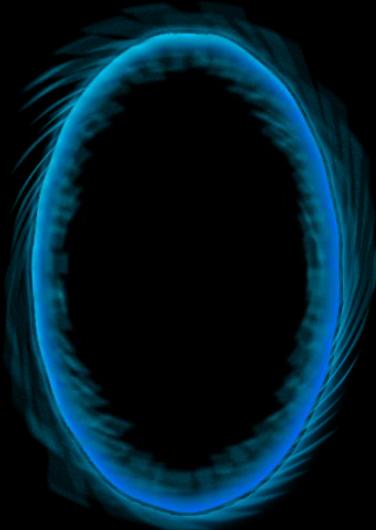


GD50

Lecture 10: Portal

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David J. Malan
malan@harvard.edu





Pong

FPS: 60

Welcome to Pong!
Press Enter to begin!

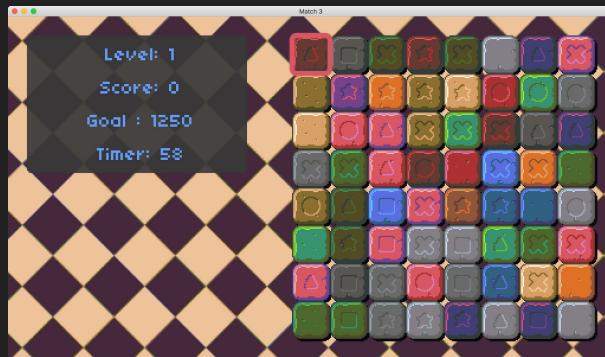
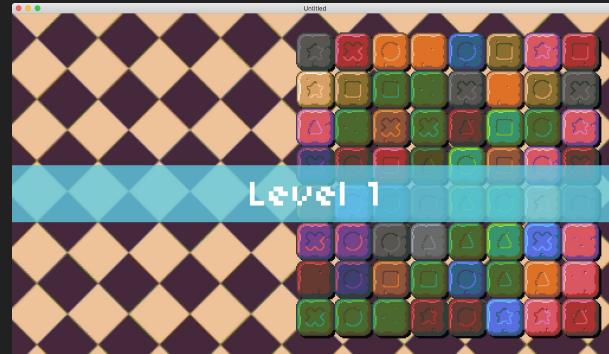


