WAYPOINT INDICATORS

C# NAVIGATION SYSTEM FOR UNITY

USER GUIDE 1.4.6

Table of Contents

What's New in version 1.4.6

1. The minimum display range between Standard and Centered Tracking were different, this has been fixed so that both show the same value.

2. In-Depth look at how to set up your project for split screen.

Quick Start (After Installing the Package)

Setting up Canvas and Camera

1. Canvas - By default, make sure your main canvas is tagged: "Canvas". You can always change this later in the "Setup Options" in the script inspector.
2. Camera - By default, make sure your main camera is tagged: "MainCamera". You can always change this later in the "Setup Options" in the script inspector.

Adding the Script to a Game Object

1. Select Game Object
2. Click "Add Component"
3. Search for: "Waypoint_Indicator"
4. Click and start customizing

Canvas Render Modes

Waypoint Indicators supports all three canvas render modes for maximum customization and flexibility as of the 1.2.7 release. The script will automatically detect the render mode of the canvas tagged in the script's Setup Options.

Screen Space - Overlay

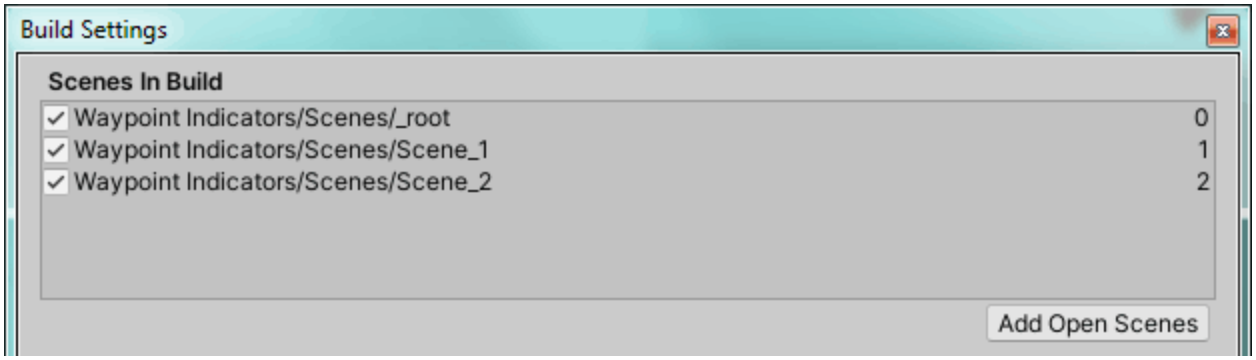
This render mode places UI elements on the screen rendered on top of the scene. If the screen is resized or changes resolution, the Canvas will automatically change size to match this.

Screen Space - Camera

This is similar to Screen Space - Overlay, but in this render mode the Canvas is placed a given distance in front of a specified Camera. The UI elements are rendered by this camera, which means that the Camera settings affect the appearance of the UI. If the Camera is set to Perspective, the UI elements will be rendered with perspective, and the amount of perspective distortion can be controlled by the Camera Field of View. If the screen is resized, changes resolution, or the camera frustum changes, the Canvas will automatically change size to match as well.

World Space
In this render mode, the Canvas will behave as any other object in the scene. The size of the Canvas can be set manually using its Rect Transform, and UI elements will render in front of or behind other objects in the scene based on 3D placement. This is useful for UIs that are meant to be a part of the world. This is also known as a "diegetic interface".

Launching the Demo



If you plan on using or playing the demo in your new project, be sure to add the respective scenes to your build index under File > Build Settings...
The scenes can be located in Waypoint Indicators > Scenes

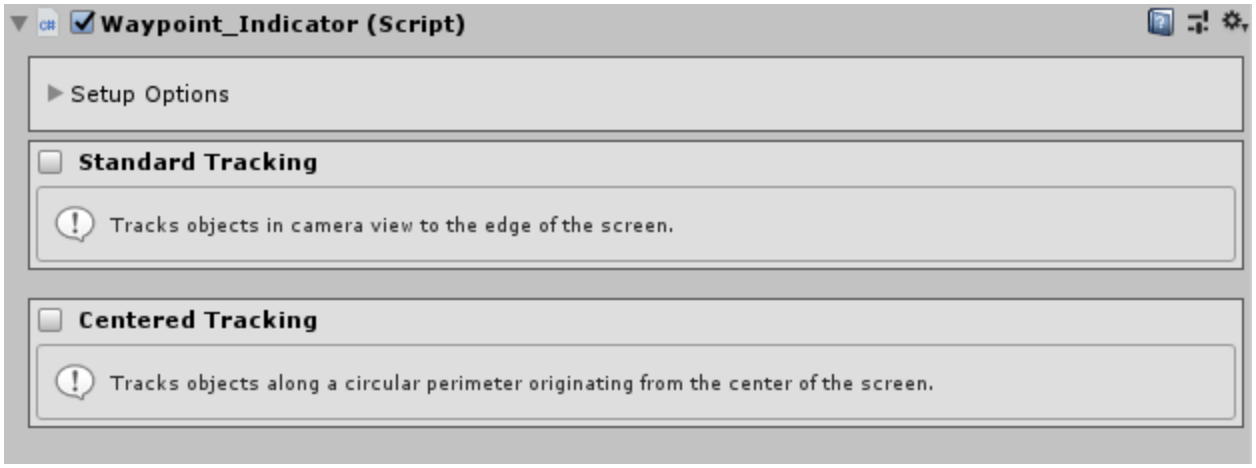
- _root
- Scene_1
- Scene_2

To avoid possible errors and scene index conflicts with the demo and your project, it is recommended to install the package into a brand new unity project.

The Waypoint Inspector: Waypoint_Indicator.cs

NOTE: Waypoint Indicators is linked to a custom editor script called *Waypoint_Indicator_Editor.cs* This keeps the inspector organized and must reside inside of a folder labeled “Editor” to work. The screenshots below are based off of that custom inspector.

Script Fully Collapsed



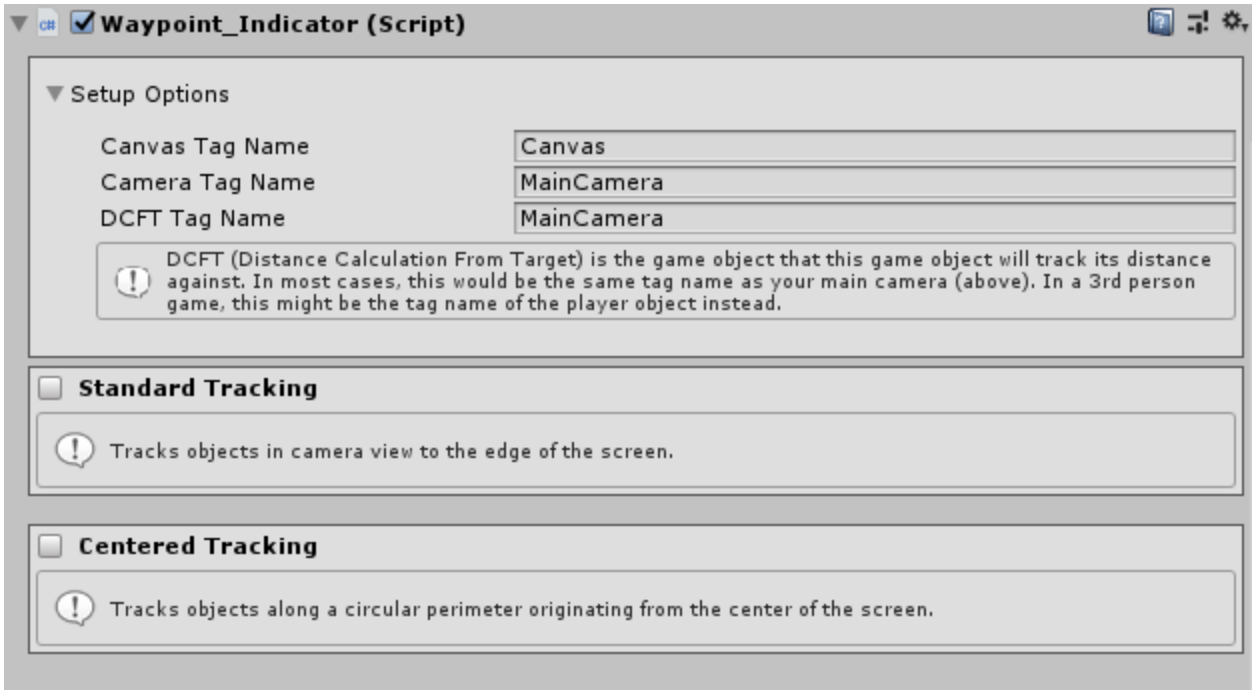
Both tracking types can be active at once for combined customization.

Setup Options
This is where the Canvas and Camera is linked to the script via public tag labels

Standard Tracking
Tracks objects within camera view to the edge of the screen. Tracking will continue to follow off-screen objects by sliding along the screen edges.

Centered Tracking
Tracks objects along a circular edge from the center of the screen. An example of this is Far Cry’s enemy detection system.

