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Weapon Wheel Generator v1.5

Manual

Table of contents

1. Introduction

This manual will help you set up a weapon wheel from scratch, add input handling, and react to item/weapon selection. To get started, use the step-by-step tutorial in section 2.

The manual also explains everything you need to know about the Weapon Wheel Generator and its properties in the detailed reference guide in section 4.

If you have any questions, you'll find my contact details on the front page of this manual.

A video tutorial for v1.5 is available. It's recommended to watch this the first time you use Weapon Wheel Generator.
https://www.youtube.com/watch?v=89GHjwW0lEw

2. Weapon Wheel step-by-step tutorial

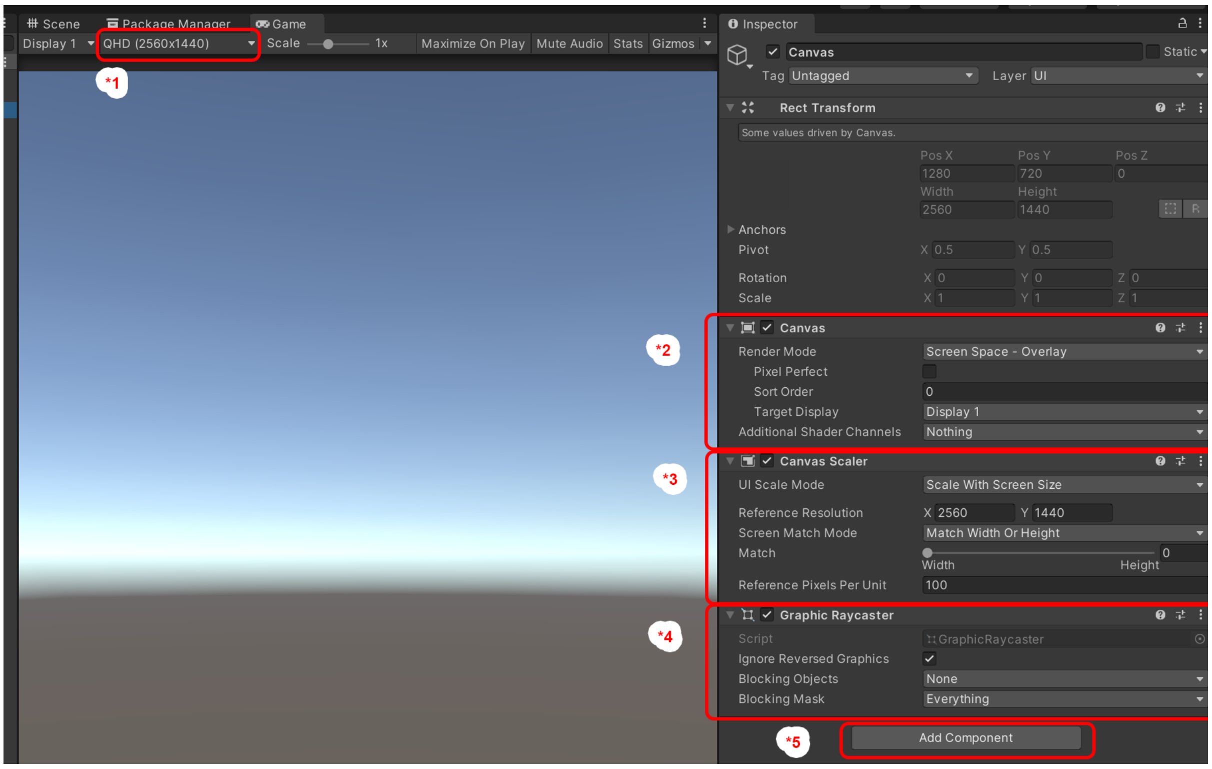
Follow this tutorial to create your first weapon wheel from scratch.

2.1. Set up a canvas

Start by creating a new scene or using an existing one. Create a scene by using the top menu: Assets > Create > Scene. The create menu can also be found by right-clicking in the project view.

In the scene hierarchy, use the plus button in the top left corner and select UI > Canvas to create a canvas. The weapon wheel will be painted/generated on this canvas.

Select the created canvas and look at the inspector.



Display 1 | QHD (2560x1440) | Scale 1x

Canvas | Static
Tag Untagged | Layer UI

Rect Transform
Some values driven by Canvas.
Pos X 1280 | Pos Y 720 | Pos Z 0
Width 2560 | Height 1440
Anchors
Pivot X 0.5 Y 0.5
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

Canvas
Render Mode: Screen Space - Overlay
Pixel Perfect
Sort Order: 0
Target Display: Display 1
Additional Shader Channels: Nothing

Canvas Scaler
UI Scale Mode: Scale With Screen Size
Reference Resolution: X 2560 Y 1440
Screen Match Mode: Match Width Or Height
Match: 0 (Width – Height)
Reference Pixels Per Unit: 100

Graphic Raycaster
Script: GraphicRaycaster
Ignore Reversed Graphics: ✓
Blocking Objects: None
Blocking Mask: Everything

Picture explanations:
***1:** Your game view resolution. If you use a canvas scaler and have a different reference resolution, the Rect Transform will be rescaled and lose some quality. You'll notice it by looking at the Scale values in the Rect Transform component. Quality loss is always the drawback when rescaling images, but the Weapon Wheel Generator is designed to be used with and works well with canvas scalers.

***2:** Your canvas render mode is set here. The Weapon Wheel Generator is intended to be used with an overlay canvas, which is placed in front of everything else.

***3:** As explained in *1, the reference resolution for the canvas scaler is set here. If you prefer to use another UI Scale Mode it's up to you. The reference resolution is the default resolution for the canvas, if the game view has any other resolution the canvas will be rescaled.

***4:** If you want your weapon wheel to be able to react to mouse/touch positions and clicks, a Graphic Raycaster is necessary.

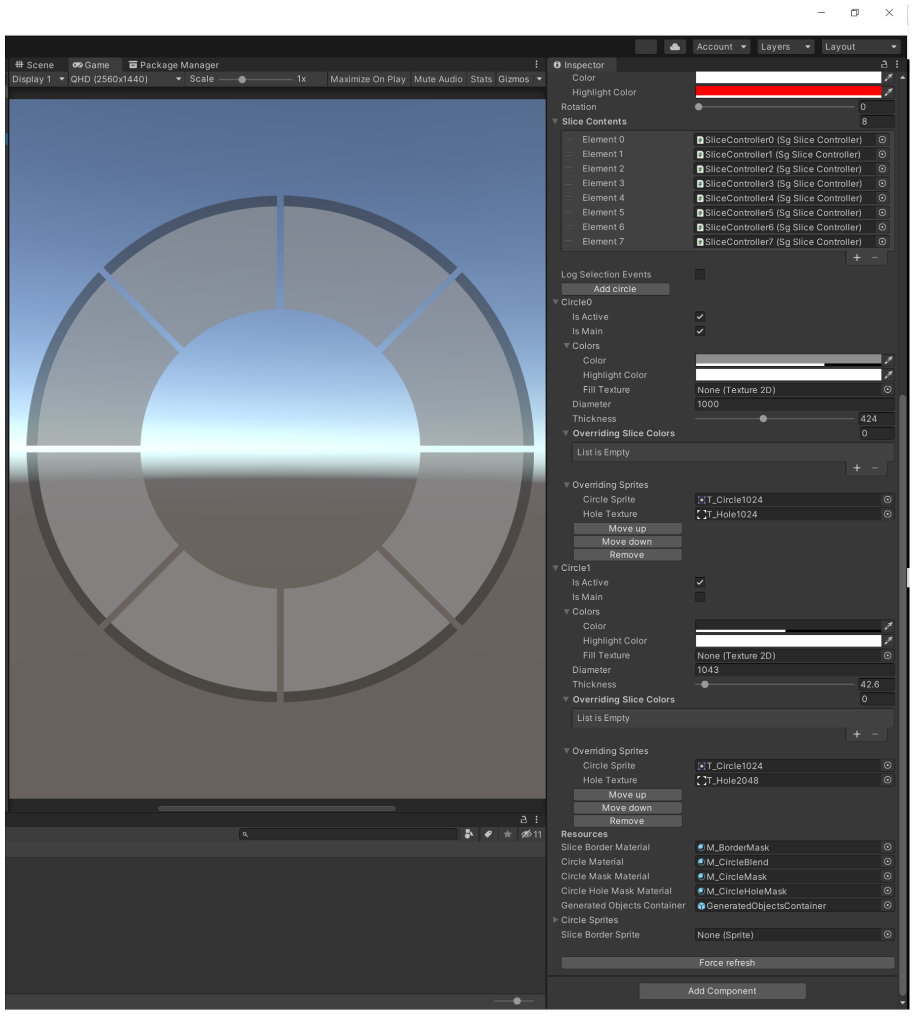
***5:** If you are missing any of these components and want to add them, use the Add Component button. If you for instance want to add a Canvas Scaler, type "Canvas Scaler" in the Add Component's search bar and select the Canvas Scaler.

2.2. Add the Weapon Wheel object

There is a prefab called P_WeaponWheel included in the package's Prefabs folder. By dragging it into the Canvas object in the scene hierarchy you'll create a weapon wheel object that is ready to use. It's also possible to create a new game object and add the

SgWeaponWheel component to it. However, it's recommended to use the prefab to have all the necessary resources connected to it.

Press the "Force refresh" button at the bottom of the component in the inspector to paint the wheel. The first time you do this, you may need to press the button a couple of times to get it right. It should look like the picture below in the game view tab.



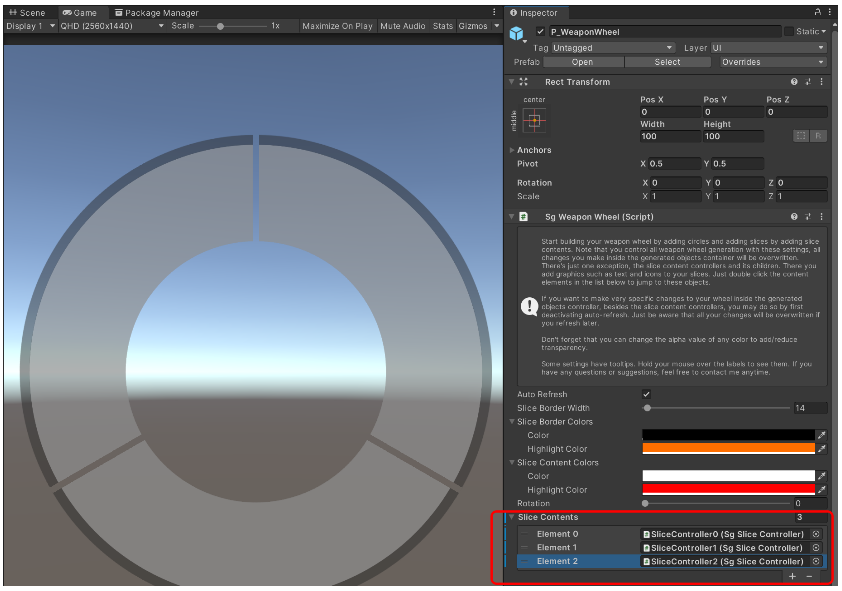
```
Color
Highlight Color
Rotation                      0
Slice Contents                8
  Element 0    SliceController0 (Sg Slice Controller)
  Element 1    SliceController1 (Sg Slice Controller)
  Element 2    SliceController2 (Sg Slice Controller)
  Element 3    SliceController3 (Sg Slice Controller)
  Element 4    SliceController4 (Sg Slice Controller)
  Element 5    SliceController5 (Sg Slice Controller)
  Element 6    SliceController6 (Sg Slice Controller)
  Element 7    SliceController7 (Sg Slice Controller)
Log Selection Events          ☐
Circle0
  Is Active                   ✓
  Is Main                     ✓
  Colors
    Color
    Highlight Color
    Fill Texture              None (Texture 2D)
  Diameter                    1000
  Thickness                   424
  Overriding Slice Colors     0
    List is Empty
  Overriding Sprites
    Circle Sprite             T_Circle1024
    Hole Texture              T_Hole1024
Circle1
  Is Active                   ✓
  Is Main                     ☐
  Colors
    Color
    Highlight Color
    Fill Texture              None (Texture 2D)
  Diameter                    1043
  Thickness                   42.6
  Overriding Slice Colors     0
    List is Empty
  Overriding Sprites
    Circle Sprite             T_Circle1024
    Hole Texture              T_Hole2048
Resources
Slice Border Material         M_BorderMask
Circle Material               M_CircleBlend
Circle Mask Material          M_CircleMask
Circle Hole Mask Material     M_CircleHoleMask
Generated Objects Container   GeneratedObjectsContainer
Circle Sprites
Slice Border Sprite           None (Sprite)
```

If you need detailed explanations of each property in this component, go to section 4.

