

Xcode and Storyboard

March 10, '16

Reference of the Swift language

Learn the Essentials of Swift

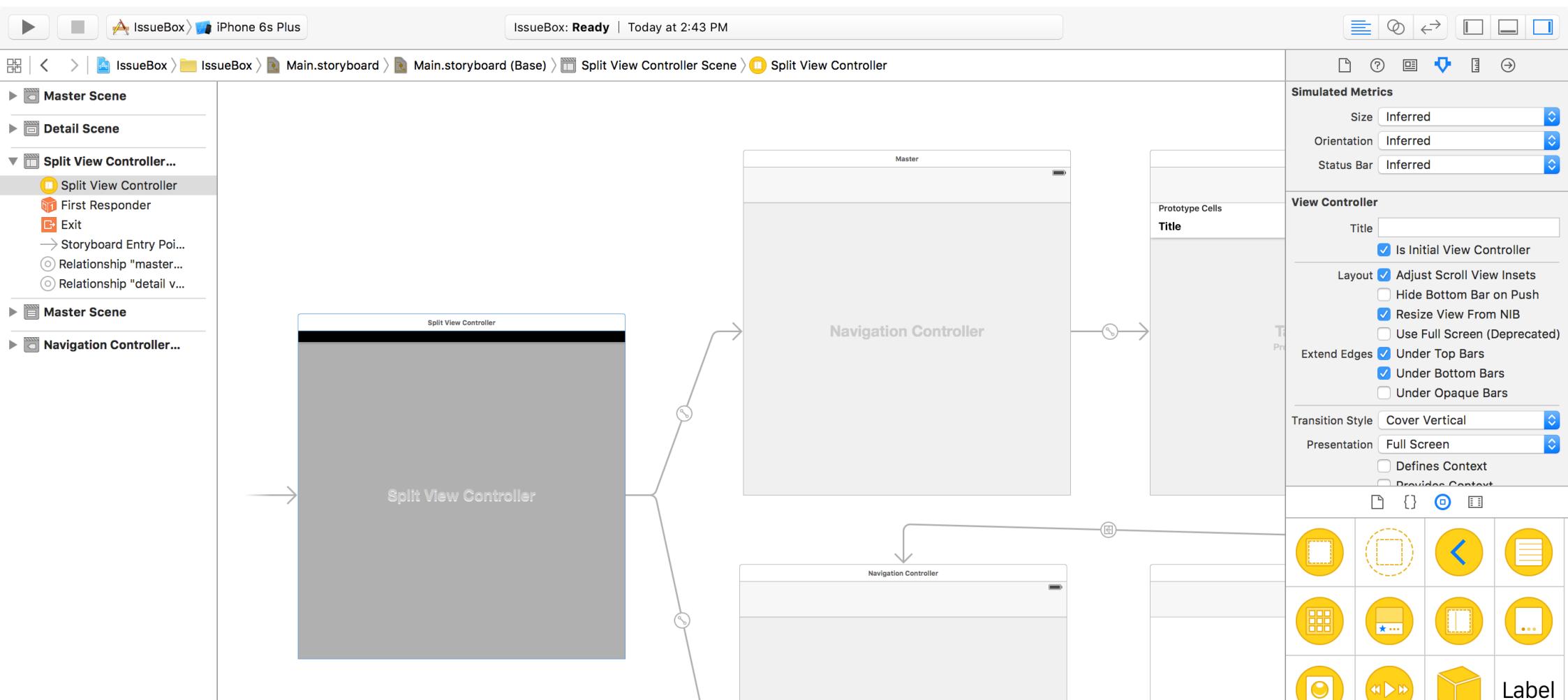
https://developer.apple.com/library/ios/referencelibrary/GettingStarted/DevelopiOSAppsSwift/Lesson1.html#/apple_ref/doc/uid/TP40015214-CH3-SW1

The Swift Programming Language

https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/index.html#/apple_ref/doc/uid/TP40014097-CH3-ID0

Xcode and Storyboard

Storyboard



Storyboard

A visual representation of the app's UI, showing screens of content (as scenes) and the transitions between them.

Connections are the relationships between each scenes and its corresponding source code file (*usually a view controller class*).

Segues are the relationships between different scenes.
The detail of segues would be mentioned in future classes.

