EasyTouch 4.X

User & API documentation

Index

What's new in EasyTouch 4

- Unity UI integration.
- EasyTouchTrigger component, that allow you to call existing functions with out a line of code relative to an EasyTouch event.
- New two finger gesture algorithm.
- The simulation of the second finger can be activated or not
- 2 methods for two fingers auto selection Finger & Average
- The double tap is now configurable.
- Gesture priority between tap & slips.
- 4 new build in swipe direction : UpLeft, UpRight, DownLeft , DownRight
- Auto update picked object option
- tmpArray of touches is now cached to prevent garbage collector.
- New inspector style

features no longer supported

- EasyJoystick & EasyButton are no longer supported, they are replaced by Easy Touch Controls
- Reserved area are no longer supported, the new Unity UI is more flexible
- Message sending via the internal management system in Unity for javascript user has been replaced by the component EasyTouchTrigger.

What is EasyTouch

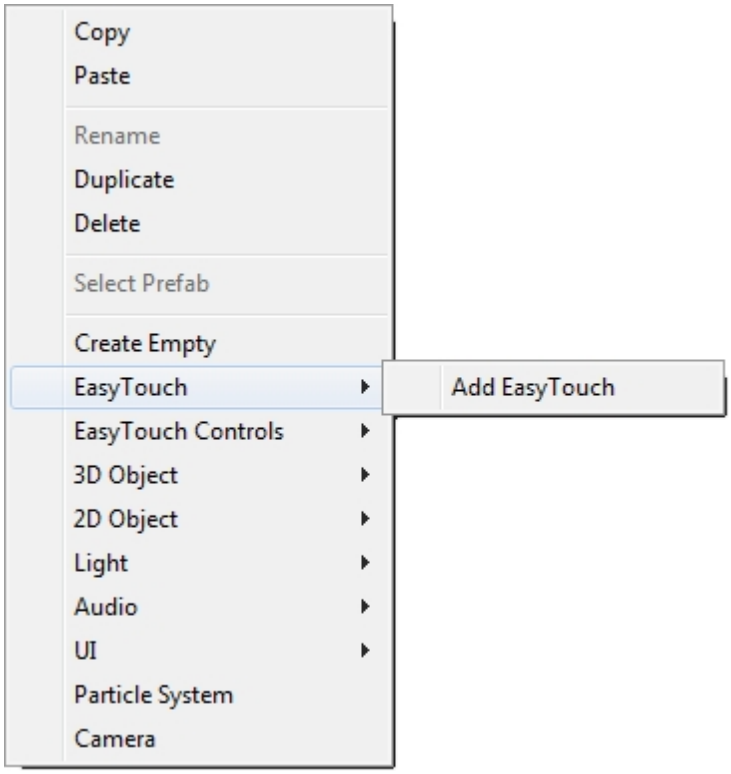
EasyTouch allow you to quickly and easily develop actions based on a touchscreen or a mouse gesture.
All major gestures are recognized such as touch, tap, double tape, twist, pinch.. and much more.

EasyTouch allows automatic detection of all gameobjects with collider on layers that you can set. To allow easy handling of the various elements that make up your scene

EasyTouch is written in C# , it notifies you of an action on the touch screen or with mouse by firing events. The events are sent by delegate system for C #, or you can use EasyTouchTrigger component is you are not familiar with events.
Each event passes a parameter class, with all the informations about the current action (position, angle, picked object ...)

Quick start

- Import EasyTouch package
- Right click on hierarchy view => EasyTouch => Add EasyTouch



