Mobile Touch Floating Joysticks with Options version 1.0 (Unity Asset Store) by Kevin

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This package is made both for people who are comfortable with code and/or those who wish to have a scene that is fully functional in terms of player control. (You use the joystick(s), it(they) control the player with animations.) The code of the joystick is fully commented and explains how it works so that you can fully understand the code.

To explain, the joystick itself generates a normalized direction vector as the user drags their finger on the visible portion of its background image. It has no magnitude (length). It generates values in the x between -1 and 1 and y values between -1 and 1. It works as if moving a point on a trigonomic unit circle. You can get this input data by calling the GetInputDirection() function of the joystick. You can read the comments in the code to understand in full how the joystick generates this data in code.

There are 4 functional demos in this package. Each one demonstrates a different setup of the joystick. Each one controls the player character movement with the joystick. The player character is a 3d humanoid model with mechanim animation clips that are triggered to run in the code. You can replace the 3d model and animation clips with your own or are free to use them in your own project. See below to replace the built-in joystick images with your own.

The joysticks only work if you are using a touch screen device, such as a mobile phone or tablet device. You must use **UnityRemote** from your touch screen device to use the joysticks while your project, runs in the Unity Editor. Otherwise, you can use Unity to build the demos directly onto your device.

To learn more how to develop for touch and to use UnityRemote please see the unity documentation https://docs.unity3d.com/2020.1/Documentation/Manual/UnityRemote5.html.

By default, each type of Joystick in this package appears when and where the screen is touched and disappears when that touch ends. By dragging on the screen the joystick will follow the finger while controlling the player character.

Each type of joystick has the following optional settings that can be set from the Unity Editor:

- Joystick Stays in Fixed Position (by default is not checked (false))
- Joystick Handle Distance (Sets the maximum distance the joystick handle stays away from the center of this joystick. The default is the number 4.)

There is a Joystick Touch Controller that controls the touch functionality. It has the following optional settings that can be set for the joystick from the Unity Editor:

- Joystick Always Visible (by default is not checked (false))

There is a Player Controller that receives the input direction vector from the joystick. It moves and animates the player character and has the following settings that are required:

- Move Speed
- Rotation Speed

There are 4 demo scenes, each one providing a specific type of joystick behavior.

- Dual-Joystick Demo
- Single Joystick Demo
- Left Joystick Demo
- Right Joystick Demo

Dual-Joystick Demo

In this demo, there are 2 joysticks, a left joystick and a right joystick.

The left joystick is limited to the left-half side of the screen. This means that the left joystick cannot be dragged past the middle of the screen and only appears under the touch if the screen is touched within this area.

The right joystick is limited to the right-half side of the screen. This means that the right joystick cannot be dragged past the middle of the screen and only appears under the touch if the screen is touched within this area.

Single Joystick Demo

In this demo, there is 1 joystick. The joystick can be dragged anywhere on the screen and will appear under the touch anywhere on the screen.