Storyboard Connections

Actions are connections which represents methods to be called on the view controller when the specified *UI events* is triggered. Such methods are annotated with **@IBAction** keyword.

Outlets are connections which are properties of the view controller which reference to *UI elements*. Such properties are annotated with **@IBOutlet** keyword.

The prefix pattern, *like the “IB” of IBOutlet*, is used as namespace in Objective-C.

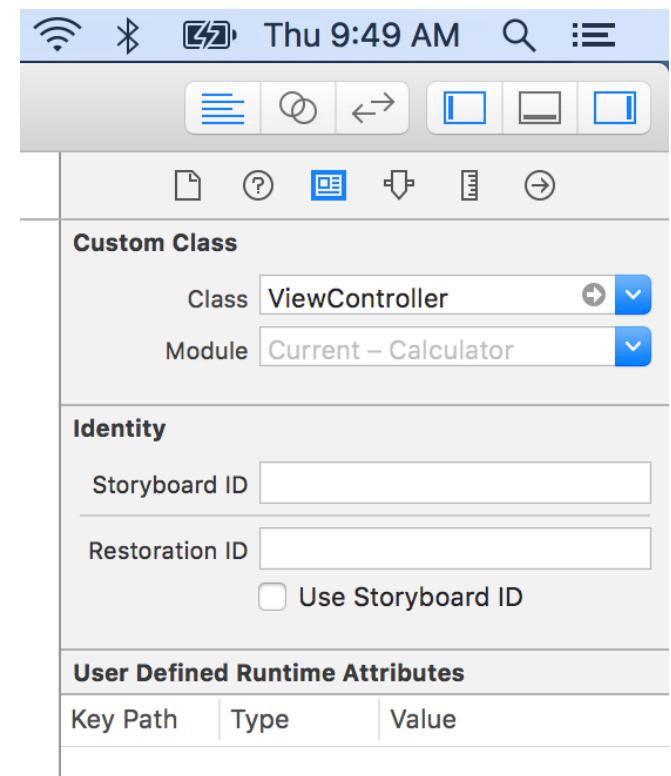
IB means “Interface Builder” which is the predecessor of Storyboard.

Class Loading

Use Identity Inspector to specify custom class for elements.

The app would use the class you assigned to instantiate that elements.

And hence your code would be executed.

