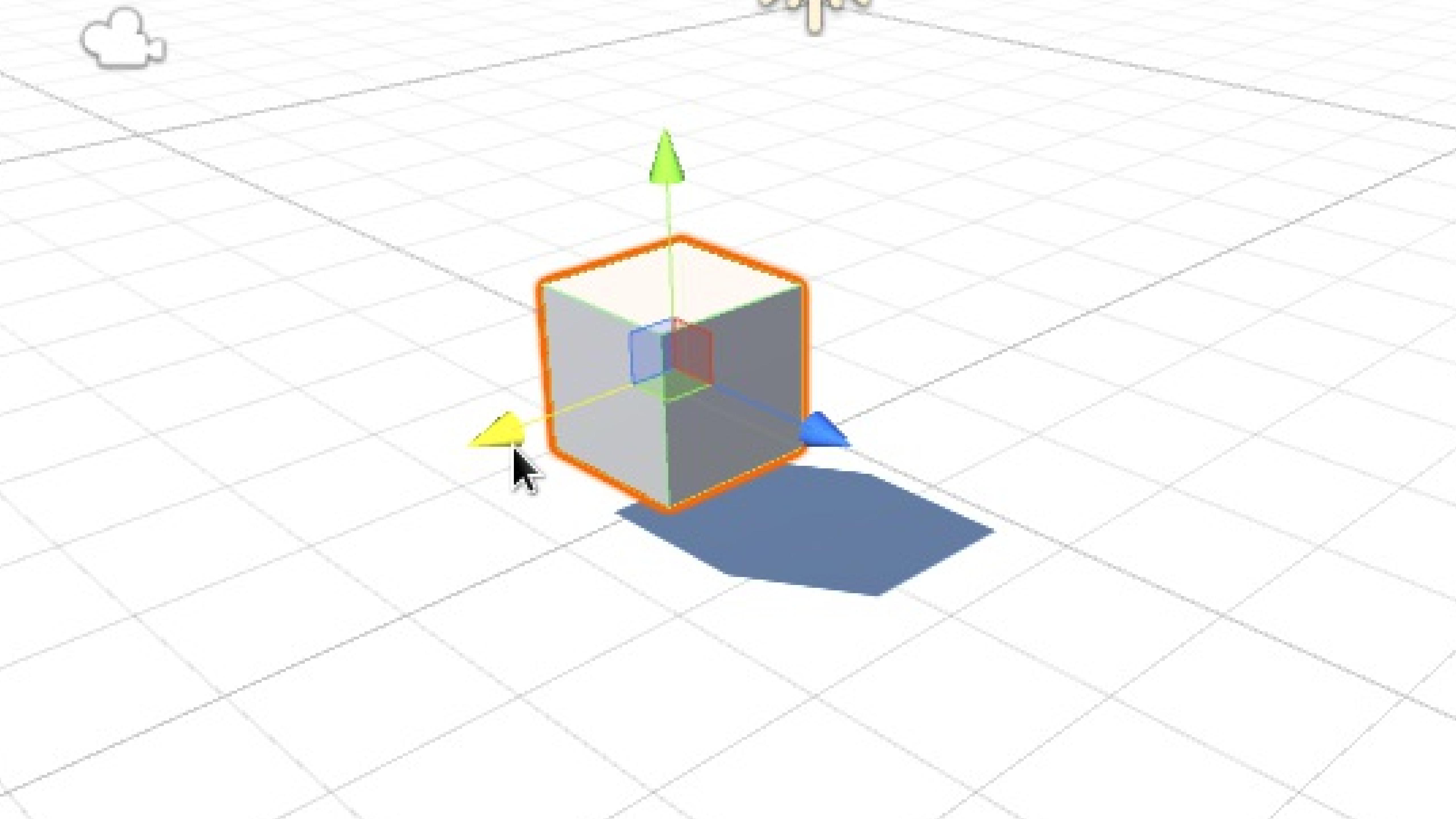
All Prefabs

All Scripts

Assets

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Assets



File Edit Assets GameObject Component Help Window



Center Local



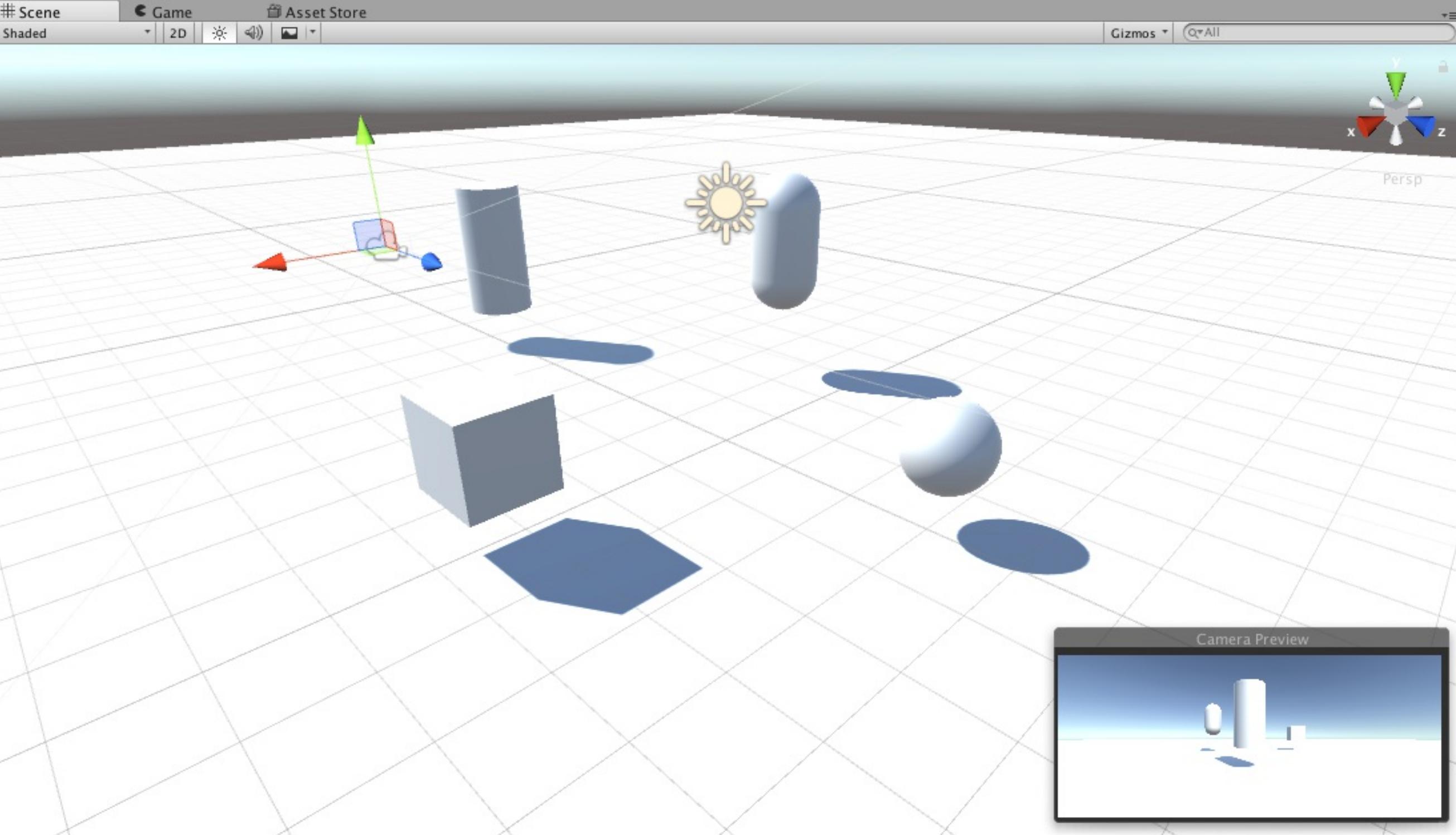
Cloud Account Layers Layout

Hierarchy

Create (Q) All Untitled*

Main Camera

- Directional Light
- Plane
- Cube
- Sphere
- Capsule
- Cylinder



Scene

Game

Asset Store

Gizmos (Q) All

Inspector Services

Main Camera

Tag MainCamera

Layer Default

Transform

Position X 0 Y 1 Z -10

Rotation X 0 Y 0 Z 0

Scale X 1 Y 1 Z 1

Camera

Clear Flags Skybox

Background Everything

Culling Mask Perspective

Projection Field of View 60

Clipping Planes Near 0.3

Far 1000

Viewport Rect X 0 Y 0 W 1 H 1

Depth -1

Rendering Path Use Player Settings

Target Texture None (Render Texture)