Left Joystick Demo

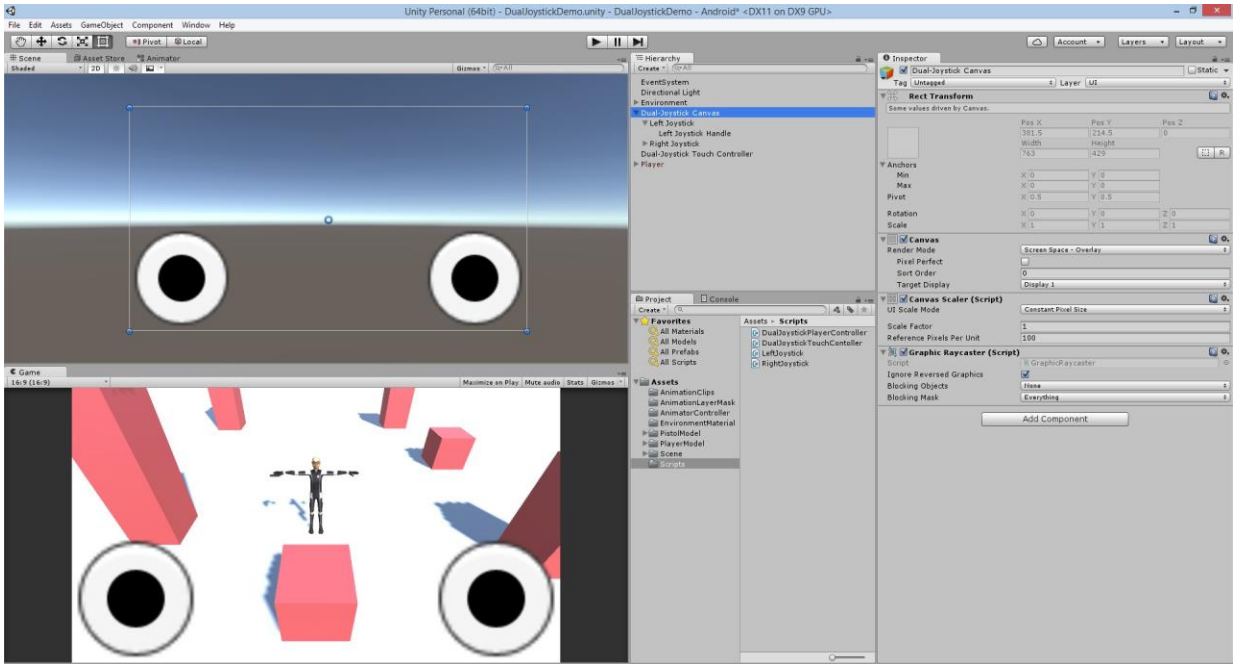
In this demo there is 1 joystick. This left joystick is limited to the left-half side of the screen. This means that this left joystick cannot be dragged past the middle of the screen and only appears under the touch if the screen is touched within this area.

Right Joystick Demo

In this demo there is 1 joystick. This right joystick is limited to the right-half side of the screen. This means that this right joystick cannot be dragged past the middle of the screen and only appears under the touch if the screen is touched within this area.

About the pivot and anchors of the joystick in Unity UI

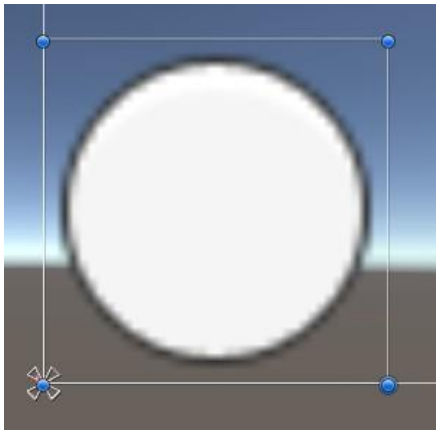
In order for the joysticks to work correctly the pivot point must be set correctly as well as the anchors. This is taken care of for you in script, so that should you move the pivot or the anchors while working in the canvas and forget to set them correctly the script will set them for you. The script will set both the pivot and anchors for you on Start().



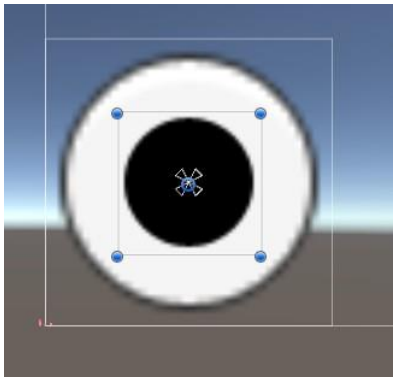
The Images of the joystick in the Unity UI

The joystick is made up of 2 images.

The white circle is the background image of the joystick. Input is generated by dragging the finger on this area.



The black circle, shown here placed over the background image, is the handle image of the joystick. It moves with the finger to provide feedback to the player but is not the part that generates the input.



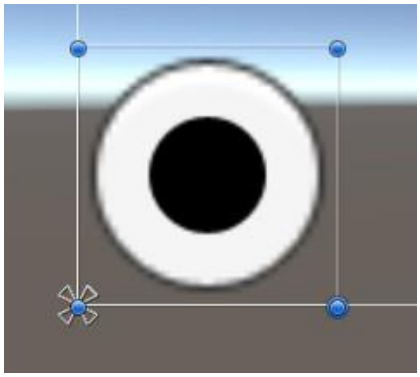
These joystick images can be replaced with your own images. The images used in this package are an image called "Knob" which is built-in to Unity.