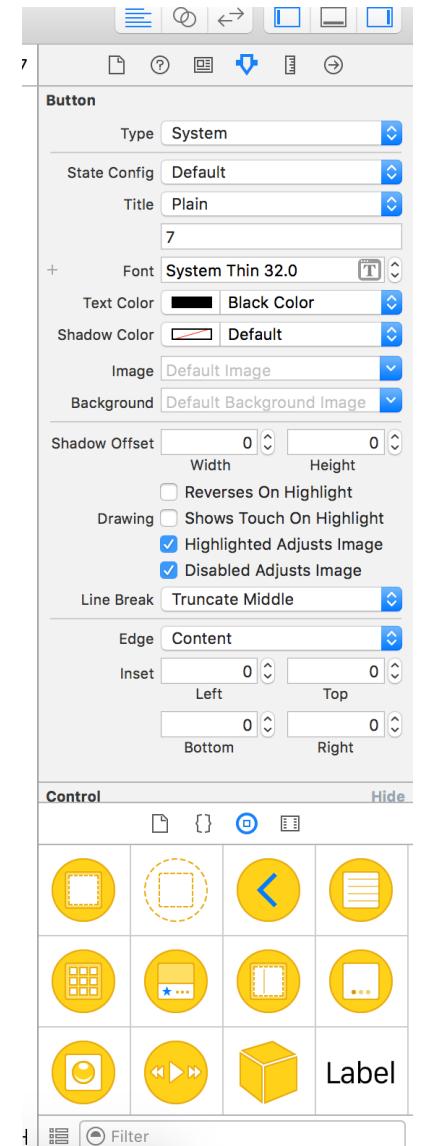


Storyboard > Identity Inspector

Attributes Editing

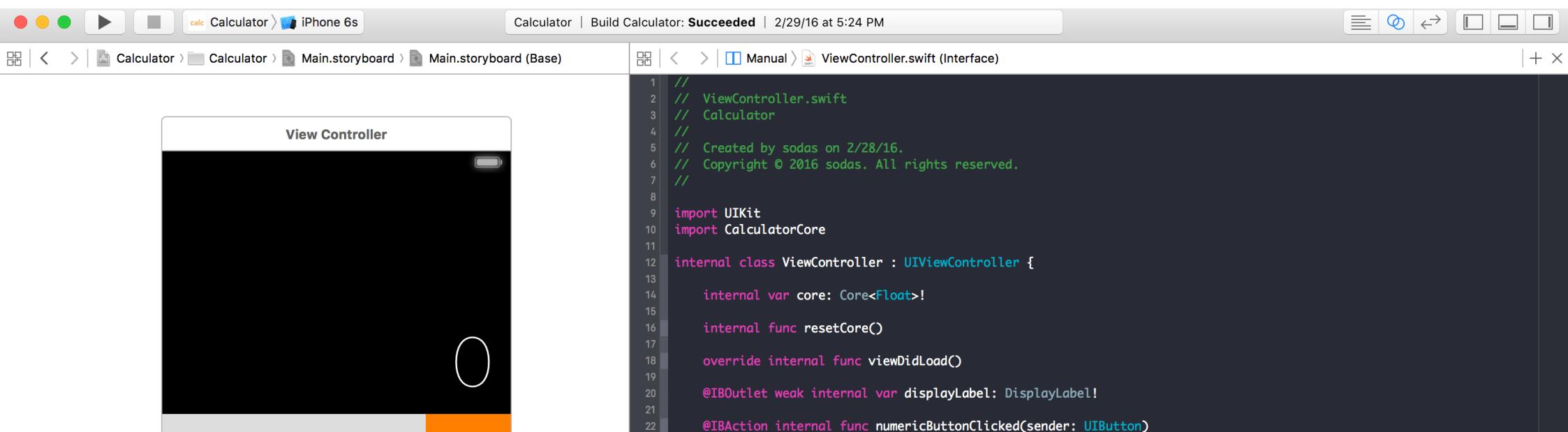
Use Attribute Inspector to custom the appearance and behavior of an element.

Use Object Library to drag a new element into the storyboard.



Storyboard > Attributes Inspector & Object Library

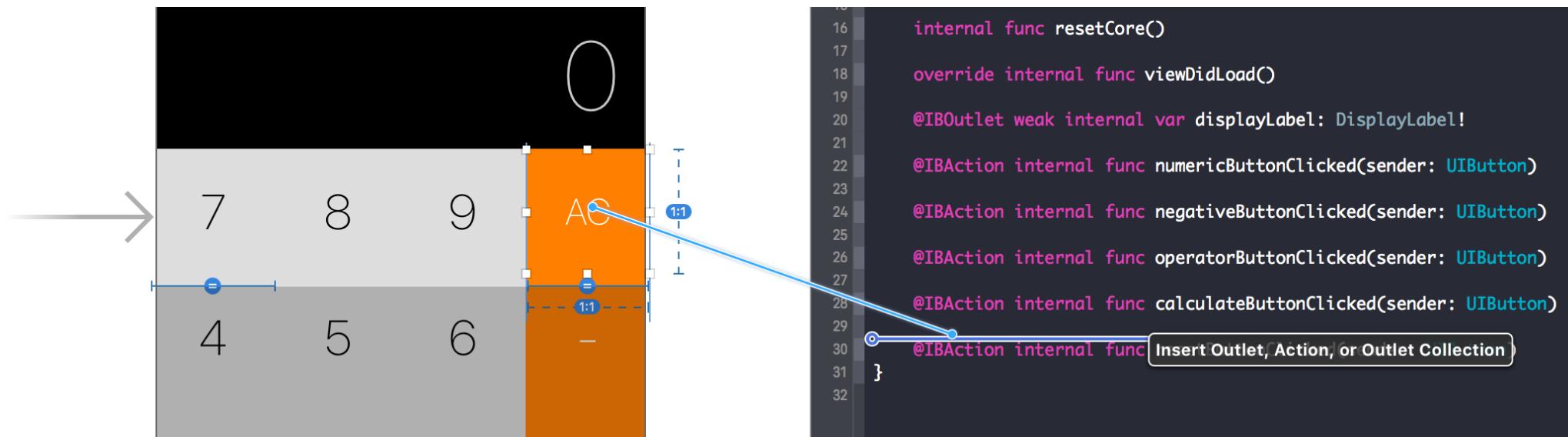
Create connections - I



Use Assistant Editor to see Storyboard and related source code.
Or even two different source code file. Switch by the jump bar.

