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Description and Features

Thank you for purchasing Quick Time Event system for Unity, this is a system for having QuickTime events in your game. This document describes in detail all options available in the system, as well as how to set it up. Also an example scene is provided to demonstrate most of the capabilities in action.

Included with the system is a demo scene that shows all the available options the system has already set up. This document goes into detail on how to set them up yourself and explains all the options.

Configurable options

- Can define QTEs asking for standard keyboard input, or use Buttons or Axes defined in Unity's Input manager
- Have the script choose a random input to ask for from all available, or from a list of random inputs to choose from, or define a static one the QTE will always use
- QTEs can be Repeatable, or single shot
- Choice between Single, Dual, Tri or Quad buttons for the player to choose from
- Mashable QTEs, when the player must mash a single button enough times. With visualization of the mashing struggle.
- Separate Failure detection: Running out of time, and optionally for pressing the wrong button.
- Visualize the Time the player has to complete the QTE via radial wiping circle
- Uses Unity 4.6+ uGUI system, Buttons can be used in any style Canvas (Screen space, Camera Space, World Space)
- Script provided so World Space buttons can orientate to look at an object.
- Script provided so World Space buttons move along with an object.
- Can make the QTE "invisible" by hiding the on screen UI buttons from displaying, allowing to you show your own objects/UI instead
- Have buttons shake back and forth
- Response scripts that can be stacked to cause multiple things to happen in response to the QTE result
- Ability to extend the response options to the QTEs by writing your own custom response scripts.

Upgrade Notes:

If you are upgrading from v1.6 or earlier

- 1. The system no longer uses the resources folder, so anything in "Resources/QTE_System" should be deleted. The sprites that were there have been moved to the "Sprites" Subfolder.
- 2. All instances of the Main script will need the new "QTE Image asset" field assigned with a QTE image asset scriptable object. An example one is included with the project under "QTE_System/Sprites/QTE_Images_Asset.asset"

If you are upgrading from a previous version (before v1.5) of this system.

- 1. You first should delete the "QTE_System" and "Resources/QTE_System" folders before importing this new version
- 2. Complete the "Main Script & Default Canvas" Section.
- 3. Unfortunately, all Triggering scripts saved into scenes or prefabs will have their values reset to defaults. This is because of the code base received an optimized overhaul in which many values were renamed. So you will have to set the values in them up again.
- 4. The "Billboard" Buttons (which were meshes being spawned in the world) functionality has been removed, because instead Unity's Canvas' can be set to world space to accomplish the same effect. Look at the World Space Canvas Section to set it up.
 Therefore, the meshes/prefabs and the following two scripts have been removed, and therefore will have to be removed from any scene/GameObject that was using them. "QTE_Billboard_Lookat.cs" and "QTE_Billboards.cs"
- 5. If for any reason a Triggering script errors out when you try and change parameters, remove the script and reattach a new copy.

Documentation

The System is comprised of 3 sections.

- **The Main script** Contains all the logic, (getting user input, determining the result, Timers, showing the sprites etc.) does not actually do anything until triggered.
- **Triggering Scripts** the Script that actually causes a Quick Time Event to happen, also configures exactly what the QTE is (single, dual, mashable, what button to use etc.)
- Response Scripts Scripts that respond to the result of the QTE, and perform an action in the scene.

The Main script & Default Canvas

The system comes with a demo scene showing the different Quick Time Events, their options, and responses. You can use and modify them, or follow the instructions below to set up the system in a new scene.



- 1. To get started, the first step is to drag the "QTE_Main" prefab from "\QTE_System\Prefabs\" into your scene.
- You will now need to create a <u>Canvas</u> in your scene to act as the default canvas that the system uses.
 This Canvas can be set up anyway you'd like. This Canvas will display the onscreen buttons when a QTE is triggered.
- 3. After creating the canvas, drag the "QTE_UI" prefab from"\QTE_System\Prefabs\" into your created Canvas to setup the necessary gameobjets the system uses.