Setup Options (Expanded)



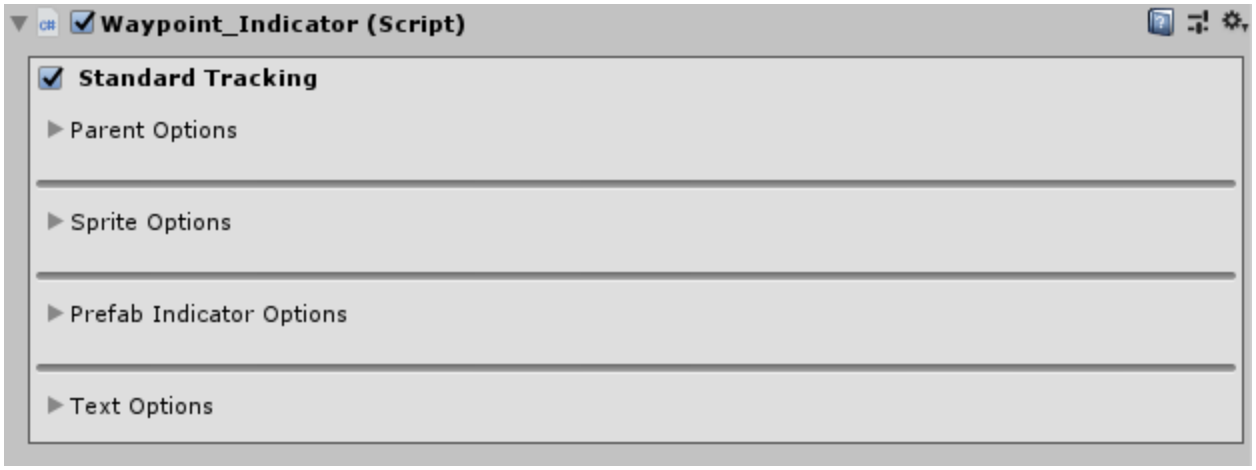
Canvas Tag Name
The unique tag name given to the canvas that will render the UI indicators.

Camera Tag Name
The unique tag name given to the Camera that the UI indicators will render to.

Multiple Cameras
When using multiple cameras, this avoids errors when checked. Requires the *WPI_Manager.cs* script to be included in your project. Learn more.

DCFT (Distance Calculation from Target)
The tag name of the game object that will be tracking the distance between itself and your waypoint game object. For example: Most FPS games will use the main camera to calculate the distance from what you're looking at. However in 3rd person games, you would want to use the player game object because that's now interacting with the objects in the world, so we would want to know how far things are from the character controller, not the camera.

Standard Tracking (Expanded)



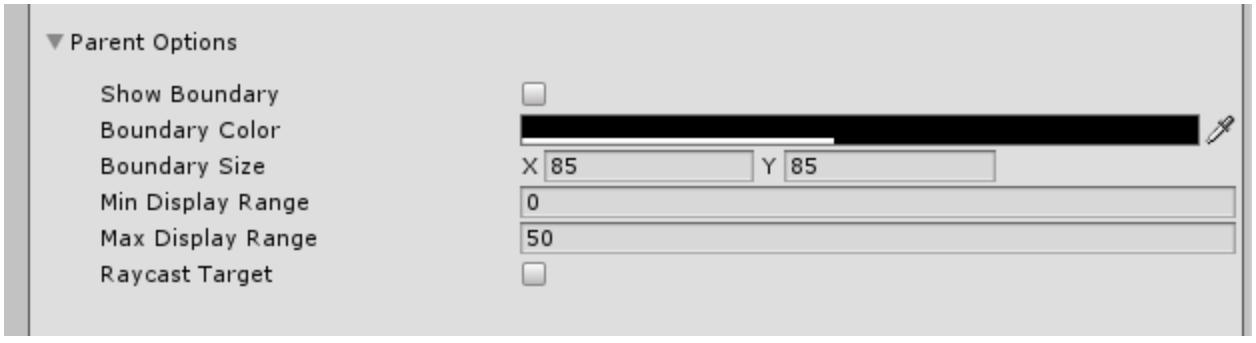
Parent Options
The container for your sprite, prefab and text indicator objects. Expand to reveal options.

Sprite Indicator Options
Images/icons used for indicating your game object with a texture type Sprite (2D and UI). Expand to reveal options.

Prefab Indicator Options
Must be an empty game object created in the Canvas with a nested child game object containing a Raw Image component. Add an Animator component for movement. Expand to reveal options.

Text Options
TextMeshPro (TMP) ready text fields for displaying custom text and distance. Expand to reveal options.

Parent Options



Show Boundary
This acts as the waypoint's radius. It shows/hides the screen edge detection boundary box. When the edges of this box meet the edge of your screen, it is considered "off-screen". Turn this option on to visually see when your UI elements are being considered on and off screen. Icon and Text elements can be moved independently from this box. The boundary box cannot be disabled, only hidden.

Boundary Color
Adjusts the fill color to easily display against various color backdrops.

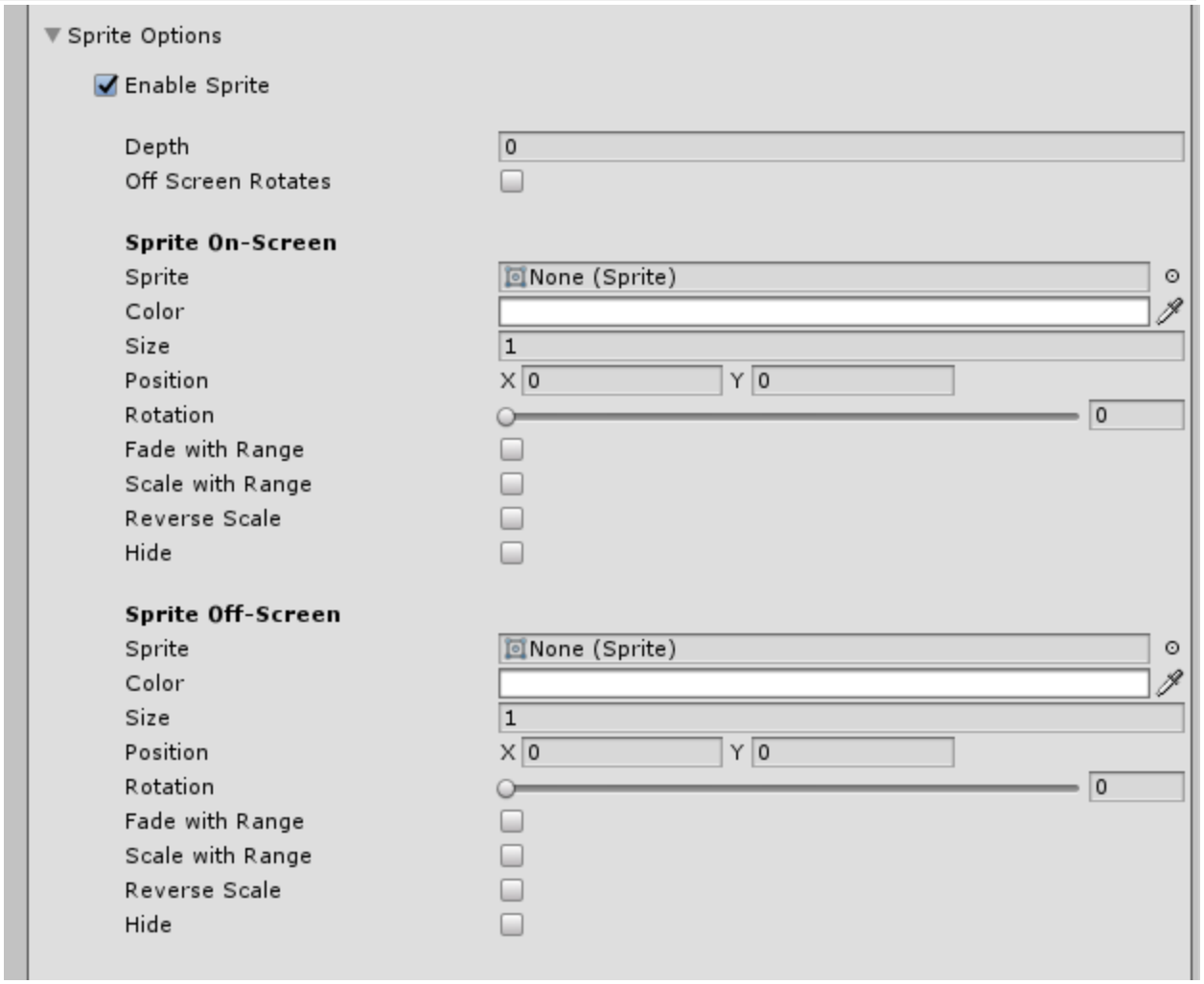
Boundary Size
Adjusts the width and height of the boundary box. This will not affect the size or positions of the children Icon and Text elements.

Min Display Range
The minimum distance between the main camera and game object at which to display the indicator. Indicators closer to the camera than this range's value will be hidden. Lower values will keep the indicator up longer as the camera moves closer to the player.

Max Display Range
The maximum distance between the main camera and game object at which to display the indicator. Indicators further away from this range will be hidden. Higher values will keep the indicator up longer as the camera moves further away.

Raycast Target
This checkbox turns on or off the Waypoint UI elements ability to block mouse clicks.

Sprite Indicator Options



Enable Sprite
Adds or removes the icon UI element completely from the Canvas. This is a performance saving option for Indicators that do not require an Icon element. Checking this enables Sprite options.

Depth
Depth control for indicator display. Use this to stack your sprite, game object or text indicators in any order you like. 0 represents the very bottom of the stack and will be covered by indicators with higher depth numbers.

Offscreen Rotates
Enables the off screen icon to rotate, point and follow the offscreen Game Object.

Sprite On/Off-Screen
Sprite
The sprite image displayed while the target game object is on-screen.

Color
Tints the sprite's color and alpha. For best results, use solid white sprites for full color control.

Size
Resizes the On/Off Screen image, bigger values make for a larger icon.
Position
Moves the icon independently along the X and Y axis for precision positioning.

Rotation
Alters the rotation angle of the on screen image.

Fade with Range
Fades on-screen icons based off of the parent Display Range value. The further the player is, the more transparent the icon becomes and vice versa.