Occlusion Culling Checkmark

HDR Off

Target Display Display 1

GUI Layer

Flare Layer

Audio Listener

Add Component

Project Console

Create (Q) All

Favorites

- All Materials
- All Models
- All Prefabs
- All Scripts

Assets

This folder is empty

Assets

Occclusion Culling

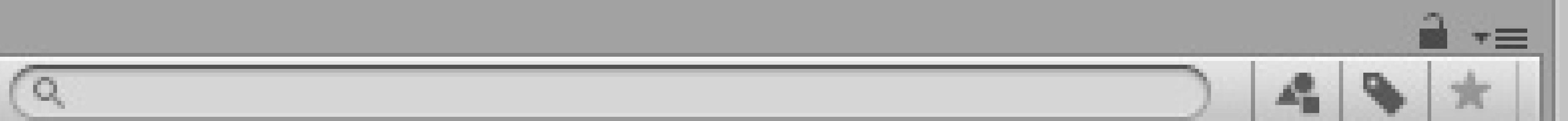
HDR

Target Display

GUI Layer

Flare Layer

Audio Listener



File Edit Assets GameObject Component Help Window



Cloud Account Layers Layout

Hierarchy

Main Camera
Directional Light
Plane
Cube
Sphere
Capsule
Cylinder

Scene

Shaded 2D | 3D | Gizmos

Game

Asset Store

Gizmos

All

Selected

None

 Project

 Console

Create ▾

▼  Favorites

 All Materials

 All Models

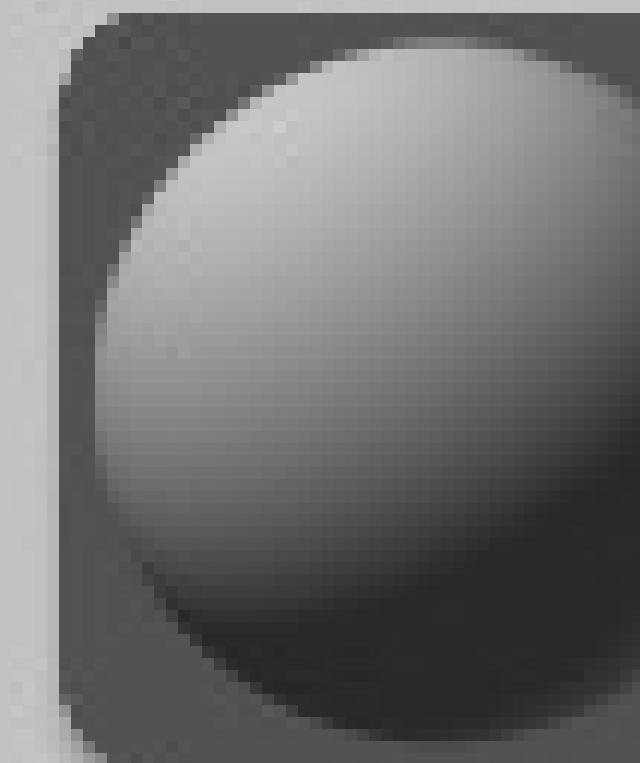
 All Prefabs

 All Scripts

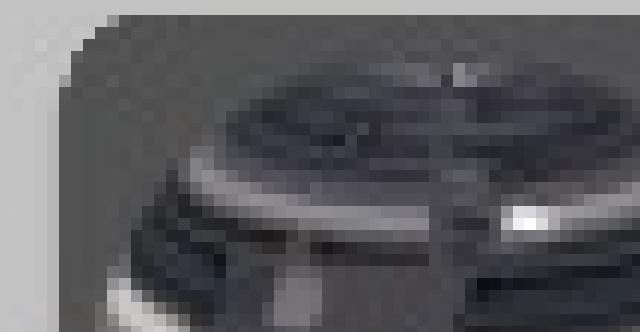
 Assets

Search: A

▼ Free Ass



Material



ected folder

Asset Store: 999+ / 999+





FREE



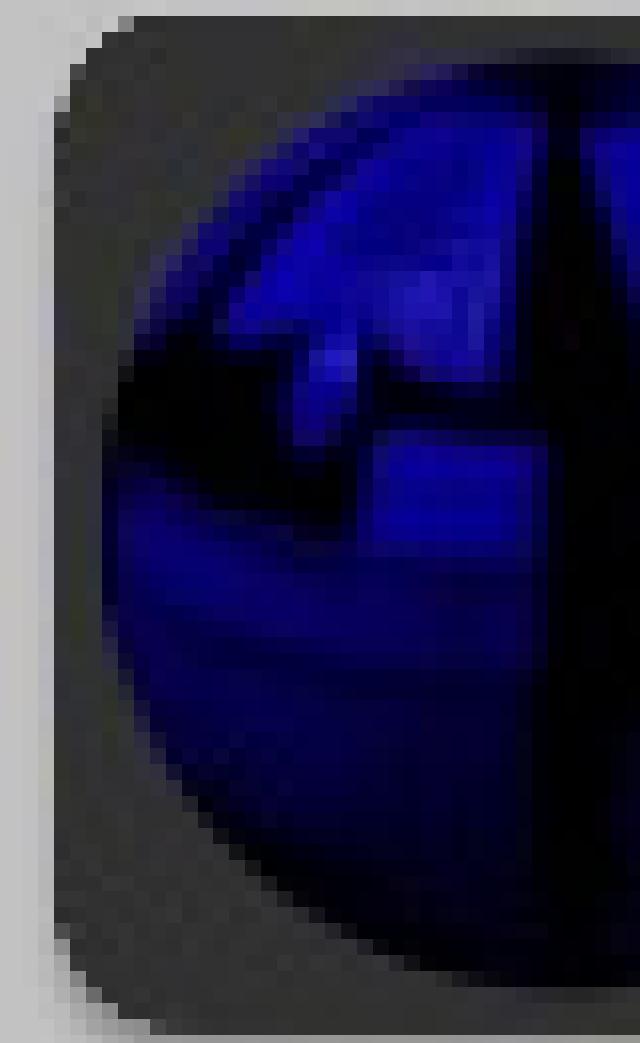
Ninja



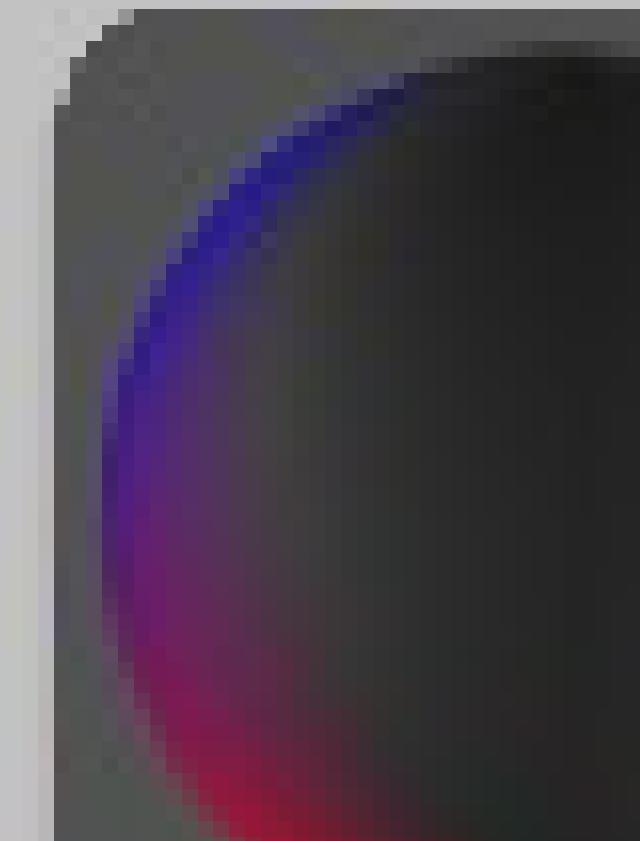
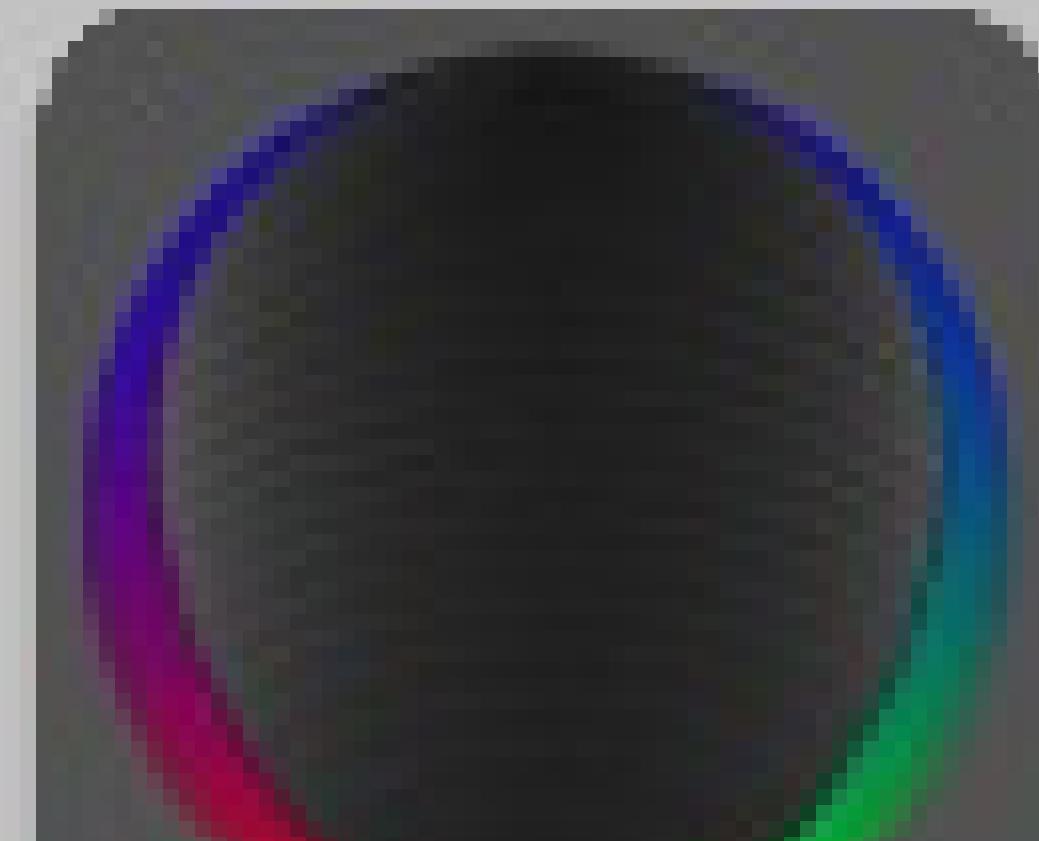
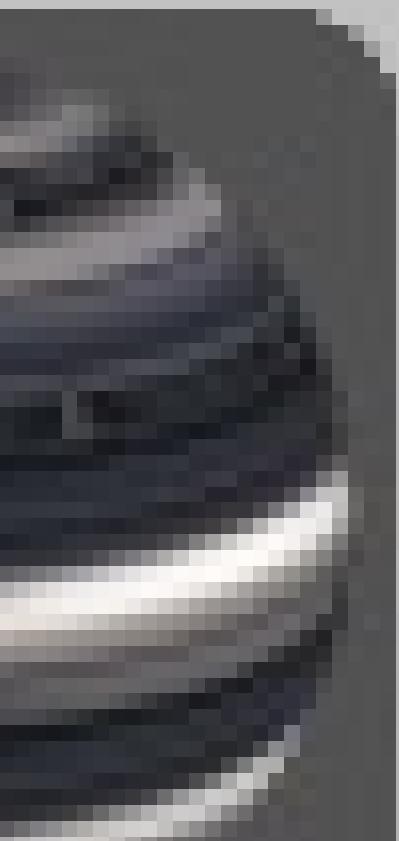
RedBeard_Blo...

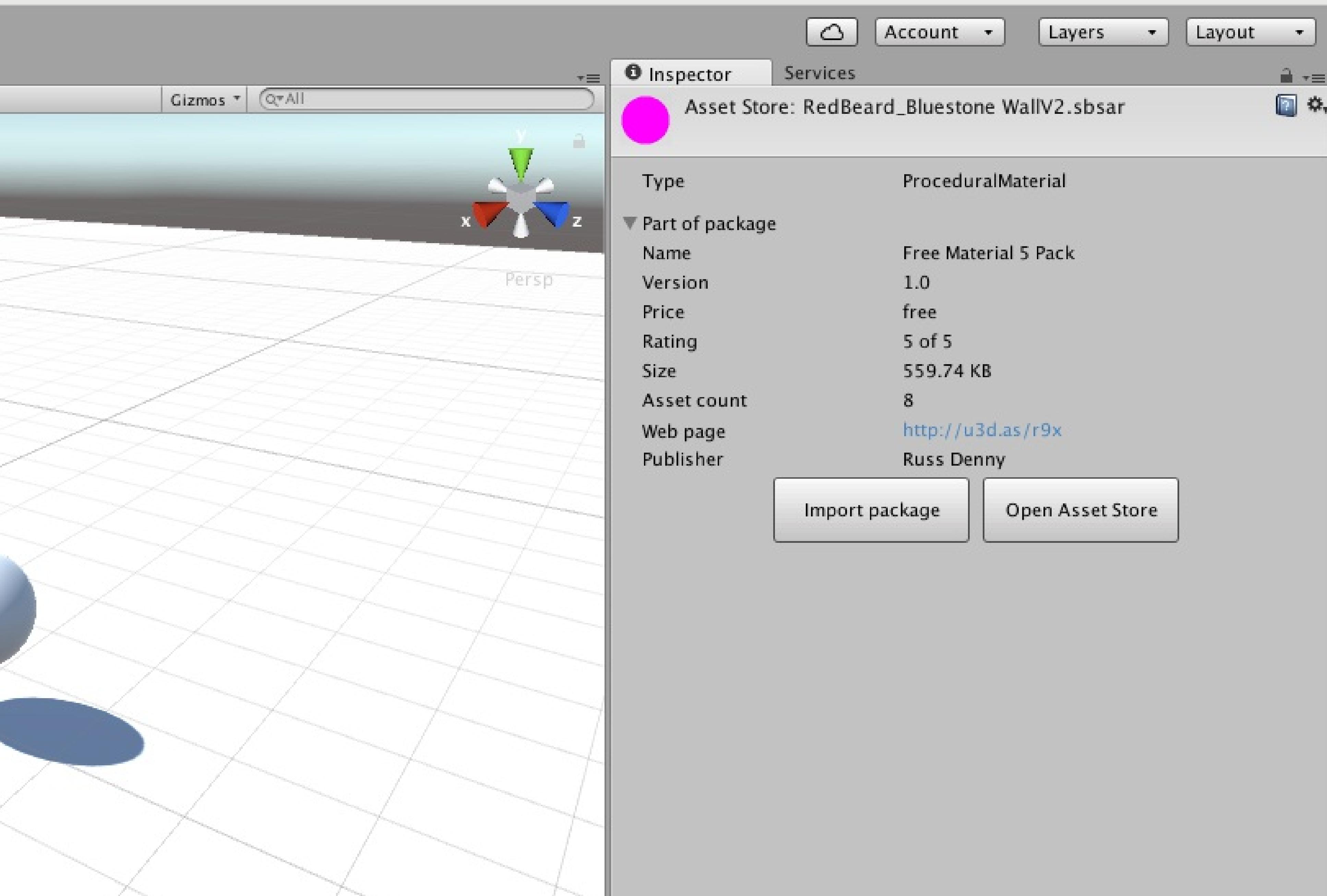


Gun01_Low...



Gun01_Hi...





Import Unity Package



Free Material 5 Pack

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Editor	NEW
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ScreenshotTaker.cs	NEW
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RedBeard Substance Pack.unity	NEW
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RedBeard_Bluestone WallV2.sbsar	NEW
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RedBeard_ConcreteV2.sbsar	NEW
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RedBeard_OldWoodV2.sbsar	NEW
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RedBeard_RockGroundV2.sbsar	NEW
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RedBeard_TilesV2.sbsar	NEW

All

None

Cancel

Import

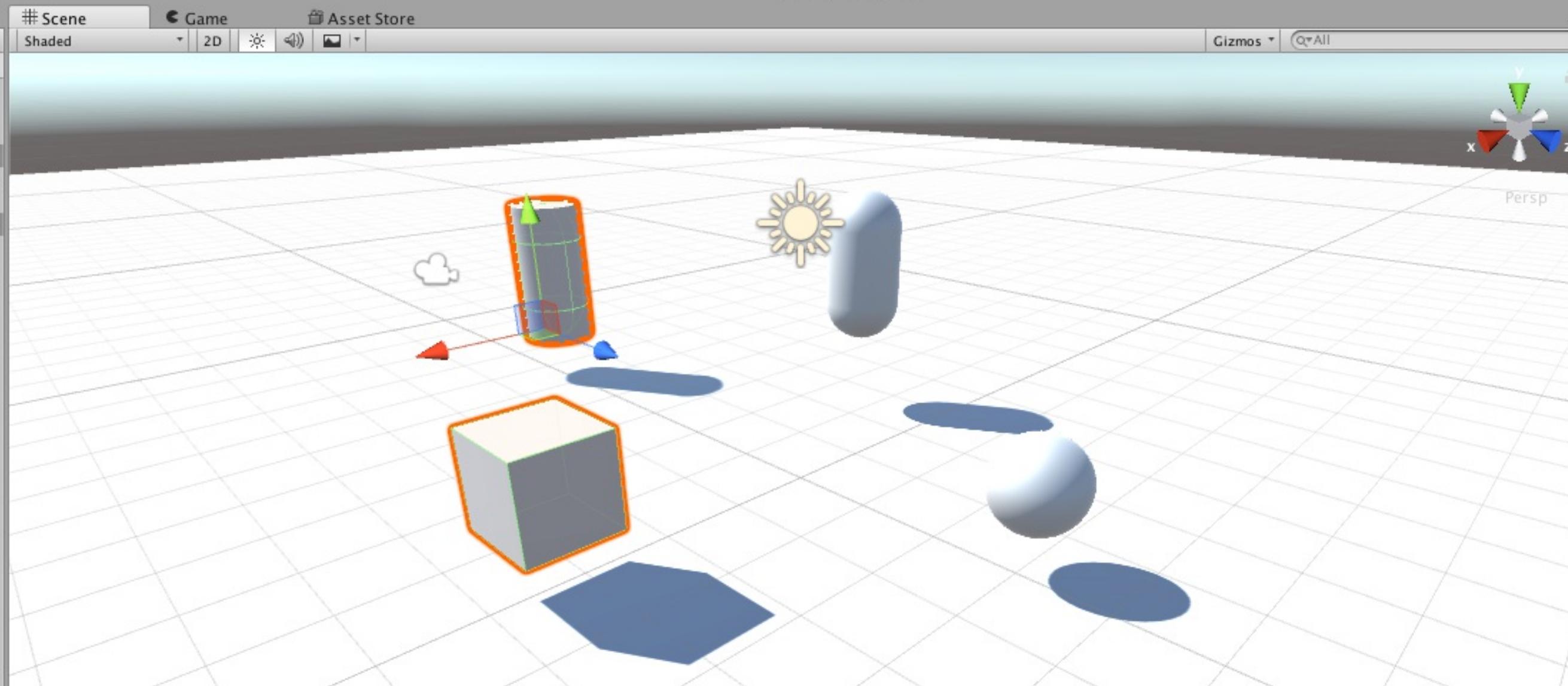
File Edit Assets GameObject Component Help Tools Window



Hierarchy
Create ▾ (Q>All
Untitled*
Main Camera
Directional Light
Plane
Cube
Sphere
Capsule
Cylinder



Cloud Account Layers Layout



Inspector Services
Untagged Layer Default
Transform Position X: 0 Y: 0 Z: 0
Rotation X: 0 Y: 0 Z: 0
Scale X: 1 Y: 1 Z: 1
Cylinder (Mesh Filter)
Mesh
Mesh Renderer Cast Shadows On
Receive Shadows
Motion Vectors Per Object Motion
Materials Size 1
Element 0 Default-Material
Light Probes Blend Probes
Reflection Probes Blend Probes
Anchor Override None (Transform)
Default-Material Shader Standard
Components that are only on some of the selected objects cannot be multi-edited.