 From there you can adjust the default position and scale of the on screen buttons. They will appear this way unless you choose to override their positions later.
- 4. Select the "QTE_Main" Prefab in your scene, and in the QTE_Main script, assign the Canvas you created to "Default Canvas".
- 5. The System uses a Scriptable object to store all the sprites the system uses. An example one can be found here "QTE_System/Sprites/QTE_Images_Asset.asset"
 Assign the "QTE Image Asset" field with the scriptable object.

Triggering Scripts

The Triggering script "QTE_Trigger.cs" actually causes Quick Time Events to happen, it can be found in "\QTE_System\Scripts\Triggers".

You attach this script to any GameObject in the world, and it fires Quick Time Events when triggered.

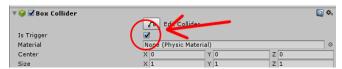
There are two ways of triggering QTEs to happen "Collider" and "Manual".

At the top of the script "Mode" will tell you which style it is using.



• Collider Mode

When the triggering script is attached to a GameObject that has a Collider **AND** "Is Trigger" set to true, the QTE will fire when the player (The GameObject tagged as "Player") walks into the collider.



If your Player does not use the <u>Character Controller</u>, and instead uses a collider for Collison, be sure to attach a <u>rigid body</u> and freeze its rotations. Or else your player may not be able to trigger the Quick Time Event when they walk through the collider.

- Manual Mode is set up to be called by any other method that you wish to use listed below
 But with all the different methods listed below the main idea is you just need to access the triggering
 script, and call TriggerQTE()
 - A. By calling the function TriggerQTE() in your own script.

 Note that if you are doing this in the update() function, you only want to do this once in a frame.

 If you are constantly setting/calling the QTE to happen every frame you will find that the QTE will fire, but you'll be unable to complete it as the button input won't work (as it is constantly firing a new Quick Time).
 - B. Via <u>Animation Events</u> in the Animator editor, or via <u>Animation events</u> on imported clips (call the function TriggerQTE()).
 - You need to attach a triggering script the same GameObject that has the animation event to trigger it.
 - C. Using <u>Animator Curves</u> by using another <u>included script to trigger them</u>.
 - D. a Cutscene or animation editor (such as Timeline, Unity's animation window, <u>Aperture Cutscene</u> <u>Editor</u>, or <u>CutScene etc</u>)
 - For this option you can attach the Triggering script to any GameObject in the scene (I recommend empty GameObjects to avoid any conflicts and easy recognition), then use the Editor to animate the boolean TriggerEnabled value to true, then immediacy false again.

Interrupting QTE's

It is possible to stop a any QTE's in progress by accessing the main script, and calling InteruptQTE() This will cancel out any active QTE's, remove any UI from the screen and no responses will happen.

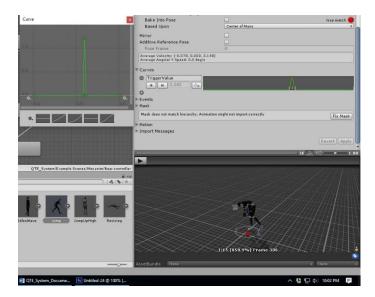
Triggering by Animation Curves

You can optionally trigger QTEs via Animator Curves.

An example of how you would use this is setting up a curve for a punching animation, so that a QTE fires in sync at a specific time of the animation such as a character winding up to punch.

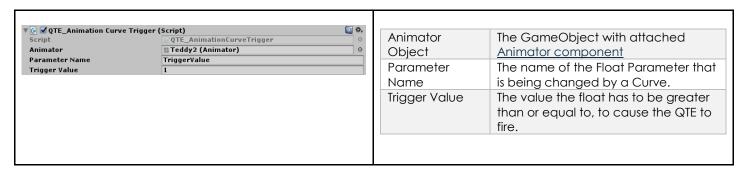
To learn how to set up an animation Curve, watch this section of this tutorial.

