

AIM INDICATOR

CONTENT

Demo scene

Cone indicator

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Textures

-Can only be changed while not in play mode.

-Can be changed both in and out of play mode.

1. DEMO SCENES

1. 3D SCENE

- i. Showcases how the asset can be used for angled/top down games.
- ii. The indicators are displayed/altered on the X and Z axis.
- iii. The prefabs uses a character controller for moving around.

2. 2D SCENE

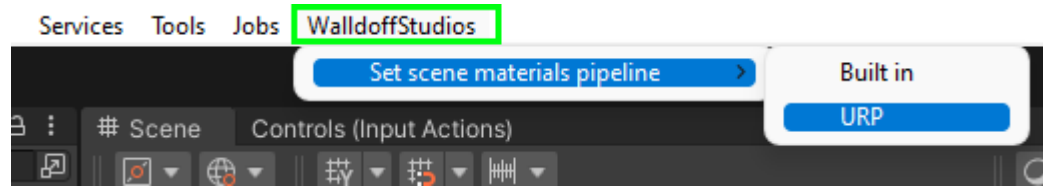
- i. Showcases how the asset can be used for 2D games.
- ii. The indicators are displayed/altered on the X and Y axis.
- iii. The prefabs uses a rigid body 2D for moving around.
- iv. Indicators are still generated using mesh renderers but the player, background and all the obstacles are 2D sprites with 2D colliders.

In both scenes there are some UI buttons that lets you loop through the different types of FOV's as well as updating colors and textures.

3. PINK SCENE MATERIALS

- i. If the materials in the scene are pink, there is no need to panic. It only means that you're not using the same pipeline as the scene materials are setup in.

To fix this go to the toolbar at the top and under “**WalldoffStudios**” select “**Set scene materials pipeline**” and then the pipeline you are using.



- ii. This will automatically change the shader from the scene materials to the pipeline you chose and they shouldn't be pink anymore.
- iii. Another way to fix this is to just create new materials and assign to the scene materials.
- iv. Keep in mind that the actual shader indicators already work with all pipelines out of the box.

2. CONE INDICATOR

Can create shapes ranging from cones to Circular shapes depending on its settings.

1. TEXTURE

- i. Sets this as the texture of the mesh when its created. If none is set it will default to a blank texture with the color of the MAINCOLOR setting.

2. RENDER EDGES

- i. Set this to true if you want to render edges for the cone.
- ii. Enabling this reveals the EDGE TEX setting.
- iii. Recommended to have enabled for normal cone shapes.
- iv. Recommended to turn off when having very high FOV values.

3. RENDER EDGES

- i. This texture will render the left and right outmost edges of the indicator.

4. RANGE

- i. How far the Cone reaches.

5. FOV

- i. How wide the cone will be. If at 360 it will become a circular shape instead of a cone.
- ii. If the FOV is somewhat close to 360 its recommended to turn off the RENDER EDGES setting on the material.

6. RAYCASTS

- i. How many interaction points that will be used.
- ii. Higher values will look smoother but be less performant.
- iii. The Higher the value the more vertices will be used when creating the shape, resulting in smoother shapes.
- iv. It performs a for loop the size of the RAYCASTS setting each frame and shoots a ray to see if it interacted with any obstacles.
- v. The generated mesh shape will end up having 2 more vertices than the RACYASTS setting.

7. TIME BETWEEN RAYCASTS

- i. Delay between each time it will check if it should update the cone.
- ii. Higher values will be more performant but will produce less smooth looking results

8. MIN DISTANCE FOR UPDATE

- i. Minimum distance between vectors that will trigger the shape to update.
- ii. Higher values will be more performant but will produce less smooth looking results.
- iii. Recommended to never be set at 0 since then it will always update It even if you stand still and your aim doesn't change.

9. OBSTACLE MASK

- i. The layer mask that the RAYCASTS will use to find the obstacles.
- ii. Recommended to only set it to layers that you want the cone to be able to interact with.
- iii. Will auto add the "Obstacle" layer in awake if none are selected.