Placing the Joystick(s) on the Unity UI Canvas

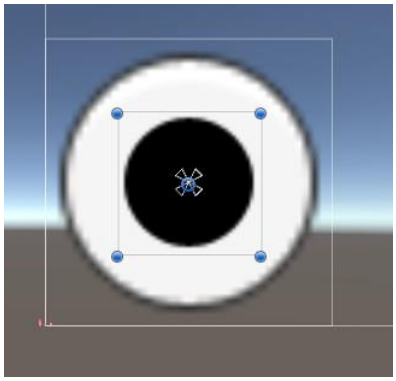
You can open the demo scenes to see how the joystick(s) are placed on the canvas.

The joystick can be placed anywhere on the canvas, the only requirement being that the pivot be in the lower-left corner of the joystick's background image and that the anchors be set to the corner of the canvas. For a left joystick, the anchors should be on a left corner of the canvas and for a right joystick, the anchors should be on a right corner of the canvas.

Once again, for every joystick, the pivot must be placed on the lower-left corner of its background image. The script will set both the pivot and anchors for you on Start().

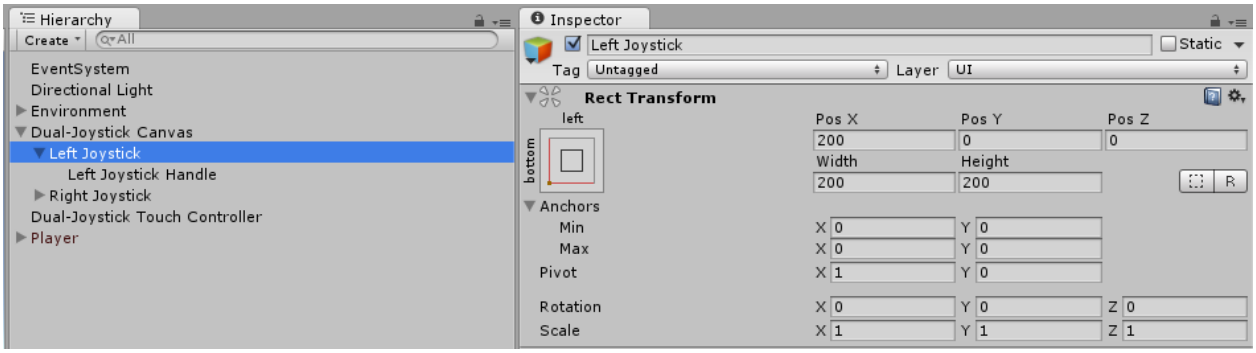


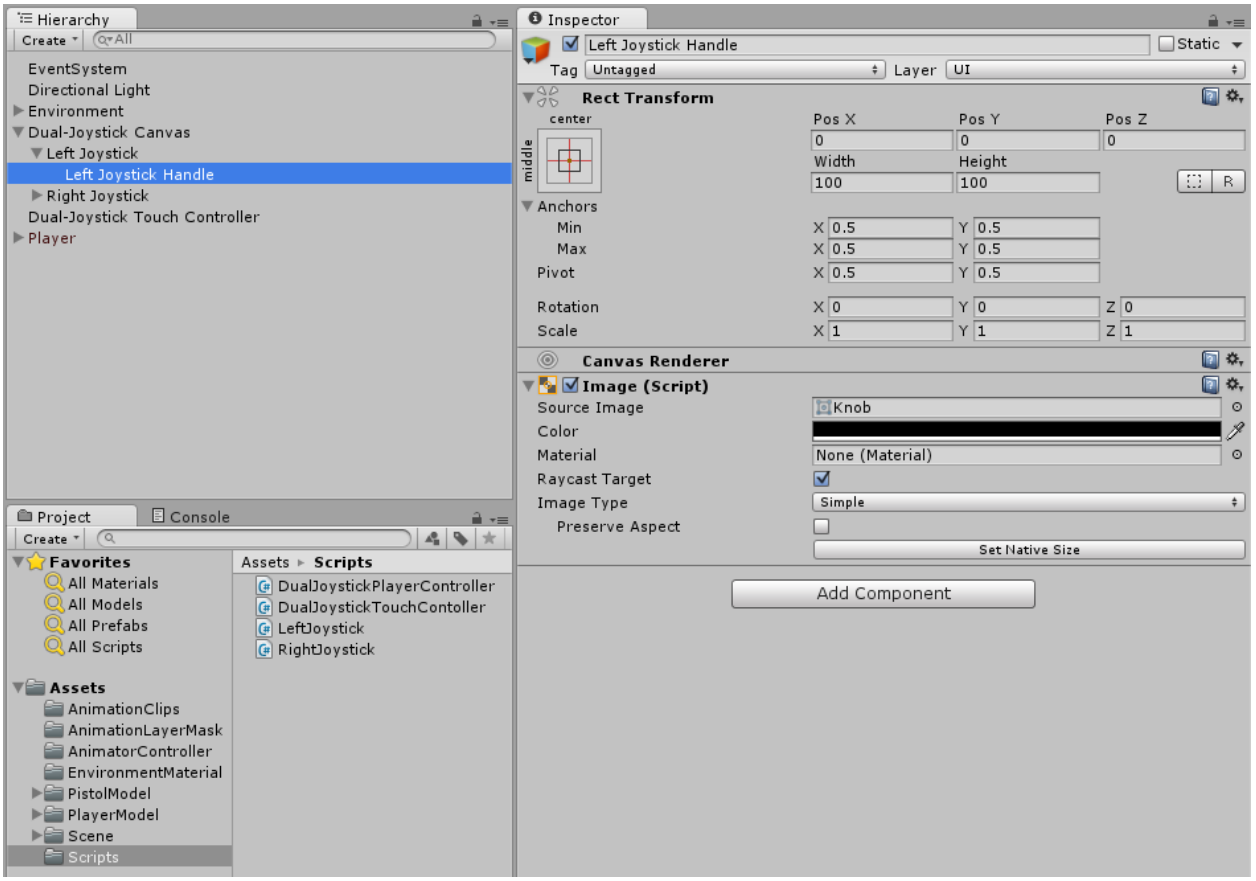
The handle image of the joystick must be placed in the center of the joystick's background image. The pivot and anchors of the handle image must be placed in the center of the joystick's background image.