- Create a new C# script MyFirstTouch
- Add these methods

```
// Subscribe to events
void OnEnable(){
	EasyTouch.On_TouchStart += On_TouchStart;
}

// Unsubscribe
void OnDisable(){
	EasyTouch.On_TouchStart -= On_TouchStart;
}

// Unsubscribe
void OnDestroy(){
	EasyTouch.On_TouchStart -= On_TouchStart;
}

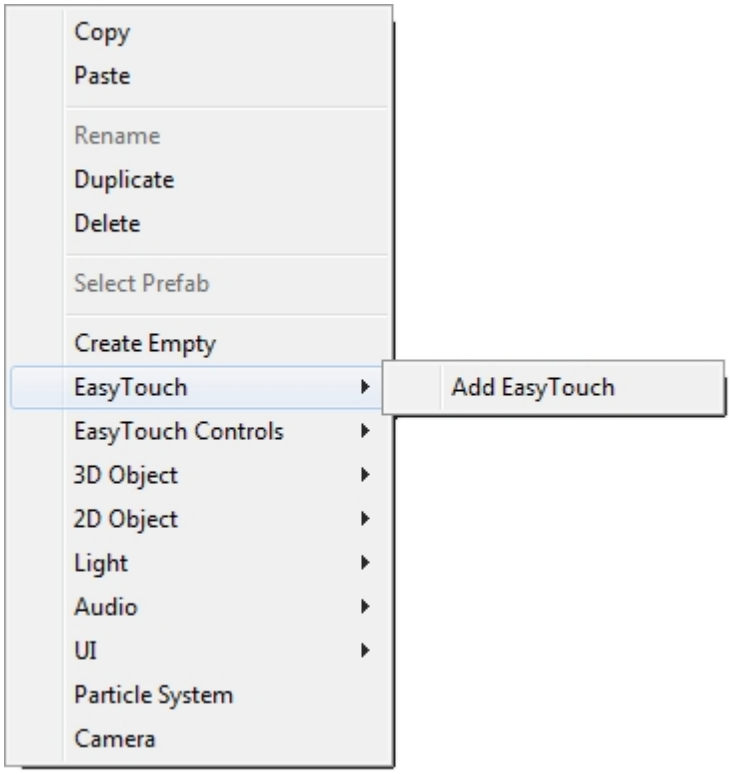
// Touch start event
public void On_TouchStart(Gesture gesture){
	Debug.Log( "Touch in " + gesture.position);
}
```

- Create an empty gameObject, and name it Receiver.

- Add MyFirstTouch script to the gameObject Receiver.
- Run it in editor, and click on the screen

Quick start with auto-selection

- Import EasyTouch package
- Right click on hierarchy view => EasyTouch => Add EasyTouch



- Create a new C# script
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// Subscribe to events
void OnEnable(){
	EasyTouch.On_TouchStart += On_TouchStart;
}