Add Component

Select Mate... □ ×

Assets Scene

None

RedBeard_BluestoneWall

Redbeard_Concrete

RedBeard_RockGround

RedBeard_Tiles

RedBeard_WoodWall

FrameDebuggerRenderTargetD

Default-Diffuse

Default-Material

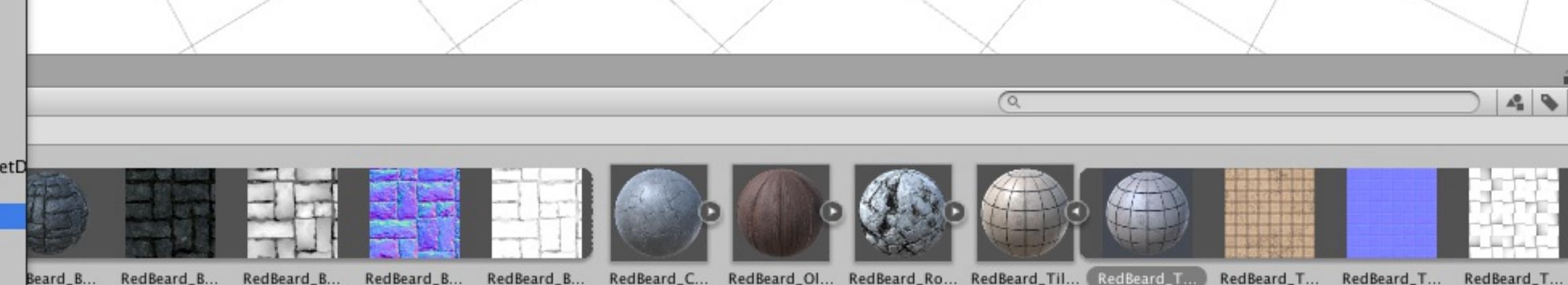
Default-Particle

Default-Skybox

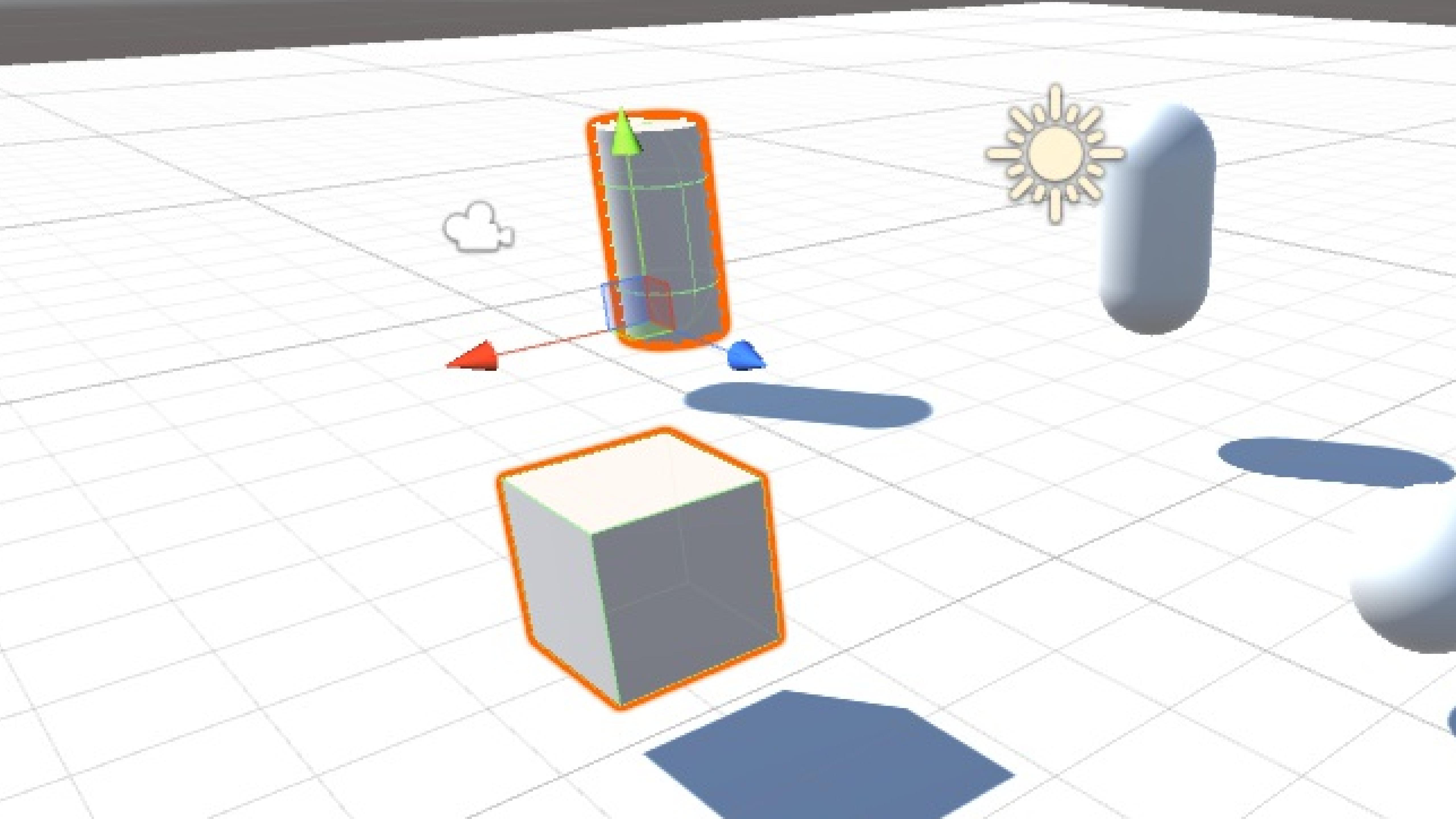
Sprites-Default

SpatialMappingOcclusion

SpatialMappingWireframe



Default-Material (Material) Res



Position

X —

Y —

Z —

Rotation

X 0

Y 0

Z 0

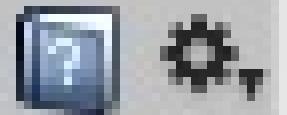
Scale

X 1

Y 1

Z 1

▼  Cylinder (Mesh Filter)



Mesh

—

▼  Mesh Renderer

Cast Shadows

On

Receive Shadows

Motion Vectors

Per Object Motion

▼ Materials

Size

1

Element 0

 Default-Material

Light Probes

Blend Probes

Reflection Probes

Blend Probes

Anchor Override

None (Transform)



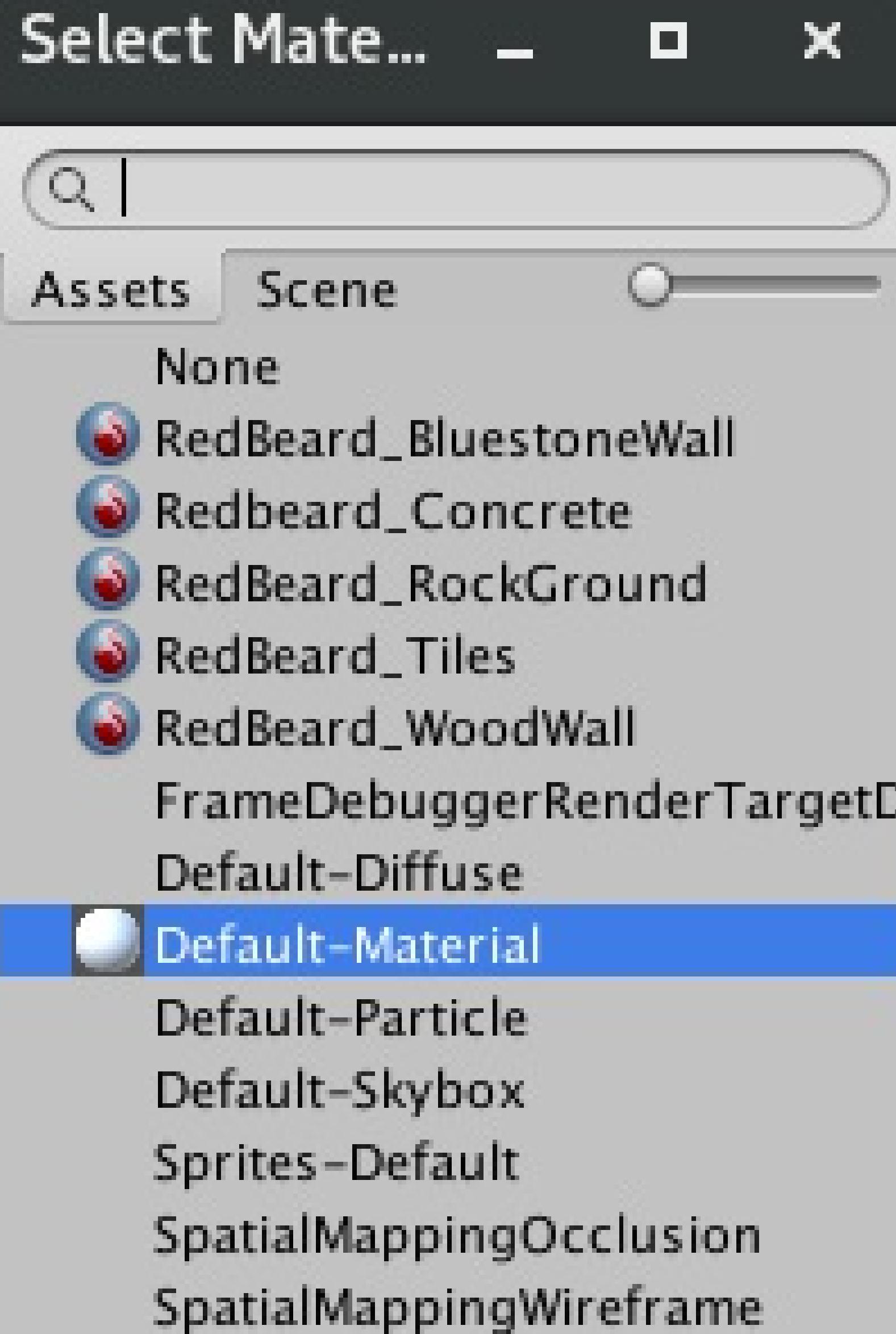
Default-Material



Shader

Standard

Components that are only on some of the selected objects cannot be multi-edited.



File Edit Assets GameObject Component Help Tools Window



Hierarchy

Untitled*

- Main Camera
- Directional Light
- Plane
- Cube
- Sphere
- Capsule
- Cylinder

Scene

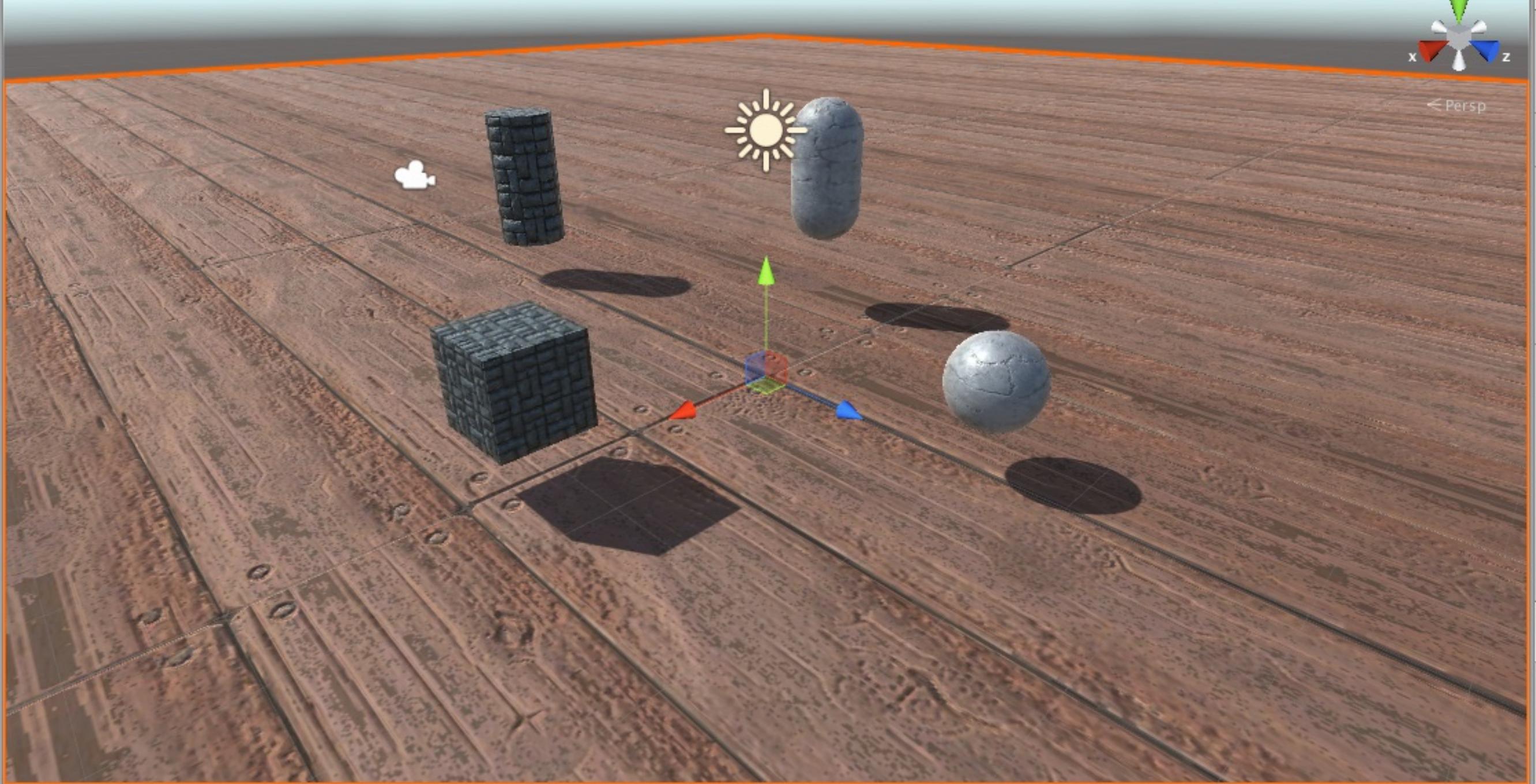
Shaded 2D

Gizmos

Asset Store



Cloud Account Layers Layout



Inspector

Plane

Tag Untagged

Layer Default

Transform

Position X 0 Y 0 Z 0

Rotation X 0 Y 0 Z 0

Scale X 10 Y 1 Z 10

Plane (Mesh Filter)

Mesh Plane

Mesh Collider

Convex

Inflate Mesh

Skin Width 0.01

Is Trigger

Material None (Physic Material)

Mesh Plane

Mesh Renderer

Cast Shadows

Receive Shadows

Motion Vectors Per Object Motion

Materials

Size 1

Element 0 RedBeard_WoodWall

Light Probes Blend Probes

Reflection Probes Blend Probes

Anchor Override None (Transform)

RedBeard_WoodWall

Shader Standard

Rendering Mode

Opaque

Main Maps

Albedo

Metallic

Smoothness

Source

Normal Map

Height Map

Occlusion

Emission

Global Illumination Realtime

Detail Mask

Tiling X 10

Offset X 0

Secondary Maps

Detail Albedo x2

Normal Map

Tiling X 1

Offset X 0

UV Set UV0

Forward Rendering Options

Specular Highlights

Reflections

Procedural Properties

Generate all outputs

Generate Min Maps

Project

Create

Console

Favorites

All Materials

All Models

All Prefabs

All Scripts

Assets

Editor

RedBeard Su...

RedBeard_Bl...

RedBeard_B...

RedBeard_B...

RedBeard_B...

RedBeard_B...

RedBeard_C...

RedBeard_Ol...

RedBeard_Ro...

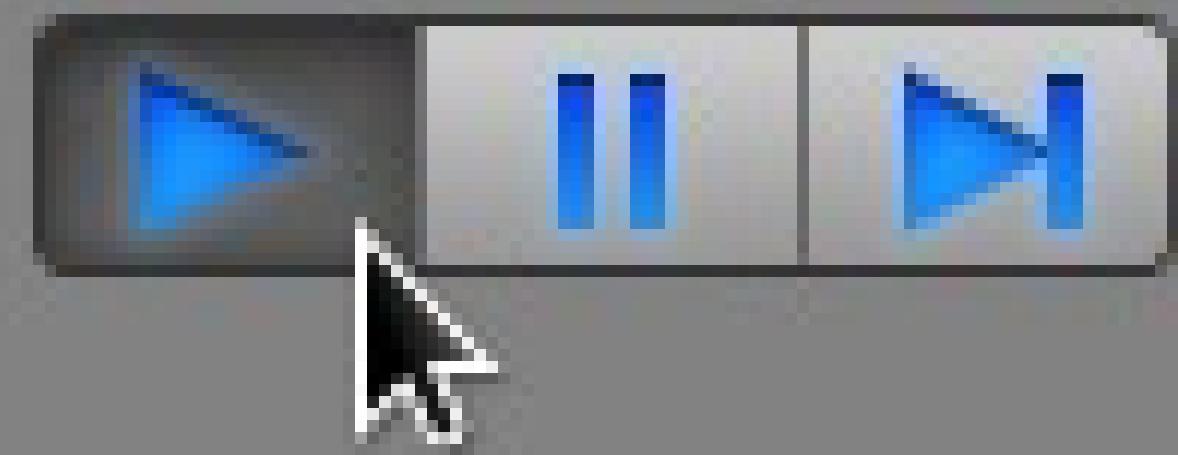
RedBeard_Til...

RedBeard_T...