Sizing the Joystick(s)

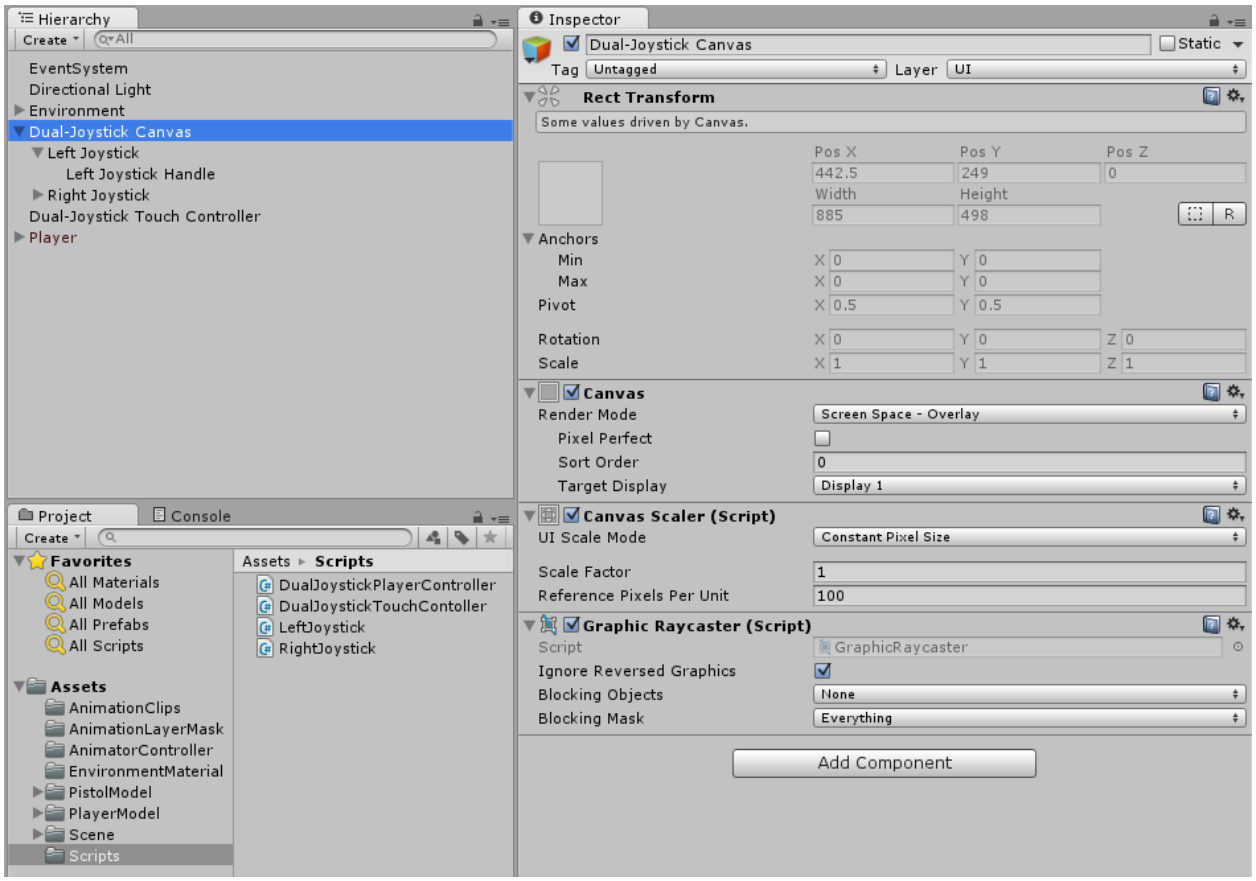
The size of the joystick (it's background image and handle image) can be set to any desired size in the Unity Editor. In the demos I have set the background image to 200 Width, 200 Height and the handle image to 100 Width, 100 Height.