// Unsubscribe
void OnDisable(){
	EasyTouch.On_TouchStart -= On_TouchStart;
}

// Unsubscribe
void OnDestroy(){
	EasyTouch.On_TouchStart -= On_TouchStart;
}

// At the touch beginning
public void On_TouchStart(Gesture gesture){

	// chack that we have touched the sphere
```

```
        if (gesture.pickedObject == gameObject)
            gameObject.renderer.material.color = new Color( Random.Range(0.0f,1.0f),
Random.Range(0.0f,1.0f), Random.Range(0.0f,1.0f));
    }
```

- Create a sphere and assign it a simple diffuse material
- Add script on the sphere
- Run it in editor, and click on the screen

EasyTouchTrigger

EasyTouchTrigger is a new component that allow you to easily & quickly use EasyTouch.It can be used instead or in addition to the conventional method by C# event.

This component allows you to call functions on GameObjects according EasyTouch events without writing a line of code.

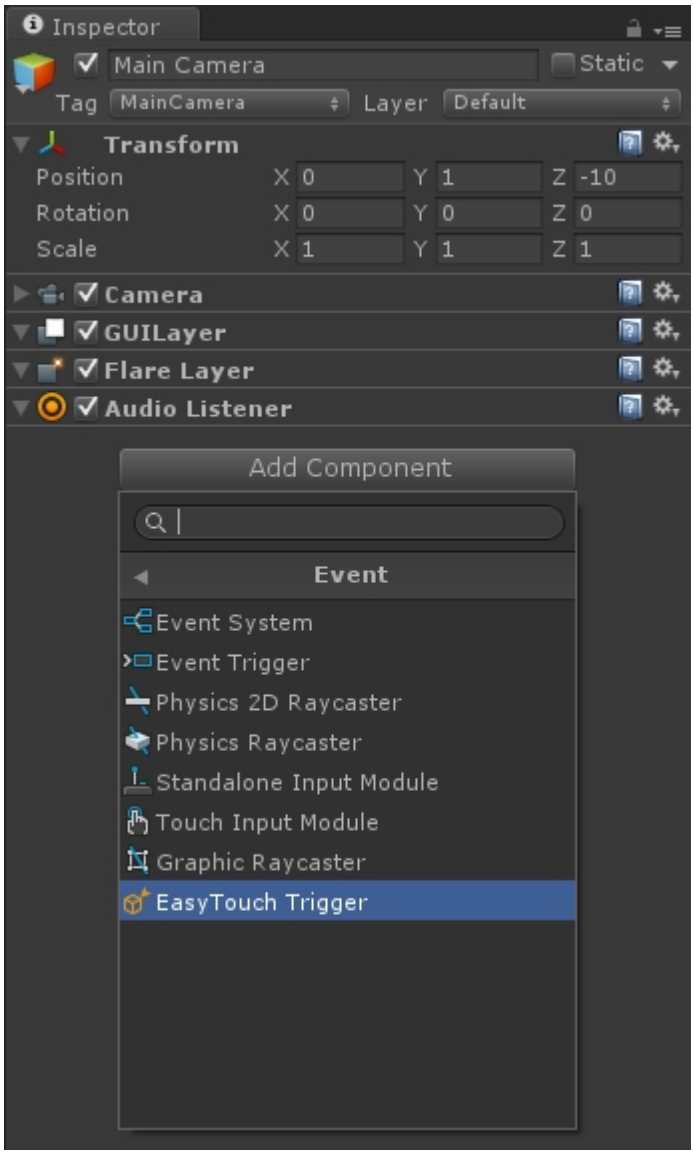
How does it work?

ETT allows you to define the object which will receive a gesture and the object on which you want to execute a function. You still have to specify the function name, and if necessary the parameter to send.

How to use ETT (Look at video on Youtube)

- Select the gameobject to interact with the touch screen, or one that will serve as a scheduler. You can add as many as you like EasyTouchTrigger.

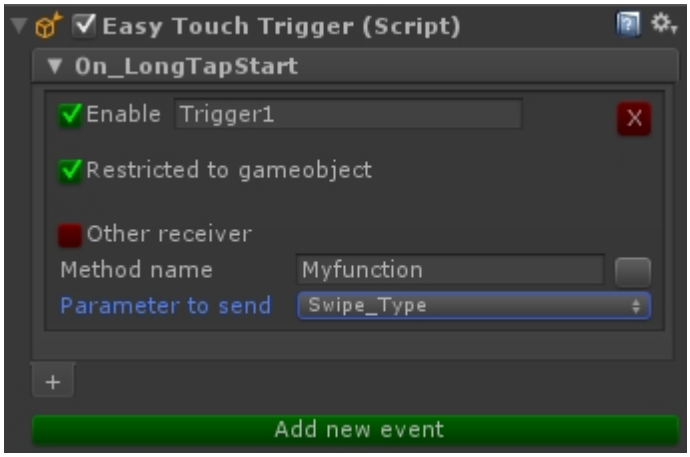
- Add ETT component with Add Component button => Event => EasyTouch Trigger



- The component is now active on your gameobject

- You can now add EasyTouch event by clicking on Add new event. A context menu will display all available events

EasyTouchTrigger Inspector



Enable + Trigger Name
Enables or disable this trigger

Restricted to gameobject

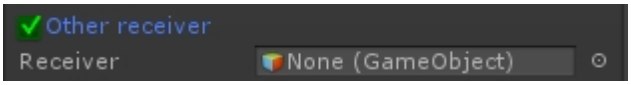
Enable : The beginning of the gesture must be on the current gameobject to trigger the action.
Disable

GameObject
Sets the selectable gameobject which will receive the start of the gesture to trigger the action.
Null : The action will be triggered in all cases

Other receiver

Disable
The message will be sent to the gameobject current.

Enable



Sets the gameobject which will receive the message

Method name
The public function to call

Parameter to send
The property of the gesture class to send

EasyTouch Inspector

Enable EasyTouch
Enables or disables EasyTouch. No events will be fired if EasyTouch is disabled

Enable Unity Remote
Enabled this option if you want to test multi-finger on Unity Remote. (Don't forget to remove this flag before your final build)

GUI Compatibility
Allow you to setup the behaviour of EasyTouch with NGUI & Unity UI

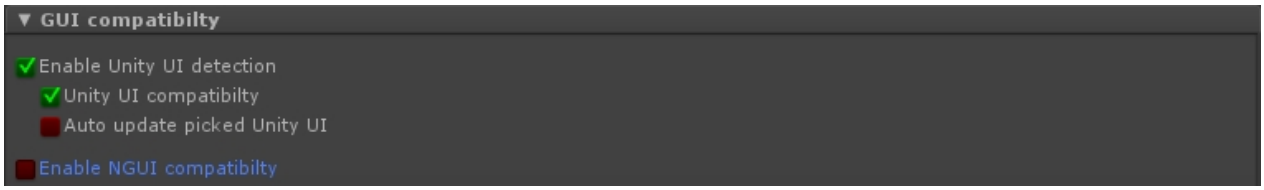
Automatic selection
Allow you ti setup the auto-seleciton.

General gesture properties
Allow you to setup simple gesture

Two fingers gesture properties
Allow you to setup two finger gesture

Second finger simulation