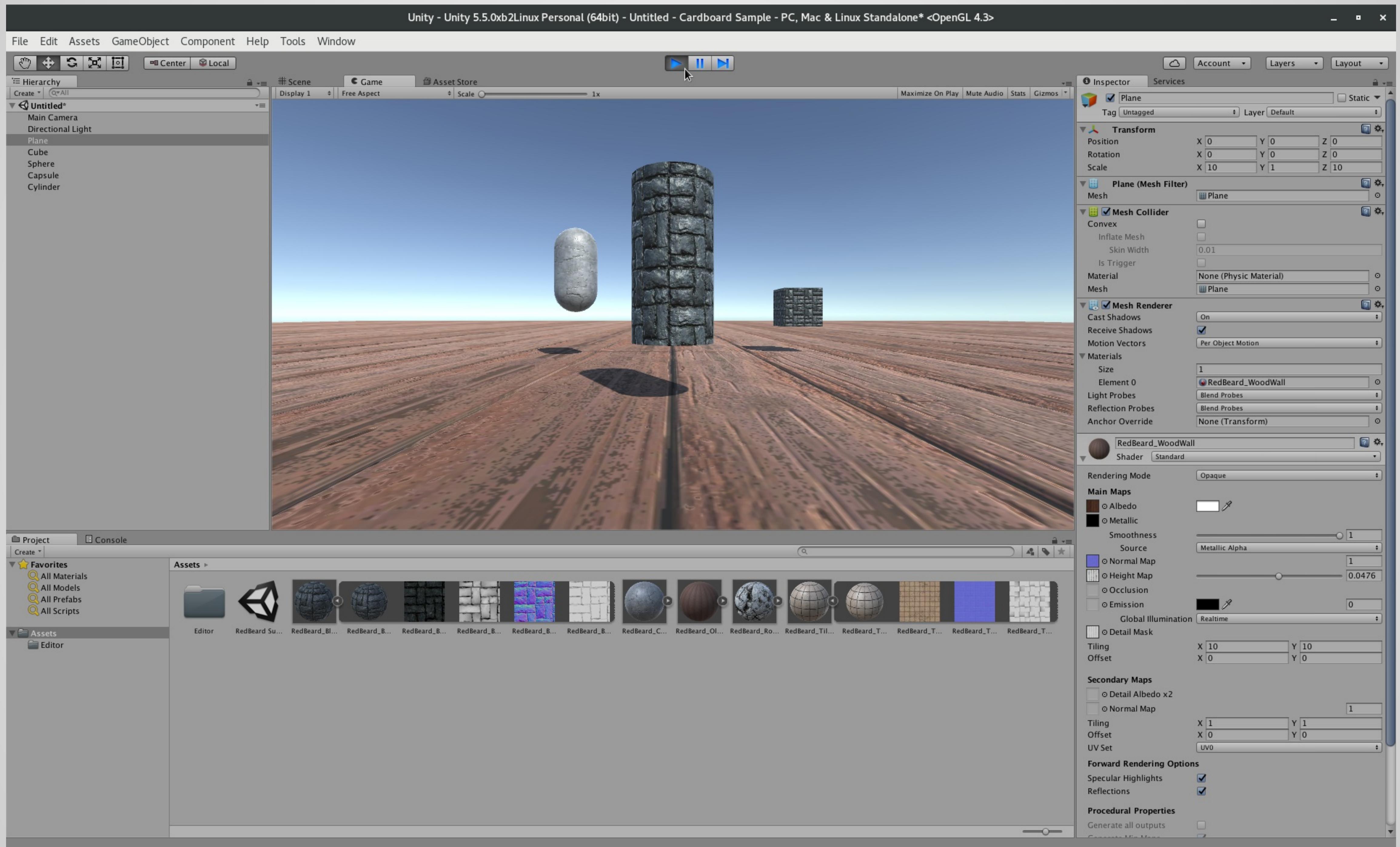
RedBeard_T...

RedBeard_T...

x Personal (64bit) - Untitled - Cardboard Sample - PC, Mac & Li



→ 1x



File Edit Assets GameObject Component Help Tools Window

Add... Shift+Ctrl+A

Hierarchy The tool handle is placed at the top of the selected object.

Untitled*

- Main Camera
- Directional Light
- Plane
- Cube
- Sphere
- Capsule
- Cylinder

Physics

- Rigidbody
- Character Controller
- Box Collider
- Sphere Collider
- Capsule Collider
- Mesh Collider
- Wheel Collider
- Terrain Collider
- Cloth
- Hinge Joint
- Fixed Joint
- Spring Joint
- Character Joint
- Configurable Joint
- Constant Force

Asset Store

Gizmos

Persp

Transform

Position X: 0 Y: 0 Z: 0

Rotation X: 0 Y: 0 Z: 0

Scale X: 1 Y: 1 Z: 1

Cylinder (Mesh Filter)

Mesh

Mesh Renderer

Cast Shadows On

Receive Shadows

Motion Vectors Per Object Motion

Materials

Size 1

Element 0

Light Probes Blend Probes

Reflection Probes Blend Probes

Anchor Override None (Transform)

Add Component

Project

Create

Favorites

- All Materials
- All Models
- All Prefabs
- All Scripts

Assets

Editor RedBeard_Su... RedBeard_B... RedBeard_B... RedBeard_B... RedBeard_B... RedBeard_B... RedBeard_C... RedBeard_Ol... RedBeard_Ro... RedBeard_Til... RedBeard_T... RedBeard_T... RedBeard_T...



File Edit Assets GameObject Component Help Tools Window



Hierarchy The tool handle is placed at the selected object's center.
Create ▾ Q+A

Untitled*

- Main Camera
- Directional Light
- Plane
- Cube
- Sphere
- Capsule
- Cylinder

Add... Shift+Ctrl+A

Mesh ► Scene Asset Store

Effects ►

Physics ► Rigidbody

Physics 2D ► Character Controller

Navigation ► Box Collider

Audio ► Sphere Collider

Rendering ► Capsule Collider

Layout ► Mesh Collider

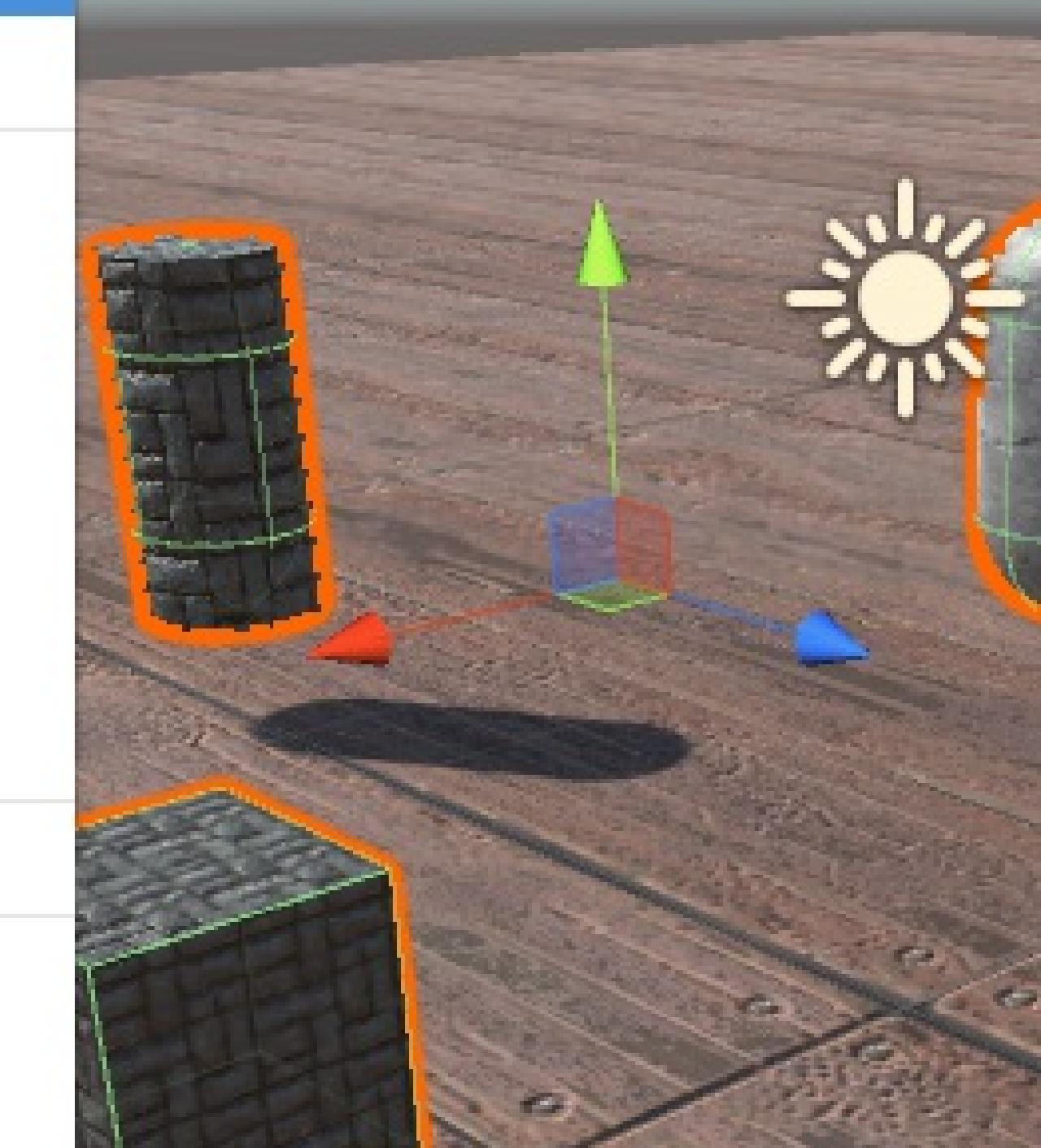
Miscellaneous ► Wheel Collider

Scripts ► Terrain Collider

Analytics ► Cloth

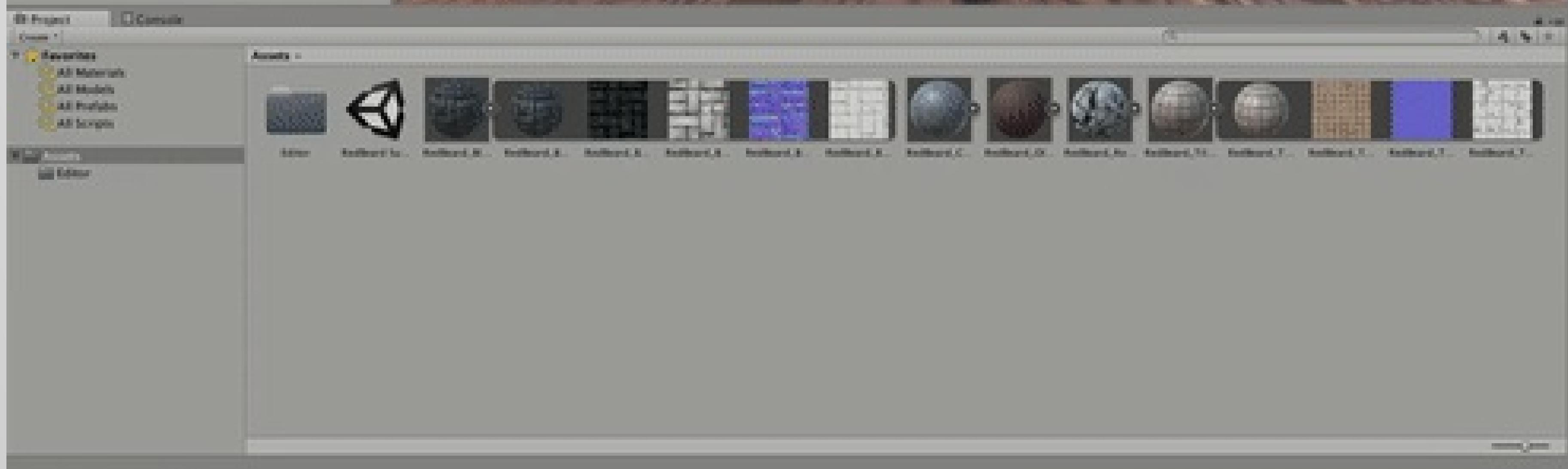
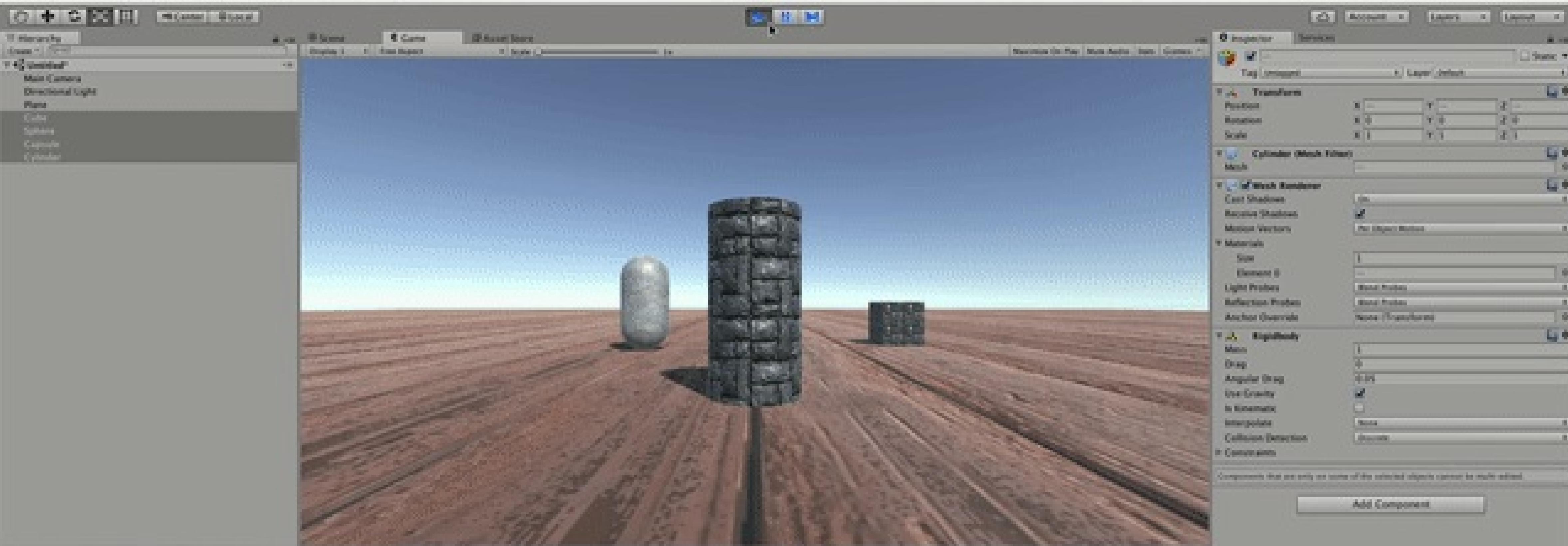
Event ► Hinge Joint

Network ► Fixed Joint





File Edit Assets GameObject Component Help Tools Window



File Edit Assets GameObject Component Help Tools Window



Center Local



Cloud Account Layers Layout

Hierarchy

- Create (Q>All)
- Untitled*
- Main Camera
- Directional Light
- Plane
- Cube
- Sphere
- Capsule
- Cylinder
- Cylinder (1)
- Capsule (1)
- Sphere (1)
- Cube (1)
- Capsule (2)
- Capsule (3)
- Cylinder (2)
- Cube (2)
- Cube (3)
- Sphere (2)
- Sphere (3)
- Sphere (4)
- Sphere (5)
- Sphere (6)
- Cube (4)
- Cube (5)