Scale With Range
Scale on-screen icons based off of the parent Display Range value. The further the player is, the smaller the icon and vice versa.

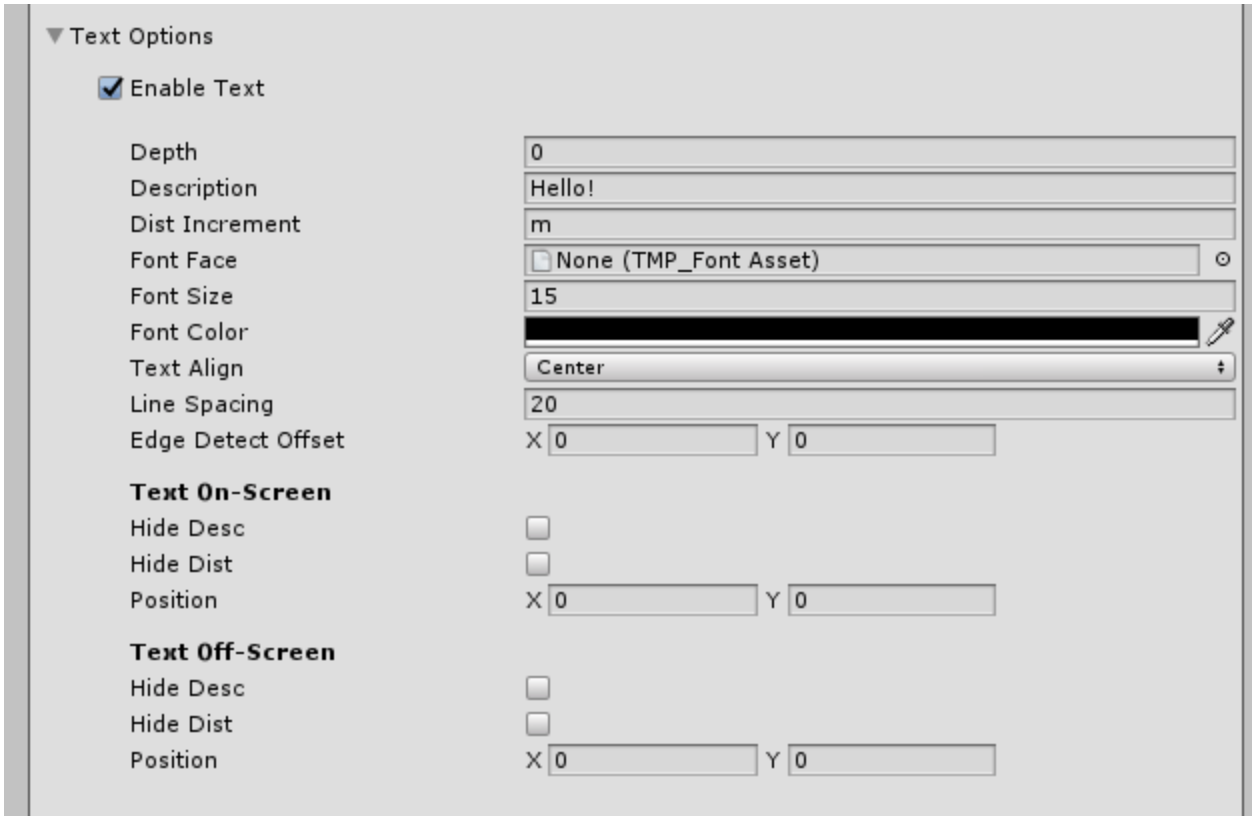
Reverse Scale
Reverses the indicator's scale function so that the further the player is, the larger the icon and vice versa.

Hide
Completely hides the on screen state of the icon.

Prefab Indicator Options

See Sprite Indicator Options for Prefab Indicator descriptions

Text Options



Enable Text
Adds or removes the text UI element completely from the Canvas. This is a performance saving option for Waypoints that do not require a Text element. Checking this box enables Text options.

Depth
Depth control for indicator display. Use this to stack your sprite, game object or text indicators in any order you like. 0 represents the very bottom of the stack and will be covered by indicators with higher depth numbers.

Description
The name or descriptive text used to call out the game object. If left empty, the description value will default to the name of your game object.

Font Face
Adds a font face for your text. See Adding Custom Fonts for more info.

Dist Increment
Customize the distance increment disaplayed ex: "33m", "33ft", "33 miles", etc

Text Size
Adjusts how big or small your text will render. This value affects Distance Counter and Description text at the same time and cannot be changed independently at this time. To force a line break, type **
** just before each break.

Text Color
Changes the color of your font. Colors will affect both on and off screen text states and cannot be changed independently at this time.

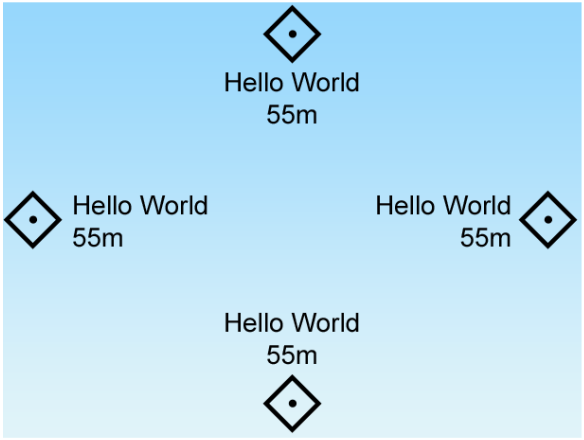
Text Align
Aligns both Description and Distance text to the left, center or right. Text is centered by default.

Text Line Spacing
Adjusts the leading or vertical spacing between multi-lines of text.

Enable Description
Shows/hides the description text.

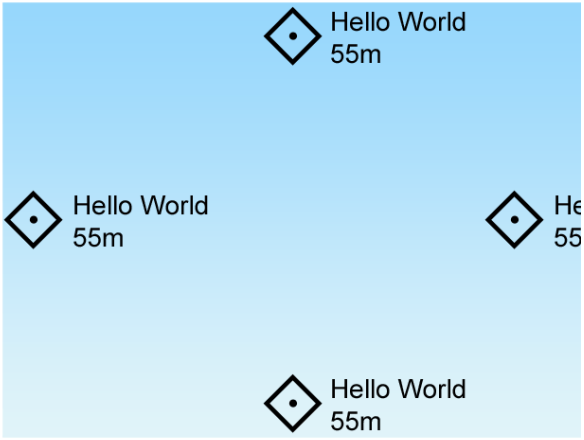
Edge Detect Offset
The amount of x and y offset that the off-screen text will auto align and position itself to the parent off-screen indicator to always stay visible. Set values to 0 to disable this feature.

USING EDGE DETECT OFFSET



Text auto-aligns and changes position
to stay on screen based on screen edge

NO EDGE DETECT OFFSET



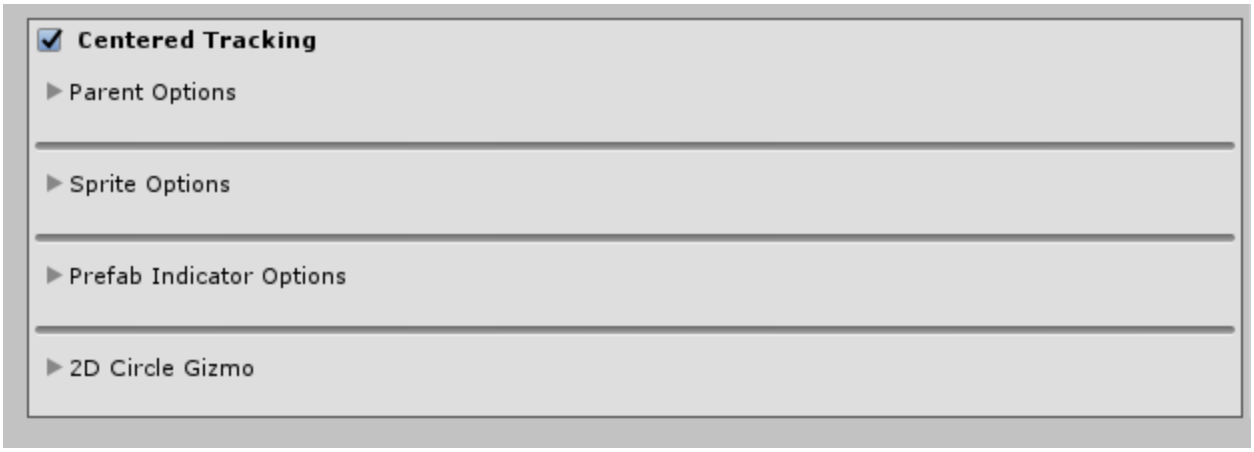
Text stays in the same place
regardless of screen edge

<u>Text On/Off-Screen</u>
On Screen Hide Desc
Completely hides the on screen state of the description text.

On Screen Hide Dist
Completely hides the on screen state of the distance counter text.

On Screen Text Offset
Moves the text field independently along the X and Y axis for precision positioning.