Storyboard > Connections > Assistant Editor

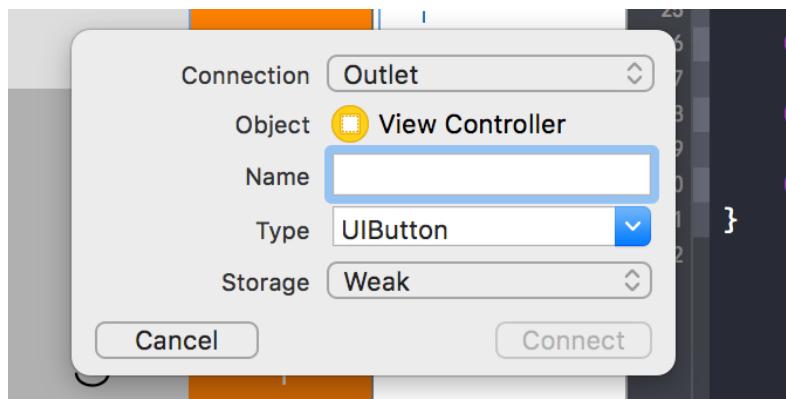
Create connections - II



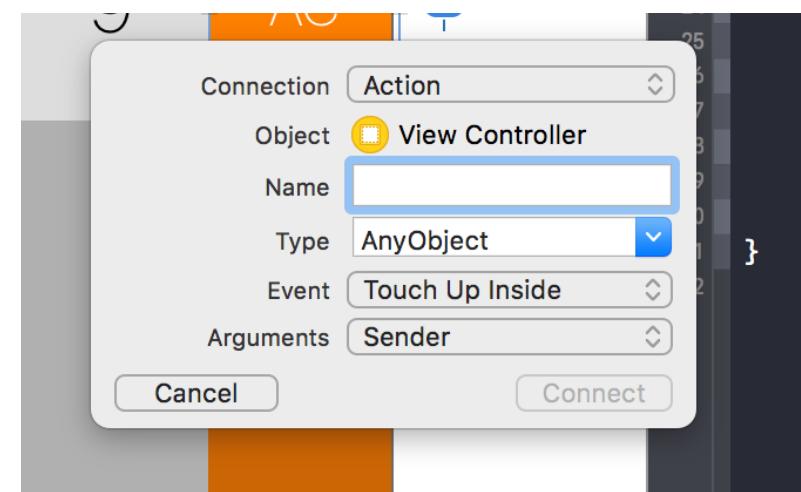
Use “control+drag” to create connections between Storyboard and Swift source code

Storyboard > Connections > Drag connections

Create connections - III



Outlet



Action

Storyboard > Connections > Outlet & Action

References of using Storyboard

Connect the UI to Code

https://developer.apple.com/library/ios/referencelibrary/GettingStarted/DevelopiOSAppsSwift/Lesson3.html#/apple_ref/doc/uid/TP40015214-CH22-SW1

