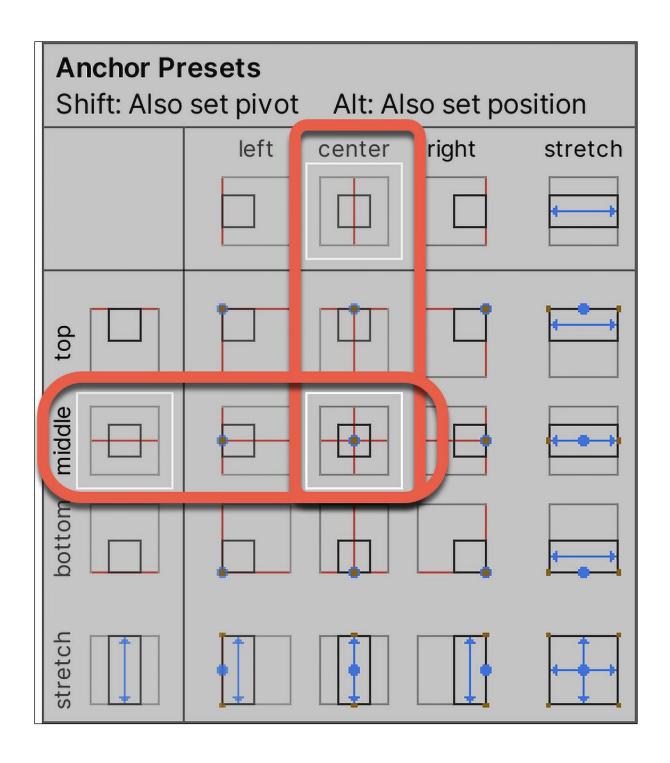
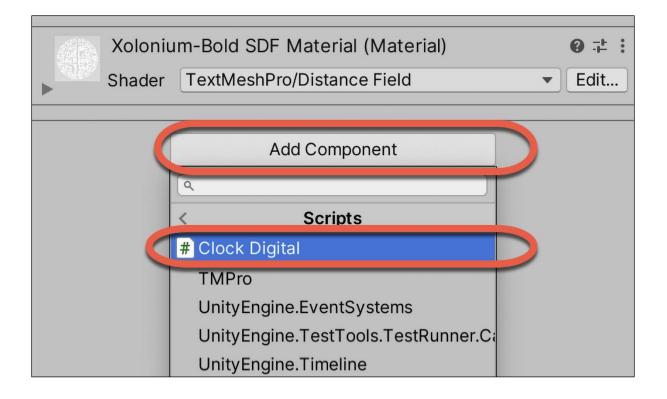




| Inspector | а : |
|-----------------------------|--------------------------------------|
| Text-hello | Static 👻 |
| Tag Untagged | ▼ Layer UI ▼ |
| ▼ 🔽 🗹 TextMeshPro - Text (U | ॥) |
| Text Input | Enable RTL Editor |
| Hello World | |
| Text Style | Normal |
| Main Settings | |
| Font Asset | E Xolonium-Bold SDF (TMP_Font Asset) |
| Material Preset | Xolonium-Bold SDF Material |
| Font Style | B U S ab AB SC |
| Font Size | 100 |
| Auto Size | |
| Vertex Color | WHITE 🔊 |
| Color Gradient | |
| Override Tags | |
| Alignment | |
| Wrapping | Enabled |
| Overflow | Overflow |

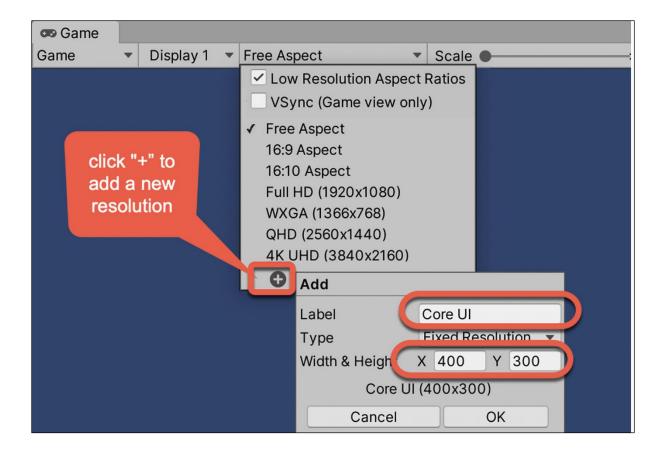


15:09:06



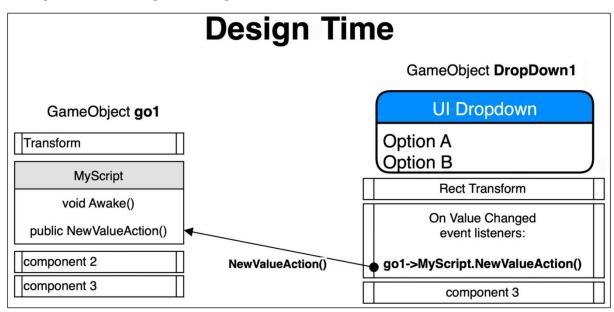
Countdown seconds remaining = 25

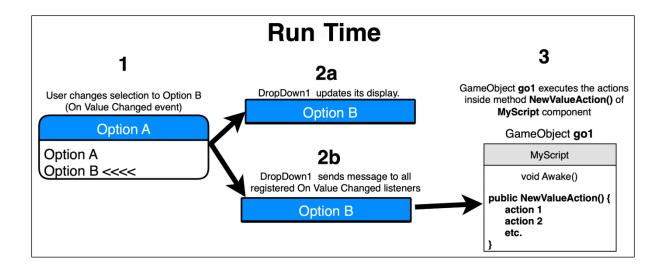




| ि Hierarchy | Inspector A | |
|---|----------------------------|--------------|
| + ▼ (¬ All ▼ ☆ sceen 1 - logo image : | Rawlmage-logo | • |
| Main Camera ♥ Canvas | Tag Untagged Layer UI | • |
| Text-hello | Rect Transform | |
| 😭 Rawlmage-logo | ▶ 💿 Canvas Renderer 🛛 🚱 🕂 | |
| 🕞 EventSystem | 🔻 🖾 🗹 Raw Image 🛛 🚱 🕂 | |
| Project a : | Texture | 5) |
| + - 9 | Color | |
| ▼ 🗁 Assets Assets > Images | Material None (Material) @ | \mathbf{b} |
| ► ► Fonts | Raycast Target 🗹 | |
| Images | Raycast Padding | |
| ► TextMesh Pro | Maskable 🖌 | |

Chapter 2: Responding to User Events for Interactive UIs



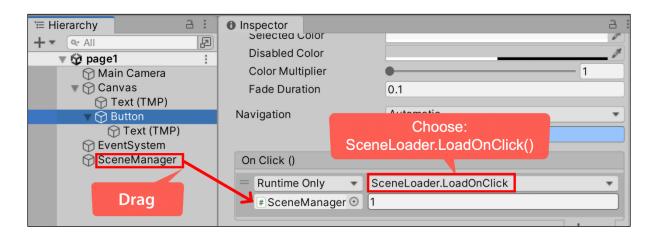


| '≡ Hierarchy | Inspector | | | | | c | a : |
|---------------------------|---------------|-----|-------|---------|---|-------|-----|
| + • Q. All | unity_logo_0 | | | | | Stati | с • |
| 💬 Main Camera | Tag Untagged | * | Layer | Default | | | * |
| 🕜 unity_logo_0 🔻 🖓 Canvas | 🔻 🦶 Transform | | | | | Ø 5 | ± : |
| ▶ 💬 Button | Position | X O | | Y 0 | Z | 0 | |
| C EventSystem | Rotation | X O | | Y O | Z | 0 | |
| | Scale | X 2 | | Y 2 | | 1 | |

| [•] ≣ Hierarchy | а: | Inspector | | 6 |
|--------------------------|------------------------|--------------|----------------------------|---|
| + • All | R | Navigation | Automatic | • |
| V 🔂 Samp | IeScene : in Camera | | Visualiz | e |
| | | | | |
| 🕤 unit | ty_logo | On Click () | | |
| 🔻 😭 Car | nvas | | | |
| ► 💬 B | Button | = Runtime | Only GameObject.SetActive | • |
| 💮 Eve | entSystem | 💙 🕅 unity_le | ogo 💿 🖌 | |
| | | | | |







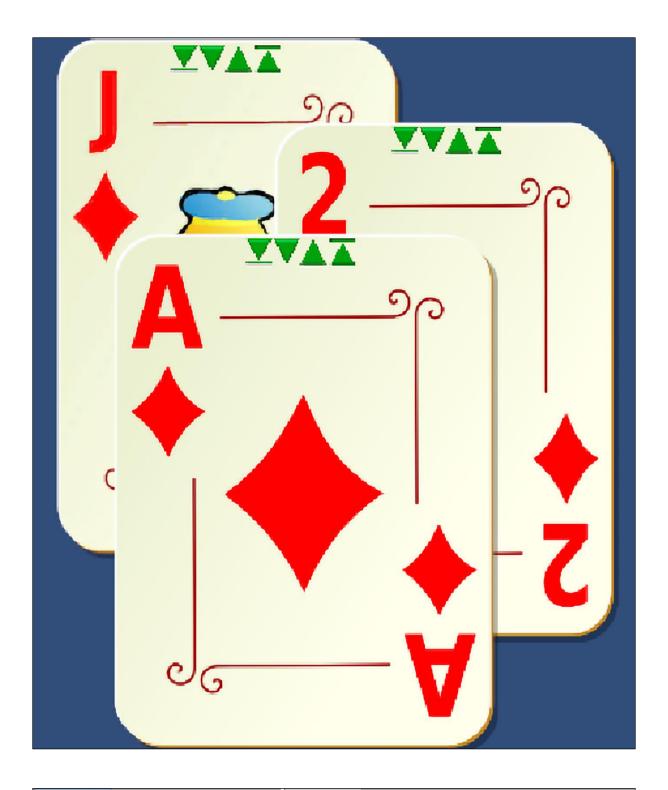
| '≡ Hierarchy 🔒 🗄 | Inspector | а |
|-------------------------|-------------------|-------------------|
| + ▼ (• All) | 🔻 🖲 🗹 Button | 0 ≓ : |
| Main Camera | Interactable | × |
| Canvas | Transition | Color Tint |
| ⑦ Text (TMP) ► ⑦ Button | Target Graphic | ⊠Button (Image) ⊙ |
| EventSystem | Normal Color | at a |
| G SceneManager | Highlighted Color | / |
| | D .cu Color | J. |
| Choose Red | Selected Color | at a |
| Choose Red | Disabled Color | A* |
| | Color Multiplier | • 1 |
| | Fade Duration | 0.1 |



| 🔻 🖲 🗹 Button | 0 ∓ : |
|---------------------|---|
| Interactable | Image: A start of the start of |
| Transition | Animation |
| Normal Trigger | Normal |
| Highlighted Trigger | Highlighted |
| Pressed Trigger | Pressed |
| Selected Trigger | Selected |
| Disabled Trigger | Disabled |
| | Auto Generate Animation |

| B KS - 6 | mp | Preview |
|------------------|----|-----------------|
| E Hierarchy ☐ | ÷ | Highlighted |
| + • (9. All | Z | |
| 🔻 🔯 SampleScene* | : | |
| 😭 Main Camera | | Normal |
| 🔻 😭 Canvas | | Pressed |
| 🕨 🎧 Button | | Selected |
| 😭 EventSystem | | Create New Clip |

| Animation | | | | | — | |
|-----------------------|---------------|------------|------------|-------------|------|------------|
| C Animation | | | | | | а |
| Preview 🔘 া া | ▶ ▶ ►► | 0 | 0:57 | 0:58 | 0:59 | 1:00 |
| Highlighted | - | ♦ ♦+ []+ | | | | |
| | | | | | | \diamond |
| ▶ \$\$ Button : Scale | | \diamond | | | | |
| | - | | | | | |
| Add | Property | | Delete the | 2nd keyfram | e | |
| | Dopesheet | Curves | 4 | | | |



| '≡ Hierarchy | a : | Inspector |
|------------------------|-----|---|
| + • (• All | R | Button-move-to-front |
| 🔻 🙀 scene2 - 3 cards | : | |
| 🕥 Main Camera | | |
| 🔻 💮 Canvas | | On Click () |
| Panel-2-diamonds | | = Duntime Only = DectTransform SetAsLastSibling = |
| Panel-ace-diamonds | | |
| Panel-jack-diamonds | | Panel-jack-diamonds (Re 💿 |
| 💬 Button-move-to-front | | |
| 💬 Button-move-down-one | | |

Slider value = 20

| '≡ Hierarchy | a : | Inspector | # Scene | 🚥 Game | | | 3 |
|-------------------------|-----|-------------|---------|--------|-------------|------------------|---------|
| + - All | Z | Color Mult | iplier | | • | | 1 |
| V SampleScene | : | Fade Dura | tion | | 0.1 | | |
| Main Camera | | Navigation | | | Automatic | : : | - |
| ⑦ Text (TMP) ► ⑦ Slider | | | | | | Visualize | |
| C EventSystem | | Fill Rect | | | *Fill (Rec | t Transform) | \odot |
| | | Handle Rect | | | * Handle | (Rect Transform) | \odot |
| | | Direction | | | Left To Rig | ght | * |
| | | Min Value | | | 0 | | |
| | | Max Value | | | 20 | | |
| | | Whole Numb | ers | | ✓ | | |
| | | Value | | | • | - | 0 |

| Hierarchy + ▼ Q All | a : 2 | Inspector Extra Settings | # Scene 🛛 📾 Game | | (Click to expand) |
|------------------------|----------|------------------------------|--------------------------|---------------------|-------------------|
| SampleScene* | : | 🔻 # 🗹 Slider V | /alue To Text (Script) | | 0 ∓ : |
| Canvas | | Script | | # SliderValueToText | ۲ |
| Text (TMP) | | Slider UI | > | Slider (Slider) | ۲ |
| 💮 EventSystem | | Liberatio | onSans SDF Material (Mat | terial) | 0≓: |
| | | Shader | TextMeshPro/Mobile/Dista | nce Field | ▼ Edit 📜 ▼ |

| '≡ Hierarchy | а: | Inspector | # Scene | 😎 Gan | ne | a : |
|------------------|------------|-------------|---------------|----------|-----------------------------------|-------------|
| + • (9. All | R | Min Value | | | 0 | |
| V 😨 SampleScene* | | Max Value | | | 20 | |
| 💬 Main Camera | | | | | | |
| 🔻 😭 Canvas | | Whole Numb | ers | | ~ | |
| 🗇 Text (TMP) | | Value | | | • | 0 |
| 🕨 🕥 Slider 💊 | | | | | | |
| 💬 EventSystem | \searrow | On Value Ch | nanged (Sing | le) | | |
| | | = Runtime | Only | T | SliderValueToText.ShowSliderValue | · · · · · · |
| | | Text (T | MP) (Slider \ | /alue ⊙ | | |

| On Value Changed (Single) | |
|--------------------------------|-----------------------------------|
| Runtime Only | SliderValueToText.ShowSliderValue |
| # Text (TMP) (Slider Value T ⊙ | |

| | | | | - | | |
|--|-----|-------|----------|-----|----------|--|
| Projec | t | E Co | onsole | | | |
| Clear 🕶 | Col | lapse | Error Pa | use | Editor - | |
| [16:35:49] 0.5211706 UnityEngine.MonoBehaviour:print (object) | | | | | | |

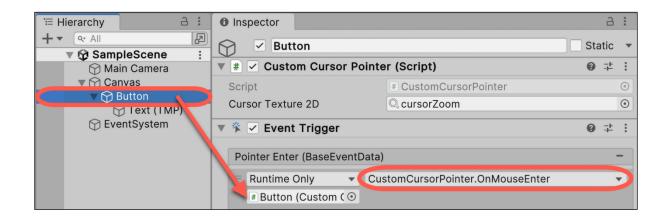


| ☐ Hierarchy 🔒 🗄 | Inspector | | a : |
|-----------------------|--------------------|------------------------------|--------------|
| + • • All | Fill Area | | Static 🔻 |
| 🔻 🔂 SampleScene 🕴 | ∇_{\bullet} | | |
| 💬 Main Camera | Tag Untagged | Layer UI | • |
| Canvas | | | |
| Text (TMP) | Rect Transform | 1 | ⊙ ∓ : |
| V 💮 Slider | left | Pos X Pos Y | Pos Z |
| 💬 Background | ω | 0 0 | 0 |
| 🕨 🏠 Fill Area | middle | | |
| ► 🕥 Handle Slide Area | | | |
| C EventSystem | | 155 12 | |
| | ▶ Anchors | | |



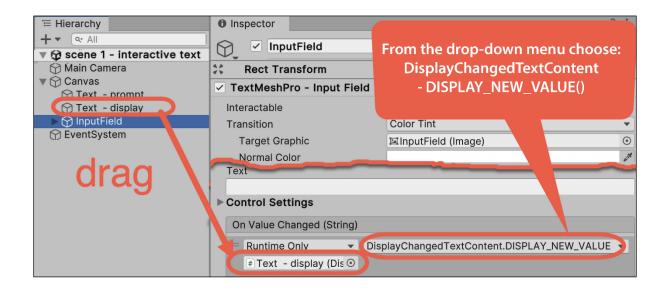
| Assets > Icor | nsCursors | | | | 1.52 | Y 0.62 | | |
|---------------|-----------|------------|------------|--------|---------------------|---------------------|--------|---------|
| | JQ | \bigcirc | Q | | Radius Overrides | 0 | | |
| | | | | ▼ # | Custom Curs | or Pointer (Script) | 0 -t | : |
| _Script | cursorArr | cursorTar | cursorZoom | Script | | # CustomCursor | Pointe | r 💿 |
| | | | | Curso | r Texture 2D | 🗇 cursorTarget | | \odot |





| Name: | Matt | last entry = | 'Matt' |
|-------|------|--------------|--------|

| ि ≔ Hierarchy 🔒 | 0 Inspector | | Ъ | |
|----------------------------|---|-----|---------|---|
| + ▼ Qr All ▼ | 🕥 🗹 Text - display | Sta | atic | |
| 💮 Main Camera | Tag Untagged Layer UI | | | • |
| Canvas Text - prompt | Rect Transform | 0 | -ŀ | : |
| 🕥 Text - display | ▶ | 0 | -F | : |
| InputField EventSystem | ▶ <u> </u> | 0 | -+- | : |
| () Eventoystem | ▼ # ✓ Display Changed Text Content (Script) | 0 | -+- | : |
| Drag | Script # DisplayChangedTextContent | | | • |
| Diag - | Input Field (TMP_Input Field) | | | • |



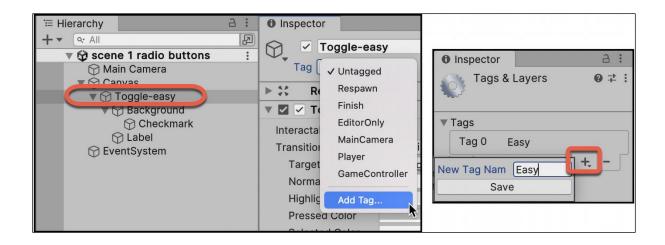
| On Value Changed (String) | |
|---|--|
| Runtime Only | DisplayChangedTextContent.DISPLAY_NEW_VALUE - |
| Dynamic string name tag BroadcastMessage CancelInvoke SendMessage SendMessageUpwards StopCoroutine | No Function GameObject > RectTransform > CanvasRenderer > ToxtMochDrollCUI > DisplayChangedTextContent > |
| Static Parameters bool enabled string name bool runInEditMode string tag bool useGUILayout BroadcastMessage (string) CancelInvoke (string) | The DISPLAY_NEW_VALUE() method is easy to find since it's in |
| Cancellnvoke () DISPLAY_NEW_VALUE () SendMessage (string) | |

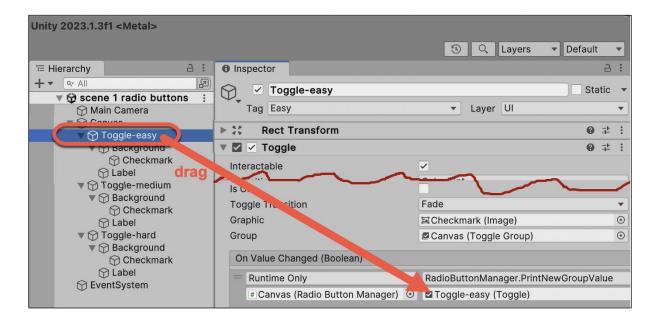
| 😎 Game 🔋 | E Console | | | | |
|---------------|--|--|--|--|--|
| Game | Clear I Collapse | | | | |
| | [11:04:52] toggle status = False UnityEngine.MonoBehaviour:print (object) | | | | |
| ✓ First Class | [11:04:53] toggle status = True UnityEngine.MonoBehaviour:print (object) | | | | |
| | [11:04:54] toggle status = False UnityEngine.MonoBehaviour:print (object) | | | | |

| ि ≔ Hierarchy 🔒 🗄 | Inspector | а | : |
|--|---|--|---|
| + ▼ Q All ▼ Image: SampleScene Image: SampleScene Image: Main Camera | Tag Untagged | Layer UI | • |
| ♥ Ŷ Canvas ♥ Ŷ Toggle Ŷ Ŷ EventSyste | ► \$\$ Rect Transform ▼ ☑ ✓ Toggle | | : |
| | Interactable Is On | × | |
| | Toggle Transition Graphic | Fade | • |
| | Group | None (Toggle Group) | 0 |
| | On Value Changed (Boolean |) | |
| | Runtime Only | oggleChangeManager.PrintNewToggleValue | 2 |
| | | + - | 5 |
| | 🔻 # 🗹 Toggle Change Man | ager (Script) 🛛 🖓 🕂 | : |

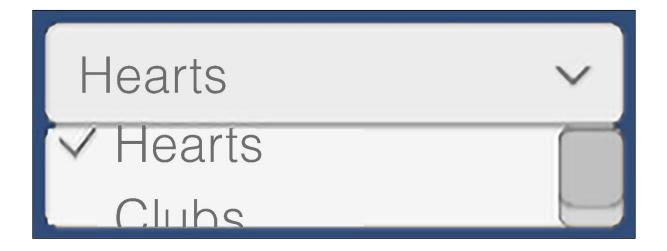
| | Console | | | | | |
|-------------|---|---------------|-------------|-------|--|--|
| - | Clear Collapse | Clear on Play | Error Pause | (I) 2 | | |
| Easy Medium | <pre>option changed to = Hard UnityEngine.MonoBehaviour:print(Object)</pre> | | | | | |
| Hard | option changed to = Medium UnityEngine.MonoBehaviour:print(Object) | | | | | |

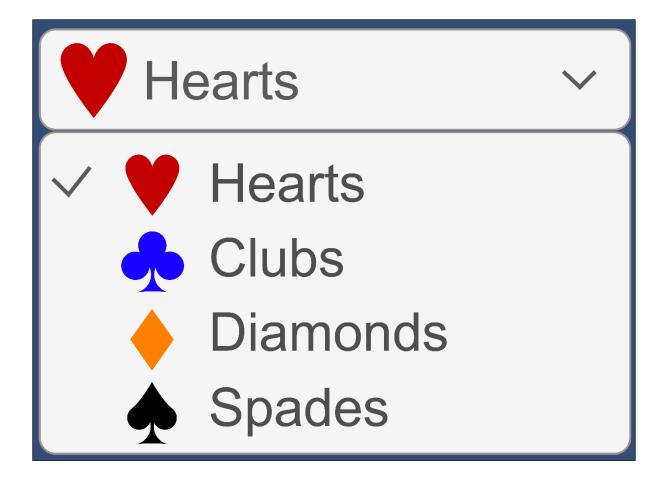
| ि Hierarchy and a | ● Inspector |
|---|-----------------------------------|
| + • (• All | ✓ Toggle-easy Static ▼ |
| Main Camera | Tag Untagged Layer UI |
| Toggle-easy | ► 🛠 Rect Transform 🛛 🛛 🕂 🗄 |
| Reckground | ▼ Z ✓ Toggle ② ‡ : |
| ☆ Checkmark ☆ Label | Interactable |
| 🕞 EventSystem | Is On |
| | Toggle Transition Fade |
| | Graphic 🖾 Checkmark (Image) 📀 |
| | Group 🛛 🖾 Canvas (Toggle Group) 💿 |



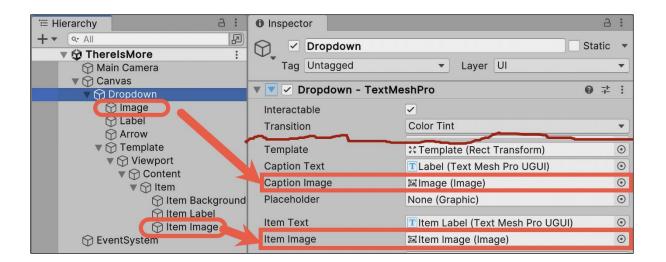


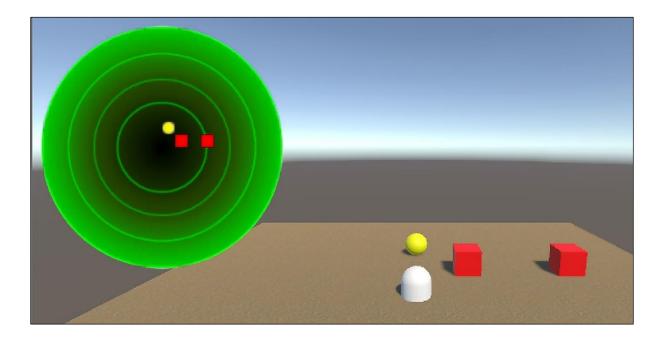
| | | | Club | S | ~ |
|--|------|--|--------------|-----------------------------|-----------|
| | | | ✓ Clu Dia | arts bs monds ades | |
| Con | sole | | | | |
| Clear Collapse Clear | | | on Play | Error Pause | Connected |
| <pre>option changed to = 1 UnityEngine.MonoBehaviour:print(Object)</pre> | | | | | |



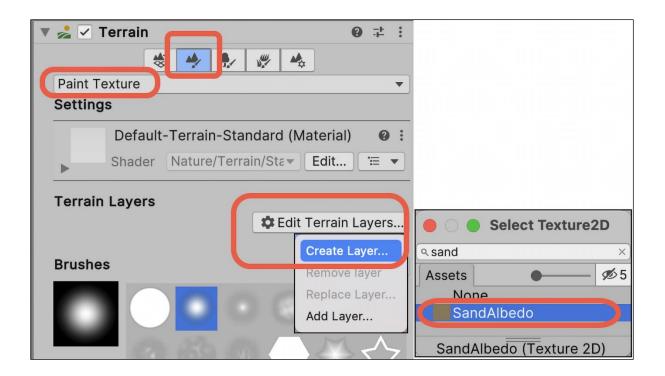


| '≡ Hierarchy | O Inspector a : |
|--|---------------------------|
| + ▼ ▼ ✿ ThereIsMore | Image Static • |
| Main Camera ▼ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ ♀ | Tag Untagged Layer UI |
| Canvas Oropdown | ▼ 🛟 Rect Transform @ 🕂 : |
| 🕥 Image | center Pos X Pos Y Pos Z |
| C Label | -61.8 0 0 |
| # Scene | -61.8 0 0 Width Height |
| | 25 25 II R |
| | ► Anchors |
| 💙 Hearts 🛛 🗸 | Pivot X 0.5 Y 0.5 |
| | Rotation X 0 Y 0 Z 0 |
| | Scale X 1 Y 1 Z 1 |

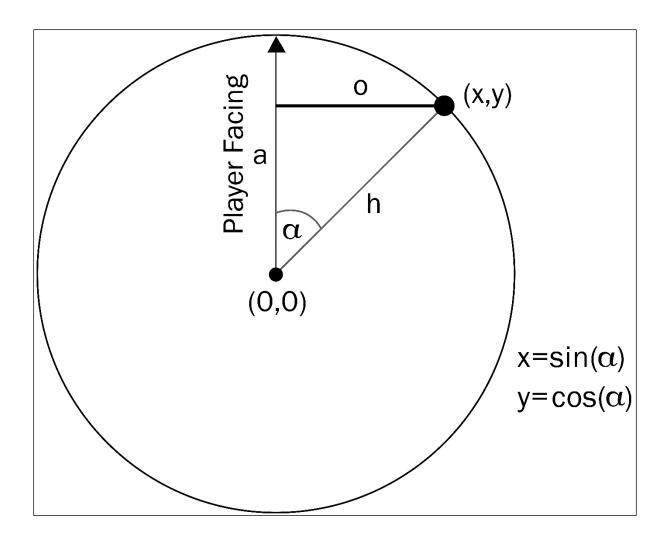




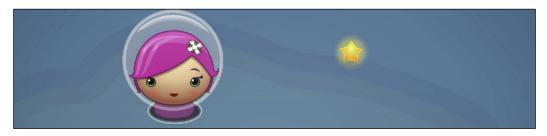
| Inspector | a : | | | |
|---|----------------|--|--|--|
| Terrain | 🗸 Static 🔻 🕇 | | | |
| Tag Untagged Layer Defa | ault 🔻 | | | |
| Transform | 3 ‡ : | | | |
| Position X -10 Y 0 | Z -10 | | | |
| Rotation X 0 Y 0 | Ζ Ο | | | |
| Scale 🗞 X 1 Y 1 | Z 1 | | | |
| 🔻 🛃 Terrain | 0 : | | | |
| | | | | |
| ► Basic Terrain | | | | |
| Tree & Detail Objects | | | | |
| Wind Settings for Grass (On Terrain Data) | | | | |
| Mesh Resolution (On Terrain Data) | | | | |
| Terrain Width 20 | | | | |
| Terrain Length 20 | | | | |



| '≡ Hierarchy | a : | Inspec | ctor | | | | Ъ | |
|---|---|----------|---------|-------------|---------------|-----|-----------------|---------|
| + • • All | adar terrain Player : | | Raw | Image-rada | r | Sta | tic | • |
| Main Came | era | Та | g Unta | agged | ▼ Layer UI | | | • |
| Terrain | - Light | ▶ \$\$ | Rect | Transform | | 0 | ᅷ | : |
| 💮 Cube | | ▶ ⊚ | Canva | as Renderer | | 0 | - <u>+</u> - | : |
| ⑦ Cube (1) ⑦ Sphere | | | Raw I | mage | | 0 | - <u>1</u> - | : |
| ▼ 🖓 Canvas | | ▼ # ✓ | Radar | (Script) | | 0 | - - | : |
| 😭 Rawlmage-radar | | Script | | | # Radar | | | ۲ |
| EventSystem | | Inside | Radar [| Distance | 20 | | | |
| | layei | Blip Siz | ze Perc | entage | 5 | | | |
| Project | a : 🧹 | Raw Im | nage Bl | ip Cube | 🗣 blip-cube | | | \odot |
| +• • 2 | 🕹 🗶 🔘 ★ 🍊 | Raw Im | nage Bl | ip Sphere | 🗣 blip-sphere | | | \odot |
| ★ Favorites Assets Scenes Scripts ■ Images Prefabs | Assets > Prefabs blip-cube blip-sphere | drag | | | | | | |



Chapter 3: Inventory and Advanced Uls



| 🌣 Project Settings | | | | : |
|--|---|------------|-----|---|
| | | ٩ | | |
| Adaptive Performance Audio Burst AOT Settings Editor | Tags and Layers ► Tags ▼ Sorting Layers | | 0 ∓ | |
| Graphics Input Manager | = Layer 0 | Default | | |
| Memory Settings | = Layer 1 | Background | | |
| Package Manager Physics | = Layer 2 | Foreground | | |
| Physics 2D Player Preset Manager Quality Scene Template Script Execution Order Services Tags and Layers TextMesh Pro | ► Layers | | + - | - |

| Inspector | | 6 | * * * |
|-----------------------|---------------------|------------------|-------|
| 🕞_ 🗹 background_blu | e_0 | Static | - |
| Tag Untagged | Layer Default | , | • |
| Final Stransform | | 0 . + | • |
| 🔻 🔀 🗹 Sprite Renderer | | 0 ≓ | • |
| Sprite | ■ background_blue_0 | (| • |
| Color | | | 28 |
| Flip | XY | | |
| Material | Sprites-Default | (| • |
| Additional Settings | Default | | |
| Sorting Layer | ✓ Background | | |
| Order in Layer | Foreground | | |

| Inspector | | | Ъ | : |
|-----------------------|-----------------------------------|-----|--------------|---------|
| Star | | Sta | atic | • |
| Tag Star | Layer Default | | | • |
| ► 🙏 Transform | | 0 | - <u> </u> - | : |
| ▼ 🗖 🗹 Box Collider 2D | | 0 | - <u> </u> - | * |
| Edit Collider | A | | | |
| Material | None (Physics Material 2D) | | | \odot |
| Is Trigger | | | | |

| Inspector | ć | 3: |
|-----------------------|-----------------------------------|------------|
| player-girl1 | Statio | - |
| Tag Untagged | Layer Default | • |
| ► 🙏 Transform | 0 . | <u>+</u> : |
| ▶ 🗖 🗹 Box Collider 2D | 0 . | <u>+</u> : |
| Rigidbody 2D | 0 . | ± : |
| Body Type | Dynamic | • |
| Material | None (Physics Material 2D) | \odot |
| Simulated | | |
| Use Auto Mass | | |
| Mass | 1 | |
| Linear Drag | 0 | |
| Angular Drag | 0.05 | |
| Gravity Scale | 0 | |



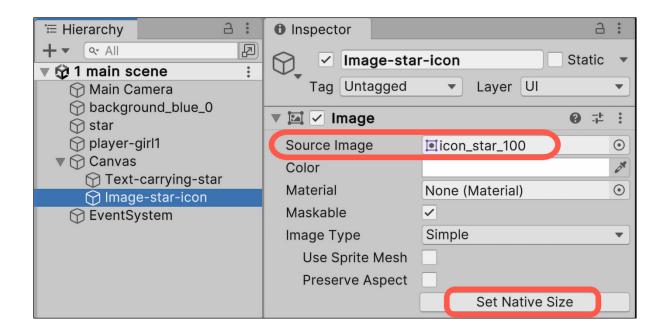
| Inspector | 3 | 0 0 0 |
|------------------------------|------|-------------|
| ✓ Text-carrying-star St | atic | - |
| Tag Untagged Layer UI | | • |
| Rect Transform | | * |
| ▼ TextMeshPro - Text (UI) | | : |
| Text Input Enable RTL Editor | or | |
| Carrying star: false | | |

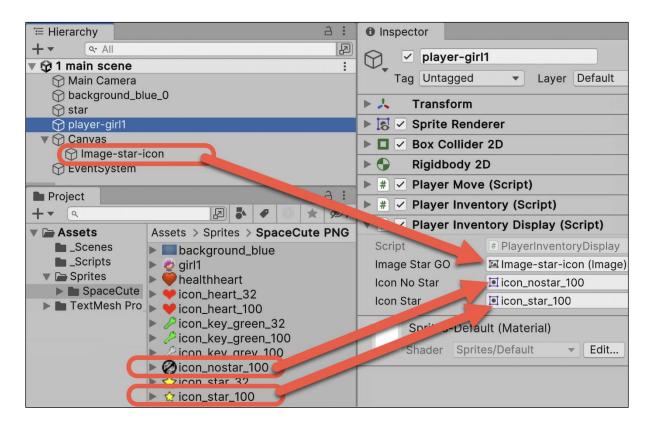
| 0 | Inspector | | | |
|-----|-------------------------|-------------------|-------------|--------------|
| 6 |) 🗹 Te | ext-carrying-star | | |
| | Tag Ur | ntagged | • | Layer UI |
| ▼ | 👯 Rec | t Transform | | |
| | stretch | | Left | Pos Y |
| | | | 0 | 0 |
| top | | | Right | Height |
| | | | ρ | 50 |
| | Anchor P Shift: Also | | sition | |
| | | left center right | stretch SHI | FT-ALT click |
| | | | | |
| | | | | Y 1 |
| | top | | | |

| [•] ≡ Hierarchy | 0 Inspector | | 3 | |
|---|-----------------------------------|-----|------|---------|
| + ▼ ▼ ✿ main scene : | O player-girl1 | Sta | atic | • |
| 😭 Main Camera | Tag Untagged Layer Default | | | • |
| ☆ background_blue_0 ☆ star | ▶ □ Box Collider 2D | 0 | -1- | : |
| 🕥 player-girl1 | ▶ 🕞 Rigidbody 2D | 0 | -1- | : |
| Canvas Text-carrying-star | ▶ # ✓ Player Move (Script) | 0 | -iF | : |
| C EventSystem | ▶ # 🗹 Player Inventory (Script) | 0 | 뇬 | : |
| | Player Inventory Display (Script) | 0 | 는 | : |
| | Script # PlayerInventoryDisplay | | | ۲ |
| | Star Text Text Mesh Pro | UGI | (IL | \odot |



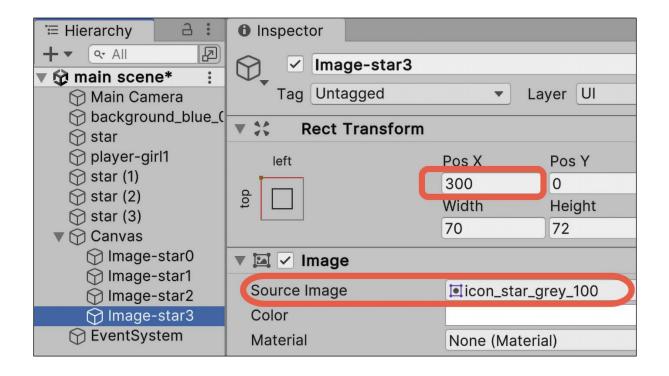


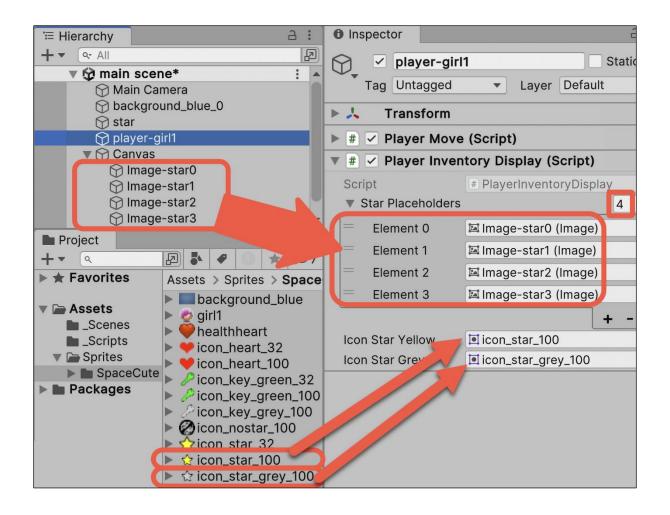


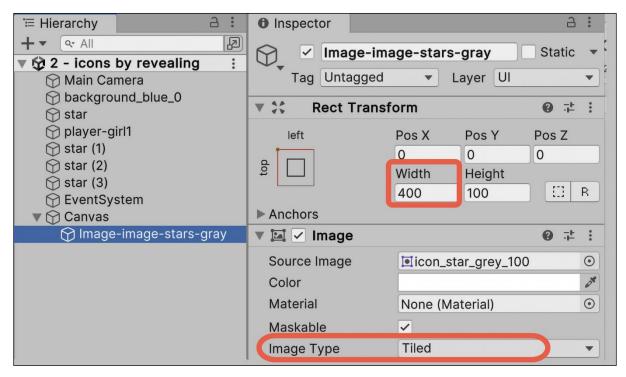




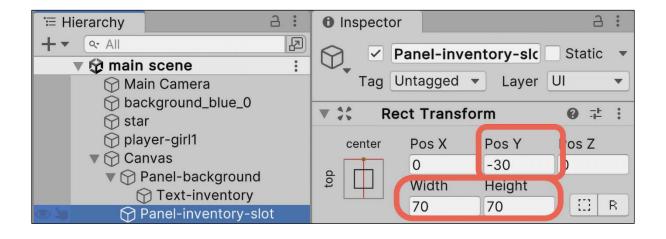
| Project | a : | Inspector* | a : |
|--|---|--------------------------------|------------------------|
| + ▼ Q ▼ → Assets | Image: Sprite > Sprite > Sprite | | _100 (Texture 2 🔞 🕂 🗄 |
| Scenes Scripts Sprites | background_blue girl1 | Texture Type Texture Shape | Sprite (2D and UI) 2D |
| SpaceCute Packages | healthheart icon_heart_32 icon_heart_100 | Sprite Mode Pixels Per Unit | Single |
| | Con_hear_100 Con_key_green_32 Con_key_green_100 | Mesh Type | Full Rect |
| | icon_key_grey_100 icon_nostar_100 | Extrude Edges Pivot | Center |
| | ▶ ☆ icon_star_32 ▶ ☆ icon_star_100 | Generate Physics Open S | prite Editor |
| | dicon_star_grey_100 sources star | | Revert |



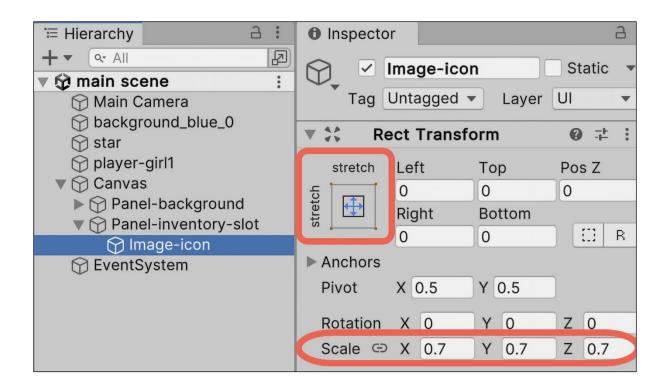










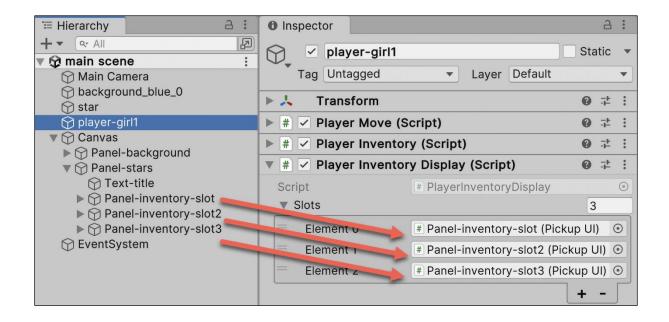




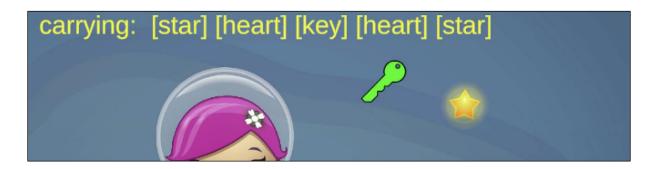


| ि ⊟ Hierarchy 🔒 🗄 | Inspector | a : |
|--------------------------|-------------------|-----------------------|
| + • (• All | Panel-inv | ventory-slot Static 💌 |
| 🔻 🔯 main scene 🕴 | | |
| 🕅 Main Camera | Tag Untagged | ▼ Layer UI ▼ |
| 🗇 background_blue_0 | ▼ # ✓ Pickup UI (| Script) |
| 💬 star | | Script) 🔮 🕂 : |
| 🗇 player-girl1 | Script | # PickupUI |
| 🔻 😭 Canvas | Icon Gray | 🗇 Image-icon-gray 💿 |
| Panel-background | Icon Color | |
| Panel-stars | 10011 00101 | Thinge con color of |
| 🔻 😭 Panel-inventory-slot | Rect Trans | form 🛛 🖓 ∓ : |
| 🕝 Image-icon-gray 🗲 | Canvas Re | nderer O-t : |
| 🕥 Image-icon-color 🗲 | Canvas Re | nderer 🛛 🖓 🕂 : |
| 💬 Text-title | 🕨 🖾 🗹 Image | 0 ≓ : |









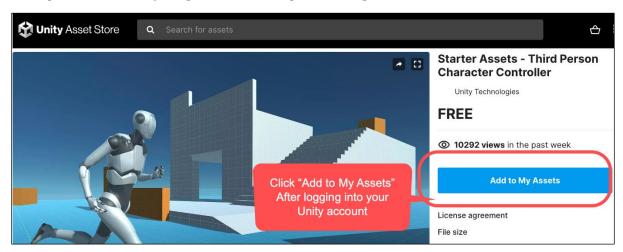
| ि ⊟ Hierarchy | 6 | 0 0 0 | 0 Insp | pector | | | | | Ъ | 0 0 0 |
|----------------|----------------|-------------|-----------|--------|--------|-------|-------|-------|------|-------------|
| + ▼ | scene | 2 | \square | 🗸 st | ar | | | Sta | atic | • |
| | in Camera | (| Т | ag Pio | kup | • | Layer | Defau | lt | • |
| | kground_blue_0 | | ▶ ↓ | Trar | nsform | | | 0 | -t- | : |
| 🕥 sta 🕥 pla | yer-girl1 | | ► [5] • | Spri | te Ren | derer | | 0 | | * |

| E Hierarchy | Inspector A: |
|----------------------------|----------------------------|
| | Static 🔻 |
| ▼ ✿ main scene : | Tag Pickup Layer Default |
| ☆ background_blue_0 ☆ star | ► 🙏 Transform 🛛 🛛 🕂 🗄 |
| 🕥 player-girl1 | ▼ # ✓ Pick Up (Script) |
| | Script # PickUp |
| | Description star |

| [™] Hierarchy | a : | Inspe | ctor | | a : | | |
|--|---|------------------|---|--|---------------|--|--|
| + ▼ ▼ 🛱 mai | or All P n scene : ▲ | Ψ_{\bullet} | Text-inver | | Static 💌 | | |
| ↔ ↔ ↔ ↔ ↔ ↔ ↔ ↔ ↔ ↔ ↔ ↔ ↔ ↔ | | ► ** | g Untagged Rect Transf TextMeshPr | • Layer UI orm o - Text (UI) | ▼ | | |
| \sim | ar (1) ar (2) Display 1 | Text I | | Enable RTL E | | | |
| the quick br fox jumped the lazy do | over the lazy dogthe quick brown fox jumped over | the qu | lick brown fox | jumped over the jumped over the fox jumped ove | e lazy | | |
| q | uick brown fox jumped over the lazy dog | Text S | tyle | Normal | • | | |
| | | Main Settings | | | | | |
| Straw / | | Font A | sset | E LiberationSa | ns SDF 💿 | | |
| | | Materi | al Preset | LiberationSans | SDF Mate▼ | | |
| | | Font S | ize | 28 | | | |
| | | Alignm | nent | | | | |
| The Children of the | and the second se | | | | <u>A</u> I AI | | |



| | Inspector | | 2 | : | | |
|--------------------|---|--------------|--------|---|--|--|
| \int | Image: Weight of the second | ▼ Layer Defa | Static | • | | |
| $\sim \mathcal{O}$ | 🕨 🙏 🛛 Transfor | 0 <u>-</u> | : | | | |
| _ | ▼ # ✓ Pick Up (Script) | | | | | |
| | Script | # PickUp | | ۲ | | |
| | Туре | Кеу | | • | | |
| Pickup type is en | um value | Star | | | | |
| from dropdowr | | ✓ Key | | | | |
| | rinena | Heart | | | | |