Centered Tracking (Expanded)

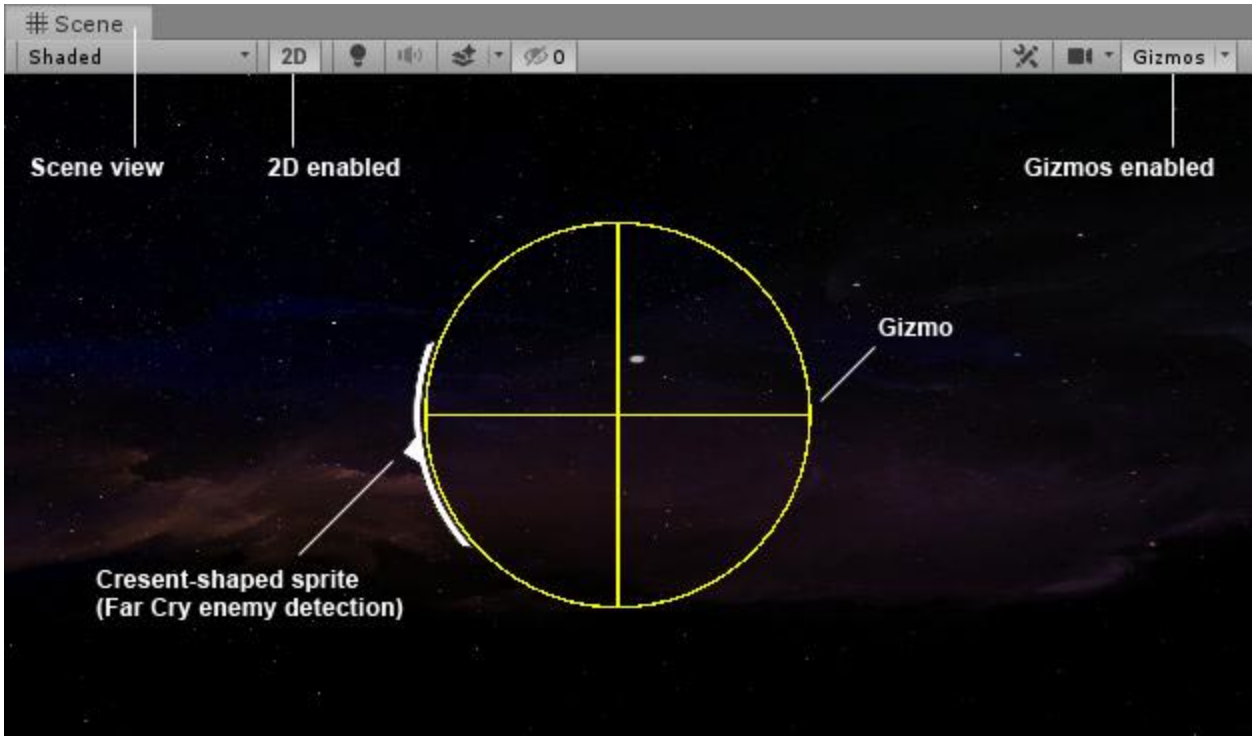


Parent Options
The visual representation of the sprite's circular tracking diameter. Expand to reveal options.

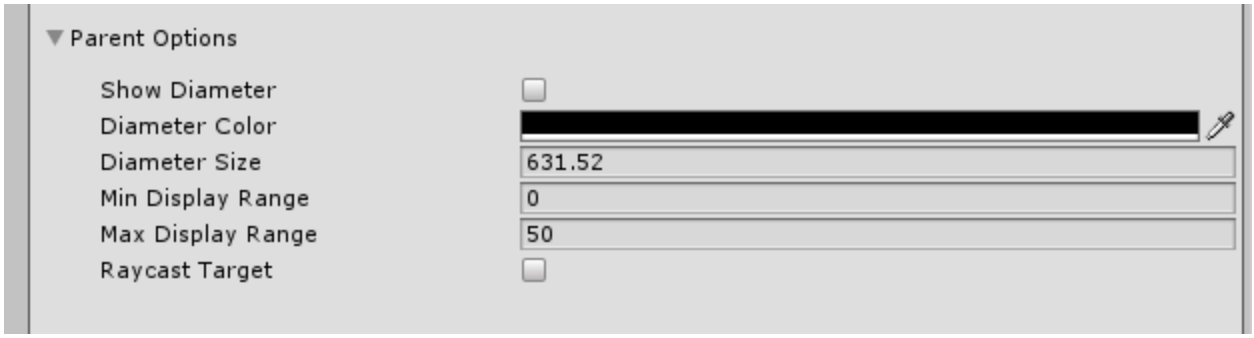
Sprite Options
Images/icons used for indicating your game object with a texture type Sprite (2D and UI). Expand to reveal options.

Prefab Indicator Options
Must be an empty game object created in the Canvas with a nested child game object containing a Raw Image component. Add an Animator component for movement. Expand to reveal options.

2D Circle Gizmo
A handy 2D wireframe tool that assists in matching the arc of a sprite to it's circular tracking path. Expand to reveal options.



Parent Options



Show Diameter
Shows/Hides the visual representation of the sprite's circular tracking diameter.

Diameter Color
Adjusts the diameter's fill color to easily display against various color backdrops.

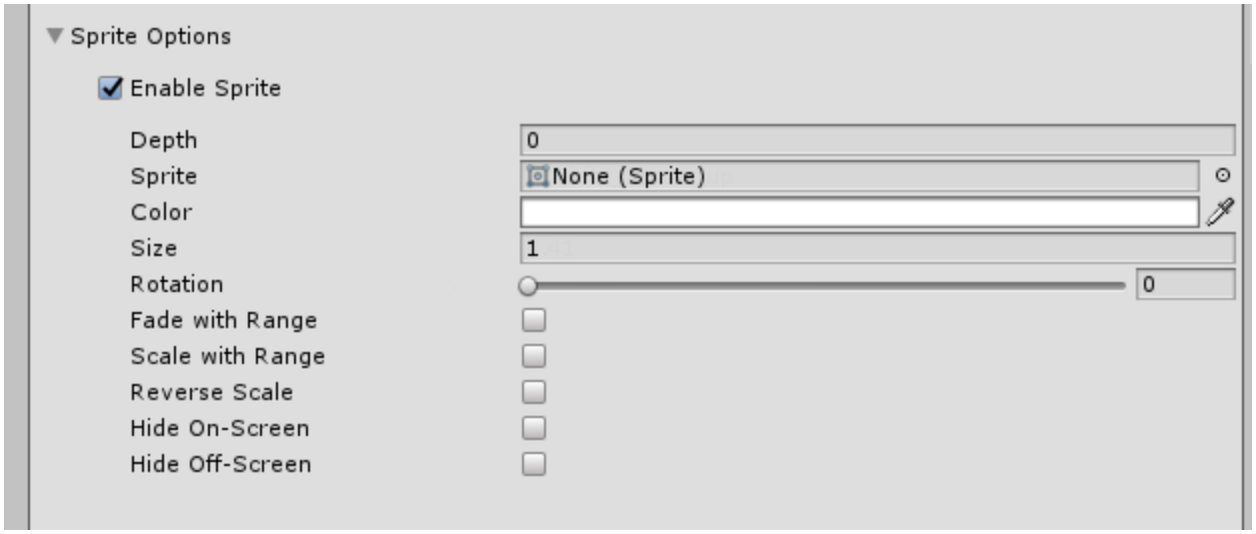
Diameter Size
Altering the diameter size will tighten or expand the tracking perimeter. Lower values shrink the diameter, bringing the sprite closer to the center of the screen as it rotates around, and vice versa.

Min Display Range
The minimum distance between the main camera and game object at which to display the indicator. Indicators closer to the camera than this range's value will be hidden. Lower values will keep the indicator up longer as the camera moves closer to the player.

Max Display Range
The maximum distance between the main camera and game object at which to display the indicator. Indicators further away from this range will be hidden. Higher values will keep the indicator up longer as the camera moves further away.

Raycast Target
This checkbox turns on or off the Waypoint UI elements ability to block mouse clicks.

Sprite Options



Depth
Depth control for indicator display. Use this to stack your sprite, game object or text indicators in any order you like. 0 represents the very bottom of the stack and will be covered by indicators with higher depth numbers.

Sprite
An image that represents the indicator for your game object.

Color
Tints the sprite through a color multiplier. For best results, use solid white sprites for full color control. Shades of grey will result in darkened areas of the selected color. Black areas of the sprite will remain black. The effect is similar to drawing on an image with multiple magic markers. Use the alpha slider to adjust opacity.

Size
Resizes the sprite, bigger values make for a larger icon.

Rotation
Alters the rotation angle of the sprite.

Fade with Range
Fades sprite based off of the parent Display Range value. The further the player is, the more transparent the sprite becomes and vice versa.

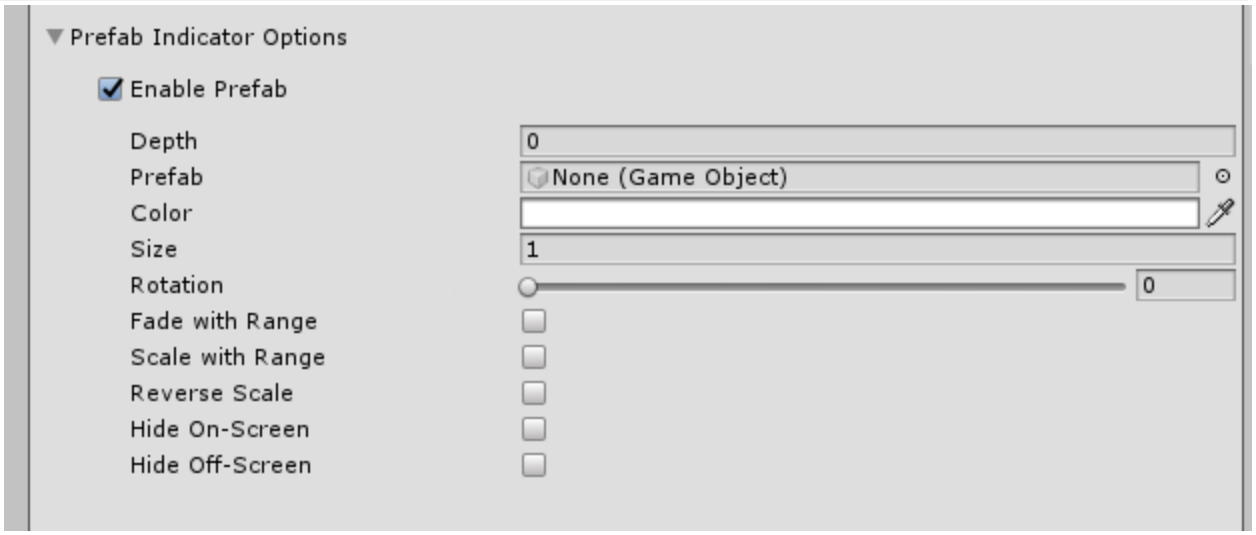
Scale With Range
Scales sprite based off of the parent Display Range value. The further the player is, the smaller the sprite and vice versa.

