

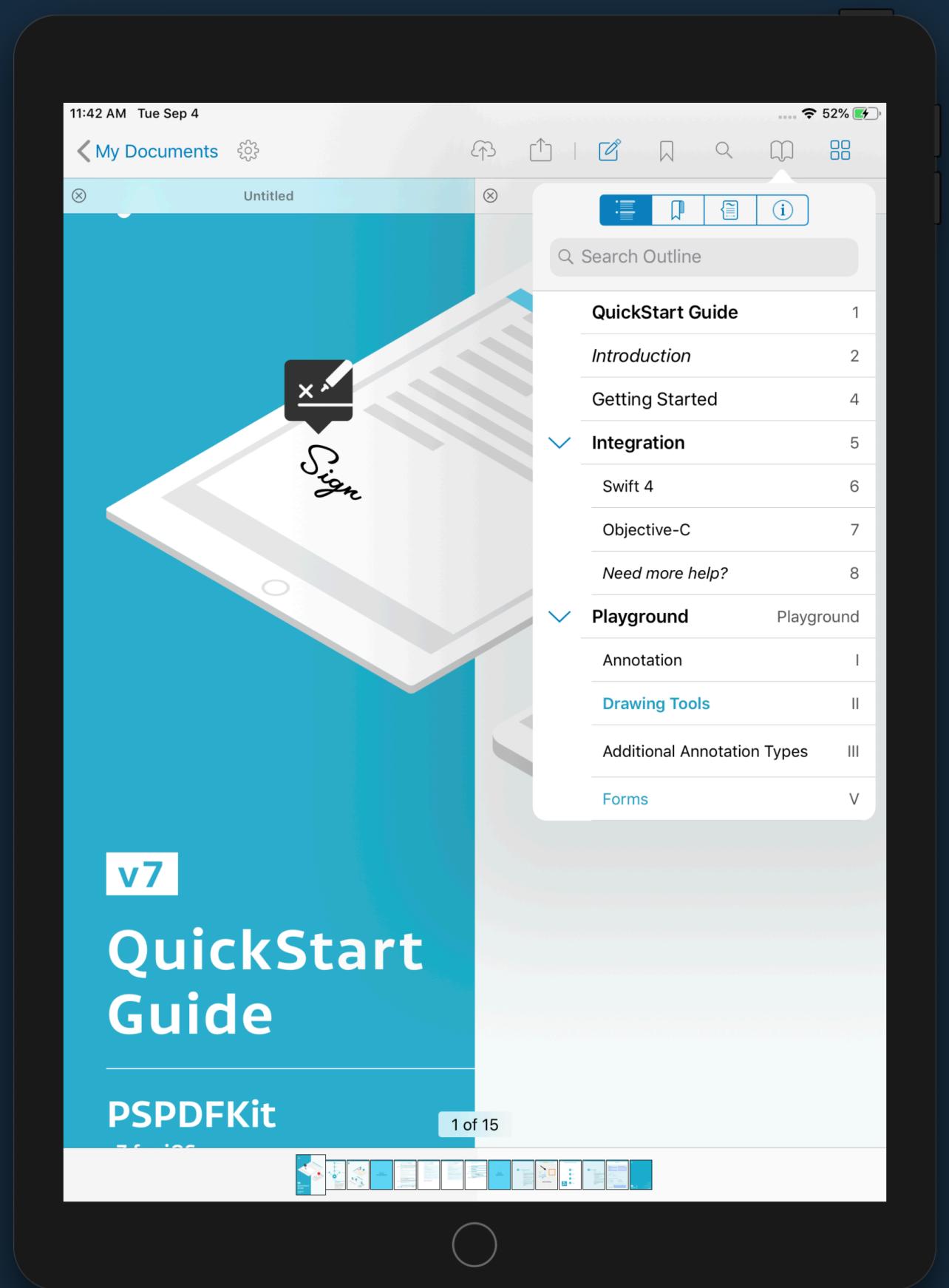
HACKING MARZIPAN

AppKit



UIKit

UIKit



A screenshot of a Twitter profile page for Peter Steinberger (@steipete). The top banner features a video thumbnail of Peter speaking at a conference, wearing a dark t-shirt with 'Objective-C' printed on it. Below the banner is his profile picture, a circular photo of him smiling. His bio includes his role as Founder/CEO of PSPDFKit and pdfviewerapp, mentioning he tweets about iOS hacks and running a remote company. It also notes he is from Vienna, Austria, and joined Twitter in March 2009. The stats section shows 63.5K tweets, 1,338 following, 24.6K followers, 20.5K likes, and 7 lists. A 'Follow' button is visible. The timeline tab is selected, showing a pinned tweet from May 2018 about his talk at UIKonf 2018, followed by a media card for a YouTube video titled 'UIKonf18 - Day 2 - Peter Steinberger - Building Per...'. The video thumbnail shows Peter speaking.

Peter Steinberger

@steipete

Founder/CEO @PSPDFKit & @pdfviewerapp. I tweet about iOS hacks & running a remote company. Really just here to confuse people with animated gif reactions. 😊 🤓

📍 Vienna, Austria

🔗 github.com/steipete/speak...

📅 Joined March 2009

🕒 2,054 Photos and videos

Tweets 63.5K Following 1,338 Followers 24.6K Likes 20.5K Lists 7

[Follow](#)

Tweets **Tweets & replies** **Media**

Pinned Tweet

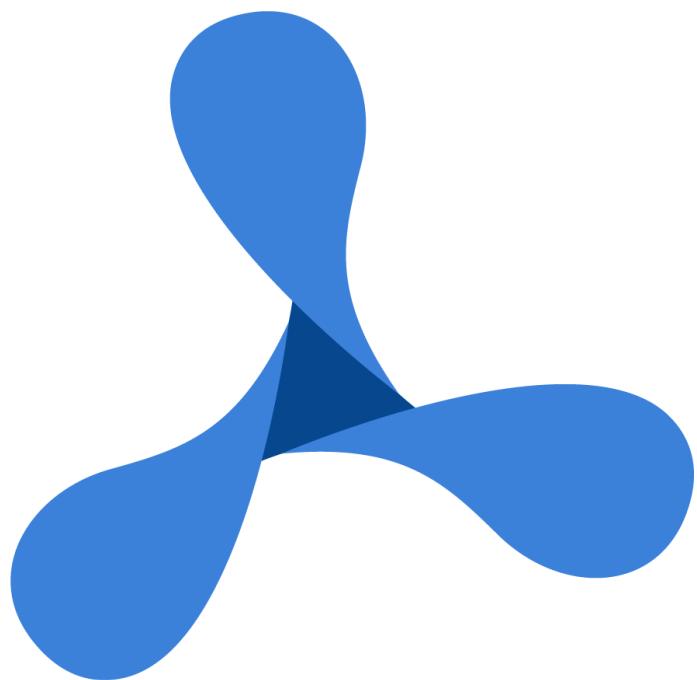
Peter Steinberger @steipete · May 20

My talk about Building Personal Brands for Introverts from @uikonf is now live! This was such a great conference, kudos to the organizers and everyone involved.

UIKonf18 - Day 2 - Peter Steinberger - Building Per...

Building Personal Brands for Introverts Having a successful online identity will open many doors and help you to become a better developer and person. I chal... youtube.com

PETER STEINBERGER - @STEIPETE - HACKING MARZIPAN - TRY! SWIFT NYC 2018



PSPDFKit

WHAT IS MARZIPAN

Aka the "iOSMac" platform.

SOME HISTORY

This has been done before...



vitorgrs



Vitor Mikaelson

50 Shades of Vitor

tlgrm.me/vitorgrs

292
posts993
followers456
following

Edit Profile

vitorgrs
Londrina

...

Archive

Turn Off Commenting

Edit

Share

Delete

Cancel



Built for Windows 10

Desktop & Touch. Surface Dial Support

[Code](#)[Issues 345](#)[Pull requests 6](#)[Wiki](#)[Releases 51](#)[More](#)Branch: [develop](#)[0.2.180220](#)[WinObjC / Frameworks / UIKit /](#)[Download](#)[Create new file](#)[Find file](#)[History](#)

DHowett-MSFT Hygiene: fix 1687 filename case collisions & renormalize CRLF & LFS (#...)

Latest commit 7bec246 29 days ago

..

[StarboardXaml](#)

MSVC: Clean up layer property animator initialization to avoid new CL...

2 months ago

[ForceInclusion.mm](#)

Fix 2618 by forcing RTObjCInterop library to be included (#2634)

a year ago

[NSMutableAttributedString+UIKitAddition...](#)

Fix additional leaks in UIKit (#1789)

a year ago

[NSBundle+UIKitAdditions.mm](#)

5762882 - UINib:nibWithNibName:bundle is not implemented and move NSN...

2 years ago

[NSCoder+UIKitAdditions.mm](#)

Fix scribble memory in NSCoder and add CGVector/UIEdgeInsets in NSValue

2 years ago

[NSDataAsset.mm](#)

6622034: UIKit APIs have Unknown/Gap status

2 years ago

[NSFileProviderExtension.mm](#)

Stubbing of UIKit

2 years ago

[NSIndexPath+UITableView.mm](#)

Implement NSIndexPath (#2279)

a year ago

[NSLayoutAnchor.mm](#)

Add support for NSLayoutAnchor, UILayoutGuide.

2 years ago

[NSLayoutAnchorInternal.h](#)

Fix for #1380 - Remove UIKit.h from Starboard.h (#1643)

a year ago

[NSLayoutConstraint.mm](#)

Foundation: Fix up NSLayoutConstraint to contain mostly valid C++

4 months ago

[NSLayoutDimension.mm](#)

Add support for NSLayoutAnchor, UILayoutGuide.