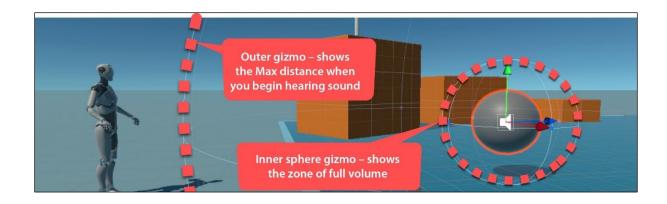
Chapter 4: Playing and Manipulating Sounds

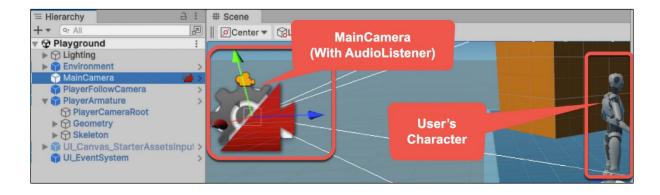
| 🗯 Unity | File Edit | Assets | GameC |)bject | Comp | onent S | Services | Jobs |
|-------------------|----------------|---------|-------|--------|---------|---------|----------|------|
| ● ● ● ● MS ▼ ▲ | Asset St | ore 🕶 🔊 |] | | | | | |
| '≡ Hierarchy | Asset Store | Web | а: | # Sce | ne | 🕫 Game | | |
| + • • All | My Assets | | R | 🙍 C | enter 🔻 | CLocal | - ∥ ₩ | - #3 |
| 🔰 🐙 🐨 Samp | lescene | | : | _ | | | | |
| 🏏 💮 Mai | in Camera | | | | | | | |
| 🎽 💮 Dire | ectional Light | | | * | | | | |

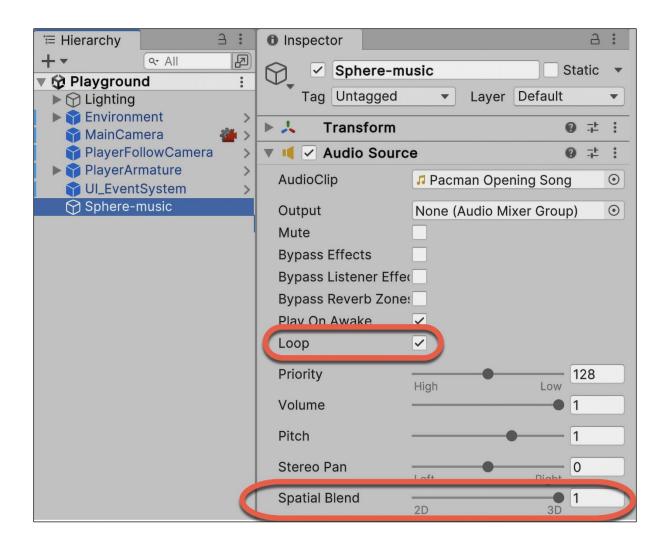
| Render Pipeline Converter | | |
|---|---|---|
| Built-in to URP | - | (|
| This tool converts project | elements from the Built-in Render Pipeline to | o URP. |
| Rendering Setting Pending Initialization | | 0/0 selected 0 − 0 <u>↓</u> 0 ● 0 ⊘ |
| Material Upgrade Pending Initialization | on | 0/0 selected 0 − 0 <u>↓</u> 0 ● 0 ⊘ |
| Animation Clip Col Pending Initian. | nverter | 0/0 selected 0 − 0 <u>/</u> 0 ① 0 ② |
| Readonly Ma Pending Initia | Check all 4 options then click | 0/0 selected 0 − 0 <u>↓</u> 0 ● 0 ⊘ |
| | Initialize And Convert | Initialize Converters Initialize And Convert |

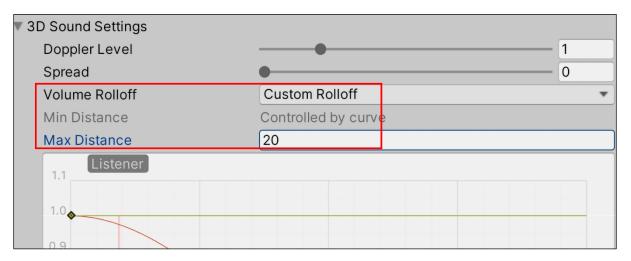
| '≡ Hierarchy 🔒 🗄 | 🚯 Inspector 🛛 # Scene 🔊 Game | ć |
|---------------------------------|-------------------------------|--------------------------|
| + ▼ Q All ▼ ✿ SampleScene* : | Main Camera Tag MainCamera | Layer Default |
| 🖓 Main Camera | Tag | Layer Deladit |
| | Transform | Ø ∓ |
| | 🕨 🖬 🗹 Camera | Ø ᅷ |
| | 🎧 🗹 Audio Listener | 0 . + |
| | 🔻 📢 🗹 Audio Source | ⊕ ; + |
| | AudioClip | 🞜 Pacman Opening Song |
| | Output | None (Audio Mixer Group) |
| | Mute | |
| | Bypass Effects | |
| | Bypass Listener Effects | |
| | Bypass Reverb Zones | |
| | Play On Awake | ✓ |

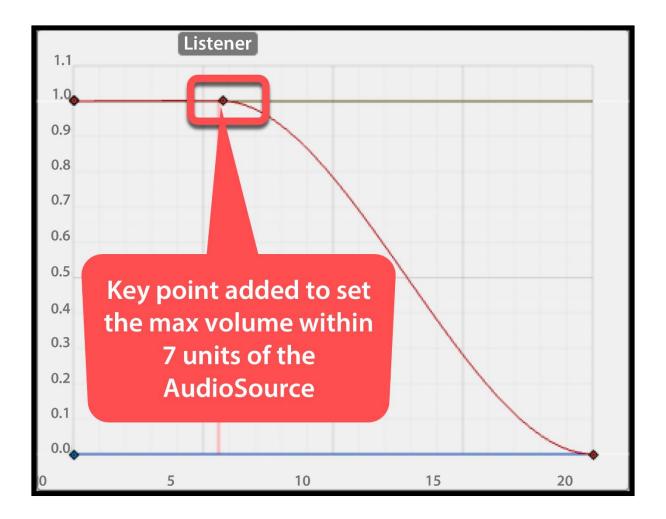
| Inspector # Scene | 🕫 Game | | 3 | : |
|-----------------------------|---------------|-----|--------------|---|
| Camera2 | | Sta | atic | * |
| Tag Untagged | Layer Default | | | • |
| ► 🙏 Transform | | 0 | - <u>+</u> - | : |
| 🕨 🖬 🗹 Camera | | 0 | 4- | : |
| 🎧 🗹 Audio Listener | | 0 | ÷ | ÷ |
| | Reset | | | |
| Add Component Remove Compor | | | | |
| | Move Up | | | |











| '≡ Hierarchy 🔒 🗄 | ● Inspector # Scene | А |
|--|-------------------------|---------------|
| + ▼ Q All D ▼ Playground* | Audio Reverb Zone | Static • |
| ▶ 🕞 Lighting | Tag Untagged | Layer Default |
| ▶ ♥ Environment > ♥ MainCamera ● | 🕨 🙏 Transform | Ø ∓ : |
| PlayerFollowCamera > | 🔻 ሕ 🗹 Audio Reverb Zone | Ø ‡ : |
| PlayerArmature Image: StarterAssetsInputs_Joy: > | MinDistance 0 | .5 |
| UL_EventSystem | MaxDistance 5 | |
| Sphere-music | ReverbPreset P | Psychotic 🗸 |
| | Room | -1000 |

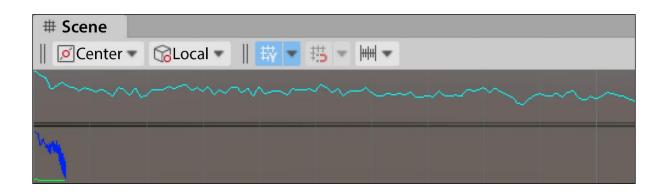
| [•] ≡ Hierarchy | a : | 1 Inspector | а: |
|---|---|--|--------------|
| +- | िष All | SoundManager | Static 💌 |
| 🔻 🤯 SampleScene* | 1 | Ψ_{\bullet} | |
| Main Camera | | Tag Untagged 🔹 Layer Default | • |
| SoundManager | | | |
| ÷ | | 🕨 🦶 Transform | 0 ≓ ∶ |
| | | 🕨 📢 🗹 Audio Source | 0 7± : |
| | | 🔻 # 🗹 Sound Player (Script) | 0 ∓:: |
| Project E Console | a : | Script # SoundPlayer | ۲ |
| + • Q. | 🔁 🛃 🛷 🕥 ★ 🕫 21 | Clip Eat Cherry 🥕 🕫 Pacman Eating Cherry | / • |
| All Materials | Assets > PacmanSFX | Clip Extra Life 💦 🛛 Pacman Extra Live | \odot |
| All Models All Prefabs | Pacman Dies Pacman Eating Cherry Pacman Eating Ghost Pacman Extra Live | Add Component | |

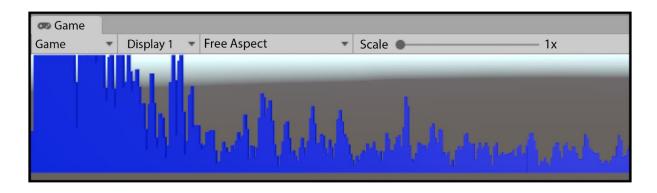
| '≡ Hierarchy a | : : | Inspector | | | | 3 | : |
|--|-----|-------------------------------|-------------|------------------------------|-----|-----|---------|
| + ▼ @ All ▼ 🛱 SampleScene* | 2 | Sour | ndManager | | Sta | tic | - |
| 💬 Main Camera | · | Tag Unta | agged | Layer Default | | | • |
| ☆ Music medieval ☆ Music arcade | | Trans | | | | 4- | : |
| 🕤 SoundManager | | 🔻 # 🗹 Sourc | e Controlle | r (Script) | 0 | | 1 |
| | | Script | | # SourceController | | | ۲ |
| | | Audio Source | Medieval | 📢 Music medieval (Audio Sour | ce) | | \odot |
| | | Audio Source | Arcade | Music arcade (Audio Source |) | | \odot |

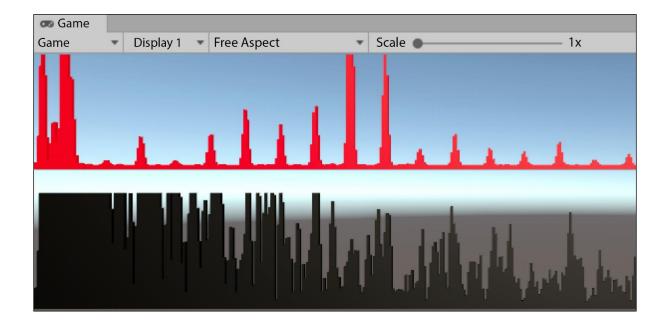
| [™] Hierarchy | а: | Inspector | | а: |
|------------------------|----------------|-------------------|------------------------------|--------------|
| + • • All | I to play* | 😭_ 🗹 Button-play | | Static |
| Main Ca | mera | Tag Untagged | Layer UI | - |
| EngineO | bject | ► 🗱 Rect Transfor | m | 0 ≓ : |
| ► 🖓 Butto | | 🔻 🖲 🗹 Button | | 0 ‡ : |
| 💮 EventSy | stem | Interactable | × | |
| | | Transition | Color Tint | - |
| | | Target Graphic | Button-play (Image) | 0 |
| | | On Click () | | |
| | | Runtime Only 🚽 | AudioSource.Play | - |
| | | EngineObject 💿 | ✓ No Function | |
| | int timeSample | 25 | GameObject | > |
| | float volume | | Transform | > |
| | BroadcastMes | sage (string) | AudioSource | |
| | Pause () | | | |
| | Play () | | | |
| | PlayDelayed (f | loat) | Add Component | |

| '≡ Hierarchy | а : | # Sce | ne | 😎 Game | 0 | nspector | | | | 3 |
|---------------------------------|-----|------------|------|----------------|--------|------------|-------------------------|----|--------------|---------|
| + ▼ (Qr All ▼ 🛱 SampleScene* | | \bigcirc | ~ | SoundManag | jer | | | St | atic | - |
| 😚 Main Camera | | Τ | ag | Untagged | | • | Layer Default | | | • |
| EngineObject | | ▶ 🙏 | т | ransform | | | | 0 | - <u>+</u> - | : |
| 🕨 🕜 Button-play | | ▼ # . | v v | Vait To Finish | Before | Playing (S | cript) | Ø | ÷ | : |
| Button-play-not-interrupt | | Scrip | ot | | | # WaitT | oFinishBeforePlaying | | | ۲ |
| ☆ EventSystem | | Audi | o Sc | ource | | 🔶 📢 Engin | eObject (Audio Source) | | | \odot |
| SoundManager | | Butto | on T | ext | -> | Text (| TMP) (Text Mesh Pro UGU | 1) | | • |
| | | | | | | | | | | |

| '≡ Hierarchy | а: | # Scene Same O Inspector | 3 |
|----------------------------|----------|--|--------------|
| + All SampleScene | [2] : | 🕞 🗹 EngineObject | Static - |
| Main Camera | | Tag Untagged Uncheck (disable) | • |
| EngineObject | | Transform the scripted component | 0 ‡ ∶ |
| | | Audio Source | 0 7 i |
| | | # Audio Destruct Behaviour (Script) | 0 ‡ ∶ |

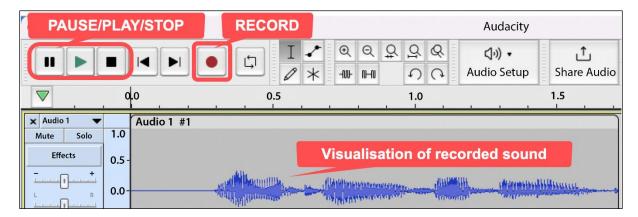


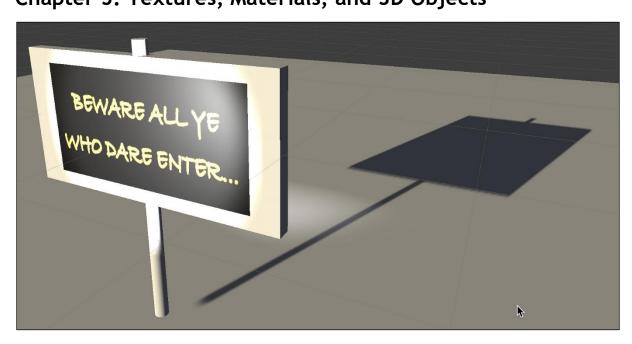




| '≡ Hierarchy 🔒 🗄 | Inspector | а | : |
|--|--------------------|----------------------------|--------|
| + ▼ Q All 2 | Tag Untagged | eduler Static T Layer | * * |
| Directional Light musicScheduler | J Transform | 0 ≓ | : |
| 🕤 loop 💊 | 🔻 # 🗹 Loop Sched | uler (Script) 🛛 🛛 구 | : |
| | Script | # LoopScheduler | ۲ |
| ♀ loop (2) ♀ loop (3) | Bpm | 140 | |
| () of the | Num Beats Per Segm | 16 | |
| | Audio Sources | 4 | |
| | Element 0 | Ioop (1) (Audio Source) | Θ |
| | Element 1 | Ioop (2) (Audio Source) | Э |
| | Element 2 | Ioop (3) (Audio Source) | Θ |
| | Element 3 | loop (4) (Audio Source) | Θ |







| Hierarchy 🔒 🗄 | ● Inspector |
|---|---|
| All Scene1 - signpo : Main Camera | Cube-signpost Static Tag Untagged Layer Default |
| Directional Light | ▼ 🙏 Transform 🛛 🛛 🕂 🗄 |
| | Position X 0 Y 0 Z 0 |
| | Rotation X 0 Y 0 Z 0 |
| | Scale 🕸 X 2 Y 1 Z 0.1 |

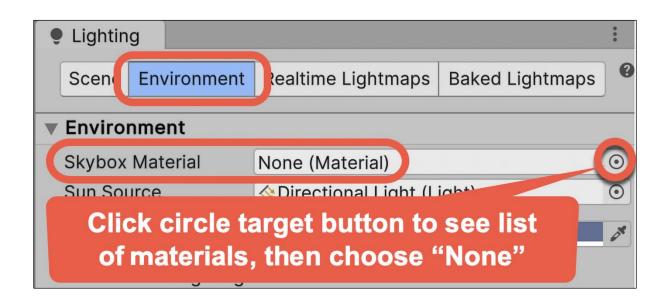
| Project | | a : | '⊞ Hierarchy | а | : | Inspector | |
|---------------|-------------|---------|--------------|----------------|---|------------------|------------------|
| + • Q | 2 4 | • * | + • (• All | | P | Beware | (Texture 2D) Imp |
| ► ★ Favorites | Assets > T | extures | | e1 - signpost | : | WIND DARKE ENTER | ····· |
| | bewa | re | ~ | in Camera | | | |
| 🔻 庙 Assets | | | 💬 Dir | ectional Light | | REW | ADEA |
| Scenes _ | | dra | Cu Cu | be-sianpost | | PUYY. | AND A |
| Materials | | | | Plane-sign | | | |
| Textures | | | | | | | |

| Hierarchy a : | ● Inspector |
|--|--|
| + ▼ | ✓ Plane-sign Static ▼ Tag Untagged ▼ Layer Default ▼ |
| ⑦ Directional Light ▼ ⑦ Cube-signpost | ▼ 🙏 Transform 🛛 🥹 🕂 : |
| 😚 Plane-sign | Position X 0 Y 0 Z -0.51 |
| | Rotation X -90 Y 0 Z 0 |
| | Scale 🕸 X -0.08 Y 1 Z -0.08 |

| # Scene | Hierarchy 🔒 🗄 | Inspector | a : |
|----------------------|--|-------------------------|------------------|
| ∥ ØCenter ▼ GCocal ▼ | + ▼ Qr All ▼ the scene1 - signpost : | Cylinder-pole | Static 🔻 |
| | 😭 Main Camera | Tag Untagged - Layer De | efault 🔻 |
| BEWARE ALL YE | ⑦ Directional Light ▼ ⑦ Cube-signpost | Transform | 0 7 : |
| WHO DARE ENTER | 🖓 Plane-sign | Position X 0 Y -0.4 Z | z o |
| LOCHTER | 🕥 Cylinder-pole | Rotation X 0 Y 0 Z | Ζ Ο |
| | | Scale 🕸 X 0.1 Y 1 Z | Z 0.1 |
| | | Cylinder (Mesh Filter) | 0 - : |

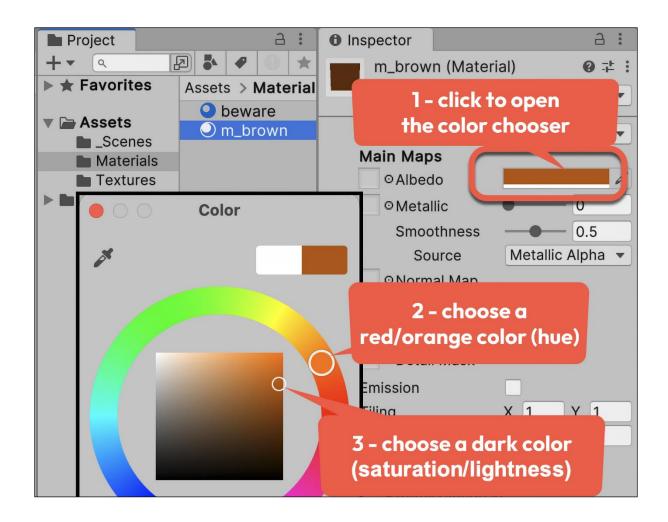
| Únity File Edit Assets | GameObject | Component | Services | Window Help |
|-------------------------------|--------------|-----------|--------------|-------------|
| | Create Empty | Child | いのブ | 1 |
| 🕒 MS 🔻 🌰 🚔 Asset Store 🕶 🌘 | Create Empty | | ሰ | 1 |
| # Scene | Create Empty | Parent | 公 第 (| |
| | 3D Object | | > | Cube |
| | Effects | * | > | Sphere |
| | Light | | > | Capsule |
| | Audio | | > | Cylinder |
| | Video | | > | Plane |
| | UI | | > | Quad |
| | LU Te ellit | | | |

| ि ⊟ Hierarchy 🔒 🗄 | ● Inspector | •••• |
|---|-------------------------------|------|
| + ▼ Q All 2 | Spot Light Static | • |
| 🖓 Main Camera | ▼ 🙏 Transform 🛛 🛛 🕂 | : |
| Directional Light Cube-signpost Directional Light | PositionX0Y0Z-2RotationX0Y0Z0 | |
| | Scale 🕸 X 1 Y 1 Z 1 | |
| Cube-ground | V 👗 🗹 Light 🕜 👎 | • |
| | Type Spot | • |
| | Range 5 | |
| | Spot Angle 50 | 7 |
| | Color | 04 |
| | Mode Realtime | • |
| | Intensity 5 | |

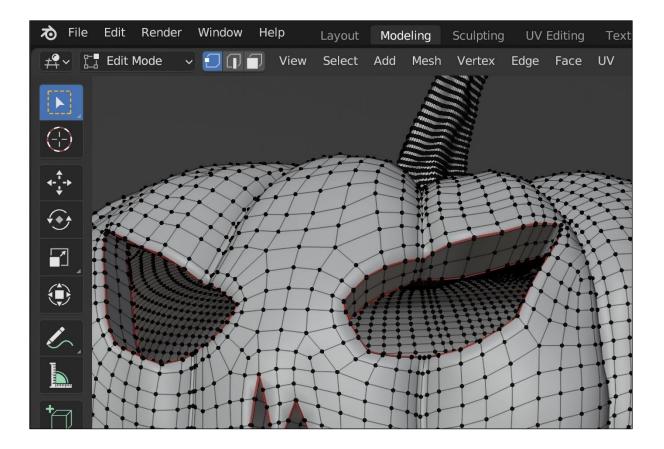


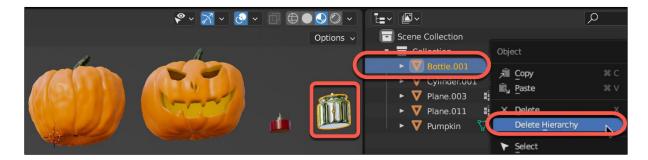


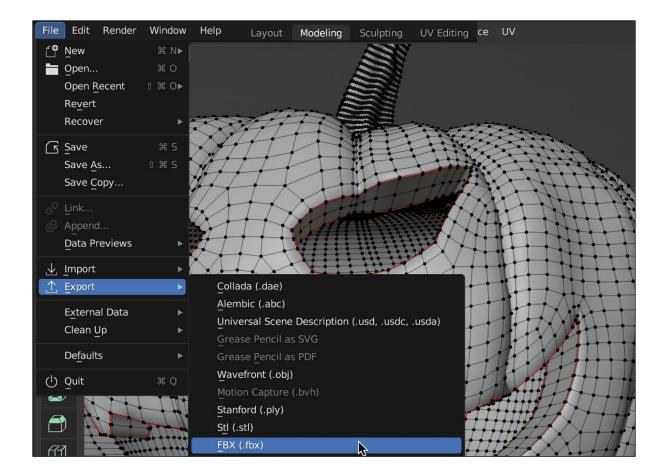
| | | Scene remplate Pipeline |
|---------------------|--------------|-------------------------|
| Click | "+" | Prefab |
| (the Ci | | Prefab Variant |
| butt | on) | Audio Mixer |
| +- | | Material |
| Favorites | Assets > Mat | Material Variant |
| Assets | beware | Lens Flare |
| Scenes Materials | | Render Texture |
| Textures | | Lightmap Parameters |
| Packages | | Lighting Settings |
| | | Custom Pondor Toxturo |

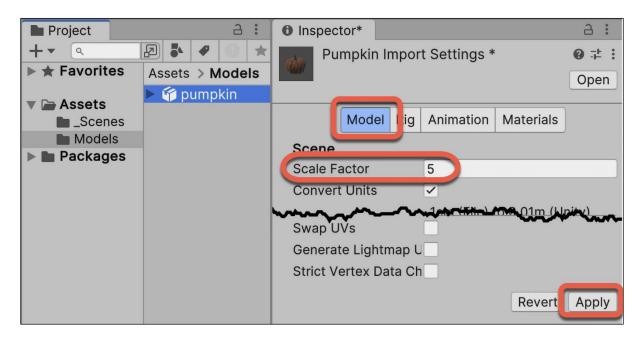


| Project | a : | 1 Inspector |
|---|-------------------------------|------------------------|
| + ▼ Q | 🔁 🌢 🔗 🕕 ★ 🕫 5 | m_woodplank (Material) |
| ► ★ Favorites | Assets > Textures > wood-plar | Shader Standard 🔹 |
| Assets Scenes | wood_plank_weathered | Rendering Mode Opaque |
| Materials Textures | | ○ Albedo |
| 🖿 wood-plank-weather | | O Metallic |

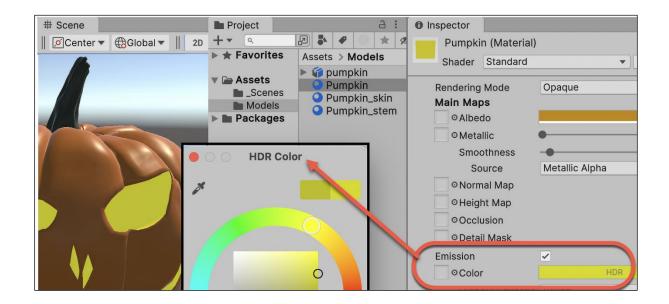




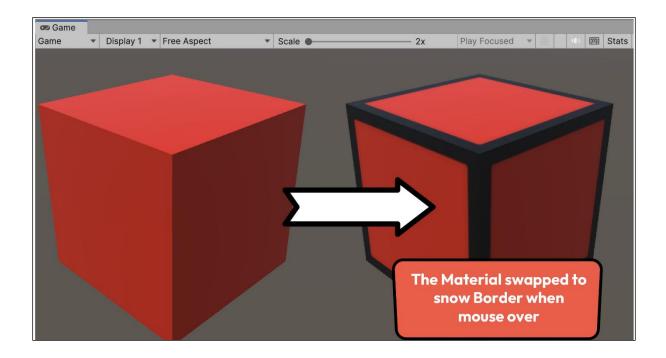


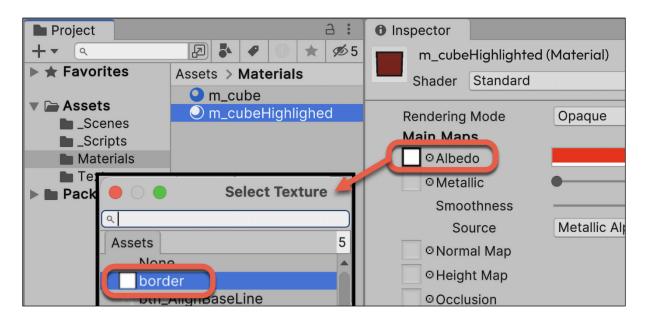


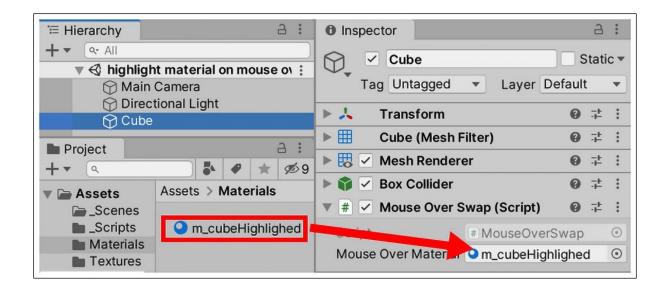
| Project | a : | Inspector | | 1: |
|-----------|-----------------|---|---|---------------|
| | | Pumpkin Import S | Settings | 0 ∓⊨ : |
| Favorites | Assets > Models | 44097 | | Open |
| Assets | 🕨 🎁 pumpkin | | | |
| Scenes | | Model R | ig Animation Materials | |
| Models | | Material Creation Mode | Import via MaterialDescription | - |
| Packages | | Location | Use Embedded Materials | |
| | | Textures | Extract Textures | |
| | | Materials | Extract Materials | |
| | | Waterials | Extract Materials | |
| | | Materials are embed assignments can be | dded inside the imported asset. Materi remapped below. | al |

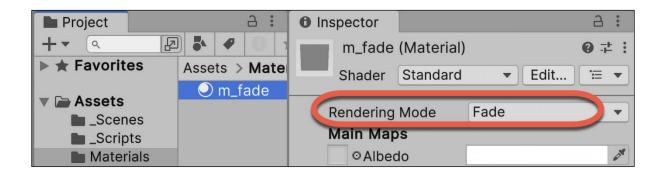


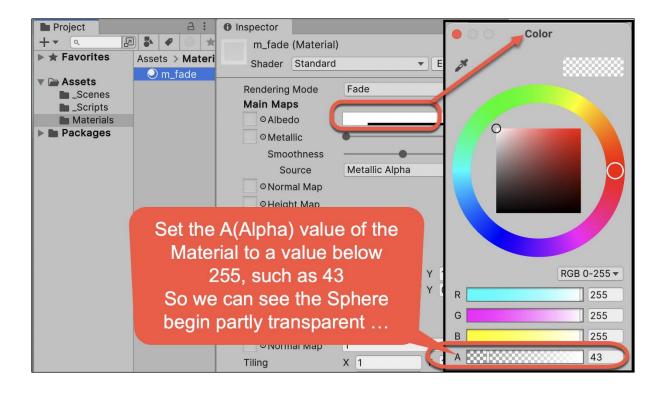
| • • • | | |
|--|--------------------|--|
| Project | ∂: 2 ♣ ♥ ○ ★ Ø5 | □ Hierarchy □ H ■ ■ i + ▼ S All ■ ■ |
| Favorites | Assets > Models | i + ▼ |
| Assets Scenes Models Packages | pumpkin | ○ Main Camera ○ Main Camera ○ Directional Light |
| Favourites | | Models Models Models Scenes Scenes.meta Models Models Models |
| | | d" is only model file in folder: Assets/Models Ily created an FBX (via the Blender application)! |



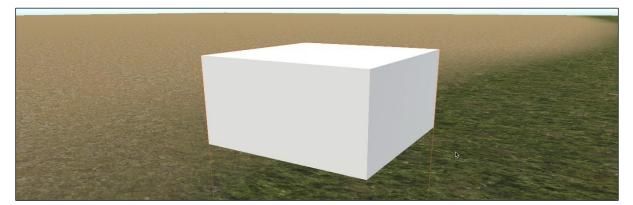


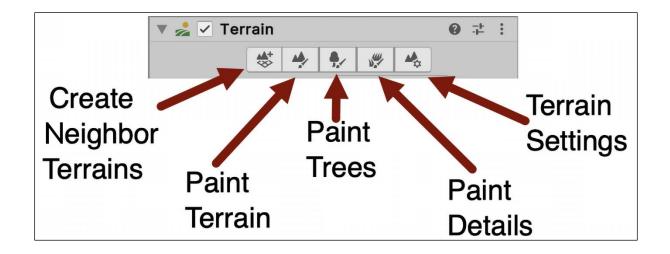


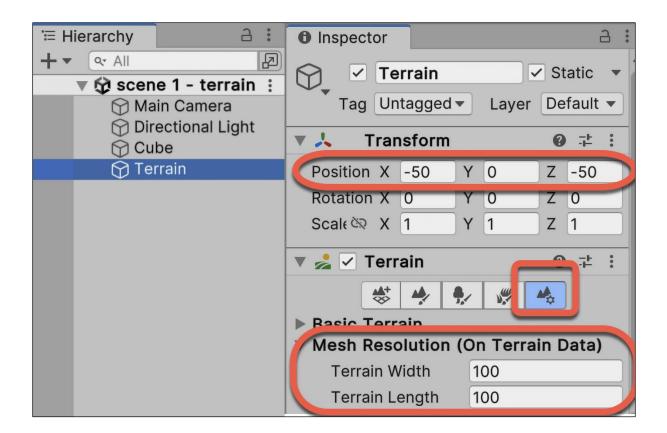


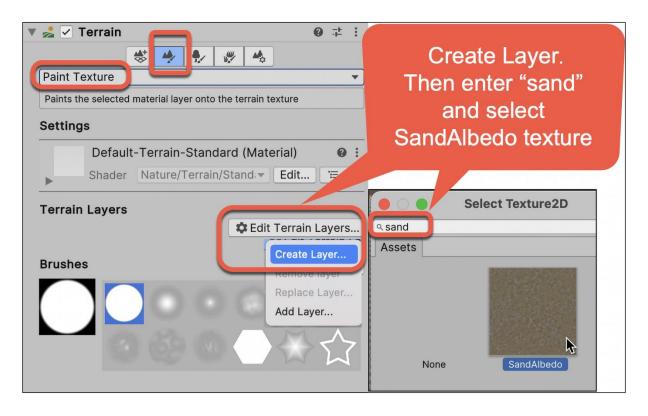


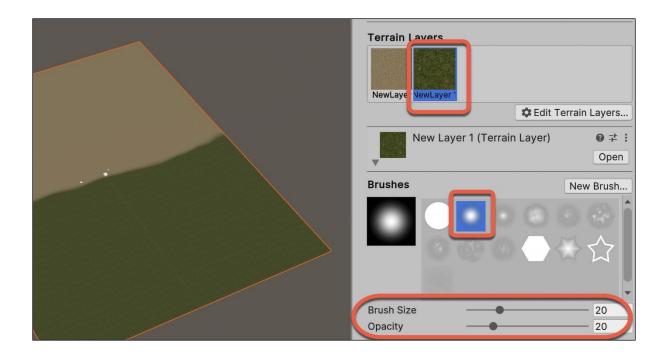
Chapter 6: Creating 3D Environments with Terrains



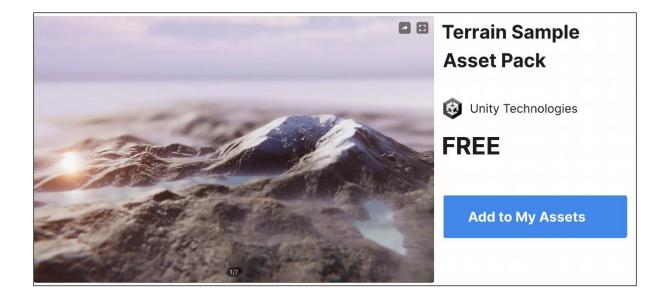




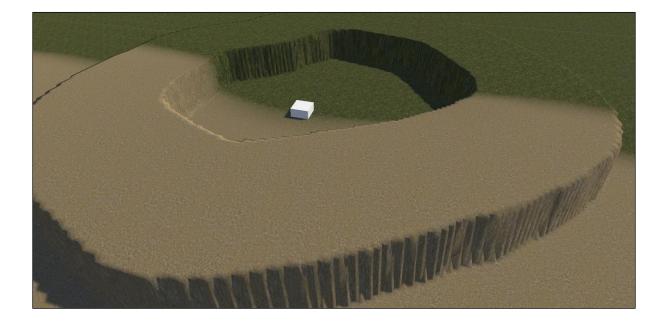




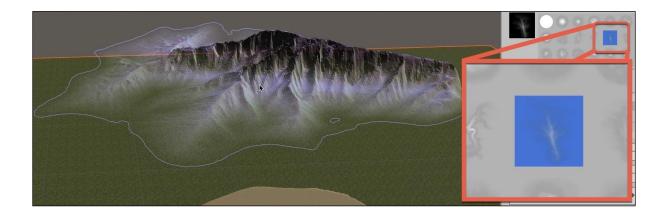


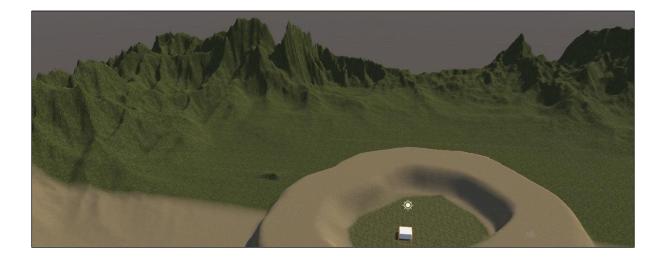


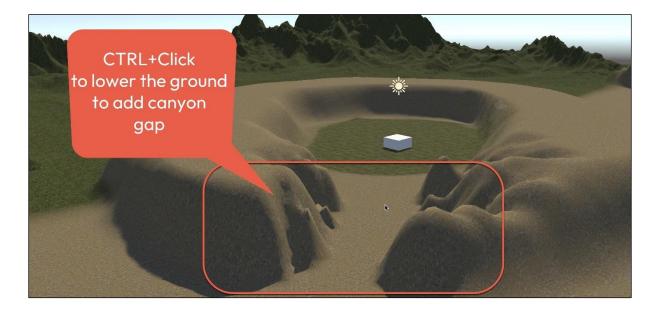
| V 🛃 🗸 Terrain | | ¥ 🍂 | 9 -⊦ : |
|---------------------|-------|--------------|-------------|
| Set Height | | | • |
| Brushes | | | New Brush |
| | | | |
| ▶ Stroke | | | |
| Set Height Controls | 3 | | \$ |
| Space | World | | |
| Height | 2 | | |
| | | Flatten Tile | Flatten all |



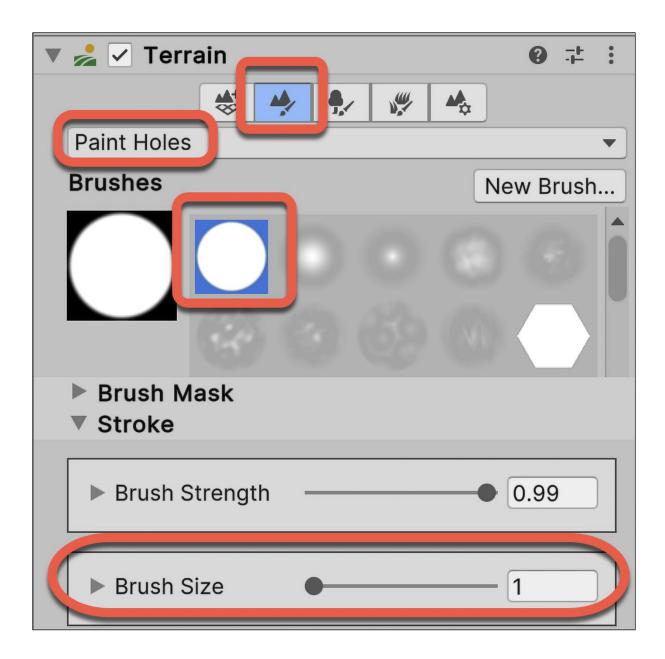


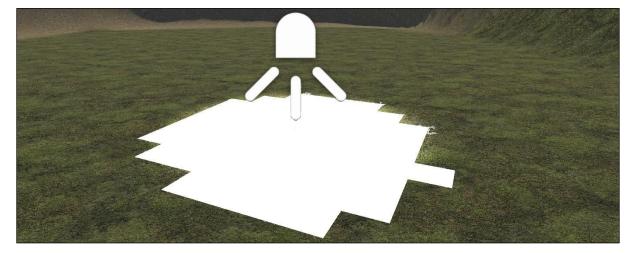


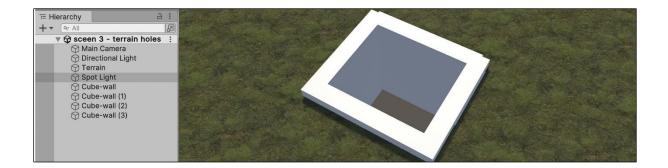


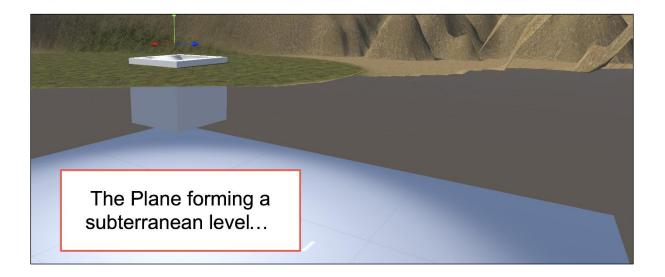


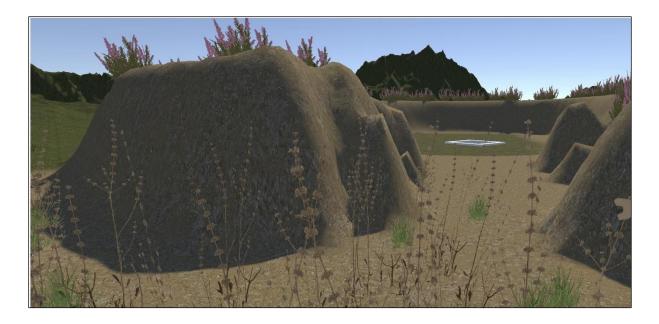
| ¥ 5 | 🛓 🗸 Terrain | 0 ≓ : | 🔻 📩 🗸 Terrain 🛛 🥹 👎 | : |
|---------------|------------------------|--------|------------------------------|---|
| | 🐟 🍫 🍢 🐙 🦀 | | * 🎐 🍢 🐙 🔺 | |
| ✓ Hydraulic | Erosion | > | , Erosion > |] |
| Thermal | Sculpt | > | Noise Sculpt > | |
| Wind | Set Height | | Terrace Set Height | |
| | Raise or Lower Terrain | | Clone Raise or Lower Terrain | |
| | Effects | > | Bridge Effects > | |
| | Transform | 、 、 | Transform | |
| | * * * * * | | * * * * * | |
| | Erosion | > | Erosion | > |
| | Sculpt | > | Sculpt | > |
| | Set Height | | Set Height | |
| | Raise or Lower Terrain | | Raise or Lower Terrain | |
| Slope Flatten | Effects | > | Effects | > |
| Sharpen Peaks | Transform | > | Pinch Transform | > |
| Contrast | Paint Holes | | Smudge Paint Holes | |
| | Stamp Terrain | | Twist Stamp Terrain | |
| | | | Conseath Ulaimha | |







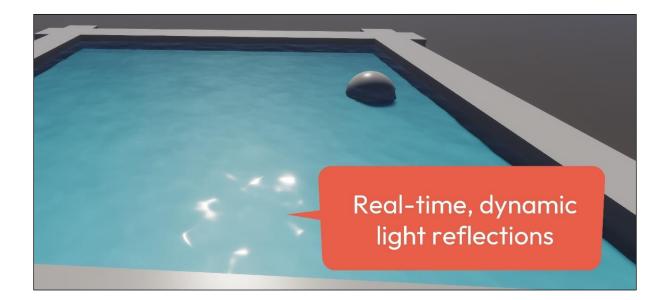




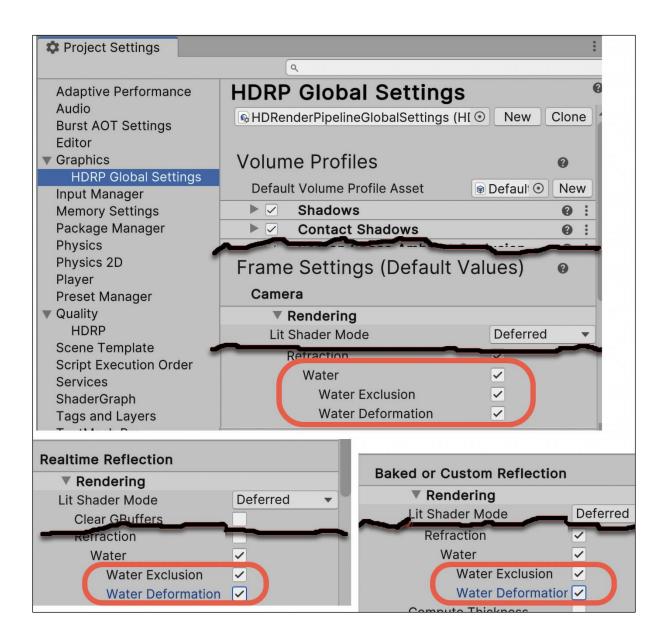
| 🔻 🍰 🗹 Terrain | | | 0 ∔ : | | |
|---|------------------|--------------------------------------|--------------|-----------------------------|-------------|
| Paint Trees Click to paint trees. Hold shift and click to erase Hold Ctrl and click to erase o | | ype. | | | |
| Trees | | | | | |
| No trees defined. | | | | | |
| Mass Place Trees | | California Edit Trees | Refresh | 000 | Add Tree |
| Settings Brush Size Tree Density Tree Height | Random? 🗹 — | Remove Tree Add Tree Edit Tree | 4 | Tree Prefab Cast Shadows | Heather_A O |
| Lock Width to Height | ✓ Random? ✓ — | | | Bend Factor | 0 Add |