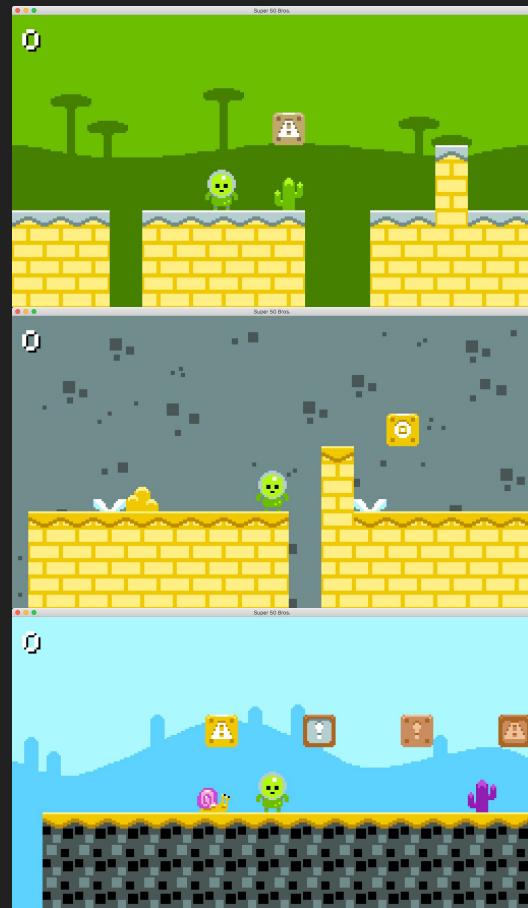
Fifty Bird

Score: 4

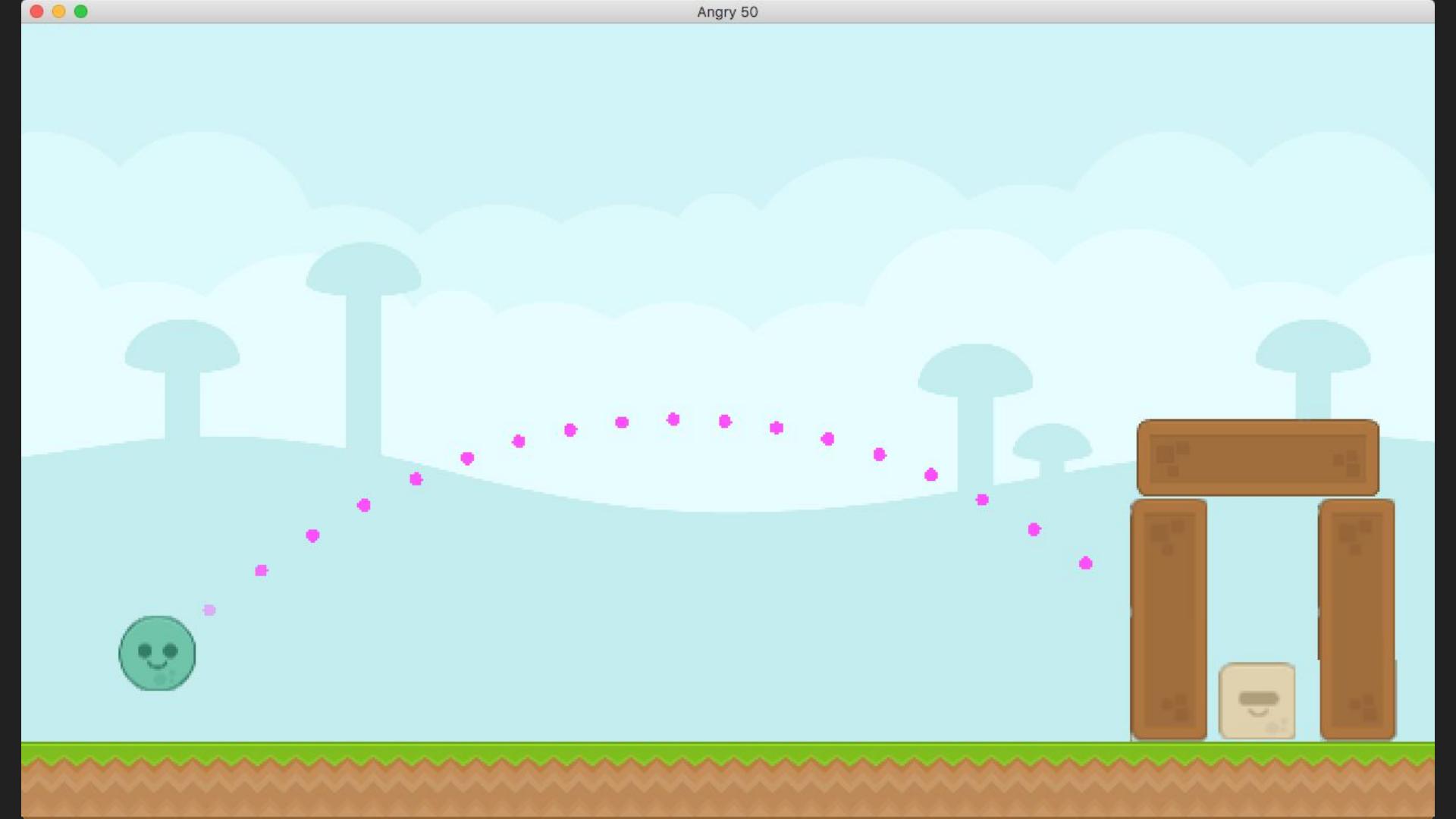


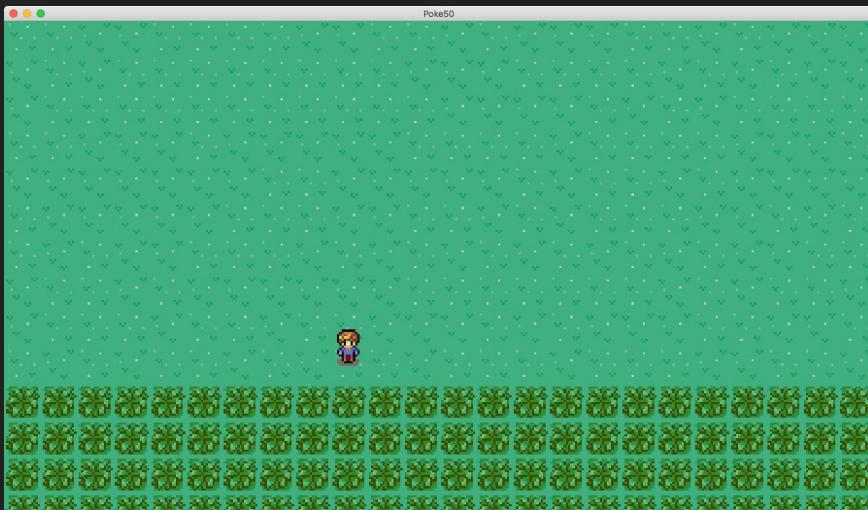


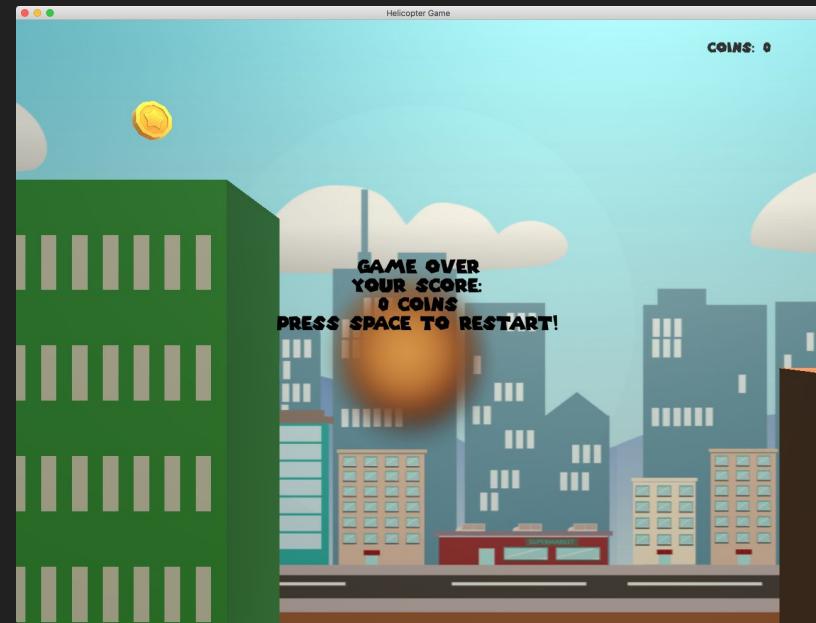








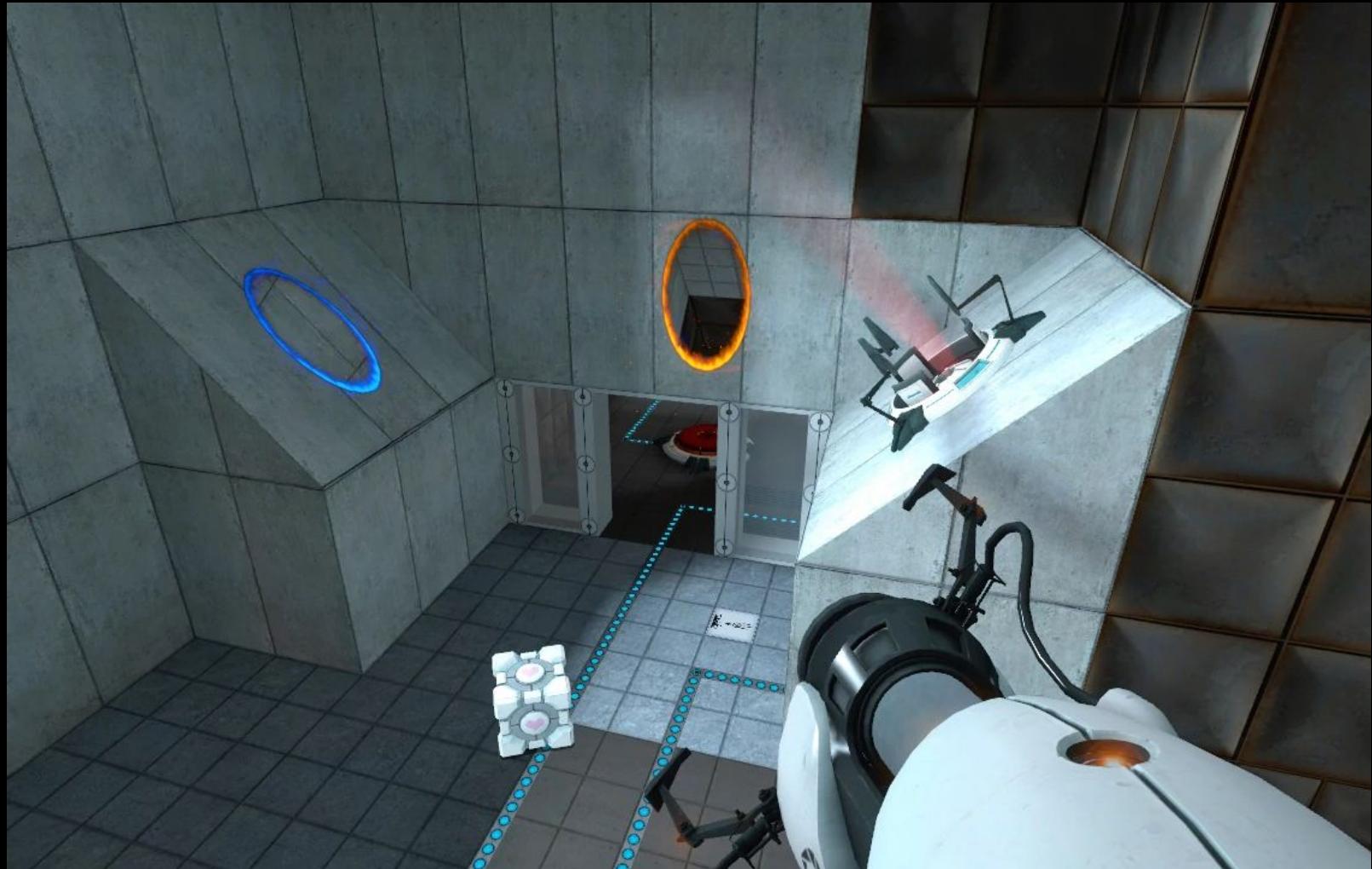






DREAD50

PRESS ENTER



Topics

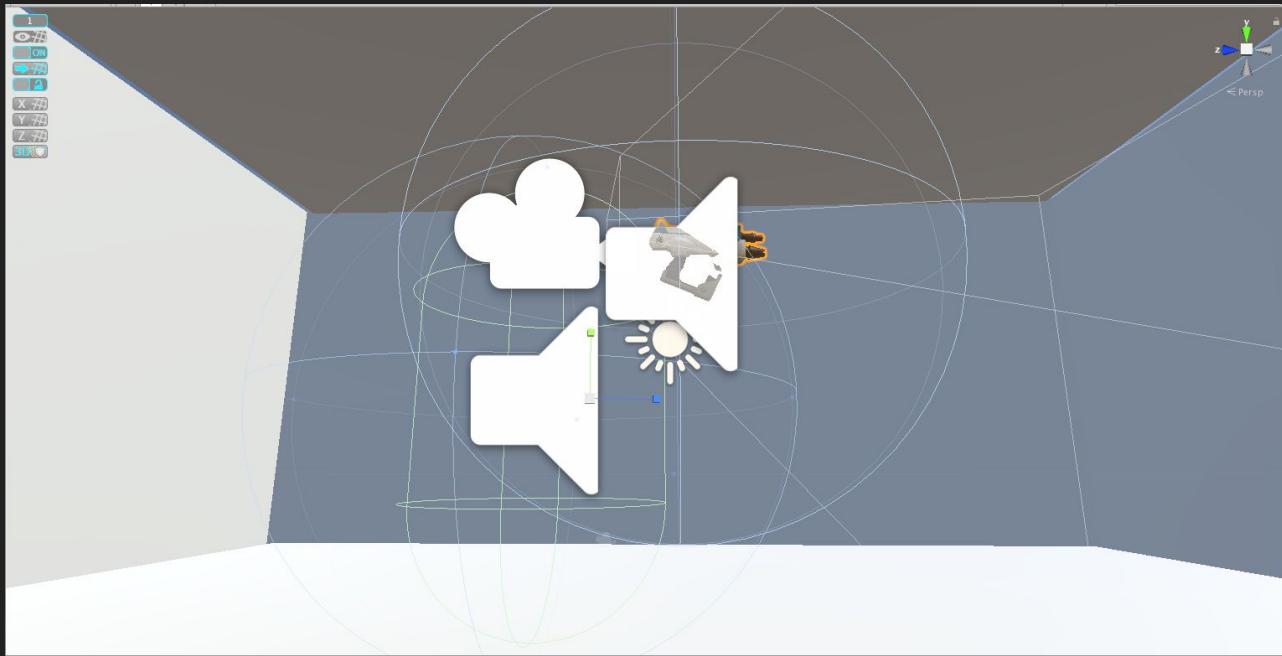
- Holding a Weapon
- Raycasting
- RenderTexture
- Texture Masking
- Decals
- Teleporting
- ProBuilder and ProGrids

But first, a demo!