2.3. Set the number of weapon wheel slices

The weapon wheel currently has 8 slices, but you might need a different number of slices.

Expand Slices > Slice Contents and use the + and - buttons to increase or decrease the number of slices. In the following picture, I have decreased them to 3 slices.



P_WeaponWheel ✓ Static

Tag Untagged Layer UI

Prefab Open Select Overrides

Rect Transform

center / middle	Pos X	Pos Y	Pos Z
	0	0	0
	Width	Height	
	100	100	

Anchors

Pivot X 0.5 Y 0.5

Rotation X 0 Y 0 Z 0

Scale X 1 Y 1 Z 1

Sg Weapon Wheel (Script)

Start building your weapon wheel by adding circles and adding slices by adding slice contents. Note that you control all weapon wheel generation with these settings, all changes you make inside the generated objects container will be overwritten. There's just one exception, the slice content controllers and its children. There you add graphics such as text and icons to your slices. Just double click the content elements in the list below to jump to these objects.

If you want to make very specific changes to your wheel inside the generated objects controller, besides the slice content controllers, you may do so by first deactivating auto-refresh. Just be aware that all your changes will be overwritten if you refresh later.

Don't forget that you can change the alpha value of any color to add/reduce transparency.

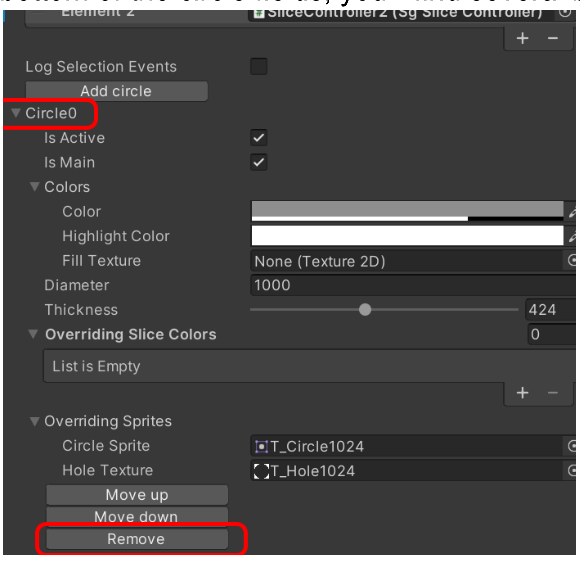
Some settings have tooltips. Hold your mouse over the labels to see them. If you have any questions or suggestions, feel free to contact me anytime.

Auto Refresh	✓
Slice Border Width	14
Slice Border Colors	
Color	⬛
Highlight Color	🟧
Slice Content Colors	
Color	⬜
Highlight Color	🟥
Rotation	0
Slice Contents	3
Element 0	SliceController0 (Sg Slice Controller)
Element 1	SliceController1 (Sg Slice Controller)
Element 2	SliceController2 (Sg Slice Controller)

2.4. Create the main weapon wheel circle

The weapon already has a main circle and an outer border, but to create a weapon wheel from scratch we want to delete the existing ones. Note that both the main circle and outer/inner borders are referred to as independent "circles" and in this example, we already have two of them - the main circle (Circle0) and the outer border (Circle1).

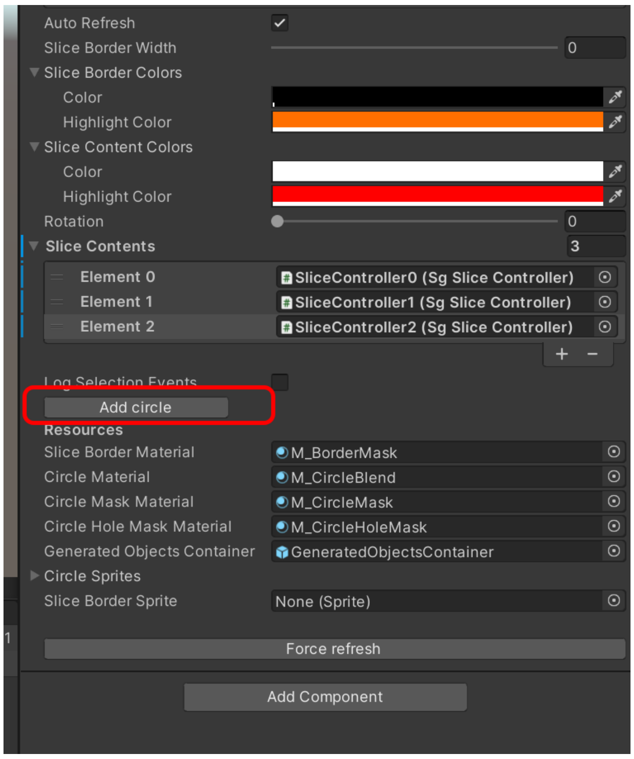
Expand Circles > Circle0 by clicking its label or the arrow to the left of the label. At the bottom of the circle fields, you'll find several buttons. Click "Remove" to remove this circle.



Log Selection Events	
Circle0	
Is Active	✓
Is Main	✓
Colors	
Color	
Highlight Color	⬜
Fill Texture	None (Texture 2D)
Diameter	1000
Thickness	424
Overriding Slice Colors	0
List is Empty	
Overriding Sprites	
Circle Sprite	T_Circle1024
Hole Texture	T_Hole1024

Now the outer border will be the only circle left and will be the new Circle0. Remove this circle too.

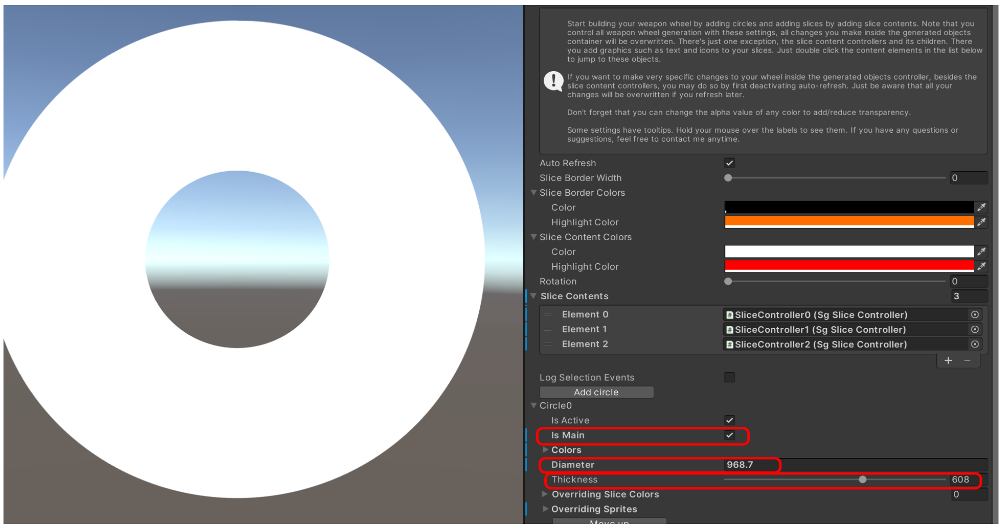
Now we have nothing. Good. Find the "Add Circle" button and press it.



```
Auto Refresh                   ✓
Slice Border Width                                       0
▼ Slice Border Colors
    Color
    Highlight Color
▼ Slice Content Colors
    Color
    Highlight Color
Rotation                                                 0
▼ Slice Contents                                         3
    Element 0                  SliceController0 (Sg Slice Controller)
    Element 1                  SliceController1 (Sg Slice Controller)
    Element 2                  SliceController2 (Sg Slice Controller)
                                                     +  −
Log Selection Events
[Add circle]
Resources
Slice Border Material          M_BorderMask
Circle Material                M_CircleBlend
Circle Mask Material           M_CircleMask
Circle Hole Mask Material      M_CircleHoleMask
Generated Objects Container     GeneratedObjectsContainer
▶ Circle Sprites
Slice Border Sprite            None (Sprite)

[Force refresh]

[Add Component]
```

After pressing the "Add Circle" button we will have a circle again. Since this is our main circle (not a border), it's important that the "Is Main" checkbox is checked. This decides where the slice content such as icons will be put by default later on.

First off, we need to set the circle size and its thickness. Adjust "Diameter" (size) and "Thickness" to the values you want.



Start building your weapon wheel by adding circles and adding slices by adding slice contents. Note that you control all weapon wheel generation with these settings, all changes you make inside the generated objects container will be overwritten. There's just one exception, the slice content controllers and its children. There you add graphics such as text and icons to your slices. Just double click the content elements in the list below to jump to these objects.

If you want to make very specific changes to your wheel inside the generated objects controller, besides the slice content controllers, you may do so by first deactivating auto-refresh. Just be aware that all your changes will be overwritten if you refresh later.

Don't forget that you can change the alpha value of any color to add/reduce transparency.

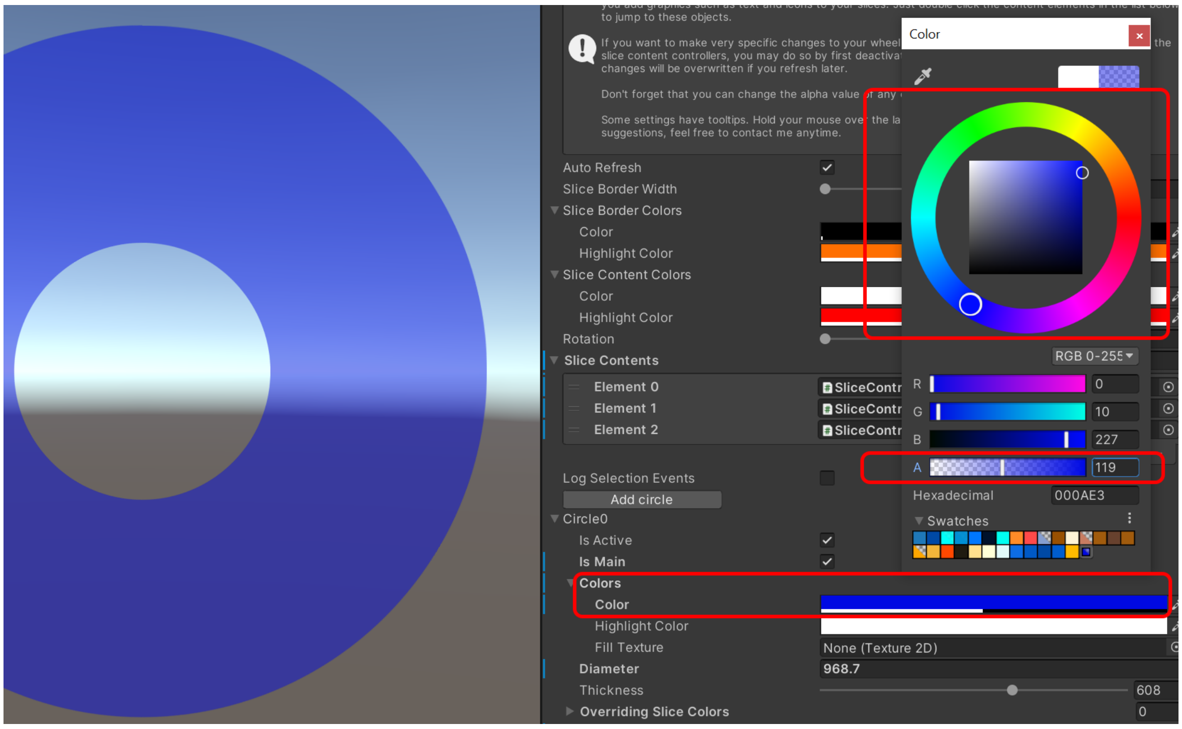
Some settings have tooltips. Hold your mouse over the labels to see them. If you have any questions or suggestions, feel free to contact me anytime.

```
Auto Refresh                   ✓
Slice Border Width                                       0
▼ Slice Border Colors
    Color
    Highlight Color
▼ Slice Content Colors
    Color
    Highlight Color
Rotation                                                 0
▼ Slice Contents                                         3
    Element 0                  SliceController0 (Sg Slice Controller)
    Element 1                  SliceController1 (Sg Slice Controller)
    Element 2                  SliceController2 (Sg Slice Controller)
                                                     +  −
Log Selection Events
[Add circle]
▼ Circle0
    Is Active                  ✓
    Is Main                    ✓
  ▶ Colors
    Diameter                   968.7
    Thickness                                            608
  ▶ Overriding Slice Colors                              0
  ▶ Overriding Sprites
```

2.5. Colorize the main circle

Now we want to give our weapon wheel some colors.