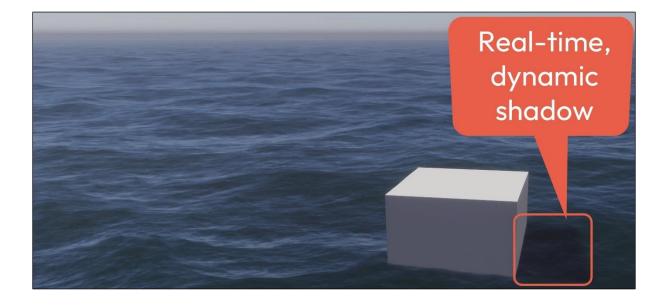
| V 🛃 V Terrain | 0 ≓ : | |
|--|---|---|
| Paint Details Paints the selected detail prototype onto the terrain Paint Details Control View List Image: Select the "+" button in order to add a Detail to scatter Preview List is Empty | Grid with. Detail Mesh Grass Texture | Add new detials (+) choos Detail Mash, select the Grass_A prefab, and then click Add |
| Add Detail Mesh Detail Prefab | Assets | Select GameObject |
| Align To Ground (%) Position Jitter (%) Min Width 1 Max Width 2 Min Height 1 Max Height 2 Noise Spread 0.1 Hole Edge Padding (%) Detail density Affected by Density Scale | | one sh_A ush_B ushDry_A ushDry_B ern_A ern_B m_C rass_A rass_B rass_C eather_A eather_B |

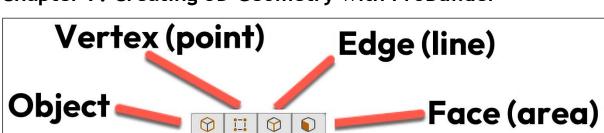


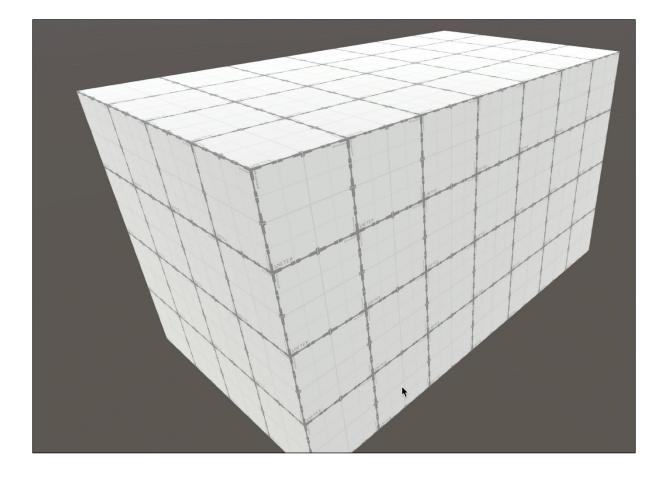
| C Project Settings | | |
|--|--|----------------------------------|
| Adaptive Performance Audio Burst AOT Settings Preset Manager Quality | HDRP HDRP Assets that are assigned either HDRP High Fidelity | in Graphics settings or in any Q |
| HDRP Scene Template Script Execution Order | Rendering Color Buffer Format | R16G16B16A16 |
| Services ShaderGraph | Lit Shader Mode Multisample Anti-aliasing Quality | Deferred Only • None • |
| Tags and Layers TextMesh Pro | Motion Vectors Runtime AOV API | |
| Time Timeline UI Toolkit | Decals Dynamic resolution Low ros Transparancy | |
| Version Control VFX Visual Scripting | ▼ Water Enable | |
| XR Plugin Management | Simulation Resolution | Medium 128 |



| E Hierarchy and a architecture | Inspector | | 3 | : |
|---|------------------------|-----------------------------------|--------|-------|
| + • Q. All | Sky and Fog Vol | ume | Static | - |
| VideorsScene : | Tag Untagged | Layer Default | | |
| Main Camera | | | | · _ |
| Sky and Fog Volume | ► 🙏 Transform | | 1. Q | * * * |
| | 🔻 🗊 🗹 Volume | | 0 7 | |
| | Mode | Global | | • |
| | Weight | | 1 | |
| | 🔻 🗹 Visual Environment | | 0 | : |
| | Sky | | | |
| | Sky type | Physically Based Sky | | • |
| | Background cleade | None | - | - |
| | Ambient Mode | Dynamic | |) |
| | Wind | | - | |
| | Physically Based Sk | (y | 0 | : |
| | ► 🗹 Fog | | 0 | : |
| | Exposure | | 0 | : |
| | 🔽 Water Rendering | | 0 | : |
| | ALL NONE | | | |
| | General | Disabled | | |
| | ✓ State | ✓ Enabled | | |
| | Lever or Detail | • Endbled | | |
| | Num Level Of Details | •••• | 3 | |
| | Lighting | | | |
| | Ambient Probe Dimmer | • • • • | 0.5 | |
| | | | | |
| | | Add Override | | |





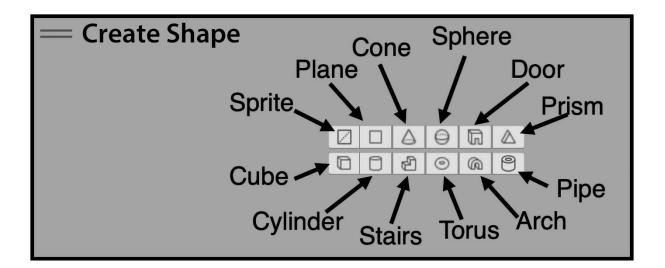


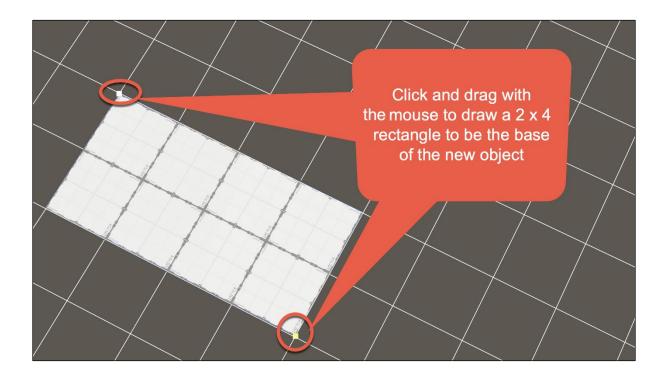
| ProBuilder | | | ProBuilder | | | * | | | |
|------------|--------|------|------------|-----------|--------|---------------------|-----|-----------------|--|
| | | | | | \sim | New Shape | | New Poly Shape | |
| | \sim | | | | | Smoothing | | Material Editor | |
| | -Be | | @ IIV22 | \square | | UV Editor | | Vertex Colors | |
| | TRA | | 0024 | \sim | | Orientation: Globa | al | Conform Normals | |
| | | BC | | ata | 12 | Export | + | Lightmap UVs + | |
| | | | | 901 | | Triangulate | | Center Pivot | |
| | | lcon | Mod | е | 1 | ProBuik Flip Not | Тех | t Mode | |
| | | | | | | | | | |

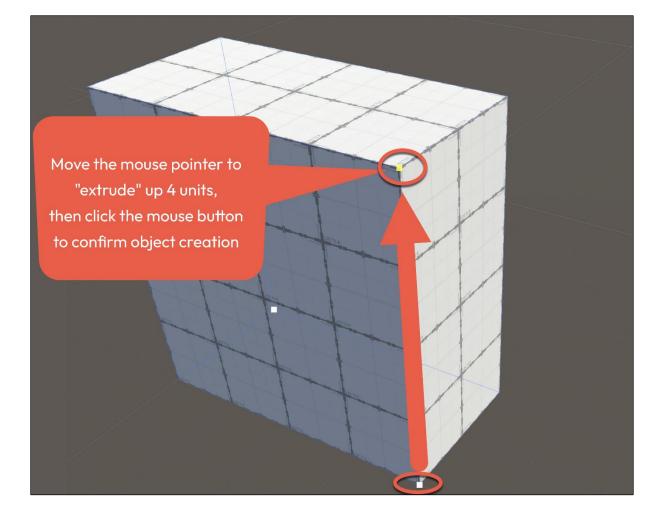
Chapter 7: Creating 3D Geometry with ProBuilder

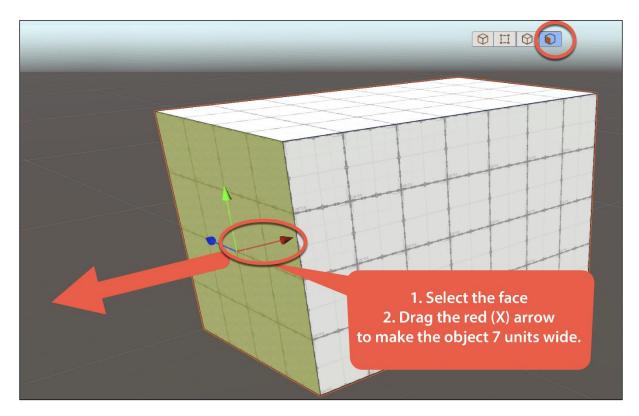
| ProBuilder | | | |
|------------------|-------------------------|--|--|
| | New Shape | | |
| \bigcirc | New Polygon Shape | | |
| | Smoothing Groups Editor | | |
| | Material Editor | | |
| | UV Editor | | |
| | Vertex Colors Editor | | |
| I Global / Local | | | |

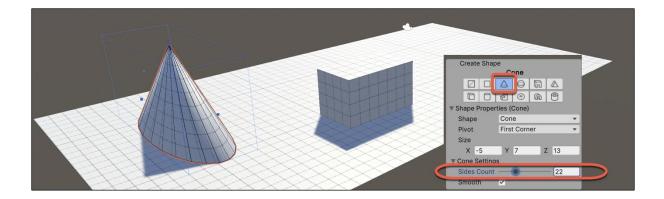
| ₩ ▼ ₿▼₩▼ | |
|---|---------------------|
| Grid Visual | : |
| Grid Plane | X Y Z |
| Opacity | |
| Move To | To Handle To Origin |
| 古 – – – – – – – – – – – – – – – – – – – | |
| Grid Snapping | : |
| Grid Size | • X 1 Y 1 Z 1 |
| Align Selected | All Axes X Y Z |
| | |
| Increment Snappin | g : |
| Move < | G X 1 Y 1 Z 1 |
| Rotate | 15 |
| Scale | 1 |

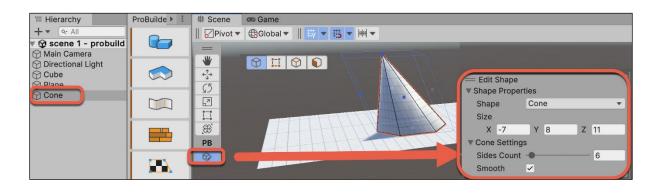


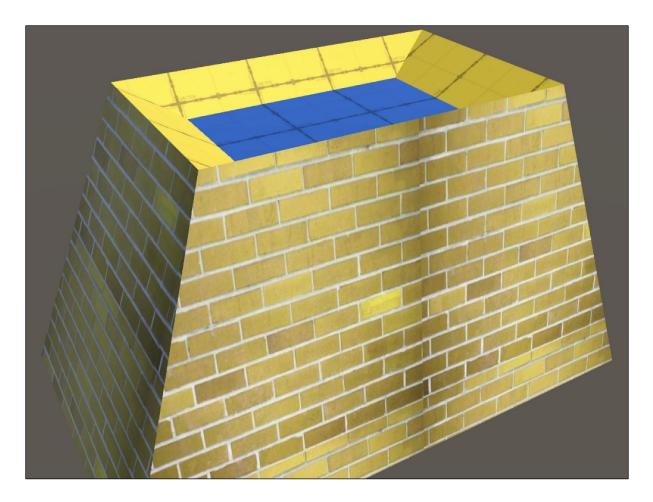


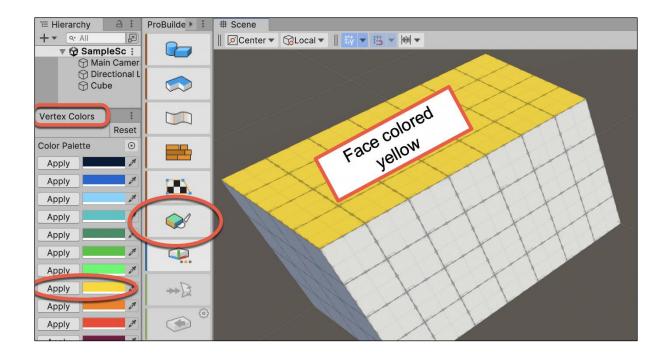


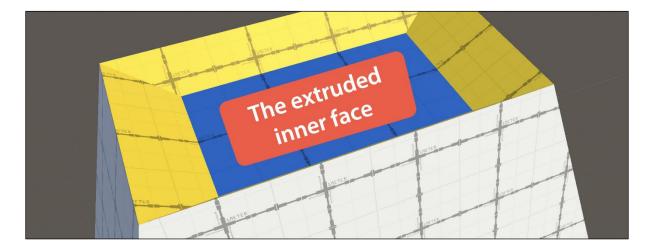


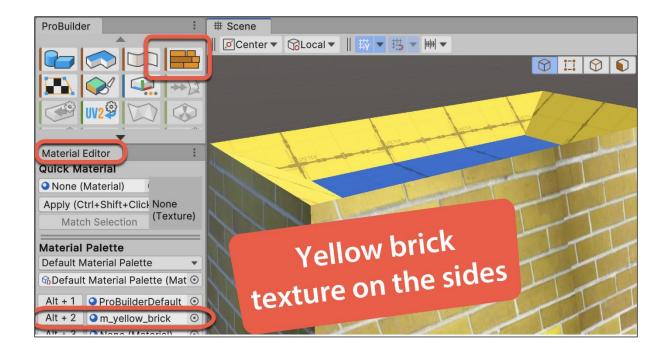


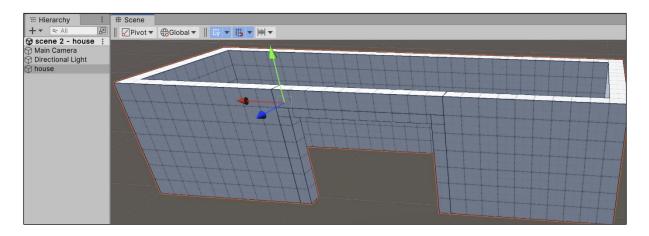






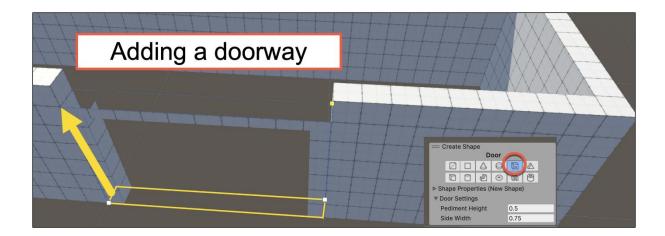


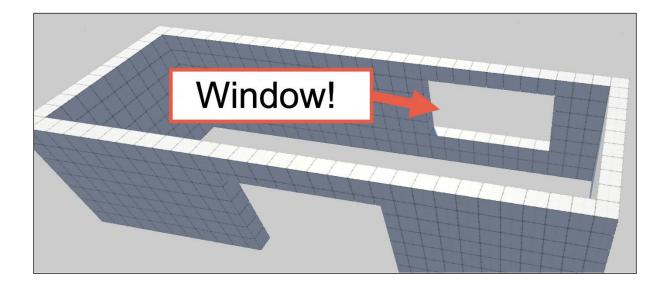




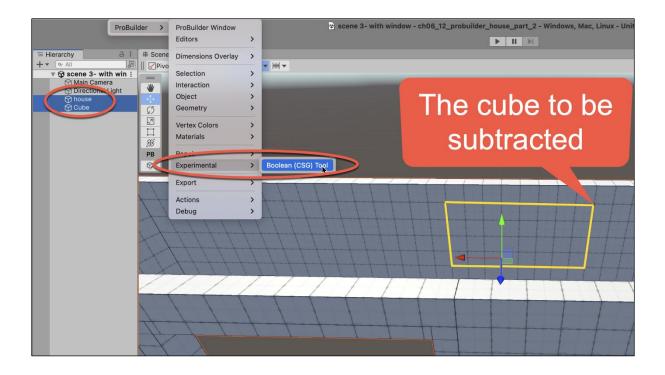
Click the mouse on each point to create an outline for the "c" shaped walls "foundations"

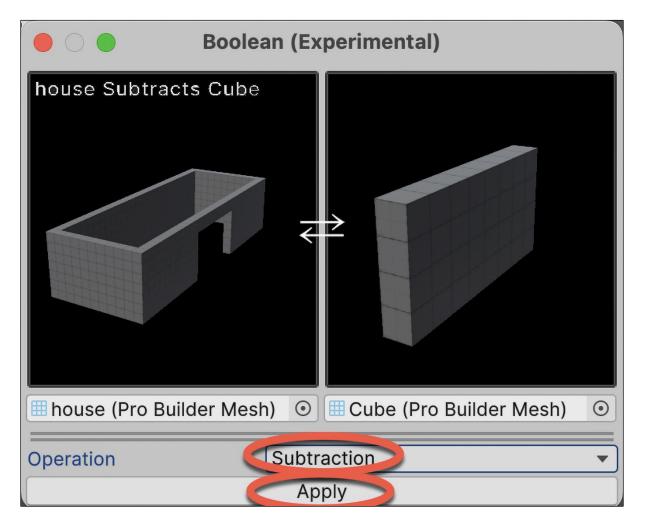
.

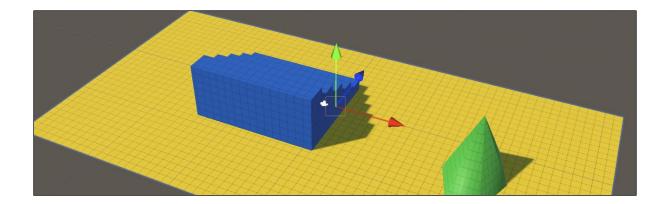


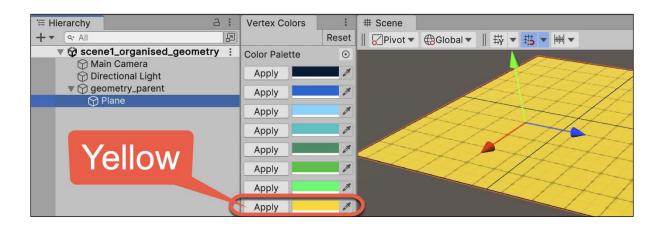


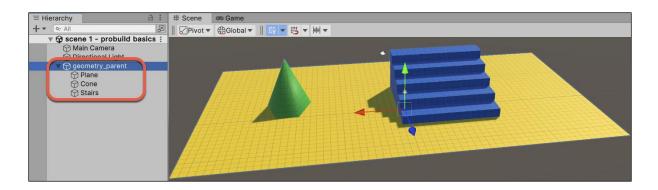
| Carl Preferences | | |
|---|--|----------|
| | ٩ | |
| General ▶ 2D ▶ Analysis Asset Pipeline | ProBuilder Dimensions Overlay Bounds Display | Object 🔻 |
| Colors Diagnostics External Tools Jobs | Experimental Enabling Experimental Features will cause Ur recompile scripts. | hity to |
| Package Manager | Experimental Features Enabled | |
| ProBuilder | Store Mesh as Asset | |

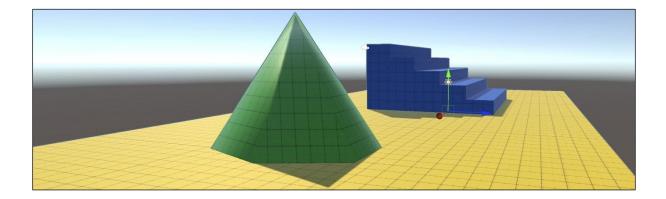


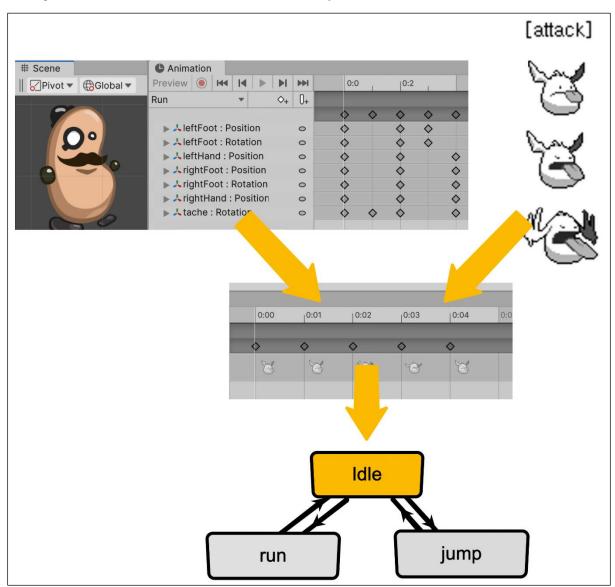








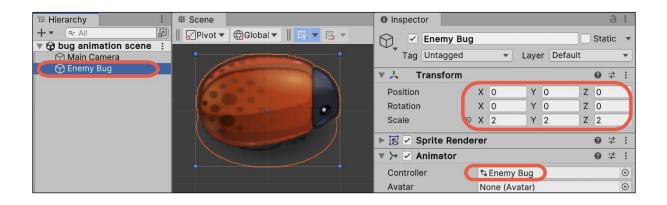


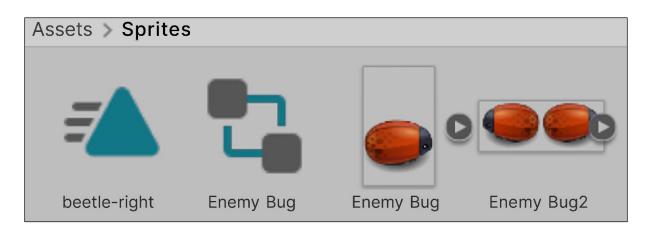


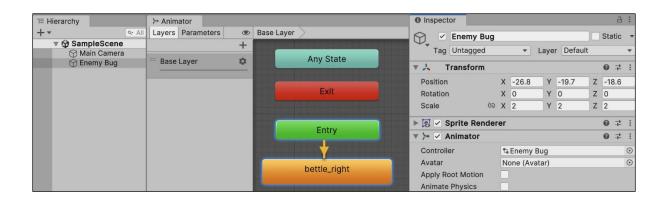
Chapter 8: 2D Animation and Physics

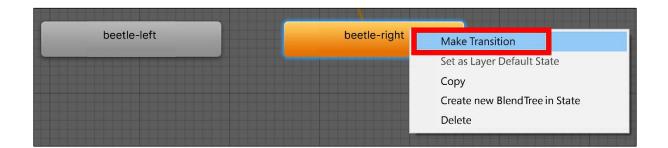


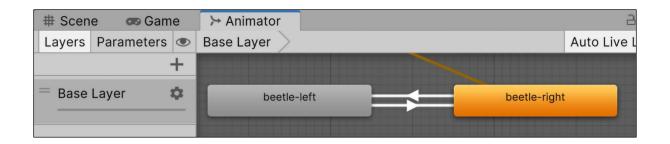
| 🏟 Project Settings | | : |
|------------------------------------|---------------------------------------|--------------|
| | ٩ | |
| Adaptive Performance Audio | Editor | 0 ≓ : |
| Burst AOT Settings | Unity Remote | |
| Editor | Device | None 🔻 |
| Graphics | Compression | JPEG 🔻 |
| Input Manager Memory Settings | Resolution | Downsize 🔻 |
| Package Manager | Joystick Source | Remote 💌 |
| Physics Physics 2D | Asset Serialization | |
| Player | Mode | Force Text 👻 |
| Preset Manager Quality | Serialize Inline Mappings On One Line | ✓ |
| Scene Template | Build Pipeline | Learn more |
| Script Execution Order Services | Multi-Process AssetBundle Building | |
| Tags and Layers | Default Behaviour Mode | |
| TextMesh Pro | Mode | 2D 🔻 |
| Time | | |



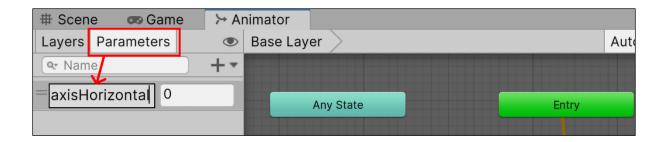


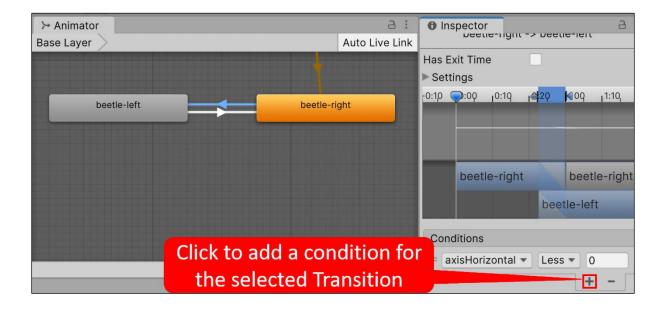






| Base Layer | Auto Live Link | beetle-left -> beetl @ 7 : 1 AnimatorTransitio |
|---------------------------------------|----------------|---|
| Exit | | Transitions Solo Mute |
| Transition goes blue when selected | Entry | beetle-left -> beetle- |
| beetle-left | beetle-right | € beetle-left -> Uncheck |
| | | Has Exit Time |

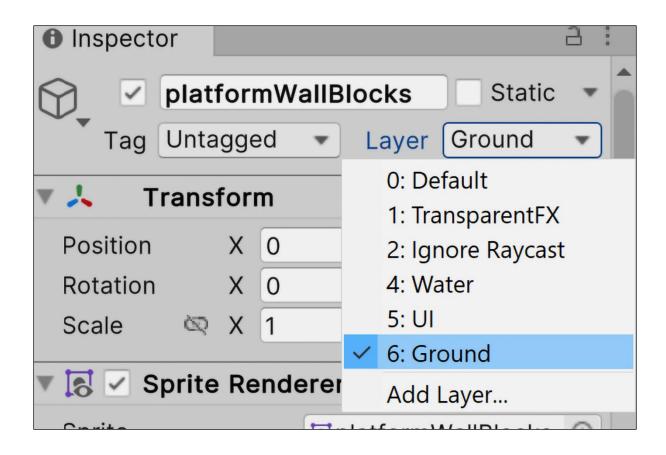




| beetle-left | ▼ # ✓ (Local Scale Se @ 글Ł : |
|---------------------------------|---|
| | Script # LocalScaleS • Scale X -1 Y 1 Z 1 |
| _Scripts/Enemy Bug_0.controller | Add Behaviour |

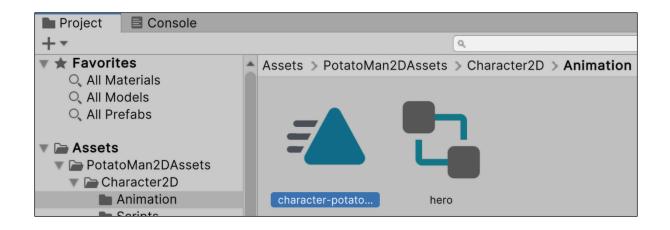
| a : | Inspector | | a : |
|----------------|----------------------------------|---------------|-----------|
| Auto Live Link | bettle_right -> 1 AnimatorTra | | 0 # i |
| | Transitions | | Solo Mute |
| | bettle_right -> bettle | e-left | |
| | | | - |
| | T | | 0 \$ |
| | bettle_right -: | > bettle-left | |
| | Has Exit Time | | |
| | Settings | | |
| | Exit Time | 0.75 | |
| | Fixed Duration | ✓ | |
| bettle_right | Transition Duratioi | 0 | |
| | Transition Offset | 0 | |
| | Interruption Sourc | None | ▼ |

| 🏟 Project Settings | | | : |
|----------------------------------|---------------------|----------------------------|---------|
| | | ٩ | |
| Adaptive Performance Audio | Physics 2D | 0 1 | : |
| Burst AOT Settings | General Settings | Layer Collision Matrix | |
| Editor | | | |
| Graphics | Gravity | X 0 Y -30 | |
| Input Manager Memory Settings | Default Material | None (Physics Material 2D) | \odot |
| Package Manager | Velocity Iterations | 8 | |
| Physics | Position Iterations | 3 | |
| Physics 2D | Bounce Threshold | 1 | = |
| Player | bounce riffestiold | 1 | |

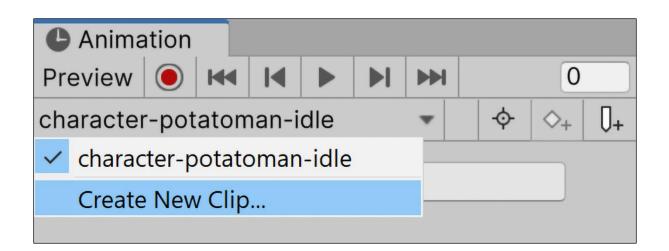


| Project | Console | a : |
|---|--------------|---|
| +- | Q, | 🔊 🖡 🖉 💮 ★ 💋 21 |
| 🔻 ★ Favorit | | Assets > PotatoMan2DAssets > Character2D > Animatic |
| ○ All Ma ○ All Mo ○ All Pre | odels | This folder is empty |
| 🔻 🖿 Assets | | |
| | oMan2DAssets | |
| | aracter2D | |
| | Animation | |

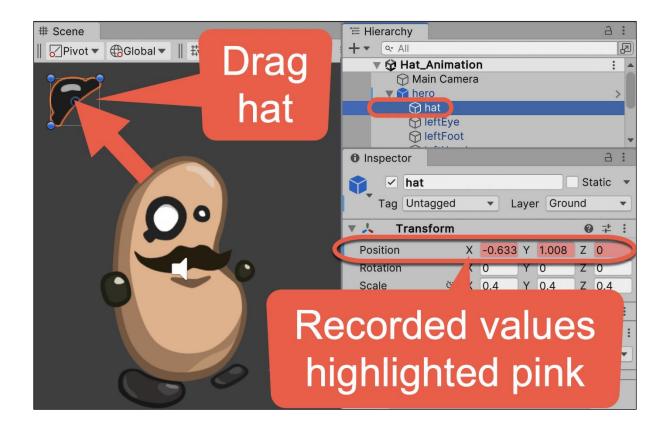
| '≡ Hierarchy 🔒 🗄 | C Animation |
|-------------------|--|
| + - All | Preview 🔘 🚧 🚺 🕨 🕨 🛛 0 0 10 20 30 40 50 |
| | [No Clip] |
| 💬 Main Camera | |
| 🔹 📬 hero 💦 🔅 | |
| 🕥 hat | |
| 🕥 leftEye | |
| 😭 leftFoot | |
| 🕥 leftHand | |
| rightEye | |
| 🕥 rightFoot | |
| 🕥 rightHand | |
| 💮 tache | |
| Project 🛛 Console | To begin animating hero, create an Animation Clip. |
| +- | Create |



| E Hierarchy a : | # Scene 🛛 🐼 Game | ≻ Animator | а : |
|--------------------|---------------------|------------|--------------------------|
| + • • All | Layers Parameters 👁 | Base Layer | Auto Live Link |
| 🔻 🔂 SampleScen 🗄 🧧 | · · Name + ▼ | | |
| 🕥 Main Camera | List is Empty | Entry | character-potatoman-idle |
| | | | |
| PieftFoot | | Any State | |

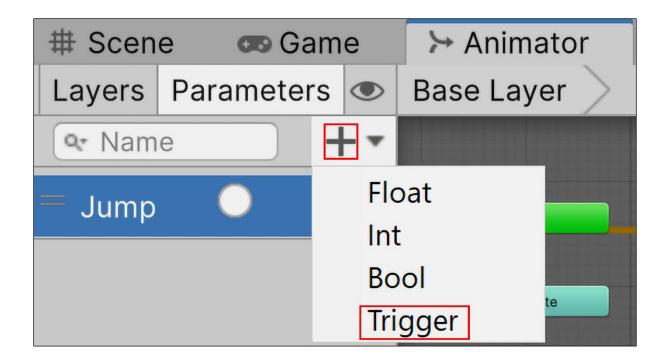


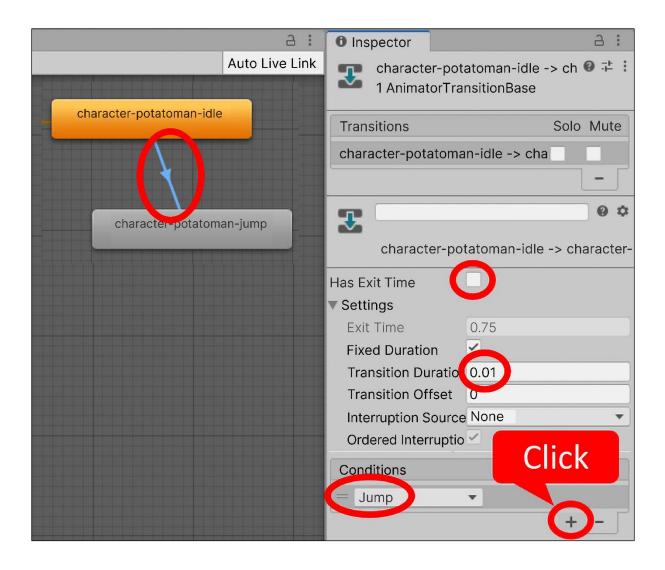
| C Anima | tion | | | | | | | | | | | | | | | | | |
|-----------|----------------|--------|--------|-------|--------|------|--------|--------------|------------------------|--------|--|-----------------|---|-----|----|----|---|------|
| Preview | $oldsymbol{O}$ | | M | | | | | 0 | | | 0 | 1 | L | 1 | | 30 | I | |
| character | -pota | atom | nan-ji | ump | | • | ¢ | \diamond_+ | Ū+ | | | | | | | | | |
| | | | Add | Prop | perty | , | | | # boo gro hat | undCh | ollider Collid Contr ody 2 eck | er 20 rol (S | | ot) | | | | + |
| | | | | Do | ppes | heet | С | urv | Ψ. | 🙏 Trar | | | | | | | | |
| As | sets | > P | Potato | | 12DA | sset | s > Cl | hari | left | | | n | (| Cli | cł | (| _ | ++++ |
| | chara | acter- | · | chara | icter- | | here | 0 | | | | | | | | | | Sim |



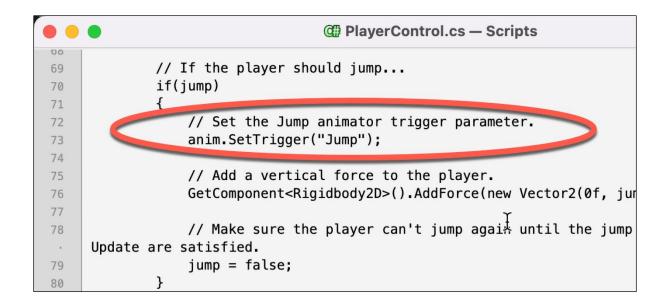
| | | | | ►►I | 0 | | | 0:00 | 0:10 | 0:20 | 0:30 | 0:40 |
|-----------------|--------|------|------|-----|-----|-----|----|------------|------|------|------|---------|
| haracter-pota | toma | Samp | oles | 60 | -¢- | \$₊ | Q+ | | | | | |
| | | | | | | | | \diamond | | | | |
| 🕨 🦶 hero : Posi | ition | | | | | | | \diamond | | | | |
| 🕨 💺 hat : Po | sition | | | | | | ۵ | \diamond | | | | |

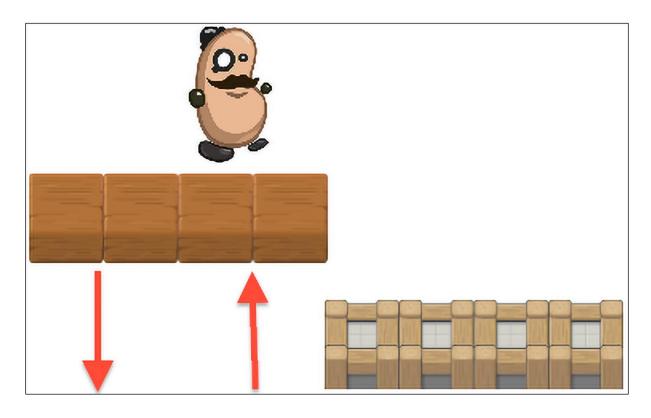
| # Scene 🛛 🖙 Game | ≻ Animator | ∃ : O Inspe |
|---------------------|------------|--|
| Layers Parameters 👁 | Base Layer | Auto Live Link |
| 🗣 Name 🛛 🕂 🔹 | | Ta |
| List is Empty | Entry | character-potatomac-irita |
| | | Make Transition |
| | | character-potat Set as Layer Default State |
| | | Сору |
| Right- | click | Create new BlendTree in State |
| | | Delete |
| | | COLUMN TWO IS NOT THE OTHER DESCRIPTION OF THE OTHER DESCRIPTION OF THE OTHER DESCRIPTION. |



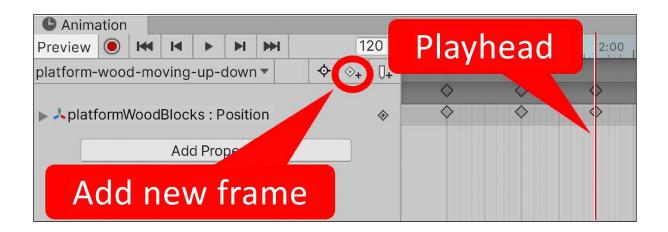


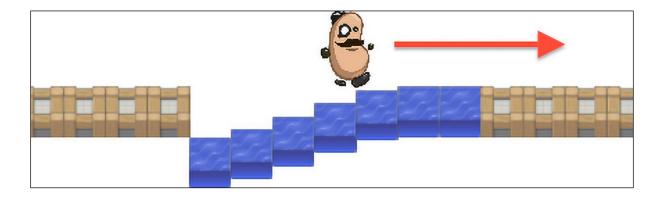
| >→ Animator | | Inspector | а: |
|---------------------------------|--------------------------|--|-------------------|
| Layers Parameters Base Layers | er > | character-potatoman-jump -> | character- 🞯 👎 🗄 |
| • Name | | 1 AnimatorTransitionBase | |
| = Jump | Entry | Transitions | Solo Mute |
| | | character-potatoman-jump -> chara | cter-p |
| | | | - |
| | character-potatoman-idle | character-potatoman-jump -> | character-potatom |
| | | Has Exit Time Settings Exit Time Fixed Duration Transition Duration 0.25 | |
| | character-potatoman-jump | Interruption Source None | • |

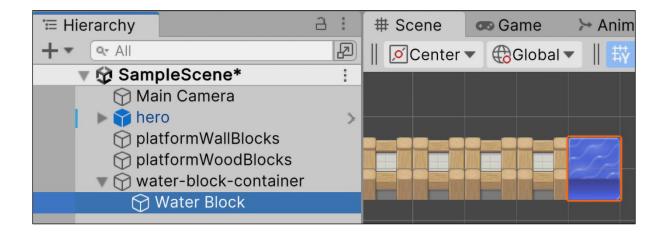




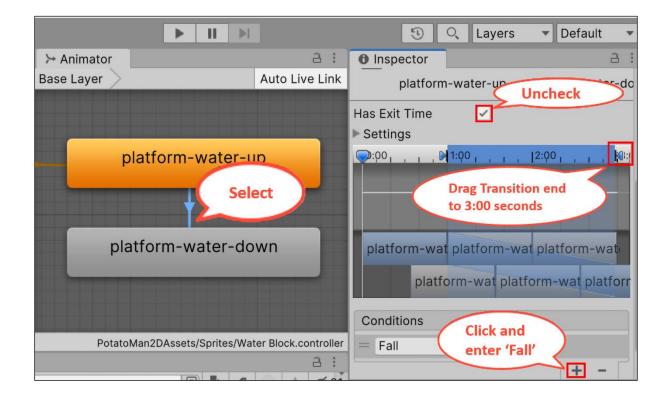
| '≡ Hierarchy | а : | # Sc | ene | C | lo Ga | me | > | + Ani | mator | | | | | | | 2 | 5 : | 0 | Inspect |
|--------------|--------|----------|-------|-----|-------|-------|-------|-------|-------|----|-----|------------------|------|----|---|---|-----|------|---------|
| + | cer | Anim | ation | | | | - | | | | | | | - | | | | | |
| 🖓 Main Ca | amer | C Anima | ation | | | | | | | | | | | | | | | | |
| ► Thero | mW/all | Preview | 1.1.1 | 144 | ◀ | | | | | C |) | | 0:00 | 1 | 1 | 1 | | 0:30 | 1 . |
| 🕥 platforr | nWoo | platform | -woo | d-m | oving | g-up | -dow | 'n₹ | ¢ | ♦+ | Ū+ | | | | | | | | |
| | | | | | Add | l Pro | perty | / | | | | Transf | | | | | | | + |
| | | | | | | | | | | | | 🙏 Rota | | | | | | | + |
| | | | | | | | | | | | ▶ □ | L Scal Box Co | | 2D |) | | | | + |







| # Scene 🛛 👁 Game | → Animator | |
|---------------------|------------------------|--------|
| Layers Parameters 👁 | Base Layer | Auto L |
| •r Name | | |
| List is Empty | | |
| | | |
| | Entry platform-water-u | ρ |
| | | |
| | platform-water-do | wn |
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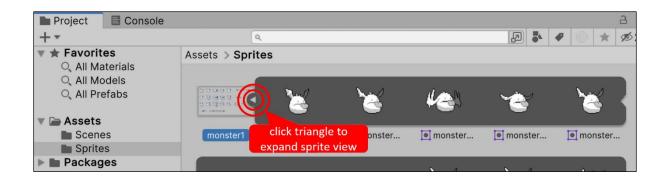


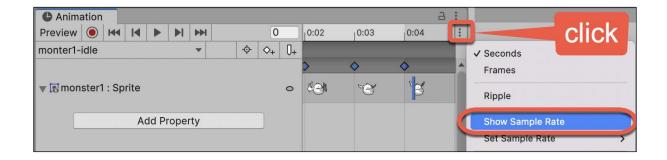
| Box Collider 2D | 0 | -l- | : |
|--------------------------|------|---------------|---------|
| Animator | 0 | - <u> </u> - | : |
| 🔻 🗖 🗹 Box Collider 2D | 0 | - <u> </u> - | ÷ |
| Edit Collider | | | |
| Material None (Physic | cs N | late | \odot |
| Is Trigger | | | |
| Used By Effector | | | |
| Auto Tiling | | | |
| Composite Operation None | | | • |
| Offset | | | |
| X 0 Y 1 | | | |
| Size | | | |
| X 1.01 Y 1.21 | | | |



| Project Console | | a : | Inspector | 2 |
|--|------------------|--------------|------------------|-----------------------|
| + • • | | 🎝 🔗 💿 ★ 💋 21 | Monster 1 (Te | xture 2D) Impor 🔞 津 🗄 |
| ▼ ★ Favorites ○, All Materials ○, All Models | Assets > Sprites | | | Open |
| Q All Prefabs | | | Texture Type | Sprite (2D and UI) |
| 🔻 🗁 Assets | | | Texture Shape | 2D 💌 |
| Scenes | monster1 sources | | Sprite Mode | Multiple 🔹 |
| Sprites Packages | | | Pixels Per Unit | 100 |
| | | | Mesh Type | Tight 🔹 |
| | | | Extrude Edges | • 1 |
| | | | Generate Physics | . 🗸 |

| Project E Console | | oprite Editor | | : □ ; | × |
|-------------------|----------------------------|-----------------|-------------------|-------------------|---|
| +- | | Sprite Editor 🔻 | Revert Apply | | 2 |
| 🔻 🛨 Favorites | Assets > Sprites | | Туре | Grid By Cell Size | - |
| Q All Materials | | | Pixel Size | X 64 Y 64 | |
| Q All Models | | | Offset | X 0 Y 0 | |
| Q All Prefabs | 232444 C 1 | | Padding | X 0 Y 0 | |
| 🔻 🗁 Assets | | | Keep Empty Rects | | |
| Scenes | | | Pivot | Center | |
| Sprites | monster1 sources | | Custom Pivot | X O Y O | |
| Packages | | | Method | Delete Existing | - |
| | | | | Slice | |
| | | 8 B | * SF 13 13 | | |
| | Assets/Sprites/monster1.pn | 9 5-4 5-4 | 1 Anno and Brok | | |

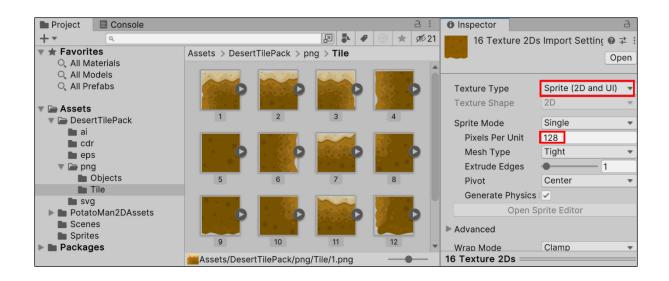


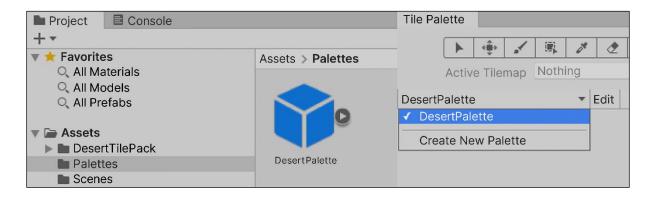


| Animation | | | | | | | |
|---------------|------------|---|------|--------------|--------------|----------|------|
| Preview 🔘 🖊 🖊 | | 0 | 0:00 | 0:01 | 0:02 | 0:03 | 0:04 |
| monter1-idle | Samples 12 | ≻ | | | | | |
| | | | | <u> </u> | <u> </u> | <u> </u> | ^ |
| | | | | \checkmark | \checkmark | V | V |