1. Create a curve that Spikes above the value you want to cause the QTE to fire, at the time you want it to fire. Make sure it "spikes", because if the curve remains above the value for more than a brief time, the QTE will fire multiple times.



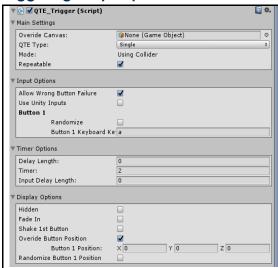
Here you can see I set up a curve to Spike above the value of 1 when the Character lands

2. Attach "QTE_AnimationCurveTrigger.cs" to the same GameObject as the Trigger script.

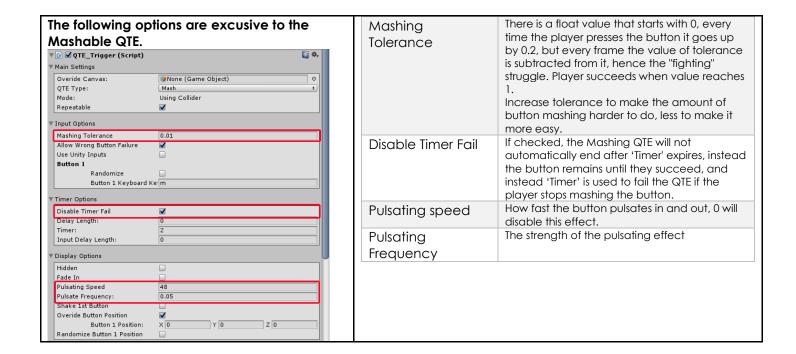


When the game runs, and the specific animation plays that has a curve that animates the specified parameter and it reaches or goes over the "Trigger Value", the QTE will fire.

Triggering Script Options:



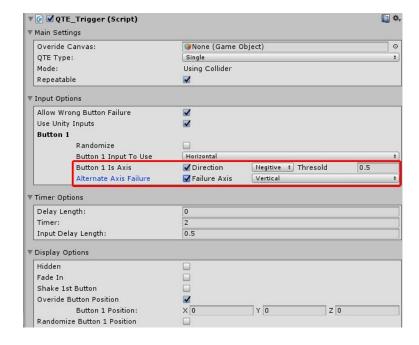
Main Settings	
Override Canvas	If left empty, the Default Canvas assigned in the main script will be used. If another canvas is specified here, it will be used instead.
QTE Type	Changes the type of the QTE, (Single, Dual, Tri, Quad, or Mashable).
Mode:	"Collider" if attached to a GameObject with a Collider, "Manual" otherwise
Repeatable (Collider only)	If true, the QTE will always fire every time the player enters the collider, if false, only fires the first time.
Input Options	
Allow Wrong Button Failure	If true, when player Presses a button that's not the correct one, the QTE will fail. If false, the QTE persists until succeeded or times out.
Use Unity Inputs	Off ->, standard keyboard input is used On -> the script will use Unity's buttons/Axis defined in the Input manager instead.
Button # Key Press	If keyboard, type button name as defined by Unity here (under Button Names), if Inputs, choose from the dropdown which input to use from the Input manager.
Random # Button	Check true if you want to use an Randomly Generated button, if true the "Key Press" fields disappear
Array of Random Buttons	Only appears if Random Button is checked true, If the Array is empty, a random button will be chosen from all available buttons. If filled up with names of Keys or Inputs, a random one will be chosen from that list instead.
<u>Timer Options</u>	
Delay Length	The time in seconds that delays the entire QTE from happening once triggered.
Timer:	The time in seconds the player must press the button before failing.
Input Delay Length	The time in seconds a delay between when the QTE appears, and when Input starts being detected. This allows players a brief reaction time, otherwise players could trigger a QTE and then auto-fail it because they are in the middle of doing something.
Timer Per Button	Only during multi-button QTEs, check true to set a timer for individual buttons to disappear, note that the first "Timer" acts as a terminator (when it finishes all buttons will disappear)
Display Options:	
Hidden	If true, no On screen UI sprites are displayed, but the QTE will still happen, useful for situations like a Fight sequence where you can use the Animations of the enemy to give the player the Cue to press something, or you wish to show your own custom objects instead
Fade In	If True the Button fades in
Fade in Time	The amount of time the button fades in
Shake	If True the button shakes back and forth
Shake Offset	If shake is true, this is how much the button will shake
Override Button Position	If false, buttons will appear where they are as set in the Canvas, if true. Buttons will be moved according to the values set in the script away from the center of the screen.
Randomize Button Position	Buttons will appear in a random position somewhere inside the canvas, and will not appear outside the canvas, not even partially