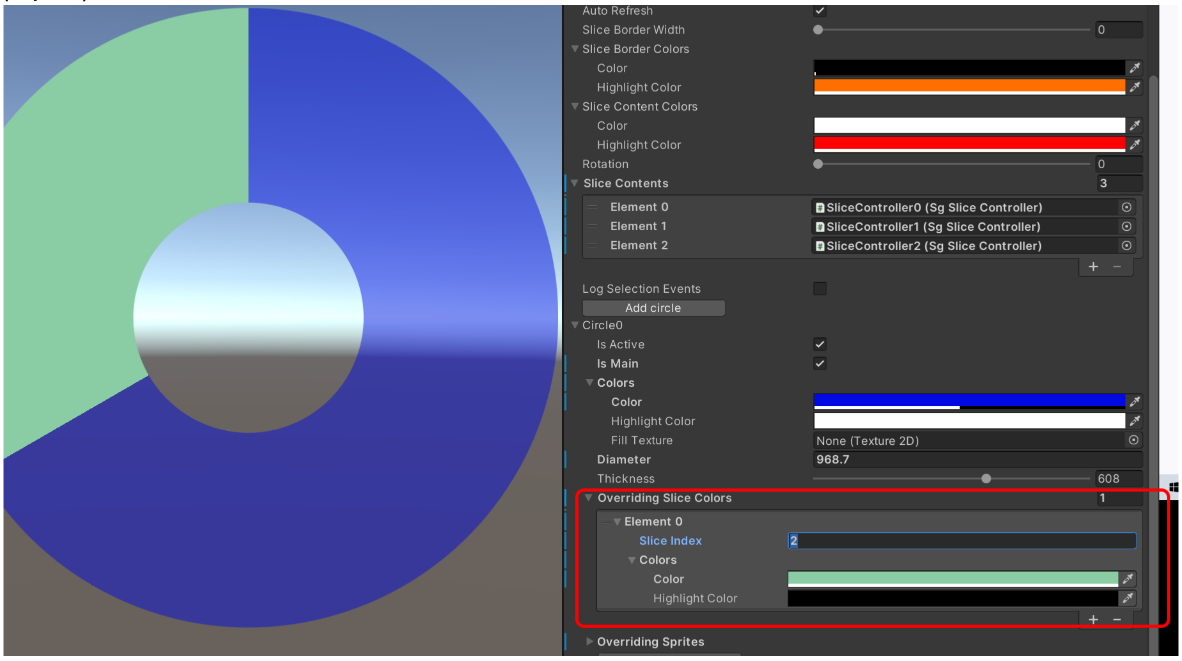
Expand the "Colors" section and click the "Color" field. In the Color window, you set the circle color you want. Note that you can add transparency by adjusting the A (alpha) value.



```
to jump to these objects.

If you want to make very specific changes to your wheel
slice content controllers, you may do so by first deactiva
changes will be overwritten if you refresh later.

Don't forget that you can change the alpha value of any

Some settings have tooltips. Hold your mouse over the la
suggestions, feel free to contact me anytime.

Auto Refresh              ✓
Slice Border Width
▼ Slice Border Colors
    Color
    Highlight Color
▼ Slice Content Colors
    Color
    Highlight Color
Rotation
▼ Slice Contents
    Element 0             SliceContr
    Element 1             SliceContr
    Element 2             SliceContr

Log Selection Events
[Add circle]
▼ Circle0
    Is Active             ✓
    Is Main               ✓
  ▼ Colors
      Color
      Highlight Color
      Fill Texture        None (Texture 2D)
    Diameter              968.7
    Thickness                                   608
  ▶ Overriding Slice Colors                     0

Color
RGB 0-255
R   0
G   10
B   227
A   119
Hexadecimal   000AE3
▼ Swatches
```

2.6. Colorize individual slices

If you wish that one slice has a different color, expand the "Overriding Slice Colors" section. In the Slice Index field, set 0 if you want to edit the first slice, 1 if you want to edit the second slice, and so on. Press the "Color" field to edit the color and don't forget to increase the A (alpha) value.

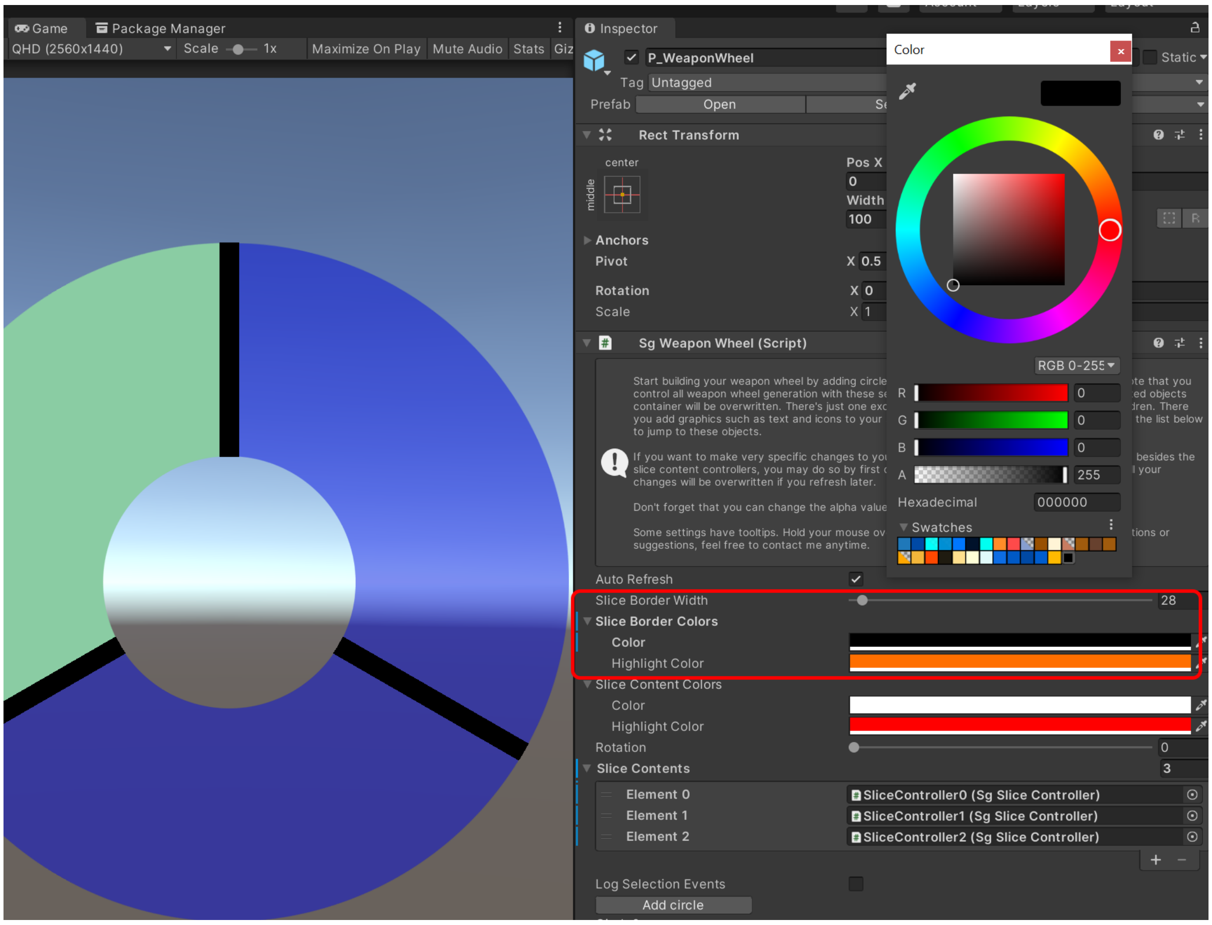


```
Auto Refresh              ✓
Slice Border Width                              0
▼ Slice Border Colors
    Color
    Highlight Color
▼ Slice Content Colors
    Color
    Highlight Color
Rotation                                        0
▼ Slice Contents                                3
    Element 0             SliceController0 (Sg Slice Controller)
    Element 1             SliceController1 (Sg Slice Controller)
    Element 2             SliceController2 (Sg Slice Controller)
                                                + −
Log Selection Events
[Add circle]
▼ Circle0
    Is Active             ✓
    Is Main               ✓
  ▼ Colors
      Color
      Highlight Color
      Fill Texture        None (Texture 2D)
    Diameter              968.7
    Thickness                                   608
  ▼ Overriding Slice Colors                     1
    ▼ Element 0
        Slice Index       2
      ▼ Colors
          Color
          Highlight Color
                                                + −
  ▶ Overriding Sprites
```

2.7. Create slice margins or borders

To separate the slices from each other, we need slice borders. These affect all circles, both the main circle and the outer/inner borders.

At the top of the Sg Weapon Wheel component, you'll find the slice border options. Adjust "Slice Border Width" to set the width of the borders and expand "Slice Border Colors" for color settings. If you set the A (alpha) value of the color to 0 the slice borders will be completely invisible and act as slice margins instead.