2 years ago

[NSLayoutManager.mm](#)

Fix _even more_ instances where we used nil instead of nullptr (#2851)

4 months ago

[NSLayoutXAxisAnchor.mm](#)

Stubbing of UIKit

2 years ago

[NSLayoutYAxisAnchor.mm](#)

Stubbing of UIKit

2 years ago

[NSMutableAttributedString+UIKit...](#)

TFS: 6523171 CommonDigest _isValidState 'asserts' on success due to m...

2 years ago

[NSMutableParagraphStyle.mm](#)

Implement NSParagraphStyle and refactor CTParagraphStyle (#1343)

2 years ago

[NSObject+UIKitAdditions.mm](#)

Stubbing of UIKit

2 years ago

CHAMELEON PROJECT



Support Chameleon!

If you'd like to help support the development of this project, use the Donate button to send money to the Iconfactory PayPal account. Thanks!

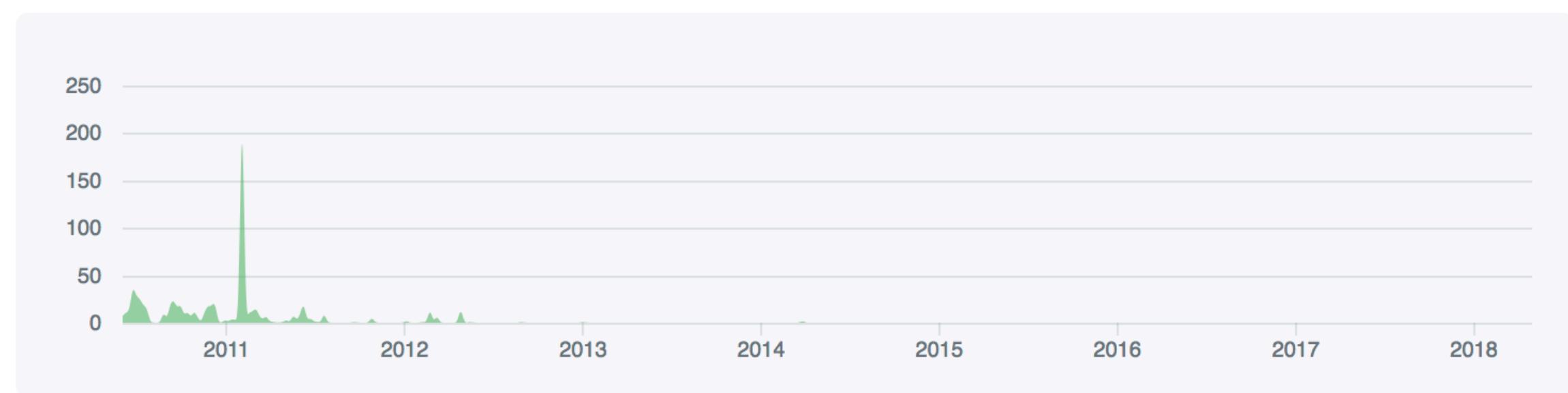
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[Code](#)[Issues 42](#)[Pull requests 6](#)[Wiki](#)[Releases](#)[More ▾](#)[Pulse](#)[Contributors](#)[Community](#)[Commits](#)[Code frequency](#)[Dependency graph](#)[Network](#)[Forks](#)

Jul 18, 2010 – Jun 15, 2018

[Contributions: Commits ▾](#)

Contributions to master, excluding merge commits

**BigZaphod**

656 commits 197,073 ++ 132,149 --

#1

**steipete**

92 commits 2,854 ++ 75 --

#2



Are you merging iOS and macOS?



No.

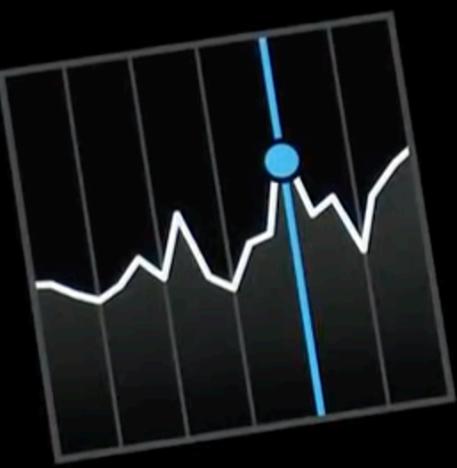


macOS app

AppKit

UIKit

Trackpad and mouse input
App window stoplights
Window resizing
Scroll-bars
Copy and paste
Drag and drop



PETER STEINBERGER - @STEIPETE - HACKING MARZIPAN - TRY! SWIFT NYC 2018

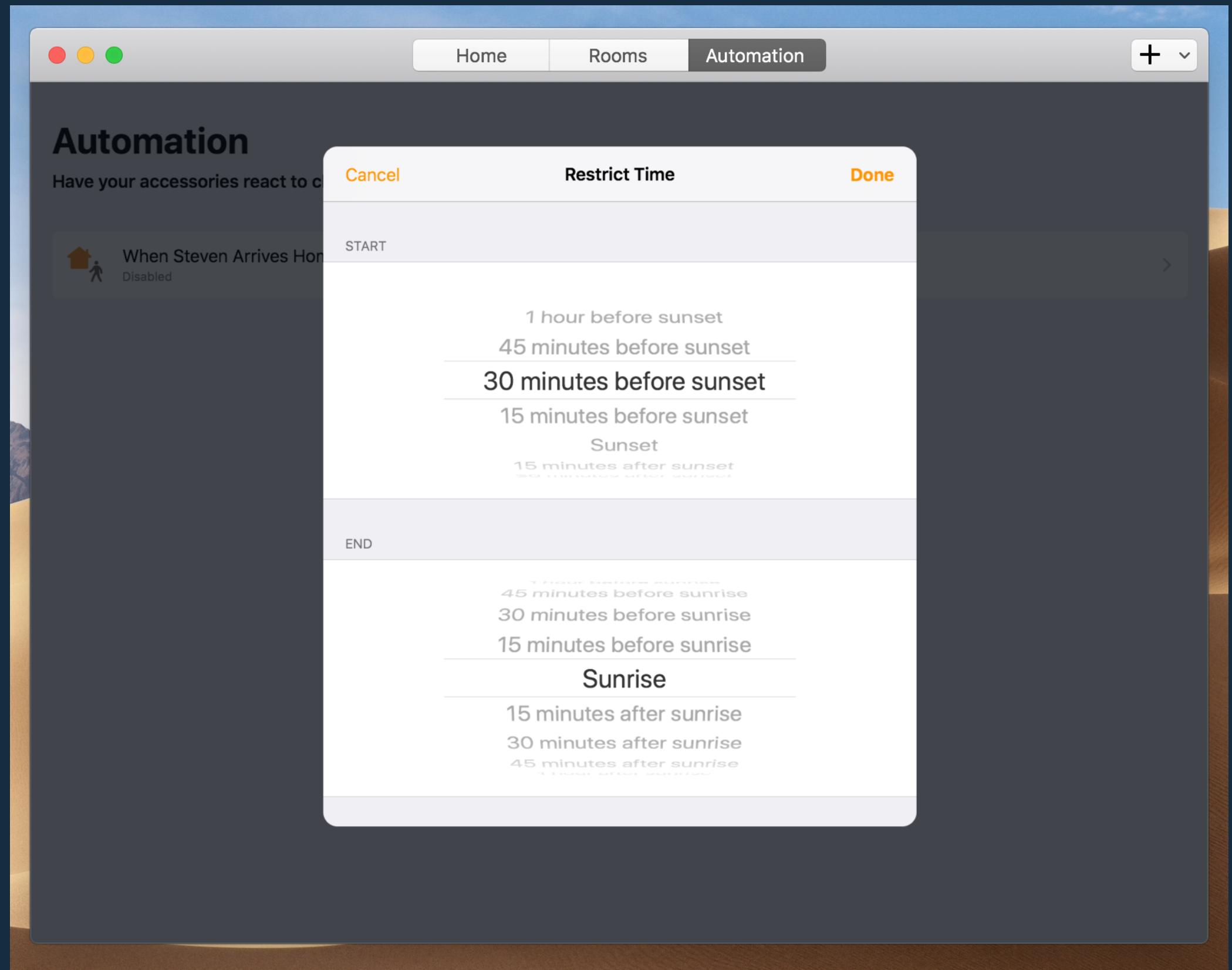
TIMELINE

- » Dec 20, 2017: Leak: Mark Gurman/Bloomberg^{leak}
- » Jun 4-8, 2018: WWDC 2018: Sneek Peek
- » Jun 7: MarzipanPlatter (Michael Thomas)
- » Jun 17: marzipanify (Steven Troughton-Smith)
- » Jul 3: Largest change, Mojave Beta 3
- » Sept/Oct: Mojave GM

^{leak} bloomberg.com/news/articles/2017-12-20/apple-is-said-to-have-plan-to-combine-iphone-ipad-and-mac-apps

FUN FACTS

- » Scale Factor is at 0.77
- » Either UIKit or AppKit, can't mix
- » Marzipanpandemic: The spread of single-window odd-UI originally-on-iOS apps to the Mac
- » Some UI paradigms can be weird...