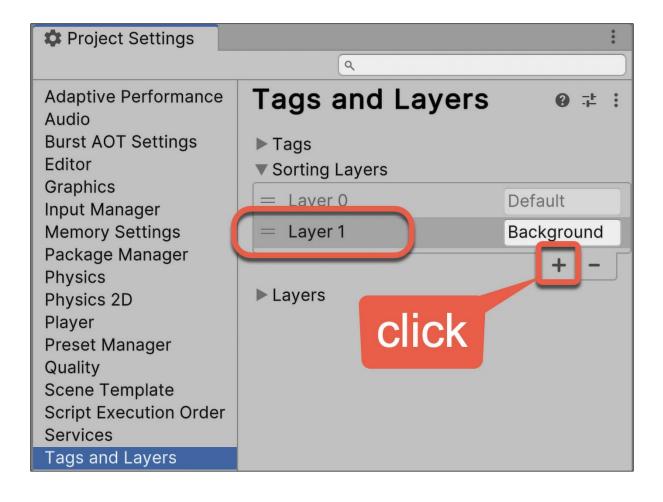
| 😎 Game | | | | | | | | | | | | | | | | | | | |
|--------------|--------|--------|------|------|--------|--------|--------|-------|-------|------------|------------|------|--------------|------------|----|------------|-------|-------|--------|
| Game | - | Displa | ay 1 | - | Free A | Aspect | | | - | Scale (| • | - 2x | Play Focused | • | 10 | E | Stats | Gizmo | os I ▼ |
| | | | | | | | | | | 2 | 4 | | | | | | | | |
| C Animatic | n | | | | | | | | | | | | | | | | | t | a : |
| Preview 🦲 | | | ► | | ••• | | 0 | | | 0:00 | 0:0 | 1 | 0:02 | 0:03 | | 0:0 | 04 | 0 | :05 : |
| monter1-idle | 9 | • | Sam | ples | 12 | ¢ | ♦+ | Ū+ | | | | | | | | | | | |
| | | | | | | | | | | \diamond | \diamond | | \diamond | \diamond | | \diamond | | | |
| ▶ 💽 Sprite | | | | | | | 0 | Ţ | | \$ | \$ | | \$ | \$ | | \diamond | | | |
| | | | D | opes | sheet | С | urves | | 4 | | | | | | | | | | • |
| Project | | | | | | | | | | | | | | | | | | 1 | а : |
| +- | | | | | | | | | ٩ | | | | | | R | . | • | * | ¢21 |
| ▶ ★ Favor | ites | | | | | Assets | 5 > A | nima | tions | s-2 | | | | | | | | | |
| 🔻 🗁 Asset | ~ | | | | | | /lonst | | | tor | | | | | | | | | |
| Asset Anin | | าร | | | | 🛋 n | nonte | r1-ic | lle | | | | | | | | | | |
| | natior | | | | | | | | | | | | | | | | | | |

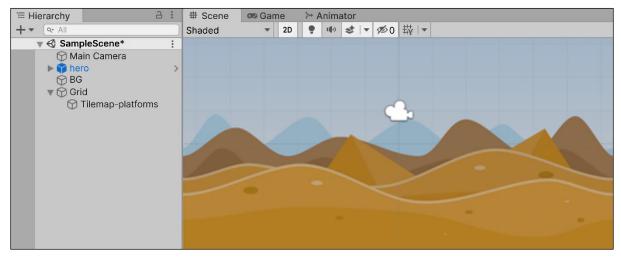


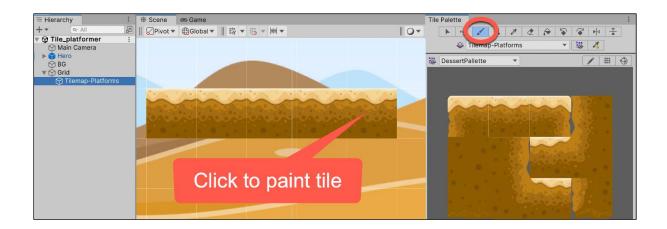


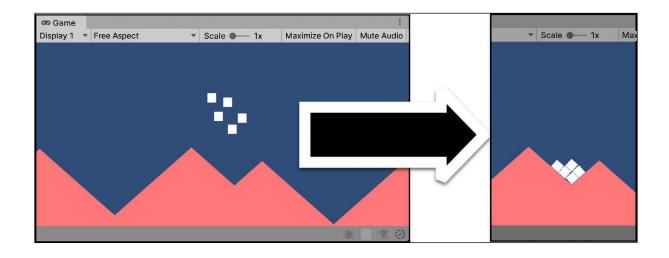




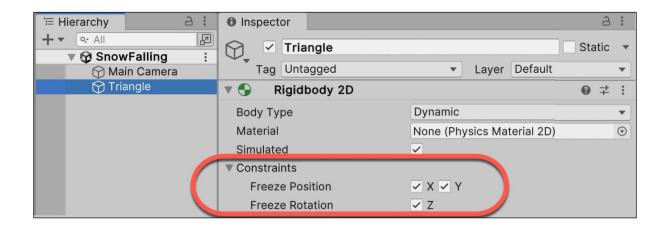


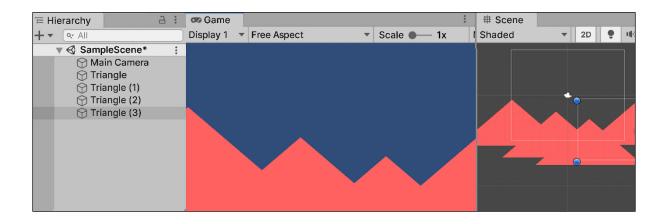


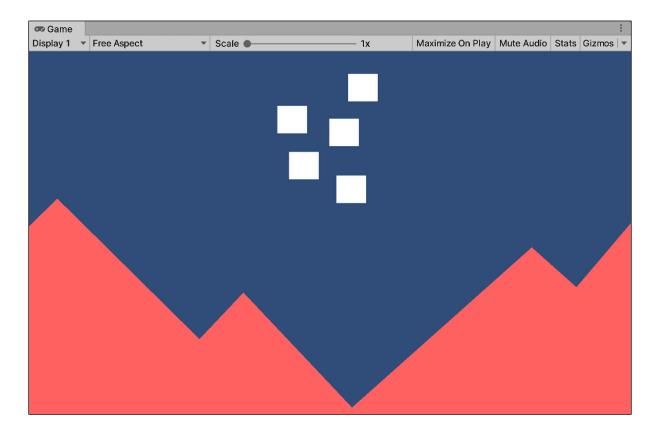




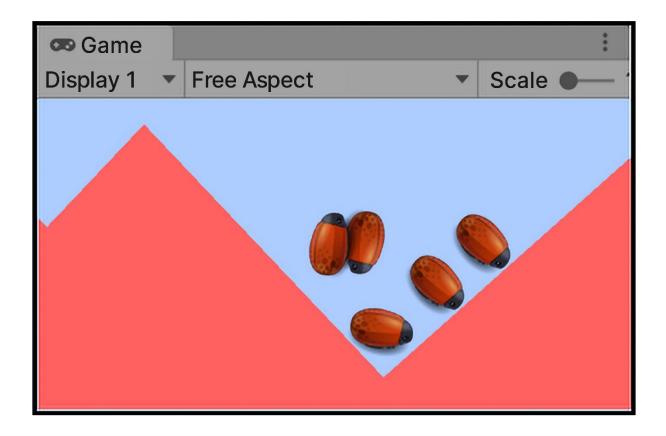
| Project 🛛 🗐 Console | | a : | Inspector | , C | 3 |
|---|--|---------------|---|----------------------------|---|
| + ▼ Q ▼ ★ Favorites Q All Materials | Assets > Sprites | ₽ № ♥ 🔘 ★ Ø21 | Triangle (Te) | ture 2D) Import Settin @ 🛱 | |
| All Models All Prefabs | Triangle Triangle | | Texture Type Texture Shape | Sprite (2D and UI) 2D | * |
| Scenes Sprites Packages | | | Sprite Mode Pixels Per Unit Extrude Edges | Polygon 4 • 1 | • |

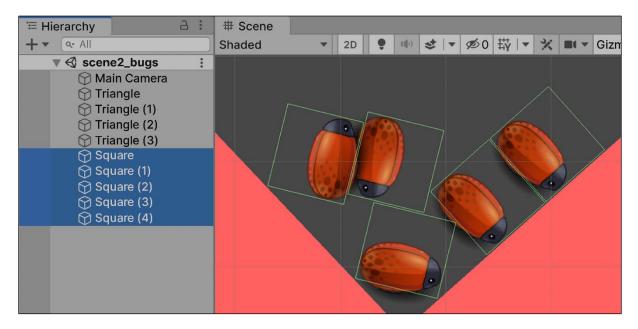


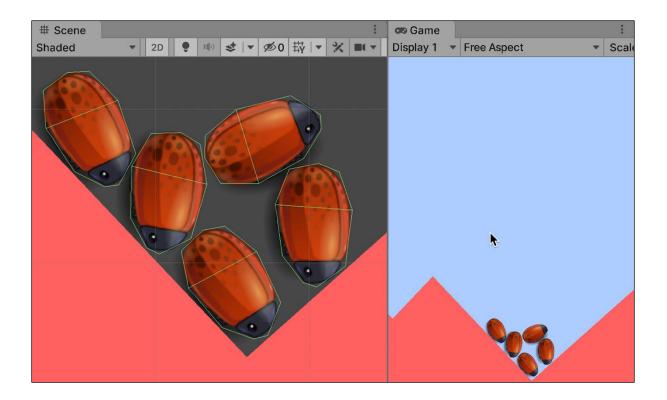


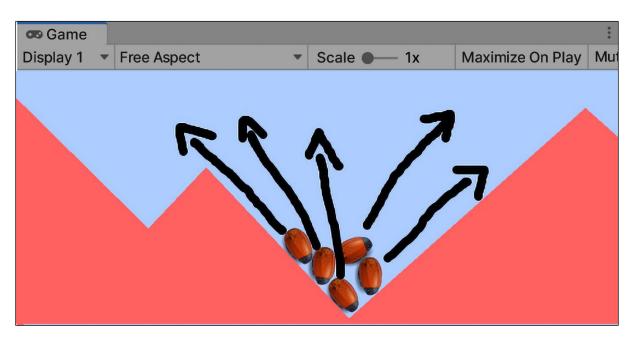


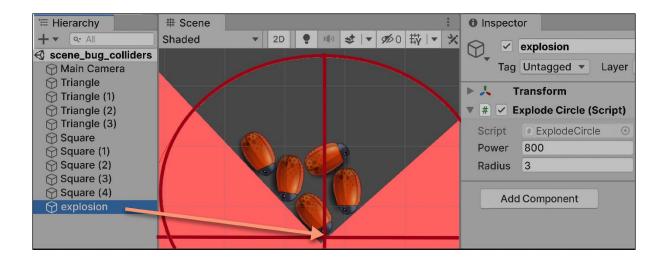
| '≡ Hierarchy a : | co Game | | | | | | | Inspector | | а | 6 E |
|------------------------------|---------|-----------|-----|------------|-----|---------------|------|-------------------|--------------------|----------------|-----|
| + • (• All | Game | ▼ Display | 1 🔻 | Free Aspec | ct | | | Square | | Static | |
| 🔻 🚱 scene1 🕴 | | | | | | | | | | | |
| 💮 Main Camera | | | | | | | | Tag Untagged | d 🔻 Layer 🛙 | Default | |
| 💮 Triangle | | | | | | | | ► 👆 Transform | 1 | 0 ; | : |
| 💮 Triangle (1) | | | | | | | | | | | |
| Triangle (2) | | | | | | | | 🔻 🛃 🖌 Sprite Rer | nderer | 0 7 | 1 |
| Triangle (3) | | | | | | | 1 | Sprite | Enemy Bug_0 | | 0 |
| Triangle (4) | | | | | | | 6.00 | 0 | pen Sprite Editor | | - |
| Triangle (5) Square | | | | | | | | | peri oprice Editor | | - |
| Square (1) | | 1. | | | | | 100 | Color | | | 0ª |
| G Square (2) | | 20. | | | | | | Flip | X Y | | |
| Square (3) | | | | | | | | Draw Mode | Simple | | |
| 💬 Square (4) | | | - | | | | | Mask Interaction | None | | |
| Square (5) | | | | | - | | | Sprite Sort Point | Center | | |
| 💮 Square (6) 🕅 Square (7) | | | | | 1. | | | Material | Sprites-Defau | ult | ۲ |
| () oquare () / | | | | | .0 | - | | Additional Settir | ngs | | |
| | | | | | 100 | 1 Contraction | | Sorting Layer | Default | | |
| | | | | | | | | Order in Layer | 0 | | |

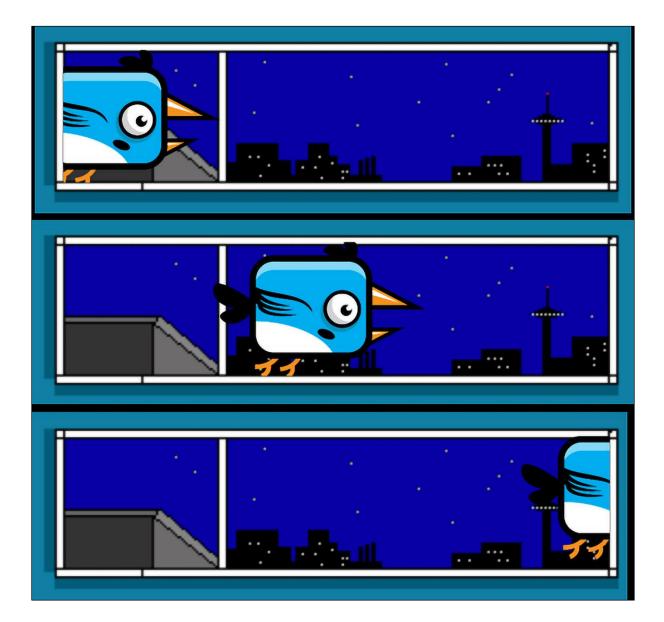


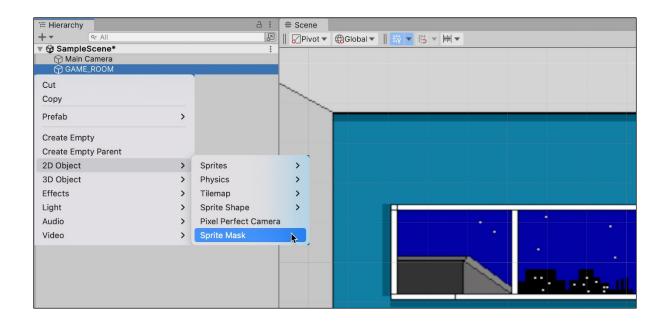


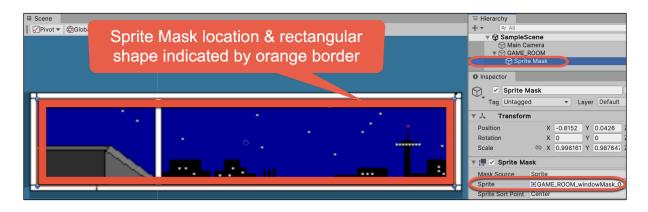


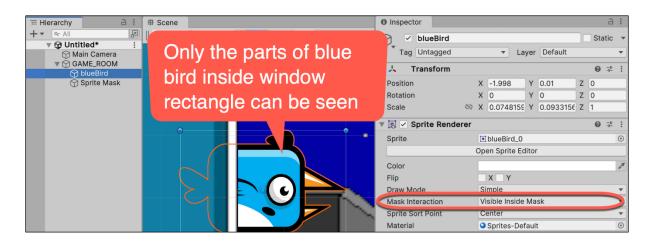


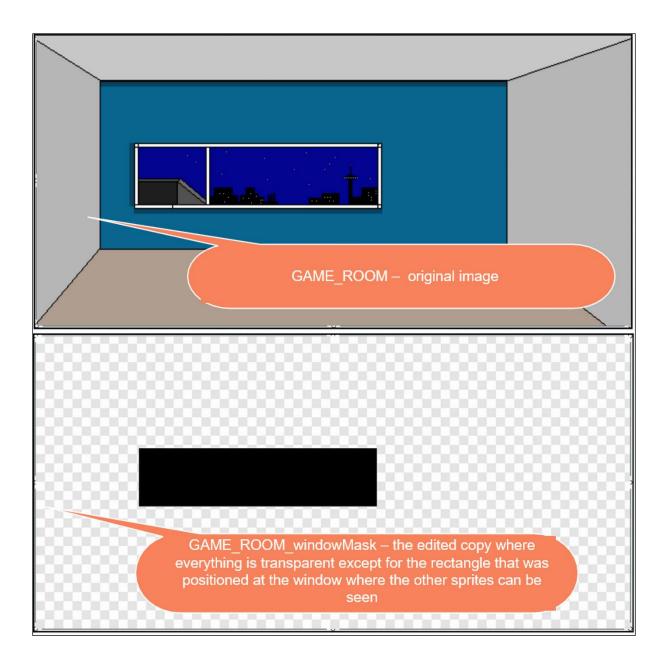




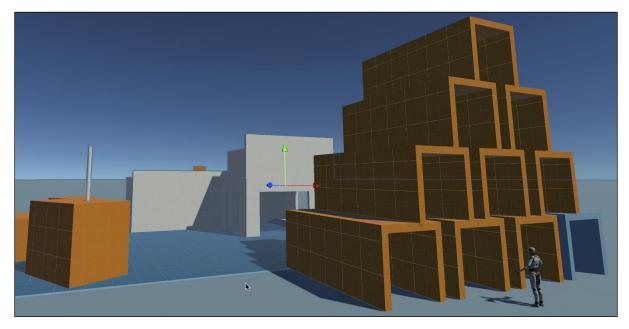








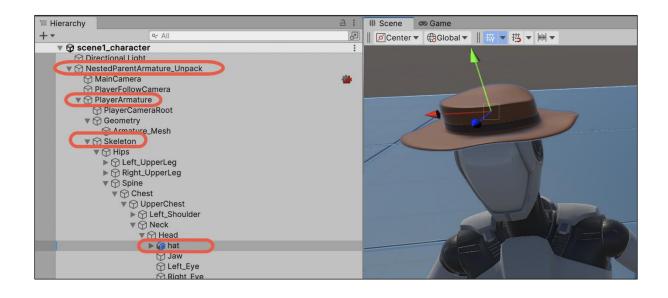
Chapter 9: Animated Character



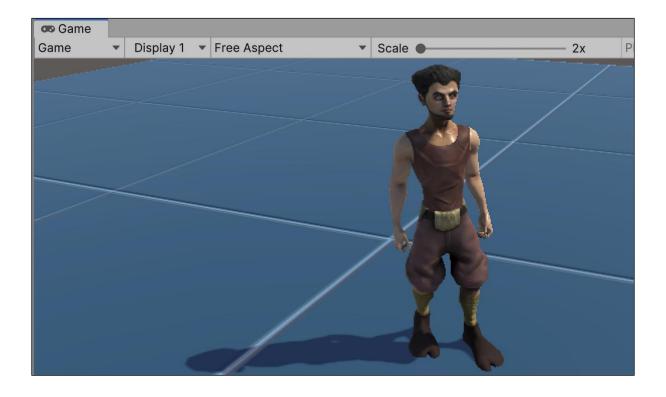
| 🖬 Pac | kage Manager | | | • |
|-------|-----------------------|-------------------------------|--|-----------------------|
| + | Packages: My Assets 🔻 | Sort: Purchased date 🔻 | : | ۹ Starter × |
| Star | Unity Registry | n Character Controller URP | Starter Assets - Third Person Cha | ractor Controllor UPP |
| Stai | In Project | Character Controller URP | | |
| POL | ✓ My Assets | ly 3D Art by Synty | 1.1.5 · June 16, 2023 Asset Store | |
| POL | Built-in | ly 3D Art by Synty | View in Asset Store Publisher Website Publisher Su | ipport |
| POL | | ers - Low Poly 3D Art by Synt | Overview Releases Images | |

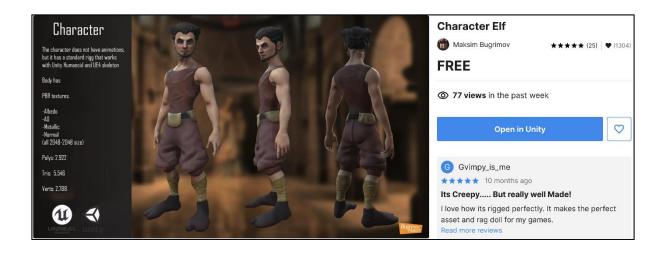


| '≔ Hierarchy | | a : | |
|--|---|-----|---------------------------|
| 🔻 🔂 scene1_character | | : | |
| 🕥 Directional Light | | | |
| ✓ ♥ NestedParentArmature_Unpact MainCamera ♥ PlayerFollowCamera ♥ PlayerArmature ♥ UI_Canvas_StarterAssetsIng ♥ UI_EventSystem ♥ Cube-ground | Cut Copy Paste Paste As Child Rename Duplicate Delete Select Children Set as Default Parent | | |
| | Prefab | | open Asset in Context |
| | Create Empty | C | pen Asset in Isolation |
| | Create Empty Parent | S | elect Asset |
| | 2D Object | > s | elect Root |
| | 3D Object | >R | eplace |
| | Effects | , R | eplace and Keep Overrides |
| | Light | > _ | less sele |
| | Audio | 2 | |
| | Video | | Inpack Completely |



| ≔ Hierarchy | a : | Inspector | | Ъ | : |
|---|----------|--|-----|--------------|---------|
| + ▼ [Q- All ▼ 🛱 scene1_character | [] [] | PlayerArmature | Sta | tic | • |
| NestedParentArmature_Unpack MainCamera PlayerFollowCamera | | Tag Player Layer | | | • |
| | | Kanada Kanad | 0 | 4- | : |
| V 🖓 PlayerArmature | | ▶ >> ✓ Animator | 0 | - <u>+</u> - | : |
| PlayerCameraRoot | | Description: Character Controller | 0 | ÷ | : |
| | | # Third Person Controller (Script) | 0 | 4- | : |
| ♥ ↔ Hips ▶ ↔ Left_UpperLeg ▶ ↔ Right_UpperLeg ♥ ↔ Spine ♥ ↔ Chest | | # Sasic Rigid Body Push (Script) # Starter Assets Inputs (Script) | | 군년 | : |
| | | | | 구는 구는 | : |
| | | ▶ 🚯 🗹 Player Input | 0 | -1- -1- | : |
| | | ▼ # ✓ Accessory Pickup (Script) | 0 | - <u> </u> - | : |
| ♥ ⑦ UpperChest ▶ ⑦ Left_Shoulder | | Script # AccessoryPickup | | | \odot |
| Veck | | Hat In Player 🕼 hat | | | \odot |
| Head hat Jaw C Left_Eye Right_Eye | | drag Add Component | | | |

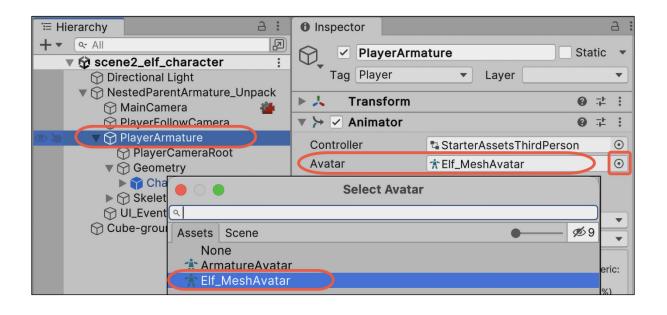




| 🖬 Pac | kage Manager | | 1 | | | | |
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| + | Packages: My Assets | Sort: Purchased date | Starter × | | | | |
| Stal | Unity Registry | n Character Controller URP | Starter Assets - Third Person Character Controller URP | | | | |
| Star | In Project | Character Controller URP | Starter Assets - Timu Person character controller 1.1.5 · June 16, 2023 Asset Store Unity Technologies View in Asset Store Publisher Website Publisher Support | | | | |
| PCL | ✓ My Assets | ly 3D Art by Synty | | | | | |
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| POL | YGUN Fantasy Chara | cters - Low Poly 3D Art by Synt | Quartieur Pelesses Imasse | | | | |

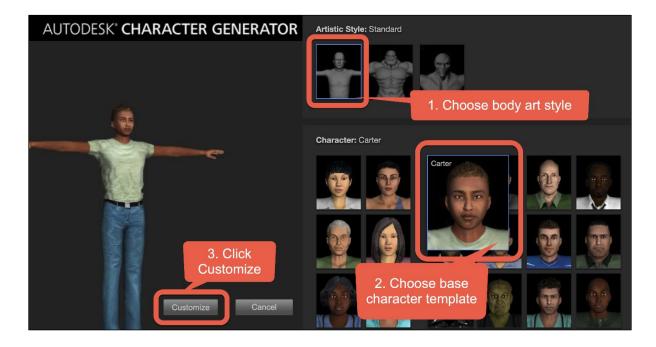
| Inspector* | | a : |
|-------------------------|---------------------------|--------------|
| Elf_Mesh Import Setting | gs * | Open |
| Мо | de Rig nimation Materials | |
| Animation Type | Humanoid | • |
| Avatar Definition | Create From This Model | • |
| | | ✓ Configure |
| Skin Weights | Standard (4 Bones) | • |
| Strip Bones | \checkmark | |
| Optimize Game Objects | | Revert Apply |

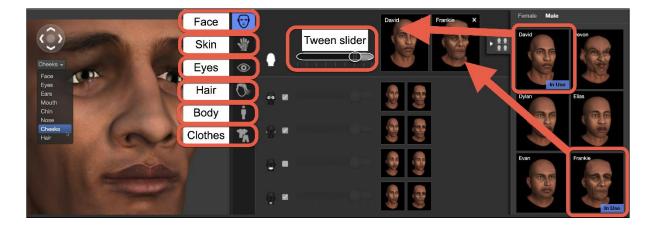
| [•] ≣ Hierarchy | | a : |
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| 🔻 🔀 scen | e2_elf_character | * |
| 💬 Dir | ectional Light | |
| 🔻 💮 Ne | stedParentArmature_Unpack | |
| | MainCamera | 🪈 |
| Ø | PlayerFollowCamera | |
| | PlayerArmature | |
| 6 | 🗃 PlayerCameraRoot | |
| VF | Geometry | |
| | Character_Elf | > |
| | 🕥 Armature_Mesh | |
| ▶ € | 🖯 Skeleton | |
| | UI_EventSystem | |
| 🖓 Cu | be-ground | |

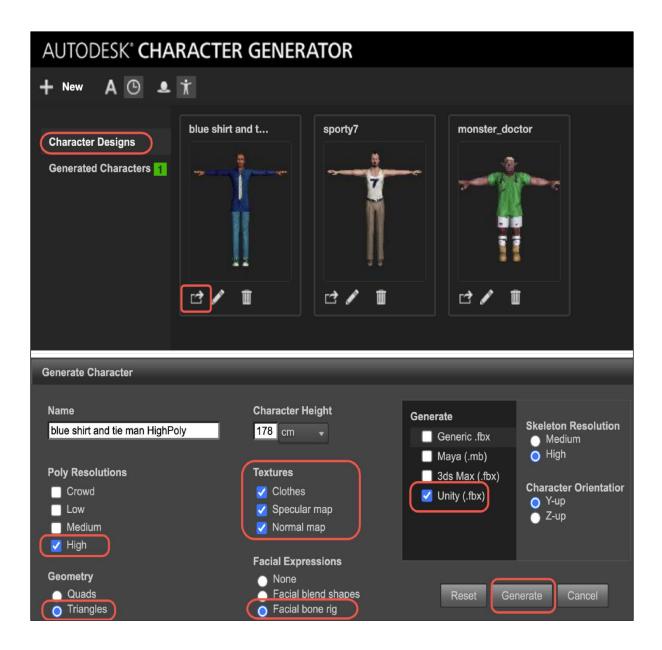


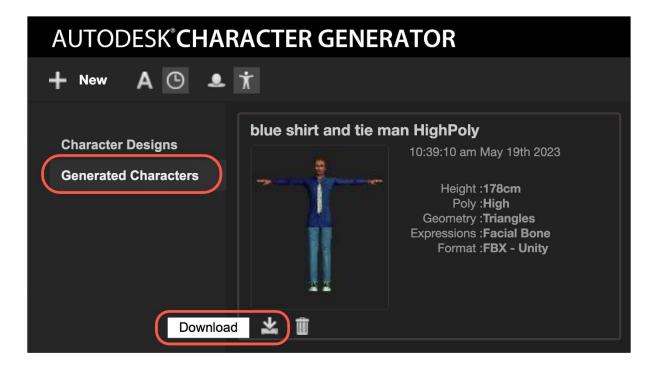
| Inspector | | | | | a : |
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| Blue shirt and tie man High Poly_Unity Import Settings | | | | 0∓: | |
| | | | | | Open |
| | Model | Rig | Animation | Materials | |
| Material Creation Mode | | | Import via MaterialDescription | | |
| Location | | Us | e Embedded | I Materials | - |
| Textures | | | Extract Textures | | |
| Materials | | | | Extract Material | S |

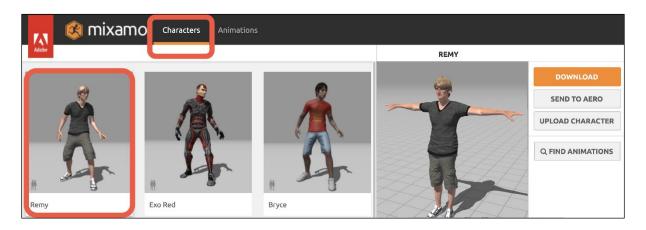


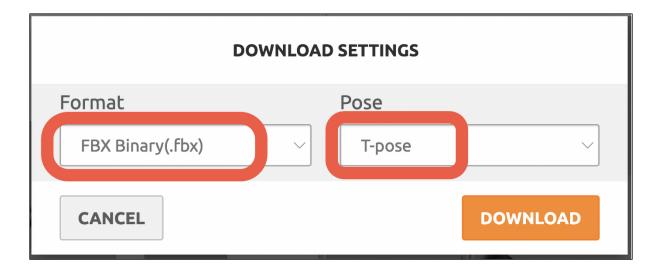


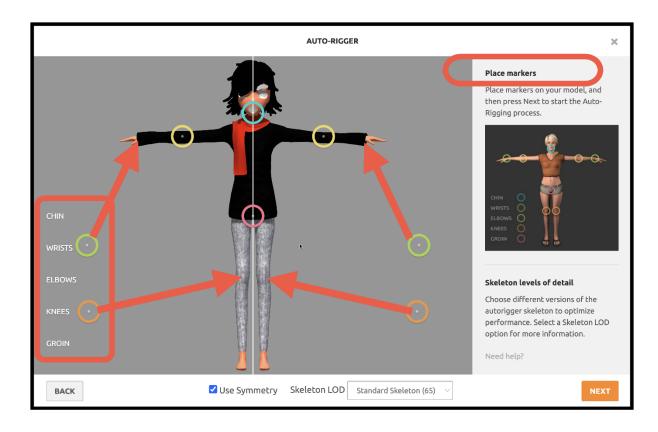


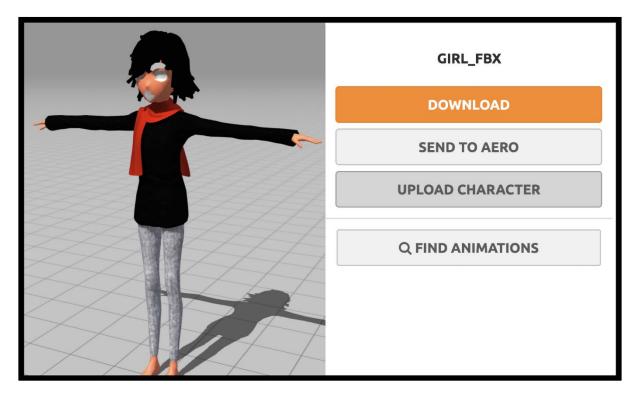


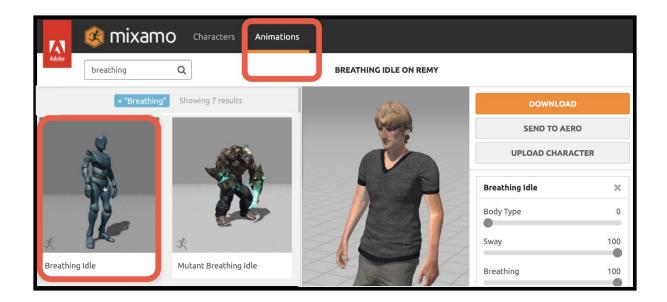




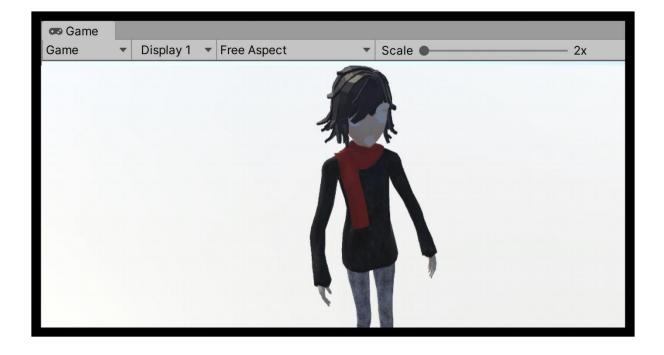


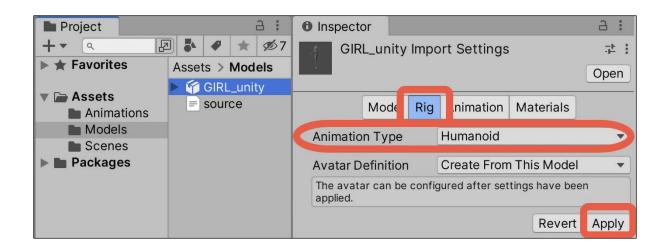


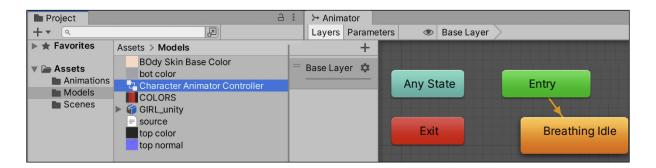




| | DOWNLOAD SETTINGS | |
|---------------------|--------------------|--------------|
| Format | Skin | |
| FBX for Unity(.fbx) | ∼ Without Skin | \checkmark |
| Frames per Second | Keyframe Reduction | |
| 30 | none | ~ |
| CANCEL | | DOWNLOAD |



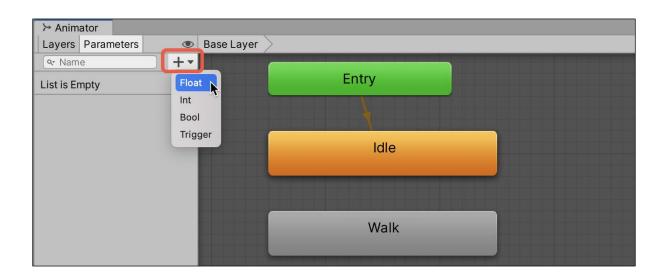




| t≡ Hierarchy | a : | ● Inspector >> Animat | tor | | Ъ | : |
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| v 🕸 scene1_id | Ile_animiton _girl_NPC | | | | | |
| Main Ca | amera | Tag Untagged | Layer Default | | | • |
| 🧲 📔 🕨 🍘 GIRL_ur | nity | Model Open | Select Overrides | | | • |
| Directio | | ► 🙏 Transform | | Ø | - <u>ŀ</u> | : |
| Project | а: | 🔻 ≻ 🗹 Animator | | 0 | -1- | : |
| + ▼ (۹ | 2 3 4 🖈 🕫 | Controller 🛛 💆 | 🗖 🕏 Character Animator Contra | oller | | \odot |
| ► ★ Favorites | Assets > Models > | Avatar | ☆GIRL_unityAvatar | | | \odot |
| | BOdy Skin Base Color | Apply P 5. Motion | | | | |
| Assets _Scenes | bot color | pdate Mode | Normal | | | - |
| Animations | Character Animator Controller | Culling Mode | Cull Update Transforms | | | • |
| Models | GIRL_unity | | | | | |



| Project | a: ₽ * * % 7 | Inspector @Standard Walk Import Setti | | :: |
|--|------------------------|---|---------------------|-----|
| ► ★ Favorites | Assets > Animations | @Standard Walk Import Setti | Ope | 'n |
| Assets Scenes Animations Models Packages | 🕨 🏟 @Standard Walk | Model Rig Import Constraints Import Animation ✓ Anim. Compression Op | Animation Materials | • |
| | | Scale Error 0.1 Length 1.167 0:00 10:05 | 5 30 FF | - D |
| | | Start 0 Loop Time ✓ Loop Pose | End 35 | 0 |



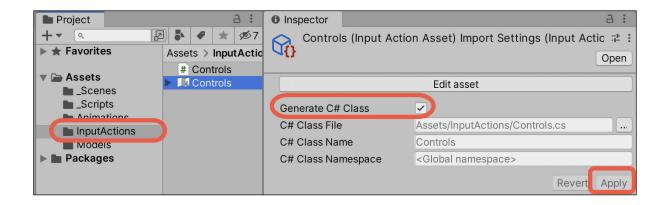
| >> Animator | | а: | Inspector | a : |
|------------------------------|---------------------------------------|----------------|-----------------------|------------------|
| Layers Parameters | Base Layer | Auto Live Link | Idle -> Walk | ∓ : |
| <pre> Name + </pre> | | | 1 AnimatorTransitionE | Base |
| = Speed 0 | Entry | | Transitions | Solo Mute |
| | l l l l l l l l l l l l l l l l l l l | | Idle -> Walk | |
| | Idle | | | |
| | | | Has Exit Time | |
| | | | ▶ Settings | |
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| | Walk | | a sol some a | |
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| ≻ Animator | | A : O Inspector A : |
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| Speed 0 | | Transitions Solo Mute |
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| 🍄 Project Settings | | | | | | : |
|--|------------------------------------|-------|-------------|----------------------|--------------|---|
| | | ٩ | | | | |
| Adaptive Performance Audio | Player | | | | 0 .∔- | : |
| Editor | Company Name | | DefaultComp | any | | |
| Graphics Input Manager | _ | | | 5 | | |
| Memory Settings Package Manager | Settings for Windows, Mac, | Linux | | | | |
| Physics 2D | ▶ Icon | | | | | |
| Player | ▶ Resolution and Present | ation | | | | |
| Preset Manager Quality | ► Splash Image | | | | | |
| Scene Template Script Execution Order | ▼ Other Settings | | | | | |
| ► Services | Rendering | | | | | |
| Tags and Layers | Color Space* | | Linear | | • | |
| TextMesh Pro | Configuration Scripting Backend | | Mono | | • | |
| Time Timeline | | | | tandard 2.1 | | |
| Ul Builder | Api Compatibility Level* | | | | - | |
| Version Control | C++ Compiler Configura | ition | Releas | 8 | | |
| Visual Scripting | Use incremental GC | | | | | |
| XR Plugin Management | Assembly Version Valida | ation | ~ | | | |
| | Active Input Handling* | | | ut Manager (Old) | | |
| | Mac Configuration | | Inpu | ut System Package (N | ew) | |
| | Camera Usage Descript | ion* | Bot | n | | |

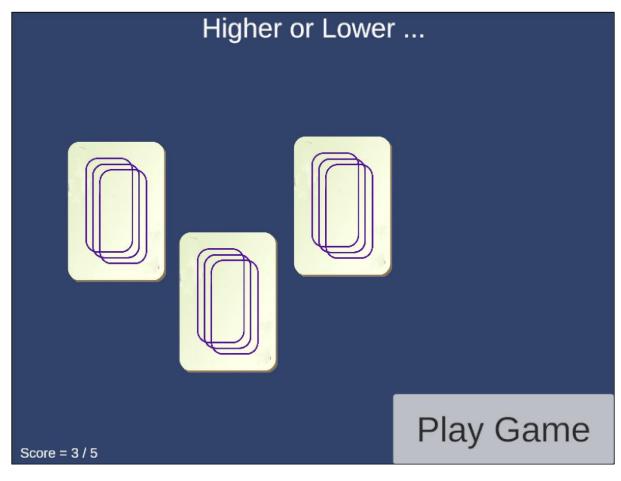
| E Hierarchy a : | Inspector Package N | lanager | 6 | : |
|---|----------------------------|--|--------------|---------|
| + ▼ Q All ▼ ☆ scene1_idle_animiton _girl_NPC : | GIRL_unity | S | tatic | • |
| Main Camera | Tag Untagged | Layer Default | | • |
| GIRL_unity | Model Open | Select Overrides | | • |
| Directional Light | ► 👗 Transform | 6 | - <u>+</u> - | : |
| | ► >> ✓ Animator | | | : |
| | 🕨 🏨 🗹 Player Move (Script) |) | . 다 | : |
| | 🔻 윢 🗹 Player Input | | 다. (| : |
| | Actions | Missing (Input Action Asset) | | \odot |
| | | s associated with this input component yet. C new set of input actions or drag an existing ir d above. | | ne |
| | | Create Act | tions. | |
| | UI Input Module | None (Input System UI Input Module) | | \odot |
| | Camera | None (Camera) | | \odot |
| | Behavior | Send Messages | | • |

| Controls (Input Ad All Control Schem | 1 | I Devices | ✓ Auto-Save | ٩ | | : |
|---|---|------------------------|-------------|--------------------|-----------------|----|
| Action Maps | + | Actions | + | Action Properties | | |
| Player | | ▼ Move | +. | Action | | _ |
| UI | | Left Stick [Gamepad] | | Action Type | Value | • |
| | | ▼ WASD | | Control Type | Vector 2 | - |
| | | Up: W [Keyboard] | | Control Type | vector 2 | |
| | | Up: Up Arrow [Keyboard |] | Interactions | | + |
| | | Down: S [Keyboard] | | No Interactions ha | ave been added. | |
| | | Down: Down Arrow [Key | /board] | | | |
| | | Left: A [Keyboard] | | Processors | | +. |
| | | Loft Loft Amow [Kayboa | | No Processors ha | ve been added. | |



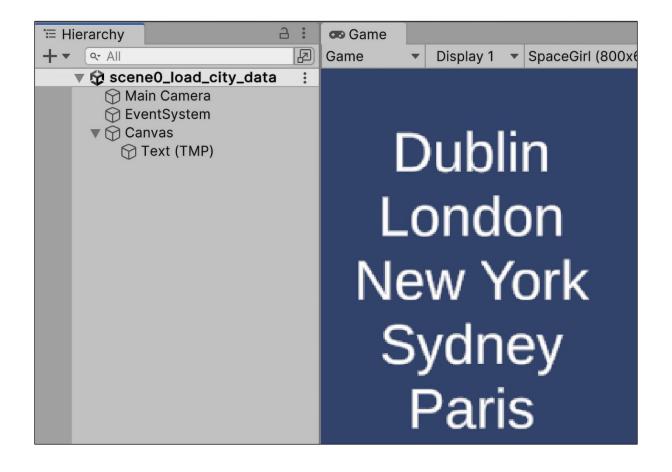
| E Hierarchy a : | Inspector | | | | | a : |
|--------------------|------------------------------|-----------------------|-------------------|-----------------|-----------|----------|
| + | 🥡 🗹 GIR | RL_unity | | | | Static 💌 |
| Main Comora | Tag Un | itagged | ▼ | Layer Defau | lt | • |
| GIRL_unity | Model | Open | Select | t | Overrides | • |
| Directional Li, ht | ► 🙏 Trans | sform | | | | 0 ‡ : |
| | 🕨 ≻ 🗹 Anim | nator | | | | 0 ≓ : |
| | 🔻 🏡 🗹 Playe | er Input | | | | 0 ∓ : |
| | Actions | | Gontrols (| Input Action As | set) | \odot |
| | Behavior Invoke Unity Events | | | | • | |
| drag | Events | | | | | |
| | ▼ Player | | | | | |
| | Move (Call | backContext) | | | | |
| | = Runtime | e Only 🗸 🗸 | PlayerMove.OnMove | | | • |
| | | unity (Player Move) 💿 | | | | |
| | | | | | | +- |

Chapter 10: Saving and Loading Data



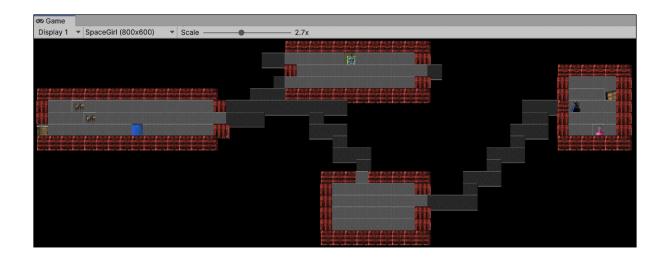
| Build Settings | 0 0 0 |
|---|-------------|
| Scenes In Build | |
| HigherOrLower/Scenes/scene0_mainMenu | 0 |
| HigherOrLower/Scenes/scene1_gamePlaying | 1 |
| HigherOrLower/Scenes/scene2_gameWon | 2 |
| HigherOrLower/Scenes/scene3_gameLost | 3 |