Allow you to setup the second finger simulation

GUI Compatibility



Enable Uniyt UI detection

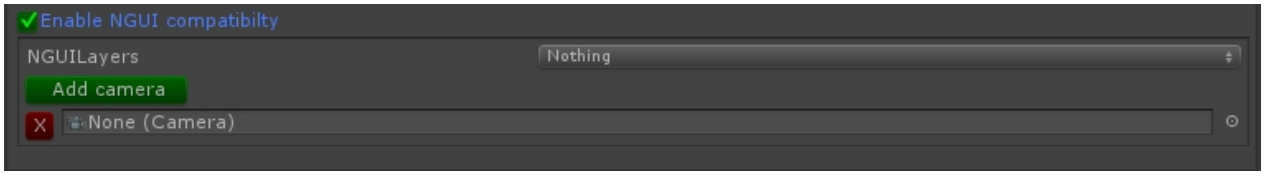
Enables or disables detection of selectable UI Element

Unity UI compatibility

Enable : EasyTouch doesn't fire gesture events if touch is over a UIElement.
Disable : EasyTouch fires gesture events, and set isOverUIElement to true for gesture class

Auto update picked Unity UI

Enable : EasyTouch update UI data at each frame



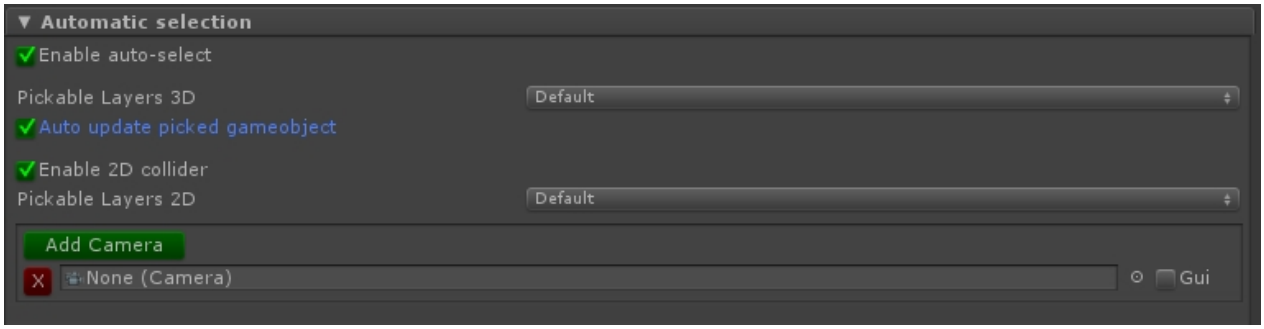
Enable NGUI Compatibility

Enable detection of NGUI object relative to NGUILAyers & Camera. EasyTouch doesn't fire gesture event if touch is over NGUI Object.

NGUI Layers
Layers mask for NGui object

Camera
All cameras for NGui detection

Automatic selection



Enable auto-select
enables 3D object detection under the touch relative to the setting.

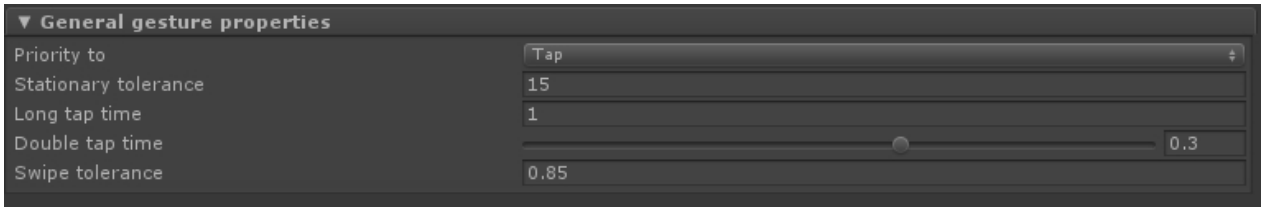
pickable layers 3D
Layer mask for selectable objects.

Auto update picked gameobject
EasyTouch update picked object at each frame

Enable 2D collider
Enable 2Dcollider detection

pickable 2D layers
Layer mask for selectable 2D objects.

General gesture properties



Priority to
You can choose between giving priority to tap gesture or slips gesture.

Tap : Stationary tolerance takes into account to detect a move from the current touch.
Slips : Stationary tolerance doesn't take into account to detect move. The motion is detect by Unity API (more reactive)

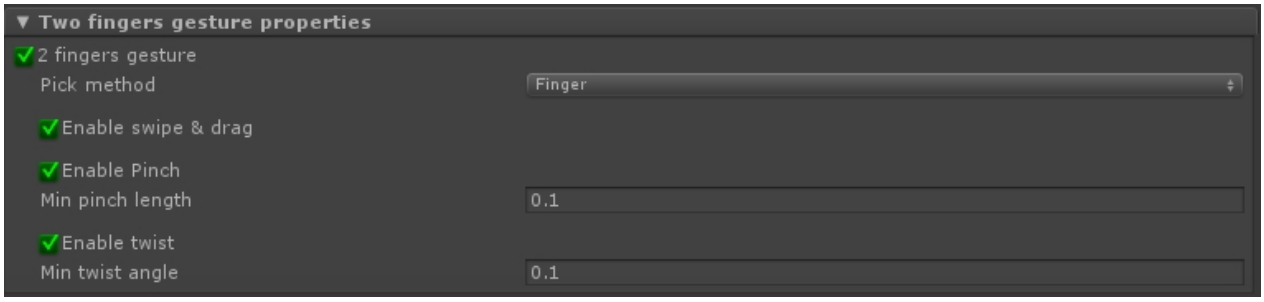
Stationary tolerance
It's a diameter in pixel in which the key is considered stationary for Tap priority

Long tap time
The time required to detect a long tap

Double tap time
The maximum time to detect a double tap

Swipe tolerance
The detection threshold between different build in swipe direction

Two fingers gesture properties



2 Fingers gesture
Enables 2 fingers gesture

Pick method
Can choose between 2 methods for auto-selection
Finger : the fingers must be over the object.
Average : It takes into account the average position to detect objet

Enable swipe & drag
Enable swipe or drag gesture

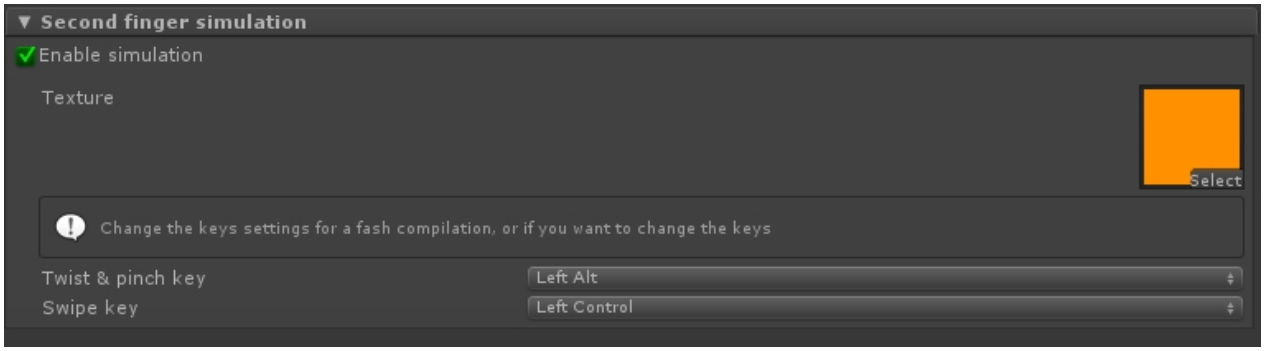
Enable Pinch
Enable pinch gesture

Min pinch length
The minimum threshold distance in pixel for detecting a pinch

Enable twist
Enable twist gesture

Min twist angle
The minimum threshold angle for detecting a twist

Second finger simulation



Enable simulation
Enables second finger simulation

Texture
The picture to display

Twist & pinch key / Swipe key
Key to activate the simulation

Welcome to the EasyTouch Scripting Reference!

This section of the documentation contains details of the scripting API that EasyTouch provides. To use this information, you should be familiar with the basic theory and practice of scripting in Unity.

EasyTouch

Enumerations

GesturePriority : Gesture priority **Tap**, **Slips**