Our Goal

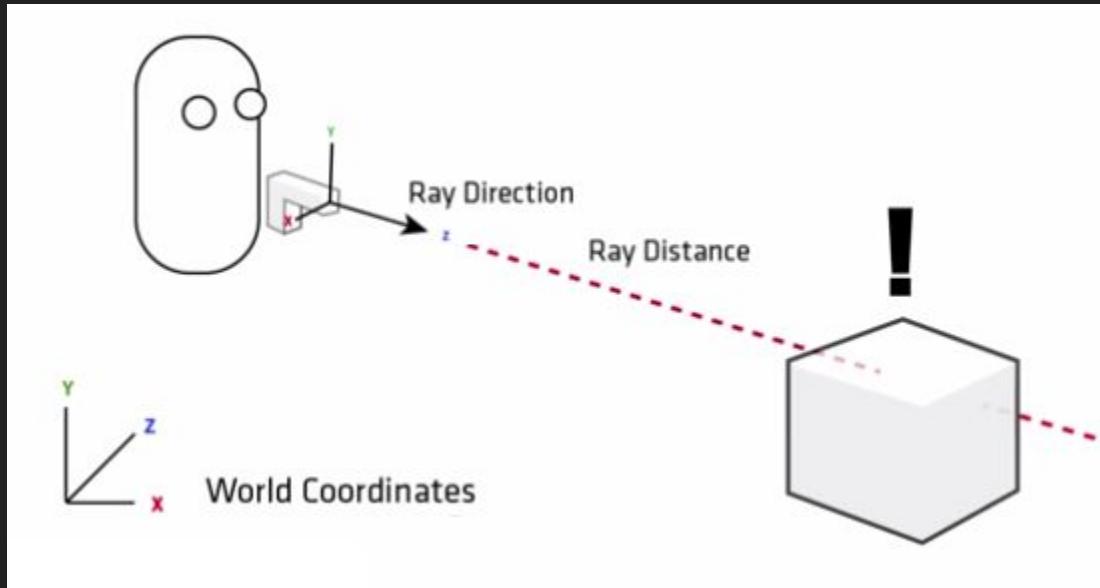


Holding a Weapon



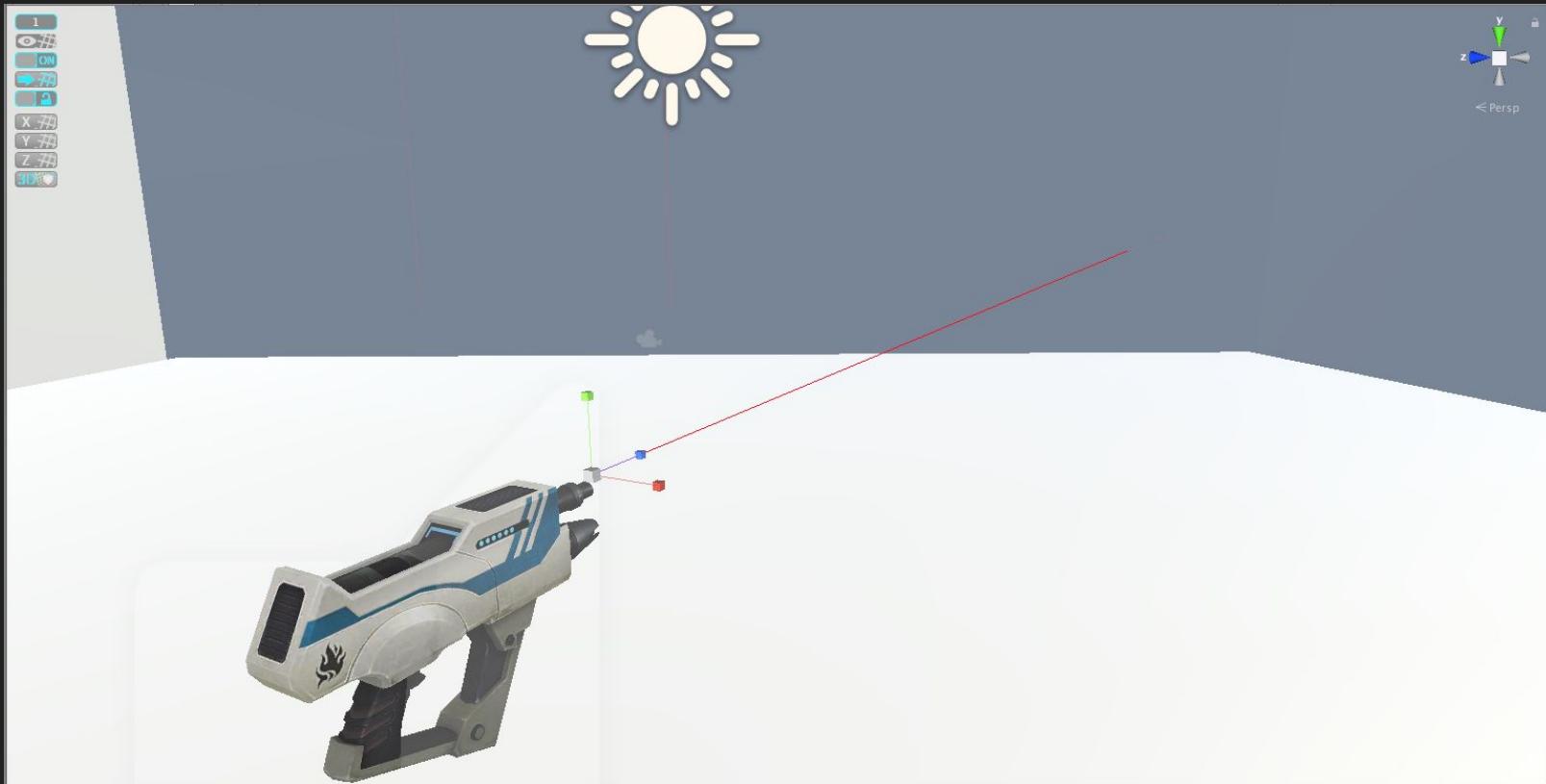
```
▼ PortalGunFPSController
  ▼ FirstPersonCharacter
    ▼ PortalGun
      GunTip
```