How To Prototype In Xcode Using Storyboard

<http://blog.mengto.com/prototype-xcode-storyboard/>

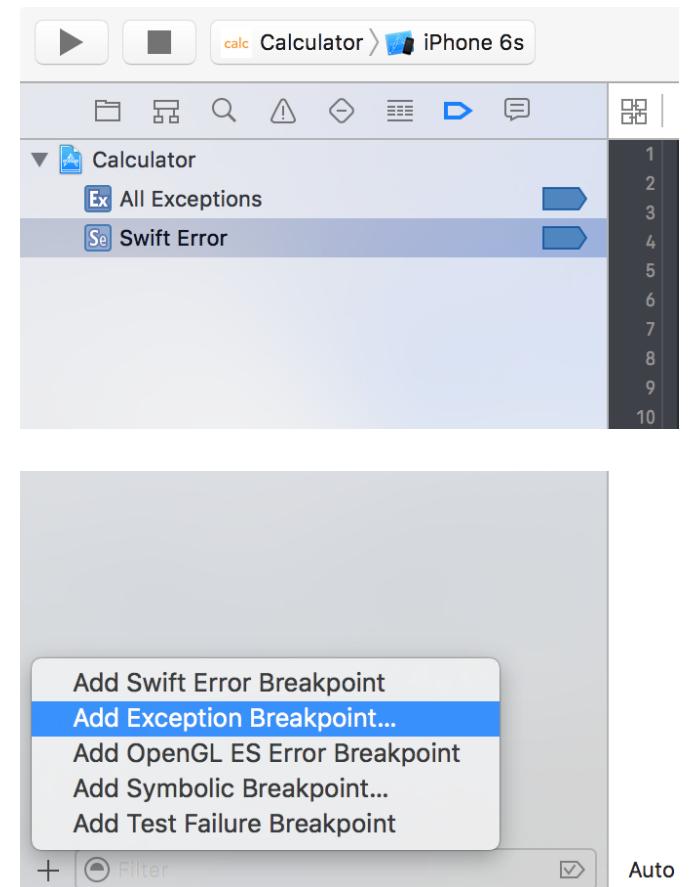
Debug hints

Debug hints - Add breakpoints

Switch to “Breakpoint Navigator”

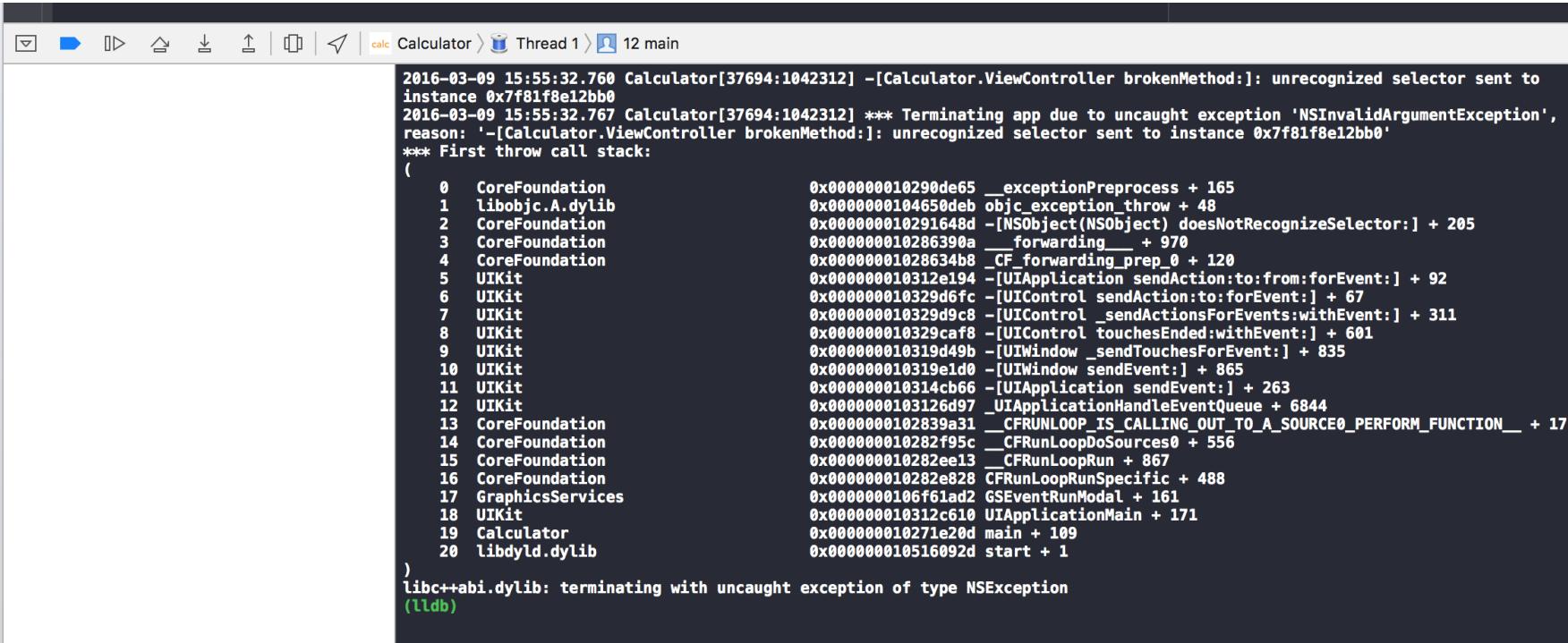
Add both “Swift Error Breakpoint” and
“Exception Breakpoint”

The later one captures exceptions from Objective-C and C++.