Scene

Game

Asset Store

Shaded

2D

Lights

Audio

Image

Movie

Texture

Material

Shader

Script

Component

Object

Folder

Prefab

Light

Light Pro

Light Pro 2

Light Pro 3

Light Pro 4

Light Pro 5

Light Pro 6

Light Pro 7

Light Pro 8

Light Pro 9

Light Pro 10

Light Pro 11

Light Pro 12

Light Pro 13

Light Pro 14

Light Pro 15

Light Pro 16

Light Pro 17

Light Pro 18

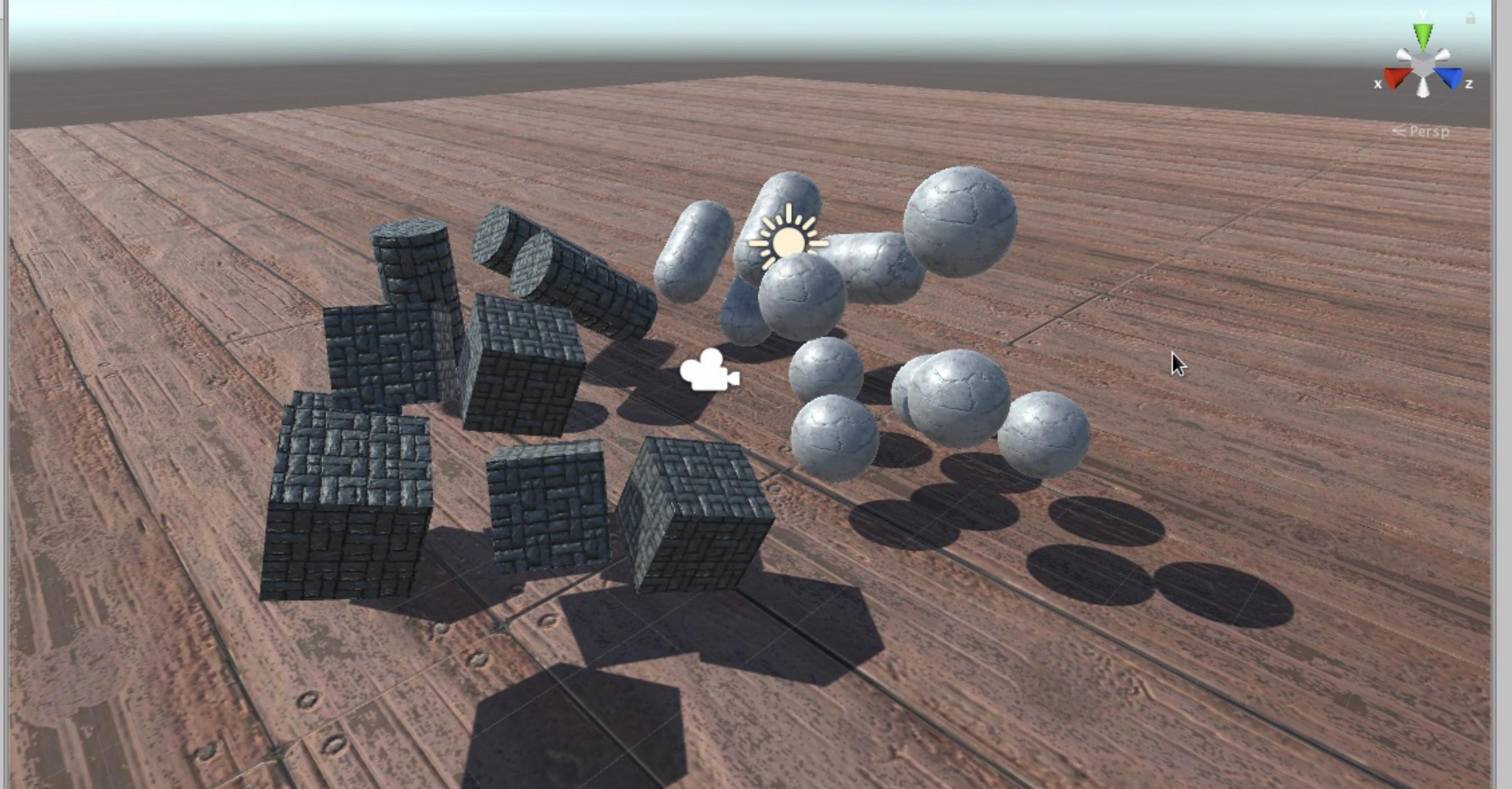
Light Pro 19

Light Pro 20

Gizmos

(Q>All)

Inspector Services



Project

Console

Create (Q)

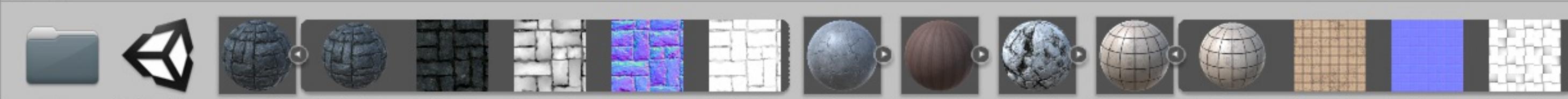
Favorites

- All Materials
- All Models
- All Prefabs
- All Scripts

Assets

Editor

Assets



File Edit Assets GameObject Component Help Tools Window



Hierarchy

Assets

Main Camera

Directional Light

Plane

Cube

Sphere

Capsule

Cylinder

Cube (1)

Capsule (1)

Sphere (1)

Cube (2)

Capsule (2)

Cylinder (2)

Cube (3)

Capsule (3)

Cylinder (3)

Cube (4)

Capsule (4)

Cylinder (4)

Cube (5)

Capsule (5)

Cylinder (5)

Cube (6)

Capsule (6)

Cylinder (6)

Sphere (1)

Sphere (2)

Sphere (3)

Sphere (4)

Sphere (5)

Sphere (6)

Cube (7)

Cube (8)

Cube (9)

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Sphere (51)

Sphere (52)

Sphere (53)

Sphere (54)

Sphere (55)

Sphere (56)

File Edit **Assets** GameObject Component Help Tools Window

Create Open Containing Folder Open Open in Look Dev Delete Open Scene Additive Import New Asset... Import Package Export Package... Find References In Scene Select Dependencies Refresh Ctrl+R Reimport Reimport All Reimport All Run API Updater... Open C# Project

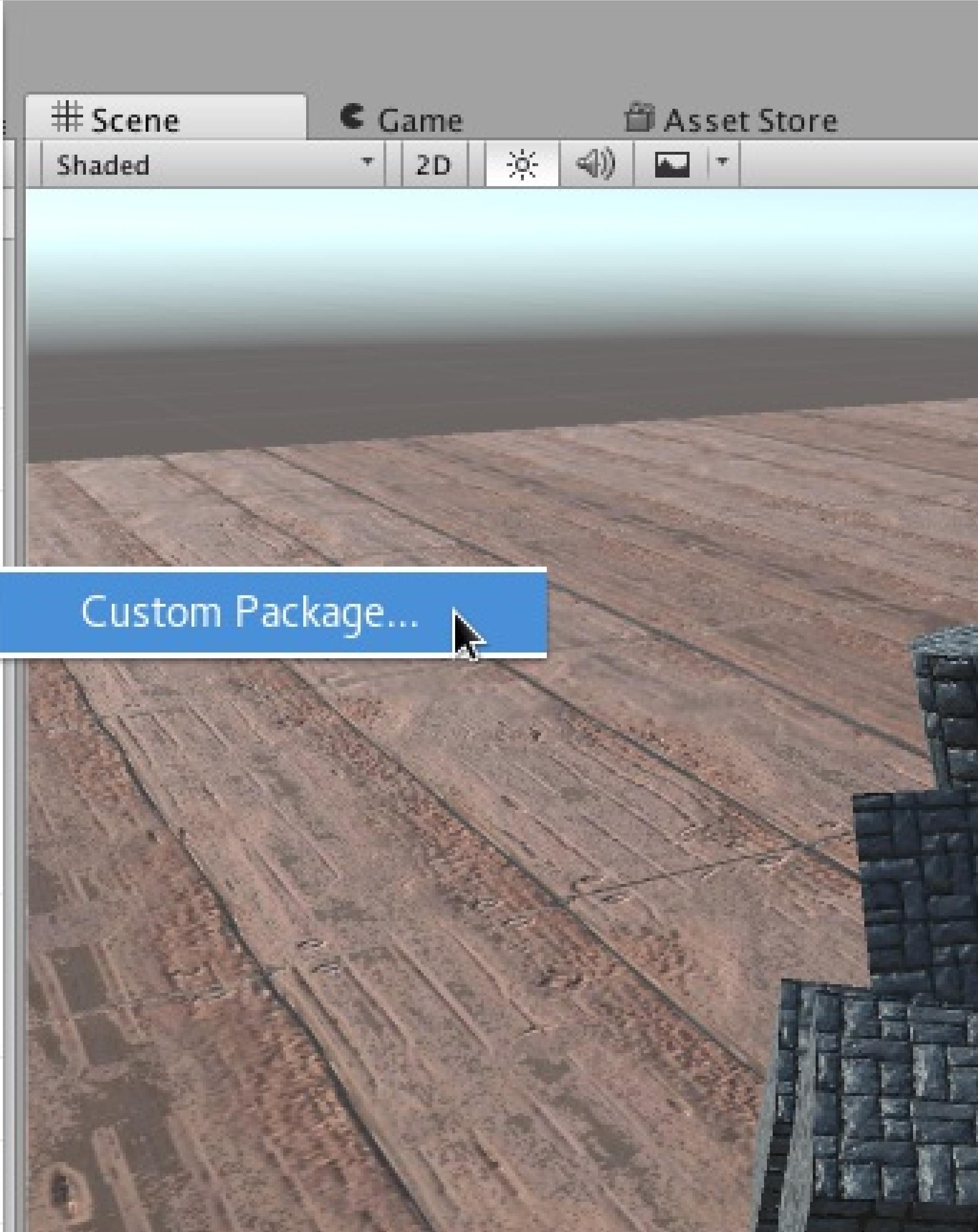
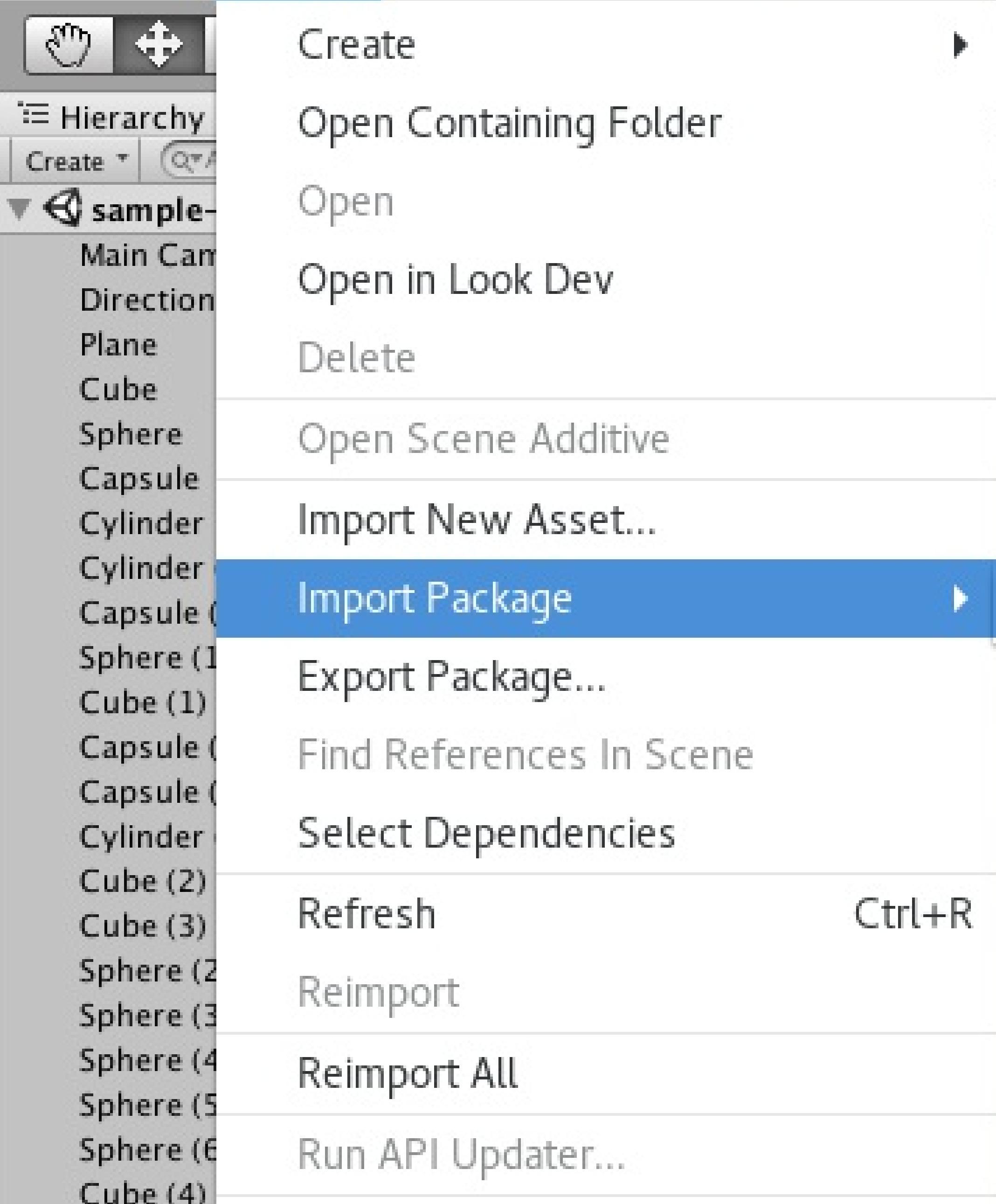
Scene Game Asset Store Shaded 2D Gizmos All Persp

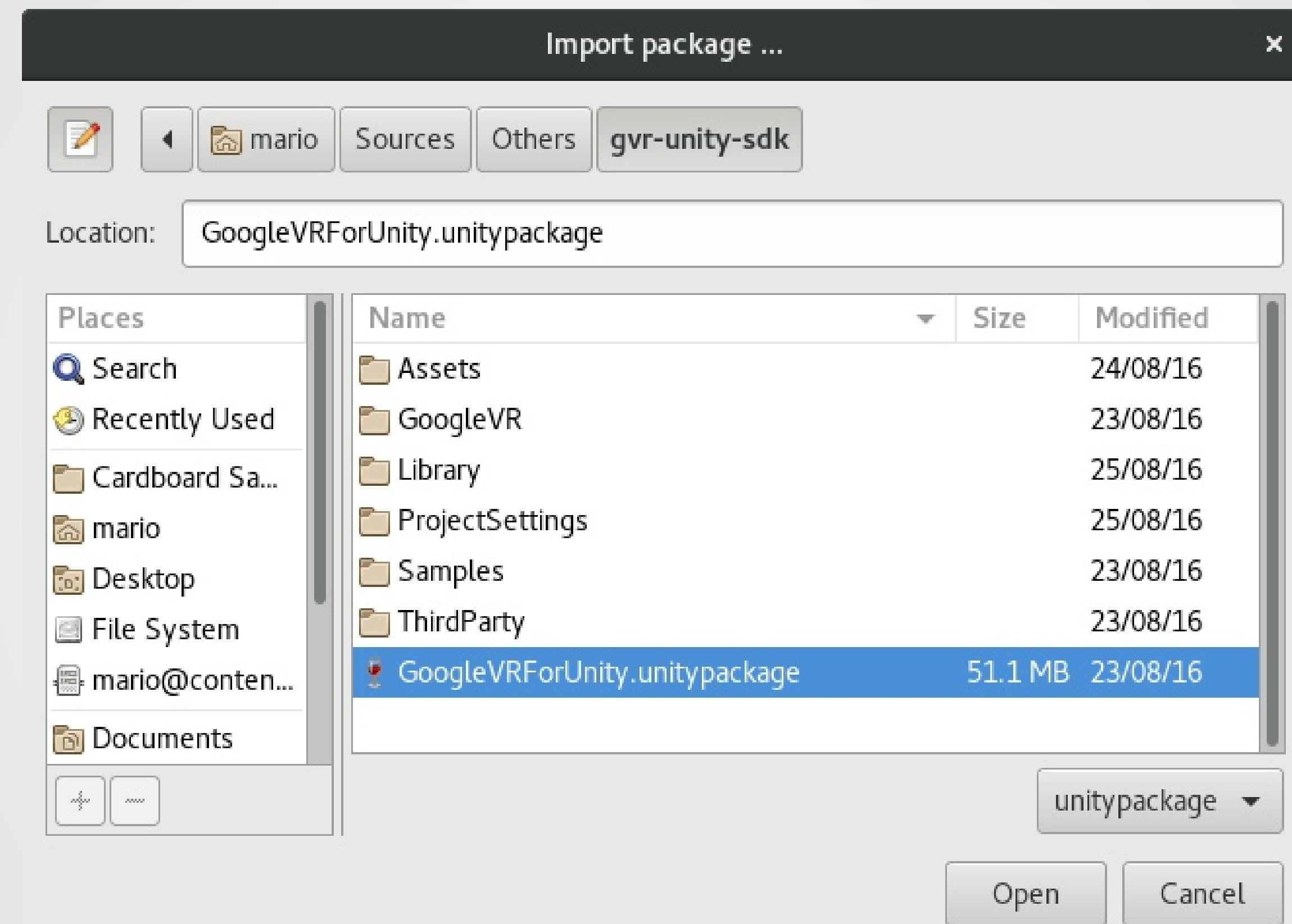
Custom Package...