Reverse Scale
Reverses the indicator’s scale function so that the further the player is, the larger the icon and vice versa.

Hide On-Screen
Completely hides the indicator when the game object is on-screen.

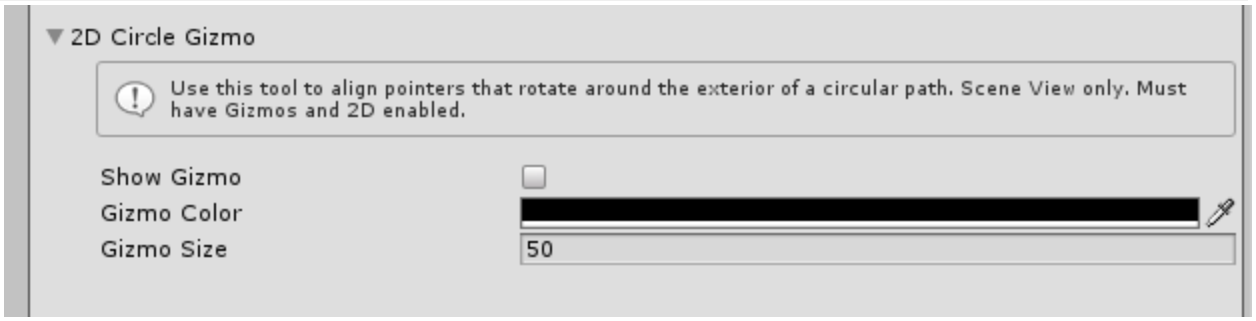
Hide Off-Screen
Completely hides the indicator when the game object is off-screen.

Prefab Indicator Options



See Sprite Options for descriptions

2D Circle Gizmo



Show Gizmo
When having Gizmos enabled, this circular wireframe will show up in the Scene view when set to 2D mode.

Gizmo Color
Adjusts the diameter's fill color to easily display against various color backdrops.

Gizmo Size
Adjusts the diameter of the gizmo.

How it Works

The Game Object and the UI Objects

Depending on what's enabled, Game Objects with a Waypoint script will spawn up to four UI objects into the Canvas at runtime. All four of these objects inherit their name prefix from the game object that spawned it.

1. Parent UI Object (contains the Icon and Text UI objects)
    a. Think of this as a container object to the Icon and Text objects. When the container's edges meet that of a screen edge, it tells the Icon and Text object to perform various actions that can be customized. For example swapping an on-screen icon with an off-screen version.
    b. The container's dimensions can be customized for greater control. For example, if your icons are running up against the edge of the screen, add padding by giving more width to the parent container and moving the icon and text closer to the center.
2. Sprite UI Object (child of the parent UI object)
    a. This accepts any graphic converted to a Sprite (See Converting Sprites for more)
    b. Arrows/Pointers/POI Icons/Targets are good examples of image types
    c. See Icon Options for additional details
3. Game Object UI Object (also a child of the parent UI object)
    a. This accepts any empty game object and all of its contents that have been created inside the Canvas.
    b. These objects can contain animations, images, raw images, buttons, etc.
4. Text UI Object (also a child of the parent UI object)

Naming

All UI objects inherit their name prefix from the game object that it spawned from followed by a "WP" (stands for waypoint) followed by a unique ID followed by the indicator type (Sprite, Object, Text). This naming convention ensures all new indicators will have unique names despite being spawned from a game object of the same name.

Parent Object

- Sprite Indicator Object
- Prefab Indicator
- Text Indicator Object

For example, two game objects both named "Cube" with all 3 indicator types enabled would look like this in the Canvas:

- Cube-WP12345
    - Cube-WP12345-Sprite
    - Cube-WP12345-Prefab

    - Cube-WP2345-Text
- Cube-WP67890
    - Cube-WP67890-Sprite
    - Cube-WP67890-Prefab
    - Cube-WP67890-Text

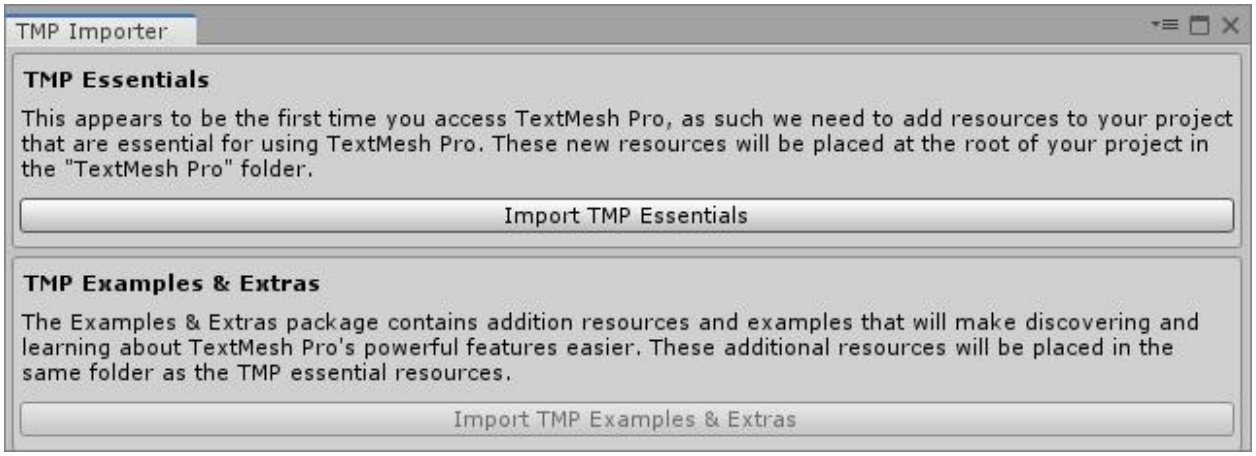
New Project Setup

Select Your Project Resolution

This is an important step as your Canvas Reference Resolution will need to mirror this in order to track the waypoint's relationship with the edge of the screen.
From the Game tab (Window > General > Game) select the project workspace resolution (might say "Free Aspect" if this is a new project) and either select an existing resolution or declare your own by clicking the plus (+) sign at the bottom of the window.

Setup TextMeshPro (TMP)

If you try to run a new project with this script WITHOUT Text Mesh Pro, you will see this popup:



Click "Import TMP Essentials" to add Text Mesh Pro
No need to import Extras

TextMesh Pro provides improved control over text formatting and layout and this system uses it as a replacement for Unity's UI Text & Text Mesh. If you do not already have TMP Essential Resources installed, follow the instructions below:

1. Window > TextMeshPro > Import TMP Essential Resources
2. At the bottom of the popup window, click "Import"
3. For more on fonts, see "Adding Custom Fonts"

Add a Canvas

UI elements cannot display without a Canvas game object. Make sure you have one in your scene. To add a Canvas, from the top menu select: GameObject > UI > Canvas

Setup Canvas

By default, make sure your main canvas is tagged: “Canvas”. You can always change this later in the “Setup Options” in the script inspector.

To edit your Canvas, select it from the Hierarchy and find the Inspector wIndow. If you do not see an Inspector window, click Window > General > Inspector

Canvas > Pixel Perfect: Disable
Most sprite elements will be scaled or rotated, or use subtle animated position or scaling, therefore it may be advantageous to disable Pixel Perfect, since the movement will be smoother without. Additionally, enabling Pixel Perfect has caused Sprites to not render at all.

Screen Space - Overlay (recommended settings):

1. UI Scale Mode: Scale With Screen Size
2. Reference Resolution: Same resolution as the project resolution selected in step one from the Game tab
3. Screen Match Mode: Match Width Or Height

Screen Space - Camera

1. Render Camera: Make sure you have a camera assigned to this slot

World Space

1. Render Camera: Make sure you have a camera assigned to this slot

Adding the Script to your Project (there are two linked scripts)

1. Due to the amount of options available, Waypoint Indicators is linked to a custom editor script (***Waypoint_Indicator_Editor.cs***) to keep the inspector organized.
2. Although the Waypoint_Indicator.cs will run smoothly without the custom inspector, it is recommended you use both scripts together for an optimal inspector interface.
    a. Waypoint_Indicator.cs
        i. This is the core asset
        ii. Place this file anywhere you like (typically a folder titled “Scripts”)
    b. Waypoint_Indicator_Editor.cs
        i. This is the custom inspector interface
        ii. This file MUST be placed in a folder called “Editor”. This “Editor” folder can sit anywhere in your project directory.
3. As of version 1.4.1 Waypoint Indicators is linked to the script (***WPI_Manager.cs****)* supporting multi-camera setup and future functionality.

Add the Script to your Game Object

1. Select your game object and go to the Inspector
2. At the bottom, click “Add Component” and search “Waypoint_Indicator”
3. Click to add
4. Run the project
5. You should see two lines of text attached to your object.
    a. Hello!
    b. Object’s distance from camera in meters
6. If you do not see any text, you might not have installed Text Mesh Pro or something’s off with your Canvas settings. Please read above to make sure you have your project setup correctly.

