Virtual JOYSTICK user guide

Last updated: 03 April 2024

Foreword

If you encounter any problems in the package, have anything you would like to clarify, or would like to report a bug, please contact us at terresquall.com/contact.

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1. Version Changelogs

Version 1.0.2 (3 April 2024)

- Removed the **UI Text Print Axis** property, which showed the axis of a joystick if you assigned a `UnityEngine.UI.Text` object to it. The removal is because newer versions of Unity only support Text Mesh Pro, and the console debug option was improved.
- Improved on the **Console Print Axis** property. Now, it shows the name of the joystick that is producing the output; and the output only generates if you are using the joystick.
- Fixed an issue where, before it is first used, a joystick may point to (or away from) the Anchor on certain Canvases that have a scale factor that is not 1, until they are used for the first time.
- Fixed an issue where resizing the screen would cause the joystick to become deformed. Now, the joysticks will recalculate their positions whenever the screen size changes (e.g. phone rotation).
- Fixed the code blocks not showing properly on the user guide.
- Added some FAQs.

Version 1.0.1 (22 March 2024)

- Fixed an issue that caused the asset to throw errors when you try to build the project.
- Added dependency on UI and the old Text element to maintain compatibility with newer versions of Unity.

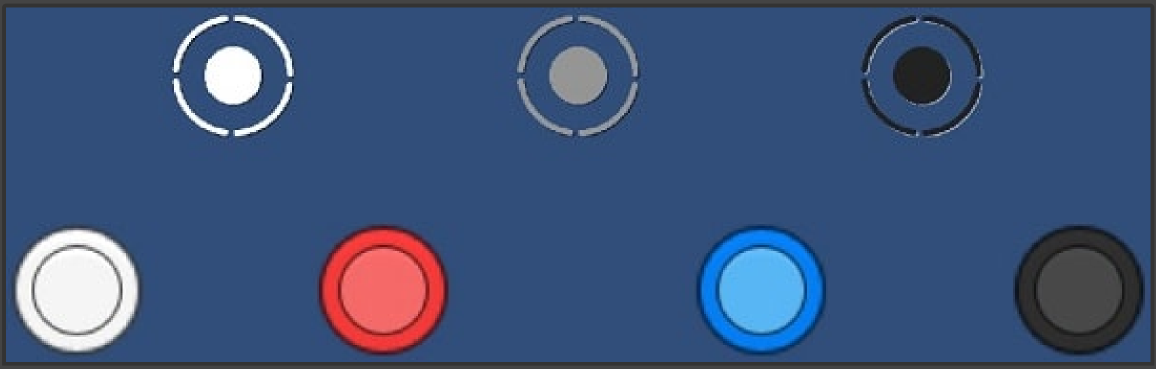
Version 1.0.0 (3 December 2023)

- Limited initial release.

2. Setting up

Import the asset into your project. The asset should be unpacked into a folder called `VirtualJoystick` in your `Assets` folder.

To add and use a virtual joystick, drag any of the joystick prefabs from `VirtualJoystick/Prefabs` onto *any* Canvas GameObject in your Scene, and it should be ready to use.


Available joystick designs to choose from.

3. Reading joystick input

Once the joystick is set up, in every script where you want to read input from any of your virtual joysticks, you will need to add the following namespace to the top of your scripts:

```
using Terresquall;
```

Once that is done, you will be able to access the `VirtualJoystick` class.

a. Using `GetAxis()`

To read input from the joystick, use `VirtualJoystick.GetAxis("Horizontal")` to read horizontal offset, and `VirtualJoystick.GetAxis("Vertical")` to read vertical offset. For example, the following code moves the character in the horizontal direction the joystick is pushed:

```
// The value of x is between -1 and 1.
float x = VirtualJoystick.GetAxis("Horizontal");
```

```
transform.position += x * Time.deltaTime;
```

The function works similarly to Unity's own `Input.GetAxis()` method. Do note, however, that the `"Horizontal"` and `"Vertical"` prompts are hardcoded into the joystick and are unrelated to the values in Unity's Input Manager.

b. Using `GetAxisRaw()`

If you want to snap the values to -1, 0 or 1, you can also use `VirtualJoystick.GetAxisRaw("Horizontal")` or `VirtualJoystick.GetAxisRaw("Vertical")`, which functions like Unity's own `Input.GetAxisRaw()`.

c. Using `GetAxis()` or `GetAxisRaw()` without arguments

If you don't like to retrieve each axis separately, you can also call `VirtualJoystick.GetAxis()` without any arguments to retrieve a `Vector2` containing the horizontal and vertical inputs.

```
Vector2 joyInput = VirtualJoystick.GetAxis();

// Moves the character with the joystick.
transform.position += joyInput.x * Time.deltaTime;
```

d. Reading multiple joysticks

If you have multiple virtual joysticks on the Scene, you will need to add an extra integer to your `GetAxis()` or `GetAxisRaw()` calls to read the 2nd virtual joystick and beyond.

```
// Reads the horizontal input of the 2nd joystick on the scene.
VirtualJoystick.GetAxis("Horizontal", 1);
// Reads the vertical input of the 3rd joystick on the scene.
VirtualJoystick.GetAxis("Vertical", 2);
```