Pivot X 0.5
Rotation X 0
Scale X 1

Sg Weapon Wheel (Script)

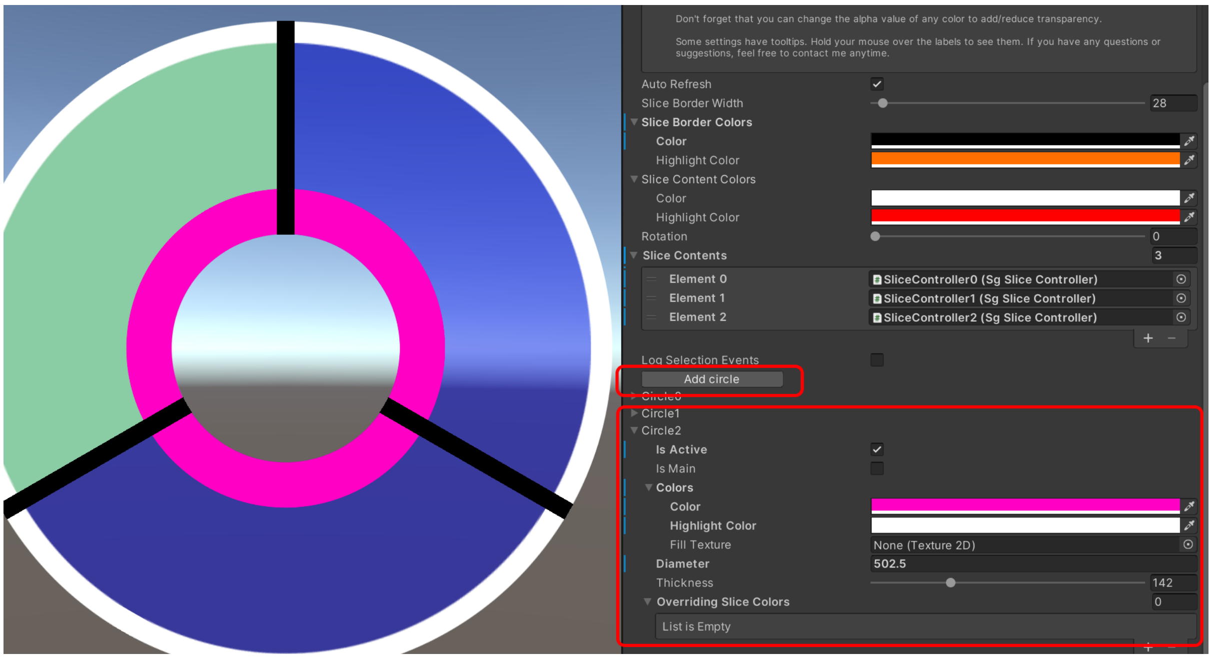
RGB 0-255
R 0
G 0
B 0
A 255
Hexadecimal 000000

Auto Refresh ✓
Slice Border Width 28
Slice Border Colors
Color
Highlight Color
Slice Content Colors
Color
Highlight Color
Rotation 0
Slice Contents 3
Element 0 SliceController0 (Sg Slice Controller)
Element 1 SliceController1 (Sg Slice Controller)
Element 2 SliceController2 (Sg Slice Controller)
Log Selection Events
Add circle

2.8. Add outer and inner borders

To add an outer or inner border, press the "Add Circle" button we previously used to create the main circle. Border circles should have the "Is Main" option unchecked.

You configure the outer/inner borders exactly the same way as the main circle. For the outer border, set a larger Diameter than the main circle has. For the inner border, set a smaller diameter than the main circle has. Then set the colors you like by expanding the "Colors" section.



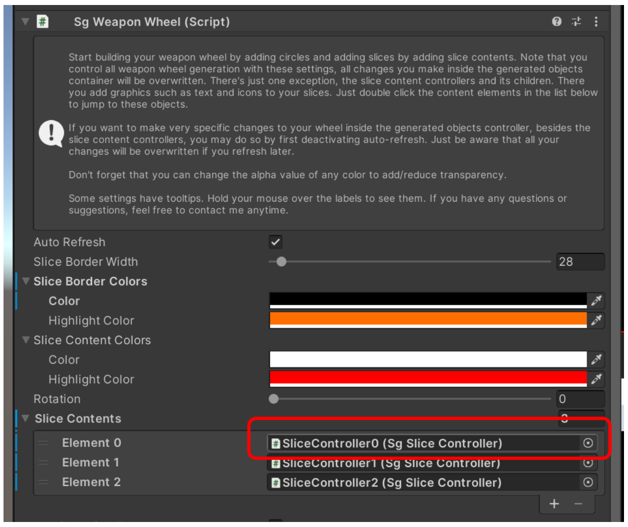
Don't forget that you can change the alpha value of any color to add/reduce transparency.

Some settings have tooltips. Hold your mouse over the labels to see them. If you have any questions or suggestions, feel free to contact me anytime.

```
Auto Refresh                 ✓
Slice Border Width                          28
▼ Slice Border Colors
    Color
    Highlight Color
▼ Slice Content Colors
    Color
    Highlight Color
Rotation                                    0
▼ Slice Contents                            3
    Element 0    SliceController0 (Sg Slice Controller)
    Element 1    SliceController1 (Sg Slice Controller)
    Element 2    SliceController2 (Sg Slice Controller)
Log Selection Events
[Add circle]
▶ Circle0
▶ Circle1
▼ Circle2
    Is Active                ✓
    Is Main
    ▼ Colors
        Color
        Highlight Color
        Fill Texture         None (Texture 2D)
    Diameter                 502.5
    Thickness                                142
    ▼ Overriding Slice Colors                0
        List is Empty
```

2.9. Add icon and text to a slice

Now we want to add some icons and text to our slices. To do this, we need to find SgSliceController objects in the hierarchy. The easiest way to do this is by double-clicking an element in the Slices > Slice Contents sections.



Sg Weapon Wheel (Script)

Start building your weapon wheel by adding circles and adding slices by adding slice contents. Note that you control all weapon wheel generation with these settings, all changes you make inside the generated objects container will be overwritten. There's just one exception, the slice content controllers and its children. There you add graphics such as text and icons to your slices. Just double click the content elements in the list below to jump to these objects.

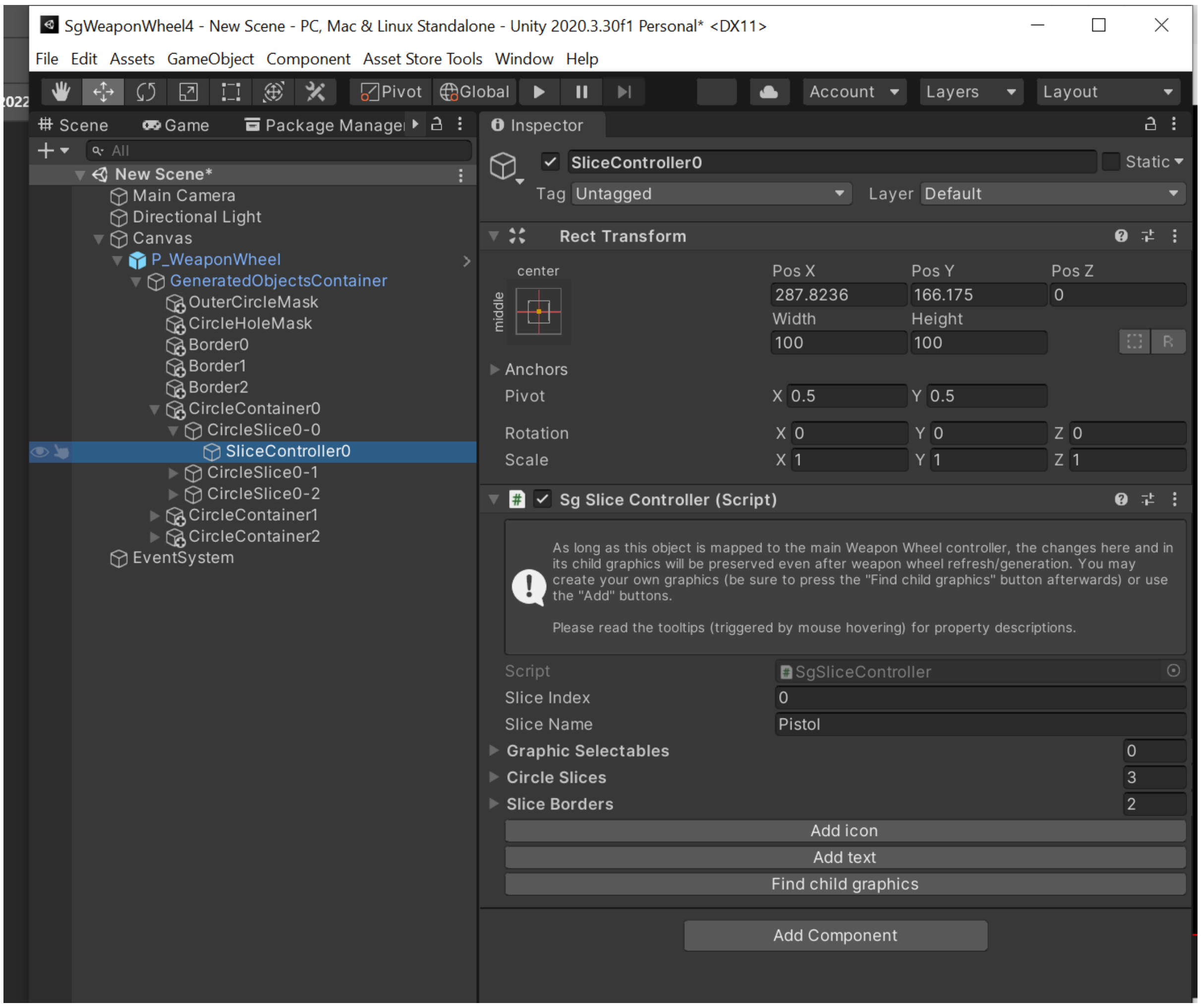
If you want to make very specific changes to your wheel inside the generated objects controller, besides the slice content controllers, you may do so by first deactivating auto-refresh. Just be aware that all your changes will be overwritten if you refresh later.

Don't forget that you can change the alpha value of any color to add/reduce transparency.

Some settings have tooltips. Hold your mouse over the labels to see them. If you have any questions or suggestions, feel free to contact me anytime.

```
Auto Refresh                 ✓
Slice Border Width                          28
▼ Slice Border Colors
    Color
    Highlight Color
▼ Slice Content Colors
    Color
    Highlight Color
Rotation                                    0
▼ Slice Contents                            3
    Element 0    SliceController0 (Sg Slice Controller)
    Element 1    SliceController1 (Sg Slice Controller)
    Element 2    SliceController2 (Sg Slice Controller)
```

The Sg Slice Controller controls unique slice content, like icons and text. You can give your slice a name in the Slice Name field. In this case, the slice will contain a pistol so I have named it "Pistol"



SliceController0 Static

Tag Untagged Layer Default

Rect Transform

center / middle

Pos X 287.8236 Pos Y 166.175 Pos Z 0

Width 100 Height 100

Anchors

Pivot X 0.5 Y 0.5

Rotation X 0 Y 0 Z 0

Scale X 1 Y 1 Z 1

Sg Slice Controller (Script)

As long as this object is mapped to the main Weapon Wheel controller, the changes here and in its child graphics will be preserved even after weapon wheel refresh/generation. You may create your own graphics (be sure to press the "Find child graphics" button afterwards) or use the "Add" buttons.

Please read the tooltips (triggered by mouse hovering) for property descriptions.