Multi-Camera Setup

WPI_Manager.SwitchCams();

WPI_Manager.SwitchCams(string **CameraTag**, string **Distance Calculated from Target Tag**);

Description:
This function tells the indicators which camera to render to when swapping between multiple cameras. It replaces the current Camera and the Distance Calculated from Target across all active Waypoints in the scene.

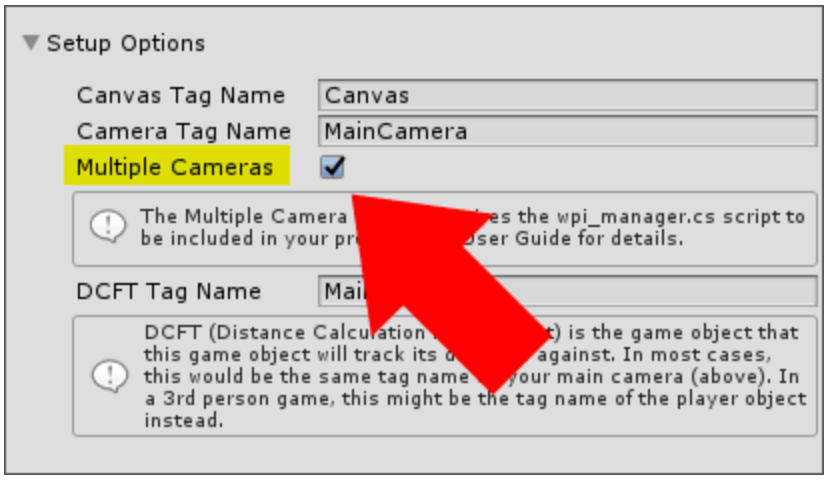
Requires the *“WPI_Manager.cs*” script to be in your project (does not have to be in scene or hierarchy). Be sure to click the “Multiple Cameras” checkbox in the set up options to avoid errors.

Example Trigger Script swapping between 3 cameras using Input.GetKeyUp():

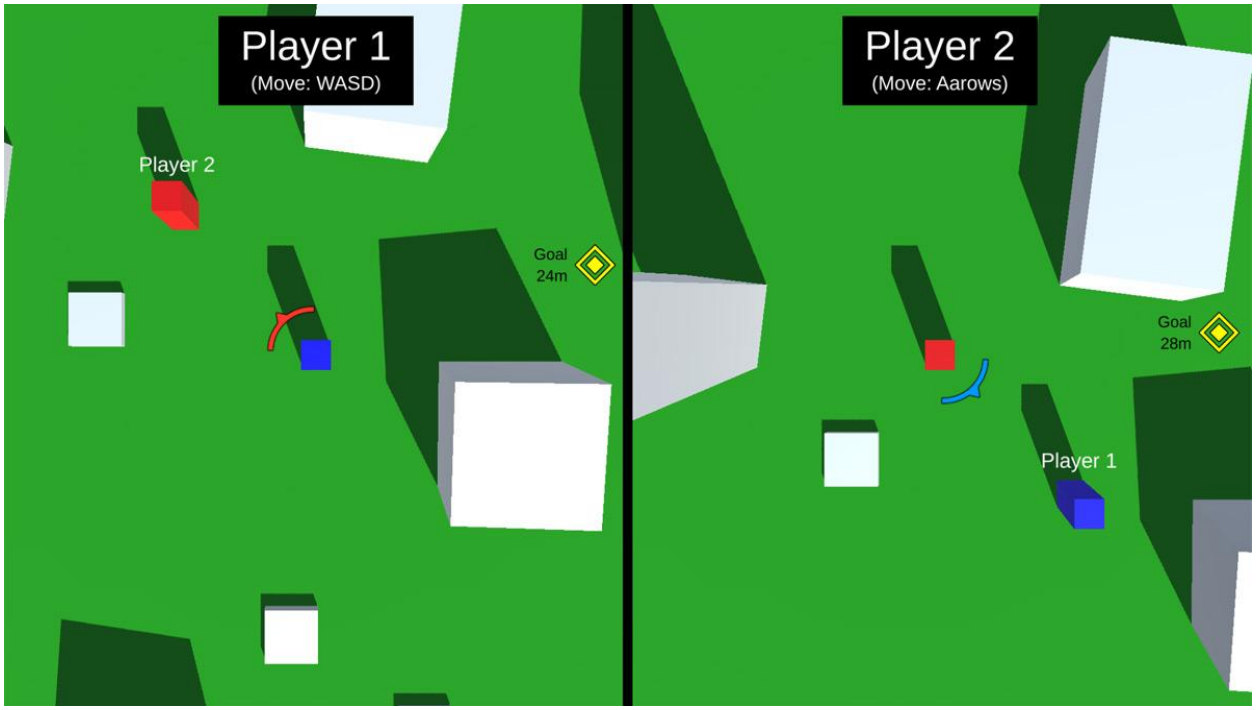
```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class camera_manager : MonoBehaviour
{
    //Call cameras by their game object so we can enable/disable them for this example
    public GameObject cam1;
    public GameObject cam2;
    public GameObject cam3;

    //Stores the tag name of the camera you’ll be switching to
    private string newCameraTag; //Sets up the new camera tag name
    //Stores the tag name of the game object you’ll be calculating distance from
    private string newDistCalTargetTag;
```

```
    //Sets cam1 as the default camera on Start
    private void Start()
    {
        newCameraTag = cam1.tag;
        newDistCalTargetTag = cam1.tag;
        //Tells Waypoints to render to a new cam and calculate dist from a new object
        WPI_Manager.SwitchCams(newCameraTag, newDistCalTargetTag);
        cam1.SetActive(true);
        cam2.SetActive(false);
        cam3.SetActive(false);
    }

    void Update()
    {
        if (Input.GetKeyUp("1"))
        {
            newCameraTag = cam1.tag;
            newDistCalTargetTag = cam1.tag;
            //Tells Waypoints to render to a new cam and calculate dist from a new object
            WPI_Manager.SwitchCams(newCameraTag, newDistCalTargetTag);
            cam1.SetActive(true);
            cam2.SetActive(false);
            cam3.SetActive(false);
        }

        if (Input.GetKeyUp("2"))
        {
            newCameraTag = cam2.tag;
            newDistCalTargetTag = cam2.tag;
            //Tells Waypoints to render to a new cam and calculate dist from a new object
            WPI_Manager.SwitchCams(newCameraTag, newDistCalTargetTag);
            cam1.SetActive(false);
            cam2.SetActive(true);
            cam3.SetActive(false);
        }

        if (Input.GetKeyUp("3"))
        {
            newCameraTag = cam3.tag;
            newDistCalTargetTag = cam3.tag;
            //Tells Waypoints to render to a new cam and calculate dist from a new object
            WPI_Manager.SwitchCams(newCameraTag, newDistCalTargetTag);
            cam1.SetActive(false);
            cam2.SetActive(false);
            cam3.SetActive(true);
        }
    }
}
```

To avoid debug errors, be sure to check “Multiple Cameras” in the Setup Options when using this function.



Split Screen Set Up



Note: Split screen support is a working experiment that with some light tweaking, can yield fantastic results. Check out the Live Demo for a working reference. If you encounter any issues please feel free to reach out at peter.tracy@yahoo.com.

These instructions assume that you already have at least one working character controller.

Setting up Split Screen

1. Select Player 1 and make sure it has a tag, if not, assign one. ex: *Player 1*
2. Select Player 1 and add a new Camera as a child to the root level
3. Name the Camera: ex: *P1 Camera*
4. Assign a tag to the Camera: ex: *P1 Camera*
5. With the Camera selected, make sure the Depth is set higher than any other cameras in the scene
6. Change Viewport Rect width to: x=0, y=0, w=0.5, h=1 (if you are exporting your game to WebGL, set x=0.001)
7. You should see that half of the total view port is rendering
8. Select Player 1 and add a new Canvas as a child to the root level
9. Name the Canvas: ex: *P1 Canvas*
10. Assign a tag to the Canvas: ex: *P1 Canvas*
11. Set Render Mode to: Screen Space - Camera
12. For Render Camera, drag and drop the *Player1 Camera* we just created
13. Set Plan Distance to: 0.4
14. Set Canvas Scaler to: Scale With Screen Size
15. Set Reference Resolution to: x = 1920, y=1080
16. Set Screen Match Mode to: Match Width Or Height
17. Set Match to: 0.5
18. Move the Player 1 character around to make sure the left side of the screen is rendering properly
19. Either repeat the instructions above for Player 2 or simply duplicate Player 1 before going forward.
20. Make sure Player 1 and Player 2 characters are in two different locations and look different from each other in order to differentiate the two split screens.
21. For Player 2, make sure the Root Character, the Canvas and the Camera are all tagged to reflect Player 2 like we did with Player 1.
22. Select the Camera in Player 2
23. Change Viewport Rect to: x=0.5, y=0, w=0.5, h=1
24. Select both Player 1 and Player 2 Canvases
25. Set Render Mode to World Space (otherwise the indicators will not render properly)
26. Test your project and make sure the characters work without errors. Split screen setup is complete. Next step is to add the Waypoint Indicator scripts.
27. To avoid errors, make sure you only have one Audio Listener in your scene active at a time. Remove or disable any additional Audio Listeners on your other Cameras

Adding a Point of Interest

This could be another player, a pickup item, an exit, etc.) For this demonstration, let's assume it's an *exit*.