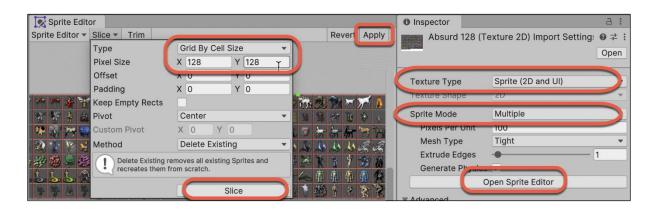
| '≔ Hierarchy | # Scene 👁 Game |
|-------------------------|------------------------------------|
| + • • All | ØCenter ▼ ⊕Global ▼ 拱 ▼ 拱 ▼ ₩ ▼ |
| 🔻 😥 scene0_mainMenu 🛛 🗧 | |
| 💬 Main Camera | |
| 💬 Directional Light | |
| 🔻 😭 Canvas | |
| 💬 Text (TMP) - title | |
| 😭 Text (TMP) - score | |
| 😭 Image - back | |
| 💬 Image - back | |
| 💮 Image - back | 0 |
| ▶ 💮 Button | ≦ core: 99 / 99 |
| EventSystem | |



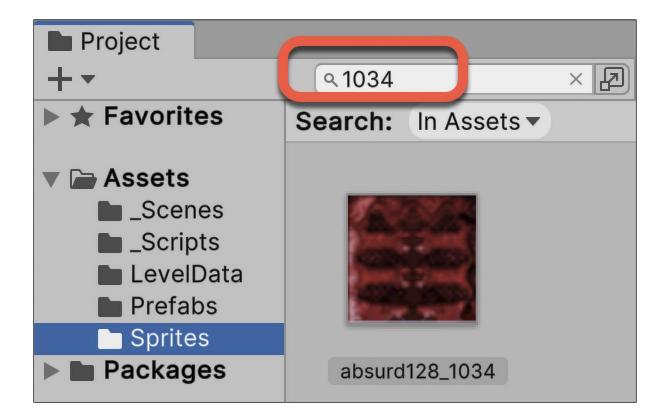
cities.txt1Dublin2London3New York4Sydney5Paris

| ि ≔ Hierarchy 🔒 🗄 | ● Inspector |
|---|---|
| + • Q. All | Text (TMP) Static 🔻 |
| v 🕼 scene0_load_city_data | $\nabla_{\mathbf{v}}$ |
| Main Camera | Tag Untagged 🔻 Layer UI 💌 |
| ✓ EventSystem ✓ ✓ Canvas | ▶ 🔽 🗹 TextMeshPro - Text (UI) 🛛 🥹 🕂 🗄 |
| Text-file-contents | ▼ # ✓ Text File Reader (Script) @ 7 : |
| Project 🔒 🗄 | Script # TextFileReader • |
| + • • • • • • • • | Text File 📄 cities 💿 |
| Assets Scenes Scripts Data | LiberationSans SDF Material (Ma ❷ 井 : Shader TextMeshPro/N▼ Edit ≔ ▼ |



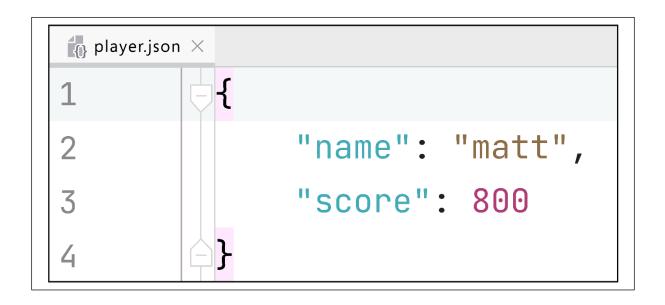


| Project | | | | |
|--|------------------|-------------|-------------|-------------|
| Assets Scenes | Assets > Sprites | | | |
| _Scripts LevelData Sprites | | 100 | ** | 1 |
| Packages | | 62/8333 | | RZ RAN |
| | absurd128 | absurd128_0 | absurd128_1 | absurd128_2 |

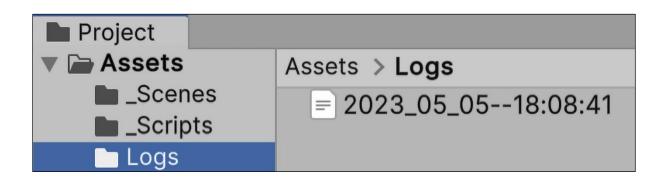


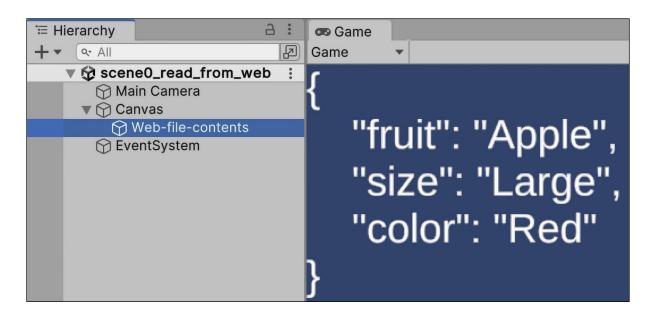
| '⊞ Hierarchy | a : | Inspector | | 2 | : |
|-------------------|---------------------------------------|----------------------|----------------------|----------------|---------|
| + • (9. All | Ð | level loade | er 🗌 | Static | - |
| Scene0_nethack_le | ve_loader : | | Laver Default | | - |
| Main Camera | | Tag Untagged | | | |
| | | J. Transform | | 0 ÷ | : |
| Project | a : | 🔻 # 🗹 Load Map Fr | om Textfile (Script) | 0 - <u>+</u> - | : |
| | ₽ 🖡 🖌 🔘 ★ 💋7 | Script | LoadMapFromTextfile | | ۲ |
| ► ★ Favorites | Assets > Prefabs | Level Data Text File | E level01 | | \odot |
| | 📬 alter_583 | Altor_592 | 📦 alter_583 | | \odot |
| Assets | chest_586 | Cheet_586 | 📬 chest_586 | | \odot |
| Scenes | corpse_1 drag all | Corpse_175 | 📦 corpse_175 | | \odot |
| | corridor_ drag an door_842 prefabs | | 📦 corridor_849 | | \odot |
| Prefabs | floor_848 | Door_844 | 📦 door_844 | | \odot |
| Sprites | horiz_1034 | Floor_848 | 📦 floor_848 | | \odot |
| Packages | potion_675 | Horiz_1034 | 📦 horiz_1034 | | \odot |
| | staris_down_993 | Potion_675 | 📦 potion_675 | | \odot |
| | 👕 staris_up_944 👕 vert_1025 | Stairs_down_993 | 📦 staris_down_993 | | \odot |
| | wizard_287 | Stairs_up_994 | 🗊 staris_up_944 | | \odot |
| | | Vert_1025 | 🗊 vert_1025 | | \odot |
| | | Wizard_287 | 📦 wizard_287 | | \odot |

| level01 | .txt × | | |
|---------|---------|-------|---------|
| 1 | | | |
| 2 | ## | ••••• | |
| 3 | | # | |
| 4 | # | | |
| 5 | ### | | (|
| 6 | % ##### | ##### | ###-@ |
| 7 | ### | # | ## |
| 8 | + | ### | ### !. |
| 9 | | # | # |
| 10 | | ### | ### |
| 11 | | # | # |
| 12 | | | ### |
| 13 | | | # |
| 14 | | ## | ### |
| 15 | | | |
| 16 | | 1 | |
| 17 | | | |

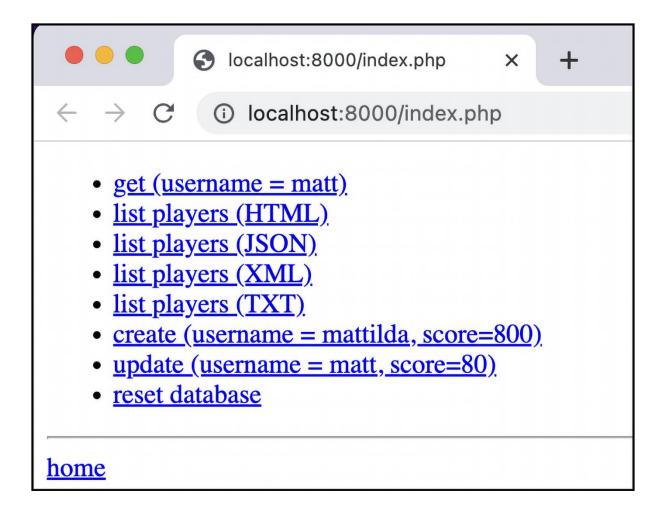


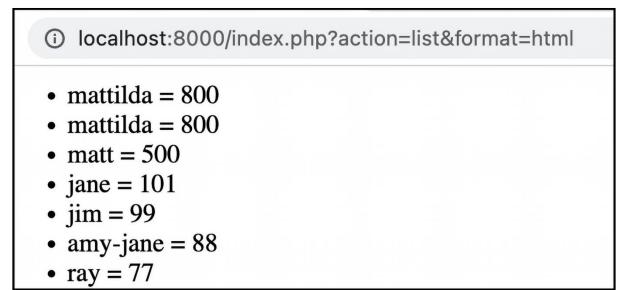
| | А | В | С | D |
|---|------------|----------|------------------------|-----------------------|
| 1 | 05/05/2023 | 18:05:04 | created | |
| 2 | 05/05/2023 | 18:05:04 | scene1 log some events | Scene has started |
| 3 | 05/05/2023 | 18:05:05 | scene1 log some events | SPACE key was pressed |
| 4 | 05/05/2023 | 18:05:05 | scene1 log some events | SPACE key was pressed |
| 5 | 05/05/2023 | 18:05:06 | scene1 log some events | SPACE key was pressed |











| \leftrightarrow \rightarrow \mathbb{C} $\textcircled{0}$ localhost:8000/index.php?acti | \leftrightarrow \rightarrow C (1) view-source: | localhost:8000/index.php?action=list&format=txt |
|--|--|---|
| mattilda = 800 mattilda = 800 matt = 500 jane = | Line wrap 🗌 | |
| | 1 mattilda = 800 2 mattilda = 800 | |
| | 3 matt = 500 | |
| | 4 jane = 101 5 jim = 99 | HTML source |
| Viewed in browser | 6 amy-jane = 88 | |
| | 7 ray = 77 | |

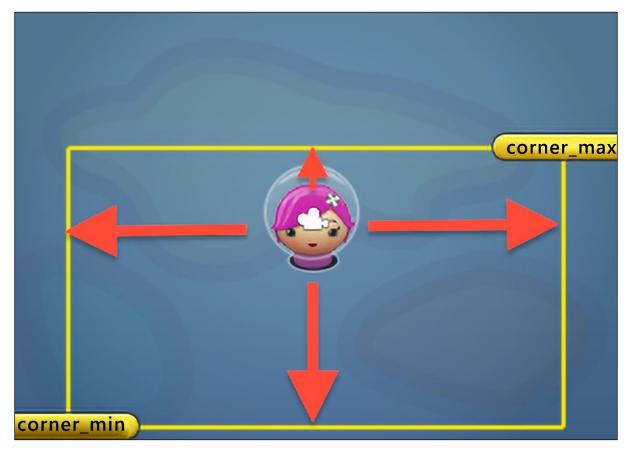




| E Hierarchy a : | Inspector | C | - I |
|--|---|----------------|------------|
| | Main Camera | Stati | с 💌 |
| scene1 - leaderboard communication : | Tag MainCamera 🔹 Layer Default | | • |
| ▼ 🕞 Canvas ☆ Text - last URL | ► 🙏 Transform | 0 - | F : |
| Text - last URL value | Camera | 0 . | <u>+</u> : |
| ► Solution - get all scores as HTML ► Solution - get all scores as TXT | 😰 🔽 Flare Layer | 9 - | <u>+</u> : |
| ► ⊕ Button - get all scores as XML | 🔒 🗹 Audio Listener | 9 . | <u>+</u> : |
| ► ☆ Button - get all scores as JSON ► ☆ Button - reset scores | ▼ # ✓ Web Leader Board (Script) | 9 - | £ : |
| | Script # WebLeaderBoard | | ۲ |
| Update URL | Ui_last URL 🖬 Text - last URL (Text |) | ۲ |
| | Ui_last URL Value 🛛 Text - last URL value | (Te | xt 💿 |
| P rext ▶ ♀ Panel | Lli tevt File | | \odot |
| Text | Leader Board URL http://localhost:8000 | | |

| LAST URL = http://localhost:8000?action=get&username=matt&format=txt | | Get score for plaver 'matt' (HTML) |
|--|---|--|
| integer received = 509 text content received from Web server | | Get score for player 'matt' (TXT) |
| | S | et score for player 'matt' (random 500-: |
| 509 | | |

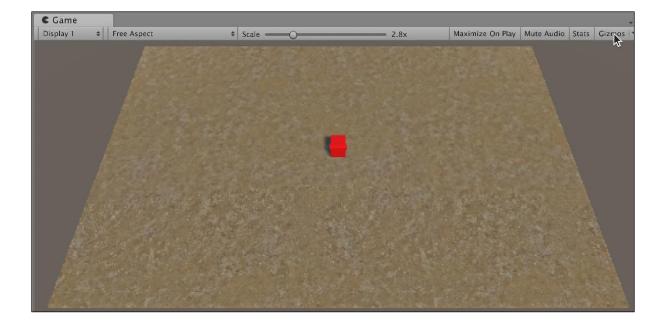
Chapter 11: Controlling and Choosing Positions

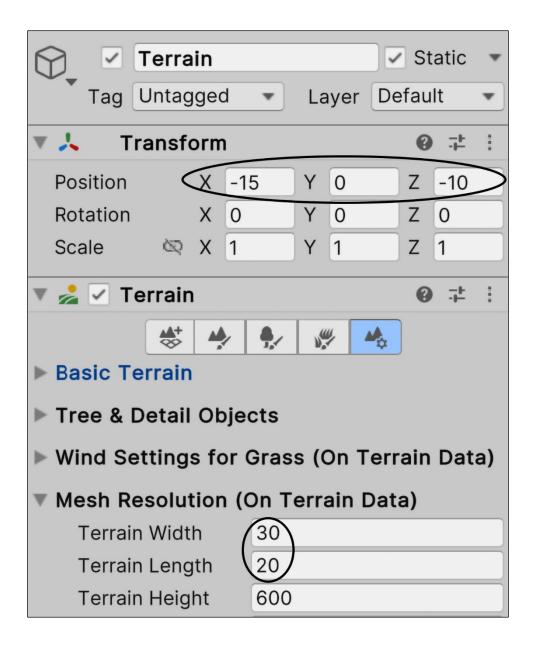


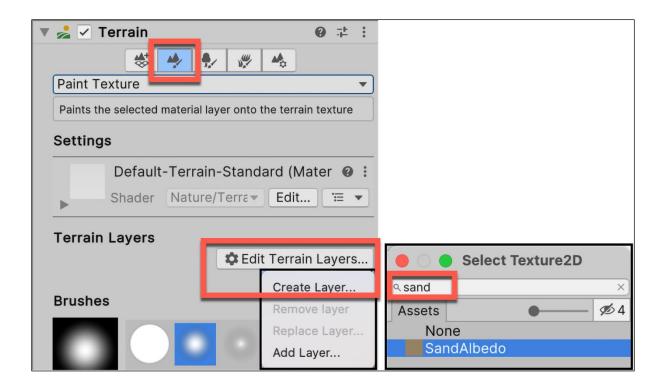
| Inspector | a : |
|-------------------|---|
| Corner_max | Static • |
| Select Icon XNone | Layer Default ♥ ↓ ↓ ↓ ↓ |
| | Y 4.39 Z 0 Y 0 Z 0 |
| Other | Y 1 Z 1 |

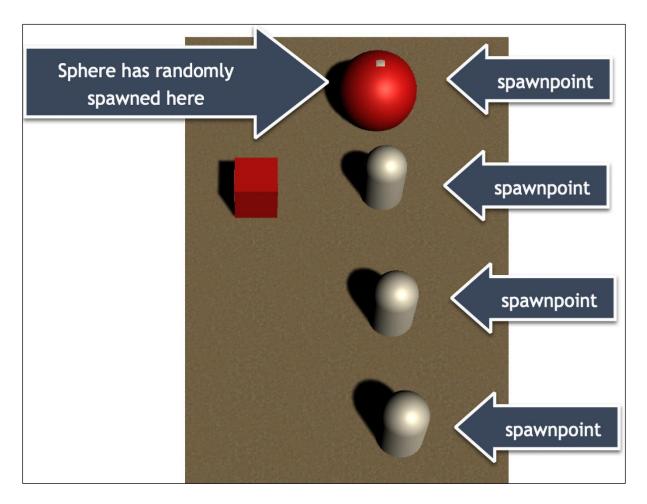
| 🔻 # 🗹 Player Move | (Script) 🕜 👎 | : |
|-------------------|------------------------------------|---------|
| Script | PlayerMove | ۲ |
| Corner_max | <pre>kcorner_max (Transform)</pre> | \odot |
| Corner_min | <pre>kcorner_min (Transform)</pre> | \odot |
| Speed | 10 | |



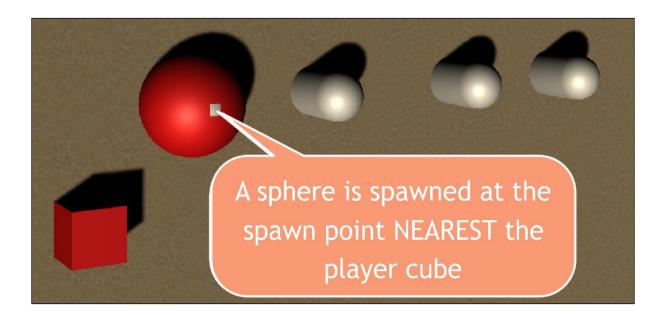


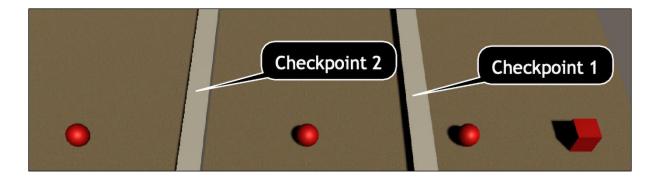


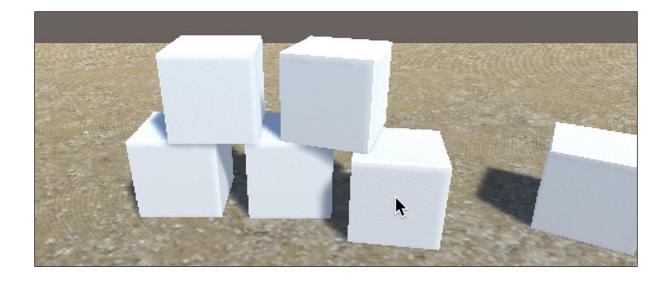


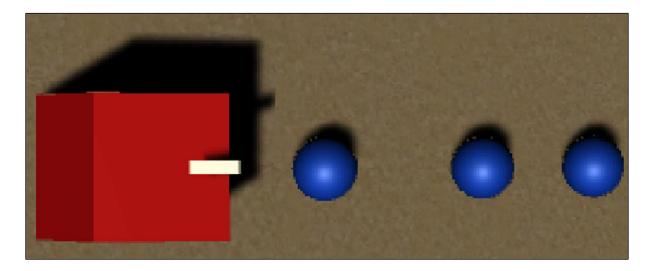


| ⊟ Hierarchy | ● Inspector |
|---|-------------------------------|
| + ▼ (\[\] All ▼ | Capsule-spawnpoint Static - |
| 😭 Main Camera | Tag Respawn 🔹 Layer Default 💌 |
| 🕥 Directional Light | ▼ 🙏 Transform 🛛 🥹 🕂 : |
| 💮 corner_max | Position X 3 Y 0.5 Z 3 |
| ♀ corner_min ♀ Cube-player ♀ Capsule-spawnpoint | RotationXVYOZOScaleX1Y1Z1 |



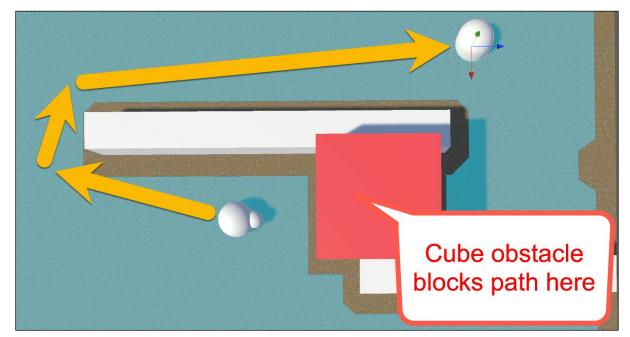








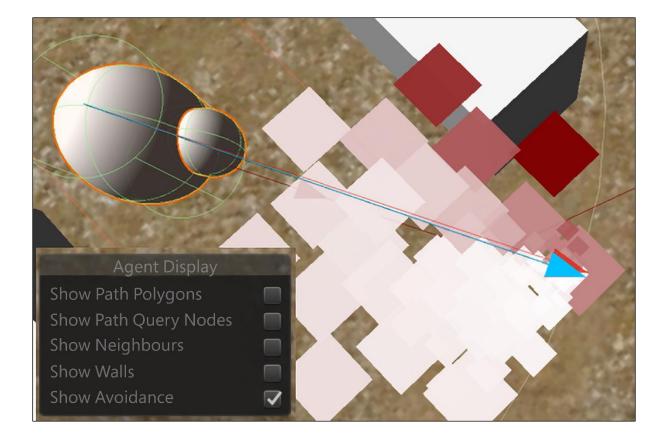
Chapter 12: Navigation Meshes and Agents

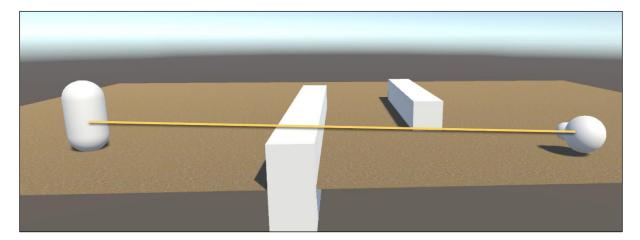


| 🛛 🤒 Package Manager | | | × |
|--|----------|---------|---|
| 🕴 🖬 Package Manager | <u> </u> | | : |
| + ▼ Packages: Unity Degistry ▼ Sort: Name (asc) ▼ Filters ▼ |) | | |
| All Vity Registry | | | |
| | | | |
| 4 My Assets | | | |
| ⁵ ^F Built-in | | | |
| Cinematic Studio 6 packages | | | |
| Sectors Sector | | <u></u> | |

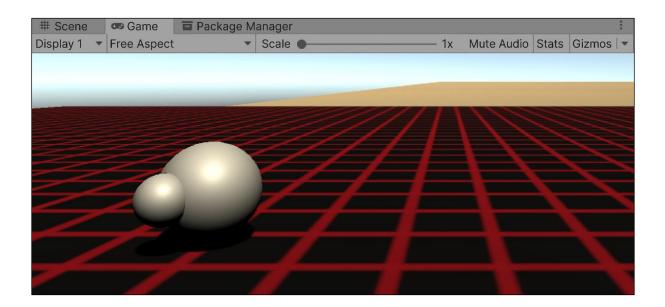
| '≡ H | ierarchy | а : | Inspector # Scene | cos Game | а : |
|----------|---------------------------|-----|-----------------------|---------------|---------------|
| +• | Q AII ▼ ☆ SampleScene* | 2 | Sphere-arrow | | Static 🔻 |
| | 🕅 Main Camera | : | Tag Untagged | Layer Default | • |
| | 💮 Directional Light | | Transform | | 0 ∓⊧ : |
| | Capsule-destination | | Sphere (Mesh Filter) | r) | Ø ‡ ∶ |
| <u>ک</u> | Sphere-arrow Sphere-small | | 🕨 🐯 🗹 Mesh Renderer | | 0 ‡ ∶ |
| | () Sphere-small | | 🕨 🍨 🗹 Sphere Collider | | 0 ∓ : |
| | | | 🔻 🧦 🗹 Nav Mesh Agent | | 0 ∓ : |
| | | | Agent Type | Humanoid | • |
| | | | Base Offset | 0.5 | |
| | | | Steering | | |
| | | | Speed | 3.5 | |
| | | | Angular Speed | 120 | |
| | | | Acceleration | 8 | |
| | | | Stopping Distance | 2 | |
| | | | Auto Braking | ~ | |

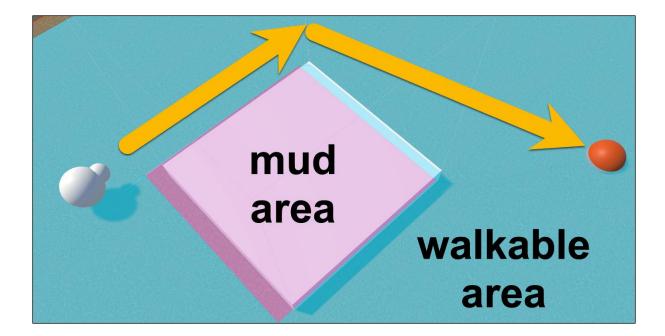
| Inspector 🛛 🔀 Navigation | З | : |
|----------------------------|------|---|
| Cube-Wall | alic | • |
| Tag Untagged Layer Default | | |
| ▼ 🙏 Transform 🚱 | -t- | : |
| Position X -6 Y 0 Z 0 | | |





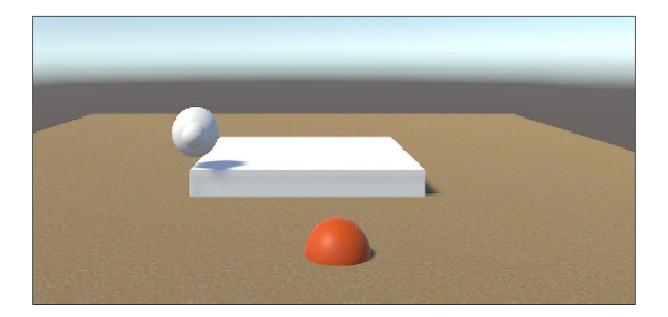
| # Scene | 📼 Game | 🖬 Package Ma | anager | | | _ | | | : |
|-------------|---------------|--|--------|---|--------|----------------|-------|--------|---|
| Display 1 | ▼ Free Aspect | * | Scale | • | 1x | Mute Audio | Stats | Gizmos | - |
| | | | | | | | | | |
| | | | | | | | | | |
| | | and the second | | | 1775 F | | | | |
| | | - | | | | | | | |
| | (| | | | | 2 million | | | |
| Sun trans | - | Y | | | | S. 19 6 1 | | | |
| Service and | | | | | | and the second | | | |
| | | | | | | | | | |
| | | | | | | Carl Stands | | | 1 |
| | | | | | | | | | - |
| | | | | | | | | | - |
| | | | | | | | | | |
| | | | | | | | | | 1 |

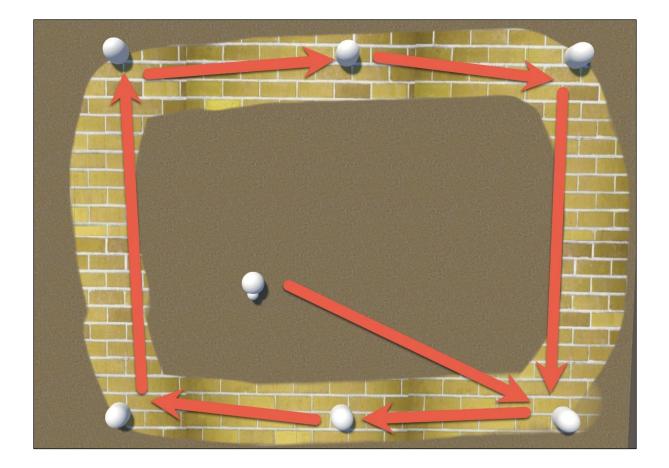


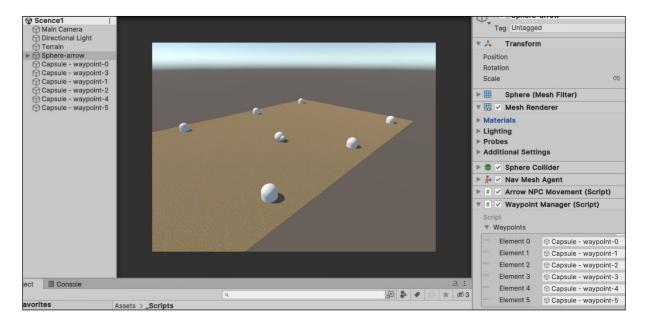


| | Agents Areas | |
|------------|--------------|------|
| | Name | Cost |
| Built-in 0 | Walkable | 1 |
| Built-in 1 | Not Walkable | 1 |
| Built-in 2 | Jump | |
| User 3 | Mud | 2 |
| User 4 | | |
| Llcor 5 | | 1 |

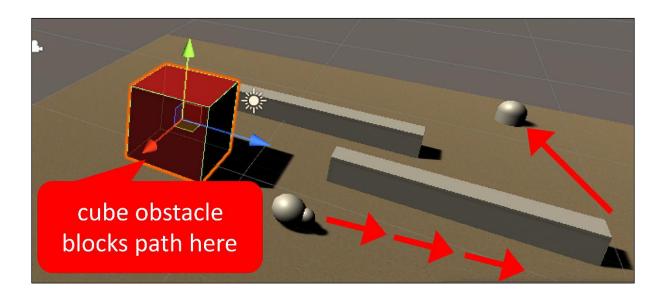
| 🔻 🤷 🗹 NavMeshN | 0 ‡ : | |
|-----------------|---------------|-----|
| - | A Edit Volume | |
| Size | X 1 Y 1 | Z 1 |
| Center | X 0 Y 1 | Z 0 |
| Area Type | Mud | • |
| Affected Agents | All | • |
| | | |

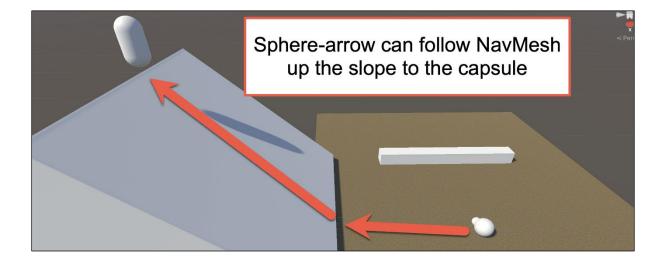


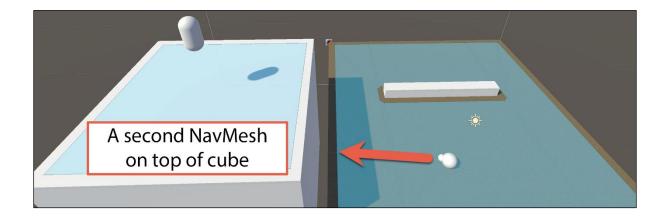


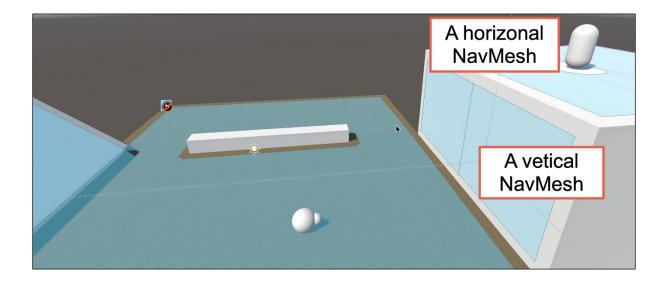


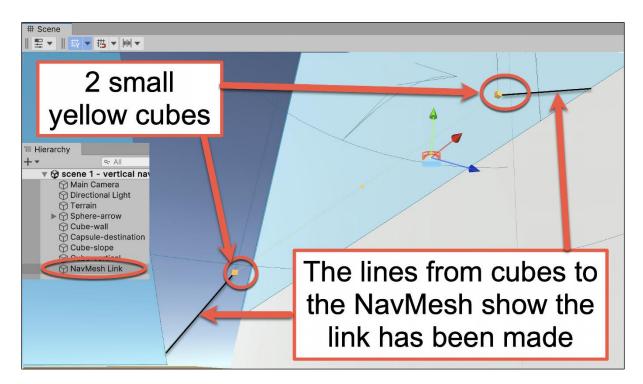
| M Asset Store | | 🕒 🕒 Inspector 🚽 🗆 | X |
|--|------------------------------------|--|---|
| rarchy | 금 : # Scene ∞ Game | • Inspector | а |
| Scene1 | | Capsule - waypoint-0 | w |
| Main Camera | * | Tag Untagged Layer Default | • |
| 💮 Terrain | | 🔻 🔨 🕹 Transform 🛛 🛛 🕫 | : |
| Sphere-arrow Sphere-small | | Position X -12 Y 0 Z 8 | כ |
| 🕜 Capsule - waypoint-0 | | Rotation X 0 Y 0 Z 0 | |
| ⑦ Capsule - waypoint-3 ⑦ Capsule - waypoint-1 | | Scale CR X 1 Y 1 Z 1 | |
| 💬 Capsule - waypoint-2 | | ► III Capsule (Mesh Filter) @ ∓ | ÷ |
| Capsule - waypoint-4 | | ► 🗒 🗸 Mesh Renderer 🛛 🛛 🛱 | : |
| 💮 Capsule - waypoint-5 | ₽ | ► 🎚 🗹 Capsule Collider 🛛 @ 👎 | : |
| | | ▼ # ✓ My Way Point (Script) @ ᅷ | : |
| | | Script MyWayPoint (| 0 |
| | | Waypoints 5 | |
| | | Element 0 🛛 🛛 🗑 Element 0 | |
| | | Element 1 # Capsule - waypoint-2 (My Way 🖸 | 0 |
| 1.0 | | Element 2 # Capsule - waypoint-3 (My Way 🖸 | D |
| | | Element 3 # Capsule - waypoint-4 (My Way 👁 | D |
| | | Element 4 # Capsule - waypoint-5 (My Way 👁 | D |
| | | + - | |











Chapter 13: Cameras, Lighting, and Visual Effects

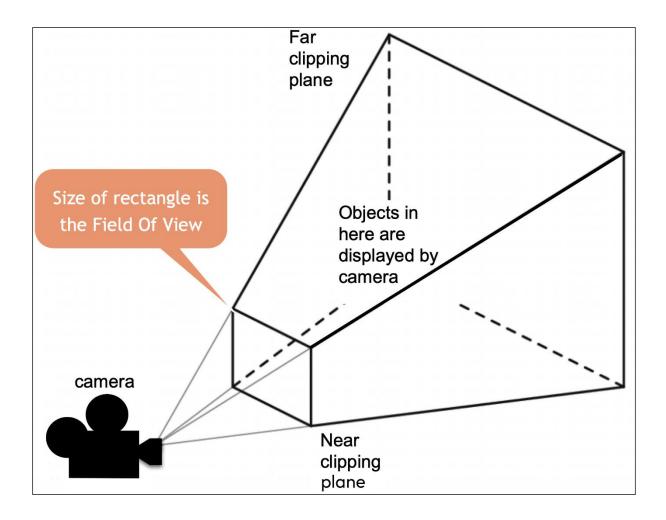


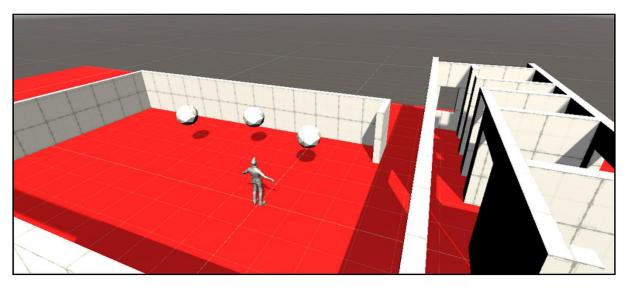


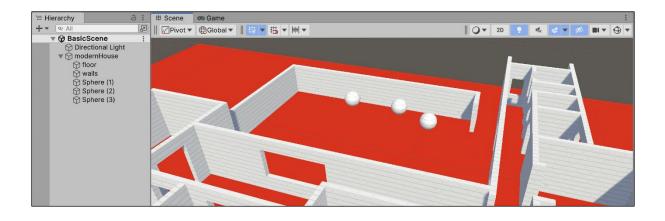


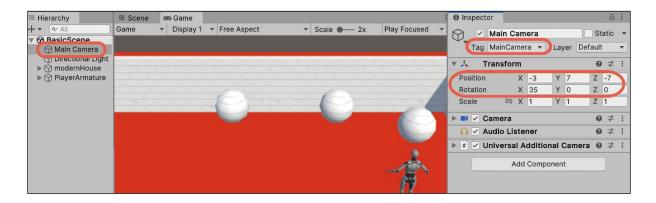
| Lighting | | | | | : |
|-------------------------|-------|-------------|--------------------|-----------------|---------------------------------------|
| | Scene | Environment | Realtime Lightmaps | Baked Lightmaps | 0 ¢ |
| ▼ Environment | | | | | |
| Skybox Material | | | Skybox | | \odot |
| Sun Source | | 1 | None (Light) | | \odot |
| Realtime Shadow Color | | | | | 1 |
| Environment Lighting | | | | | |
| Source | | | Skybox | | • |
| Intensity Multiplier | | - | • | | 2 |
| Environment Reflections | | | | | |
| Source | | | Skybox | | • |
| Resolution | | | 128 | | • |
| Compression | | | Auto | | · · · · · · · · · · · · · · · · · · · |
| Intensity Multiplier | | - | | | • 1 |

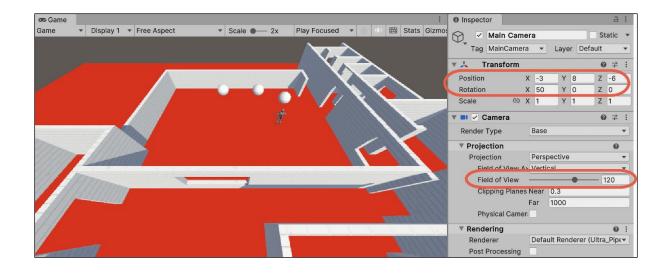
| Light E | xplorer | | | | | | : |
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| Lights | 2D Lights | Reflection | Light Pr | obes | Static Emissives | | |
| Isolat | e Selection | Show I | nactive | Objects | ٩ | | |
| Enabled | Name | | Туре | | 5 | Shape | |
| ~ | Area Light | | Area (b | aked only | /- [] | Disc 🔹 | |
| ~ | Spot Light 2 | | Spot | | • | | |
| ~ | Spot Light 1 | | Spot | | • | | |
| ~ | Point Ligh | oint Light | | | • | | |
| ~ | Directiona | l Light | Directio | onal | • | | |

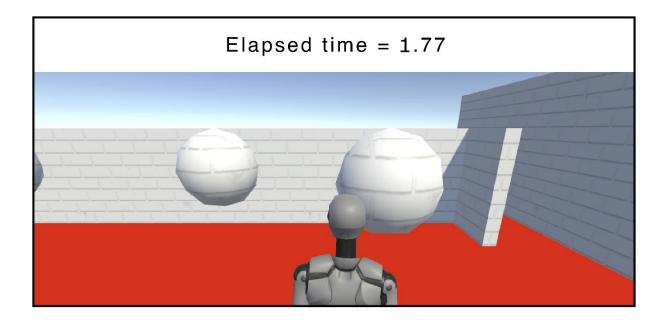








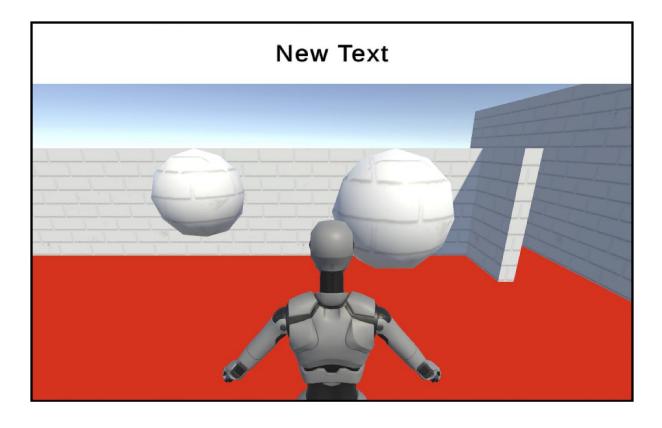


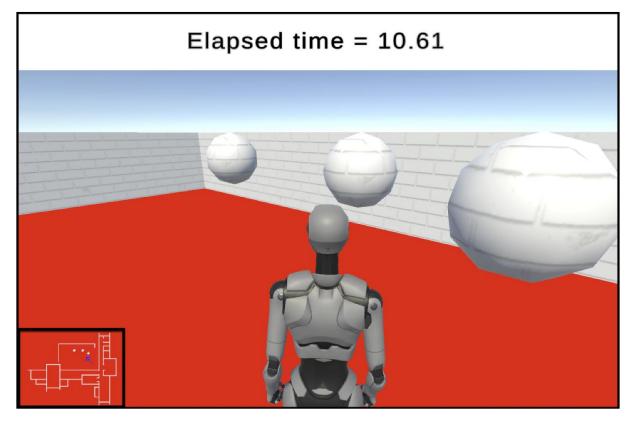


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| | ectional Light | 🕨 🦶 🛛 Trans | sform | | 8 | - <u> </u> - | ••• |
| \checkmark | dernHouse yerArmature | 🔻 🔳 🗹 Came | era | | 0 | -1- | * * |
| ا | PlayerCameraRoot | Render Type | ; | Base | | | • |
| | Geometry | Projection | n | | | 0 | |
| M | Main Camera | Output | | | | 0 | |
| | | Output Te | xture | None | (Rende | r Te | \odot |
| | | Target Dis | splay | Displa | ay 1 | | • |
| | | Target Ey | е | Both | | | • |
| | | Viewport | Rect | | | | |
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| | | W 1 | | Н | 0.85 | | |

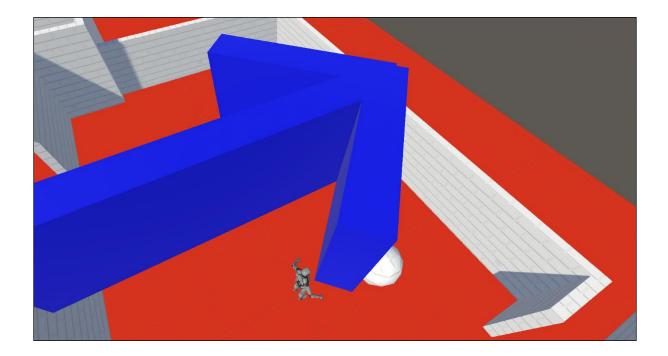
| ि ≔ Hierarchy 🔒 🗄 | Inspector | a : |
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| Directional Light | 🔻 💶 🗹 Camera | Ø ∓ : |
| ► 🗇 modernHouse | Render Type | Base |
| 😭 Camera 2 - timer | Projection | 0 |
| | Rendering | Ø : |
| | Renderer | Default Renderer (Ultra_PipelineA 🔻 |
| | Post Processing | |
| | Culling Mask | UI |
| | Occlusion Culling | |
| | Stack | 0 |
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| | Background Type | Solid Color |
| | Background | 68 |
| | Output | 0 |
| | Output Texture | None (Render Texture) |
| | Target Display | Display 1 🔹 |
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| [:] ≡ Hierarchy | a : | Inspector | |
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| Canvas | | Render Mode Screen Space - Camera | |
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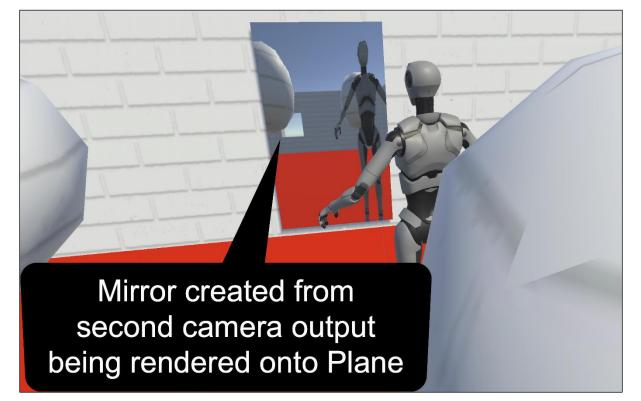


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| 🗘 Camera 2 - timer | Rotation X 90 | Y O Z O |
| Canvas EventSystem | Scale 🕅 X 1 | Y 1 Z 1 |
| Camera 3 - minimap | 🔻 💶 🗹 Camera | 0 ∓ : |
| | Projection | 0 |
| | Projection | Orthographic |
| | Size | 14 |
| | Rendering | |
| | Renderer | Default Renderer (Ult |
| | Render Shadows | \checkmark |
| | Priority | 1 |
| | Environment | 0 |
| | Output | 0 |
| | Output Texture | None (Render Textu 💿 |
| | Target Display | Display 1 🔹 |
| | Target Eye | Both |
| | Viewport Rect | |
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| | W 0.2 | H 0.2 |



- 🔻 🔣 🗹 Mesh Renderer
- Materials
- Lighting
 - Cast Shadows

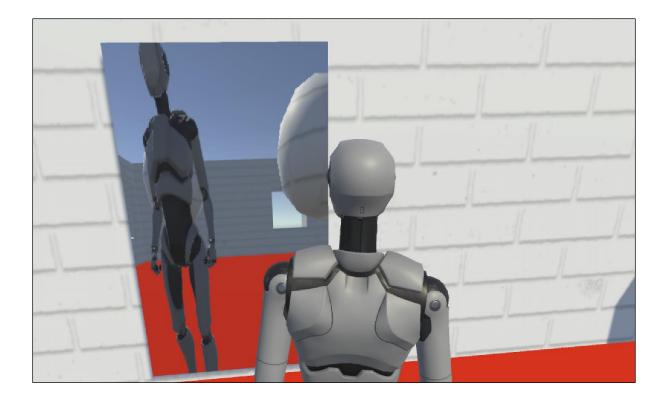


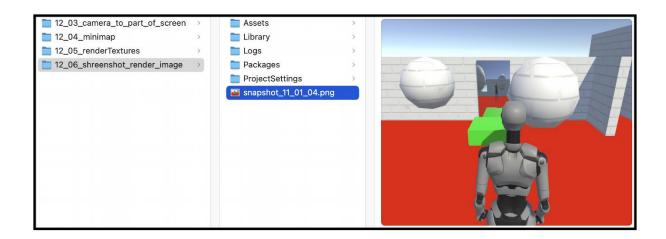


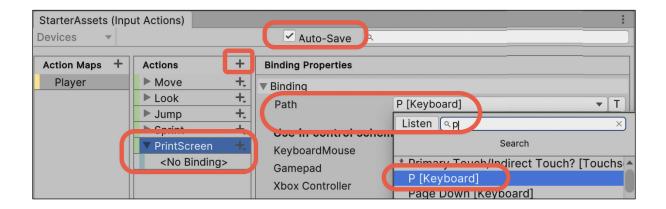
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| ► 🖓 Skeleton | | Render Type | Base | • |
| Main Ca | mera CLONE | Projection | | 0 |
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| Prefabs Settings | Pretabs Settings OMetallic Map O |