Script SgSliceController

Slice Index 0

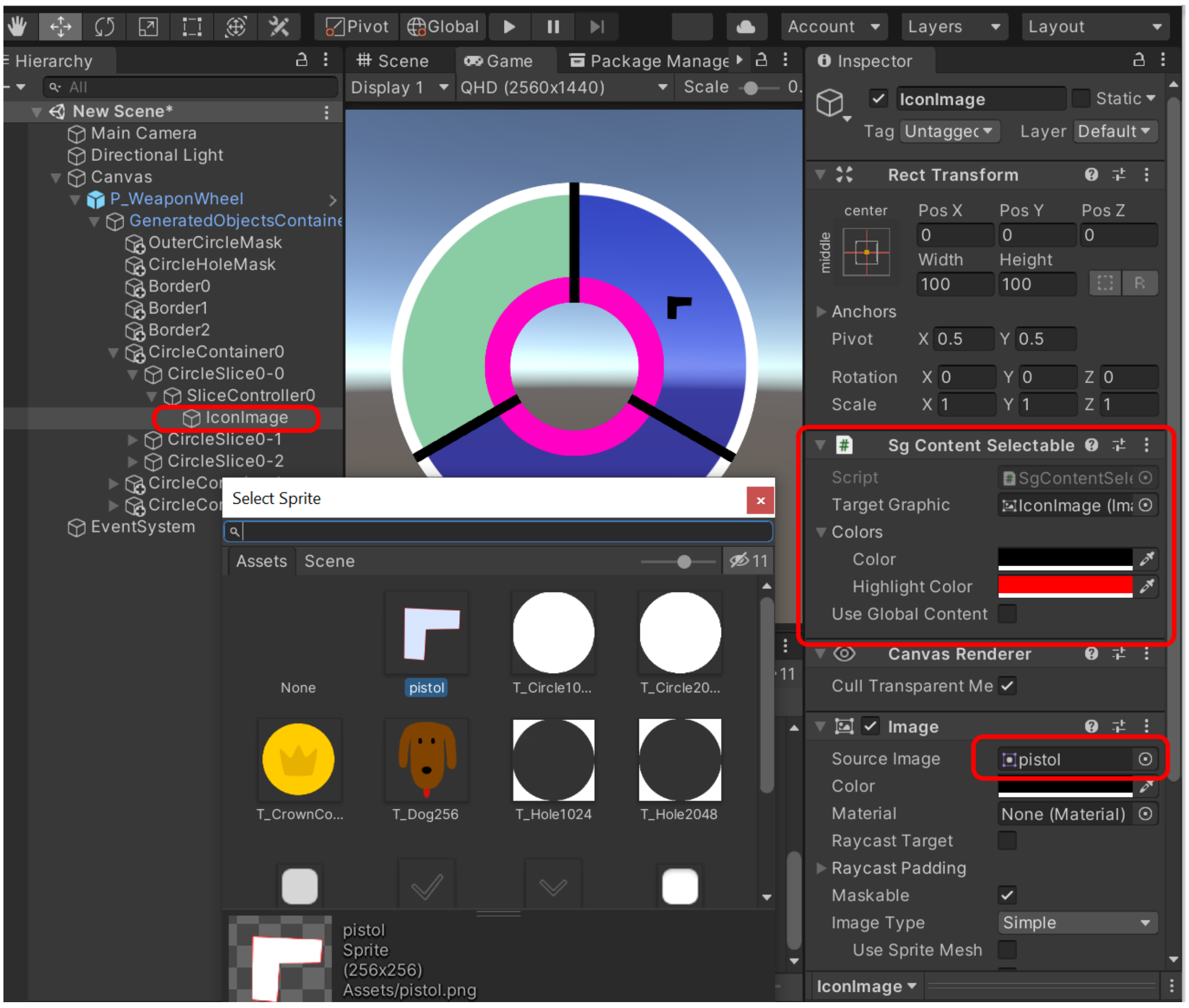
Slice Name Pistol

Graphic Selectables 0

Circle Slices 3

Slice Borders 2

In Sg Slice Controller you also find some buttons. Press the "Add icon" button to add an icon. In the scene hierarchy, the Slice Controller object now will have a new child object with two important components attached to it: SgContentSelectable and Image.



pistol
Sprite
(256x256)
Assets/pistol.png

IconImage ✓ Static
Tag Untagged Layer Default

Rect Transform
center / middle
Pos X 0 Pos Y 0 Pos Z 0
Width 100 Height 100
Anchors
Pivot X 0.5 Y 0.5
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

Sg Content Selectable
Script SgContentSel
Target Graphic IconImage (Im
Colors
Color ⬛
Highlight Color 🟥
Use Global Content ☐

Canvas Renderer
Cull Transparent Me ✓

Image ✓
Source Image pistol
Color ⬛
Material None (Material)
Raycast Target ☐
Raycast Padding
Maskable ✓
Image Type Simple
Use Sprite Mesh ☐

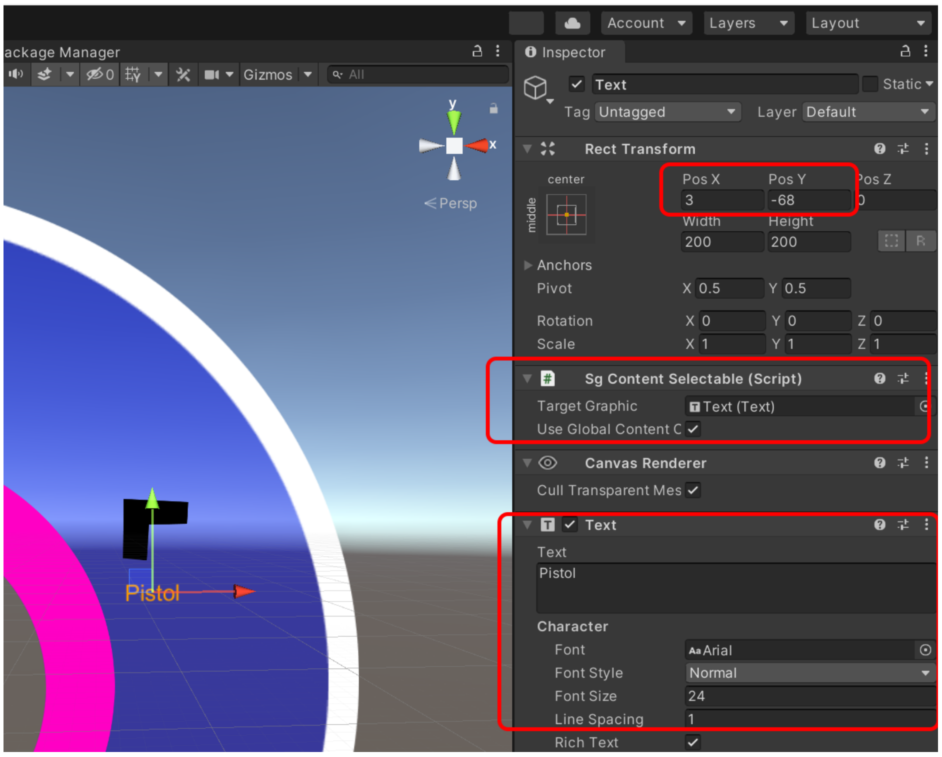
IconImage

In the Image component, pick an image of choice as "Source Image". Now you can decide if you want this image to use the color settings from the parent Weapon Wheel object or if you want to use unique colors for this specific icon. In this case, I want to use specific colors, and therefore I have unchecked the "Use Global Content Colors" option in the Sg Content Selectable component.

Set "Width" and "Height" in the Rect Transform component to resize your image. Note that the size of the imported image should be close to the width and height you set here to avoid losing quality. In my example, the Rect Transform width and height are 100x100 and ideally, the imported image should have the size 128x128 or 100x100.

Don't forget that when you import your own textures, you need to set "Sprite (2D and UI)" as "Texture Type" in the Texture Import Settings to be able to use them in the (UI) Image component.

To add text, press the "Add text" button on the slice's Sg Slice Controller. In this case, I've changed the offset on the text's Rect Transform component and decided to use the parent's content color settings by checking the "Use Global Content Colors" checkbox. To change the color of this text element and any other graphic component where "Use Global Content Colors" is enabled, change Content Colors on the main Sg Weapon Wheel object.



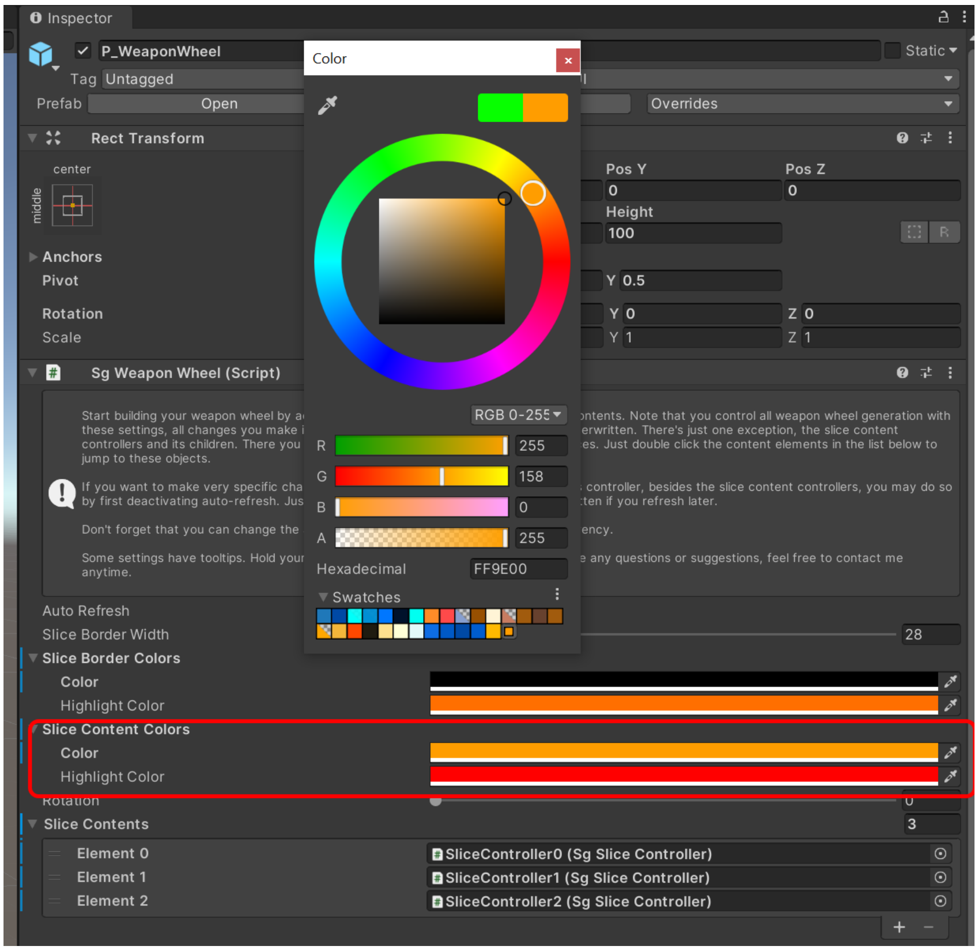
Text Static
Tag Untagged Layer Default

Rect Transform
center
middle
Pos X 3 Pos Y -68 Pos Z 0
Width 200 Height 200
Anchors
Pivot X 0.5 Y 0.5
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

Sg Content Selectable (Script)
Target Graphic Text (Text)
Use Global Content C ✓

Canvas Renderer
Cull Transparent Mes ✓

Text
Text
Pistol
Character
Font Arial
Font Style Normal
Font Size 24
Line Spacing 1
Rich Text ✓



P_WeaponWheel Static
Tag Untagged
Prefab Open Overrides

Rect Transform
center
middle
Pos Y 0 Pos Z 0
Height 100
Anchors
Pivot Y 0.5
Rotation Y 0 Z 0
Scale Y 1 Z 1

Sg Weapon Wheel (Script)

Start building your weapon wheel by a… …ntents. Note that you control all weapon wheel generation with these settings, all changes you make i… …erwritten. There's just one exception, the slice content controllers and its children. There you… …es. Just double click the content elements in the list below to jump to these objects.

If you want to make very specific cha… …controller, besides the slice content controllers, you may do so by first deactivating auto-refresh. Jus… …ten if you refresh later.

Don't forget that you can change the … …ency.

Some settings have tooltips. Hold your… …e any questions or suggestions, feel free to contact me anytime.

R 255
G 158
B 0
A 255
Hexadecimal FF9E00

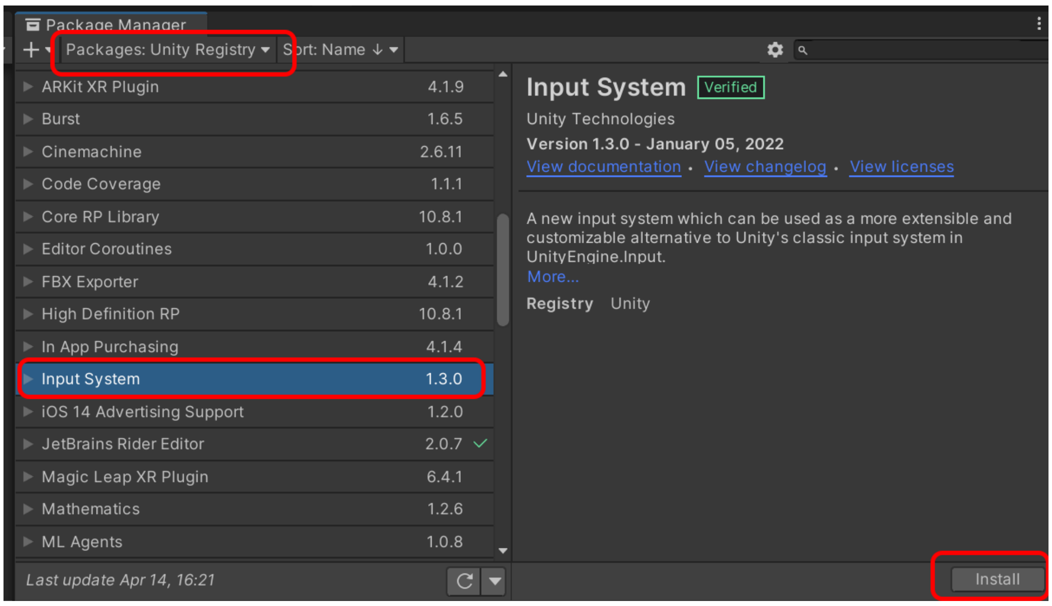
Auto Refresh
Slice Border Width 28
Slice Border Colors
Color
Highlight Color
Slice Content Colors
Color
Highlight Color
Rotation 0
Slice Contents 3
Element 0 SliceController0 (Sg Slice Controller)
Element 1 SliceController1 (Sg Slice Controller)
Element 2 SliceController2 (Sg Slice Controller)

You can add graphic elements manually, but then you also need to refresh the weapon wheel manually on the base weapon wheel object afterward.