SwipeDirection : Build in swipe direction **None**, **Left**, **Right**, **Up**, **Down**, **UpLeft**, **UpRight**, **DownLeft**, **DownRight**, **Other**

TwoFingerPickMethod : 2 fingers pick method **Finger**, **Average**

Events

Click here for all events

Static functions

SetEnabled : Enables or disables EasyTouch.

GetEnabled : Return true is EasyTouch is enabled.

SetUICompatibily : Enables or disables Unity UI compatibility.

GetUIComptability : Return true is Unity UI compatibility is enabled.

SetAutoUpdateUI : Enables or disables auto-update picked UI element.

GetAutoUpdateUI : Return true if auto-update UI element is enabled.

SetEnableAutoSelect : Enables or disables auto selection.

GetEnableAutoSelect : Return true if auto-selection is enabled

SetAutoUpdatePickedObject : Enables or disable auto-update picked object.

GetAutoUpdatePickedObject : Return true if auto-update picked object is enabled.

Set3DPickableLayer : Set layer mask for selectable object.

Get3DPickableLayer : Return the layer mask for selectable object.

AddCamera : Add a camera for selectable object.

RemoveCamera : Remove a camera.

GetCamera : Return a camera.

SetEnable2DCollider : Enables or disables 2D collider detection.

GetEnable2DCollider : Return true if 2D collider detection is enabled.

Set2DPickableLayer : Set layer mask for 2d selectable object.

Get2DPickableLayer : Get layer mask for 2D selectable object.

SetGesturePriority : Set the gesture priority.

GetGesturePriority : Return the gesture priority.

SetStationaryTolerance : Set the stationary tolerance.

GetStationaryTolerance : Get the stationary tolerance

SetLongTapTime : Set the long tap time.

GetlongTapTime : Get the long tap time.

SetDoubleTapTime : Set the double tap time.

GetDoubleTapTime : Get the double tap time.

SetSwipeTolerance : Set the swipe tolerance

GetSwipeTolerance : Get the swipe tolerance

SetEnable2FingersGesture : Enables or disables 2 fingers gestures.

GetEnable2FingersGesture : Return true if 2 fingers gesture is enabled.

SetTwoFingerPickMethod : Set the 2 fingers selectable method.

GetTwoFingerPickMethod : Return the 2 fingers selectable method.

SetEnablePinch : Enables or disables pinch gesture.

GetEnablePinch : Return true if pinch gesture is enabled.

SetMinPinchLength : Set the min pinch detection length.

GetMinPinchLength : Return the min pinch detection lenght.

SetEnableTwist : Enables or disables twist gesture.

GetEnableTwist : Return true if twist gesture is enabled

SetMinTwistAngle : Set the min twist angle detection

GetMinTwistAngle : Get the min twist angle

GetSecondeFingerSimulation : Enables or disables second finger simulation.

SetSecondFingerSimulation : Return true if second finger simulation is enabled.

Events

Each event is firing with a parameter of type Gesture.

Single finger events

On_Cancel : Occurs when The system cancelled tracking for the touch.

On_TouchStart : Occurs when a finger touched the screen.

On_TouchDown : Occurs while as the touch is active.