MARZIPANTS: REACT NATIVE + MACOS

↪ It's ✨ Reasonably Good ✨

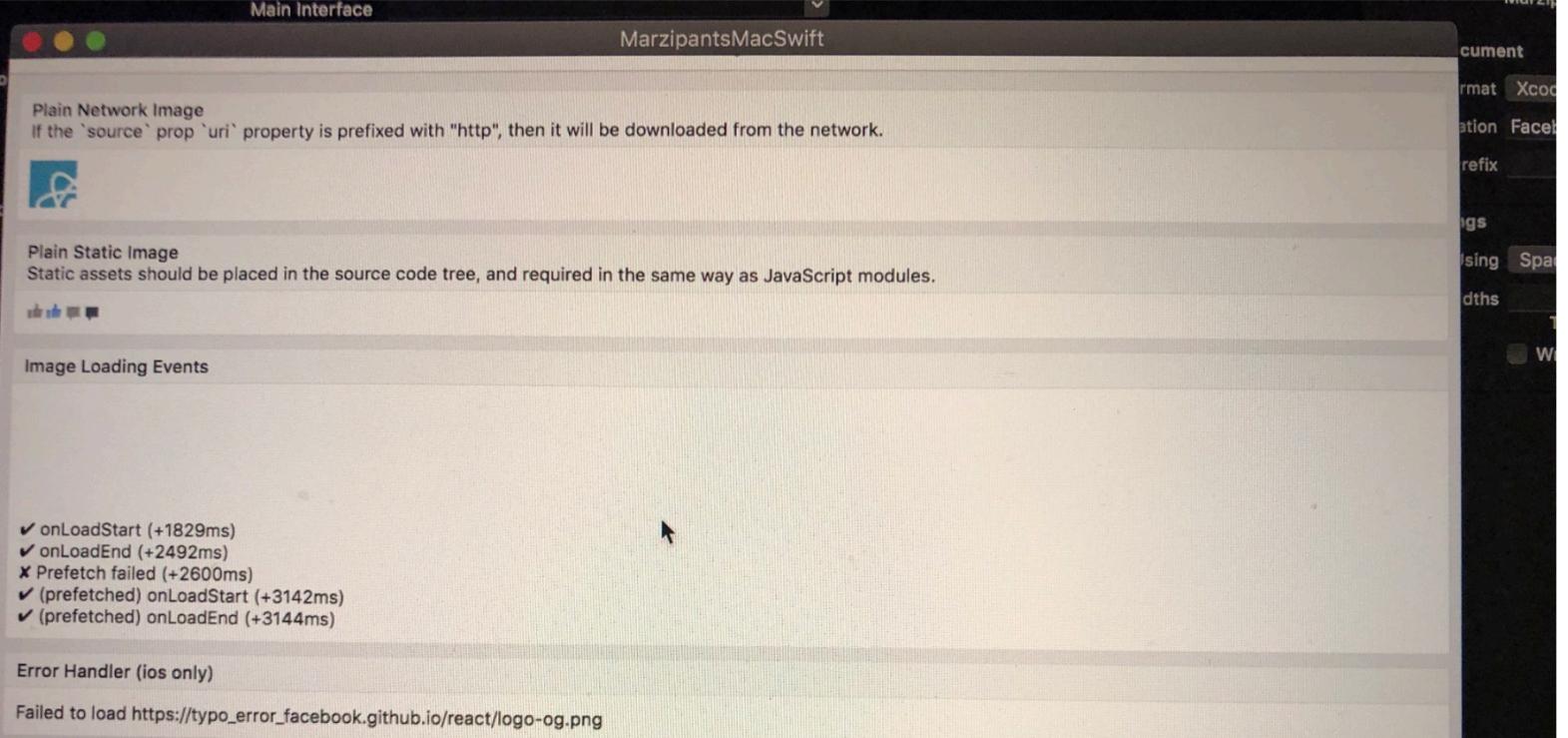
It's surprising how well it's working. Besides the obvious mobile-specific things, it's running abouuuut as well as tvOS builds of React Native.

I wouldn't recommend using it. Ever. C'mon now.

How It Looks

I have some screenshots* of the [RNTester](#) sample application from React Native.

(*photos, lols. My UI server dies *hard* the second my Touchbar becomes active, which my screenshot shortcut does. Ehhh)



The screenshot shows the RNTester application window titled "Main Interface". The window displays several sections related to image loading:

- Plain Network Image:** If the 'source' prop 'uri' property is prefixed with "http", then it will be downloaded from the network.
- Plain Static Image:** Static assets should be placed in the source code tree, and required in the same way as JavaScript modules.
- Image Loading Events:** A list of events with their execution times:
 - ✓ onLoadStart (+1829ms)
 - ✓ onLoadEnd (+2492ms)
 - ✗ Prefetch failed (+2600ms)
 - ✓ (prefetched) onLoadStart (+3142ms)
 - ✓ (prefetched) onLoadEnd (+3144ms)
- Error Handler (ios only):** Failed to load https://typo_error_facebook.github.io/react/logo-og.png

It's  Reasonably Good 

WHY LOOK AT THIS NOW?

IOSMAC ARCHITECTURE

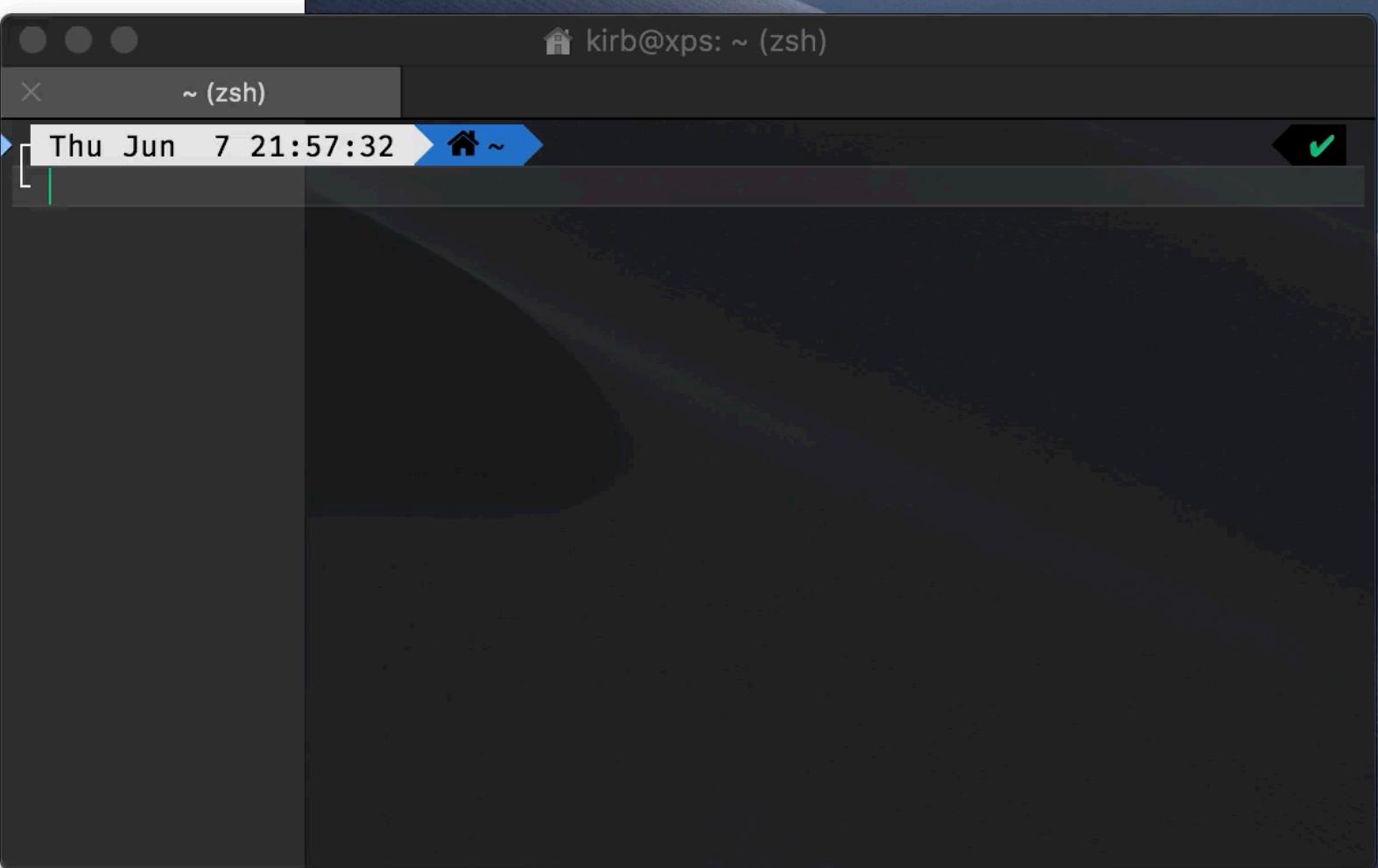
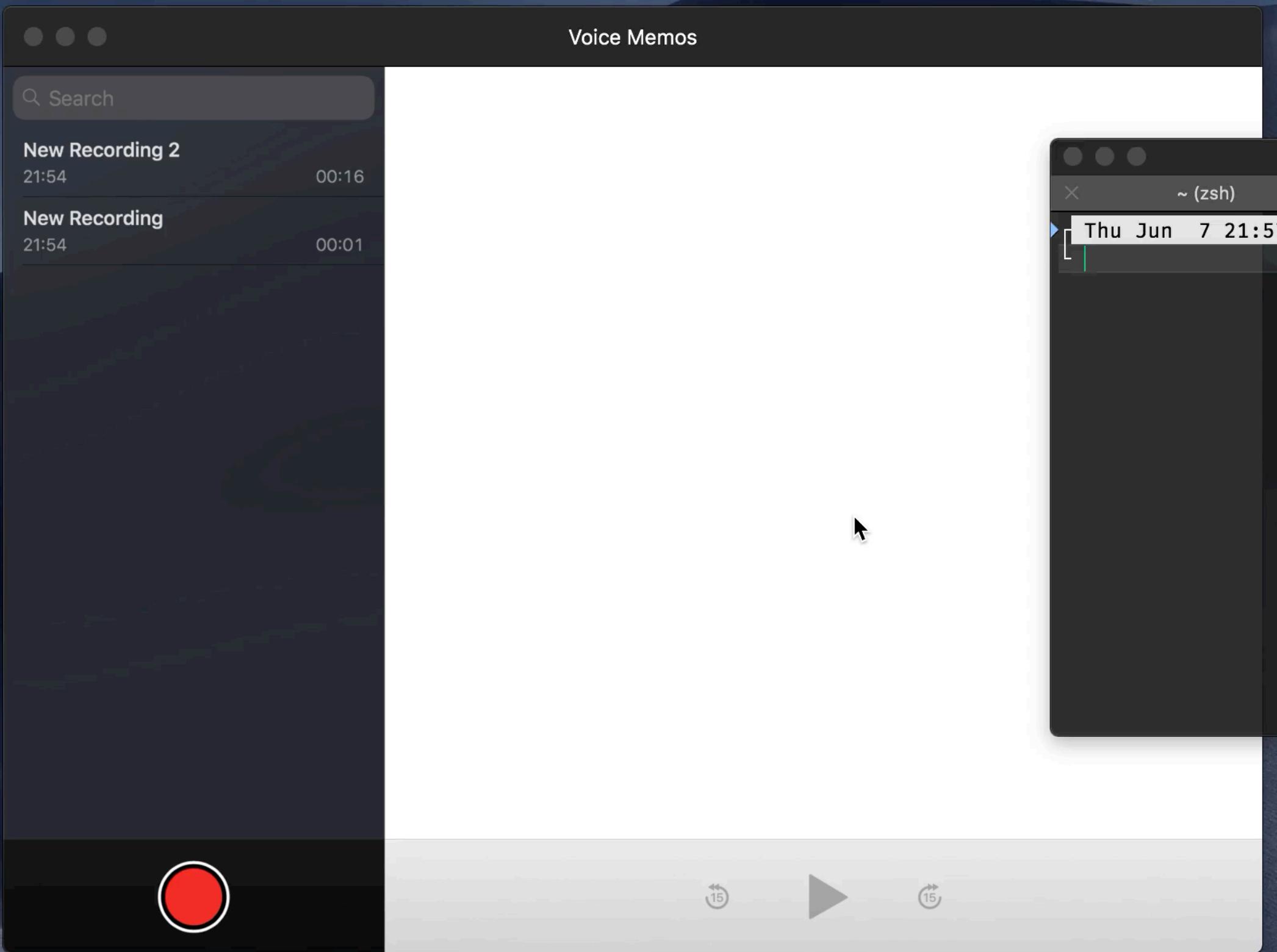
```
otool -L /Applications/VoiceMemos.app/Contents/MacOS/VoiceMemos  
  
/Applications/VoiceMemos.app/Contents/MacOS/VoiceMemos:  
/System/Library/Frameworks/Accounts.framework/Versions/A/Accounts  
/System/Library/PrivateFrameworks/AppleAccount.framework/Versions/A/AppleAccount  
/System/Library/Frameworks/CoreSpotlight.framework/Versions/A/CoreSpotlight  
/System/Library/Frameworks/CoreData.framework/Versions/A/CoreData  
/System/Library/Frameworks/CloudKit.framework/Versions/A/CloudKit  
/System/Library/PrivateFrameworks/AppSupport.framework/Versions/A/AppSupport  
/System/Library/Frameworks/AVFoundation.framework/Versions/A/AVFoundation  
/System/Library/Frameworks/CoreGraphics.framework/Versions/A/CoreGraphics  
/System/Library/Frameworks/CoreMedia.framework/Versions/A/CoreMedia  
/System/Library/Frameworks/Foundation.framework/Versions/C/Foundation  
/System/Library/PrivateFrameworks/FrontBoardServices.framework/Versions/A/FrontBoardServices  
/System/Library/PrivateFrameworks/MediaRemote.framework/Versions/A/MediaRemote  
/System/Library/PrivateFrameworks/MediaServices.framework/Versions/A/MediaServices  
/System/Library/Frameworks/QuartzCore.framework/Versions/A/QuartzCore  
/System/Library/PrivateFrameworks/TCC.framework/Versions/A/TCC  
/System/iOSSupport/System/Library/Frameworks/UIKit.framework/Versions/A/UIKit  
/System/iOSSupport/System/Library/PrivateFrameworks/VoiceMemos.framework/Versions/A/VoiceMemos  
/usr/lib/libobjc.A.dylib  
/System/Library/Frameworks/CoreFoundation.framework/Versions/A/CoreFoundation
```