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| 💮 Plar | ne | ▼ III Plane (Mesh Filter) @ 7 iii iii |
| Project | a : | Mesh |
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| Assets Scenes | m_renderMaterial Materials | Element 0 • m_renderMaterial • + - |

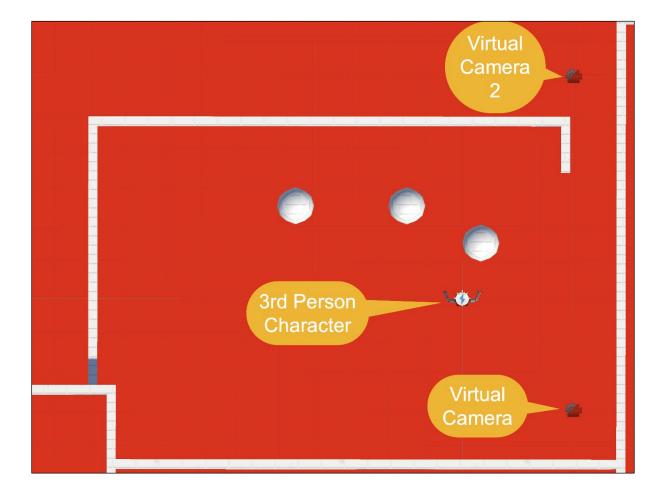






| E Hierarchy a : | Inspector | | Ê | . : | Selection | ct InputActionRe | eference |
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| ModernHouse Methods Methods | ► 🙏 Transform | | 0 -i | : | Noi 9 Pla | ne yer/Fire | |
| Plane - mirror | 🔻 # 🗹 Snapshot (Script) | | 0 7 | : | | yer/Jump | |
| ☆ Camera 2 - mirror ☆ Cube - spapshot | | Snapshot | | 0 | 🚯 Pla | yer/Look yer/Look | |
| 🕤 screenshot - object | Print Screen | Player/PrintScreen (Input Ac | tion Ref | 0 | | yer/Move ver/Move | |
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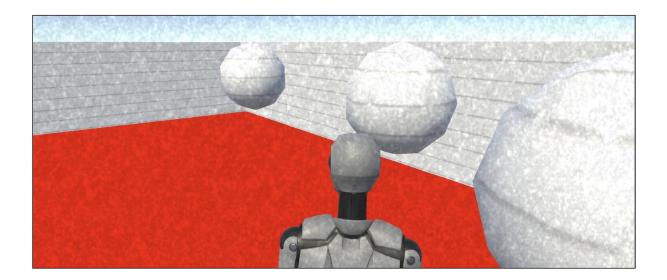
| 🗯 Unity File Ed | Assets ameObject Compo | onent Services | Jobs Tools 1 | Tutorial Window Help |
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| Unity File Ed Asset Stc Hierarchy Scene 3 - snapshc Directional Light ModernHouse PlayerArmature Plane - mirror Cube - snapshot Screenshot - object | Assets ameObject Compo Create Reveal in Finder Open Delete Refresh Reimport Reimport All Extract From Prefab Update UXML Schema View in Import Activity Window | > ₩ R | Jobs Tools T Project V Revorites Scenes Scripts Materials Prefabs Settings StarterAssets Textures Packages | Assets Asset Assets Asset Ass |
| | Open C# Project Save RenderTexture to file | | | |
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| PlayerCameraRoot ▶ ♀ Geometry ▶ ♀ Skeleton ♀ Main Camera | Position X 12.674 Y 8.8721 Z 12.674 Rotation X 26.334 Y -135 Z 0 Scale Image: I |
| ClearShot Camera | Camera O 7 : |
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| PlaverArmature | | | • • | | • |
| PlayerCameraRoot | | 🔻 🊈 🗹 CinemachineClearShot | • | | : |
| ► Geometry ► Skeleton | | Status: Live Solo | | | |
| Main Camera | 10 | Game Window Guides 🛛 🗸 | | | |
| ▼ 💮 ClearShot Camera | _ | Sav During Play | | | |
| 🖓 Virtual Camera | | Priority 10 | | | |
| | | Follow None (Transform) | \odot | 10 | 8 |
| | | Look At A PlayerCameraRoot (Tran | sform 💿 | 0 | |

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| ► 分 Geometry ► 分 Skeleton | Ltatus: Live | Solo |
| 💮 Main Camera 🛛 🍟 | Game Window Guides | ✓ |
| 🕤 Virtual Camera | Save Durin, Play | |
| | Priority | 10 |
| | Follow | 🙏 PlayerCameraRoot (Transform 🕥 🌣 |
| | Look At | None (Transform) 💿 🌣 |
| | Standby Update | Round Robin 💌 |
| | Lens Vertical FOV | 60 🗸 |
| | Transitions | |
| | ▶Body | 3rd Person Follow |

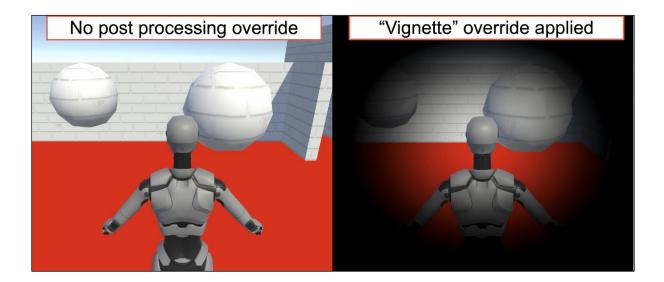


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| Tag MainCamera | Layer Default | | | • |
| 🔻 🙏 Transform | | 0 | | : |
| 🔻 🗖 🗹 Camera | | 0 | - <u> </u> - | : |
| Render Type | Base | | | • |
| Projection | | | 0 | |
| Rendering | | | 0 | : |
| Renderer | Default Renderer (Ultra_PipelineAsset_ForwardRer | nder | er) | • |
| Post Processing | | | | |

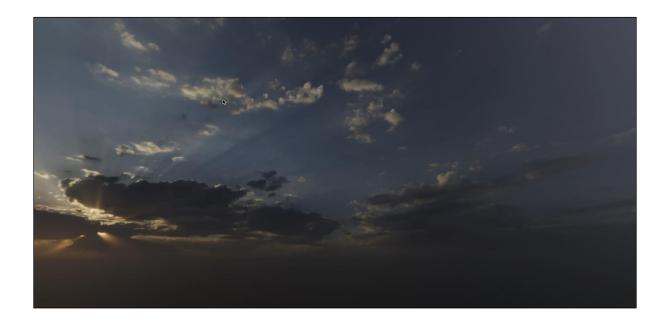
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| + • (• All | R | | GameObje | ct | | | S' | tatic | - |
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| ~ | tional Light | Тад | Untagged | • | Layer | Default | | | |
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| \sim | ain Camera | Weight | | | | | • | 1 | |
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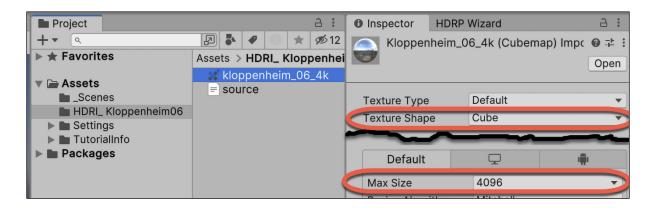
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| Skeleton Main Camera | Weight | • 1 |
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| | | Add Override |
| | | |
| | | Post-processing |
| | | Channel Mixer |
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| | | Color Adjustments |
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| 😭 GameObject | Priority | 0 |
| | Profile | GameOb O New Clone |
| | Film Grain | 0: |
| | ✓ Туре | Large 01 |
| | Intensity | • 1 |
| | Response | 0 |



| '≔ Hierarchy 🔒 🗄 | Inspector | a : |
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| 🗇 Directional Light | 🕨 🦶 🛛 Transform | ❷ ∓ : |
| ▶ (☆) modernHouse ▶ (☆) PlayerArmature | 🔻 🗑 🗹 Volume | 0 ∓ : |
| \bigcirc Post Processing 2 | Mode | Global |
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| | Color | 27 |
| | Center | X 0.5 Y 0.5 |
| | Intensity | 0.66 |
| | Smoothness | — 1 |
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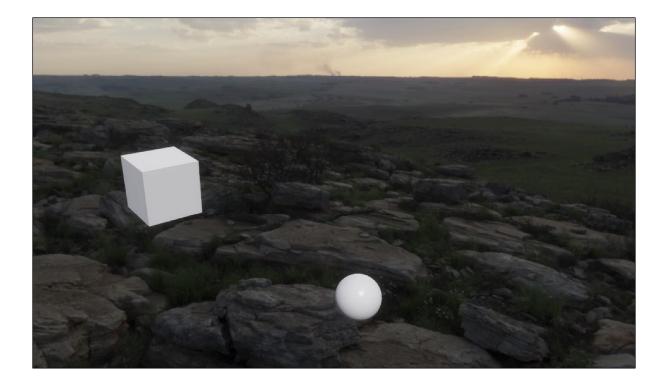


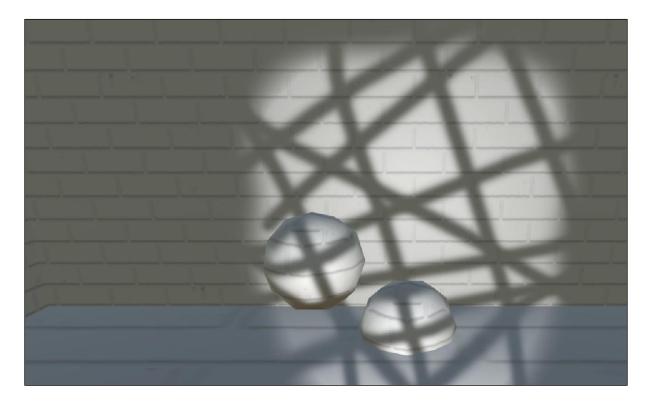


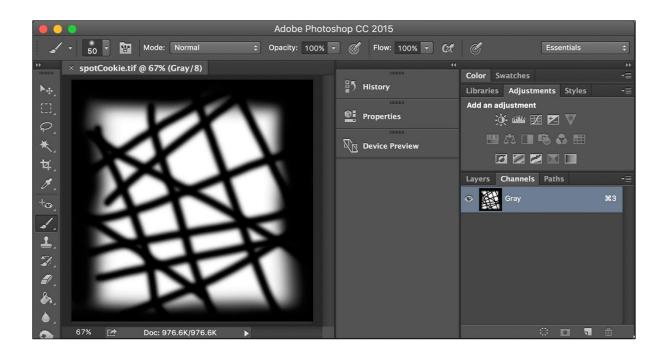
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| | | Sky and Fog Volume | Layer Default | Static 💌 |
| | | ► ↓ Transform | | 0 ‡ : |
| | | Volume | | 0 := : |
| | | Mode | Global | • |
| | | Weight Priority | 0 | |
| | | Profile | SkyandFogSettingsProfile (V | New Clone |
| Project | | 🔻 🗹 Visual Environment | | 0: |
| + - | | ALL NONE | | |
| Favorites | Assets > HDRI_ Kloppenheim06 | Sky Sky type | HDRI Sky | |
| V 🗁 Assets | = source | Background clouds | None | |
| Scenes HDRI_ Kloppenheim06 | | Ambient Mode | Static | • |
| Settings | | Yesically Based Sky | | 0: |
| | | ► ✓ Fog ► ✓ Exposure | | 0 : 0 : |
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| Re Ducient | о : | 1. Select "Sky Profile" | asset file 📕 |
|--|---------------------------|--|--------------|
| Project +▼ Q | | Inspector Sky Profile (Volume Profile) | ; 0 ‡ ; |
| ► ★ Favorites | Assets > HDRI_ Kloppenh | | Open |
| Assets Scenes | = source | 🗸 🖂 HDRI Sky | 0: |
| HDRI_ Klopp | | Hdri Sky | k O |
| Tutorialli Packages | 3. Drag kloppenheim asset | Distortion Mode None | |
| Packages | into "Hdri Sky" property | 2. Check "Hdri Sky" | • |

| ि Hierarchy | a : | Inspector | a : |
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| Main C | | J. Transform | ❷ ∓ : |
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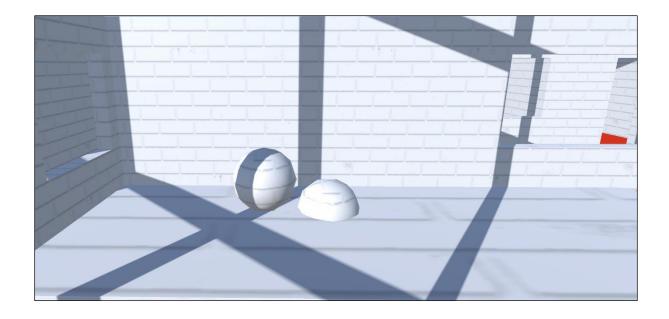


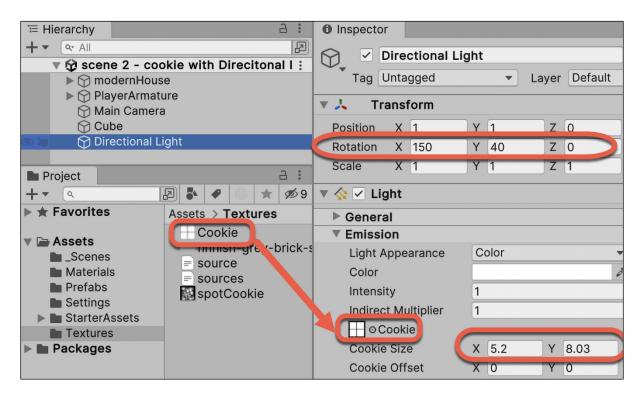


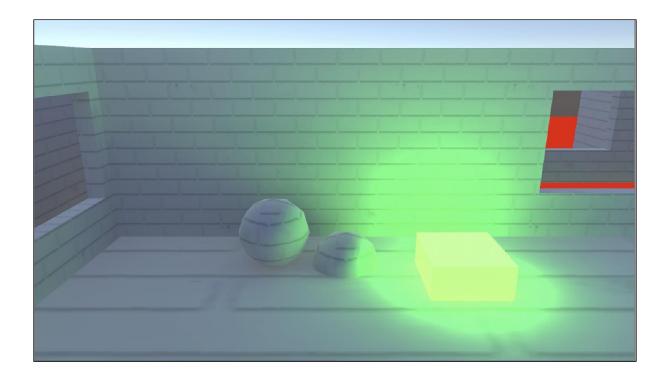


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| 🖿 Prefabs | 📓 spotCookie | Texture Shape | 2D | v |
| E Settings | | Light Tupe | Spotlight | |
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| [™] ⊟ Hierarchy | a : | Inspector | | а : |
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| ► 💬 modernHouse | | ▼ General | | 0 |
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| Scenes | finnish-grey-brick- | Intensity | 20 | |
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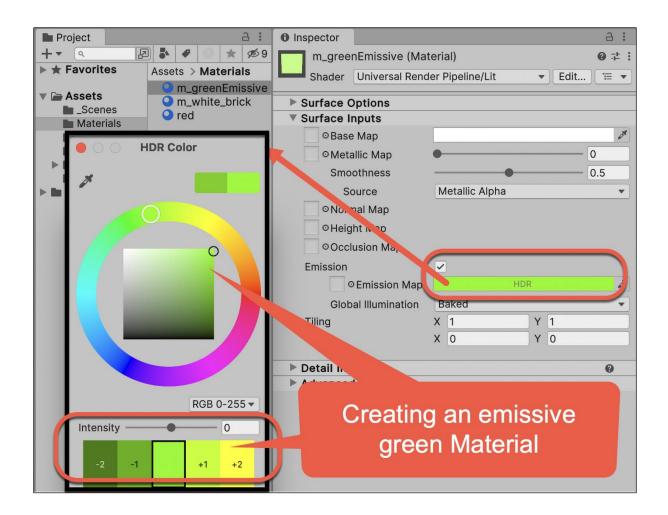






| ि Hierarchy | Inspector | | З | |
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| + ▼ (\arrow All) ▼ 🔂 scene 1 - Cube with emissiv : | ✓ Directional Light Tag Untagged Layer Default | Sta | tic | • |
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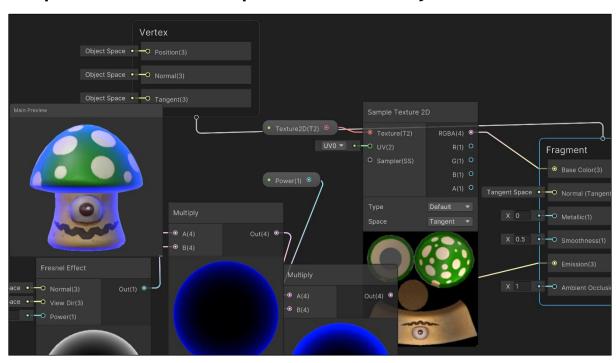
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| ▶ modernHouse ▶ PlayerArmature | Position X -1 Y 0 Z -3 |
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| • Lighting | | | | : | | | | | | | |
|---------------------------|---------------------|--------------------|-------------------|-----|--|--|--|--|--|--|--|
| Scene robe Volumes | Environment | Realtime Lightmaps | Baked Lightmaps | | | | | | | | |
| Lighting Settings | ▼ Lighting Settings | | | | | | | | | | |
| Lighting Settings Asset | 😪 New L | ighting Settings | C New Cl | one | | | | | | | |
| Realtime Lighting | | | | | | | | | | | |
| Mixed Lighting | | | | | | | | | | | |
| Baked Global Illumination | | | | | | | | | | | |
| Lighting Mode | Baked In | Baked Indirect 🔹 | | | | | | | | | |
| Lightmapping Settings | i | | | | | | | | | | |
| ► Workflow Settings | | | | | | | | | | | |
| | | Auto Generat | Generate Lighting | 7 | | | | | | | |

Global Illumination [0:00:07]

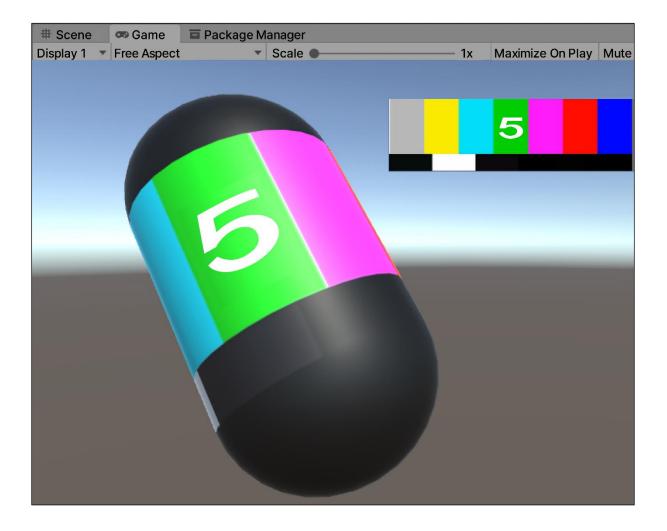


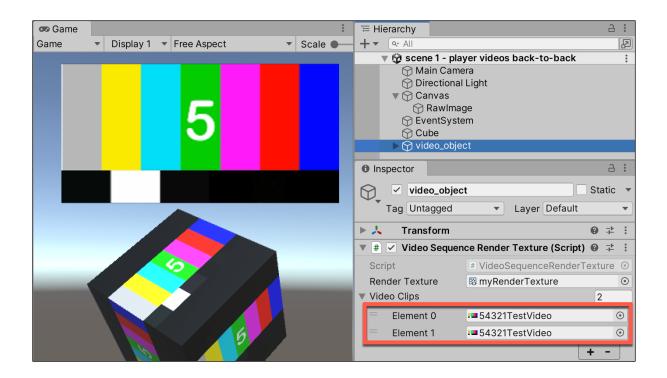


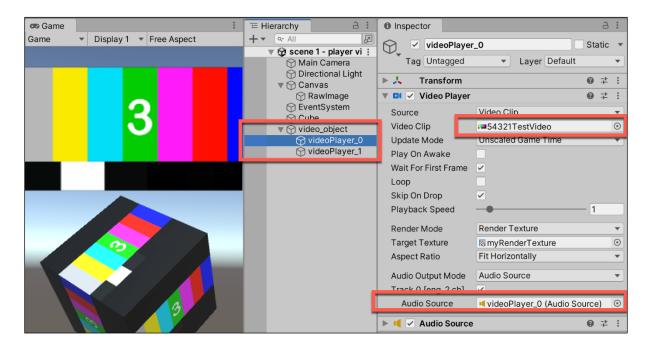
Chapter 14: Shader Graphs and Video Players

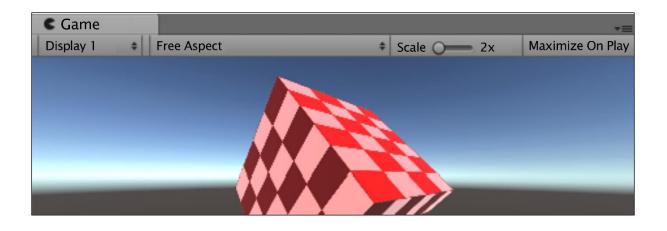
| oo Game | | | | | | : 0 | Inspector | 🖬 Pa | ickage Manager | | 9 | : |
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| Game | - | Display 1 | ▼ Free Aspect | 🔻 Scale 🜒 2x | Play Focused 👻 👘 | ₩ 6 | d . | /ain Cam | iera | | Static | * |
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| | | | | | | | 🗖 🗹 Vid | deo Playe | ər | | @ ‡ | : |
| | | | | | | | Source | | | Video Clip | | - |
| | | | | | | | Video Clip | | | 54321TestVideo | | \odot |
| | | | | | | | Update M | ode | | Unscaled Game Time | | • |
| | | | | | | | Play On A | wake | | ~ | | |
| | | | | | | | Wait For F | irst Frame | 3 | ✓ | | |
| | | | | | | | Loop | | | | | |
| | | | | | | | Skip On D | rop | | ~ | | |
| | | | | | | | Playback \$ | Speed | | • | 1 | |
| | | | | | | | Render Mo | ode | | Camera Far Plane | | - |
| | | | | | | | Camera | | | Main Camera (Camera |) (| • |
| | | | | | | | Alpha | | | | • 1 | |
| | | | | | | | 3D Layout | | | None | | - |
| | | | | | | | Aspect Ra | tio | | Fit Horizontally | | • |

| co Game | | 1 | Inspector Package Manager | а: |
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| Game | ▼ Display 1 ▼ Free Aspect | Scale Zx Play Focused | ⊖ Cube | Static 💌 |
| | | | Tag Untagged Layer Default | • |
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| | | | Etter Cube (Mesh Filter) | 0 ‡ : |
| | | | 🕨 🐯 🗹 Mesh Renderer | 0 ∔ : |
| | | | 🕨 📦 🗹 Box Collider | 0 ≓ : |
| | | | DI Video Player | 0 ∔ : |
| | | | I v Audio Source | 0 ‡ : |
| | | | # Play Pause Main Texture (Script) | 0 7 |
| | | | Script # PlayPauseMainTexture | 0 |
| | | | Video Clip -= 54321TestVideo | C |
| | | | Default-Material (Material) | 0: |
| | | | Shader Standard 🗸 E | dit 🥻 🖅 🔻 |
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| | | | Add Component | |
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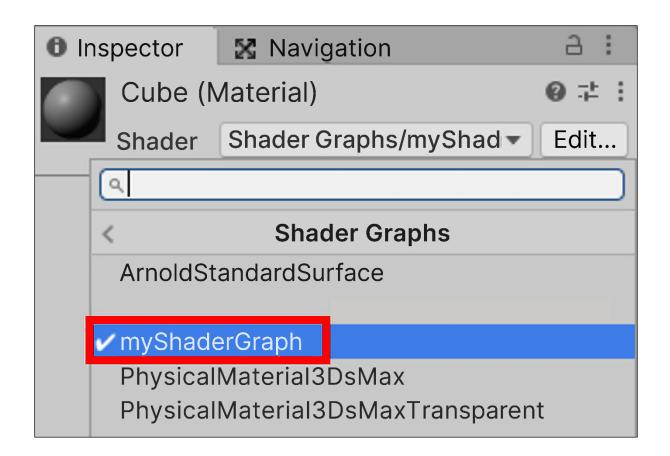




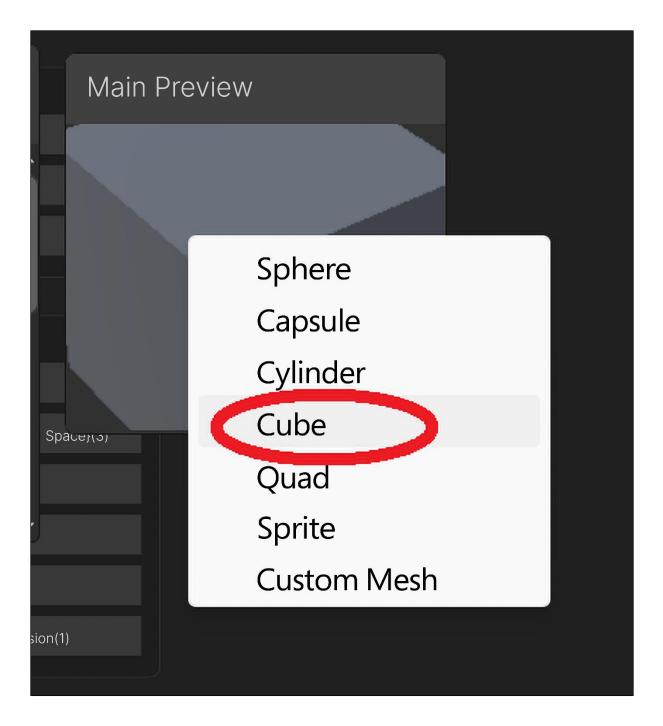


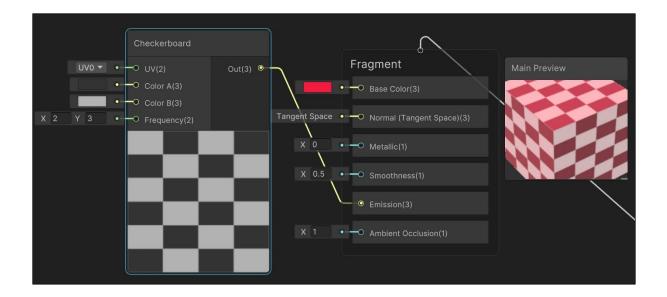


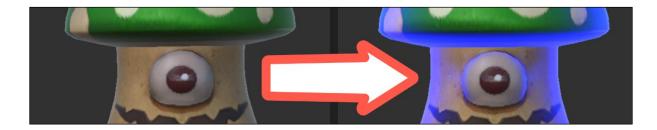
| Project | a : | 🌣 Project Settings | |
|--|--|--|---|
| + ▼ Q | 🔊 🎝 🌒 📩 💋 16 | | ٩ |
| ► ★ Favorites | Assets | Adaptive Performance | Graphics @ # |
| Assets Scenes Settings | mykenderPipeline_kenderer \$ \$ 0 Readme | Burst AUT Cottings Editor | Scriptable Render Pipeline Settings |
| TutorialInfo Packages | Scenes Settings TutorialInfo | ▼ Graphics URP Global Settings Input Manager | A Scriptable Render Pipeline is in use, some settings will not be used and are hidden |
| | 😡 UniversalRenderPipelineGlobalS | Memory Settings | |



| S | ave Asset | Save As | Show In F | Project (| Check Ou | it Co | olor Mode | <pre><none></none></pre> | • | Blackboard | Graph Inspect |
|---|----------------------|-----------------|-----------|------------------------|-----------------------------|-------------|-----------|--------------------------|--------------------|------------|---------------|
| | myShad Shader Gra | erGraph aphs | + | Graph | Inspect | or | | | Main | Preview | |
| | | | Î | | 0 | | gs | | | | |
| | (1) BLA | ACKBOARD | | Unive Unive Mate | <mark>(2) G</mark> ersal | RAPH INSPEC | TOR | sp • | (3) Balle (1,3) | PREVIEW | |



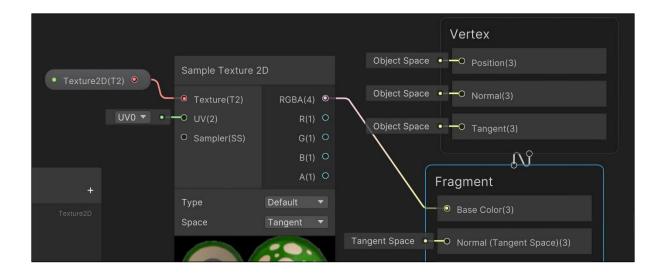


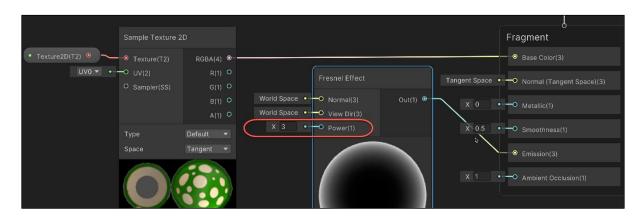


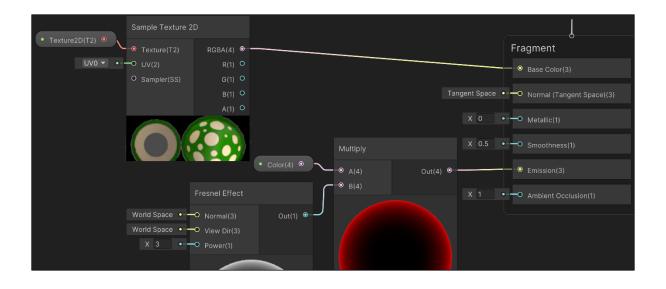


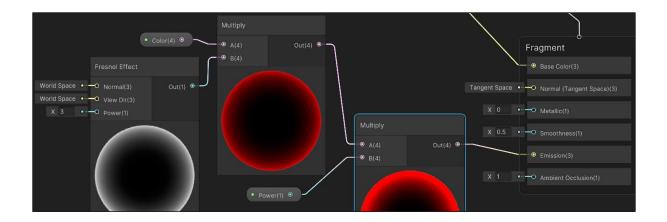
|) SM 🔻 📥 🛛 🏦 Asset Store 🔻 | | | | |
|--|-------------|-------------------------|--|----------------|
| Hierarchy 👌 🗄 | # Scene | Inspector | | c |
| ▼ (Q. All | Center | MushroomMon | | Static |
| ▼ SampleScene* : ▼ | | Tag Untagged | Layer Default | |
| MushroomMon | <pre></pre> | Transform | | 0 . |
| Main Camera | 5 | 🔻 🗟 🗹 Skinned Mesh Rend | lerer | 0 7 |
| Directional Light Global Volume Cube | | Bounds | A Edit Bounds | |
| () Case | | Center | X -2.339166 Y -0.0705554 Z | 0 |
| | 103 | Extent | X 2.345082 Y 2.348867 Z | 2.11694 |
| | | Quality | Auto | |
| | | Update When Offscreen | | |
| | | Mesh | HushroomMon | |
| | | Root Bone | Langton (Angle Angle Ang | |
| | | Materials | | 1 |
| | | = Element 0 | Material/glowShaderGraph | $\mathbf{>}$ |
| | | ▶ Lighting | Select Material | |
| | | Probes | Q glo | |
| | | Additional Settings | Assets Scene - | 9 |
| | | | None | |
| Project Console | | Material/glowShader | Graph (Mater O Material/glowS | naderGr |

| glowShaderGraph Shader Graphs + | Graph Inspector | | | |
|---------------------------------|----------------------------------|---|--------|------------------------------|
| • Texture2D Texture2D | Node Settings Graph | n Settings | | Select Texture |
| | Property: Texture: | 2D | ۹ 🗌 | |
| | Name Reference | Texture2D Texture2D | None | Scene |
| | Default | 2 MushroomGreen | O Musl | hroomGreen |
| | Mode Use Tiling and Offset | White | URP | hroomRed ult-Checker-Gray |
| | Precision | Inherit | | |
| | Exposed | Image: A set of the set of the | | ult-Crecker ult-Particle |
| | Override Property Declaration | | | ult-ParticleSystem ground |







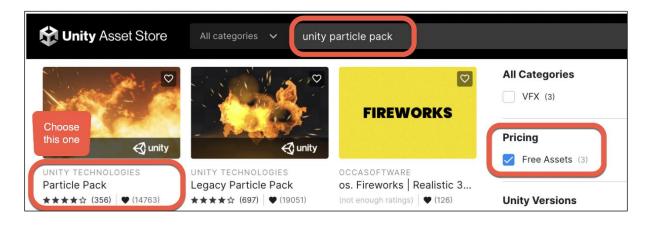


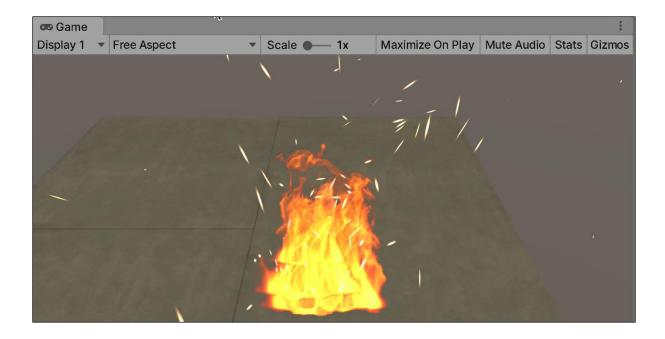
| | Disable batching | no |
|-----------------------|----------------------|--|
| Assets > shadergraphs | Keywords SRP Batcher | compatible |
| | ▼ Properties | Toyturo2D (Toyturo) |
| | _Color | Texture2D (Texture) Color (Color) |
| glowShade myShader | _Power | Power (Range) _WorkflowMode (Float) |
| | _CastShadows | _CastShadows (Float) |

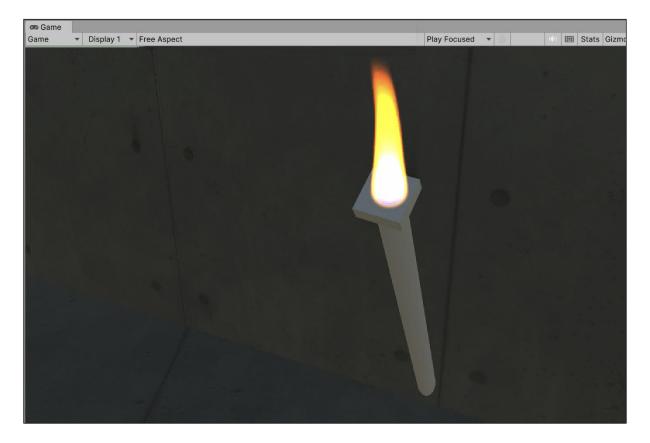
Chapter 15: Particle Systems and Other Visual Effects

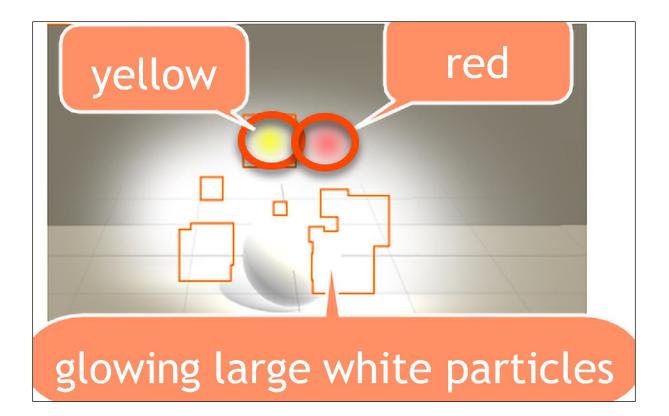




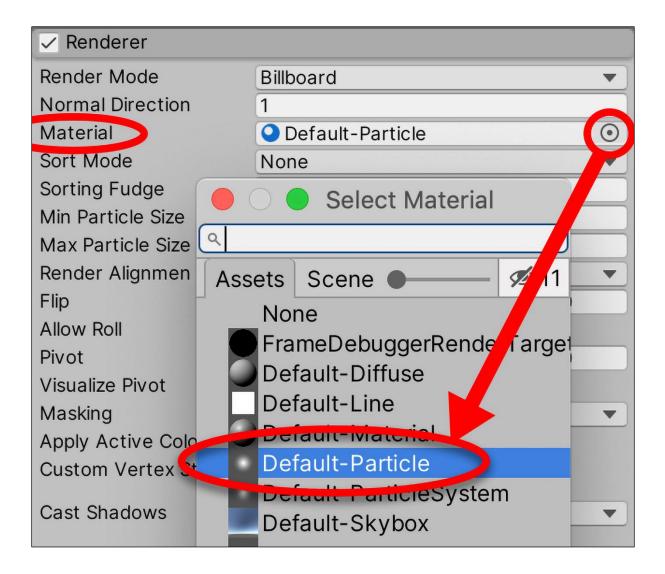






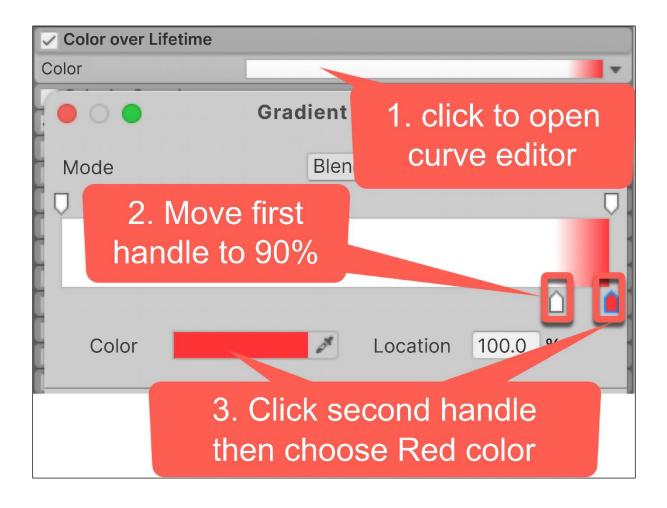


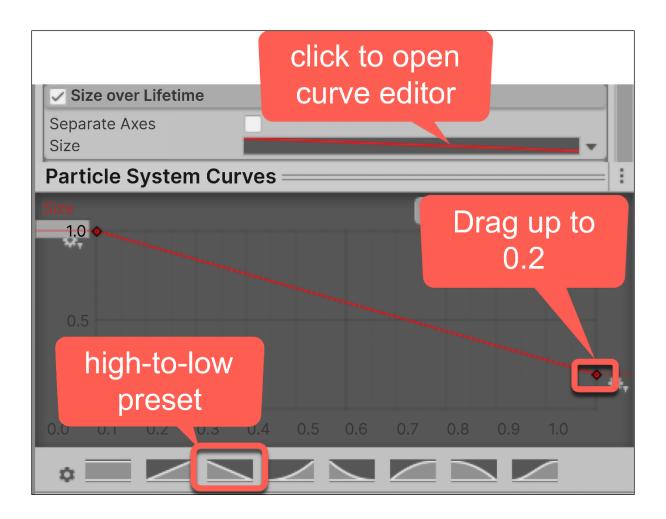
| # Scene | | | | | | | | | : |
|---------|--------|----------|------|----|----------|--------|---------------------|-----------|----------------|
| Shaded | ▼ 2D 9 | 1() | \$. | ø0 | - □ - □ | × | I I • | Gizmos | ▼ Q All |
| | | | | | | | ۵ | | y x |
| | ÷. | | | | Partic | le Eff | ect | | |
| | | | | | Paus | se | Re | start | Stop |
| | | | | | Playbac | k Spe | eed | 1.00 | |
| | | | | | Playbac | k Tim | ne | 48.61 | |
| | | | | I | Particle | S | | 50 | |
| | | <u> </u> | | | Speed F | Range | ; | 5.0 - 5.0 | e Line de |
| 17 | | | | | Simulat | e Lay | ers | Nothing | • |
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| 1 1 | | | | | | v Bou | | | |
| harman | - | | | | Show | v Only | / Sele | cted | |

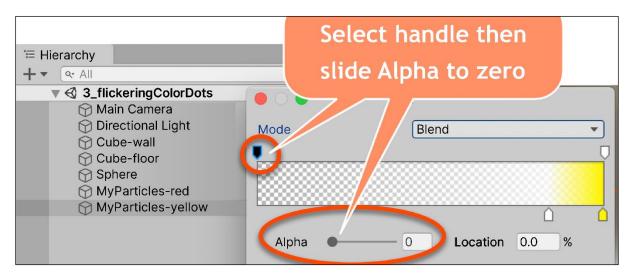


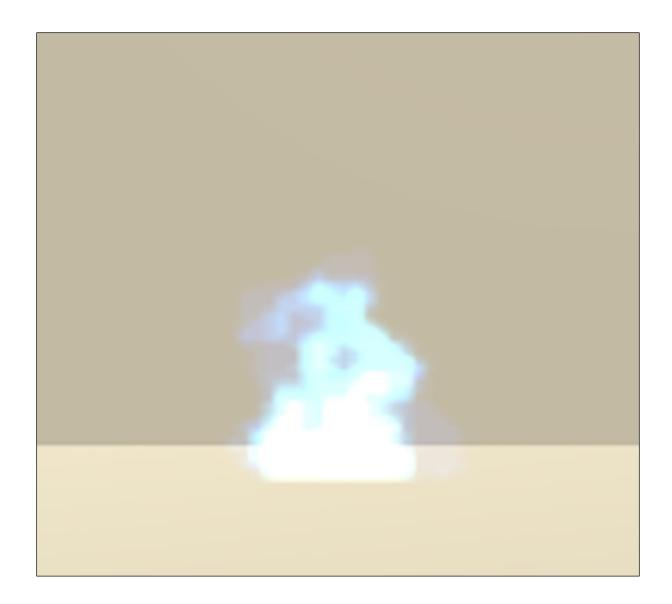
| MyParticles | | + |
|----------------|--------------|---|
| Duration | 5 | |
| Looping | \checkmark | |
| Prewarm | | |
| Start Delay | 0 | |
| Start Lifetime | 5 | ▼ |
| Start Speed | 5 | • |
| 3D Start Size | | |
| Start Size | 1 | ▼ |

| # Scene | | MyParticles | + |
|---------|--------------|--|-------------------|
| Shaded | ▼ 2D • • ••• | Duration Looping Prewarm | 5.00 ✓ |
| | | Start Lifetime Start Speed 3D Start Size Start Size | 1 • 1 • 5 • |
| | - | | |

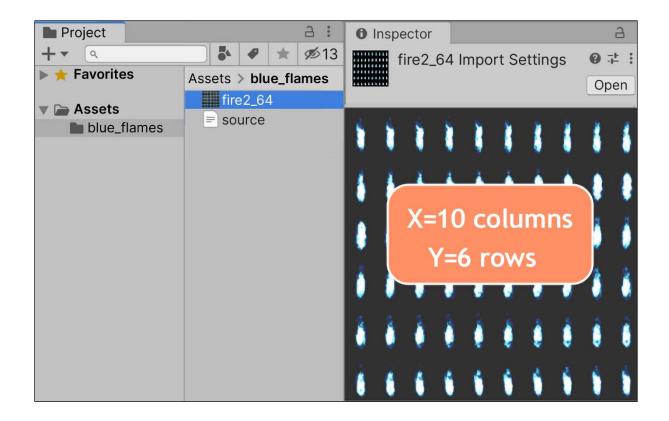






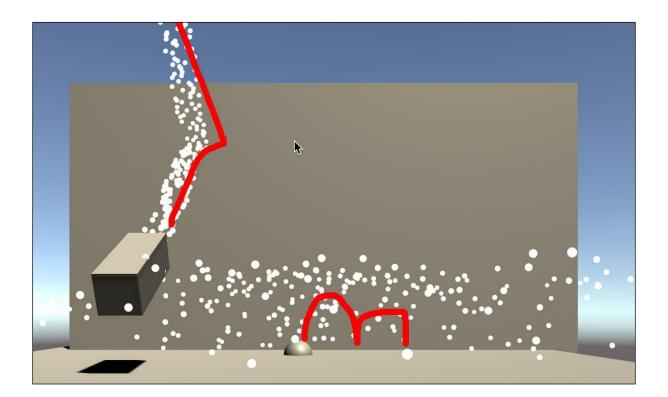


| * // | AMEART.ORG |
|---|--|
| Animated Fire | |
| Аитнок: BenHickling Tuesday, October 2, 2018 - 14:32 | Preview: Download the blue fire sprite sheet: |
| Art Type: 2D Art License(s): Domain CC0 | Transparent PNG sprite sheet - 64 x 64 - 60 fire2_64.png Fire(s): fire1_64 png 27.8 Kb [4117 / 040(\$)] Fire2_64.png 26 Kb [1: 6 download(\$)] 6 download(\$)] |