On_TouchUp : Occurs when a finger was lifted from the screen.

On_SimpleTap : Occurs when a finger was lifted from the screen

On_DoubleTap : Occurs when the number of taps is equal to 2 in giving time.

On_LongTapStart : Occurs when a finger is touching the screen, but hasn't moved since the time required for the detection of a long tap.

On_LongTap : Occurs while as the touch is active after a LongTapStart.

On_LongTapEnd : Occurs when a finger was lifted from the screen after a long tap.

On_DragStart : Occurs when a drag start. A drag is a swipe on a selectable object

On_Drag : Occurs while as the drag is active.

On_DragEnd : Occurs when a finger that raise the drag event , is lifted from the screen.

On_SwipeStart : Occurs when swipe start.

On_Swipe : Occurs while as the swipe is active.

On_SwipeEnd : Occurs when a finger that raise the swipe event , is lifted from the screen.

Two finger events

On_TouchStart2Fingers : Like On_TouchStart but for a 2 fingers gesture.

On_TouchDown2Fingers : Like On_TouchDown but for a 2 fingers gesture.

On_TouchUp2Fingers : Like On_TouchUp but for a 2 fingers gesture.

On_SimpleTap2Fingers : Like On_SimpleTap but for a 2 fingers gesture.

On_DoubleTap2Fingers : Like On_DoubleTap but for a 2 fingers gesture.

On_LongTapStart2Fingers : Like On_LongTapStart but for a 2 fingers gesture.

On_LongTap2Fingers : Like On_LongTap but for a 2 fingers gesture.

On_LongTapEnd2Fingers : Like On_LongTapEnd but for a 2 fingers gesture.

On_Twist : Occurs while a twist gesture.

On_TwistEnd : Occurs at twist gesture end.

On_Pinch : Occurs while as the pinch gesture is active.

On_PinchIn : Occurs while as the pinch in gesture is active.

On_PinchOut : Occurs while as the pinch out gesture is active.

On_PinchEnd : Occurs when the 2 fingers that raise the pinch event , are lifted from the screen.

On_DragStart2Fingers : Like On_DragStart but for a 2 fingers gesture.

On_Drag2Fingers : Like On_Drag but for a 2 fingers gesture.

On_DragEnd2Fingers : Like On_DragEnd but for a 2 fingers gesture.

On_SwipeStart2Fingers : Like On_SwipeStart but for a 2 fingers gesture.

On_Swipe2Fingers : Like On_Swipe but for a 2 fingers gesture.

On_SwipeEnd2Fingers : Like On_SwipeEnd but for a 2 fingers gesture.

Unity UI

On_OverUIElement : Occurs when the touch is over a UI element when Unity Ui compatibility is On

On_UIElementUp : Occurs when the touch is lifted from UI element when Unity Ui compatibility is On

Gesture

Each event is firing with a parameter of type Gesture. It contains all information about the current gesture.

Variables

fingerIndex : The index of the finger that fired the event, or -1 for a two fingers gesture.

touchCount : The number of active touches.

startPosition : The start position of the current gesture that fired the event.

position : The current position of the current gesture that fired the event.