FRONTBOARD SERVICES

- » FBSScene
- » FBSSceneSnapshotRequest
- » FBSUIApplicationLaunchEvent
- » FBSWorkspace

PROCESSES

- » **VoiceMemos.app** /Applications/VoiceMemos.app
- » **voicememod** /System/iOSSupport/System/Library/PrivateFrameworks/VoiceMemos.framework/Support/voicememod
- » **UIKitSystem.app** /System/Library/CoreServices/UIKitSystem.app
- » **UIKitHostApp.xpc (disguised)** /System/Library/PrivateFrameworks/UIKitHostAppServices.framework/Versions/A/XPCServices/UIKitHostApp.xpc



UIKITSYSTEM

```
$ ./System/Library/CoreServices/UIKitSystem.app/Contents/MacOS/UIKitSystem
```

UIKitSystemApp is the system app for iosmac applications.
It cannot be started directly.

UIKITSYSTEM FRAMEWORKS

```
$ otool -L /System/Library/CoreServices/UIKitSystem.app/Contents/MacOS/UIKitSystem
/System/Library/CoreServices/UIKitSystem.app/Contents/MacOS/UIKitSystem:
/System/Library/PrivateFrameworks/AssertionServices.framework/Versions/A/AssertionServices
/usr/lib/libAccessibility.dylib
/System/Library/CoreServices/UIKitSystem.app/Contents/Frameworks/UIKitSystemAppCore.framework/...
/System/iOSSupport/System/Library/Frameworks/UIKit.framework/Versions/A/UIKit
/System/Library/PrivateFrameworks/BackBoardServices.framework/Versions/A/BackBoardServices
/System/iOSSupport/System/Library/PrivateFrameworks/UIKitServices.framework/Versions/A/UIKitServices
/System/Library/PrivateFrameworks/UIKitSystemAppServices.framework/Versions/A/UIKitSystemAppServices
/System/Library/Frameworks/QuartzCore.framework/Versions/A/QuartzCore
/System/Library/PrivateFrameworks/BaseBoard.framework/Versions/A/BaseBoard
/System/Library/PrivateFrameworks/FrontBoardServices.framework/Versions/A/FrontBoardServices
/System/iOSSupport/System/Library/PrivateFrameworks/FrontBoard.framework/Versions/A/FrontBoard
/System/Library/Frameworks/CoreServices.framework/Versions/A/CoreServices
/System/Library/Frameworks/Foundation.framework/Versions/C/Foundation
/usr/lib/libobjc.A.dylib
/usr/lib/libSystem.B.dylib
/System/Library/Frameworks/CoreFoundation.framework/Versions/A/CoreFoundation
/System/Library/PrivateFrameworks/Swift/libswift(...).dylib
```

com.apple.uikit.systemapp.plist			
com.apple.uikit.systemapp.plist > No Selection			
Key	Type	Value	
Root	Dictionary	(7 items)	
Label	String	com.apple.uikit.systemapp	
► MachServices	Dictionary	(7 items)	
► PurpleSystemAppPort	Dictionary	(1 item)	
com.apple.frontboard.systemappse...	Boolean	YES	
com.apple.frontboard.workspace	Boolean	YES	
com.apple.uikit.systemapp.services	Boolean	YES	
com.apple.uikit.systemapp.daemon...	Boolean	YES	
com.apple.UIKit.KeyboardManage...	Boolean	YES	
com.apple.UIKit.statusbarse...	Boolean	YES	
► ProgramArguments	Array	(2 items)	
Item 0	String	/System/Library/CoreServices/UIKitSystem.app/Contents/MacOS/UIKitSystem	
Item 1	String	system_app_start	
EnableTransactions	Boolean	NO	
EnablePressuredExit	Boolean	NO	
POSIXSpawnType	String	App	
ThrottleInterval	Number	10	

UIKITSYSTEM ENTITLEMENTS

```
$ ldid -e /System/Library/PrivateFrameworks/UIKitHostAppServices.framework/Versions  
/A/XPCServices/UIKitHostApp.xpc/Contents/MacOS/UIKitHostApp
```

- applicationservices.allowedtowrapanotherprocess
- com.apple.private.defaults-impersonate
- com.apple.uikitstemapp.bundlehost
- com.apple.uikitstemapp.client

LET'S BUILD A „MAC“ APP!

DISCLAIMER

- » Things will break
- » Release Marzipan apps is tricky
- » Make backups, use a separate Mac if possible
- » Disabling security is a bad idea
- » I have no idea what I'm doing either

PREPARE MACBOOK FOR HACKERY == DISABLE SECURITY



```
sudo csrutil disable
```

```
sudo nvram boot-args="amfi_get_out_of_my_way=0x1"1
```

```
<key>com.apple.private.iosmac</key> <true/>
```