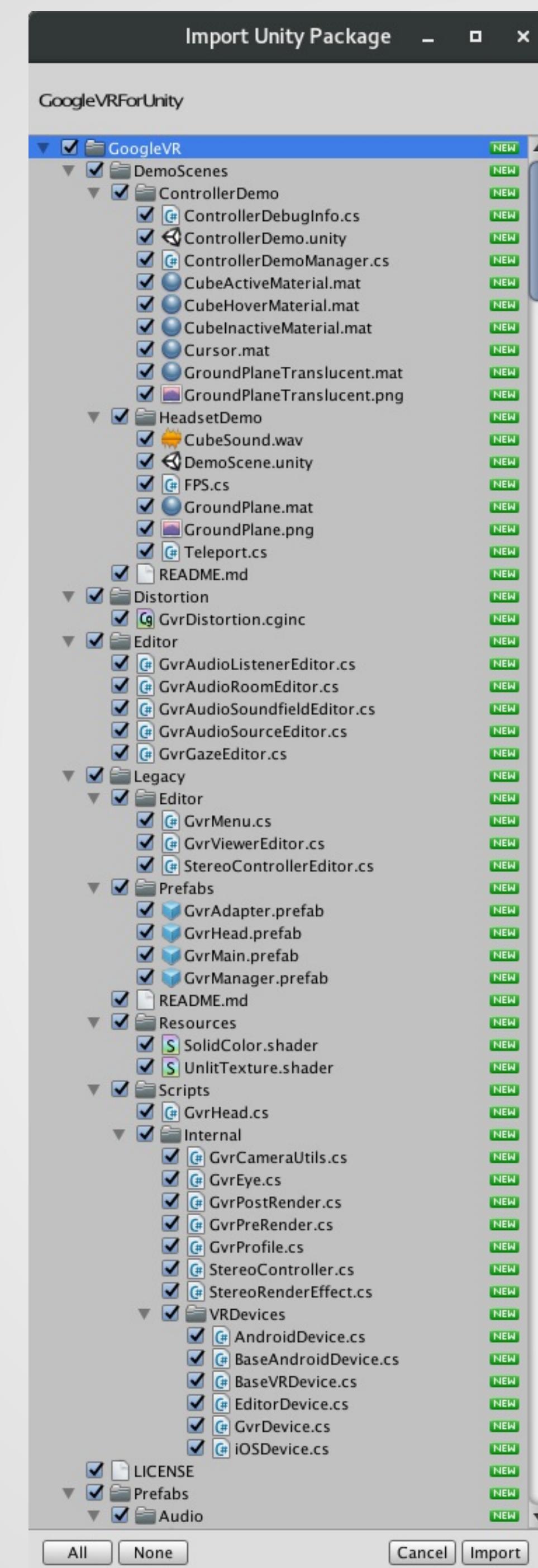
The Unity Editor interface is shown with the following details:

- Assets Menu:** The "Assets" menu is open, showing options like Create, Import Package (which is selected), and Custom Package... (highlighted with a blue box).
- Scene View:** Displays a 3D perspective view of a wooden floor with several floating spheres and cubes.
- Inspector View:** Shows various components and settings for selected objects.
- Project View:** Shows the "Assets" tab, which contains a folder icon, a cube icon, and several material icons labeled RedBeard_Su..., RedBeard_Bl..., RedBeard_C..., RedBeard_Ol..., RedBeard_Ro..., RedBeard_Til..., and sample-scene.
- Bottom Status Bar:** Shows a warning message: "Assets/Editor/ScreenshotTaker.cs(17,7): warning CS0414: The private field 'Screenshot.showPreview' is assigned but its value is never used".

File Edit Assets GameObject Component Help Tools Window









API Update Required



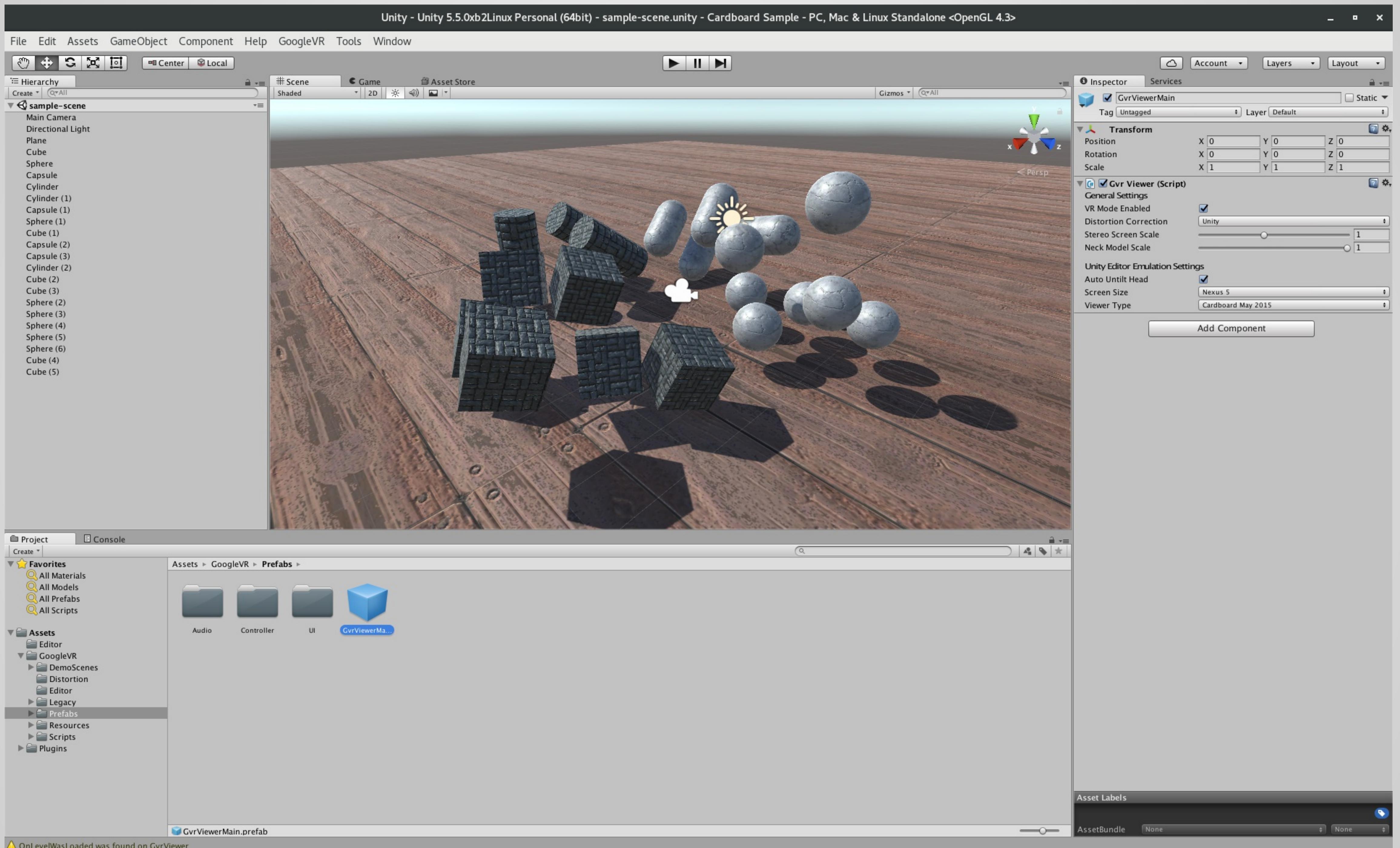
This project contains scripts and/or assemblies that use obsolete APIs.

If you choose 'Go Ahead', Unity will automatically upgrade any scripts/assemblies in the Assets folder found using the old APIs. You should make a backup before proceeding.

(You can always run the API Updater manually via the 'Assets/Run API Updater' menu command.)

I Made a Backup. Go Ahead!

No Thanks



Create ▾

▼ ★ Favorites

- 🔍 All Materials
- 🔍 All Models
- 🔍 All Prefabs
- 🔍 All Scripts

▼ Assets

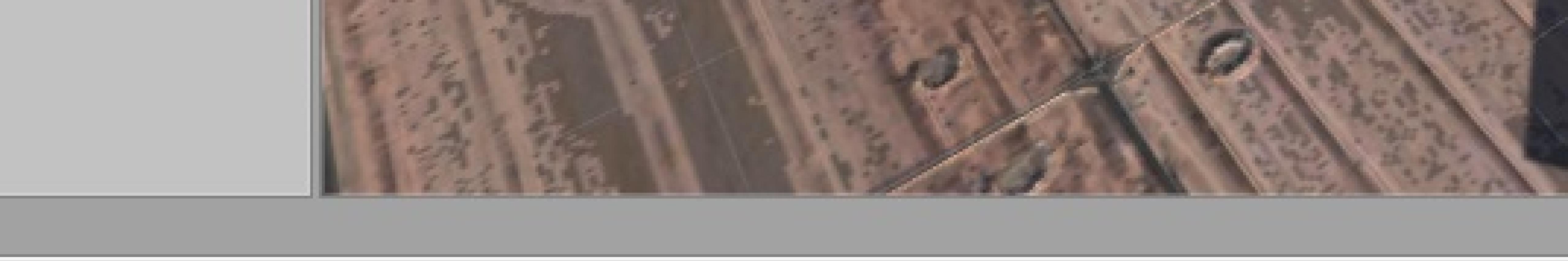
- 📁 Editor
- ▼ GoogleVR
 - ▶ DemoScenes
 - ▶ Distortion
 - ▶ Editor
 - ▶ Legacy
 - ▶ Prefabs
 - ▶ Resources
 - ▶ Scripts
 - ▶ Plugins

Assets ➔ GoogleVR ➔ Prefabs



Audio

Controller



Assets ▶ GoogleVR ▶ Prefabs ▶



Audio



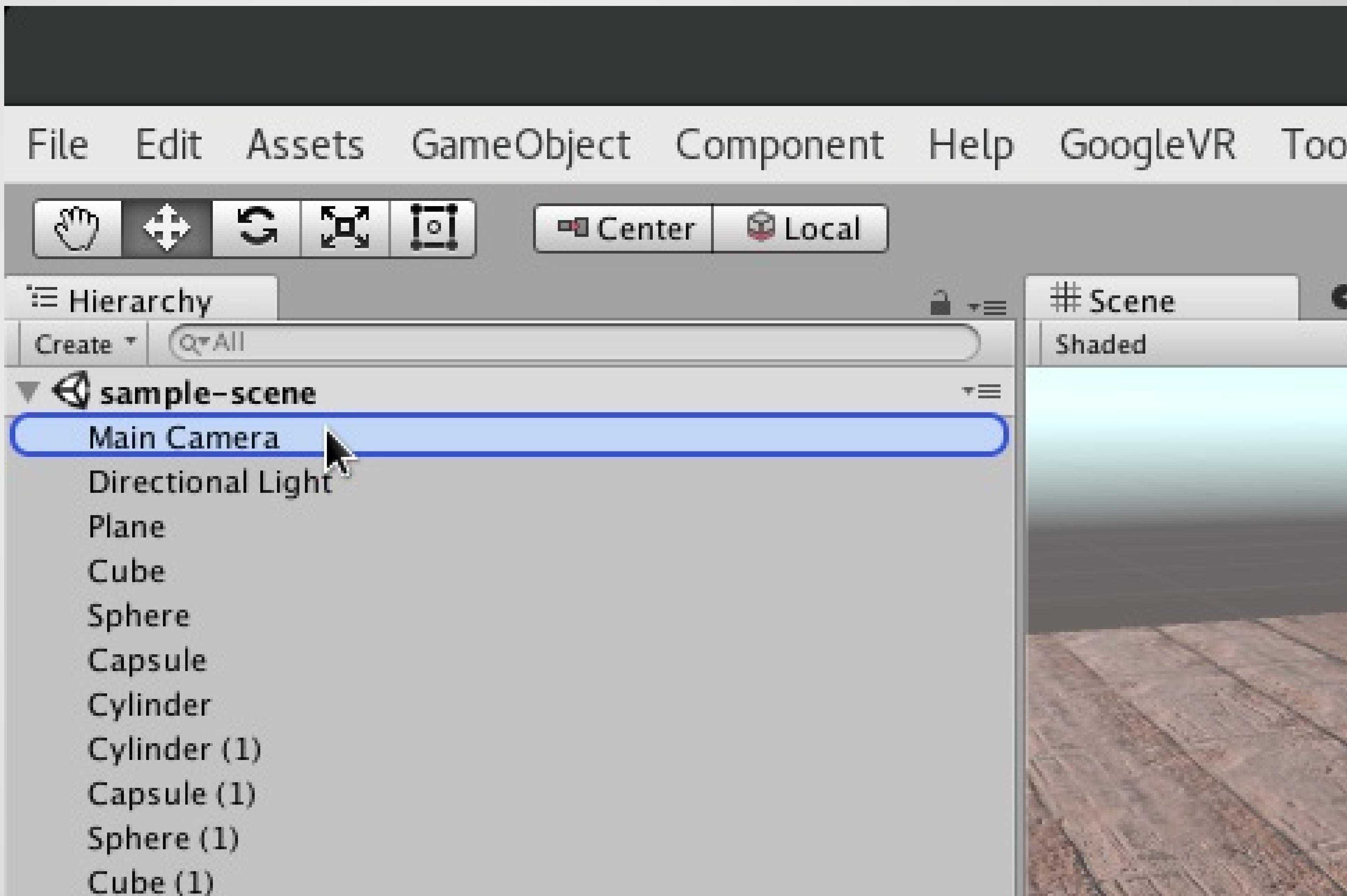
Controller



UI



GvrViewerMa...