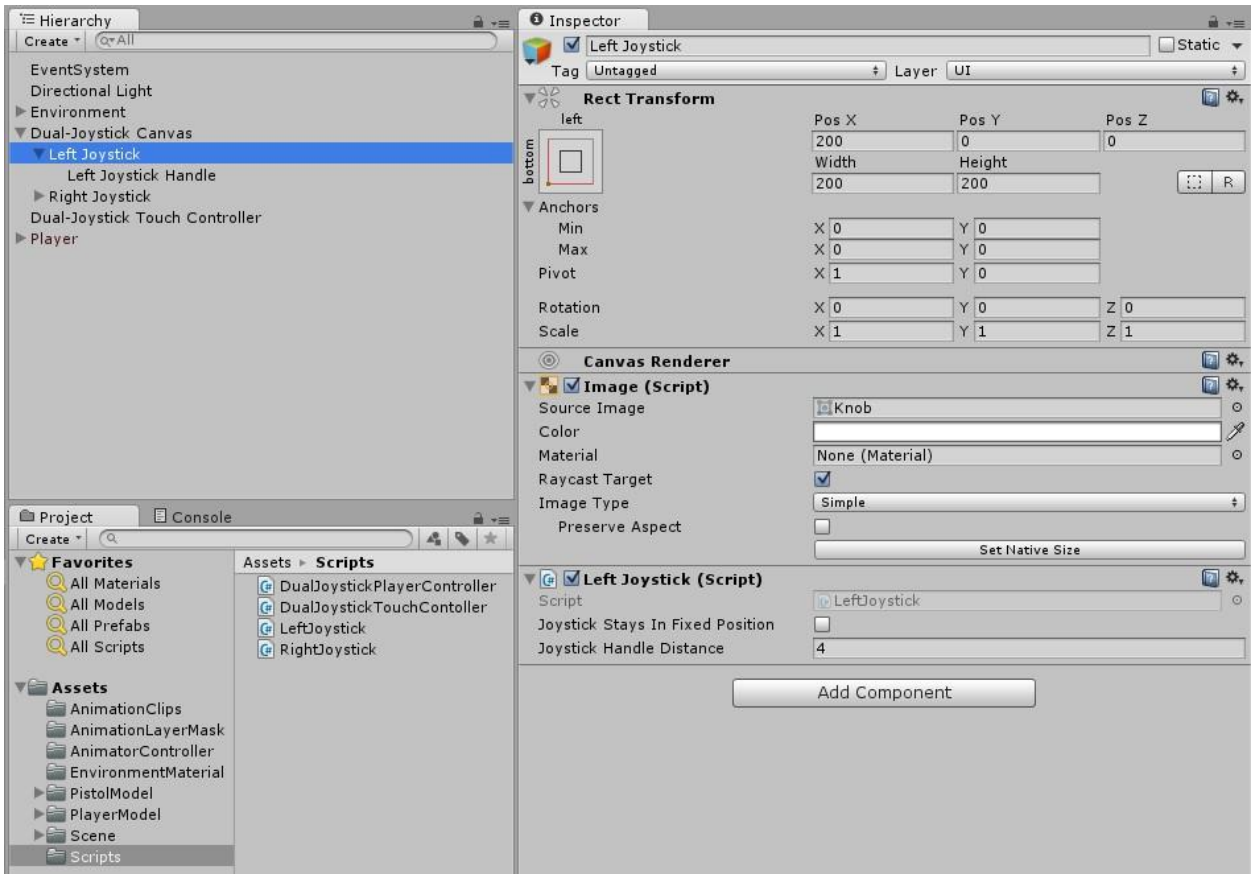
Joystick Hierarchy

The joystick must be placed in a Canvas. This screenshot shows the DualJoystickDemo. Both left and right joysticks are a child of their canvas.