¹ <https://www.theiphonewiki.com/wiki/AppleMobileFileIntegrity>

VIRTUAL MACHINES DO NOT WORK

biscuitehh / MarzipanPlatter

Watch 10 Star 212 Fork 3

Code Issues 2 Pull requests 0 Wiki Releases More ▾

UIKit + macOS

swift macos uikit reverse-engineering wwdc18

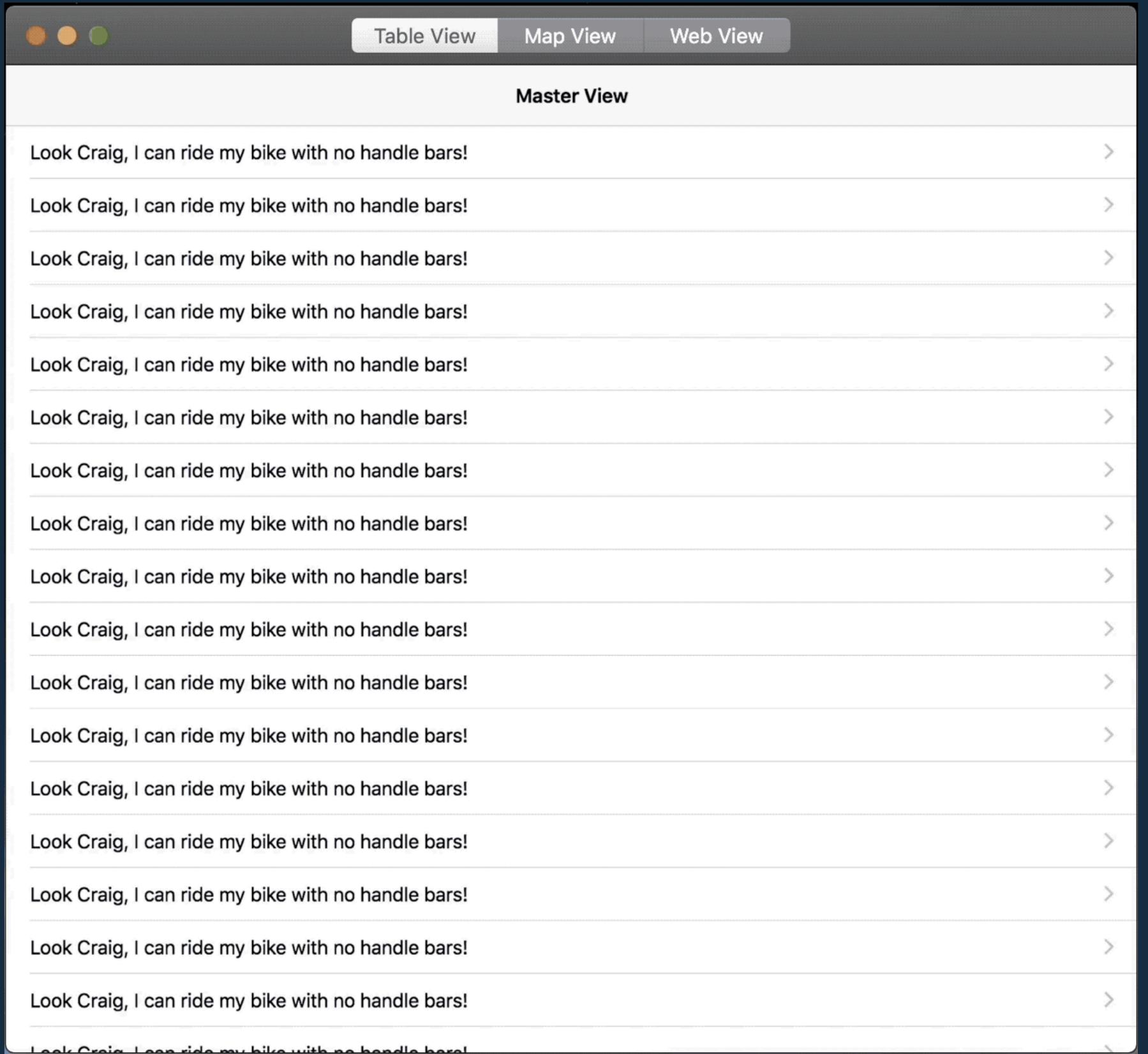
11 commits 1 branch 0 releases 2 contributors MIT

Branch: master ▾ Create new file Find file Clone or download ▾

biscuitehh Merge pull request #5 from Ikuczborski/fixed-absolute-path ... Latest commit f7de888 5 hours ago

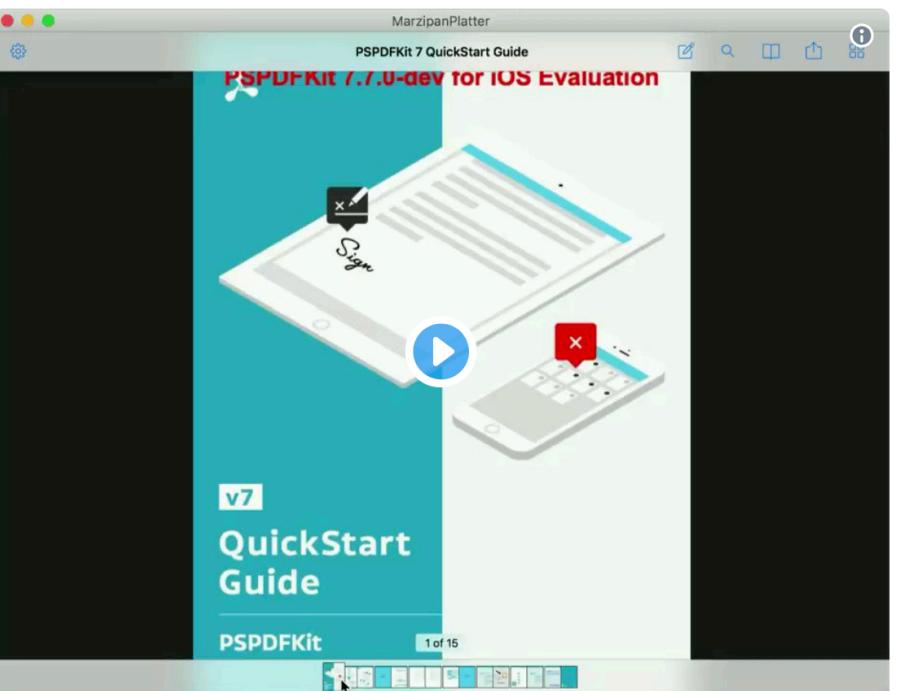
Frameworks	Marzipan Round #2	18 hours ago
Helpers	Remove missing Xcode project reference & document gibberish in Linker...	18 hours ago
MarzipanPlatter.xcodeproj	Removed commented line	6 hours ago
MarzipanPlatter	Get rid of unneeded environment variables section in Info.plist	18 hours ago
assets	Marzipan Round #2	18 hours ago
scripts	Marzipan Round #2	18 hours ago
.gitignore	Initial Commit	6 days ago
ExportOptions.plist	Initial Commit	6 days ago
LICENSE	Initial Commit	6 days ago
README.md	Fix cool .gif asset	7 hours ago

Marzipan Platter



OTHER APPS

Other developers are already experimenting with porting their own apps to the Mac. Joshua May from Geekbench [ported the Geekbench and VoodooPad apps](#) to the Mac. Probably the most impressive port so far was Peter Steinberger's port of the PDF Viewer app, which has a million lines of code and took half a day to port, according to him.



 **Peter Steinberger**
@steipete 

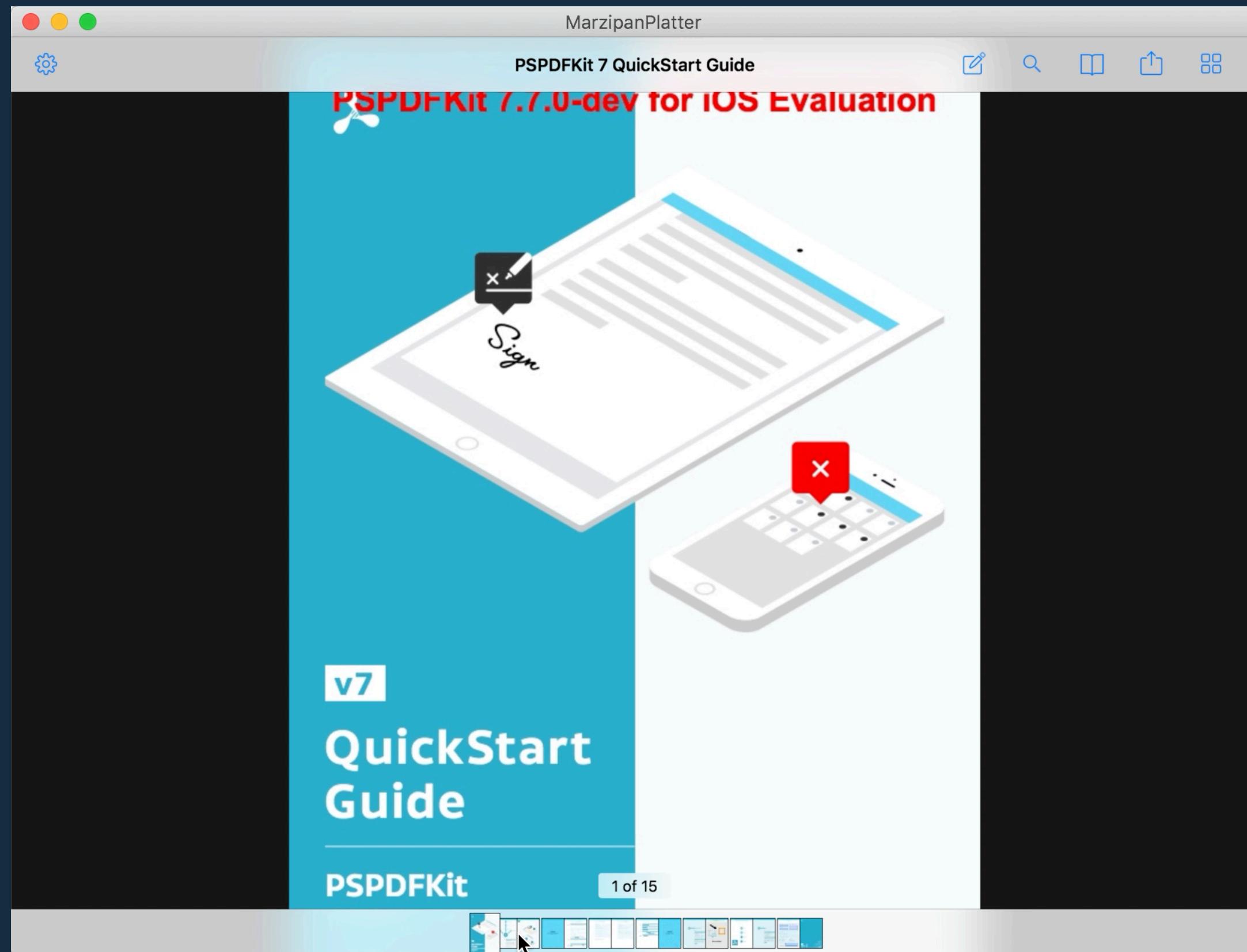
Got [@pdfviewerapp](#) running on Marzipan 🎉

Featuring inline video, page curl, popovers, scrolling, text selection, inline forms, adding text, color inspector, search, editing documents - almost everything works. Took me half a day. Project is 1MLOC ObjC/C++.