File Edit Assets GameObject Component Help GoogleVR Tools Window



Center Local



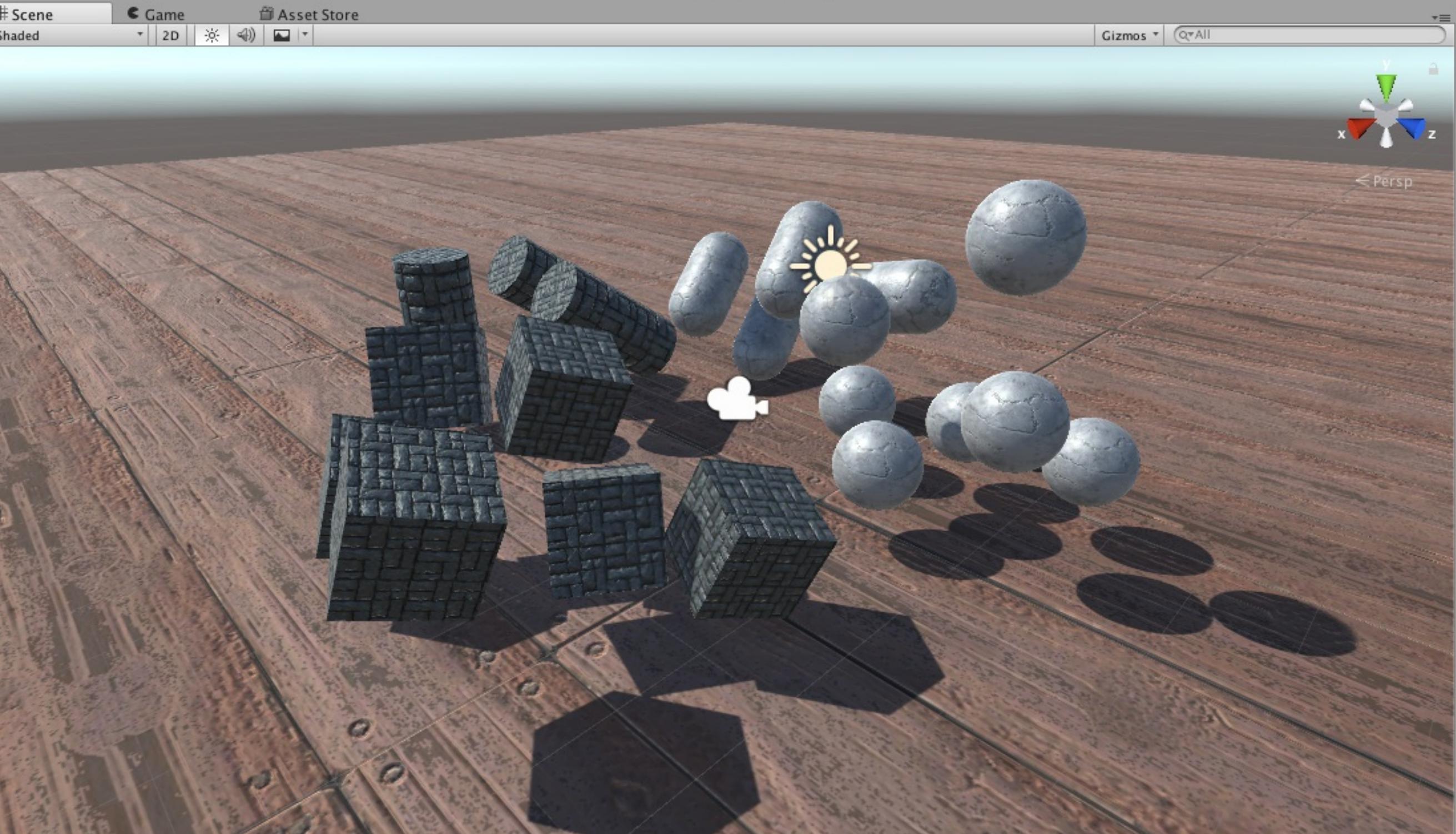
Cloud Account Layers Layout

Hierarchy

Create (All)

sample-scene

- Main Camera
- Directional Light
- Plane
- Cube
- Sphere
- Capsule
- Cylinder
- Cylinder (1)
- Capsule (1)
- Sphere (1)
- Cube (1)
- Capsule (2)
- Capsule (3)
- Cylinder (2)
- Cube (2)
- Cube (3)
- Sphere (2)
- Sphere (3)
- Sphere (4)
- Sphere (5)
- Sphere (6)
- Cube (4)
- Cube (5)



Inspector Services

GvrViewerMain

Tag Untagged Layer Default

Transform

Position	X 0	Y 0	Z 0
Rotation	X 0	Y 0	Z 0
Scale	X 1	Y 1	Z 1

Gvr Viewer (Script)

General Settings

VR Mode Enabled

Distortion Correction Unity

Stereo Screen Scale 1

Neck Model Scale 1

Unity Editor Emulation Settings

Auto Until Head

Screen Size Nexus 5

Viewer Type Cardboard May 2015

Add Component

Project Console

Create

Favorites

- All Materials
- All Models
- All Prefabs
- All Scripts

Assets

- Editor
- GoogleVR
- DemoScenes
- Distortion
- Editor
- Legacy
- Prefabs
- Resources
- Scripts
- Plugins

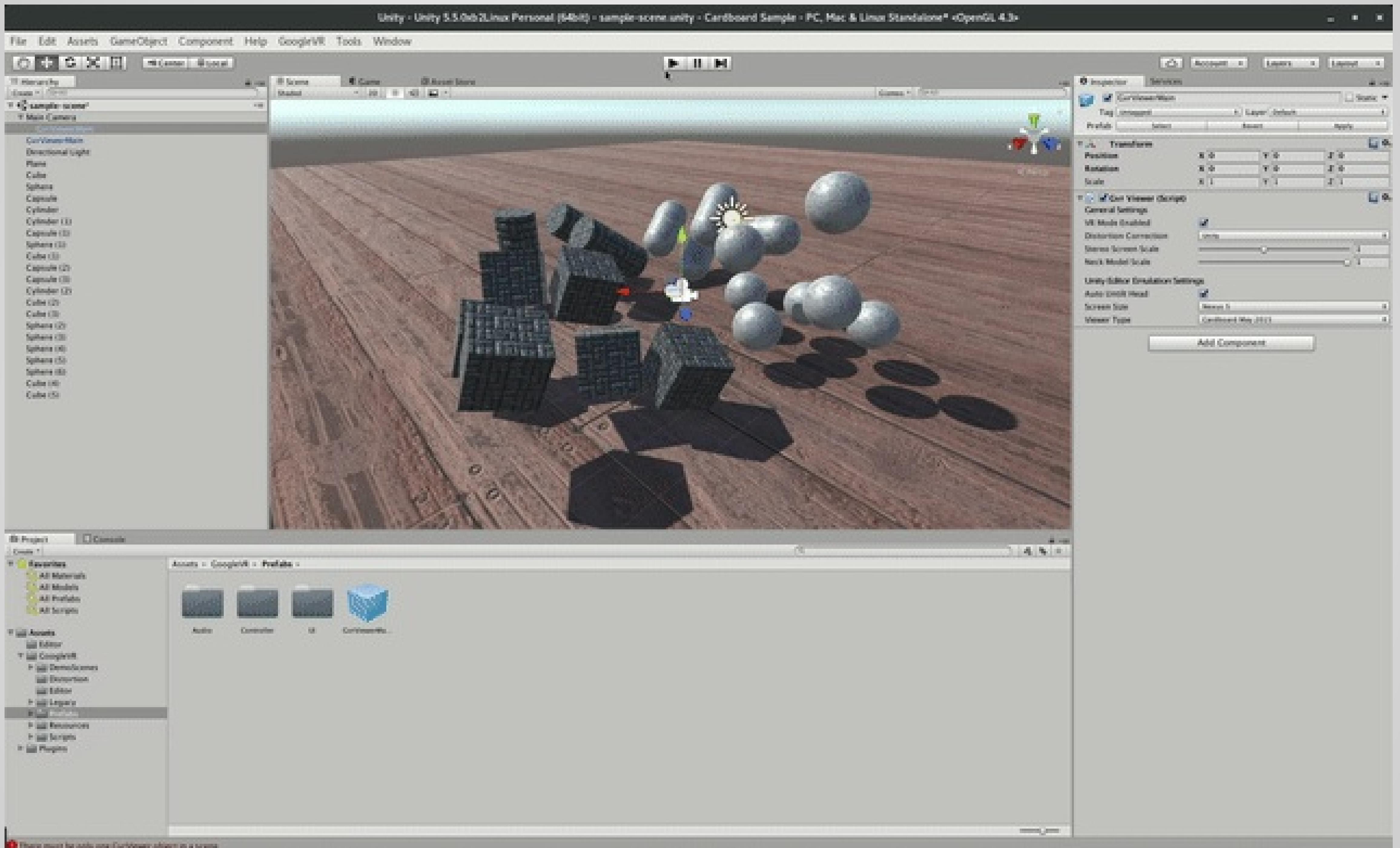
Assets > GoogleVR > Prefabs >

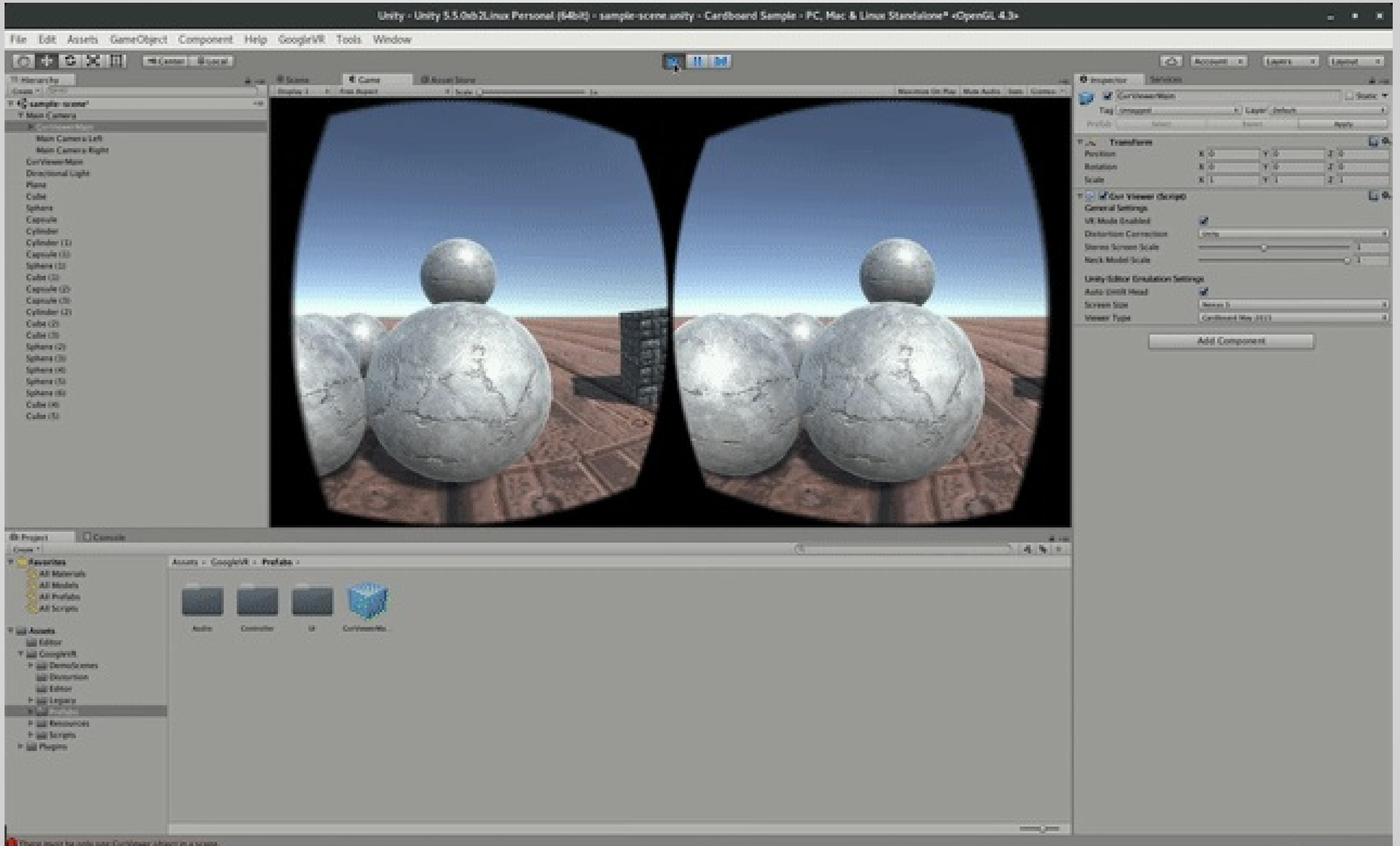
Audio Controller UI GvrViewerMa...

Asset Labels

AssetBundle None

OnLevelWasLoaded was found on GvrViewer





Summary of Unity Demo

- Using Unity is fast
- Using Cardboard SDK is easy
- Using internal renderer for simulating

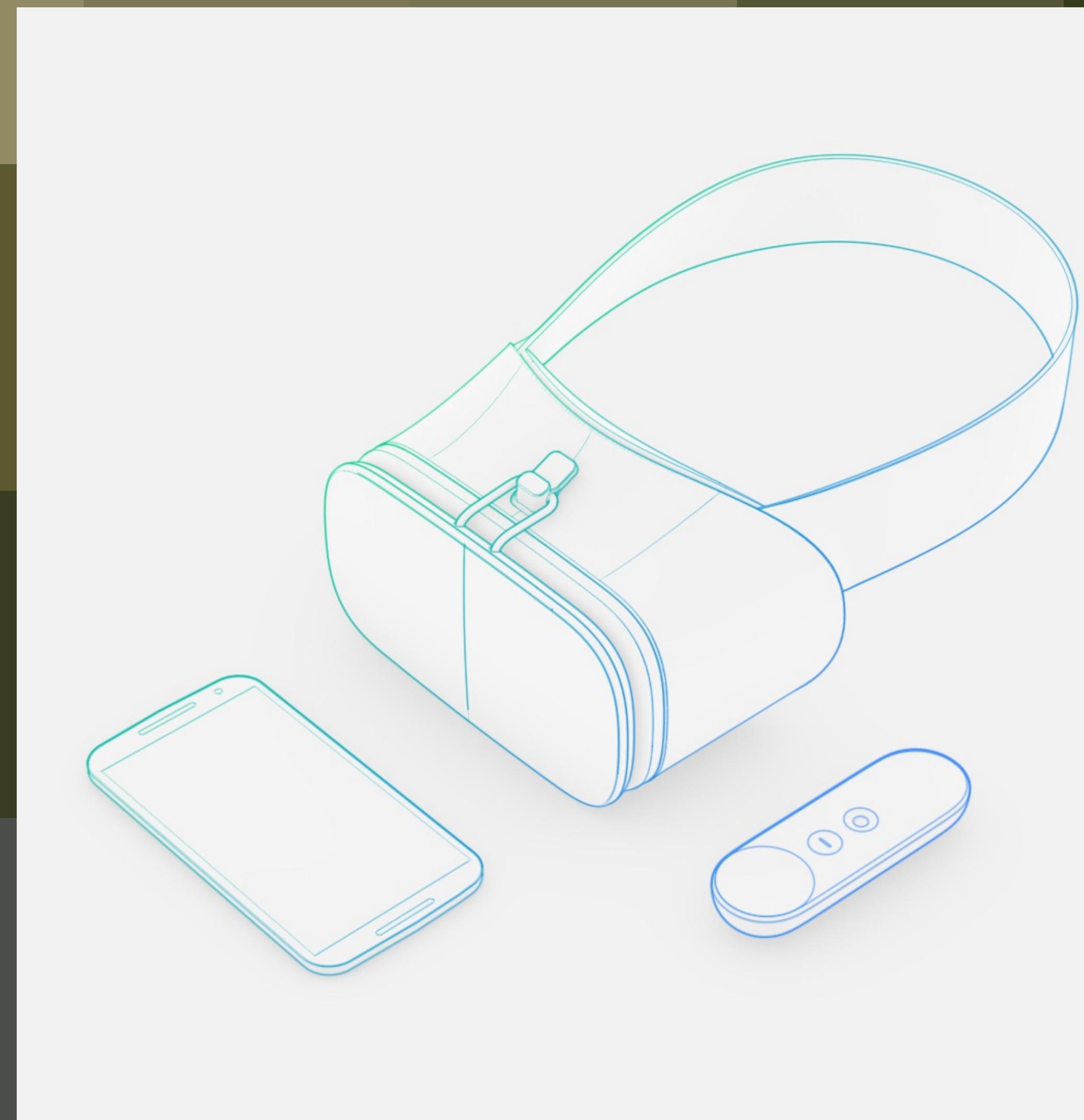


Difficulties in using Unity

- Cost for non free version exists.
- Integration with other (Java) libraries difficult at best.
- Sending of Intents (aka interacting with Android OS / apps) is rather hard.