Raycasting

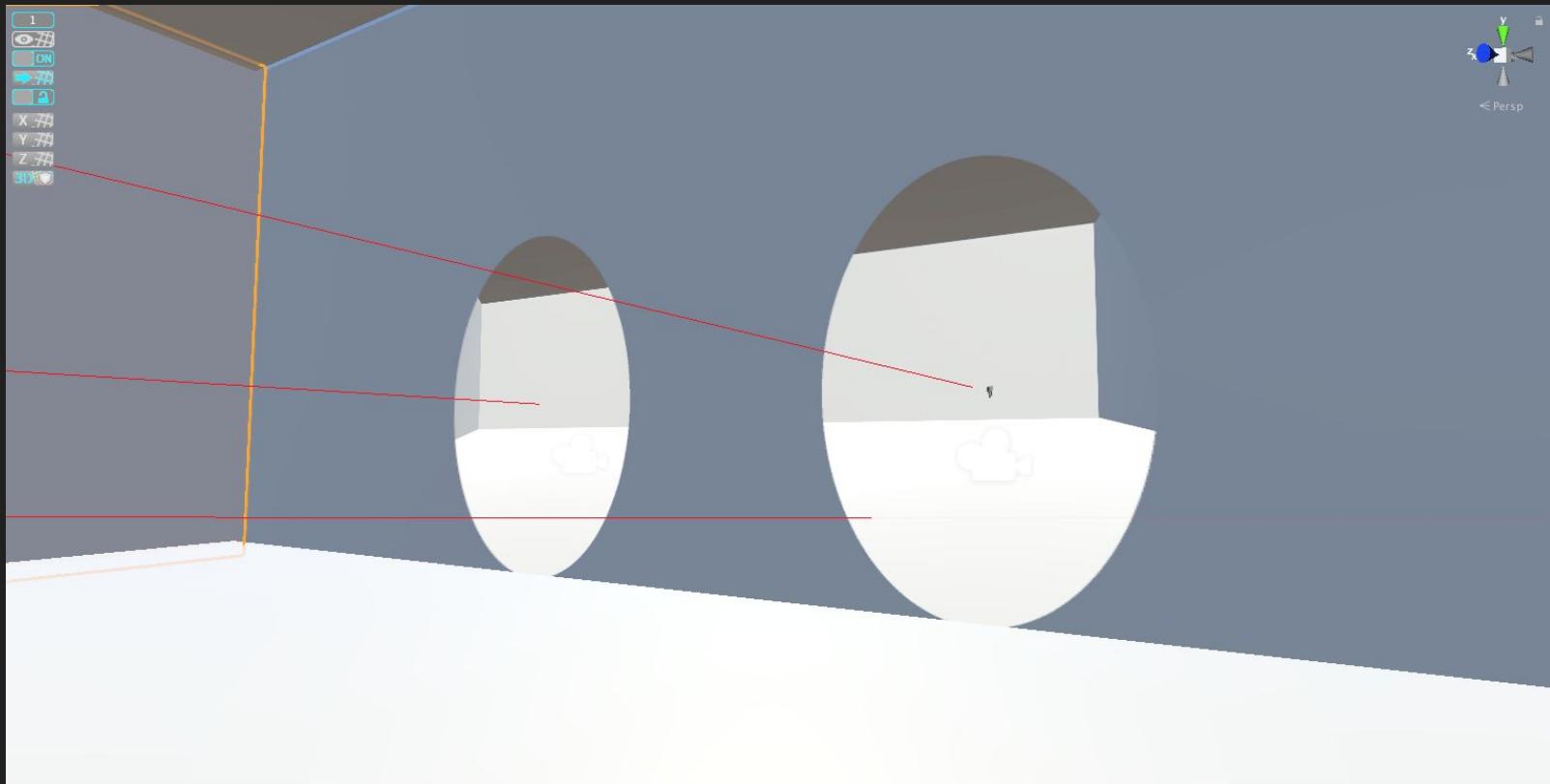


<http://www.clonefactor.com/wordpress/unity3d-show-room/raycast-gizmos-visualizer/>