Major props to Apple!

11:49 PM - Jun 11, 2018

 461  127 people are talking about this



**CAUTION
FAST SLIDES AHEAD
I DID REALLY DUMB THINGS AND YOU
SHOULDN'T LOOK TO CLOSELY**

The screenshot shows the Xcode interface with the following details:

- Project Navigator:** Shows the project structure under "MarzipanPlatter".
 - Root folder: MarzipanPlatter (contains README.md, ExportOptions.plist).
 - Subfolder: MarzipanPlatter (contains PSPDFKitUI.xcassets, PSPDFKit.bundle, AppDelegate.swift, Info.plist, MarzipanPlatter.entitlements, PSPDFMarzipanViewController.h, PSPDFMarzipanViewController.m, MarzipanAppDelegate.h, MarzipanAppDelegate.m, main.m, MarzipanPlatter-Bridging-Header.h, PSMCopyHelper.m, PSMCopyHelper.h).
 - File: PSPDFKitUI.xcodeproj
 - Folder: Samples (contains numerous PDF files: A.pdf, About PSPDFKit.pdf, aes-encrypted.pdf.aes, Annotation Test.pdf, Annual Report.pdf, B.pdf, C.pdf, Case Study Box.pdf, D.pdf, Empty Page.pdf, Form_example_signed.pdf, Form_example.pdf, Forms_formatted.pdf, JKHF - Annual Report.pdf, JohnAppleseed.p7c, JohnAppleseed.p12, multimedia.pdf, one.pdf, protected.pdf, PSPDF Web.pdf).
- Editor:** Displays the contents of `AppDelegate.swift`. The code initializes a `UIWindow` and sets up a `PSPDFViewController` to display a PDF document.
- Top Bar:** Shows the project name "MarzipanPlatter", the current file path "My Mac", indexing status ("Indexing | Processing files"), and a warning count of 21.
- Toolbar:** Includes standard Xcode icons for file operations like Open, Save, Find, and Print.

```
returning -1
2018-06-15 03:37:12.555087+0200 MarzipanPlatter[42930:1704484] -[UILabel ns_widgetType]: unrecognized selector sent to instance 0x108602f80
2018-06-15 03:37:12.643534+0200 MarzipanPlatter[42930:1704484] *** Terminating app due to uncaught exception 'NSInvalidArgumentException', reason: '-
[UILabel ns_widgetType]: unrecognized selector sent to instance 0x108602f80'
*** First throw call stack:
(
    0  CoreFoundation                      0x00007fff47a5016a __exceptionPreprocess + 197
    1  libobjc.A.dylib                     0x00007fff73984b10 objc_exception_throw + 48
    2  CoreFoundation                      0x00007fff47ad8793 -[NSObject(NSObject) __retain_OA] + 0
    3  CoreFoundation                      0x00007fff479ddf0c ___forwarding___ + 1502
    4  CoreFoundation                      0x00007fff479dd898 _CF_forwarding_prep_0 + 120
    5  AppKit                            0x00007fff45127312 -[NSAquaUserInterfaceTheme _ruleForView:comparedToView:withEdge:] + 43
    6  AppKit                            0x00007fff4512724a -[NSAquaUserInterfaceTheme resolvedValue:forSymbolicConstant:inConstraint:containerView:] +
564
    7  AppKit                            0x00007fff45126ea9 -[NSLayoutConstraint(NSSymbolicConstantResolution)
defaultResolvedValue:forSymbolicConstant:error:] + 85
    8  Foundation                         0x00007fff49e043f5 -[NSLayoutConstraint constant] + 52
    9  Foundation                         0x00007fff49e0379c -[NSLayoutConstraint _lowerIntoExpression:reportingConstantIsRounded:] + 189
    10 Foundation                        0x00007fff4a098baa -[NSLayoutConstraint _addToEngine:mutuallyExclusiveConstraints:] + 114
    11 UIKitCore                          0x0000000105b39700 __57-[UIView(AdditionalLayoutSupport) _switchToLayoutEngine:]_block_invoke_2 + 452
    12 Foundation                        0x00007fff49e0346e -[NSISEngine withBehaviors:performModifications:] + 110
    13 UIKitCore                          0x0000000105b39515 __57-[UIView(AdditionalLayoutSupport) _switchToLayoutEngine:]_block_invoke + 572
    14 UIKitCore                          0x0000000105b392a1 -[UIView(AdditionalLayoutSupport) _switchToLayoutEngine:] + 217
    15 UIKitCore                          0x00000001062630ca __45-[UIView(Hierarchy) _postMovedFromSuperview:]_block_invoke + 112
    16 UIKitCore                          0x0000000106262fd8 -[UIView(Hierarchy) _postMovedFromSuperview:] + 809
    17 UIKitCore                          0x0000000106273b8c -[UIView(Internal) _addSubview:positioned:relativeTo:] + 1932
    18 MarzipanPlatter                  0x00000001000d59ac -[UIView(PSPDFAutoLayout) pspdf_addManagedSubview:] + 108
    19 MarzipanPlatter                  0x0000000100159b0c -[PSPDFDocumentStateViewController viewDidLoad] + 2220
```



NSAquaUserInterfaceTheme ns_widgetType



All

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Settings

Tools

3 results (0.74 seconds)

Did you mean: **NS Aqua User Interface Theme ns widget Type**

[NSSegmentedControl & NSSegmentStyleSeparated ... - Apple - Lists](#)

<https://lists.apple.com/archives/cocoa-dev/2015/Aug/msg00294.html> ▾

Aug 26, 2015 - ... exception: Assertion failure in -[NSSegmentedControl ns_widgetType], ... + 198 5

AppKit 0x00007fff935fabca -[NSAquaUserInterfaceTheme ...]

[rdar://23290438: Assertion failed in Separated-style ... - Open Radar](#)

www.openradar.me/23290438 ▾

Oct 27, 2015 - ... an assertion is failed in -[NSSegmentedControl ns_widgetType]. Output ... + 219 5

AppKit 0x00007fff8faa71a4 -[NSAquaUserInterfaceTheme ...]

[subject:"NSSegmentedControl" - The Mail Archive](#)

<https://www.mail-archive.com/search?l=cocoa-dev@lists.apple.com&q=o...o...> ▾

... parent view, I get an exception: Assertion failure in -[NSSegmentedControl ns_widgetType], +

198 5 AppKit 0x7fff935fabca -[NSAquaUserInterfaceTheme ...]

In order to show you the most relevant results, we have omitted some entries very similar to the 3 already displayed.

If you like, you can repeat the search with the omitted results included.

Community bug reports

Assertion failed in Separated-style NSSegmentedControl when window moved from a Retina to non-Retina screen

Originator: zacharias.pasternack
Number: rdar://23290438 Date Originated: 10/27/1
Status: Open Resolved: No
Product: AppKit Product Version:
Classification: Crash Reproducible: Always

Summary:

When a Separated-style NSSegmentedControl is in an auto-layout window, and that window is moved from a Retina to a non-Retina screen (or vice-versa), an assertion is failed in `-[NSSegmentedControl ns widgetType]`.

Output from the debugger is as follows:

```
2015-10-27 22:02:25.889 SegmentedControlTest[14965:910170] *** Assertion failure in -[NSSegmentedControl
ns_widgetType], /Library/Caches/com.apple.xbs/Sources/AppKit/AppKit-1404.13/Layout.subproj/NSUserInterfaceTheme.m:41
2015-10-27 22:02:25.889 SegmentedControlTest[14965:910170] What kind of segmented control are we!
2015-10-27 22:02:25.895 SegmentedControlTest[14965:910170] (
    0  CoreFoundation                      0x00007fff995ece32 __exceptionPreprocess + 178
    1  libobjc.A.dylib                     0x00007fff963e0dd4 objc_exception_throw + 48
    2  CoreFoundation                      0x00007fff995f1b0a +[NSEXception raise:format:arguments:] + 106
    3  Foundation                          0x00007fff94c1de16 -[NSAssertionHandler
handleFailureInMethod:object:file:lineNumber:description:] + 198
    4  AppKit                            0x00007fff8fbcd51fd -
[NSSegmentedControl(NSIBSegmentedControlIntegration) ns_widgetType] + 219
    5  AppKit                            0x00007fff8faa71a4 -[NSAquaUserInterfaceTheme
_ruleForView:comparedToView:withEdge:] + 64
    6  AppKit                            0x00007fff8faa70ca -[NSAquaUserInterfaceTheme
resolvedValue:forSymbolicConstant:inConstraint:containerView:] + 521
    7  AppKit                            0x00007fff8faa6d57 -[NSLayoutConstraint(NSSymbolicConstantResolution
defaultResolvedValue:forSymbolicConstant:error:) + 89
    8  Foundation                         0x00007fff94b8f5f1 -[NSLayoutConstraint _effectiveConstant:error:] +
105
    9  Foundation                         0x00007fff94b8f4f3 -[NSLayoutConstraint constant] + 52
   10  Foundation                        0x00007fff94b8e910 -[NSLayoutConstraint
_lowerIntoExpression:reportingConstantIsRounded:] + 200
   11  Foundation                        0x00007fff94b95c31 -[NSLayoutConstraint _containerGeometryDidChange]
83 PETER STEINBERGER - @STEIPETE - HACKING MARZIPAN - TRY! SWIFT NYC 2018
12  AppKit                            0x00007fff8f8aac31 NSViewEnumerateConstraints + 253
```

```
@interface UILabel (PSPDFMarzipan)

// Otherwise we get an unrecognized selector
- (NSUInteger)ns_widgetType;

@end

@implementation UILabel (PSPDFMarzipan)

- (NSUInteger)ns_widgetType {
    return 0;
}

@end

@interface UITextField (PSPDFMarzipan)

// Otherwise we get an unrecognized selector
- (NSUInteger)ns_widgetType;

@end

@implementation UITextField (PSPDFMarzipan)

- (NSUInteger)ns_widgetType {
    return 0;
}

@end
```