Axis input

When using Unity's inputs from the Input Manager instead of straight up keyboard input, Axes are setup differently than simple buttons, <u>As descried here</u> Axes are a float value that ranges in between -1 to 1 rather than being a button that is "on" or "off".

Because of this difference, a workaround was implemented to detect the difference between the two directions.



- 1. First you must check the "Button X is Axis" box if the input you wish to use is an axis
- 2. Choose which direction the Axis to detect "Positive" or "negative"
- 3. Set the Threshold the Axis must reach to trigger a success. This should not be a negative value or above 1.

Alternate Axis Failure

If the "Allow Wrong Button Failure" option is checked, then if the user inputs the opposite Axis direction specified then the QTE will fail.

For example, if the Horizontal Axis in the Positive (Left) direction is chosen, going negative (Right, the opposite direction) will fail the QTE.

However, other directions, such as the vertical axis (up and down) will not fail the QTE, nothing will happen because that axis is not being detected. To enable this, check "Alternate Axis Failure" and choose the axis you also want to cause failure.

This way only going in the correct direction (left) will succeed, any other direction will fail the QTE.

Custom UI Images

The system uses a Scriptable object to store and load all the sprites, an example one can be found here "QTE_System/Sprites/QTE_Images_Asset.asset"

You can replace the sprites inside the asset or create another copy of the asset and assign your own sprites.

You will find the Sprites themselves the QTE system uses inside the folder "\QTE_System\Sprites".

You can replace the Sprites in those folders with your own, there is no limitation on what size they are, and they can be in any image format readable by Unity (I have provided .psds).

Naming Conventions:

The Sprites have a naming convention: "QTE_(Button or Input name)" For example if you want to create a button for the keyboard key "[", create a new image named "QTE_["

If you choose a button/key in a Triggering script that there is no Sprite for, No Sprite will appear on screen, and a Debug error message will tell you what Key/input is missing an Sprite.

Displaying Custom Objects

You can prevent the UI Sprite from appearing on screen by checking the "Hidden" property in Triggering scripts. This sets the onscreen UI Sprite to invisible, but the Quick Time Event still fires anyway.

You can then parent your own objects to the GameObject Buttons In the canvas and they will appear instead.

Visualizations



Wiping Circle

Expanding Circle

You can visualize the timer of a QTE as it is counting down by having a wiping circle that changes color behind it.

- 1. Drag in the "QTE_TimerUI" prefab into your canvas from "/QTE_System/Prefabs" if it does not have one already.
- 2. Attached "QTE_Response_TimerUl.cs" to your triggering GameObject.

"QTE_Response_TimerUI.cs" has a "Position Offset" property that will offset the Timer UI from the Buttons if you wish

If you are finding that the Timer UI is drawing overtop of the Buttons, You can attach a canvas component to the Timer UI GameObjects and set "Override sorting" to true, then "Order in layer" to -1

You can also visualize the struggle/progress of the mashing QTE by having a colored Circle expand outward from the button until it reaches an outside ring

- 3. Drag in the "QTE_MashUI" prefab into your canvas from "/QTE_System/Prefabs" if it does not have one already.
- 1. Add "QTE_Response_MashUl.cs" to your triggering GameObject

You can find the explanation of "QTE_Response_MashUI" properties here.