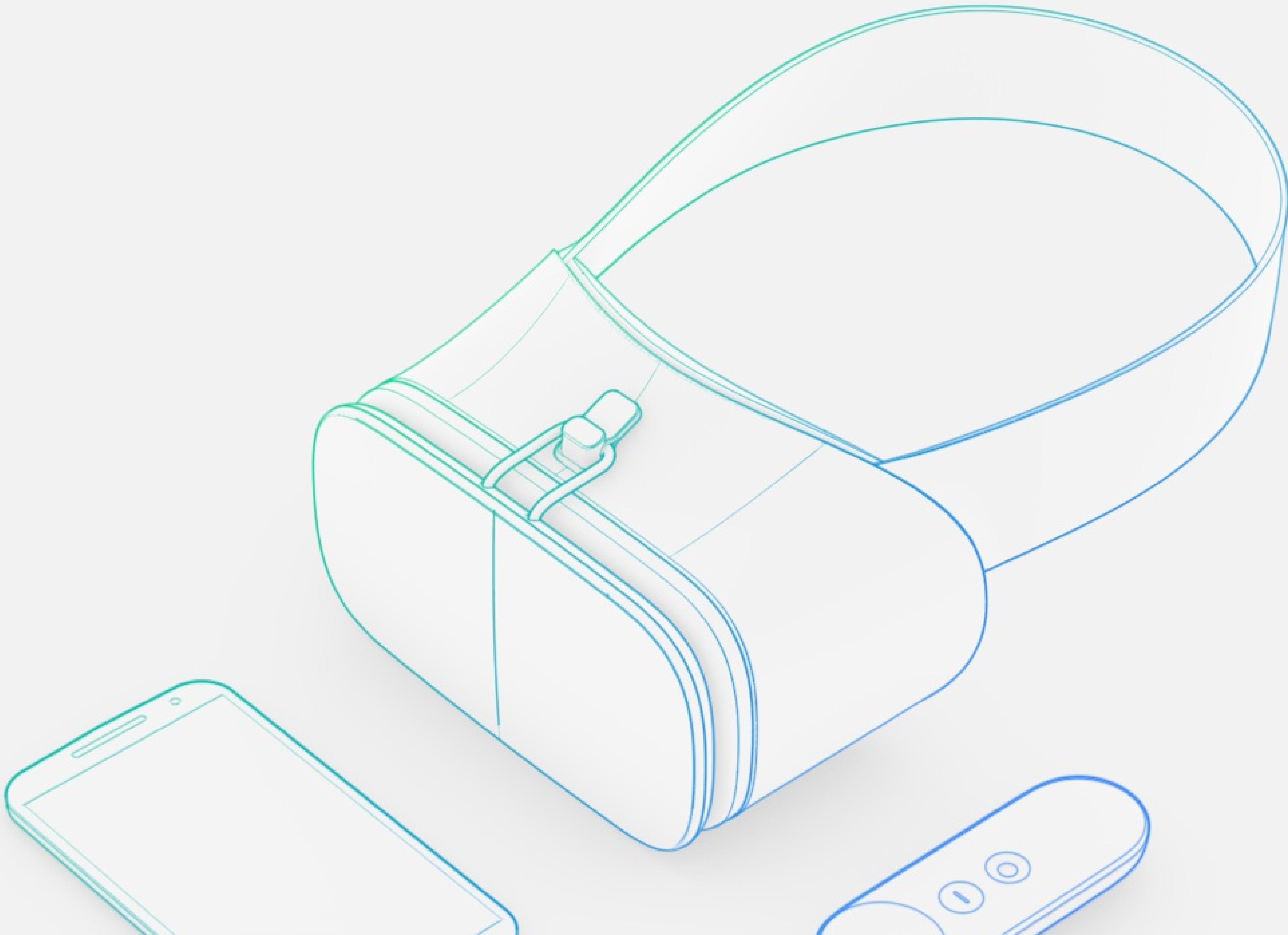


Daydream





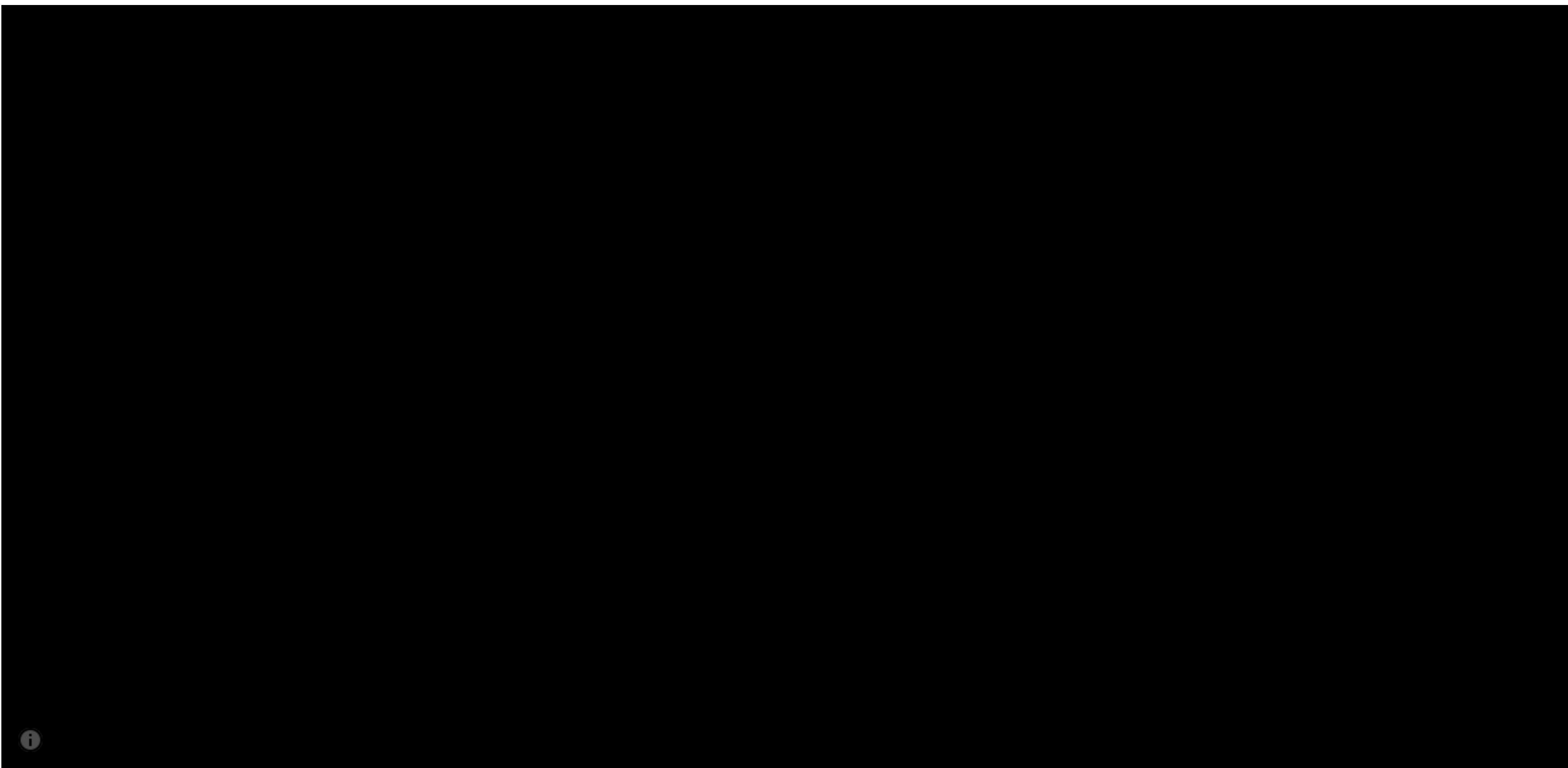




Daydream SDK features

- Same as Cardboard SDK
- Controlling the controller
 - orientation/acceleration
 - input (Clickpad: x,y, clicked, App Button, Vol+/-)
- spatial audio engine

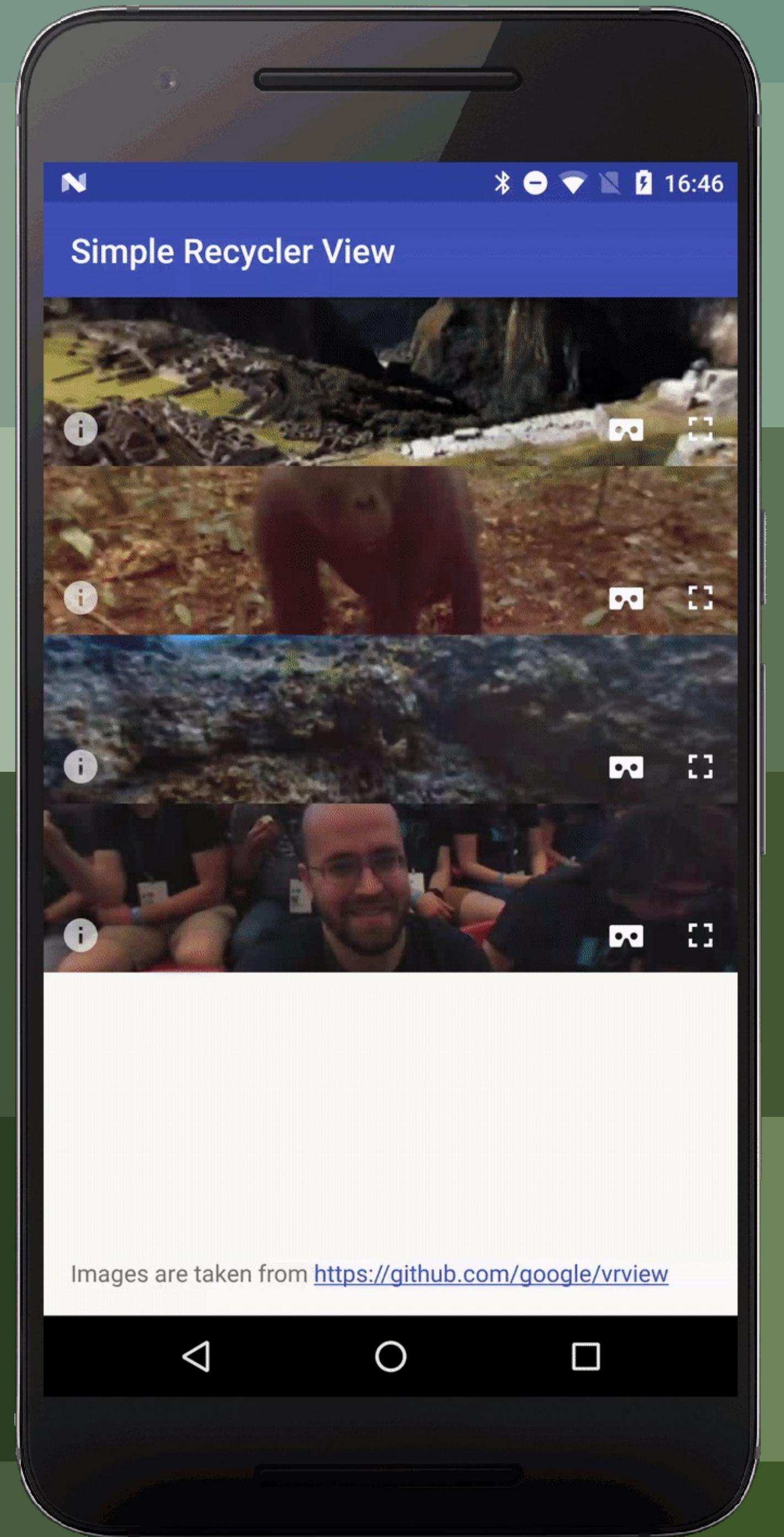
VrView on Web/ios/Android



Simple RecyclerView with 4 items 🎥 Images from Google







Sample Recycler View Project

 Source Code

MainActivity.java

ConstantResourceAdapter.java

ConstantResourceAdapter

foobar

ItemView.xml

something something

Making the change

something else something else

Changes in java

TextView -> VrPanoramaView

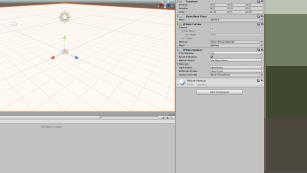
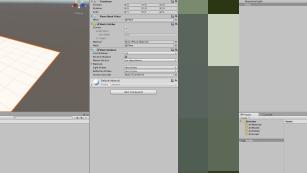
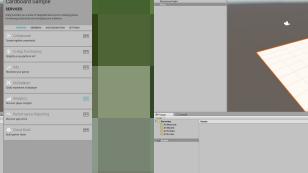
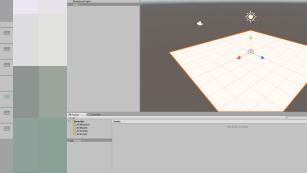
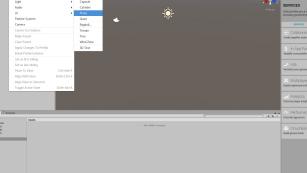
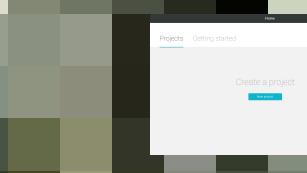
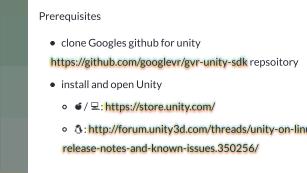
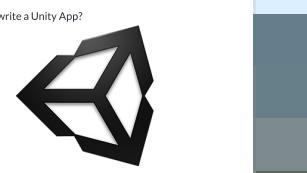
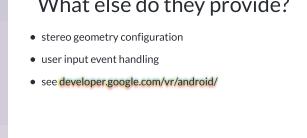
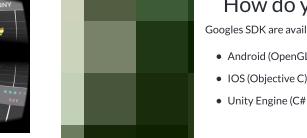
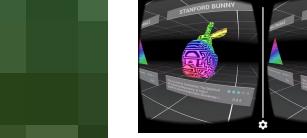
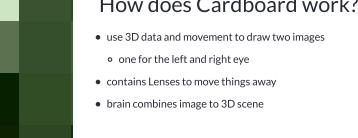
RUN

Limitations of Android SDK

- using 3D models has to be done by
 - either low level OpenGL or
 - 3rd party 3d engine



Cardboard



What will you build?

🎥 General 🎥 Controller 🎥 Designing

📄 Google VR Github

🐦 @MarioBodemann