The screenshot shows the Xcode interface with the following details:

- Project:** MarzipanPlatter
- Target:** My Mac
- Status Bar:** Running MarzipanPlatter : MarzipanPlatter
- Build Log:** Thread 1: EXC_BAD_INSTRUCTION (code=EXC_I386_INVOP, subcode=0x0)
- Left Navigator:** Shows system metrics (CPU, Memory, Energy Impact, Disk, Network) and a stack trace for Thread 1.
- Editor:** The code file `UIView+PSPDFAutoLayout.m` is open at line 51, which contains the problematic line: `[self addSubview:subview];`
- Bottom Bar:** Shows the command line interface (11db).

```
@interface UILabel (PSPDFMarzipan)  
  
// Otherwise we get an unrecognized selector  
- (NSUInteger)ns_widgetType;
```

```
@end
```

```
@implementation UILabel (PSPDFMarzipan)
```

```
- (NSUInteger)ns_widgetType {  
    return 1;  
}
```

```
@end
```

```
12 class AppDelegate: UIResponder, UIApplicationDelegate {  
13  
14     var window: UIWindow?  
15  
16     func application(_ application: UIApplication, didFinishLaunchingWithOptions launchOptions: [UIApplication.LaunchOptionsKey : Any]? = nil) ->  
17         Bool {  
18  
19             // Playground is convenient for testing  
20             let samplesURL = Bundle.main.resourceURL!.appendingPathComponent("Samples")  
21             let sourceURL = samplesURL.appendingPathComponent("PSPDFKit 7 QuickStart Guide.pdf")
```

MarzipanPlatter > Thread 1 > 13 main

```
2018-06-15 03:57:39.204135+0200 MarzipanPlatter[1007:11516] *** Assertion failure in -[NSLayoutConstraint constant], /BuildRoot/Library/Caches/com.apple.xbs/Sources/Foundation-1535.12/Foundation/Layout.subproj/NSLayoutConstraint.m:741  
2018-06-15 03:57:39.511659+0200 MarzipanPlatter[1007:11516] *** Terminating app due to uncaught exception 'NSInternalInconsistencyException', reason:  
'Theme <NSAquaUserInterfaceTheme: 0x6000000169d0> was unable to resolve symbolic constant NSSpace in constraint <NSLayoutConstraint:0x600002124500  
PSPDFActivityImageLabel:0x109221050.leading == UILayoutGuide:0x600003b072c0'UIViewLayoutMarginsGuide'.leading NSSpace(unresolvable) (active)'  
*** First throw call stack:
```

```
(  
0  CoreFoundation          0x00007fff49e6116a __exceptionPreprocess + 197  
1  libobjc.A.dylib          0x00007fff75d95b10 objc_exception_throw + 48  
2  CoreFoundation          0x00007fff49e65050 +[NSObject(NSObject) _copyDescription] + 0  
3  Foundation              0x00007fff4c296918 -[NSAssertionHandler handleFailureInMethod:object:file:lineNumber:description:] + 194  
4  Foundation              0x00007fff4c215488 -[NSLayoutConstraint constant] + 199  
5  Foundation              0x00007fff4c21479c -[NSLayoutConstraint _lowerIntoExpression:reportingConstantIsRounded:] + 189  
6  Foundation              0x00007fff4c4a9baa -[NSLayoutConstraint _addToEngine:mutuallyExclusiveConstraints:] + 114  
7  UIKitCore               0x0000000105b2a3e5 -[UIView(UIConstraintBasedLayout)  
_layoutEngine_didAddLayoutConstraint:roundingAdjustment:mutuallyExclusiveConstraints:] + 450  
8  UIKitCore               0x0000000105b2a7f7 -[UIView(UIConstraintBasedLayout)  
_tryToAddConstraintWithoutUpdatingConstraintsArray:roundingAdjustment:mutuallyExclusiveConstraints:] + 30  
9  UIKitCore               0x0000000105b2aec8 -[UIView(UIConstraintBasedLayout) nsli_addConstraint:] + 38  
10 UIKitCore               0x0000000105b2b0bd __50-[UIView(UIConstraintBasedLayout) addConstraints:]_block_invoke + 183  
11 Foundation              0x00007fff4c21446e -[NSISEngine withBehaviors:performModifications:] + 110  
12 UIKitCore               0x0000000105b2af84 -[UIView(UIConstraintBasedLayout) addConstraints:] + 160  
13 MarzipanPlatter         0x0000000100159bdd -[PSPDFDocumentViewController viewDidLoad] + 2061  
14 UIKitCore               0x000000010628f20b -[UIViewController loadViewIfRequired] + 1206  
15 UIKitCore               0x000000010628f662 -[UIViewController view] + 27  
16 MarzipanPlatter         0x000000010040da9b -[UIViewController(PSPDFContainer)  
pspdf_containerAddChildViewController:viewConfiguration:] + 731
```

```
let activityView = [PSPDFActivityImageLabel new];
[contentView pspdf_addManagedSubview:activityView];
[contentView addConstraints:[NSLayoutConstraint constraintsWithVisualFormat:@"H:|[activityView]-|"
    options:0 metrics:nil views:NSDictionaryOfVariableBindings(activityView)]];
_activityView = activityView;

let passwordView = [PSPDFPasswordView new];
passwordView.delegate = self;
passwordView.document = self.document;
[contentView pspdf_addManagedSubview:passwordView];
[contentView addConstraints:[NSLayoutConstraint constraintsWithVisualFormat:@"H:|[passwordView]-|"
    options:0 metrics:nil views:NSDictionaryOfVariableBindings(passwordView)]];
_passwordView = passwordView;
```



NSAquaUserInterfaceTheme NSSpace



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1 result (0.66 seconds)

Did you mean: **NS Aqua User Interface Theme Space**

rdar://13591245: Auto Layout: Aqua space to view's superview ...

www.openradar.me/13591245

Apr 5, 2013 - ... Theme <NSAquaUserInterfaceTheme: 0x1021405d0> was unable to ... H:[
NSView:0x102124470]-(NSSpace(unresolvable))- [NSButton: ...]

In order to show you the most relevant results, we have omitted some entries very similar to the 1 already displayed.

If you like, you can repeat the search with the omitted results included.

Auto Layout: Aqua space to view's superview unresolvable without using |

Originator: lithium3141

Number: rdar://13591245

Status: Open

Product: OS X SDK

Classification: Other Bug

Date Originated: 05-Apr-2013 04:33 PM

Resolved:

Product Version: OS X 10.8.3 (12D78)/Xcode 4.6.1 (4H512)

Reproducible: Always

05-Apr-2013 04:33 PM Tim Ekl:

Summary: When specifying an array of NSLayoutConstraint instances using the visual format, a default Aqua space between a view and its immediate superview is unresolvable if the superview is referenced by name, instead of with the pipe (|) character.

Steps to Reproduce:

1. Create a new Cocoa application
2. Instantiate a button programmatically
3. Turn off translatesAutoresizingMaskIntoConstraints on the button
4. Add the button as a subview of the main window's content view
5. Add a constraint between the button and the main window's content view with the visual format: @"[contentView]-[button]"

Expected Results: The Auto Layout system interprets [contentView] as referring to the button's immediate superview and produces the appropriate Aqua space constraint.

Actual Results: The Auto Layout system logs an error:

```
2013-04-05 16:25:21.494 AquaSpaceSuperviewTest[97459:303] *** Assertion failure in -[NSLayoutConstraint constant],  
/SourceCache/Foundation/Foundation-945.16/Layout.subproj/NSLayoutConstraint.m:529
```

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resolve symbolic constant <NSLayoutConstraint:0x10213eb90 H:[NSView:0x102124470]-(NSSpace(unresolvable))->

```
6 // Copyright © 2018 Biscuit Labs. All rights reserved.  
7 //  
8  
9 import UIKit  
10  
11 @UIApplicationMain  
12 class AppDelegate: UIResponder, UIApplicationDelegate {  
13  
14     var window: UIWindow?  
15  
16     func application(_ application: UIApplication, didFinishLaunchingWithOptions launchOptions: [UIApplication.LaunchOptionsKey : Any]? = nil) ->  
17         Bool {  
18  
19         // Playground is convenient for testing  
20         let samplesURL = Bundle.main.resourceURL!.appendingPathComponent("Samples")  
21         let sourceURL = samplesURL.appendingPathComponent("PSPDFKit 7 QuickStart Guide.pdf")  
22     }  
23 }
```