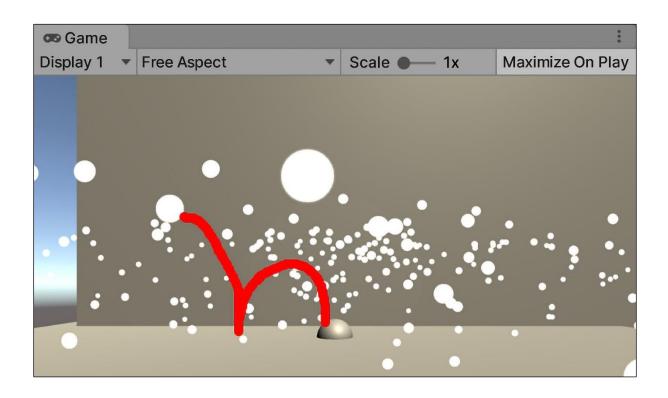


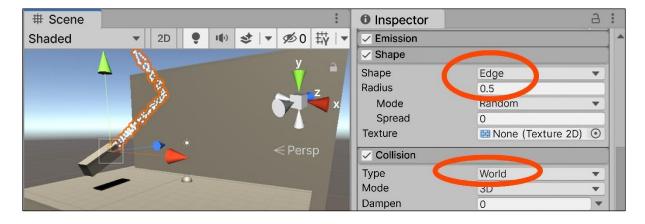
| Project Console | | a : | Inspector | | а : |
|---|----------------------|----------|----------------|-------------------------|-------------|
| + ▼ Q | 2 4 | 🌒 ★ 🕬 13 | m_blueFir | e (Material) | 0 ∓: |
| Favorites Q All Materials | Assets > blue_flames | | Shader P | articles/Standard Unlit | ▼ Edit 📜 ▼ |
| All Models All Prefabs | • m_blueFire | | Blending O | ptions | |
| | | | Rendering M | lode Additive | • |
| 🔻 🗁 Assets | | | Color Mode | Multiply | • |
| blue_flames | | | Main Option | ns | |
| Scenes Packages | | | Flip-Book Fra | | |
| P Packages | | | Two Sided | | |
| | | | Soft Particles | s 🗸 |] |

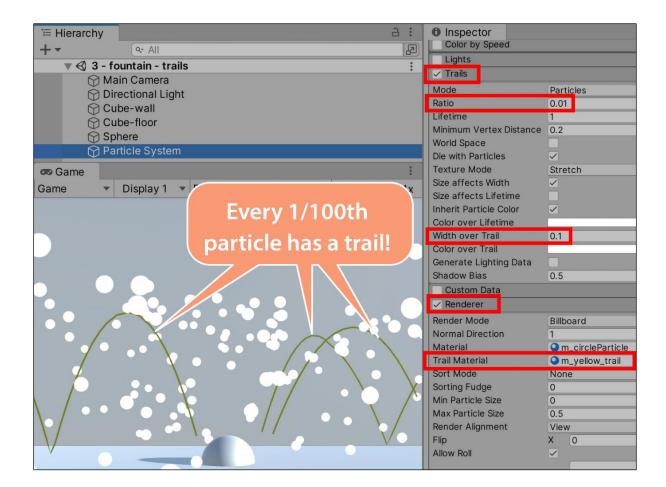
| Texture Sheet Animation | | | | | |
|-------------------------|-------------|--|--|--|--|
| Mode | Grid | | | | |
| Tiles | X 10 Y 6 | | | | |
| Animation | Whole Sheet | | | | |
| Time Mode | Lifetime | | | | |
| Frame over Time | | | | | |
| Start Frame | 0 | | | | |
| Cycles | 1 | | | | |
| Affected UV Channels | Mixed | | | | |
| Renderer | | | | | |
| Render Mode | Billboard | | | | |
| Normal Direction | 1 | | | | |
| Material | m_blueFire | | | | |



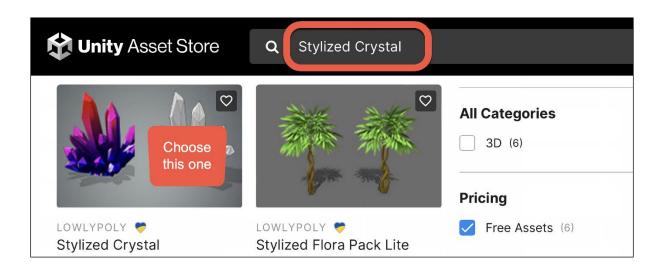
| Project E Console | e | a : | 0 | Inspector | | | | а: |
|-----------------------------------|------------------|-----------------------------------|----|--------------|-------------|----------------|--------|--------------|
| + • (9, | | 🔁 🌢 🔗 🕕 ★ 💋 13 | | m_circle | Particle (I | Material) | | 0 ‡ : |
| ▼ ★ Favorites ○, All Materials | Assets > Materia | | | Shader | Particles/ | Standard Unlit | ▼ Edit | . 🗄 💌 |
| O, All Models | | | | Blending | Options | | - | |
| ୍ All Prefabs | | Select Texture × | | Rendering | Mode | Additive | | • |
| 🔻 🗁 Assets | | ٩ | | Color Mod | е | Multiply | | • |
| Materials Scenes | | Assets 🛛 🗾 💋 13 | | Main Opt | ions | | | |
| Packages | | None Default-Checker-Gray | | Flip-Book | Frame Blen | nc | | |
| | | Default-Checker | | Two Sided | l | | | |
| | | Default-Particle | | Soft Partic | les | | | |
| | | Default-ParticleSystem | | Camera Fa | ding | | | |
| | | ─ Background ✓ Checkmark | | Distortion | | | | |
| | | DropdownArrow | | Maps | | | | |
| | | InputFieldBackground | | 🕛 💿 Albeo | do | ŀ | IDR | 0× |
| | | UIMask | | Emission | | | | |
| | Assets/Materia | UISprite | m_ | circlePartio | cle | | | |

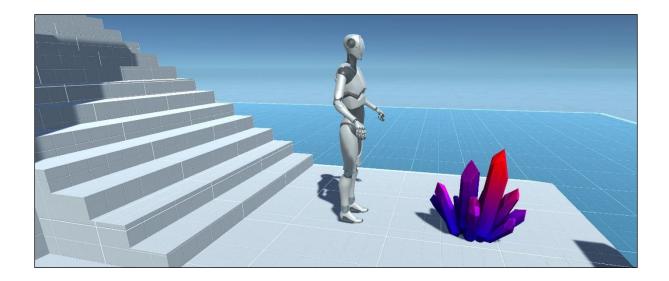


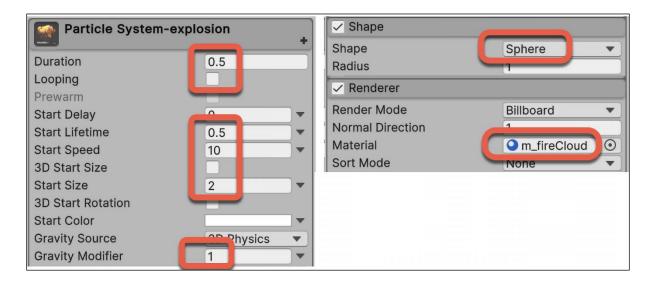




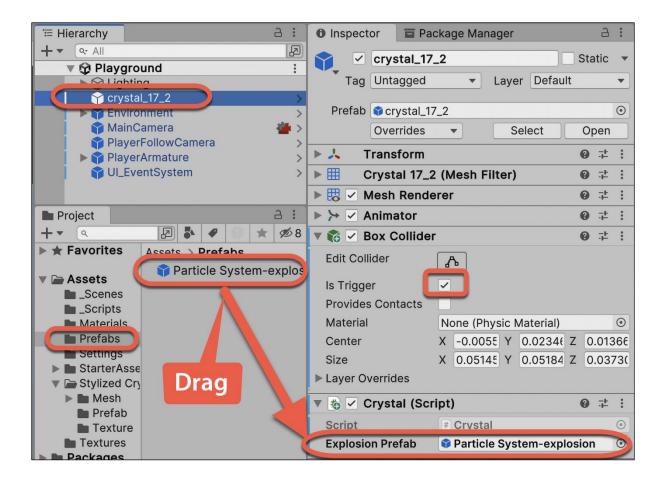


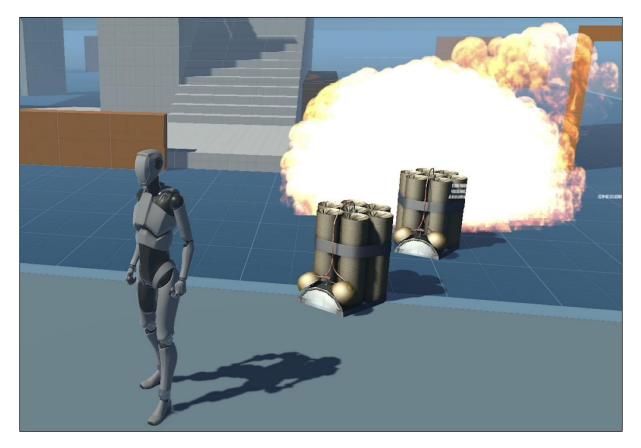


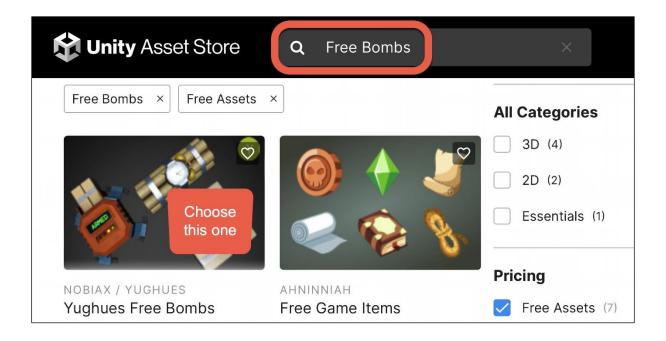


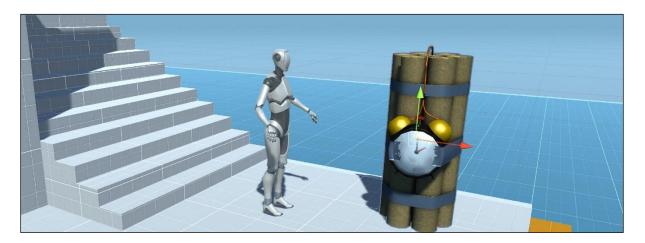


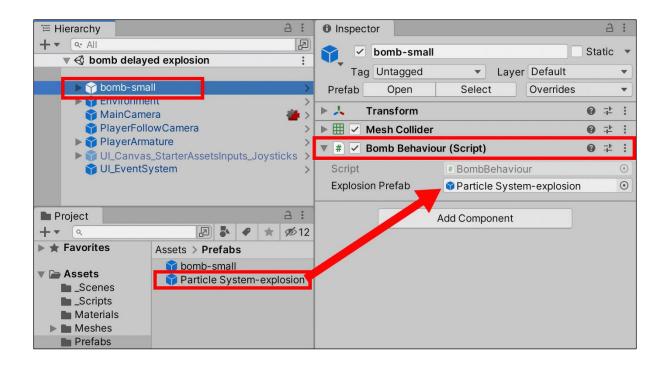
| Particle System-explosion | | | | | | | |
|---------------------------|-------|--------|----|----------|-------------|--|--|
| Emission | | | | | | | |
| Rate over Time | | 10 | | | | | |
| Rate over Distan | ice | 0 | | | | | |
| Bursts | | | | | | | |
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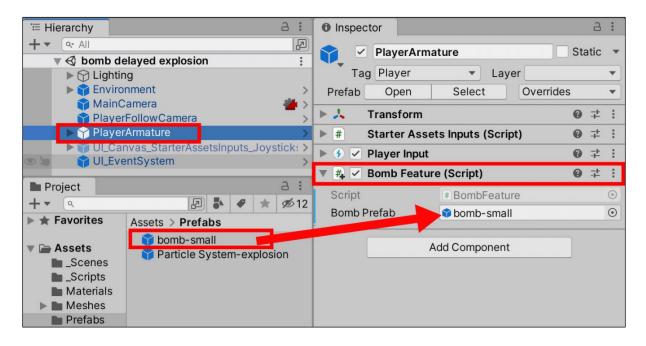


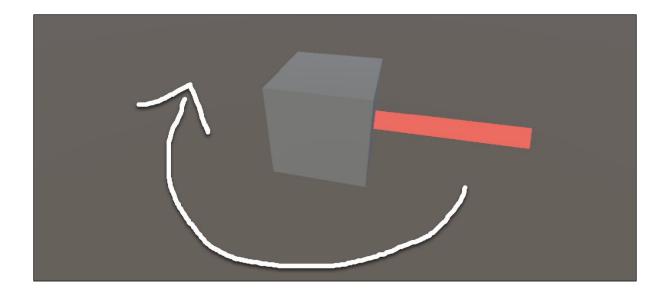




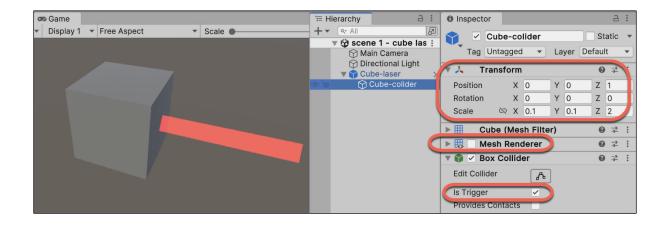


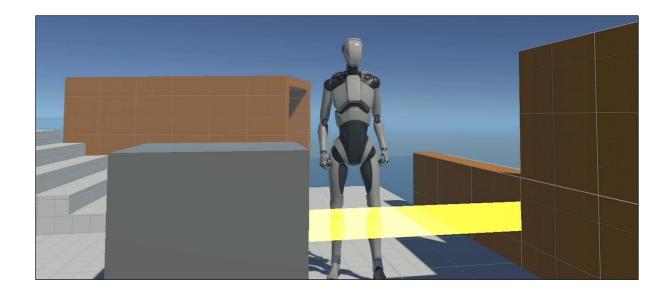


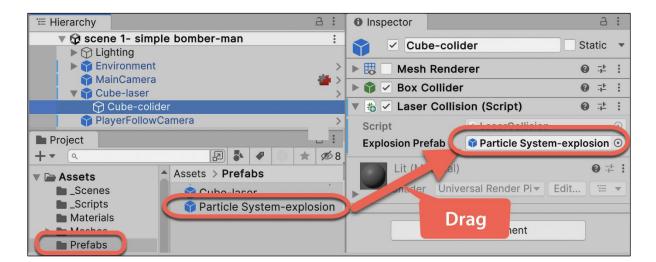


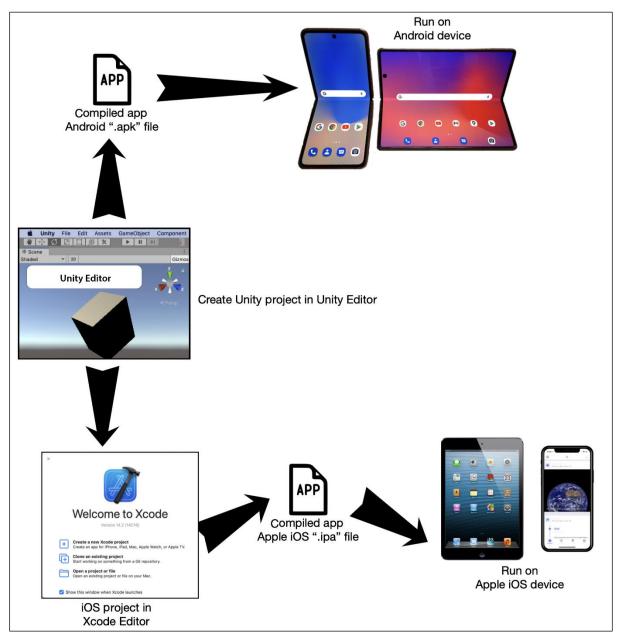


| '≡ Hierarchy | a : | Inspector | a : |
|---|--------------------|-------------------|------------------------------------|
| + All Scene 1 - cub | e laser : | 📬 🗹 Cube-lase | er Static 💌 |
| Main Camera | 1 | Tag Untagged | Layer Default |
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| 🔻 🗁 Assets | Assets > Materials | 🔻 # 🗹 Laser Displ | ay (Script) 🛛 🕂 : |
| Scenes | m fireCloud | Script | # LaserDisplay 💿 |
| Scripts Materials | • m_laser | Line Width | 0.2 |
| Matchais | | length | 2 |
| Prefabs | | Color | X |
| Settings | | Material | • m_laser • |
| StarterAssets Stylized Crystal | | Rotation Speed | 0.1 |









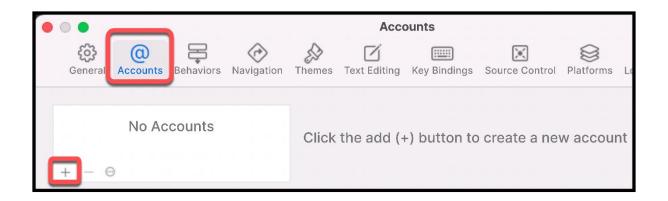
Chapter 16: Mobile Games and Apps

| ••• ••• | Installs | | | (2) cog" button and e Add Modules | Install Editor |
|--------------------|----------|--|----------|---|----------------|
| Projects | All C | official releases Pre-releases | | ch | |
| installs Learn (1) | ۲ | 2023.1.0b19 SUCON BETA /Applications/Unity/Hub/Editor/2023.1.0b19/Unity.app macOS | | Add modules Reveal in Finder | |
| Choose "Installs | " tab | 2023.1.0b9 SILICON BETA /Applications/Unity/Hub/Editor/2023.1.0b9/Unity.app macOS | | Uninstall | \$ |
| | • | 2022.2.211 & SILICON /Applications/Unity/Hub/Editor/2022.2.211/Unity.a Android WebGL macOS | 2022.2.2 | version has modu | ules added |

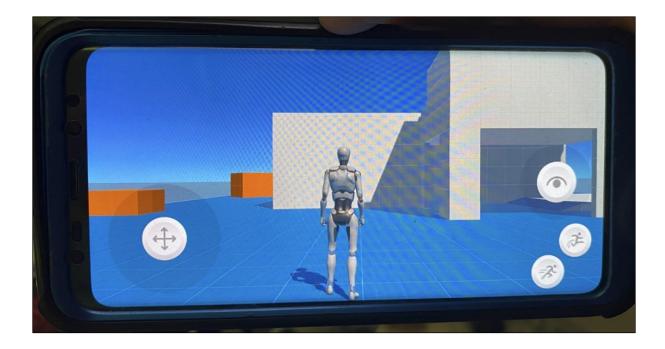
| Add modules for Unity 2023.1.19f1 | | × |
|---|---|------|
| Add modules | Required: 7.07 GB Available: 50.5 | 2 GB |
| ➡ DEV TOOLS | DOWNLOAD SIZE SIZE ON DIS | к |
| Microsoft Visual Studio Community | 2022 1.58 GB 1.59 G | В |
| | DOWNLOAD SIZE SIZE ON DIS | к |
| Android Build Support OpenJDK Android SDK & NDK Tools | Ensure OpenJDK and the SKD/NDK are also checked 3.06 G | В |
| | Continu | ie |

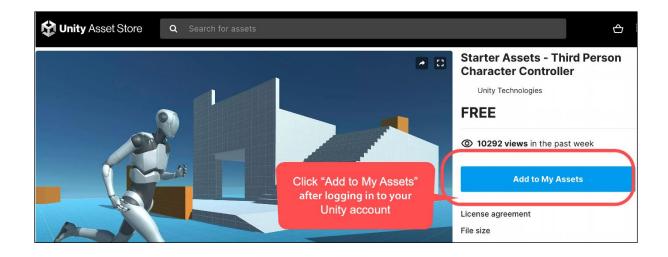
| | • ~ 0 | Insta | alls | (2) Click "cog" button and choose Add modules |
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| • | Projects | All C | Official releases Pre-releases | Con the |
| | Learn | ۲ | 2023.1.0b19 silicon BETA /Applications/Unity/Hub/Editor/2023.1.0b19/Unity.app macOS | Add modules Reveal in Finder |
| | Choose Installs ta | ıb | 2023.1.0b9 SILICON BETA /Applications/Unity/Hub/Editor/2023.1.0b9/Unity.app macOS | Uninstall |
| | | 0 | 2022.2.2f1 silicon /Applications/Unity/Hub/Editor/2022.2.2f1/Unity.af Android WebGL macOS | n 2022.2.2 version has modules added |

| Add modules for Unity 2023.1.1 | 9f1 | × |
|--------------------------------|------------------------------|---------------------------|
| Add modules | Required: 1.13 GB A | vailable: 50.52 GB |
| | DOWNLOAD SIZE | SIZE ON DISK |
| Android Build Support | 480.9 MB | 2.21 GB |
| | 114.82 MB | 222.86 MB |
| 🕒 📄 Android SDK & NDK Tori | For Apple mobile development | 3.06 GB |
| iOS Build Support | select iOS Build Support | 1.13 GB |
| tvOS Build Support | 291.61 MB | 1.11 GB |
| | | Install |



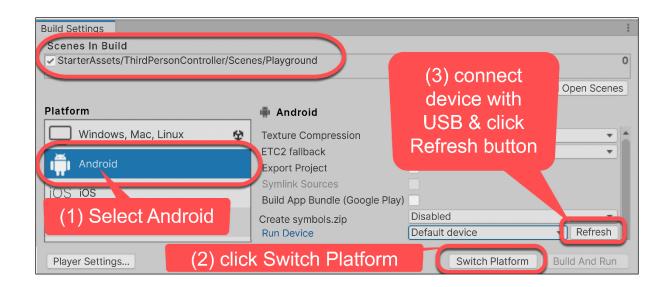
| • • • | Accounts |
|--|--|
| General Accounts Behaviors Navigation T | Themes Text Editing Key Bindings Source Control Platforms Lo |
| Apple IDs | Apple ID |
| dr_matt_smith@me.com dr_matt_smith@me.com | Apple ID: dr_matt_smith@me.com |
| Apple ID | Description: dr_matt_smith@me.com |
| successfully added as a personal team | Team Role |
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| | Download Manual Profiles Manage Certificates |





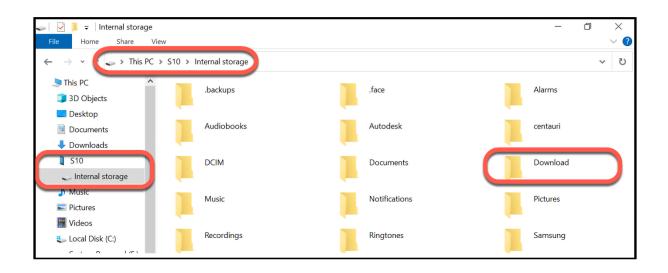
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| Star | Unity Registry | n Character Controller URP | Starter Assets - Third Person Character Controller URP | | | | | |
| Star | In Project | Character Controller URP | · | | | | | |
| POL | ✓ My Assets | ly 3D Art by Synty | 1.1.5 · June 16, 2023 Asset Store Unity Technologies | | | | | |
| POL | Built-in | ly 3D Art by Synty | View in Asset Store Publisher Website Publisher Support | | | | | |
| POL | YGON Fantasy Charact | ers - Low Poly 3D Art by Synt | | | | | | |





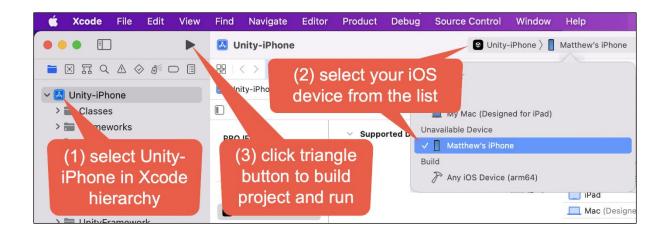
| Platform | 1 | | |
|----------------------------|--------------------------------|-------------------------|----------|
| PC, Mac & Linux Standalone | Android | | |
| in Android 📢 | Texture Compression | Don't override | • |
| ios ios | ETC2 fallback | 32-bit | • |
| 105 105 | Export Project | | |
| | Symlink Sources | | |
| | Build App Bundle (Google Play) | | |
| | Create symbols.zip | Disabled | • |
| | Run Device | ✓ Default device | |
| | Development Build | All compatible devices | |
| | Autoconnect Profiler | Samsung SM G965F (| 2d4334t) |
| | | Learn about Unity Cloud | Build |
| Player Settings | В | Build Build And Ri | un |

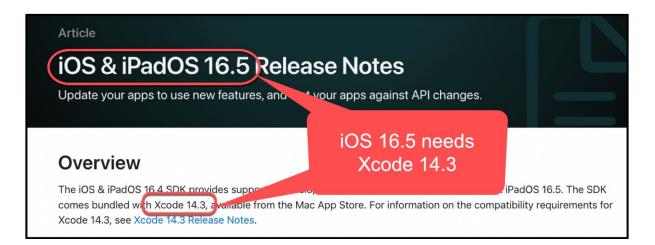
| Project Settings | | |
|--|--------------|------------------|
| Adaptive Performance Audio | Player | 0 ‡ : |
| Burst AOT Settings | Company Name | DefaultCompany |
| Editor | Product Name | Robot Playground |
| Graphics URP Global Settings Input Manager | Version | 0.1 |
| Input System Package Memory Settings | App nai | me with |
| Package Manager | installed of | |
| Physics | installeu (| |
| Physics 2D | | (Texture 2D) |
| Player | | (, |

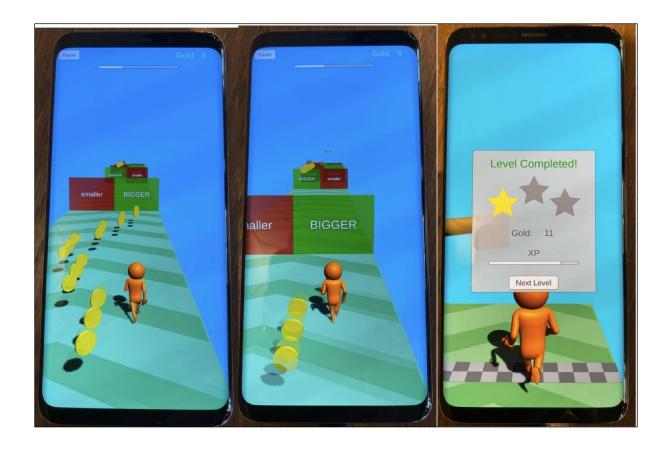


| 🌣 Project Settings | | : |
|--|---|-----------------------------------|
| | | ٩ |
| Adaptive Performance | Player | Ø∓ ÷ |
| Audio | 360 Stereo Capture* | |
| Burst AOT Settings Editor | Load/Store Action Debug Mode | |
| Graphics Input Manager Input System Package Memory Settings | Identification Override Default Bundle Identifier Bundle Identifier | Com.mattsmithdev.Robot-Playground |
| Package Manager Physics Physics 2D | Version* Build | 0.1 |
| Player | Signing Team ID | |
| Preset Manager Quality | Automatically Sign iOS Provisioning Profile | Browse |

| 88 | | | · 🖞 🔗 | Q Search |
|----------------------------|-----------------|--|--------|---|
| thirdPersonAndroidMobile > | Build_BurstDebu | sFoldntShipItWithYd gInformation_DoNotS tDebugInformation_D Open in 2 editor | ship → | Classes Info.plist LaunchScreen-iPad.png LaunchScreen-iPad.storyboard LaunchScreen-iPhone.storyboard LaunchScreen-iPhoneLandscape.png LaunchScreen-iPhonePortrait.png Libraries MainApp Unity-iPhone Tests Unity-iPhone.xcodeproj UnityFramework |











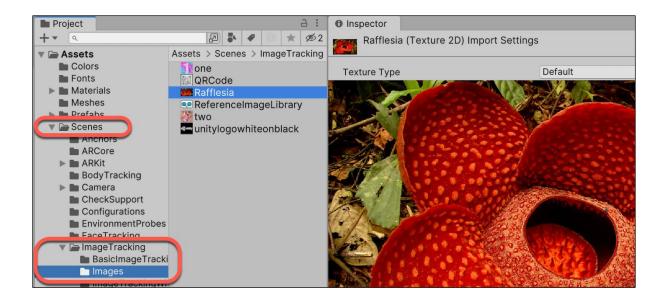
Chapter 17: Augmented Reality (AR)

| | 🚯 Unity | | < 🚯 Unity | | Supported number of tracked faces: 1 Max number of faces to track: 1 Number of tracked faces: 1 Requested camera facing direction: User |
|--|--------------------------|-----------------------------|--------------------|--------------|--|
| and the second | AR Foundation San | nples | Samples / Face Tra | cking | Current camera facing direction: User Requested tracking mode: RotationOnly |
| and the second s | Simple AR | Camera | Face Pose | Face Mesh | Current tracking mode: RotationOnly |
| | Plane Detection | lmage Tracking | Face Regions | Blend Shapes | |
| | Object Tracking | Face Tracking | Eye Lasers | | |
| | | Point Clouds | Fixation Point | | |
| A DOWN | Anchors | | | | |
| 1 | Environment Probes | Occlusion | | | |
| | Check Support | Interaction | | | |
| | Configuration Chooser | Debug Menu | | | |
| | | ARCore Session Recording | | | |
| | | | | | |

| 🔍 🔍 🌔 🚺 Unity-Techno | logies/arfoundatio × + | | |
|---|---------------------------|--|------------|
| \leftrightarrow \rightarrow C \cong github.o | com/Unity-Technologies/ar | rfoundation-samples | |
| Unity-Technologies / | arfoundation-samples | 3 | O Watch ▼ |
| <> Code (1) Issues 22 | ື່ງ Pull requests 🕞 Ad | ctions 🛄 Projects 🛄 Wiki 🕕 Security 🖂 In | sights |
| <mark>ট main -</mark> ট 7 brand | ches 🔊 0 tags | Go to file | Gitpod |
| tdmowrer Update RE | ADME | Clone (?) HTTPS SSH GitHub CLI | commits |
| .github | Stale bot igno | res featu https://github.com/Unity-Technolog: 📋 | nths ago |
| Assets | Update packa | Iges to 4. Use Git or checkout with SVN using the web URL. | days ago |
| Packages | packa | iges to 4. | days ago |
| Projec | | ges to 4. | days ago |
| D.gitign Cho | DOSE ZIP | iges to 4. 🔮 Open with GitHub Desktop | days ago |
| 🗅 сомт 🗖 🗖 | wnload | | nths ago |
| | | e copyrig | nths ago |
| README.md | Update READ | ME | 7 days ago |

| Build Settings | | | : 0 | | |
|--|--|---|-----------------------------------|--|--|
| Scenes In Build | | | | | |
| Scenes/Menu/Menu Scenes/ARKit/ARCollaborationData/ARCo Scenes/ARKit/ARKitCoachingOverlay/ARK Scenes/ARKit/ARKitGeoAnchors/ARKitGeo Scenes/ARKit/ARWorldMap/ARWorldMap Scenes/ARKit/ThermalState/ThermalState Scenes/Anchors/Anchors Scenes/Camera/CameraGrain/CameraGr | AR demos already adde | scenes are ed to the Build | 0 1 2 3 4 5 6 7 | | |
| | | Add Open Sce | enes | | |
| Platform | 🖷 Android | | | | |
| Windows, Mac, Linux | Texture Compression | Use Player Settings | • | | |
| ± | ETC2 fallback | 32-bit | • | | |
| Android 🕸 | Export Project | | | | |
| | Switch to Android gle Play) Disabled | | | | |
| Select Device f | rom list | ✓ Default device | | | |
| Click "Build An | d Run" elease build | All compatible devices <enter ip=""></enter> | | | |
| | | Samsung SM G965F (1c8cc66052 | Od7ece) | | |
| | Autoconnect Profiler Deep Profiling | | * | | |
| | Script Debugging | | | | |
| | Compression Method | LZ4 | | | |
| ▼Asset Import Overrides | | | 10000 | | |
| Max Texture Size No Override 🔹 | | | | | |
| Texture Compression No Override 💌 | | Learn about Unity Cloud | Build | | |
| Player Settings | | Build Build And R | un | | |

| દ્ર ા | Jnity [.] | Anchors | Meshing |
|---------------------------------------|---------------------------|--------------------------|-----------------------------|
| AR Foundation San Simple AR | nples Camera | Environment Probes | Occlusion |
| Plane | Image | Check Support | Interaction |
| Detection Object | Tracking Face Tracking | Configuration Chooser | Debug Menu |
| Tracking | | ARKit | ARCore Session Recording |
| Body Tracking | Point Clouds | | |



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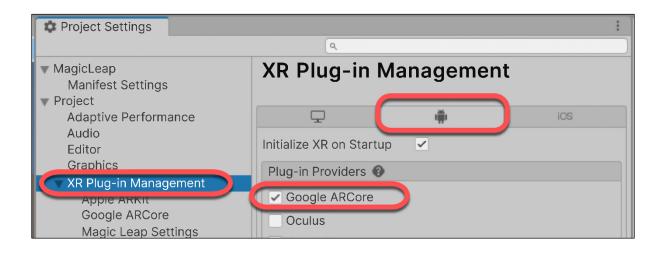
Add images

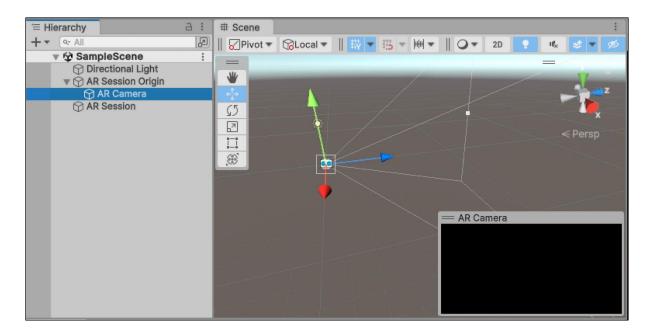
Annotations appear on phone when image recognised

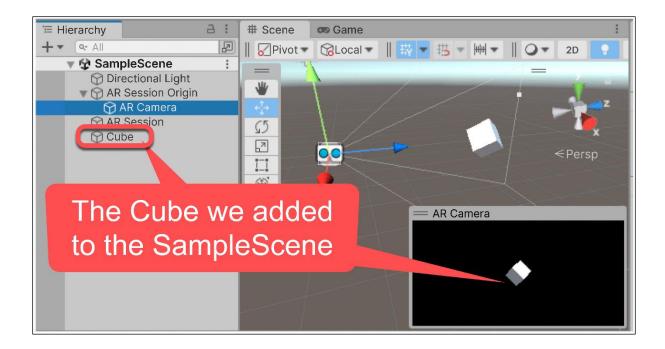
| Project | a : | Inspector | a : |
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| + • • | 🔊 🎝 🖌 🖉 🕚 ★ 💋 2 | FaceMeshPrefab (Prefab Asset) | 0: |
| ▶ ★ Favorites | Assets > Prefabs | | Open |
| Assets Colors | 😭 Background Render Mo | Root in Prefab Asset (Open for full editing support) | |
| Fonts | The EnvironmentProbePref | ► 🙏 Transform | 0 : : |
| Materials Meshes | 😭 Eye Laser Prefab 🍞 Eye Pose Prefab | ► 💽 🗸 AR Face (Script) | 0 : : |
| 🔻 🗁 Prefabs | 😭 FaceMeshPrefab | 🕨 💽 🗹 AR Face Mesh Visualizer (Script) | 0 : : |
| robot | FixationRayPrefab | ▶ III [none] (Mesh Filter) | 0 : : |
| Scenes | JointLineRenderer | ▶ 🐯 🗹 Mesh Renderer | 0 : : |
| Scripts | 😭 Large TriAxes | 🕨 # 🗹 Face Material Switcher (Script) | 0 : : |
| Shaders TextMesh Pro | LightDirectionArrow | TriColor1 (Material) | 0∓: |
| 🔻 🗁 Textures | robot | Shader Standard Fdit | |
| IrelandFlag XR | SlothHead | 🔴 🔘 🌑 Select Texture | Ĺ |
| | 🍞 TriAxes | Rendering Mod Aireland | × |
| Packages | | Assets | - 12 |
| | | | |
| | | O Metallic Flag_of_Ireland | |
| | | Smoothn Flag_of_Ireland (Texture 2 | 2D) P |

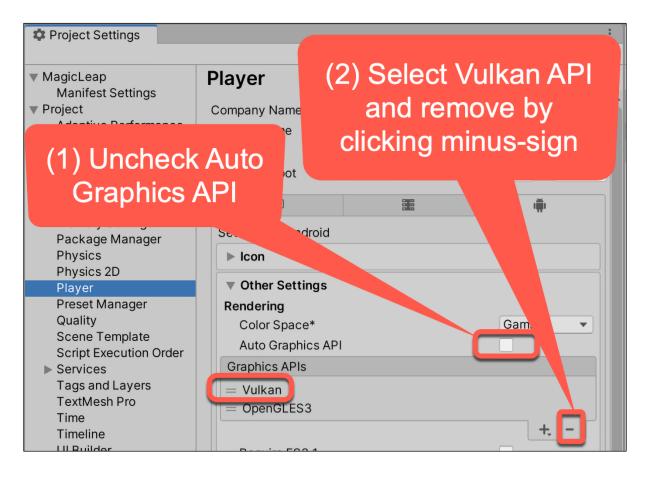


| ••• | | ew project 23.1.0b9 SILICON BETA 🗘 |
|----------------------------|-----------------------|---|
| i≡ All templates ■ Core | STP 3D (HDRP) Core | |
| å Sample ≉ Learning | 3D Mobile Core | |
| (| [𝔄] AR Core | AR Quickstart your Augmented Reality (AR) |
| | 2D Mobile | applications with a sample scene, assets, and the recommended packages and settings. |
| | | Cancel Create project |





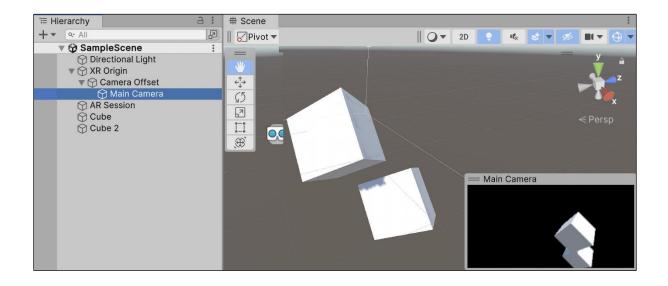




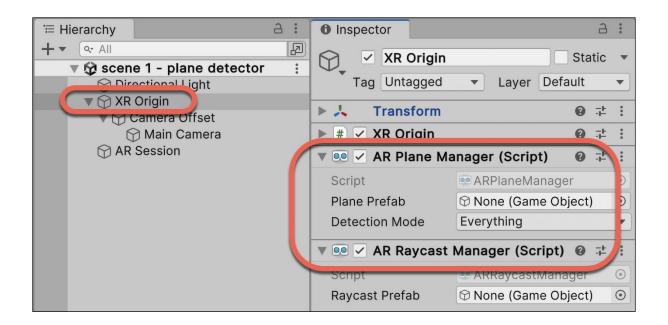
| 🌣 Project Settings | | | : | | |
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| | | ٩ | | | |
| ▼ MagicLeap | Player | | 0 ≓ : | | |
| Manifest Settings ▼ Project | | | I | | |
| Adaptive Performance Audio | Settings for Android | | | | |
| Editor Graphics | ▶ Icon | | | | |
| In-Editor Tutorials | Resolution and Presentation | ion | | | |
| Input Manager Memory Settings | ▶ Splash Image | | | | |
| Package Manager Physics | Other Settings | | | | |
| Physics 2D | Rendering | | | | |
| Player | Color Space* | Gamma | ▼ | | |
| Preset Manager | Auto Graphics API | | | | |
| Quality | Identification | | | | |
| Scene Template Script Execution Order | Override Default Package | Name | | | |
| Services | Package Name | com.Defau | ultCompany.ch1512withnew | | |
| Tags and Layers TextMesh Pro | Invalid characters ha | ave been removed from the Applic | ation Identifier. | | |
| Time | Version* | 1.0 | | | |
| Timeline | Rundle Version Code | 1 | | | |
| UI Builder Version Control | Minimum API Level | Android 7. | 0 'Nougat' (API level 24) 🖵 💭 | | |
| Visual Scripting | Target API Level | | (highest installed) | | |

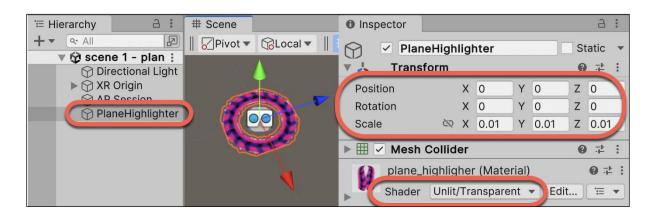


| ➡ Package Manager ➡ Packages: Unity Registry ▼ Sort: Name (asc) ▼ All Services | Filters 🔻 | Clear Filters | | : | AR Foundation | × |
|--|-----------|--|---------------|--------------|------------------|-----------------|
| ▼ Packages | | R Founda | ation | | | Install |
| AR Foundation 5.1.0 | | I.0 · Septembe | | elease | | Install |
| | | om Unity Regis m.unity.xr.arfo cumentation | undation | - | Inc. | |
| | | | rsion History | Dependenc | ies | |
| | Ac | collection of Su | ıbsystems as | well as Mond | Behaviours and C | # utilities for |

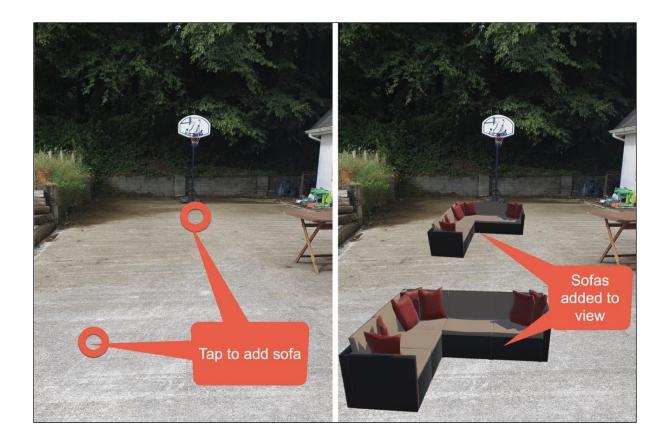








| T≡ Hierarchy a : | Inspector | | Э | : |
|--|--|------|--------------|---------|
| + ▼ Q All ▼ Scene 1 - plane detector : O Directional Light | ✓ XR Origin Tag Untagged ▼ Layer | Sta | tic | * |
| XR Origin | ▶ 🙏 Transform | 0 | - <u>+</u> - | : |
| PlaneHighlighter | ▶ # ✓ XR Origin | 0 | - <u>+</u> - | : |
| | ▶ 💌 🗸 AR Plane Manager (Script) | 0 | - <u>+</u> - | : |
| Text (TMP) | ▶ 💌 🗸 AR Raycast Manager (Script) | 0 | 4. | : |
| | ▼ # ✓ Placement Indicator (Script) | 0 | - <u>+</u> - | : |
| | Script # PlacementIndica | tor | | ۲ |
| | Plane Visual 🕜 PlaneHighlighter | | | \odot |
| | Text Image Data Text (TMP) (Text | t Me | sh | \odot |



| 🔂 Unity Asset Store | ۵ | patio sofa | | × |
|--------------------------------|---|------------|--|---|
| patio sofa × Free Assets × | | | All Categories | _ |
| | | | 3D (1) Pricing Free Assets (1) | - |
| IVAN LOGINOV Patio sofa set | | | | |

| °≔ Hierarchy | a : | ● Inspector ■ Package Manager → | : |
|---|--|---|---|
| + ▼ | urniture placer : | | • |
| 🖓 Directiona | Light | Tag Untagged 🔹 Layer Default | • |
| ▼ 🖓 XR Origin ▼ 🖓 Camera | | ► L Transform | : |
| 🖓 Main 💮 AR Session | | ▶ # ✓ XR Origin ⊕ ∓ [±] ▶ | : |
| Project | | ► 💀 🗸 AR Raycast Manager (Script) 🛛 🕹 👎 | * |
| 🔻 🗁 Assets | Assets > Patio Furniture > Prefabs | ▼ # ✓ Furniture Manager (Script) @ ∓ | : |
| Scenes Scripts Materials | <pre> f cheaper_coffee_table f cheaper_sofa_chair f</pre> | | • |
| Patio Furniture Materials Mesbas Prefabs Scenes | cheaper_sofa_chair_with_pillows cheaper_sofa_full expensive_coffee_table expensive_sofa_chair expensive_sofa_chair expensive_sofa_chair | Add Component | |
| Textures | rexpensive_sofa_full | | |



| # Scene | 1 | 0 Inspector | a : |
|--|-------------|--|------------------|
| 🕸 Scenes 🌍 car | 🗹 Auto Save | Output ✓ Sphere | Static 💌 |
| ║◙▾ ⊕▾ | r 💋 🖩 👻 🔂 🔻 | Tag Untagged Layer Default | • |
| | | ▼ 🙏 Transform | 0 ; : |
| | | Position X 0.03 Y 0 Rotation X 0 Y 0 | Z 0.05 Z 0 |
| A Contraction of the second se | | Scale X 0 Y 0 Scale X 0.03 Y 0.03 | Z 0.03 |
| | | V III Sphere (Mesh Filter) | 0 .∔ : |
| | | Mesh ESphere | ۲ |
| | | 🔻 🖽 🗹 Mesh Renderer | 0 ‡ ; |
| | | Materials | 1 |
| | | ▶ Lighting | |
| | | Probes | |
| | | Additional Settings | |
| | | 🔻 🌻 🗹 Sphere Collider | Ø ∓ i |
| | | Edit Collider | |
| | | Is Trigger | |