deltaPosition : The delta position since last call.

actionTime : The elapsed time in second since the begin of gesture.

deltaTime : The delta time since last call.

swipe : The swipe or drag direction.

swipeLength : The swipe length in pixel.

swipeVector : The swipe vector direction.

deltaPinch : The delta pinch length in pixel since last call.

twistAngle : The delta angle of the twist since the last call.

twoFingerDistance : The distance in pixel between two finger for a two finger gesture.

pickedObject : The current picked gameObject.

pickedCamera : The picked camera.

isGuiCamera : Is the picked camera is flag as GUI

isOverGui : Is the current touch is over an Unity UI.

pickedUIElement : The current picked Unity UI.

Functions

GetTouchToWordlPoint : Transforms touch position from screen space into world space.

GetSwipeOrDragAngle : Gets the swipe or drag angle.

NormalizedPosition : Gets the normalized position.

GetCurrentPickedObject : Gets the real picked object under the touch

IsOverUIElement : Is the current touch is over an Unity UI.

IsOverRectTransform : Is the current touch is over a specific RectTransform.

GetCurrentFirstPickedUIElement: Gets the real picked Unity UI under the touch.

Gesture.fingerIndex

public int **fingerIndex**

Description

The index of the finger that fired the event, or -1 for a two fingers gesture. Useful for managing the multi-touches.

Gesture.touchCount

public int **touchCount**

Description

The number of active touches. Useful for managing the multi-touches.

Gesture.startPosition

public Vector2 **startPosition**

Description

The start position of the current gesture that fired the event, or the average position between the 2 touches for a two fingers gesture.

Gesture.position

public Vector2 **position**

Description

The current position of the current gesture that fired the event, or the average position between the 2 touches for a two fingers gesture.

Gesture.deltaPosition

public Vector2 **deltaPosition**

Description

The delta position since last call. EasyTouch computes is own delta to prevent difference between all mobile platform.

Gesture.actionTime

public float **actionTime**

Description

The elapsed time in second since the begin of gesture.

Gesture.deltaTime

public float **deltaTime**

Description

The delta time since last call.

Gesture.swipe

public EasyTouch.SwipeDirection **swipe**

Description

The swipe or drag direction. This value is calculated with the deltaPositon for current gesture, and between startPosition and current position for gesture end.

Gesture.swipeLength

public float **swipeLength**

Description

The swipe length in pixel. This value is computed for end gesture between startPosition and position.

Gesture.swipeVector

public Vector2 **swipeVector**

Description

The swipe vector direction.

Gesture.deltaPinch

public float **deltaPinch**

Description

The delta pinch length in pixel since last call.