World Space Billboards

If you prefer the buttons to actually be existing in the 3D world, rather than 2D UI sprites onscreen, you can easily set this up.

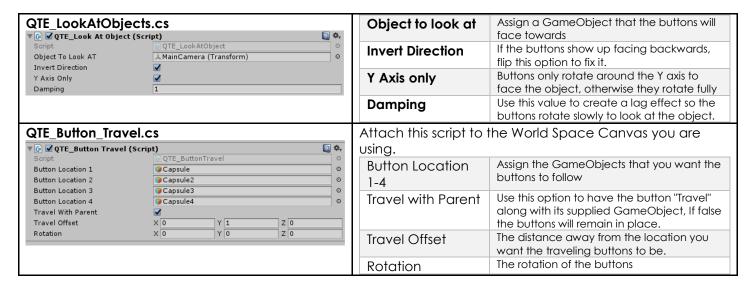
- 1. Create a World Space Canvas in the scene, and drag another "QTE_UI" prefab onto it.
- 2. Move the canvas/buttons to where you would like them to be in the scene
- 3. In a triggering script, Assign the new canvas as the Override Canvas

Because you've specified an override canvas, it will be used instead of the default canvas.

If you wish for the buttons to turn to look at the player/another object, I have included a script called "QTE LookAtObject.cs"

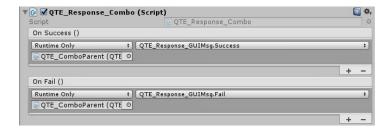
Attach this script to each of the Button UI Images, and assign what object to look at

If you wish for the buttons to travel along with other objects in the scene, I have provided a script called "QTE_ButtonTravel.cs".



QTE Combos

You can create a combo of Quick Time Events that the player must complete all in a row to succeed rather than individually.



- Attach to a GameObject "QTE_Response_Combo.cs", this script is now be the script you want to call to start the combo, rather than calling individual quick time events.
 Just like QTE_Trigger.cs, If the GameObject it's attached to has a collider set to "Is Trigger" the combo will fire if the player walks into it, otherwise you can call "StartCombo()" in the script to start the combo.
- Create as many new QTE_Triggers as you want to be used in the combo, and make them children of the GameObject that has "QTE_Response_Combo.cs". They will be fired in order according to their sorting.



3. From there, you can specify what happens in response to the success/failure of the combo using the two Unity Events

Response scripts

The triggering scripts will cause the QTE to fire, and the Main script will display the UI and perform the logic to see whether they failed or succeeded. But now you obviously want something to happen in your game "in response" to the result of the Quick Time Event, that's what the Response scripts are for.

- Response scripts attach to the same GameObject that has a QTE Triggering script.
- The response will only happen to that Quick Time Event that is Triggered by that object, and not by any other Quick Time Events in the scene.
- Multiple response scripts can be attached to have more than one thing happen.

What you want to have happen in your game after a Quick Time event is highly dependent on what exactly you want to accomplish in your game. I have included several example response scripts to get you started, but more than likely you may have to end up modifying the scripts, or writing your own responses to perform exactly what you want to do in your game.