3. Input handling step-by-step tutorial

3.1. Input preparations

If you want to use the new input system, you first need to install it. Open up the package manager: Window > Package Manager.


Package Manager

Packages: Unity Registry ▾ Sort: Name ↓ ▾

ARKit XR Plugin	4.1.9
Burst	1.6.5
Cinemachine	2.6.11
Code Coverage	1.1.1
Core RP Library	10.8.1
Editor Coroutines	1.0.0
FBX Exporter	4.1.2
High Definition RP	10.8.1
In App Purchasing	4.1.4
Input System	1.3.0
iOS 14 Advertising Support	1.2.0
JetBrains Rider Editor	2.0.7 ✓
Magic Leap XR Plugin	6.4.1
Mathematics	1.2.6
ML Agents	1.0.8

Last update Apr 14, 16:21

Input System Verified

Unity Technologies

Version 1.3.0 - January 05, 2022

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A new input system which can be used as a more extensible and customizable alternative to Unity's classic input system in UnityEngine.Input.
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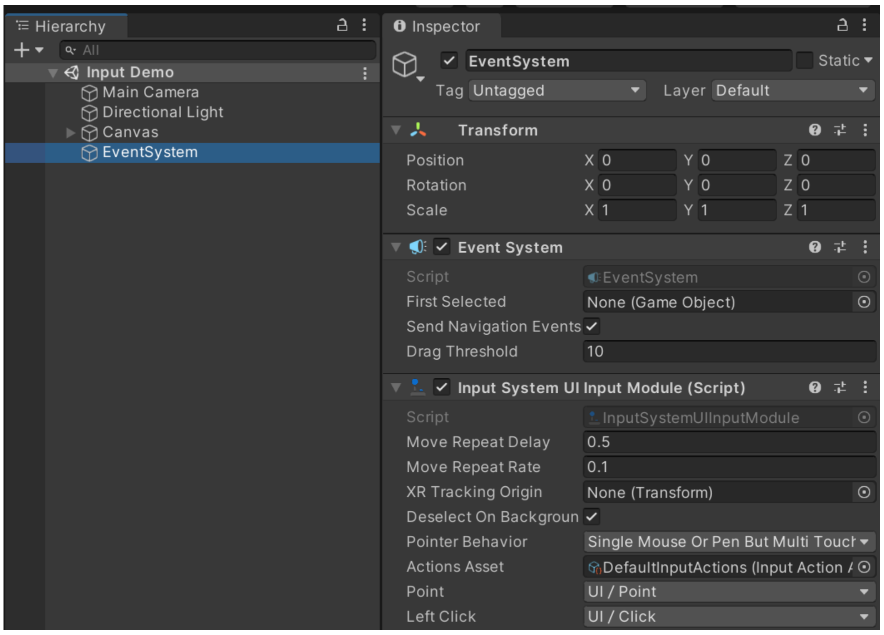
To be able to detect mouse position and clicks, make sure your scene has an Event System. If not, create it from the scene hierarchy: UI > Event System. There may be an error message stating that the Event System is adapted to the old input system. Just press the button to upgrade the Event System.


Hierarchy

- Input Demo
  - Main Camera
  - Directional Light
  - Canvas
  - EventSystem

Inspector

EventSystem ✓ Static ▾
Tag Untagged Layer Default

Transform

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

Event System ✓

Script	EventSystem
First Selected	None (Game Object)
Send Navigation Events	✓
Drag Threshold	10

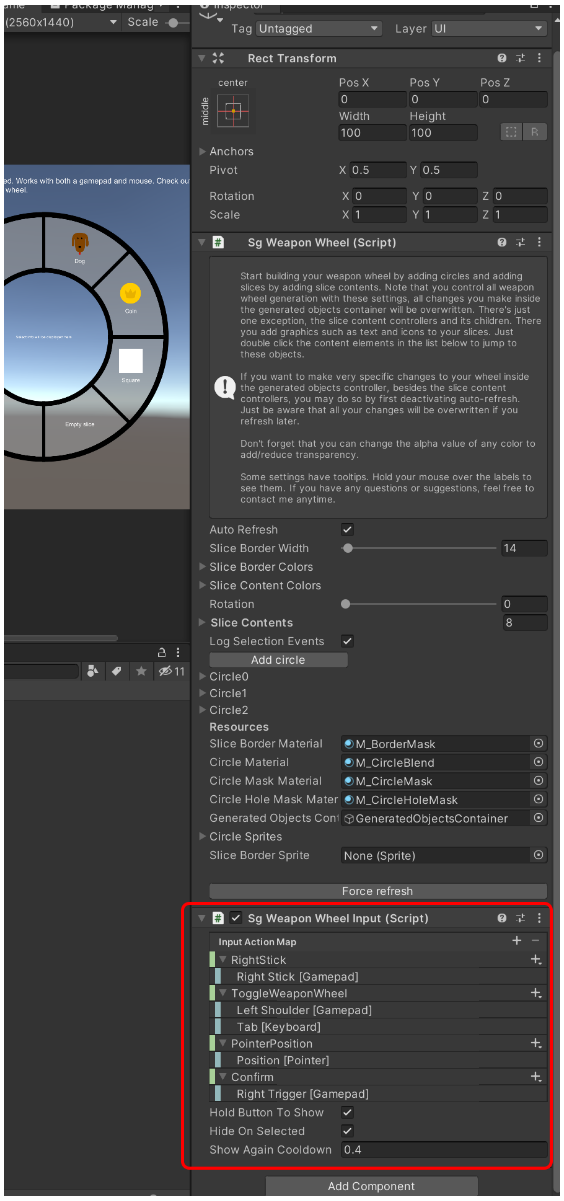
Input System UI Input Module (Script) ✓

Script	InputSystemUIInputModule
Move Repeat Delay	0.5
Move Repeat Rate	0.1
XR Tracking Origin	None (Transform)
Deselect On Backgroun	✓
Pointer Behavior	Single Mouse Or Pen But Multi Touch
Actions Asset	DefaultInputActions (Input Action
Point	UI / Point
Left Click	UI / Click

It's important that you don't have any UI elements that block the weapon wheel. Let's say you have a UI Text element in the scene that stretches over the entire canvas, it needs to have "Raycast Target" unchecked if the element is in front of the weapon wheel.

3.2. Integrating with the "new" Input System

If starting from scratch, you can drag the prefab found in ShellanderGames/WeaponWheel/InputExtension/Prefabs into the canvas in the scene hierarchy. If you already have an Sg Weapon Wheel object, add the Sg Weapon Wheel Input component to it. If you choose the latter option and want the preconfigured input handling, you can open up the P_WeaponWheelInput prefab and copy its Sg Weapon Wheel Input component.



```
Tag Untagged            Layer UI

Rect Transform
center        Pos X   Pos Y   Pos Z
middle        0       0       0
              Width   Height
              100     100
Anchors
Pivot         X 0.5   Y 0.5
Rotation      X 0     Y 0     Z 0
Scale         X 1     Y 1     Z 1

Sg Weapon Wheel (Script)
```

Start building your weapon wheel by adding circles and adding slices by adding slice contents. Note that you control all weapon wheel generation with these settings, all changes you make inside the generated objects container will be overwritten. There's just one exception, the slice content controllers and its children. There you add graphics such as text and icons to your slices. Just double click the content elements in the list below to jump to these objects.

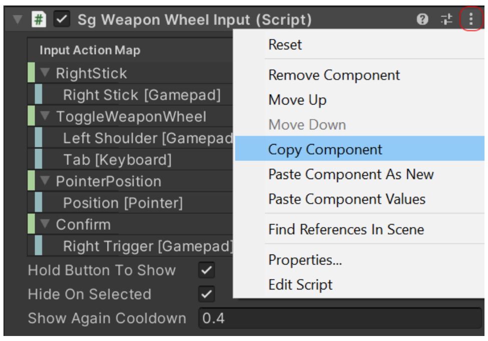
If you want to make very specific changes to your wheel inside the generated objects controller, besides the slice content controllers, you may do so by first deactivating auto-refresh. Just be aware that all your changes will be overwritten if you refresh later.

Don't forget that you can change the alpha value of any color to add/reduce transparency.

Some settings have tooltips. Hold your mouse over the labels to see them. If you have any questions or suggestions, feel free to contact me anytime.

```
Auto Refresh                ✓
Slice Border Width          14
Slice Border Colors
Slice Content Colors
Rotation                    0
Slice Contents              8
Log Selection Events        ✓
Circle0
Circle1
Circle2
Resources
Slice Border Material       M_BorderMask
Circle Material             M_CircleBlend
Circle Mask Material        M_CircleMask
Circle Hole Mask Mater      M_CircleHoleMask
Generated Objects Cont      GeneratedObjectsContainer
Circle Sprites
Slice Border Sprite         None (Sprite)

Sg Weapon Wheel Input (Script)
Input Action Map
  RightStick
    Right Stick [Gamepad]
  ToggleWeaponWheel
    Left Shoulder [Gamepad]
    Tab [Keyboard]
  PointerPosition
    Position [Pointer]
  Confirm
    Right Trigger [Gamepad]
Hold Button To Show         ✓
Hide On Selected            ✓
Show Again Cooldown         0.4
```



```
Sg Weapon Wheel Input (Script)
Input Action Map
  RightStick
    Right Stick [Gamepad]
  ToggleWeaponWheel
    Left Shoulder [Gamepad
    Tab [Keyboard]
  PointerPosition
    Position [Pointer]
  Confirm
    Right Trigger [Gamepad]
Hold Button To Show         ✓
Hide On Selected            ✓
Show Again Cooldown         0.4
```

In the Sg Weapon Wheel Input component, you specify which buttons to use. By default, in the prefab, the input actions are configured like the picture above. All the actions you want to be enabled must be named exactly like that (RightStick, ToggleWeaponWheel, PointerPosition, Confirm), otherwise, they won't work unless you edit the script.

You can of course use whatever bindings you want. If you for instance want to toggle the weapon wheel by pressing the shift key instead of the tab key, you can change it by double-clicking the tab binding. If there is any input you don't need, you can simply delete the action.

That's about it actually. Run the game and the input handling should work for both mouse and gamepad. By default, you need to hold down the assigned ToggleWeaponWheel key (e.g. tab) to show the wheel, but this can be changed to toggling by unchecking the "Hold Button To Show" option.