This value is positive for On_PinchIn & On_PinchOut events

This value is positive for pinch out gesture, and negative for pinch in gesture for On_Pinch event.

Gesture.twistAngle

public float **twistAngle**

Description

The delta angle of the twist since the last call.

Negative value for clockwise.
Positive value for anit-clockwise.

Gesture.twoFingerDistance

public float **twoFingerDistance**

Description

The distance in pixel between two finger for a two finger gesture.

Gesture.pickedObject

public GameObject **pickedObject**

Description

The current picked gameObject detected at the touch start, or the real object under the touch position if auto update is enabled.

Gesture.pickedCamera

public Camera **pickedCamera**

Description

The picked camera for find the picked object.

Gesture.isGuiCamera

public bool **isGuiCamera**

Description

Is the picked camera is flag as GUI

Gesture.isOverGUI

public bool **isOverGui**

Description

The current touch is over an Unity UI element detected at the touch start, or update in real time is auto-update is enabled.

This value is correct only when the Ui Compatibility Mode is disabled, otherwise it will always be equal to false.

Gesture.pickedUIElement

public GameObject **pickedUIElement**

Description

The current picked Unity UI element detected at the touch start, or update in real time is auto-update is enabled.

This value is correct only when the Ui Compatibility Mode is disabled, otherwise it will always be equal to Null.

Gesture.GetTouchToWorldPoint

public Vector3 **GetTouchToWorldPoint**(float z)

Description

Transforms the current touch position from screen space into world space.
The z position is in world units from the camera.

public Vector3 **GetTouchToWorldPoint**(Vector3 position3D)

Description

Transforms the current touch position from screen space into world space.
position3D is a the destination world position, from that will be computed the length from the camera.

Gesture.GetSwipeOrDragAngle

public float **GetSwipeOrDragAngle**()

Description

Return the swipe or drag angle.

Gesture.NormalizedPosition

public Vector2 **NormalizedPosition**()

Description

Return the normalized position relative to screen.

Gesture.GetCurrentPickedObject

public GameObject **GetCurrentPickedObject**()

Description

Gets the real picked object. You don't need to use the functions, if auto-update is enabled.

Gesture.IsOverUIElement

public bool **IsOverUIElement**()

Description

Return true if current touch is over an Unity UI element

Gesture.IsOverRectTransform

public bool **IsOverRectTransform**(RectTransform tr, Camera camera=null)

Description

Return true if current touch is a recttransform.

Gesture.GetCurrentFirstPickedUIElement

public GameObject **GetCurrentFirstPickedUIElement**()

Description

Gets the real picked Unity UI Element. You don't need to use the functions, if auto-update is enabled.