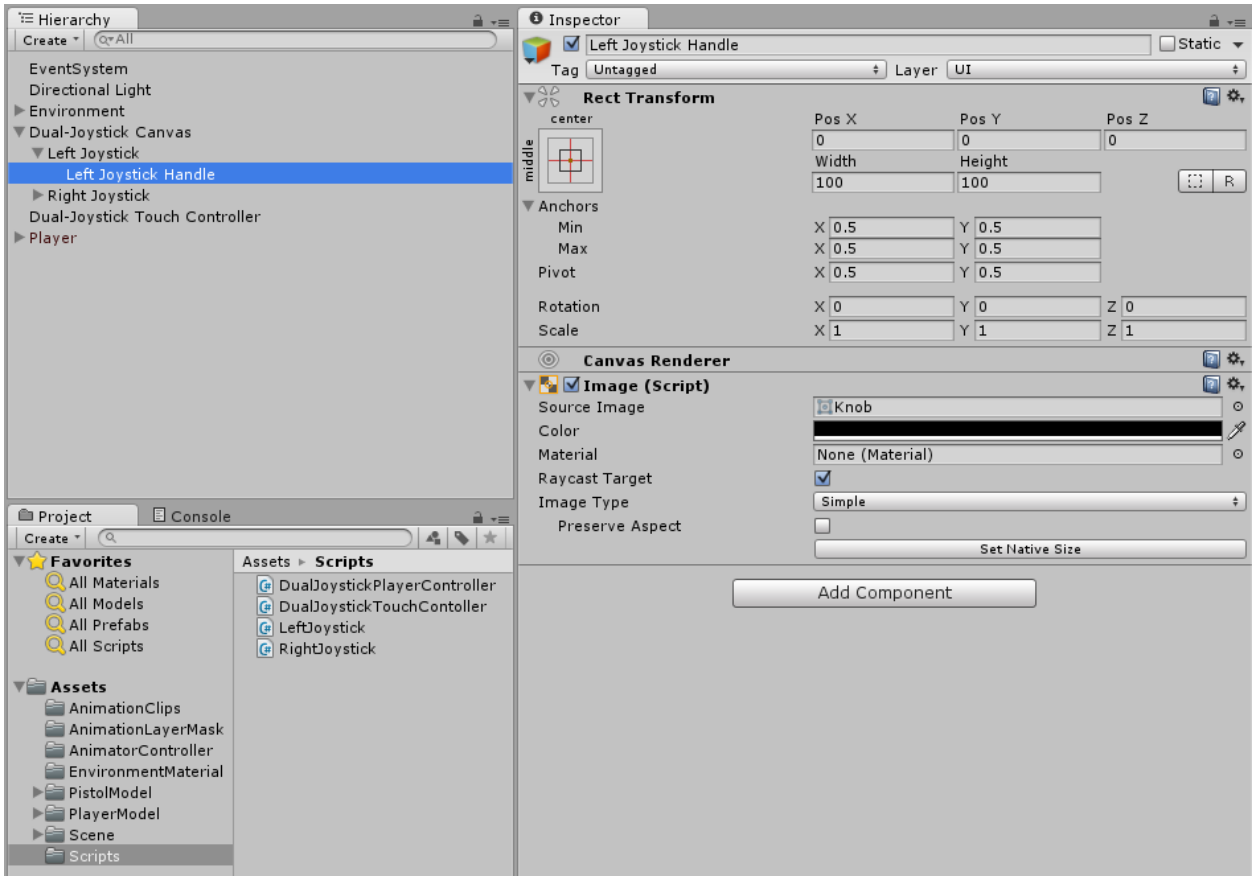
Components of the Joystick Background Image

The joystick's background image component and its script are attached to the joystick. This screenshot shows the Left Joystick in the DualJoystickDemo. There is an image component and the LeftJoystick script component.



Components of the Joystick Handle Image

The child game object of the joystick's background image is the handle of the joystick. It has an image component with a different color than the parent background image.