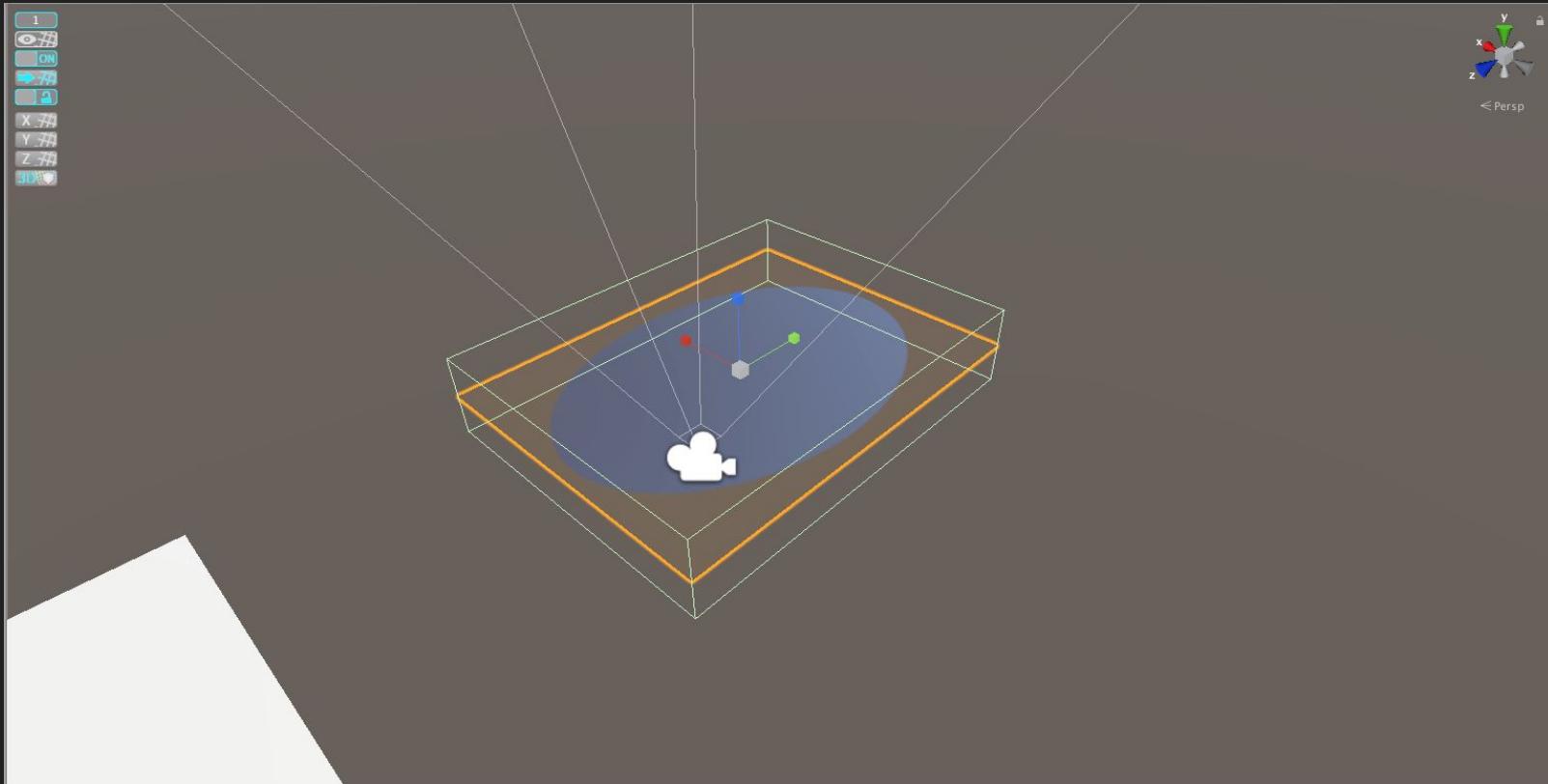
Raycasting



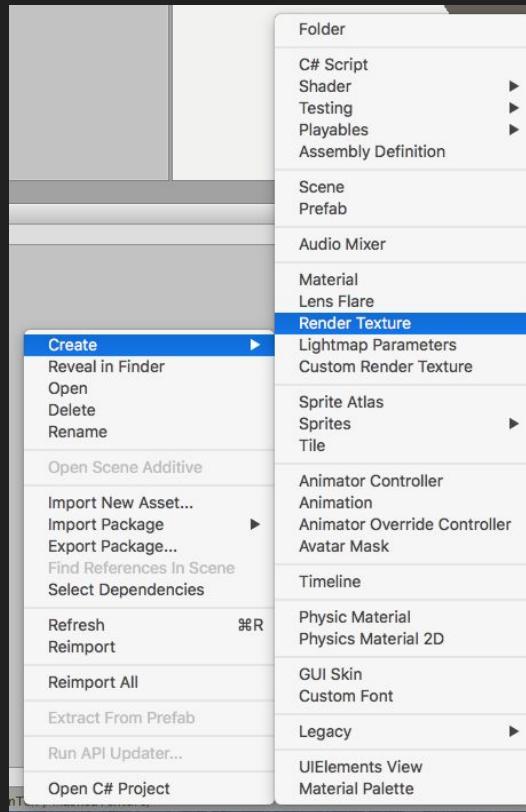
Raycasting



Render Texture



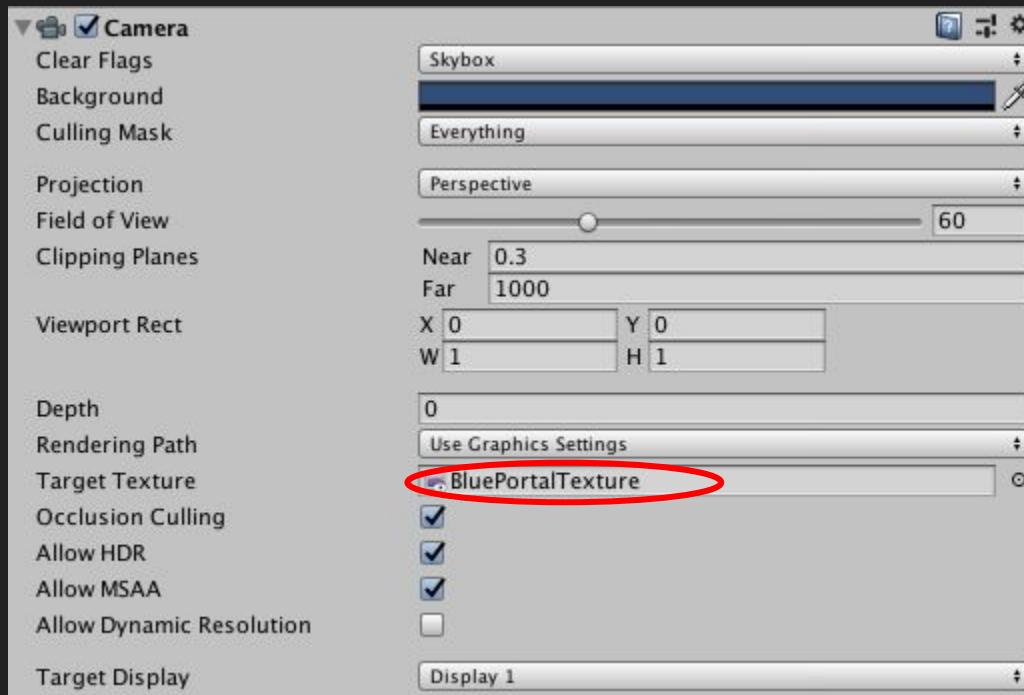
Render Texture



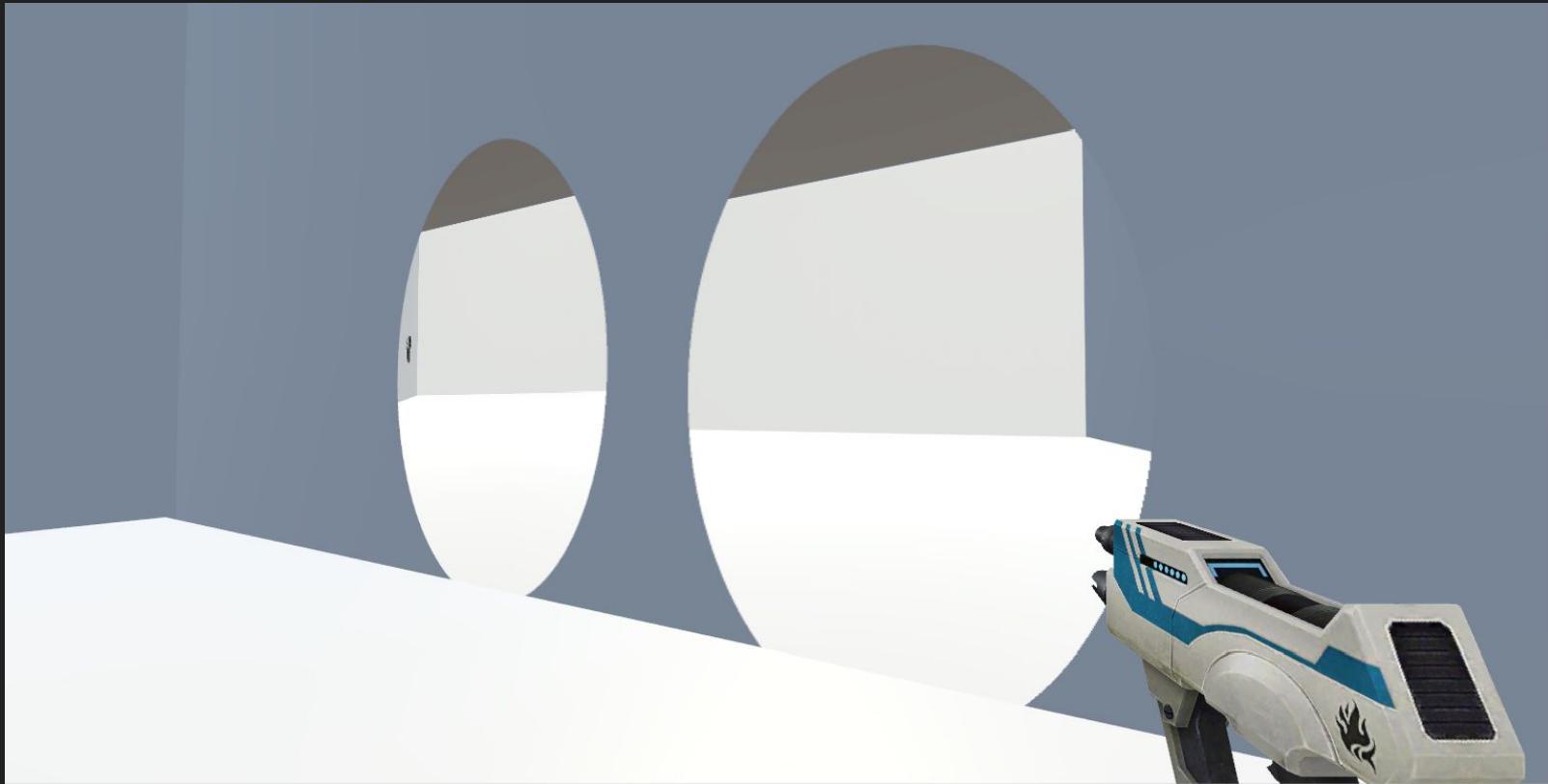
The Unity Inspector window displays settings for a 'Render Texture' asset named 'BluePortalTexture'. The asset is currently set to 2D mode with dimensions of 1024x1024 pixels. It uses ARGB32 color format and has a depth buffer of at least 24 bits. The 'Enable Mip Maps' checkbox is checked, while 'Auto generate Mip Maps' and 'Dynamic Scaling' are unchecked. The 'Wrap Mode' is set to 'Clamp', and 'Filter Mode' is set to 'Bilinear'. A note at the bottom states: 'RenderTextures with depth must have an Aniso Level of 0.' The 'Aniso Level' slider is set to 0.

Setting	Value
Dimension	2D
Size	1024 x 1024
Anti-Aliasing	None
Color Format	ARGB32
Depth Buffer	At least 24 bits depth (with stencil)
sRGB (Color RenderTexture)	<input type="checkbox"/>
Enable Mip Maps	<input checked="" type="checkbox"/>
Auto generate Mip Maps	<input type="checkbox"/>
Dynamic Scaling	<input type="checkbox"/>
Wrap Mode	Clamp
Filter Mode	Bilinear
Aniso Level	0