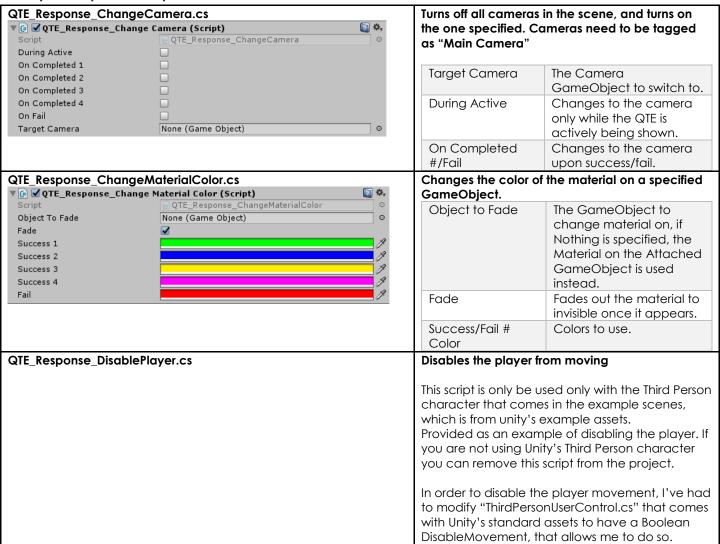
I have included a Template script "QTE_Response_Blank.cs", this script can be used to write your own response scripts.

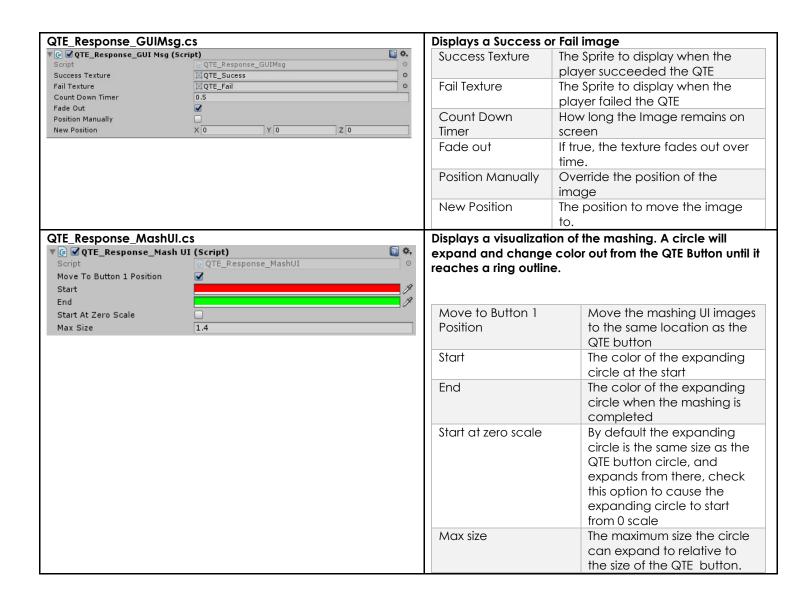
You can perform an action

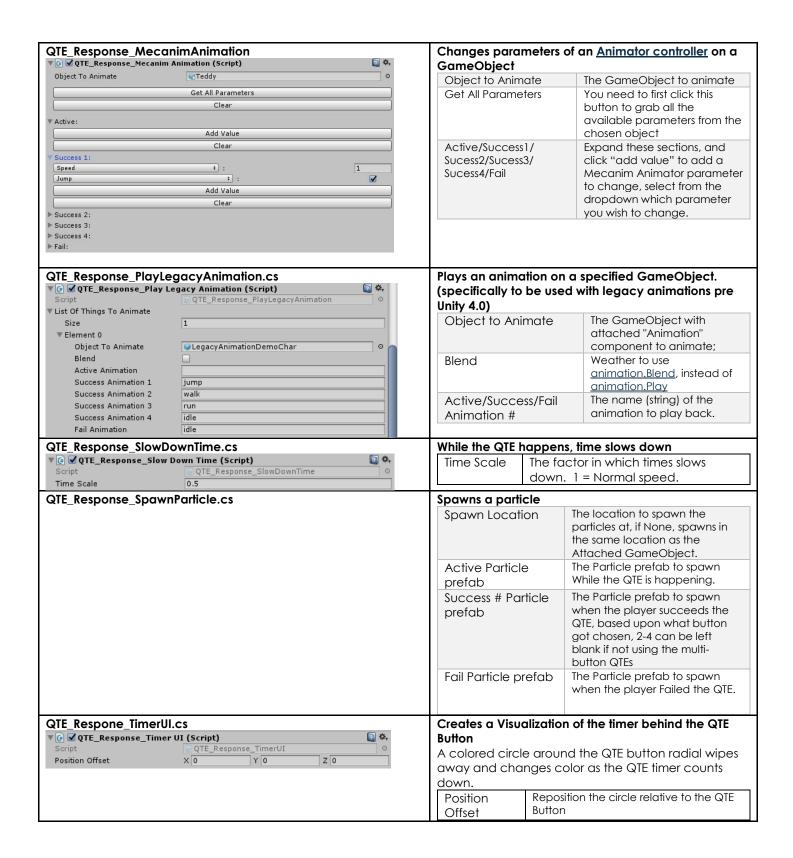
- Once When the QTE starts
- While the QTE is happening (e.g. Disable player input)
- A different action per each success button
- A different action when the QTE fails by Timing out, or by wrong button press.