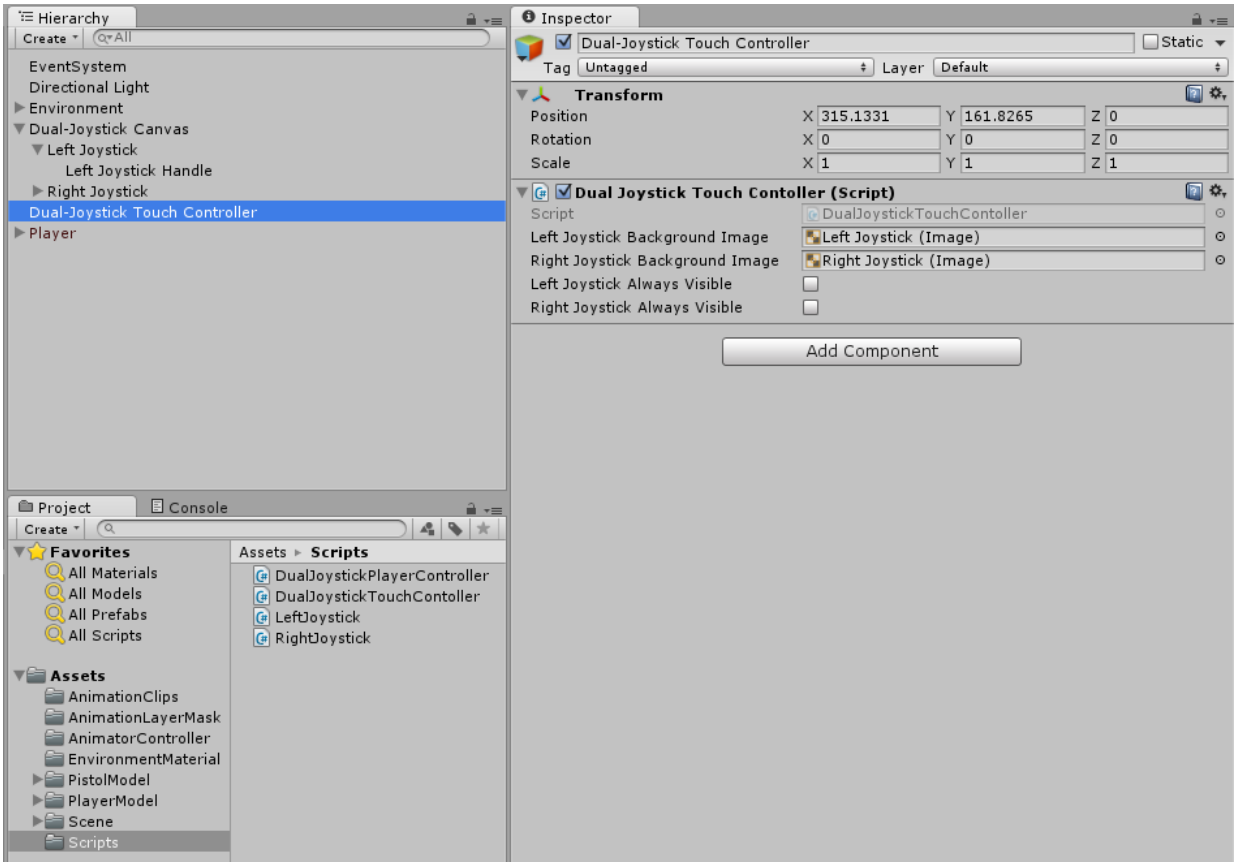


The Joystick Touch Controller

This game object does not need to be in a canvas. It controls the visibility behavior of the touches depending on the fixed position setting of the joystick. There is a Joystick Touch Controller in each demo.

You can read the code and comments to understand how if works and/or further modify it to suit your own project if desired.

- DualJoystickTouchContoller
- SingleJoystickTouchController
- LeftJoystickTouchContoller
- RightJoystickTouchContoller



The Player Controller

This game object does not need to be in a canvas. It controls the movement of the player character by getting the normalized input direction vector generated from the joystick. It is in this game object where the GetInputDirection() is called. There is a Player Controller in each demo.

You can read the code and comments to understand how if works and/or further modify it to suit your own project if desired.

- DualJoystickPlayerController
- SingleJoystickPlayerController
- LeftJoystickPlayerController
- RightJoystickPlayerController