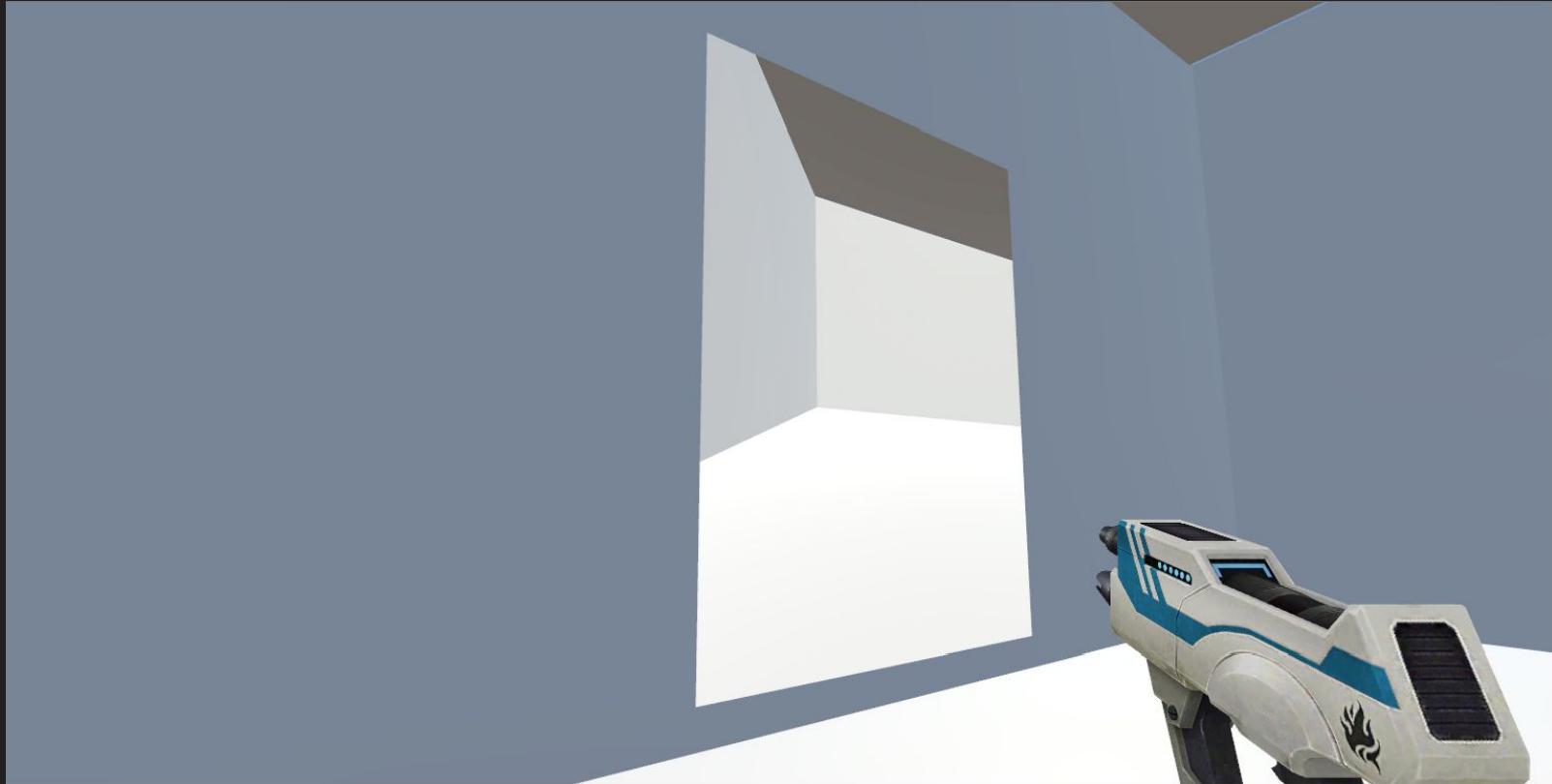
Render Texture



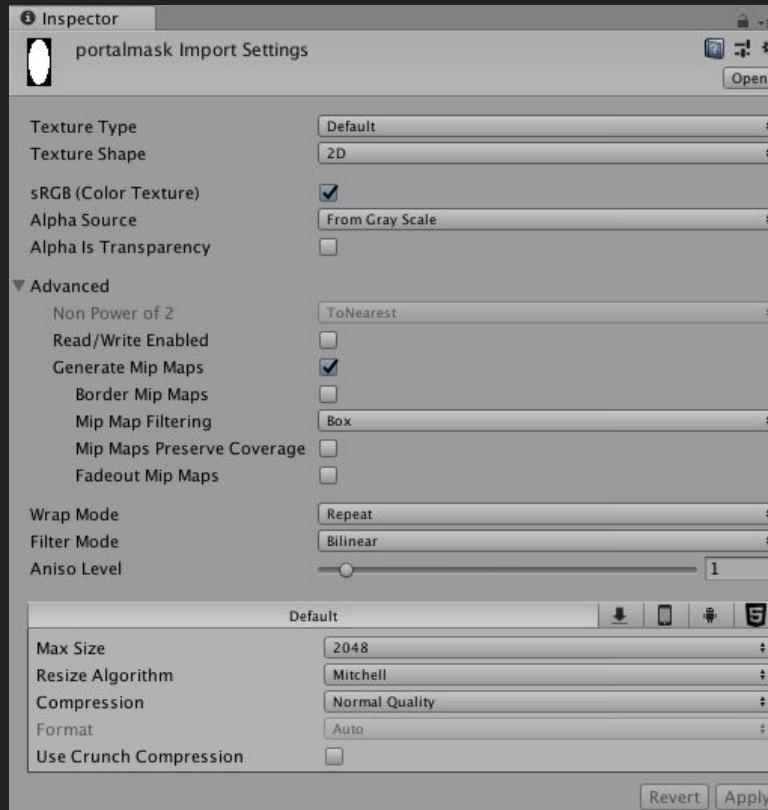
Render Texture



Texture Masking



Texture Masking

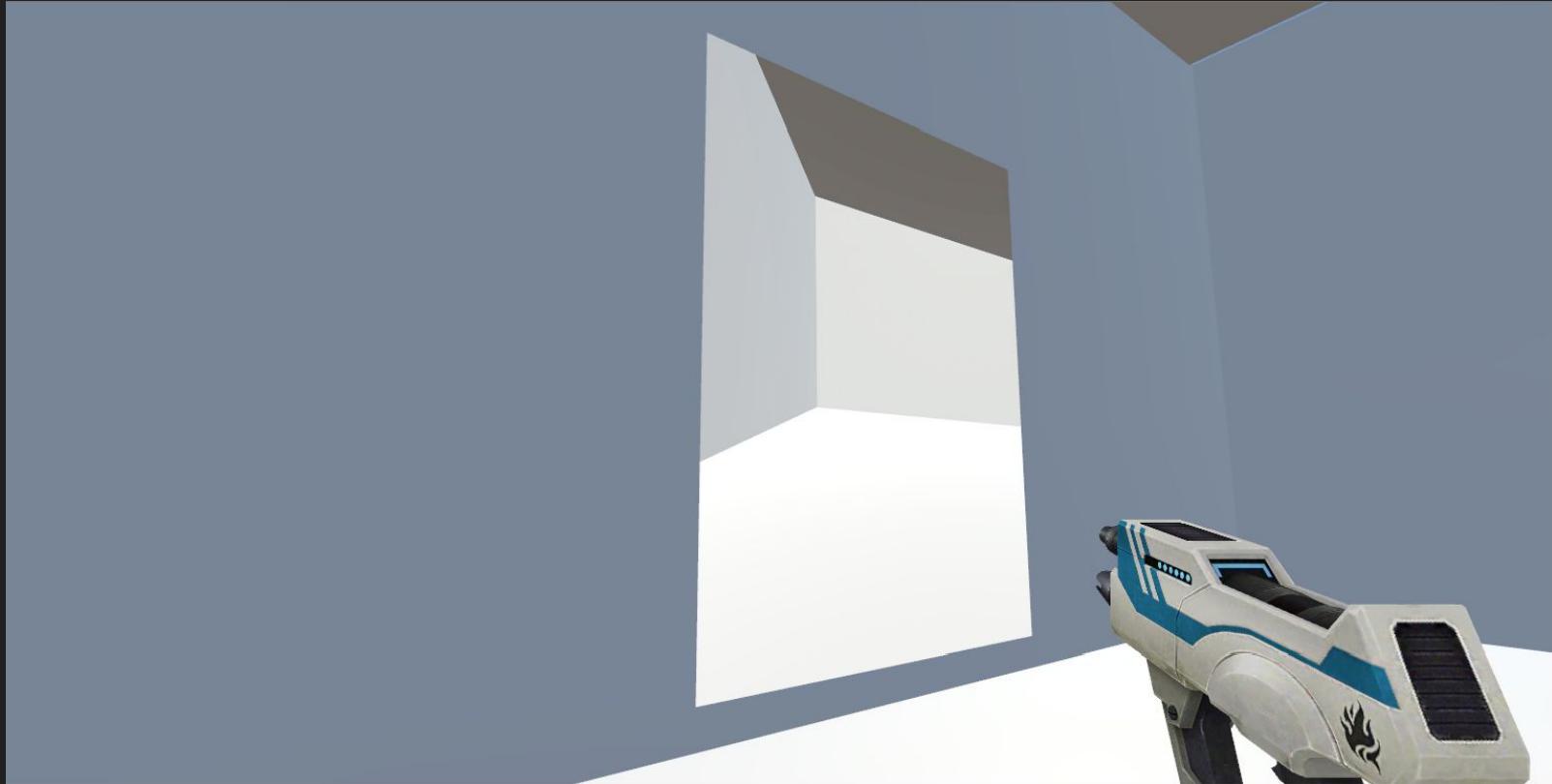


Texture Masking

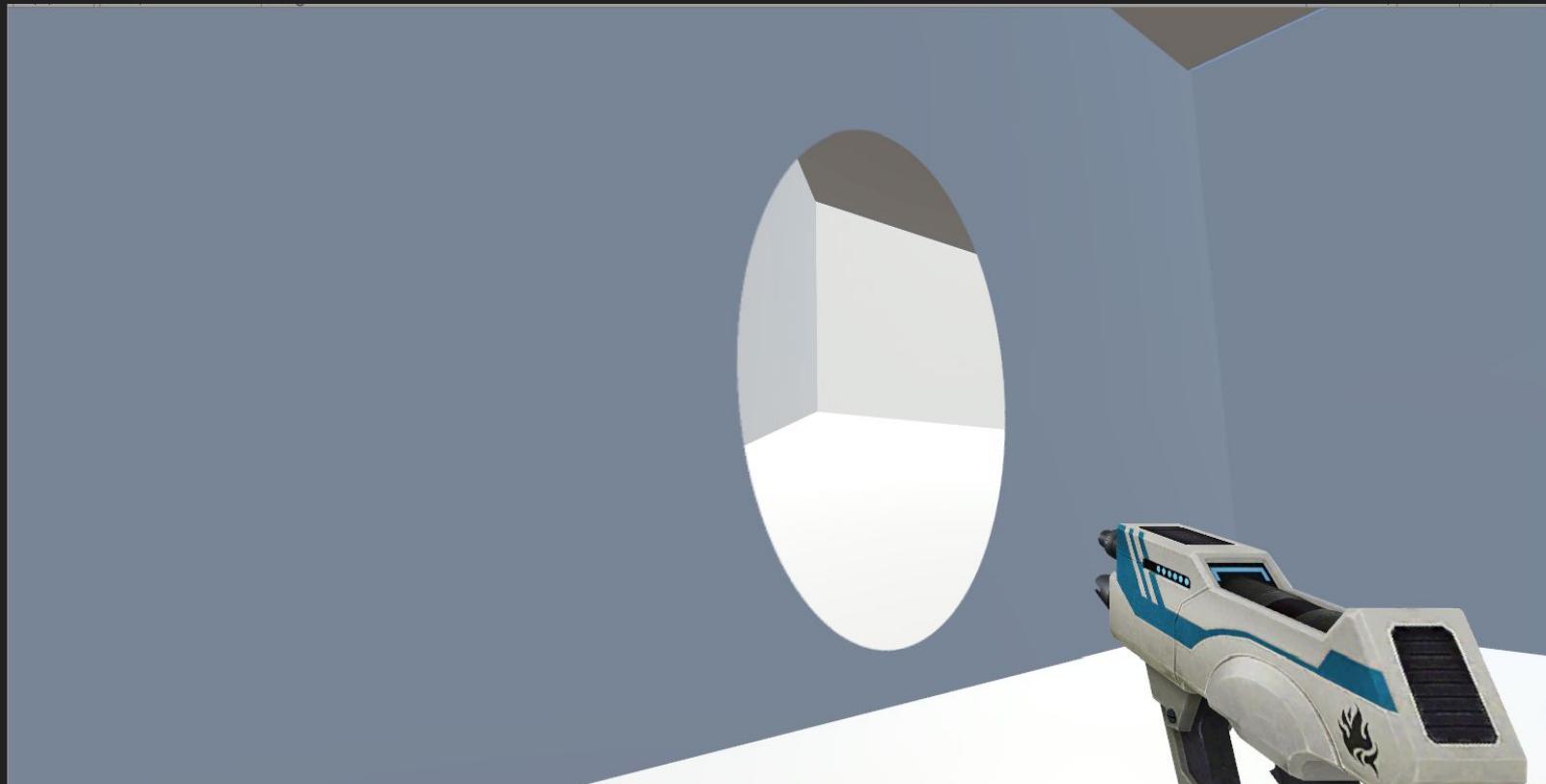
```
1 Shader "MaskedTexture"
2 {
3     Properties
4     {
5         _MainTex ("Base (RGB)", 2D) = "white" {}
6         _Mask ("Culling Mask", 2D) = "white" {}
7     }
8     SubShader
9     {
10        Tags {"Queue"="Transparent"}
11        Lighting Off