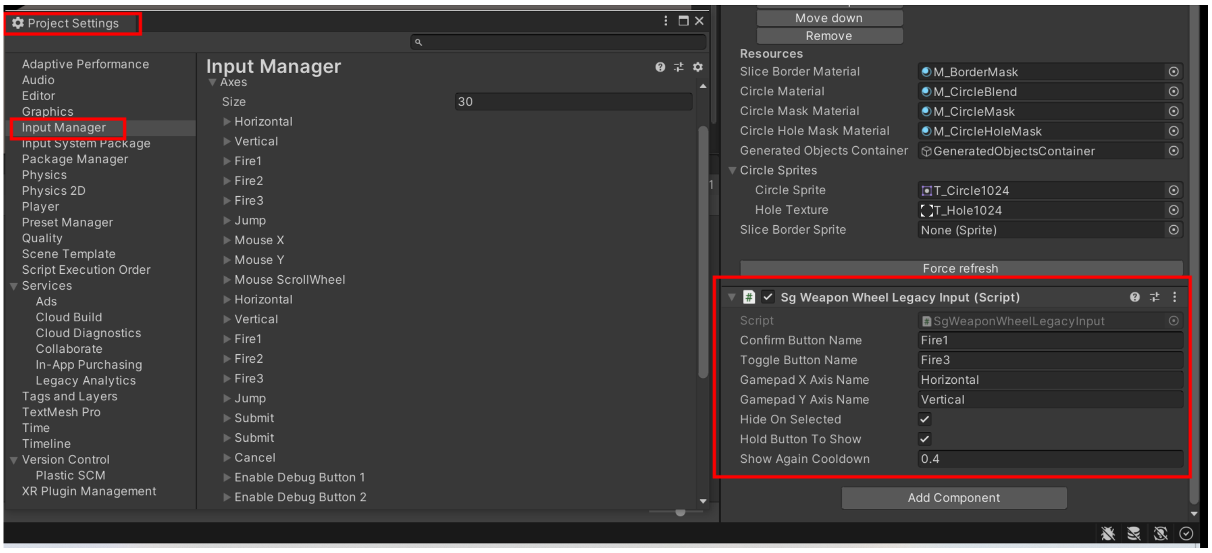
The reason why you don't need to specify a click button here is that the SgSliceController.cs script creates EventTrigger components at runtime. Click button is specified in the Event System.

For a detailed description of each Sg Weapon Wheel Input property, see section 4.

3.3. Integrating with the old input system

To use the old input system, you still need an Event System in your scene. Add it as we did in section 3.1.

Now you just need to add the Sg Weapon Wheel Legacy Input component to your main weapon wheel object and enter the input names you want to use. What buttons and axes these input names correspond to are configured in the Input Manager in the Project Settings.



Input Manager
Axes
Size 30
Horizontal
Vertical
Fire1
Fire2
Fire3
Jump
Mouse X
Mouse Y
Mouse ScrollWheel
Horizontal
Vertical
Fire1
Fire2
Fire3
Jump
Submit
Submit
Cancel
Enable Debug Button 1
Enable Debug Button 2

Resources

Slice Border Material	M_BorderMask
Circle Material	M_CircleBlend
Circle Mask Material	M_CircleMask
Circle Hole Mask Material	M_CircleHoleMask
Generated Objects Container	GeneratedObjectsContainer
Circle Sprites	
Circle Sprite	T_Circle1024
Hole Texture	T_Hole1024
Slice Border Sprite	None (Sprite)

Sg Weapon Wheel Legacy Input (Script)

Script	SgWeaponWheelLegacyInput
Confirm Button Name	Fire1
Toggle Button Name	Fire3
Gamepad X Axis Name	Horizontal
Gamepad Y Axis Name	Vertical
Hide On Selected	✓
Hold Button To Show	✓
Show Again Cooldown	0.4

3.4. Listen and react to select changes

To react to weapon wheel changes you need to attach an Action to the SgWeaponWheel component. Below is a simple example.

```
using ShellanderGames.WeaponWheel;
using UnityEngine;

public class WeaponWheelChangeListener : MonoBehaviour
{
      public SgWeaponWheel weaponWheel;

    void Start()
    {
        if(weaponWheel == null) {
              //Find a weapon wheel component if one has not been
attached in the inspector
              weaponWheel = FindObjectOfType<SgWeaponWheel>();
        }

        //Tell the weapon wheel that when an weapon wheel event occurs,
the WeaponWheelEventCallback method below should be called
        weaponWheel.AddEventCallback(WeaponWheelEventCallback);
    }

    //The method that will be called every time a weapon wheel event
occurs
    void WeaponWheelEventCallback(SgWeaponWheelEvent wheelEvent) {
        //Handle each SgWeaponWheelEventType differently
        switch (wheelEvent.type) {
              case SgWeaponWheelEventType.Dehighlight:
                    Debug.Log("Item "+wheelEvent.slice.sliceIndex+" was
unhighlighted");
                    break;
              case SgWeaponWheelEventType.Highlight:
                    Debug.Log("Item " + wheelEvent.slice.sliceIndex + "
was highlighted");
                    break;

              //The most important event. A weapon has been selected
              case SgWeaponWheelEventType.Select:
                    Debug.Log("Item " + wheelEvent.slice.sliceIndex + "
was selected");
                    //Call a method that handles weapon changing
                    ChangeWeapon(wheelEvent.slice.sliceName);
                    break;
```

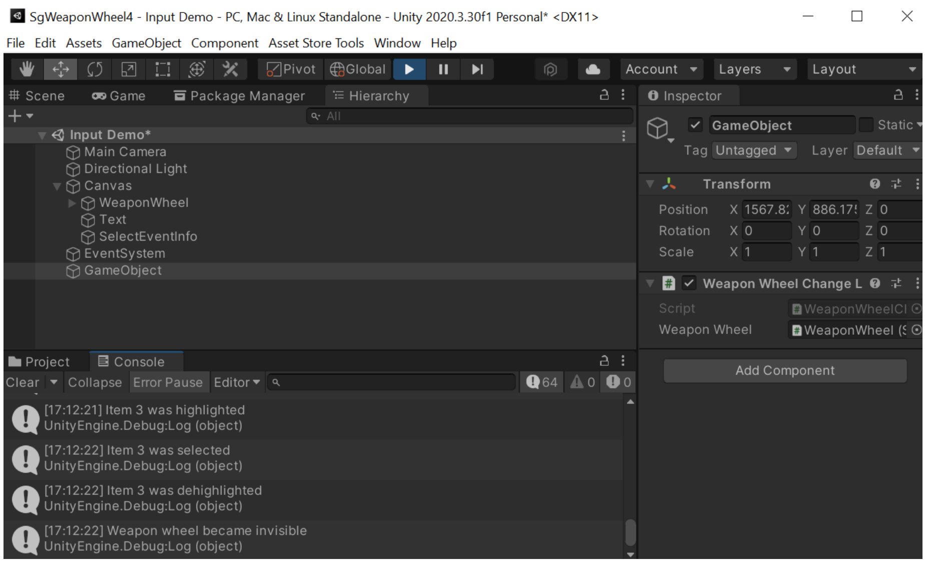
```
             case SgWeaponWheelEventType.WheelVisible:
                   Debug.Log("Weapon wheel became visible");
                   break;
             case SgWeaponWheelEventType.WheelInvisible:
                   Debug.Log("Weapon wheel became invisible");
                   break;
       }
    }

    void ChangeWeapon(string weaponName) {
       //Add your change weapon code here
       if(weaponName == "shotgun") {
            //...
       } else if(weaponName == "pistol") {
            //...
       }
    }
}
```

Unfortunately I cannot include any example on how to change weapons in your game since it's a very specific task. It all depends on how you have set up your weapon handling. However, there is a simple weapon manager implementation in this demo scene: InputExtension/Scenes/Weapon Manager

To test this example, create a new script called WeaponWheelChangeListener (.cs), copy the code to that file, and then attach the component to any game object in your scene.

Don't forget to add slice names to your weapons/items as explained in section 2.9.


SgWeaponWheel4 - Input Demo - PC, Mac & Linux Standalone - Unity 2020.3.30f1 Personal* <DX11>
File Edit Assets GameObject Component Asset Store Tools Window Help
Pivot Global
Account Layers Layout
Scene Game Package Manager Hierarchy
Inspector
Project Console
Clear Collapse Error Pause Editor
Add Component

```
Input Demo*
  Main Camera
  Directional Light
  Canvas
    WeaponWheel
    Text
    SelectEventInfo
  EventSystem
  GameObject
```

```
GameObject                       Static
Tag Untagged     Layer Default
Transform
Position   X 1567.8:  Y 886.17!  Z 0
Rotation   X 0        Y 0        Z 0
Scale      X 1        Y 1        Z 1
Weapon Wheel Change L
Script         WeaponWheelCl
Weapon Wheel   WeaponWheel (
```

```
64  0  0
[17:12:21] Item 3 was highlighted
UnityEngine.Debug:Log (object)
[17:12:22] Item 3 was selected
UnityEngine.Debug:Log (object)
[17:12:22] Item 3 was dehighlighted
UnityEngine.Debug:Log (object)
[17:12:22] Weapon wheel became invisible
UnityEngine.Debug:Log (object)
```

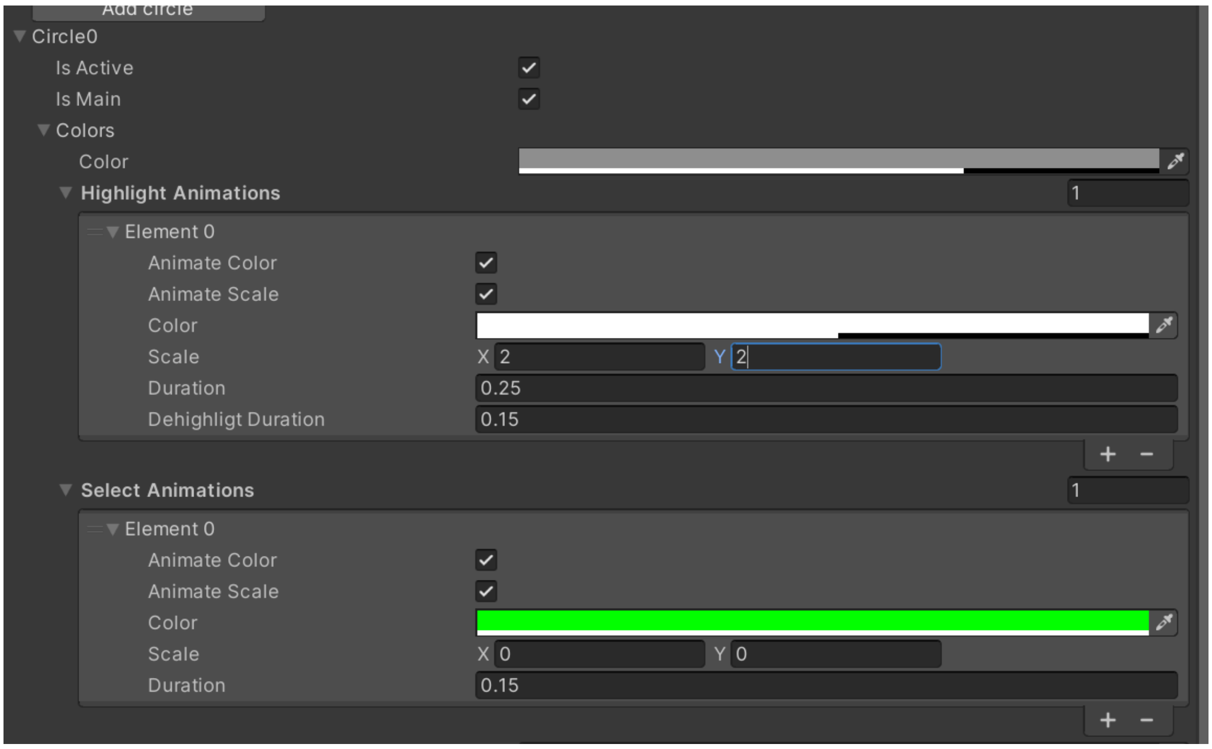
3.5. Highlight and select effects

To change color or scale when an item is highlighted or selected, look for Highlight Animations. This can be set on circles (including main, and inner and outer borders), slice separating borders, slice contents (text and icons), and can be overridden by individual slices.

In the example below a circle slice will change color from gray to white in 0.25 seconds and the slice scale will change from 1 to 2 when highlighted. When unhighlighted, the circle will change its color back to gray and the scale will be reset to 1 in 0.15 seconds.