1. Select the *exit* game object
2. Add the Waypoint Indicator script by dragging the script into its inspector or by clicking "Add Component" and searching Waypoint Indicators
3. Find and expand Setup Options
4. Set Canvas Tag Name to Player 1 Canvas tag name: *Player 1 Canvas*
5. Set Camera Tag Name to Player 1 Camera tag name: *Player 1 Camera*
6. Leave Multiple Cameras unchecked
7. Set DCFT Tag Name to Player 1 root game object tag name: *Player 1*
8. Check "Standard Tracking"
9. Set Max Display Range to: 1,000

10. Test your project by clicking the play button
11. You should only see one yellow box with small text saying “Hello World” constrained to the left screen representing Player 1
12. Make cosmetic changes to your indicator to suit the project needs.
13. Before you stop your project, be sure to right-click the Waypoint Indicator script and select “Copy Component”
14. After stopping the project, paste the component values into the Waypoint Script
15. Player 1 indicator is now set.
16. With the *exit* game object selected, add another Waypoint Indicator script underneath the existing one by right-clicking the Waypoint Indicator script and selecting “Copy Component” and right-clicking again and selecting “Paste Component As New”. (If you had 3 players then you’d add a 3rd and so on)
17. Collapse the first Waypoint Indicator script:and expand the new one
18. Find and expand Setup Options
19. Set Canvas Tag Name to Player 2 Canvas tag name: *Player 2 Canvas*
20. Set Camera Tag Name to Player 2 Camera tag name: *Player 2 Camera*
21. Leave Multiple Cameras unchecked
22. Set DCFT Tag Name to Player 2 root game object tag name: *Player 2*
23. Hit play and test.
24. Repeat for each point of interest

Inconsistent Edge Detection
Depending on your project resolution and the ratio of your split screens, the indicators may not line up perfectly to the screen edges.

If you’re experiencing inconsistent edge detection, try this fix.

Tips to Get Started

Make sure your existing project is free of any console errors

Sometimes errors from other scripts will affect the performance of this asset. Please be sure that there are no errors prior to attempting to debug the script.

Use Empty Game Objects For Precision Positioning

Apply the Waypoint script to an empty game object, give it a unique name, then make it a child of the object you wish to track. This allows you to physically place the Waypoint where you like on the object. Waypoint scripts placed directly onto game objects will spawn at the object’s local 0,0,0 origin points. Since every game object has a different origin point, this could yield unpredictable positioning results for your Waypoint.

Editing Waypoints on Prefabs at RunTime

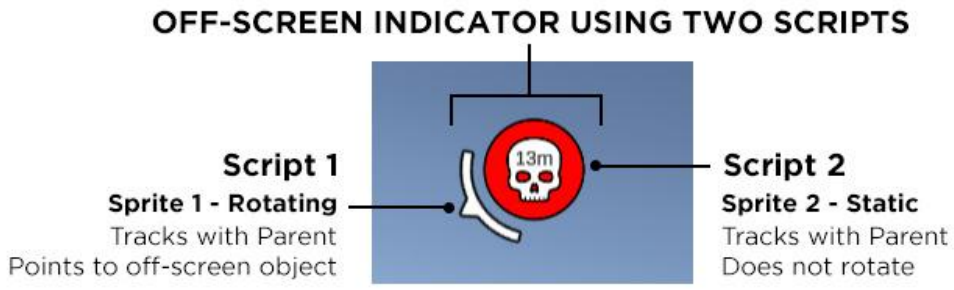
When editing in RunTime, edit the script from the scene object directly, not the prefab resource file, your changes will not save. Instead, find and click the game object within the scene hierarchy and edit from there. When you're done, right-click the waypoint script, select "Copy Component". Stop running the project, right-click the waypoint script you just copied and select "Paste Component Values". This will make sure you don't lose your edits during runtime.

Stacking/Layering Indicators Using Depth

You can achieve some cool effects by placing animated Indicators behind static ones while keeping text indicators on top of everything. Use the depth field to stack your sprite, game object or text indicators in any order you like. 0 represents the very bottom of the stack while 2 is the very top.

Attach Multiple Scripts for Added Functionality

One script is good, but two can be better. Waypoint Indicators work together when multiple scripts are added to a single object.
For example, you might want to show a static sprite coupled with a rotating arrow pointing to its object location off screen. Since a sprite state cannot be both static and allow to rotate at the same time on the same script, you would use one script to handle the static sprite and the other to handle the rotating sprite. See below:



Globally Hiding and Showing Waypoints

WPI_Manager.ToggleVisibility();

Description:
Hides or shows all Waypoints in the scene while keeping their parent game objects visible.

***Note** current and newly spawned waypoints all inherit the same state. This means when waypoints are toggled OFF, any new waypoints spawned into the sence will not display their waypoint until toggled back on and vice versa.

Requires the *"WPI_Manager.cs*" script to be in your project (does not have to be in scene or hierarchy).

Example Trigger Script using Input.GetKeyUp():