Debug hints > Add breakpoints

Debug hints - Unknown actions



The screenshot shows the Xcode interface during a debug session. On the left, a sidebar lists various threads and their states. Thread 1 is active, showing a stack trace for an exception:

```
2016-03-09 15:55:32.760 Calculator[37694:1042312] -[Calculator.ViewController brokenMethod]: unrecognized selector sent to instance 0x7f81f8e12bb0
2016-03-09 15:55:32.767 Calculator[37694:1042312] *** Terminating app due to uncaught exception 'NSInvalidArgumentException', reason: '-[Calculator.ViewController brokenMethod]: unrecognized selector sent to instance 0x7f81f8e12bb0'
*** First throw call stack:
(
    0   CoreFoundation                      0x000000010290de65 __exceptionPreprocess + 165
    1   libobjc.A.dylib                     0x0000000104650deb objc_exception_throw + 48
    2   CoreFoundation                      0x000000010291648d -[NSObject(NSObject) doesNotRecognizeSelector:] + 205
    3   CoreFoundation                      0x000000010286390a __forwarding__ + 970
    4   CoreFoundation                      0x00000001028634b8 CF_forwarding_prep_0 + 120
    5   UIKit                             0x000000010312e194 -[UIApplication sendAction:to:from:forEvent:] + 92
    6   UIKit                             0x000000010329d6fc -[UIControl sendAction:to:forEvent:] + 67
    7   UIKit                             0x000000010329d9c8 -[UIControl _sendActionsForEvents:withEvent:] + 311
    8   UIKit                             0x000000010329caf8 -[UIControl touchesEnded:withEvent:] + 601
    9   UIKit                             0x000000010319d49b -[UIWindow _sendTouchesForEvent:] + 835
    10  UIKit                            0x000000010319e1d0 -[UIWindow sendEvent:] + 865
    11  UIKit                            0x000000010314cb66 -[UIApplication sendEvent:] + 263
    12  UIKit                            0x0000000103126d97 -[UIApplicationHandleEventQueue + 6844]
    13  CoreFoundation                    0x0000000102839a31 __CFRUNLOOP_IS_CALLING_OUT_TO_A_SOURCE0_PERFORM_FUNCTION__ + 17
    14  CoreFoundation                    0x000000010282f95c __CFRunLoopDoSources0 + 556
    15  CoreFoundation                    0x000000010282ee13 __CFRunLoopRun + 867
    16  CoreFoundation                    0x000000010282e828 CFRunLoopRunSpecific + 488
    17  GraphicsServices                 0x0000000106f61ad2 GSEventRunModal + 161
    18  UIKit                            0x000000010312c610 UIApplicationMain + 171
    19  Calculator                       0x000000010271e20d main + 109
    20  libdyld.dylib                   0x000000010516092d start + 1
)
libc++abi.dylib: terminating with uncaught exception of type NSException
(lldb)
```

Debug hints > Unknown Actions

Debug hints - Unknown actions

The screenshot shows the Xcode debugger interface with the following details:

- Thread 1 Queue: com.apple.main-thread (serial)**: This sidebar lists several frames of the stack trace, starting from `objc_exception_throw` and ending at `main`.
- Code View (Top):** The code for the `AppDelegate` class is shown:

```
11 @UIApplicationMain
12 class AppDelegate: UIResponder, UIApplicationDelegate {
13
14     var window: UIWindow?
15 }
16
17
```
- Call Stack (Bottom):** The call stack shows the application's main thread:

```
Calculator > Thread 1 > 18 main
```
- Output Window (Bottom Right):** The output window displays the error message:

```
2016-03-09 15:56:44.689 Calculator[37743:1045111] -[Calculator.ViewController brokenMethod:]: unrecognized selector sent to instance 0x7fdd514561c0
(lldb)
```
- Toolbar (Bottom Center):** Standard Xcode debugger toolbar buttons are visible.