12        ZWrite Off
13        Blend SrcAlpha OneMinusSrcAlpha
14        Pass
15        {
16            SetTexture [_Mask] {combine texture}
17            SetTexture [_MainTex] {combine texture, previous}
18        }
19    }
20 }
```

http://wiki.unity3d.com/index.php?title=Texture_Masking

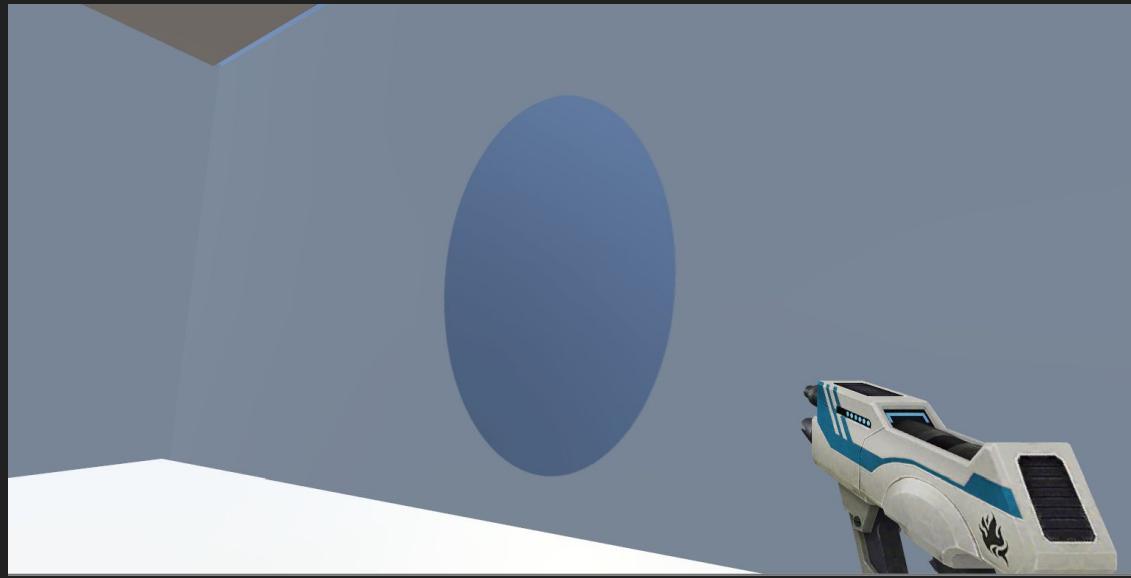
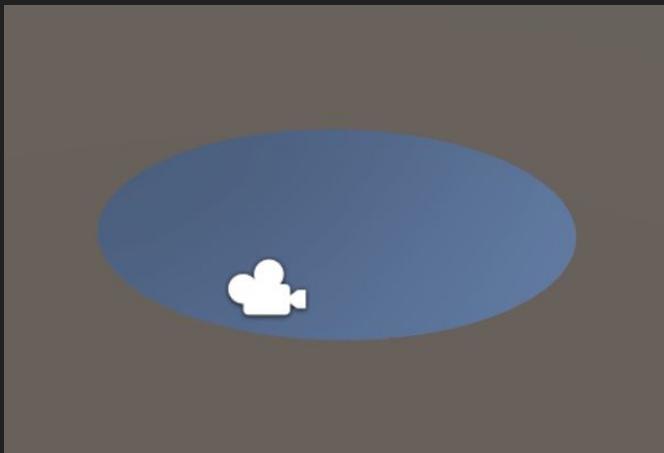
Texture Masking



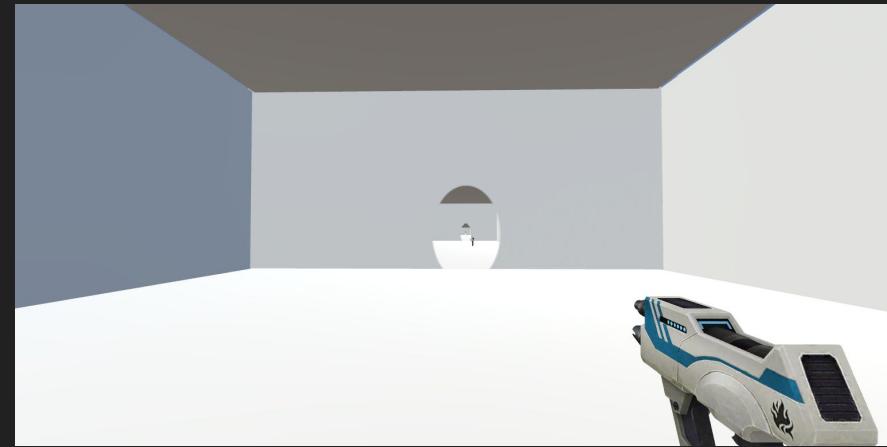
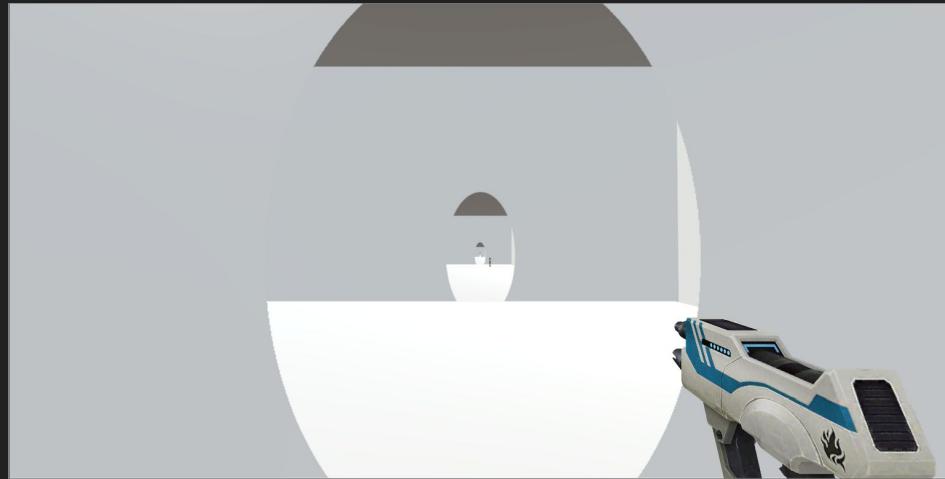
Texture Masking