When a slice is selected (confirmed/submitted), the color will change to green and the scale to 0 in 0.15 seconds. Note that the select duration should be similar to the weapon wheel Fade Out Duration, otherwise you won't be able to see the select animation.

Also note that slice scaling is somewhat in beta stages and won't work well with visible slice borders. However, the scaling effect works very well with slice content like icons.



- Circle0
  - Is Active: ✓
  - Is Main: ✓
  - Colors
    - Color
    - Highlight Animations: 1
      - Element 0
        - Animate Color: ✓
        - Animate Scale: ✓
        - Color
        - Scale: X 2, Y 2
        - Duration: 0.25
        - Dehighligt Duration: 0.15
    - Select Animations: 1
      - Element 0
        - Animate Color: ✓
        - Animate Scale: ✓
        - Color
        - Scale: X 0, Y 0
        - Duration: 0.15

Don't forget to increase the colors' A (alpha) values, otherwise the colors will be invisible. Also check the boxes for the animations you want to use (e.g. Animate Color if you want a color transition), and if the list is empty you need to add an animation item by pressing the + button.

To override the highlight color for a specific slice, use Overriding Slice Colors in the circle settings in the base Sg Weapon Wheel component. To override the highlight color for a specific content object (icon or text), edit colors on its Sg Content Selectable component.

4. Detailed reference guide

Remember that you can get property explanations by holding your mouse over each property label in the Inspector.

4.1. The SgWeaponWheel component

4.1.1 General settings

Auto Refresh
Auto-refresh your changes. If turned off, you can still refresh by pressing the bottom button.

Rotation
Weapon wheel rotation, 0-360 degrees.

Log Selection Events
If enabled, weapon wheel events such as highlighting and wheel visibility changes are logged.

4.1.2 Slices

Slice Contents
Controllers for each unique slice. Increase/decrease the number of elements to change the number of slices.

Slice Content Colors
The default colors SgContentSelectable uses. Individual SgContentSelectables can override these settings.

Color
Highlight Color *(deprecated)*
Highlight Animations
Select Animations

4.1.3 Circles

Add circle (button)
Press to add a main circle or an outer/inner border.

Circle[0, 1, 2, etc.]
Expand to change circle settings.

Is Active
If deactivated, the circle won't be painted. Used for temporary hiding.

Is Main
Tells which slice to put icons or text on. Only one circle can have this enabled.

Colors
Circle colors

Color
Highlight Color *(deprecated)*
Highlight Animations
Select Animations
Fill texture
Fills the circle with a texture. The texture will be affected by the configured colors.
Texture scale
Fill texture scale.
Texture rotation
Fill texture rotation.
Texture offset
Fill texture offset.

Diameter
Circle size.

Thickness
The circle thickness (difference between outer and inner diameter).

Overriding Slice Colors
Add elements here if you want one or more slices to have unique colors.

- **Slice Index**
  The slice to change color for.
- **Colors**
  Individual slice colors.
  - **Color**
  - **Highlight Color** *(deprecated)*
  - **Highlight Animations**
  - **Select Animations**

Overriding Sprites
If you want to use unique circle textures for this circle. You may be able to increase the circle quality by trying the different circle textures included since they have different sizes.

- **Circle Sprite**
  Circle sprite.
- **Hole Texture**
  Hole texture.

Move up (button)
Decrease circle index.

Move down (button)
Increase circle index.

Remove (button)
Remove this circle.

4.1.4 Slice borders

Slice Border Width
Margin/border width between slices.

Slice Border Cut Inner Adjustment
If your slice border is reaching in too far, it can be adjusted here.

Slice Border Cut Outer Adjustment
If your slice border is reaching out too far, it can be adjusted here.

Slice Border Colors
The colors to use for borders between slices

> **Color**
> The default color.
> **Highlight Color** *(deprecated)*
> Color when a slice is highlighted. Deprecated, use animations instead.
> **Highlight Animations**
> Tween transitions.
>
> > **Animate Color**
> > Check this box to enable color animation.
> > **Animate Scale**
> > Check this box to enable scale animation.
> > **Color**
> > Color to animate to.
> > **Duration**
> > Highlight animation duration
> > **Dehighlight Duration**
> > Dehighlight/unhighlight animation duration.
>
> **Select Animations**
> Tween transitions.
>
> > **Animate Color**
> > Check this box to enable color animation.
> > **Animate Scale**
> > Check this box to enable scale animation.
> > **Color**
> > Color to animate to.
> > **Duration**
> > Select animation duration.

4.1.4 Resources

The following properties are resources that normally don't need to be changed. These are more advanced options.

Slice Border Material
The material slice borders uses to be able to cut objects with Circle Material and to be cut by objects with Circle Mask Material and Circle Hole Mask Material.

Circle Material
The material circles uses to blend a circle and hole texture together and to be cut by objects with Slice Border Material.

Circle Mask Material
Cuts objects with Slice Border Materials.

Circle Hole Mask Material
Cuts objects with Slice Border Materials.

Generated Objects Container
Where generated objects will be placed. All children, except Sg Slice Content Controllers and their children, will be cleared every time the weapon wheel is refreshed. This occurs every time you change a value or press the "Force refresh" button.

Circle Sprites
Circle textures that will be blended together.

> **Circle Sprite**
> Circle sprite.
>
> **Hole Texture**
> Hole texture.

Slice Border Sprites
If you want to use something else than a square to draw slice borders.

Force refresh (button)
Press this if you want to regenerate your weapon wheel. If auto-refresh is turned on you usually don't need to press this button.

4.2. The SgSliceController component

Slice Index
Slice index. Is set by the main Sg Weapon Wheel component every time it refreshes. It's not recommended to edit it manually.

Slice Name
Optional item/weapon name. Will be passed in Weapon Wheel Events.

Graphic Selectables
Components that are affected by "Content Colors" in the base weapon wheel object. These components are added by scripts by pressing the "Find child graphics" button or every time the base weapon wheel object refreshes.

Circle Slices
Since the Sg Slice Controller is responsible for controlling the entire slice, each circle has one slice that this component can change color on. These are not children to this object since they need to be effectively masked without unnecessary SetPass calls. The circle slices are assigned to this component every time the base weapon wheel object refreshes so it's not recommended to edit manually.

Slice Borders
Two slice borders, one on each side of the slice. Set by the base weapon wheel object. It's not recommended to edit it manually.

Add icon (button)
Adds a UI Image object as a child to this object.

Add text (button)
Adds a UI Text object as a child to this object.

Find child graphics (button)
Attaches all active child SgSelectable to this component. This also happens every time the base weapon wheel object is updated.

4.3. The SgWeaponWheelInput component

Input Action Map
For full weapon wheel input integration, actions with these names need to be present:

RightStick (Vector2)
Bind a gamepad stick to this. Used to highlight weapon wheel slices and select them if the bound button for ToggleWeaponWheel is released and the "Hold Button To Show" option is set to true.

ToggleWeaponWheel (Button)
If "Hold Button To Show" is true: Shows the weapon wheel while a bounded button is pressed. If "Hold Button To Show" is false: toggle the weapon wheel when a bounded button is tapped or pressed.

PointerPosition (Vector2)
Mouse position. Must be present to be able to "prioritize" the closest slice to the mouse position since all slice objects overlap each other.

Confirm
A button to confirm the highlighted choice. Primarily used for gamepads since mouse clicks are registered by the Event System. If "Hold Button To Show" is set to true, this isn't necessary since slices can be selected anyway by releasing the stick.

Hold Button To Show
If true, the ToggleWeaponWheel button must be pressed down to show the weapon wheel. If false, the weapon wheel will toggle on button presses.

Show Again Cooldown
Delay before the weapon wheel can be displayed again after selecting a slice. Only applicable when "Hold Button To Show" is set to true.

Highlight Slice On Digit Press
Highlight slice when a keyboard digit is pressed.

Select Slice On Digit Press
Select slice when a keyboard digit is pressed. Works even when the weapon wheel is invisible

First Slice Offset

Changes which slice will be considered the first, the slice that will be selected when 1 is pressed. This can be a negative value.

4.4. The S_UiImageBlend shader

The S_UiImageBlend shader is used to blend a circle texture and a hole texture together. It's not necessary to use this manually since the SgWeaponWheel script handles it.

A material using this shader should be attached to a UI Image.

Blend (RGB)
A texture to blend with the UI Image.

Blend2 (RGB)
A secondary texture to blend with the UI Image. Used when the circle has a fill texture.

The rest of the properties are equivalent to the UI/Default shader, but with slightly different names.

5. Frequently asked questions

5.1. Can I use TextMeshPro (TMP) components instead of normal Text components?

Yes, any UI class that extends the Graphic class can be used. After adding a Text component to a slice by pressing the “Add text” button, remove the Text component on the created object and then add a “TextMeshPro - Text (UI)” component instead. Finally, press the “Find child graphics” button on the parent Sg Slice Controller and you are good to go.

As of v1.3 of the Weapon Wheel Generator, there is a button for creating TextMeshPro objects.

5.2. Can I add/change/remove weapons on my weapon wheel during runtime?

Yes. The main Sg Weapon Wheel script has a sliceContents list. By adding/removing predefined SgSliceController objects to that list, the slices are changed.

See the Dynamic Populating demo scene and its SgAddSlicesDemo.cs script for an example.

5.3. How do I freeze my player camera when my weapon wheel is visible?

There is an event called *SgWeaponWheelEventType.WheelVisible*. By listening to events you could freeze your camera rotation/movement when the WheelVisible event occurs and then unfreeze the camera again when the WheelInvisible event occurs. See section 3.4 to see how to listen to events.

Exactly how to freeze your camera depends entirely on your setup.

5.4. How do I make one circle appear in front of the other circles?

If you for instance want your main circle to be in front of the border circles, you can press the “Move down” button to increase its circle index and put it in front of the border.

5.5. The first time i try to highlight slices with the mouse after pressing play it doesn’t work properly

This issue is fixed in v1.3. If you’re using an older version, here’s a quick fix. Add these three lines of code to SgSliceController.cs:

```
private void Awake()
{
MainCircleSlice.Image.raycastTarget = false;
}
```

5.6. How do I make the weapon wheel hidden on startup?

Deactivate its GeneratedObjectsContainer.

5.7. How do I temporarily disable the weapon wheel during runtime?

You can disable the entire Sg Weapon Wheel game object. E.g.

```
WeaponWheel.gameObject.SetActive(false);
```

6. Video tutorial

A video tutorial can be found here:
https://www.youtube.com/watch?v=89GHjwW0IEw

7. Changelog

Version 1.0 (April 15, 2022)

First release

Version 1.1 (April 19, 2022)

- Made it possible to fill circles and their slices with a texture
- Added integration with the old input system
- Made it possible to fine-tune when slice borders and circles get cut
- More demo scenes
- More demo textures
- Updated manual
- Detect inspector undos
- Minor refactoring and other code improvements

Version 1.2 (June 30, 2022)

- Made it possible to highlight or select items by pressing keyboard digits (optional)
- Created a generic input handling class to avoid duplicated code, both input system implementations use it

Version 1.3 (July 13, 2022)

- Added support for adding Text Mesh Pro UI objects to slices
- Fixed mouse highlighting issue the first time the weapon wheel is used after pressing Play

Version 1.4 (August 3, 2022)

- Added new animated highlight effects like color fading and scale changing
- Introduced select effects
- Made it possible to fade in/out the weapon wheel when it's toggled
- Fixed issue where highlight/dehighlight/select events were occasionally sent twice
- Various minor fixes and improvements.

Don't forget to backup your project before upgrading. Make sure you refresh your weapon wheel by pressing "Force refresh" after upgrading.

Version 1.5 (to be determined)

- Give each weapon wheel its own animation manager to avoid concurrency issues if multiple weapon wheels exist in the same scene
- Made the inspector UI much easier to use by splitting up properties into sections
- New demo scene with a basic weapon manager
- Added support for binding existing PlayerInput with the weapon wheel input handling
- A video tutorial is now available