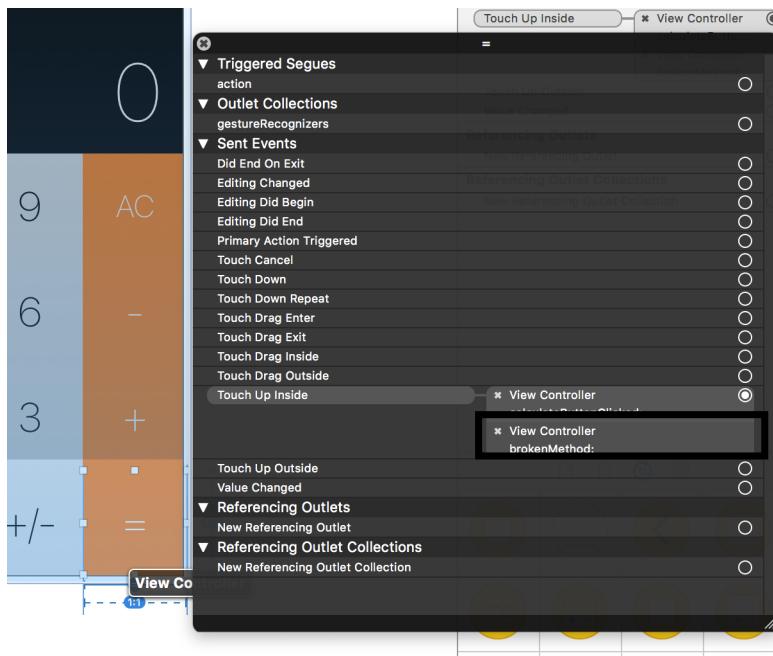
Debug hints > Unknown Actions

Debug hints - Unknown actions

```
2016-03-09 15:56:44.689 Calculator[37743:1045111] -[Calculator.ViewController brokenMethod:]: unrecognized selector sent to instance 0x7fd514561c0  
(lldb)
```

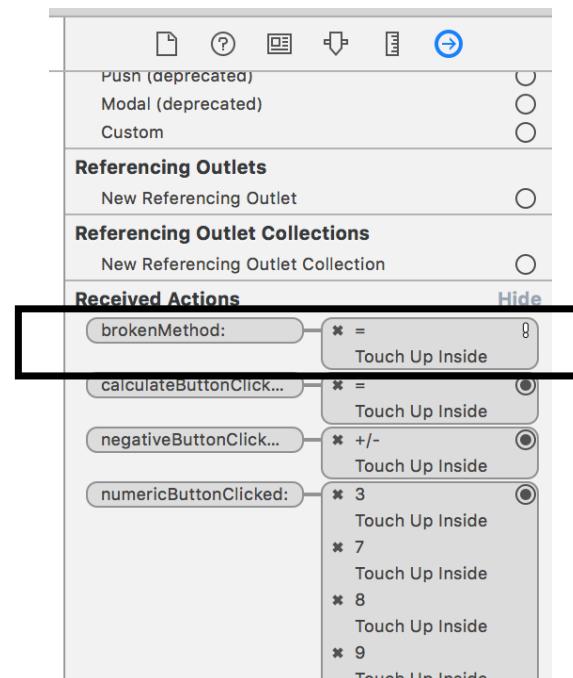
Usually happens when you remove a method from a view controller which is miss-created in the storyboard.

Debug hints - Unknown actions



Connection Popup
by right-click on an element

Debug hints > Unknown Actions



Connection Inspector

Hints of git commands

Create an account for git hosting service. [GitHub](#) or [Bitbucket](#).

Create a remote git repository.

git init

Create a git local repo

git remote

Add refs of remote repo

git add

Add files to be committed

git tag

Annotate a tag

git commit

Save current progress

git push [--tags]

Send changes (or tags) to remote repo

Assignments

Read Human Interface Guidelines

We may have a simple report or quiz for this in the future classes.

Prepare your team final project.

Explore Apple's Swift Documentation

CocoaHeads Meet-up 3/10



Target on developers in Apple's platform

台北市大安區光復南路102號7樓 Cardinal Blue Office (PicCollage)

每月第二個週四 (Check [CocoaHeads Facebook Group](#))