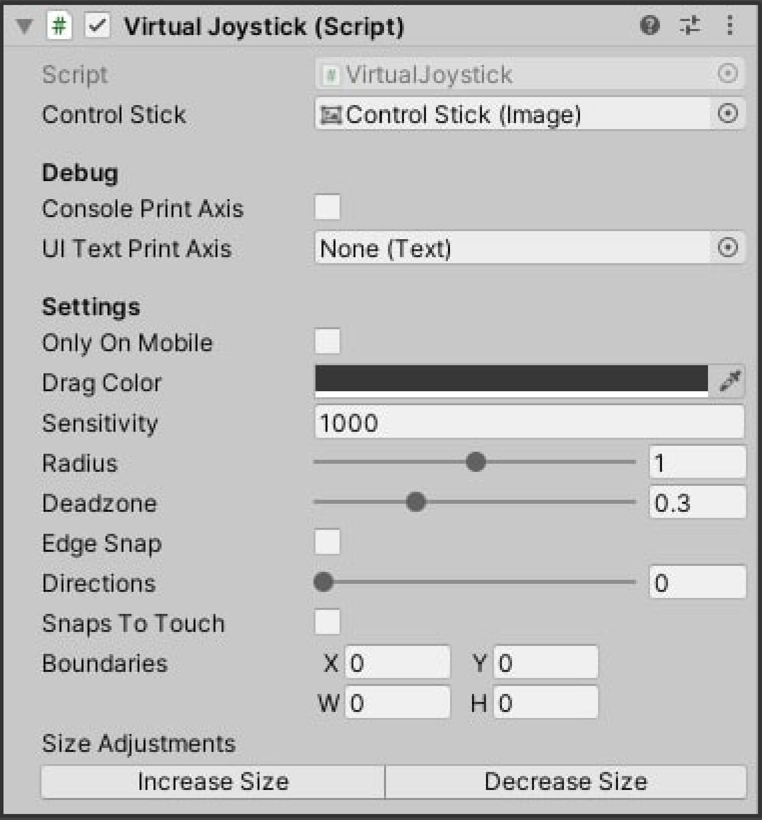
If you want to retrieve input data for both axes, just pass the integer value of the joystick, like so:

```
// Gets the input data of the 3rd joystick.
```

```
VirtualJoystick.GetAxis(2);
```

4. Settings

On top of this, each virtual joystick also comes with a **Virtual Joystick** component, which has a variety of settings you can toggle.


Virtual Joystick (Script)

Script	VirtualJoystick
Control Stick	Control Stick (Image)
Debug	
Console Print Axis	☐
UI Text Print Axis	None (Text)
Settings	
Only On Mobile	☐
Drag Color	■
Sensitivity	1000
Radius	1
Deadzone	0.3
Edge Snap	☐
Directions	0
Snaps To Touch	☐
Boundaries	X 0 Y 0 W 0 H 0

Size Adjustments

Increase Size | Decrease Size

The Virtual Joystick component.

To adjust how the Virtual Joystick works, you will want to adjust the attributes under the **Settings** section. Below are a list of the properties, and what they do:

Property	Description
Only On Mobile	Check this box if you want to hide the Virtual Joystick when the game is not being played on a mobile device. Only works on Unity 2020 and above. Works with the Device Simulator in Unity.
Drag Color	What the color of the joystick turns into when you are tapping on it. Used to provide feedback when using the joystick.
Sensitivity	This controls how responsive the joystick is.
Radius	This controls how far you can pull the control stick on the joystick away from the joystick base at the centre. When adjusting this, a red circle will be shown on the joystick, showing you how big this radius is.

Property	Description
Deadzone	A value between 0 and 1, representing a percentage of the maximum distance the joystick can travel. For example, if this value is 0.3, you will need to pull the joystick at least 30% away from the centre for the input to register.
Edge Snap	Only works if **Direction** is more than 0. When checked, this causes the joystick to only move along the axes of the directions it can snap to.
Direction	If more than 0, the joystick will snap to specific directions when outside the **Deadzone**. The useful values here are 4 and 8, although you are technically unrestricted to set the number here. If **Direction** is set to 4, the joystick snaps to ↑ ↓ ← →. Set it to 8, and it will snap to ↑ ↗ ← ↘ ↓ ↙ ← ↖.
Snaps To Touch	This works together with the **Boundaries** attribute. When checked, the joystick will teleport to wherever your finger is, as long as they are within the boundaries set.
Boundaries	If a finger is tapped within the bounds denoted (in the Editor, this is a yellow box around the joystick), **Snaps To Touch** will occur.
Size Adjustments	For adjusting the size of the joystick, use the buttons here to make your life easier, as there is a child element inside the joystick that you have to scale up as well.

5. FAQs

The Joystick is not showing up when I drag it onto a Scene! What do I do?

If it is not showing up, that's because it wasn't parented to a Canvas. If you put it directly into the Scene, it won't work!

To create a Canvas in your Scene, go to **GameObject > UI > Canvas**.

Now the Joystick is showing up, but it is not responding when I tap or drag it!

Make sure you have an Event System on your Scene as well. The first time you create a Canvas, Unity will also add an **EventSystem** GameObject with an **Event System** component on it. This component is needed for the Joystick to function.

If you have accidentally deleted your Event System, create a new one by going to **GameObject > UI > Event System**.