10. USE HIT DETECTION

- i. If set to false it will not use hit detection to update the mesh vertices.
- ii. Useful if you want to just use normal FOV's.

11. DRAW DEBUG

- i. Will display debug lines in the scene view where the RAYCASTS are shot if enabled.

12. DISTORTION

- i. Affects how distorted the indicator becomes when interacting with obstacles.

- ii. Different textures will require different distortion amounts so test it out a bit to find a value that suits the specific indicator.

13. OFFSET

- i. Affects how close the indicator will come to the obstacle, If at 1.0f it will render right up to the edge of the obstacle.
- ii. Can be used to create a “shadow” like effect with values less than 1.0f.

14. MAIN COLOR

- i. The main color the texture will multiply with. If using white textures or none the color of the cone will become this color

15. MAIN COLOR

- i. How bright the indicator will be, higher values can result in glow type effects.

16. ENABLE FILL EFFECT

- i. If you want this cone to use fill effect.
- ii. Enabling this will reveal **FILL SPEED** and **FILL COLOR** settings.

17. FILL SPEED

- i. How fast the fill effect will be animated if it's used.

18. FILL COLOR

- i. The fill color of the texture. Set this if you want to use some type of fill effect for the cone.
- ii. The **FILL SPEED** property affects how much of the shape will use this color.

3. **LINE INDICATOR**

Creates a straight line similar to Unity's line renderer.

1. TEXTURE

- i. Sets this as the texture of the mesh when its created. If none is set it will default to a blank texture with the color of the MAINCOLOR setting.

2. RANGE

- i. How far the Line reaches

3. WIDTH

- i. How Wide mesh will be. Adjust this to be the width of your projectile.

4. EDGE PADDING

- i. How far in from the edges it will start checking for obstacles.
- ii. If at 0 it will start checking from the outer edges of the line shape.

5. RAYCASTS

- i. How many interaction points that will be used. Higher values will look smoother but be less performant.
- ii. It performs a for loop the size of the “raycasts” variable each frame and shoots a ray to see if it interacted with any obstacles.

6. TIME BETWEEN RAYCASTS

- i. Delay between each time it will check if it should update the line.
- ii. Higher values will be more performant but will produce less smooth looking results.

7. OBSTACLE MASK

- i. The layer mask that the RAYCASTS will use to find the obstacles.
- ii. Recommended to only set it to layers that you want the cone to be able to interact with.

8. USE HIT DETECTION

- i. If set to false it will not use hit detection to update the mesh vertices.
- ii. Useful if you want to just use normal FOV's

9. DRAW DEBUG

- i. Will display debug lines in the scene view where the RAYCASTS are shot if enabled.

10. OFFSET

- i. Affects how close the indicator will come to the obstacle, higher values will be further away from obstacle.

11. LERP TIME

- i. How fast the mesh will adjust to the new hit point.
- ii. Lower values will be smoother.

12. MAIN COLOR

- i. How bright the indicator will be, higher values can result in glow type effects.

13. ENABLE FILL EFFECT

- i. If you want this cone to use fill effect.
- ii. Enabling this will reveal FILL SPEED and FILL COLOR settings.

14. FILL SPEED

- i. How fast the fill effect will be animated if it's used.

15. FILL COLOR

- i. The fill color of the texture. Set this if you want to use some type of fill effect for the cone.
 - ii. The FILL SPEED property affects how much of the shape will use this color.
-

4. PARABOLIC INDICATOR

Creates a parabolic shape towards a target. Unlike the other this one doesn't shoot any raycasts and doesn't have any hit detection.

1. TEXTURE

- i. The target where the parabola will end.
- ii. Is always required.
- iii. Recommended to use a TARGET INDICATOR for this one.
- iv. If you don't want any visible target for the landing spot, then just use a empty transform or comment out the code in the parabolic indicator class.

2. TEXTURE

- i. Sets this as the texture of the mesh when its created. If none is set it will default to a blank texture with the color of the MAINCOLOR setting.

3. RANGE

- i. How far the parabola can reach.

4. WIDTH

- i. How Wide mesh will be.
- ii. Width will be constant across entire shape so use textures to adjust the look of the width at different points across the shape.