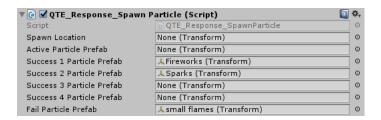
If you don't intend to use the Multi-button QTEs with your response script, then the "if" statements for the different successes can be left empty, or deleted entirely.

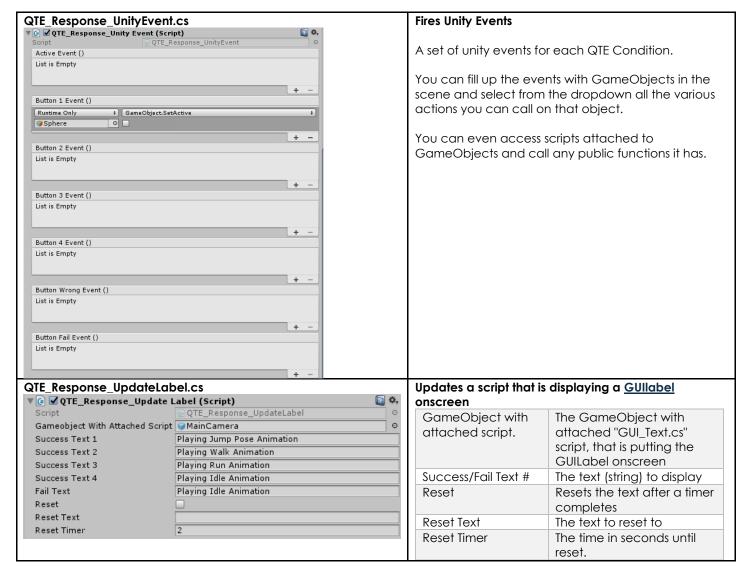
Example Response scripts:











Legal

Purchase of this Quick Time event system through the Unity asset store is covered by Unity's Terms of Service and EULA, you can view that information here.

http://unity3d.com/company/legal/as_terms

Contact:

mattswanton3d@gmail.com http://www.mattswanton.com

Unity Forum Topic

http://forum.unity3d.com/threads/188088-Quick-Time-Event-system

Change List:

Version 1.0 - June 24, 2013

• Initial Release

Version # 1.1 - July 1st 2013

- Unity 3.5 version released
- lowering required version to base Unity 4 instead of 4.1
- Added Response script for a Slow down "bullet time" effect while the QTE is happening
- Fixed a bug with the Cutscene scripts auto-firing when the scene started

Version # 1.2 - July 8th, 2013

- "Enable Button Fail" option added, so that the QTE will not fail if wrong button is pressed.
- Triggering by Animator Curves support added.
- Adding ability for response scripts to detect & respond differently the two different kinds of failures (Wrong button, or timeout)

Version # 1.3 - August 28th, 2013

- Combined the 10 triggering scripts into one single script
- Triggering script has its own Custom Editor Inspector script
- references to "Cutscene" functionality, now referred to as "Manual"
- Individual timers for multi-button QTEs
- QTE Delay Timer (Different from the Input Delay Timer)
- Change camera response script
- Fixed 2 bugs with Billboards script, will now work in Manual (Cutscene) mode, and now no longer has to be above the trigger script.