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class toggle_waypoints : MonoBehaviour
{
    void Update()
    {
        if (Input.GetKeyUp("1"))
        {
            //Hides all waypoints if they are active, and shows them if they are inactive
            WPI_Manager.ToggleVisibility();
        }
    }
}
```

NOTE: Waypoints will destroy themselves when the game object or its parent is either destroyed or deactivated. Code below:

1. Destroy(gameObject)
2. gameObject.SetActive(false);

Adding Custom Fonts

Although not needed, custom fonts will help establish your game's look and feel. Here's how:

1. Locate the Project tab (Window > General > Project)
2. Create a *FONTS* folder in your assets folder.
3. Unity supported font formats: .ttf and .otf
4. Place supported fonts into the *FONTS* folder.
5. Open Font Asset Creator: Window >TextMeshPro > Font Asset Creator
6. Click "Source Font File" to select font.
7. Click "Generate Font Atlas"
8. Click "Save"
9. Your font is ready to use

Converting Images to Sprites

Although your project contains several sprite examples to experiment with, you may want to add your own.

The instructions below assume you already have icon art saved to your project.

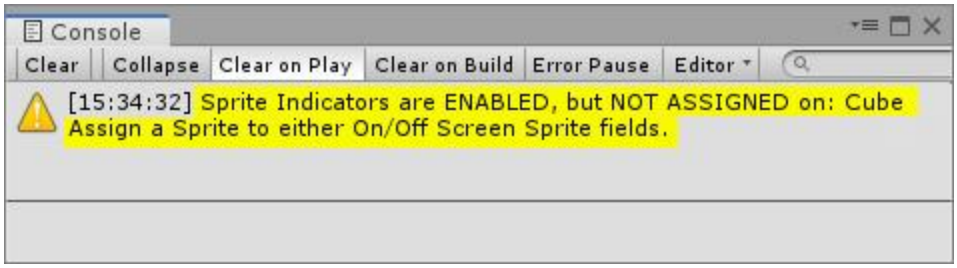
1. Locate your image in Unity via the Project tab (Window > General > Project)
2. Go to the Inspector Window (Window > General > Inspector)
3. Click “Texture Type” at the top
4. Select “Sprite (2D and UI)
5. Click “Apply” in the bottom right
6. Your icon is ready to use

Customized Console Warnings

If your waypoint isn’t working, check the console

In an attempt to go beyond the console log, detailed warnings for predictable situations have been added to facilitate speedier bug fixing. For example, if no sprites have been selected for the Icon, instead of seeing a white box, the console will tell you there are missing images and which game object its referring to.

Example:



FAQ

Newly added Sprite isn’t showing up during runtime

This happens when adding a sprite for the first time while the game is running. SImply reset the script by disabling and enabling it back. Also check that your camera is within DISPLAY RANGE.

Sprites, Objects, or Text aren’t showing up

1. Check to see that your camera isn’t out of the default DISPLAY RANGE which is 50. This can be fixed by changing the Display Range to a much larger value. Try putting in 1,000 as a starting point to see if your elements show up.

2. Disable Pixel Perfect in your Canvas. Most sprite elements will be scaled or rotated, or use subtle animated position or scaling, therefore it may be advantageous to disable Pixel Perfect, since the movement will be smoother without. Additionally, enabling Pixel Perfect has caused Sprites to not render at all.

3. You might be missing sprites. Make sure you have sprites assigned to “On Screen Sprite” and “Off Screen Sprite” in the icon section.

“New Game Object” keeps spawning over and over outside of my canvas when project starts

This happens when there is either no Canvas in your project or your project Canvas is labeled differently than what the Waypoint script is looking for. Basically the script can’t find the Canvas. To fix, open the Waypoint Indicator script and update the “canvas_name” value in line 10 to the same name as your Canvas.

Changes aren’t updating in real time when the project is running

Make sure you are NOT updating the PREFAB from your project directory, this will yield no results. To see changes in real time, find and click on the Game Object with the Waypoint Indicator script attached either from your Hierarchy window or your scene view and edit directly from there.

How do I control the stacking order of text versus icons

Text and Icon UIs show up in the order that they are spawned. To place a UI object on top of another, simply disable, then enable the icon you want on top. Disabling text automatically disables the description and distance fields. You will need to re-enable them when re-enabling the Text UI.

Sprites look stretched

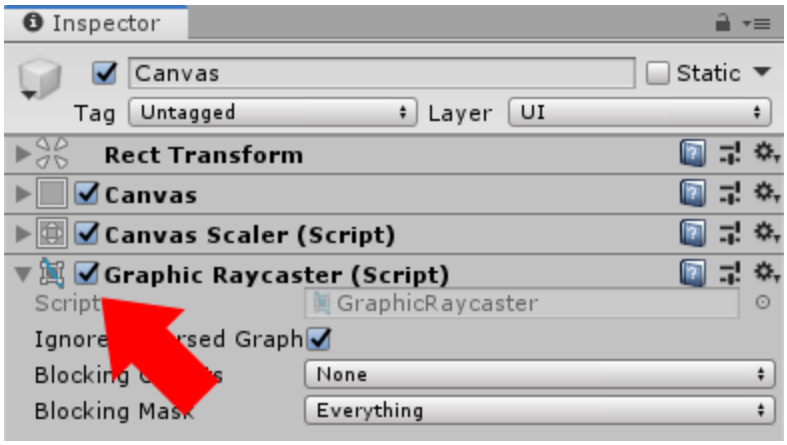
Disable and re-enable the game object with the waypoint script attached to fix. Do this each time you swap out your sprites with another sprite of a different with and height dimensions. The sprite size is set when the icon becomes enabled. If you swap out a sprite with another sprite of different width and height dimensions, the old values will still be applied to the new sprite and stretching will occur.

Demo won’t play (Scene Errors)

If you plan on using or playing the demo in your new project, be sure to add the respective scenes to your build index under *File > Build Settings...*
The scenes can be located in *Waypoint Indicators > Scenes*
To avoid possible errors and scene index conflicts with the demo and your project, it is recommended to play the demo in a brand new unity project.

Navigation UI elements aren't clicking through

There's a chance that Waypoint Indicator objects might be blocking your Raycast pointer. To fix this, simply go to your Canvas inspector window and disable "Graphic Raycaster"

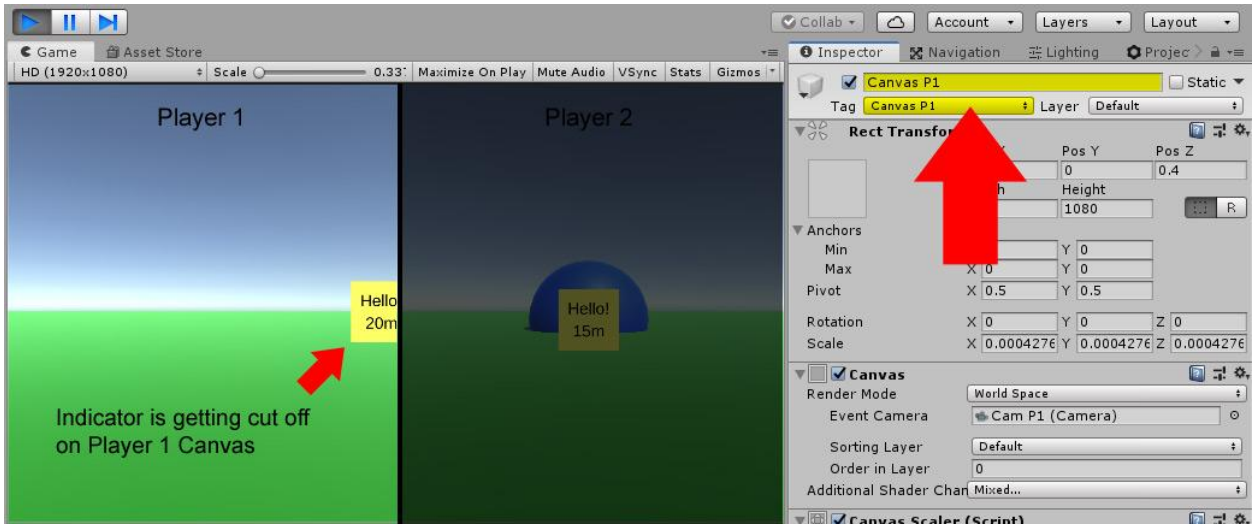


Jittery UI in Screen Space - Camera Mode

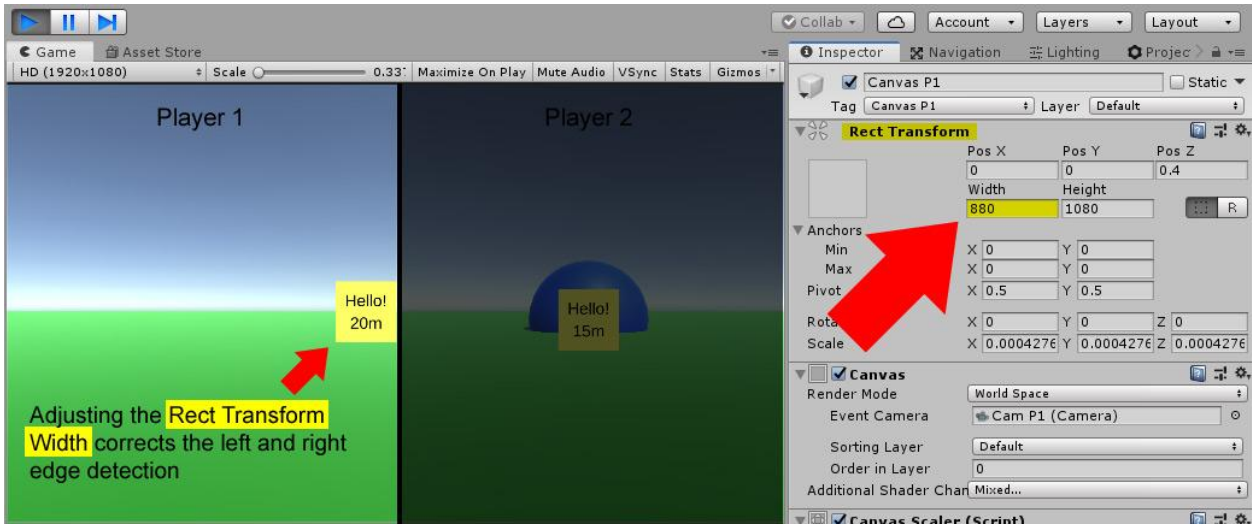
1. If you are using a Camera controller, check to make sure that the Waypoint Indicator Update() function matches that of the camera controller. If your camera controller uses a FixedUpdate, make sure to change that in the Waypoint Indicator script to match.
2. Make a separate Canvas for your Waypoint Indicators and make it a child of the camera that renders the Indicators.

Split Screen: Inconsistent Edge Detection

Since we will be tweaking Player 1 and Player 2 Canvases, make sure each player has a dedicated Canvas that is handling the indicators, otherwise any UI elements sharing a Canvas with your indicators will scale out of proportion giving undesirable results.



Hit the play button to run your project. With the Waypoint Indicator boundary turned on (in the Waypoint inspector), position the Waypoint game object so that the indicator is pointing off-screen



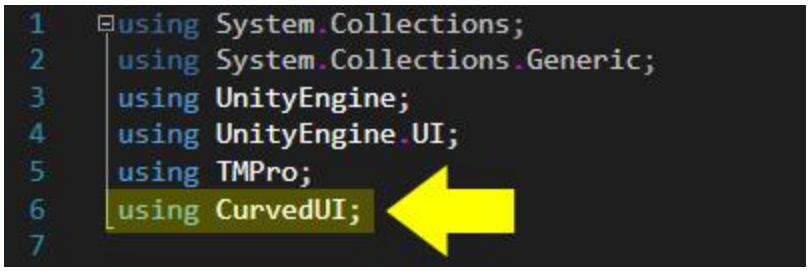
Adjust the width and height Rect Transform of the Canvas (Render Mode: World Space) until the boundaries are flush against screen edges. In this case, we adjusted the Width to fix the left and right edge detection. Alternatively, you would adjust the Height to correct top and bottom detections. Copy and paste the Rect Transform values from Player 1 Canvas into the Player 2 Canvas to fix both screens.

Still Not Working??

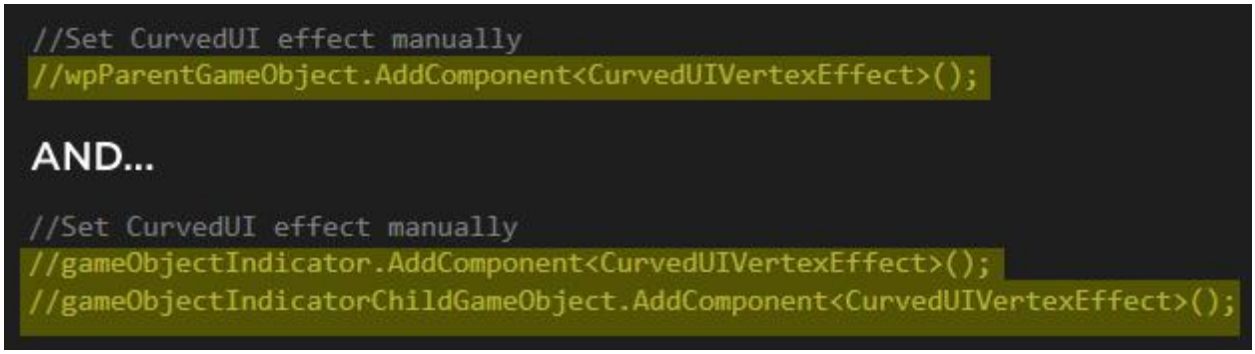
Some issues can be resolved by removing the package completely and re-importing. If you continue to have issues, please feel free to email me directly at peter.tracy@yahoo.com

Integrating with Curved UI

Waypoint Indicators supports Curved UI. Follow the instructions below to get your waypoints working properly:

1. Add “using CurvedUI;” to the name space
2. 

3. Search for “*Set CurvedUI effect manually*” and uncomment the line(s) below it for each result (there are probably 9 places to uncomment). There may be instances where two lines need to be uncommented. They will show up clustered together.

4. 

Contact

If you're having any issues at all with this script, please contact me. I'm not happy unless you are! Also, if the script is working out for you and you're super satisfied, I'd love to hear from you! Click the contact link below to send me a message.

peter.tracy@yahoo.com

@studio11508 | http://ptracy.com/ | Feedback Form