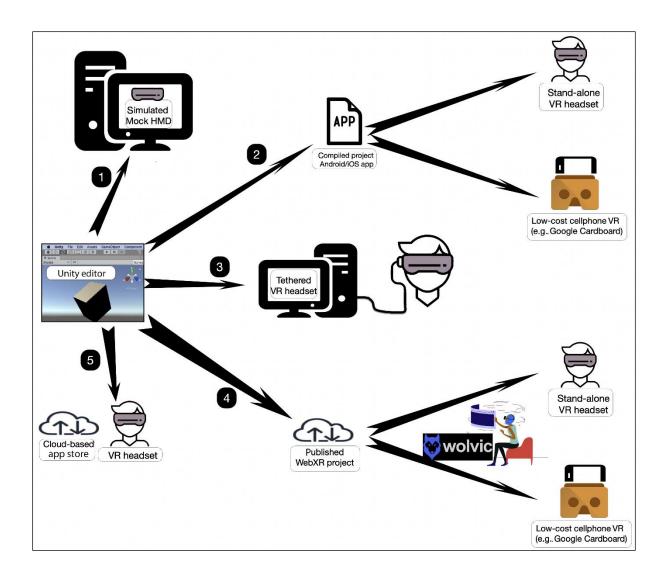
| Project | a : | 0 Inspector | a : |
|---|---------------------------|--|------------------|
| + • • | 🔁 🦆 🤗 🗮 🖈 5 | My Reference Image Library (XR Reference Image Library) | 0 : : |
| ► ★ Favorites | Assets > Images | | Open |
| Assets Scenes Scripts Images LowPoly Space Cars Materials Prefabs TextMesh Pro Textures XR | ComvReferenceImageLibrary | Name tesla_book Specify Size Keep Texture at Runtime Add Image | |

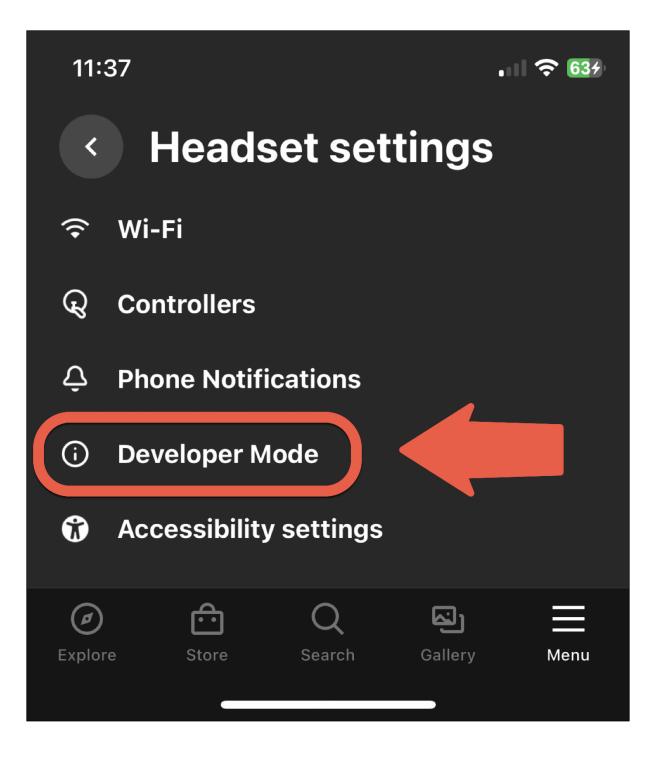
| '≡ Hierarchy | a : | Inspector | | ć | ∃ : |
|-------------------------------|---|---|------------------------------------|------------|------|
| + ▼ | | XR Origin Tag Untagged | Layer Default | Statio | • |
| ► 🕥 XR Origin ⓒ AR Session | | Image: Second | , | 0 | |
| EventSystem Project | а: | ▶ # ✓ XR Origin ▶ ● ✓ AR Plane Manager (| | 0.7 | |
| + ▼ | Image: Base of the second | ▶ ✓ AR Raycast Manage ▼ ✓ AR Tracked Image Manage | | 0 - | |
| V 🖿 Assets | Scenes | Script | ARTrackedImageManager | | ۲ |
| E Sooner | myReferenceImageLibrary | Serialized Library | myReferenceImageLibrary (XR R 0 | eferend | ce 💿 |
| | LowPoly Space Cars | Tracked Image Prefab | 🗊 car | | ٢ |
| Materials Prefabs | retabs | Anchor Manager | • • • | 9 - | |
| TextMesh Pro | Pielaus | Script | Manager ARAnchorManager | | • |

Chapter 18: Virtual and Extended Reality (VR/XR)

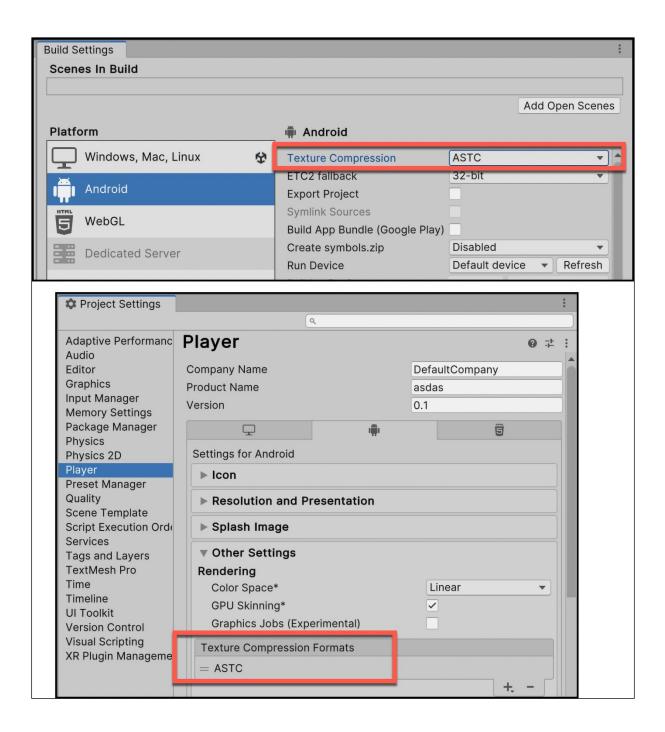






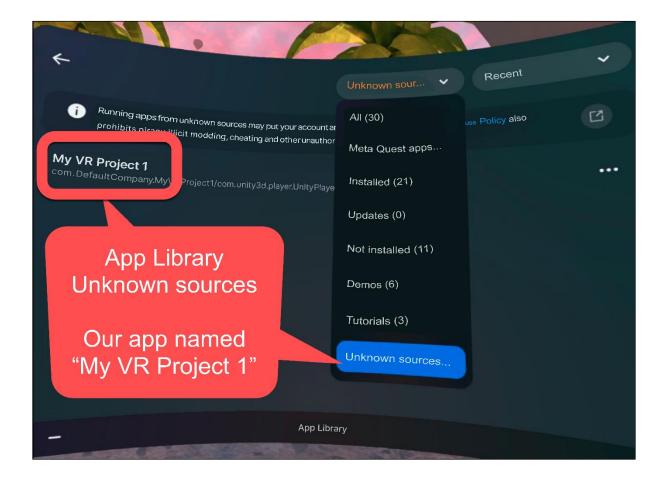


| Project Settings | : |
|--|---|
| | ٩ |
| Adaptive Performance | XR Plug-in Management |
| Quality Scene Template Script Execution Order Services Tags and Layers TextMesh Pro Time Timeline UI Builder Version Control Visual Scripting XR Plug-in Management | Initialize XR on Startup Plug-in Providers ARCore Oculus OpenXR |
| | Unity Mock HMD |
| Project Settings | 1 |
| | ٩ |
| Adaptive Performance Audio | Oculus |
| Editor | 모 표 (추 |
| Graphics Input Manager Input System Package | Stereo Rendering Mode Multiview |
| Visual Scripting | Target Devices |
| VR Plug-in Management | Quest 2 Quest Pro |



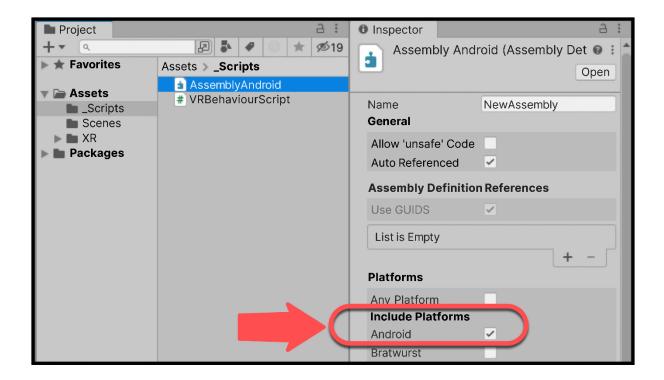
| 🗢 Project Settings | | | | : |
|----------------------------|--------------|-----------------|-----|---|
| | ٩ | | | |
| Adaptive Performanc | Player | | 0 ‡ | : |
| Package Manager Physics | Company Name | MattSmithDev | | |
| Physics 2D | Product Name | My VR Project 1 | | 1 |
| Player | Version | 0.1 | | 1 |
| Preset Manager | Version | 0.1 | | |

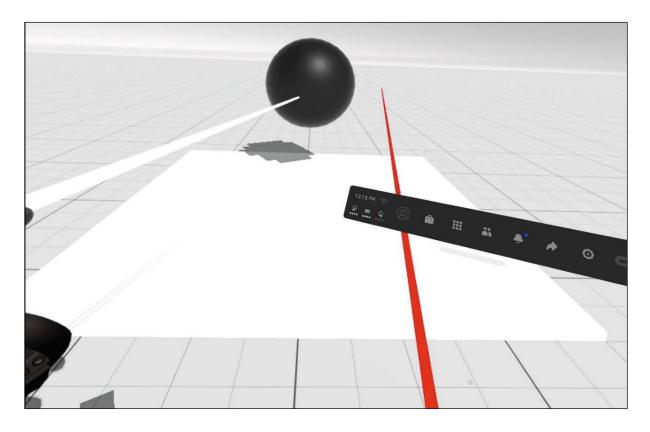
| Build Settings | | | | | |
|---------------------|---|--|-------------------------|----------|------------|
| Scenes In Build | | | | | |
| Scenes/SampleScene | | | | | C |
| | | | | Add O | pen Scenes |
| Platform | | 🖷 Android | | | |
| Windows, Mac, Linux | î | Texture Compression | Use Player Settings | | • |
| 25 | | ETC2 fallback | 32-bit | | • |
| Android | Ŷ | Export Project | | | |
| HTHL | | Symlink Sources | | | |
| 5 WebGL | | Build App Bundle (Google Play) | | | |
| Dedicated Server | | Create symbols.zip | Disabled | | • |
| | | Run Device | Default device | • | Refresh |
| iOS ios | | Build to Device | ✓ Default device | | |
| | _ | Patching is disabled for Release build | All compatible devices | | |
| PJA PS4 | | Development Build | <enter ip=""></enter> | | |
| | | Autoconnect Profiler | | | |
| PJS PS5 | | Deep Profiling | Oculus Quest 2 (1WMHHB4 | 0512154) | _ |



| • • • | Preferences | |
|--|--|--------|
| Preferences | | : |
| | ۵, | |
| General 2D Physics Analysis Profiler Asset Pipeline Colors | External Tools External Script Editor Rider 2022.3.2 Customize handled extensions in Project Settings Editor Additional extensions to include Generate .csproj files for: Android | |
| Diagnostics External Tools | DJDK Installed with Unity (recommended) | |
| GI Cache Jobs Package Manager Rider Scene View | JDK /Applications/Unity/Hub/Editor/2023.1.3f1/PlaybackEngines/AndroidPlayer/OpenJDK Image: A state of the s | Browse |
| Scene Template Search Indexing Timeline | SDK /Applications/Unity/Hub/Editor/2023.1.3f1/PlaybackEngines/AndroidPlayer/SDK Image: A start of the start | Browse |
| Visual Scripting | Android NDK Installed with Unity (recommended) NDK /Applications/Unity/Hub/Editor/2023.1.3f1/PlaybackEngines/AndroidPlayer/NDK You are not using the recommended Android NDK, versions other than 23.1.7779620 are not officially supported. | Browse |
| | Gradle Installed with Unity (recommended) Gradle /Applications/Unity/Hub/Editor/2023.1.3f1/PlaybackEngines/AndroidPlayer/Tools/gradle | Browse |

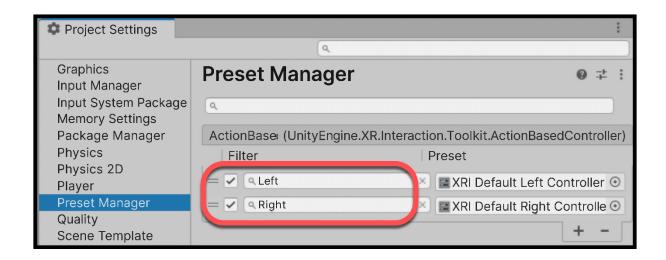
| 🌣 Project Settings | | |
|------------------------------------|--------------------------|-------------------------------|
| | ٩ | |
| Adaptive Performance | Player | Ø ;± : |
| Audio | Package Name | com.mattsmith.core3D_project1 |
| Editor Graphics | Version* | 0.1 |
| Input Manager | Bundle Version Code | 1 |
| Input System Package | Minimum API Level | Android 10.0 (API level 29) |
| Memory Settings Package Manager | Target API Level | Automatic (highest installed) |
| Physics | Configuration | |
| Physics 2D | Scripting Backend | IL2CPP 🔹 |
| Player | Api Compatibility Level* | .NET Standard 2.1 |

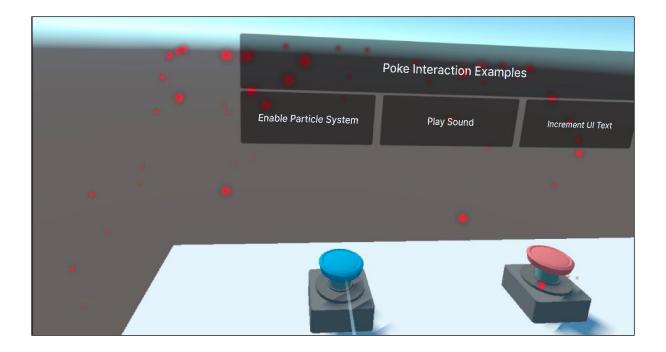




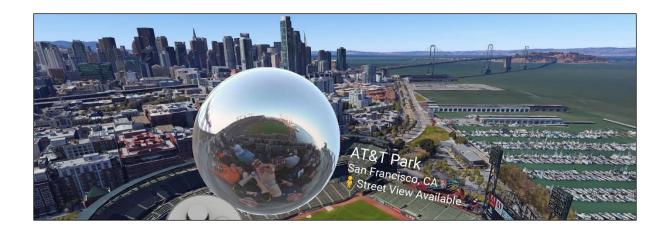
| Package Manager | 1 |
|---|---|
| + Packages: Unity Registry Sort: Name (asc) | Filters Velear Filters Clear Filters |
| All Services | |
| Packages | XR Interaction Toolkit Remove |
| XR Interaction Toolkit 2.4.1 ✓ | 2.4.1 · July 18, 2023 Release From Unity Registry by Unity Technologies Inc. com.unity.xr.interaction.toolkit Documentation Changelog Licenses Description Version History Dependencies Samples |
| | Starter Assets 2.15 MB Assets to streamline setup of behaviors, including a default set of input actions and presets for use with XR Interaction Toolkit behaviors that use the Input System. Import |

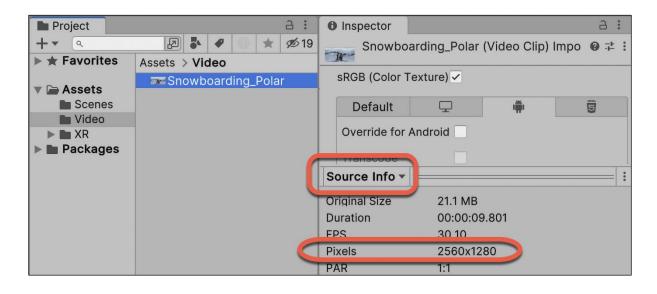
| Project | а : | Inspector | | а: |
|---------------------------------|---|-----------------|-------------------------------|----------|
| + ▼ Q | 🛃 🛃 🛷 🕕 ★ 🕫 21 | UnityEngine.XF | R.Interaction. Toolkit. Actio | 0: |
| ▶ ★ Favorites | Assets > Samples > XR Interaction 1 | | sedController default | |
| Assets Scripts | AffordanceThemes Audio | Preset Type Ur | nityEngine.XR.Interaction.To | olkit.A |
| Scripts | DemoScene Editor | XR Controller | (Action-based) | ‡ : ⊙ |
| ▼ 🗁 2.4.1 ▼ 📄 Starter Assets | Models Prefabs Scripts | Tracking | | |
| Anordance m | Unity.XR.Interaction.Toolkit.Sam XRI Default Continuous Move | | Update And Before Render | - |
| Editor | XRI Default Continuous Turn | Position Action | | |
| Models | 💳 XRI Default Gaze Controller | Use Reference | ✓ | _ |
| Scripts | XRI Default Input Actions | Reference | 😪 XRI LeftHand/Position | (In ⊙ |
| Scenes | E VDI Default Left Action Bucodo | Rotation Action | | |
| | RI Default Left Controller | Use Reference | × | |





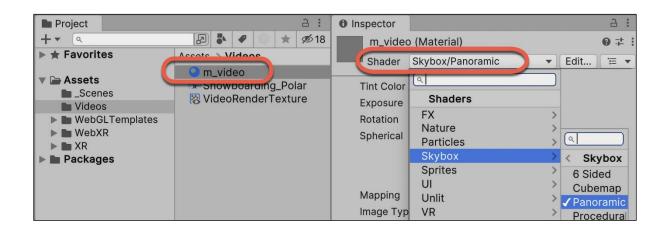




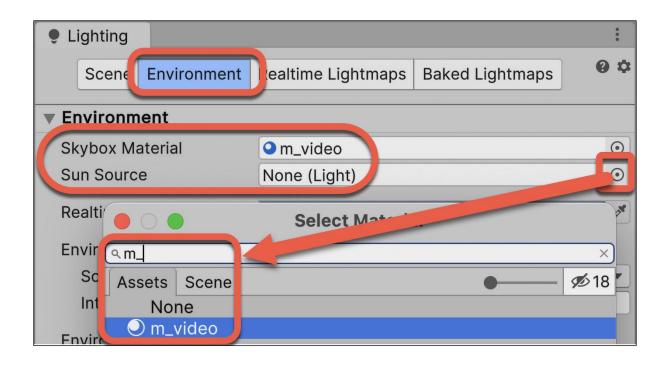


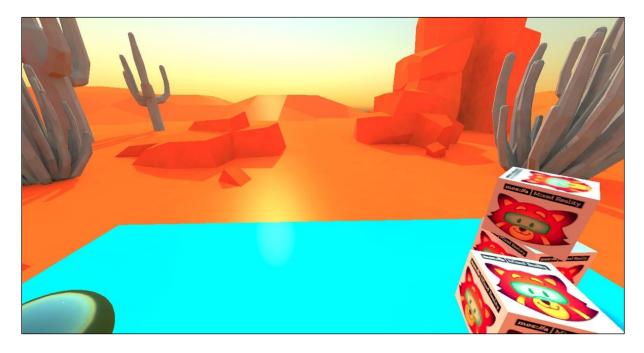
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| ★ Favorites | Assets > Video | | Open |
| | m_video | | |
| V 🖿 Assets | Snowboarding_Polar | Dimension | 2D 🔻 |
| Scenes La Samples | 🔞 VideoRenderTexture | Size | 2560 × 1280 |
| Video | | Anti-aliasing | None |
| NR 🖿 🕨 | | Enable Compatible F | -(~ |
| NRI 🖿 | | Color Format | R8G8B8A8 SNORM |
| Packages | | Depth Stencil Forma | it None |
| | | Enable Mip Maps | |

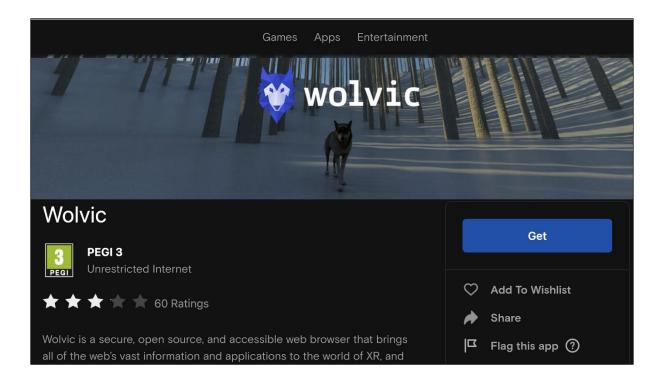
| Hierarchy a : | Inspector | | | а : |
|---|--|---|------|--------------|
| + ▼ Qr All ▼ Scene1 - 360 video : ☆ XR Interaction Manager | ✓ video-playe Tag Untagged | er ▼ Layer Default | Stat | c • |
| | ► 🙏 Transform | | 0 | j t : |
| 🕥 video-player | 🔻 💶 🗹 Video Player | | 0: | i |
| Project a : | Source | Video Clip | | • |
| + ▼ | Video Clip | Snowboarding_Polar | | \odot |
| ► ★ Favorites Assets > Videos | Update Mode | Unscaled Game Time | | • |
| Assets Snowboarding Polar Snowboarding Polar Video Ponder Taxture | Play On Awake | Image: A start of the start of | | |
| ► _Scenes VideoRenderTexture | Wait For First Frame | ✓ | | |
| | Loop | | | |
| WebGLTempla WebXR | S. On Drop | \checkmark | | |
| | Playba Speed | -• | - 1 | |
| Packages | Render Mode | Render Texture | | • |
| | Target Texture | Interset State | | 0 |
| | Aspect Ratio | Fit Horizontally | _ | - |



| Project | | | | a : | Inspector | | a : |
|--|------------------|-----------|---------|------------------------|---|------------------------------|-------------------|
| +• (٩ | | 2 | 4 | 18 🖈 🔿 | m_video | o (Material) | 0 ∓ : |
| ► ★ Favorites | (| Assets > | | | Shader | Skybox/Panoramic | ▼ Edit 😇 ▼ |
| Assets _Scenes Videos WebGLTem WebXR XR | plates | sno | wboard | ang_Polar erTexture | Tint Color Exposure Rotation Spherical | (HDR) | <i>≯</i> 0 |
| Packages | Video Assets | | | elect Texture | | < "SELECT" er for "Video" | jitude Layout |
| | 🛛 🐻 Vic | leoRendei | rTextur | e | | None | • |



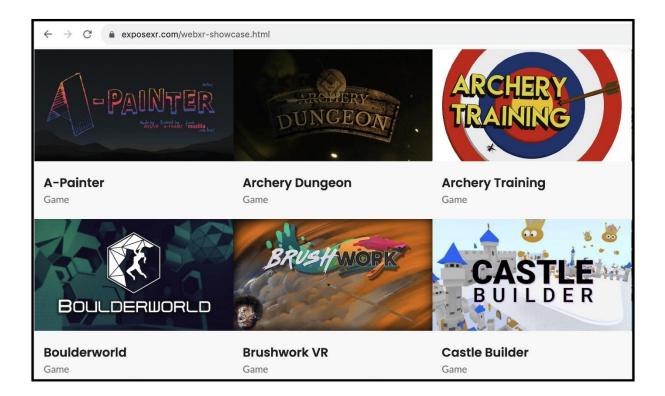






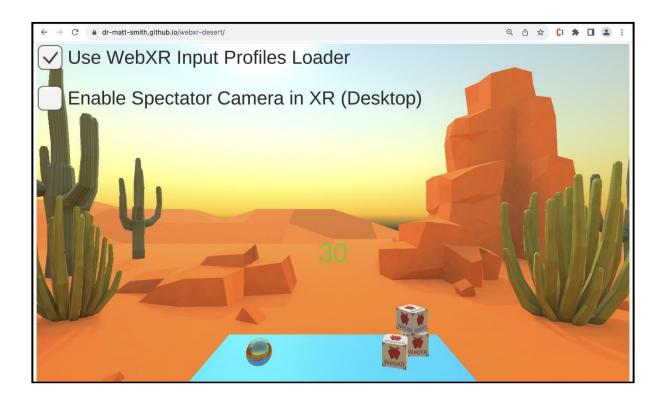
| Add modules for Unity 2023.1.3 | 3f1 🗉 SILICON |
|--------------------------------|---------------|
| | |

| Add modules | Required: 2.51 GB | Available: 121.78 GB |
|--|-------------------|----------------------|
| ✓ PLATFORMS | DOWNLOAD SIZE | SIZE ON DISK |
| US Bulla Support | 423.47 MB | 1.09 GB |
| tvOS Build Support | 416.75 MB | 1.08 GB |
| WebGL Build Support | 872.41 MB | 2.51 GB |
| Windows Build Support (Mono) | 379.38 MB | 1.17 GB |
| Windows Dedicated Server Build Support | 379.8 MB | 1.17 GB |
| | | Install |



 \times

| Name | |
|-------------------------------|---|
| 🗸 🚞 unity-webxr-export-master | |
| _config.yml | |
| 📄 README.md | |
| ✓ ■ Packages | |
| > 📄 webxr | (2) May a thread foldow into |
| > webxr-interactions | (2) Move these folders into |
| 🗸 🚞 MainProject | MainProject/Packages |
| > 📄 ProjectSettings | , see a s |
| 🗸 📄 Packages | |
| 📄 webxr-interactions | |
| 📜 webxr | |
| package: (1) | Delete these shortcuts |
| 🖺 manifest. | |
| > 🚞 Assets | |



| ■ github.com/new |
|---|
| Create a new repository |
| A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository. |
| Owner * Owner * Repository name * Image: Construction of the second state of the secon |
| Great repository names are short and memorable. Need inspiration? How about stunning-octo-potato ? |
| • Public Anyone on the internet causee this repository. You choose who can commit. |
| O A Private You choose who can see and commit to this repository. |
| Initialize this repository with: Add a README file This is where you can write a long description for your project. Learn more about READMEs. |
| Create repository |

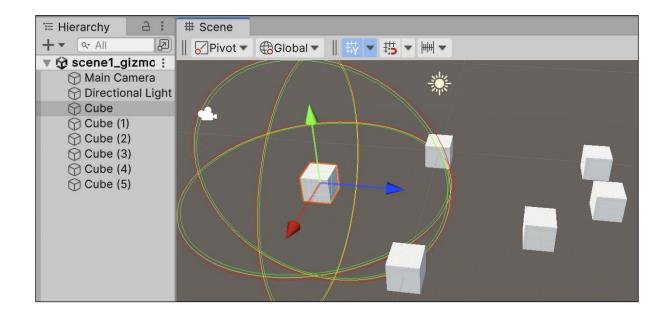
| Favourites | xr-t 🖽 🗘 | »Q | ≡ O dr-matt-smith / webxr-desert |
|---|----------|------|---|
| MirDrop | docs | > | <> Code 🕥 Issues 👫 Pull requests 🕑 Actions 🖽 Projects 🖽 |
| Recents Applications | READ | drag | webxr-desert / |
| 🗎 github | | | |
| 🚍 Desktop | | | Г |
| Documents | | | |
| Ownloads | | | Drag files here to add them to your repository |
| 🖨 Macintosh HD | | | Or choose your files |

| ☐ C dr-matt-smith / webxr-desert | GitHub Pages |
|---|---|
| <> Code 💿 Issues 🕛 Security 🗠 Insights 🕸 Settings | Build and deployment |
| ණු General | Source Deploy from a branch 👻 |
| Code and automation ° Branches | Branch GitHub Pages is currently disabled. |
| ♡ Tags | P main → 📄 /docs → Save |
| Codespaces | Select folder × main / (root) |
| | None |

| '≡ Hierarchy a : | O Inspector |
|---|---|
| + ▼ Q All ▼ 🛱 scene2 - from scratch : ↑ Directional Light | ✓ Sphere Static ▼ Tag Interactable ▼ ayer Default ▼ |
| ▼ ♥ WebXRCameraSet > | ▼ 🙏 Transform 🛛 🛛 🕂 🗄 |
| ► ☆ handR ► ☆ Cameras | Position X 0 Y 0.7 Z 0 |
| | Rotation X 0 Y 0 Z 0 |
| 🕎 Sphere | Scale © X 0.3 Y 0.3 Z 0.3 |
| # Scene : | ▶ 🌐 Sphere (Mesh Filter) @ 🕂 : |
| | ▶ 🔀 🗹 Mesh Renderer 🛛 🕹 🕂 🗄 |
| Λ | ▶ Sphere Collider Ø ∓ : |
| | ► 🕞 Rigidbody 🛛 🔮 🕂 🗄 |
| | 🔻 # 🗹 Mouse Drag Object (Script) 🛛 🥹 💠 🗄 |
| | Script MouseDragObject O |
| | Orange (Material) 🛛 😨 🕂 🗄 |
| | Shader Standard Edit Edit |
| | Add Component |

Chapter 19: Advanced Topics: Gizmos, Automated Testing, and More



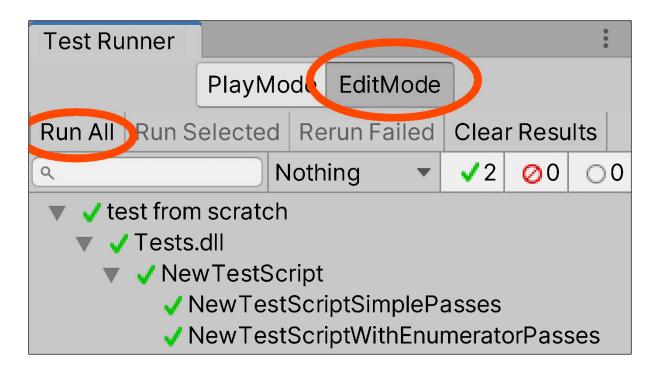


| # Scene | |
|---|--|
| <mark>⊘</mark> Pivot ▼ ⊕Global ▼ 拱 ▼ 拱 ▼ 卌 ▼ | |
| | |
| | |

| # Scene | | | | |
|-----------|------|---|-----|--------------------|
| 🖌 Pivot 🗸 | ▼ 2D | Ç | Iť× | \$ 7 Ø 11 9 7 |
| | | | | Skybox |
| | | | | ⊀ Fog |
| | | | | ✓ Flares |
| | | | | Always Refresh |
| | | | | ✓ Post Processing |
| | | | | ✓ Particle Systems |
| | | | | |

| Ć | Unity | File | Edit | Assets | GameObject | Component | Services | W |
|---|-------|------|------|--------|------------------|-----------|----------------|---|
| | | | | | Create Empty | Child | 心心 | N |
| | | | | | Create Empty | ራ | N | |
| | | | | | Create Empty | Parent | ት ዝ | G |
| | | | | | 3D Object | | | > |
| | | | | | Effects | | | > |
| | | | | | Light | | - | > |
| | | | | | Align With View | w | ራ | F |
| | | | | | Align View to S | Selected | | |
| | | | | | Set as last sibl | ing | H | - |
| | | | | | Set as first sib | ling | H | = |
| | | | | | Toggle Active | State | 公公 | A |
| | | | | | Move To View | | ک # | F |
| | | | | | Create New Sr | napgrid | | |

| ≔ Hierarchy 🔒 🗄 | # Scene | | | | Inspector | | 6 | * * * |
|-----------------------------|-----------|----------|-----|--------|----------------------|----------|--------------|-------|
| + • (• All | 🖌 Pivot 🔻 | Global ▼ | ₩ - | #5 ▼ ₩ | snap-to | o-grid | Static | - |
| ▼ 🔀 scene 1 - snapto grid 🔅 | [| | | | Tag Untagger | Layer | Defau | lt₹ |
| Directional Light | | | | | ► 🙏 Transform | | 0 -⊢ | : |
| | | | | | 🔻 # 🗹 Grid Gizmo | (Script) | 0 -⊧- | : |
| | | | | | Grid size: | 5 | | • |
| | | | | | Color: | | | 64 |
| | | | | | Number of grid lines | 20 | | |
| | | | | | Length of grid lines | 50 | | |
| | - | | | | Add Comp | onent | | |
| | - | | | | | | | |
| | | | | | | | | |



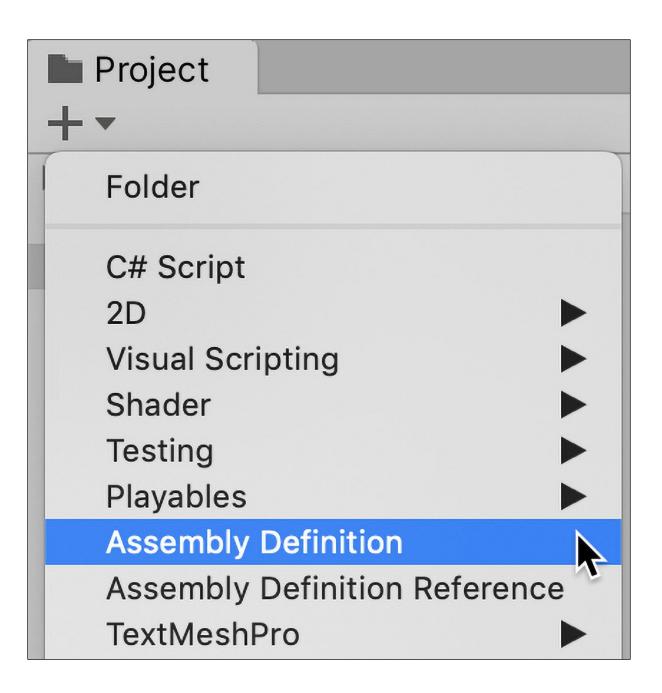
| Test Runr | ner | | | | | * * | |
|--|--|-------------------|-------------|------------|---------------|--------------|--|
| | Pla | PlayMode EditMode | | • | | | |
| Run All | un Selec | cted Re | run Failed | Clea | Clear Results | | |
| ٩ | | Noth | ing 💌 | √ 0 | 00 | \bigcirc 0 | |
| Edit in th Defin Asse Refe | No tests to show EditMode tests can be in Editor only Assemblies, either in the editor special folder or Editor only Assembly Definitions that references the "nunit.framework.dll" Assembly Reference or any of the Assembly Definition References "UnityEngine.TestRunner" or "UnityEditor.TestRunner" | | | | | | |
| Cr | reate Edi | tMode T | est Assem | bly Fo | lder | | |
| | EditMode test scripts can only be created in editor test assemblies. | | | | | | |
| | Create T | est Scri | pt in curre | nt folde | er | | |

| Test Ru | nner | | | | | | | | * |
|------------|--|------|----------|--------|-------|-------|------------|----|----|
| | | Ρ | layMode | Edit | Mode | | | | |
| Run All | Run Selec | ted | Rerun Fa | iled | Clear | Resul | ts | | |
| ٩ | | | | lothir | ng | • | √ 1 | 00 | 00 |
| • • | ookbook - Tests.dll SimpleT Test(| este | | - | | | | | |

| Ø TestTwoEqualsThreeShouldFail |
|---------------------------------------|
| TestTwoEqualsThreeShouldFail (0.012s) |
| Expected: 3 But was: 2 |
| |

| Test Ru | nner | | | | | | | | | 000 |
|------------|--|---------|--------|------------|--------|-------|-------|------------|----|--------------|
| | | | PlayMo | de | Edit | tMode | | | | |
| Run All | Run Se | elected | Rerun | Fa | iled | Clear | Resul | ts | | |
| ٩ | | | |) N | lothir | ng | • | √ 4 | 00 | \bigcirc 0 |
| • • | Cookbook - data-provider-project Tests.dll DataProviderTester TestAdd TestAdd(0,0,0) TestAdd(1,0,1) TestAdd(0,1,1) TestAdd(0,1,2) | | | | | | | | | |

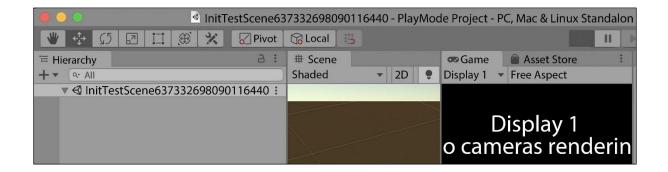
| Test Ru | nner | | | | | | | • • • |
|--|--|------------|--------|---------|--------|----|----|-------|
| | | PlayMode | Edit | Mode | | | | |
| Run All | Run Selecte | d Rerun Fa | ailed | Clear I | Result | ts | | |
| ٩ | | 1 | lothir | ng | • | √5 | 00 | 00 |
| 🔻 🗸 C | 🔻 🚽 Cookbook - health-unit-project | | | | | | | |
| · · · · | Tests.dll | | | | | | | - 15 |
| ▼ | 🔻 🗸 TestHealth | | | | | | | |
| | TestHealthNotGoAboveOne | | | | | | | |
| | 🗸 TestNoChangeAndReturnsFalseWhenAddNegativeVa | | | | | | | |
| TestPointTwoAfterAddPointOneTwiceAfterKill | | | | | | | | |
| TestReturnsOneWhenCreated | | | | | | | | |
| | 🗸 TestRe | turnsZeroW | /henk | Cilled | | | | |

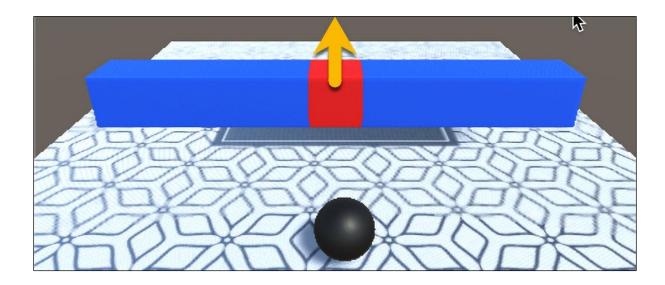


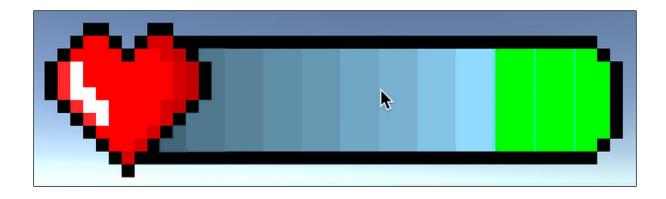
| Project | | a : | Test Runner 1 Inspector \exists : | | | |
|---|----------------------|-------|--|--|--|--|
| + ▼ ► ★ Favorites | Assets > _Scripts | * 109 | HealthScriptAssembly Import @ : Open | | | |
| 🔻 🖿 Assets | # Health | | | | | |
| Scripts | HealthScriptAssembly | | Name HealthScriptAssemt | | | |
| Plugins | | | General | | | |
| Scenes | | | Allow 'unsafe' Code | | | |
| Tests Packages | | | Auto Referenced 🗸 | | | |
| P Packages | | | Override References | | | |
| | | | No Engine Reference | | | |
| | ▶ | | Define Constraints | | | |
| | N- | | List is Empty | | | |
| | | | + - | | | |
| | | | Assembly Definition References | | | |
| | | | Use GUIDs 🗸 | | | |
| | | | List is Empty | | | |
| Selea | ct the "Editor" | | + - | | | |
| | platform | | Platforms | | | |
| | plation | | Any Platform | | | |
| | | | Include Platforms | | | |
| | | | Android | | | |
| | | | Editor | | | |
| | | | ;00 | | | |

| Project Project | Asset) Import Settin @ : Open |
|---|----------------------------------|
| V Assets Name Tests | |
| Scenes General | |
| ■ Tests Allow 'unsafe' Code ■ Packages Auto Referenced No Engine References Override References Override References ✓ Root Namespace ✓ | |
| Define Constraints | × |
| UNITY_INCLUDE_TESTS Assembly Definition References | + - |
| Use GUIDs | |
| = UnityEngine.TestRunne Unity = UnityEditor.TestRunner | |
| = HealthScriptAssembly | IthScriptAssembly |

| Test Ru | nner | | | | • • • |
|--|--------------|--------------|---------------|-------------|--------------|
| | | PlayMode | EditMode | | |
| Run All | Run Selected | Rerun Failed | Clear Results | Run All Tes | ts (Standalo |
| ٩ | | | Nothing | ▼ √1 | 00 00 |
| PlaymodeTest project Tests.dll PhysicsTestScript GameObject_WithRigidBody_WillBeAffectedByPhysics | | | | | |







| Project | | |
|---|--|--|
| ► ★ Favorites | Assets > HealthBarScene > _Scripts | |
| Assets HealthBarScene Scenes Scripts Images Scenes Packages | # # # # # Image: Constraint of the second s | |
| Assets/HealthBarScene/_Scripts/PlayerAssembly.asmdef | | |

| Test Runner | | | | | | | |
|--|--|--|--|--|--|--|--|
| PlayMode EditMode | | | | | | | |
| Run All Run Selected Rerun Failed Clear Results Run All Tests (StandaloneOSX) | | | | | | | |
| Q Nothing ✓1 ⊘0 ○0 | | | | | | | |
| HealthBar - playmode test project | | | | | | | |
| Tests.dll HealthBarPlayModeTests | | | | | | | |
| TestHealthBarlmageMatchesPlayerHealth | | | | | | | |
| | | | | | | | |
| Test Runner | | | | | | | |
| PlayMode EditMode | | | | | | | |
| Run All Run Selected Rerun Failed Clear Results | | | | | | | |
| Q Nothing ✓ 9 ⊘0 ○0 | | | | | | | |
| 🔻 🗸 HealthBar - playmode test project | | | | | | | |
| ▼ ✓ Tests-editmode.dll | | | | | | | |
| EditModeUnitTests+TestCorrectValues DefaultHealthOne | | | | | | | |
| ✓ HealthCorrectAfterReducedByHalf | | | | | | | |
| <pre>/ HealthCorrectAfterReducedByPointOne</pre> | | | | | | | |
| EditModeUnitTests+TestEvents | | | | | | | |
| CheckEventFiredWhenAddHealth | | | | | | | |
| CheckEventFiredWhenReduceHealth EditModeUnitTests+TestExceptions | | | | | | | |
| Throws_Exception_When_Add_Health_Passed_Less_Than_Zero | | | | | | | |
| Throws_Exception_When_Reduce_Health_Passed_Less_Than_Zero | | | | | | | |
| Throws_Exception_when_Reduce_Health_Passed_Less_Than_Zero V EditModeUnitTests+TestLimitNotExceeded | | | | | | | |
| HealthNotExceedMaximumOfOne | | | | | | | |
| EditModeUnitTests+TestLogging | | | | | | | |
| Throws_Exception_When_Add_Health_Passed_Less_Than_Zero | | | | | | | |

| < Summary | | | | | | |
|--------------------------------|---|---------------------------|----------------|----------------|-------------|--|
| Class: | Player | | | | | |
| Assembly: | PlayerAssembl | | | | | |
| File(s): | /Users/matt/Documents/Books/Unity_cookbook/unity2020_codes/chapter13_testGizmo/PlayMode HealthBar Project/Assets/HealthBarScene/_Scripts/Player.cs | | | | | |
| Covered lines: | 29 | | | | | |
| Uncovered lines: | 3 | | | | | |
| Line coverage: | 90.6% (29 of 32) | | | | | |
| <i>Netrics</i> | Custometic | | Camponia | Percentag | | |
| Method | Cyclomatic complexity 0 | NPath complexity 0 | Sequence cover | Indicates so | ome login | |
| GetHealth() | 0 | 0 | 100% | | | |
| Player() | 0 | 0 | 100% | paths not | tested | |
| AddHealth() | 0 | 0 | 100% | 0% | 0 | |
| ReduceHealth() | 0 | 0 | 70% | 0% | 0 | |
| PublishHealthChange Event() | 0 | 0 | 100% | 0% | 0 | |
| 40 41 pu 6 42 { 6 43 | <pre>blic void ReduceHealt if (amount < 0)</pre> | | | | | |
| 1 44 | throw new Argur | mentOutOfRangeException (| ("amount Lines | not tested hig | nlighted in | |
| 45 | this health -= amount; code listing in HTML report | | | | | |
| 5 46 5 47 | | | | | | |
| 5 47 | if (this.health < MIN_HEALTH) | | | | | |
| 0 48 | <pre>{ this.health = MIN HEALTH;</pre> | | | | | |
| 0 50 | this.nealth = MIN_HEALTH; | | | | | |
| 5 51 | <pre>} PublishHealthChangeEvent();</pre> | | | | | |
| 5 52 7 | | | | | | |
| 53 | | | | | | |

| 🄈 Code Coverage | | | | 0 0 0 |
|-------------------------|--------------|------------------------|---------------|-------------|
| Generate Report | | Clear Results | Clear History | 0 |
| Settinas | | | | |
| Enable Code Coverage | | | | |
| Results Location | /Users/Com | nputer/Documents/ | synch/99_E 📔 | • |
| Report History Location | /Users/Com | nputer/Documents/ | synch/99_E 📔 | • • |
| Included Assemblies | PlayerAsse | mbly,Tests,TestsEditMo | de | • |
| Report Options | | | | |
| HTML Report | | | | |
| Additional Reports | | | | |
| Report History | \checkmark | | | |
| Summary Badges | \checkmark | | | |
| Additional Metrics | | | | |
| Test Runner References | | | | |
| Auto Generate Report | | | | |

| 🖬 Package Manager | | | | | |
|--------------------------------|--------------------|------------------|-----------------|-----------|-----------------|
| + - Packages: Unity Registry - | Sort: Name (asc) 🔻 | Filters 🔻 | Clear Filters | | |
| All Services | | | | | |
| Packages | | Dytho | n Scriptir | na (| Install |
| Python Scripting | 7.0.0 | • | - | | Install |
| | | 7.0.0 · Ma | rch 14, 2023 | Release | |
| | | From Unit | y Registry by | Unity Teo | chnologies Inc. |
| | | com.unity | .scripting.pyth | ion | |

| Python Script Editor Load Save Save & Create Shortcut Execu | te Clear Code Clear Output Clear All |
|--|--------------------------------------|
| Hello World from Python | Output |
| print ('Hello World from Python') | Type code here |