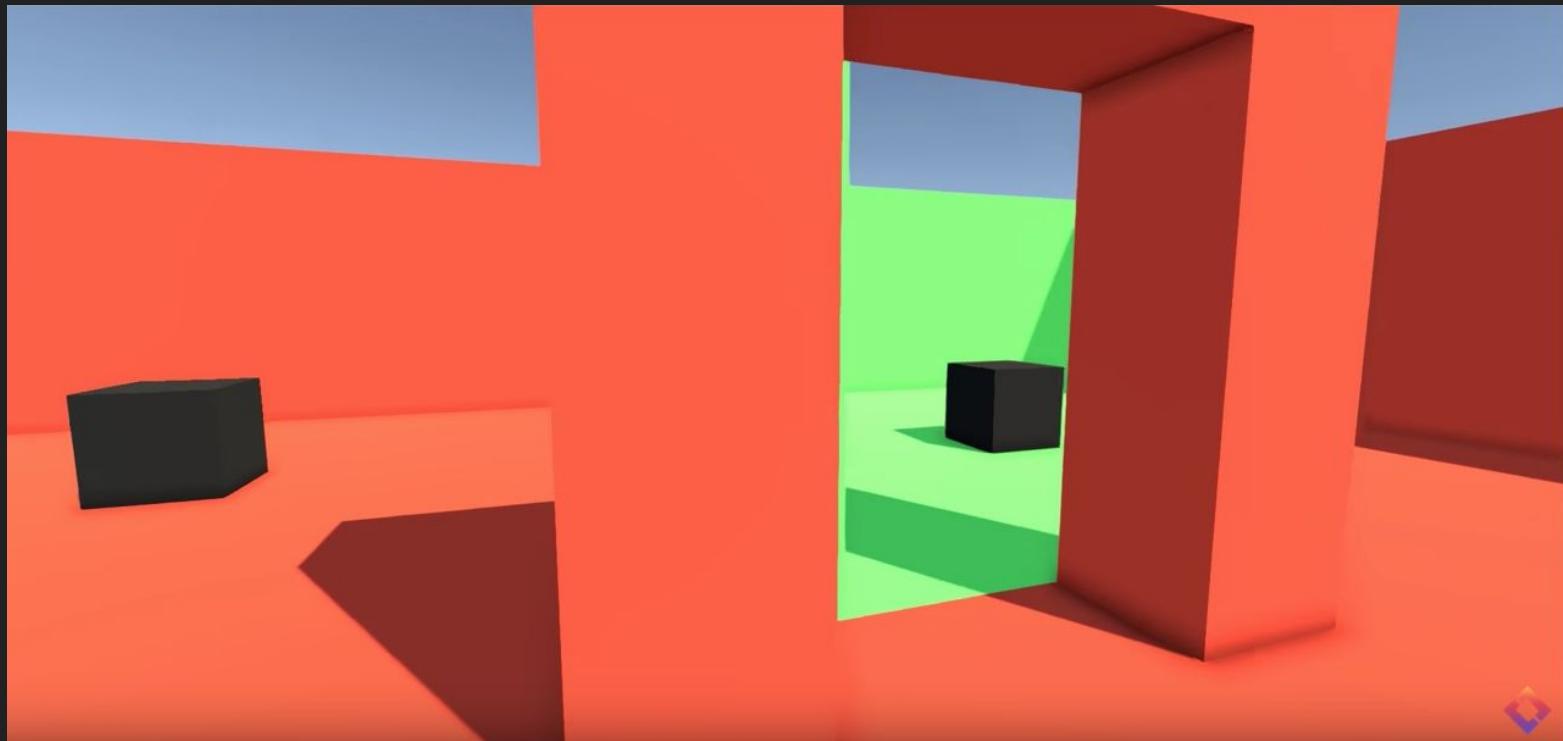
Decals



Teleporting



A Better Version



<https://www.youtube.com/watch?v=cuQao3hEKfs>

Brackeys



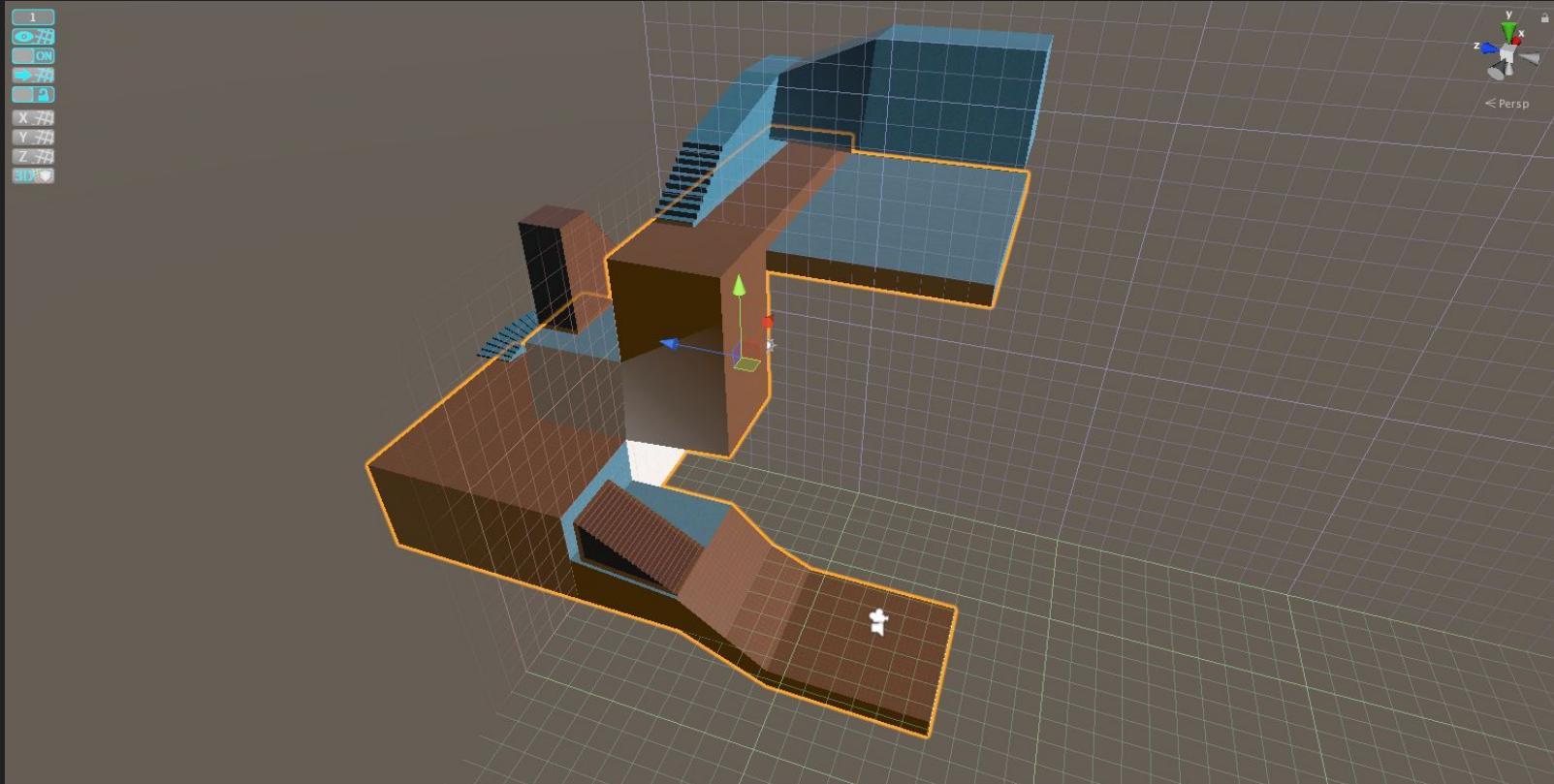
https://www.youtube.com/channel/UCYbK_tjZ2OrIZFBvU6CCMiA

The Best Version



Dave Kircher
Tejeev Kohli

ProBuilder and ProGrids



Awesome Tutorials



ProBuilder:

<https://www.youtube.com/watch?v=PUSOg5YEflM>

ProGrids:

<https://www.youtube.com/watch?v=UtNvtlrJcNc>

Assignment 10

- Create your own level using ProBuilder!
- Level should be of reasonable complexity and include at least **two** different textures/materials (not including the default).
- Level must include an FPSController.
- There must be at least one jumping puzzle for the player.
- At the end of the level, there must be a collider with a trigger that makes "Level Complete" pop up on the screen.

This was GD50!