5. RESOLUTION

- i. The height of the parabola. Will always be at this height independent of range.

6. RESOLUTION

- i. How detailed the mesh will be. Lower values will make it look smoother (use more vertices) but will be less performant.
- ii. Some values can cause end of parabola to look a little buggy, try some different values until you think it looks good.

7. BRIGHTNESS

- i. How bright the indicator will be, higher values can result in glow type effects.

8. MAIN COLOR

- i. The main color the texture will multiply with. If using white textures or none the color of the cone will become this color.

9. ENABLE FILL EFFECT

- i. If you want the target to use fill effect.
- ii. Enabling this will reveal **FILL SPEED** and **FILL COLOR** settings.

10. FILL SPEED

- i. How fast the fill effect will be animated if it's used.

11. FILL COLOR

- i. The fill color of the texture. Set this if you want to use some type of fill effect.
- ii. The FILL SPEED property affects how much of the shape will use this color.

5. TARGET INDICATOR

The target indicator is a procedurally generated basic Quad. It doesn't have any hit detection so if you want to use that it's recommended to use a cone indicator with FOV value of 360 with hit detection. The target indicator can be very useful for radial effects or in combination with the parabolic indicator. The target indicators fill effect is filled radially from the center instead of from bottom to the top.

1. TEXTURE

- i. Sets this as the texture of the mesh when its created. If none is set it will default to a blank texture with the color of the **MAINCOLOR** setting.

2. RADIAL SIZE

- i. Affects the local scale of the targets X and Z axis.

3. LERP TIME

- i. How fast the mesh will adjust to the new radial size.
- ii. Lower values will be smoother.

4. BRIGHTNESS

- i. How bright the indicator will be, higher values can result in glow type effects.

5. MAIN COLOR

- i. The main color the texture will multiply with. If using white textures or none the color of the cone will become this color.

6. ENABLE FILL EFFECT

- i. If you want the target to use fill effect.
- ii. Enabling this will reveal **FILL SPEED** and **FILL COLOR** settings.

7. FILL SPEED

- i. How fast the fill effect will be animated if it's used.

8. FILL COLOR

- i. The fill color of the texture. Set this if you want to use some type of fill effect.
- ii. The FILL SPEED property affects how much of the shape will use this color.

6. SETUP

Setups for some different scenarios

1. DEMO SCENE

- i. The demo scene is the easiest place to try out the FOV Shader since there is already a camera and basic player controller setup. Just click play and you can try out the Cone indicator right away.
- ii. If you create a new basic player and you have the joysticks active you have to assign the basic player on both the move and shooting joysticks. If you want

the camera to follow the new player, you also need to assign it as the “follow” object on the “gameCam” game object.

2. CREATING NEW INDICATORS

1. To create a new indicator, start by dragging in a BASIC PLAYER prefab into the scene.
2. It has a child object called INDICATORCONTROLLER. Select it and make sure its VISUALS field is not null.
3. Then you can create new indicators by clicking the ADD INDICATOR button in the inspector.
4. It's recommended to create and remove your indicators directly from this inspector.
5. Creating an indicator here will spawn a new object and assign all necessary components for an indicator.
6. Select it and change its values to your preference.
7. If you want to change the type of indicator. Then change it in the inspector of the INDICATORCONTROLLER.
8. Changing the type here will automatically change the indicator to that type with the correct indicator class, material, and main texture.
9. Duplicate existing indicators by pressing the blue button with a “+” sign.
10. Delete a specific indicator by pressing the red button with a “X” sign.
11. OBS. The “Remove all” button will delete all child elements of the INDICATOR_CONTROLLER so only put indicators as child objects of this and be vary of using the button.

3. MATERIALS

- i. Since the materials properties aren't serialized on the actual material but instead via a material property block you just need one material for each indicator type.
- ii. However, if you want the materials to be rendered in front or behind other types of indicators it is worth creating new materials.
- iii. To change what is rendered in front of what etc. Try experimenting with different STENCIL COMPARISON, STENCIL OPERATION, ZWRITE and RENDER QUEUE values to get the desired effect.