<u>Version # 1.4 - December 29th, 2013</u>

- The main script now has a public function you can call "InteruptQTE()" that will halt and cancel out any QTEs that are playing.
- Most of the update() based timers have been replaced with Coroutine yield timers, I believe these are more efficient.
- Fixed a Null error bug when using the Delay timer with multi-button QTEs

<u>Version 1.5 – May 2017</u>

- Entire system updated to use Unity 5's new uGUI system, old legacy GUI support dropped. Minimum required version is now Unity 4.6
- Main QTE script is now a singleton, better way of accessing it rather than constantly using GameObject.Find() in every script that needs to access the main script.
- General optimization overhaul of the code base. (for example base class, using arrays instead of separate declared variables, Cleaner syntax for response scripts (old scripts still work), other misc. cleanups)
- System now no longer Instantiates and Destroys objects, Necessary GameObjects are set up in the scene at the start, and when no longer needed they are disabled. Far more memory efficient.
- New demo scene
- New example UI sprites
- QTE Combo script added to add combo functionality

- In the triggering script, you no longer have to type in a name to use a button defined in the Input manager, instead a drop down list is presented
- Now any axes can be used in a QTE, not just the vertical/horzitonal axes, and you can choose the threshold the axis must reach to succeed.
- Along with choosing any axis, you can choose another axis to also fail the QTE,
- Wiping Circle Timer Visualization added
- Fade in buttons option added
- Mashing Visualization
- Bug Fixes:
 - -Calling QTE manually fixed
 - -World space UI buttons now can shake and pulsate, previous method of using mesh billboards did not.
 - -Fixed a bug where odd behavior would happen after a mashable QTE was completed (Repsonses triggering twice for example)
 - -Fixed a bug where Multi-timer QTEs Buttons would stop disappearing correctly
 - -Fixed a bug where Mult-button QTEs would sometimes disappear if a multi-timer QTE was completed previously.
 - -When the randomize option is checked, it will now also choose axes along with buttons.
 - -QTE triggers that are prefabs now retain their modified settings when hitting play.

Version 1.6 - December 2017

- Removal of javascript files, the system wasn't using them in anyway.
- Reimported the Standard Assets Third Person Character, cleaned up the Standard Assets folder to only
 have things the system is using for the demo scenes.
- Added the ability for button/key based QTE's to have a Hold timer, Player is required to hold the button/key down for a certain time to succeed.
- Updated the Blank response script to show how to run code once when the QTE Starts.
- Fixed a bug with the Response GUI script throwing a null error when freshly added to a Trigger
- Added the ability for the Mashing UI outside ring to expand to the "max size", previously only the
 expanding circle was expanding to the max size
- Re did the Mecanim Animator Response script, Now with a custom inspector that allows you to more easily add and select parameters to modify. Now you can select from a list of all available Animator parameters from the object you wish to animate, and it dynamically shows you the correct parameter type to change. Rather than how the inspector was before where there was complicated array that you had to expand, and then manually type the parameter names.

Version 1.7 – April 2019

- System no longer stores and loads Sprites from the Resources folder, Unity does not recommend using it in the first place. Instead they are now stored inside a scriptable object.
- Fixed a bug with the Mashing Circle UI, the outer ring was too big.
- Optimized the trigger script, repeated code for each button replaced with function.
- Removal of Prefabs/scripts in the Standard Asset Folder that the demo scene wasn't using.
- The old Example Particles the Demo scene was using have been replaced with Shuriken versions as the legacy particle system has been removed entirely as of 2018.1
- Changed lightmap settings on demo scene to remove the baked lightmaps, not necessary.
- Other Misc. code cleanup