7. TEXTURES

1. TEXTURE TYPES

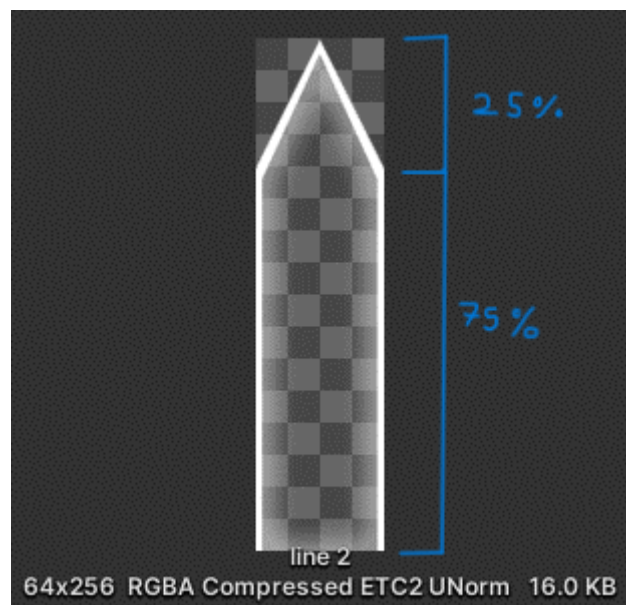
- i. Cone – use these for circle and cone indicators.

- ii. Edges – use these for the cone textures to render left and right outlines for the indicator.
- iii. Line – use these for your line indicators.
- iv. Parabola – use these for the parabola indicators.
- v. Target – use these for the target indicators.

2. INDICATOR UV'S

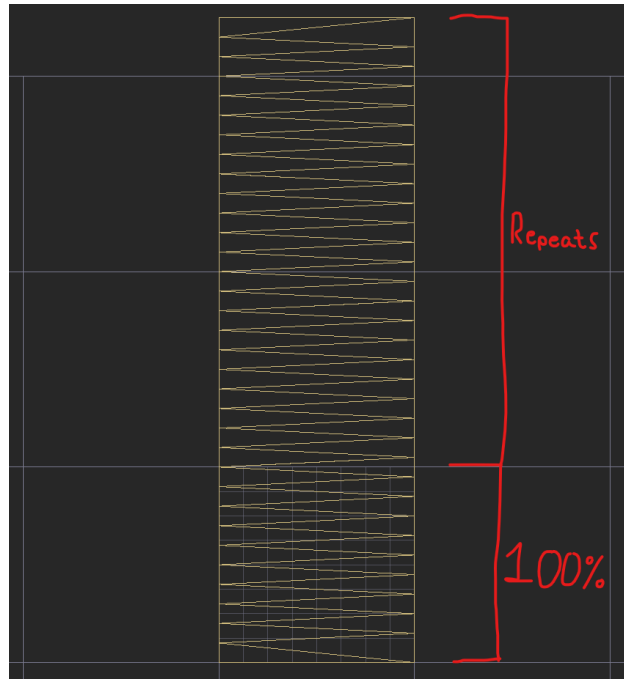
The UVs of the different Indicators are unwrapped in 3 different ways

- i. The **CONE** and **CIRCLE INDICATORS** are unwrapped with the x UV on just 1 pixel. This makes it easy to create new textures as you only need to focus on the Y axis. When creating circles with the cone indicator it is recommended to remove the two lines on the side from the image to avoid stretched seems.
- ii. The **LINE INDICATOR** is unwrapped with the bottom 75% being stretched depending on how long your line indicator is. The top 25% of the indicator is however not stretched and therefore supports more detailed patterns. It's recommended to create textures for it with a (1: 4) ratio.



- iii.
- iv. The **PARABOLA INDICATOR** is unwrapped in a way that makes the entire texture repeat on the y-axis. The number of times it will repeat will depend on how many vertices it has. I've created the textures for the parabola with a (1:4) ration but that isn't required.

v.



3. CREATE YOUR OWN

- i. To make it easy to create your own textures I've included the PSD files I've used to create the textures. Feel free to use them as a template when creating your own textures.