Thread 1: signal SIGABRT

□ □ □ □ □ □ | ⌂ MarzipanPlatter > Thread 1 > 13 main

-1

```
2018-06-15 04:19:00.307931+0200 MarzipanPlatter[2015:54196] *** Assertion failure in -[_UISystemBaselineConstraint constant], /BuildRoot/Library/Caches/com.apple.xbs/Sources/Foundation/Foundation-1535.12/Foundation/Layout.subproj/NSLayoutConstraint.m:741  
2018-06-15 04:19:00.368479+0200 MarzipanPlatter[2015:54196] *** Terminating app due to uncaught exception 'NSInternalInconsistencyException', reason:  
'Theme <NSAquaUserInterfaceTheme: 0x6000000188b0> was unable to resolve symbolic constant NSLayoutAnchorConstraintSpace in constraint  
<_UISystemBaselineConstraint:0x600002676fa0 'UISV-spacing' H:[UILabel:0x1090720b0]-(NSLayoutAnchorConstraintSpace(unresolvable))-[UITextField:  
0x109955000] (active)'  
*** First throw call stack:
```

```
(  
0  CoreFoundation                      0x00007fff49e6116a __exceptionPreprocess + 197  
1  libobjc.A.dylib                      0x00007fff75d95b10 objc_exception_throw + 48  
2  CoreFoundation                      0x00007fff49e65050 +[NSObject(NSObject) _copyDescription] + 0  
3  Foundation                          0x00007fff4c296918 -[NSAssertionHandler handleFailureInMethod:object:file:lineNumber:description:] + 194  
4  Foundation                          0x00007fff4c215488 -[NSLayoutConstraint constant] + 199  
5  Foundation                          0x00007fff4c21479c -[NSLayoutConstraint _lowerIntoExpression:reportingConstantIsRounded:] + 189  
6  Foundation                          0x00007fff4c4a9baa -[NSLayoutConstraint _addToEngine:mutuallyExclusiveConstraints:] + 114  
7  UIKitCore                           0x0000000105b2a3e5 -[UIView(UIConstraintBasedLayout)  
_layoutEngine_didAddLayoutConstraint:roundingAdjustment:mutuallyExclusiveConstraints:] + 450  
8  UIKitCore                           0x0000000105b2a7f7 -[UIView(UIConstraintBasedLayout)  
_tryToAddConstraintWithoutUpdatingConstraintsArray:roundingAdjustment:mutuallyExclusiveConstraints:] + 30  
9  UIKitCore                           0x0000000105b2aec8 -[UIView(UIConstraintBasedLayout) nsli_addConstraint:] + 38  
10 UIKitCore                           0x00000001064f1f89 -[_UIOrderedLayoutArrangement  
activateAndInsertEdgeToEdgeConstraintForGapBetweenPrecedingItem:followingItem:isPrecededByVisibleItem:isFollowedByVisibleItem:isHidden:] + 282  
11 UIKitCore                           0x00000001064f371e -[_UIOrderedLayoutArrangement _insertIndividualGuidesAndConstraintsAsNecessary] + 3137  
12 UIKitCore                           0x00000001064f4a50 -[_UIOrderedLayoutArrangement _updateArrangementConstraints] + 1598  
13 UIKitCore                           0x00000001064f5176 -[_UIOrderedLayoutArrangement _updateConstraintsForVisibleItems] + 175
```

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UISTACKVIEW SYSTEM SPACING

```
- (void)setPspdf_fallbackSpacing:(CGFloat)fallbackSpacing {
    if (@available(iOS 11.0, *)) {
        self.spacing = UIStackViewSpacingUseSystem;
    } else {
        self.spacing = fallbackSpacing;
    }
}
```

UISTACKVIEW SYSTEM SPACING YOLO

```
- (void)setPspdf_fallbackSpacing:(CGFloat)fallbackSpacing {
    //if (@available(iOS 11.0, *)) {
    //    self.spacing = UIStackViewSpacingUseSystem;
    //} else {
    self.spacing = fallbackSpacing;
    //}
}
```

LESSON: DO NOT MIX UIKIT AND APPKIT

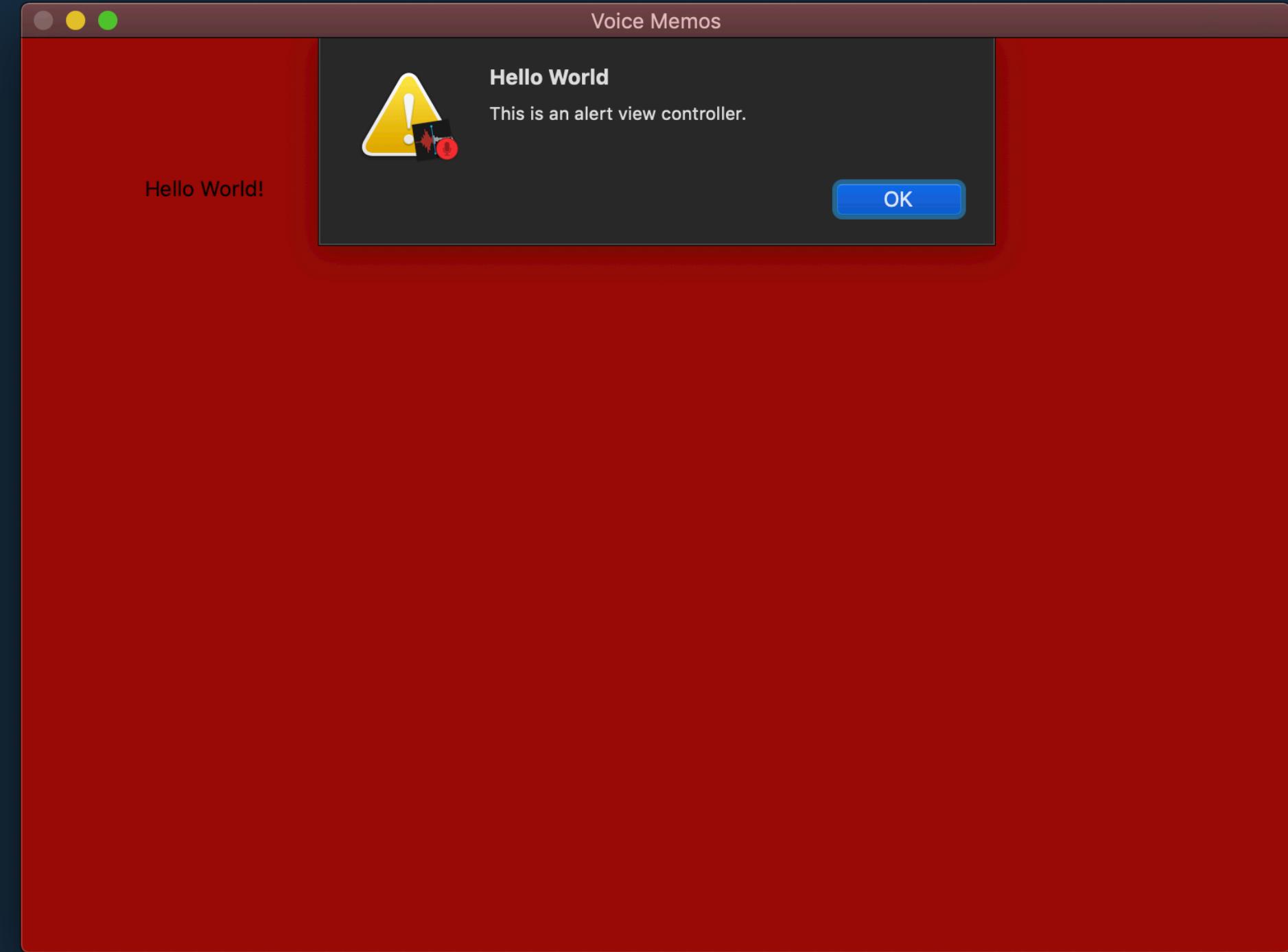
TAKING OVER VOICEMEMOS

```
Compile Hook.dylib
replace("\x32\x00\x00\x00\x20\x00\x00\x01\x00\x00\x00", "\x32\x00\x00\x00\x20\x00\x00\x06\x00\x00\x00\x00")
DYLD_INSERT_LIBRARIES=Hook.dylib /Applications/VoiceMemos.app/Contents/MacOS/VoiceMemos &

+ (void)load {
    Class originalClass = NSClassFromString(@"RecorderAppDelegate");
    Method originalMeth = class_getInstanceMethod(originalClass, @selector(applicationDidFinishLaunching:));
    sOriginalImp = method_getImplementation(originalMeth);

    Method replMeth = class_getInstanceMethod(NSClassFromString(@"Hook"), @selector(applicationDidFinishLaunching:));
    method_exchangeImplementations(originalMeth, replMeth);
}

- (void)applicationDidFinishLaunching:(id)sender {
    UIViewController *vc = [[UIViewController alloc] init];
    [vc setTitle:@"hello wwwdc"];
    UIWindow *window = [[UIWindow alloc] init];
    [window setValue:vc forKey:@"rootViewController"];
    [window makeKeyAndVisible];
}
```



MARZIPANIFY

Usage

```
marzipanify MyApp.app|MyFramework.framework|MyBinary
```

Screenshot

The screenshot illustrates the 'Picker View' component before and after being processed by Marzipanify. On the left, a smartphone displays the 'Picker View' interface with three columns of numerical data. On the right, a desktop application window titled 'UIKitCatalog' shows the same data in a tabular format, indicating that Marzipanify has converted the mobile UI component into a desktop-compatible version.

UIKitCatalog	Picker View
Activity Indicators AAPLActivityIndicatorViewController	50 190 105 55 195 110 60 200 115 65 205 120 70 210 125 75 215 130 80 220 135
Alert Controller AAPLAlertControllerViewController	55 195 110 60 200 115 65 205 120 70 210 125 75 215 130 80 220 135
Buttons AAPLButtonViewController	60 200 115 65 205 120 70 210 125 75 215 130 80 220 135
Date Picker AAPLDatePickerController	65 205 120 70 210 125 75 215 130 80 220 135
Image View AAPLImageViewController	65 205 120 70 210 125 75 215 130 80 220 135
Page Control AAPLPageControlViewController	65 205 120 70 210 125 75 215 130 80 220 135
Picker View AAPLPickerController	65 205 120 70 210 125 75 215 130 80 220 135
Progress Views AAPLProgressViewController	65 205 120 70 210 125 75 215 130 80 220 135
Segmented Controls AAPLSegmentedControlViewController	65 205 120 70 210 125 75 215 130 80 220 135
Sliders AAPLSliderViewController	65 205 120 70 210 125 75 215 130 80 220 135
Stack Views AAPLStackViewController	65 205 120 70 210 125 75 215 130 80 220 135
Steppers AAPLStepperViewController	65 205 120 70 210 125 75 215 130 80 220 135
Switches AAPLSwitchViewController	65 205 120 70 210 125 75 215 130 80 220 135
Text Fields AAPLTextFieldViewController	65 205 120 70 210 125 75 215 130 80 220 135
Text View AAPLTextViewController	65 205 120 70 210 125 75 215 130 80 220 135
Web View	65 205 120 70 210 125 75 215 130 80 220 135

ADDS A FEW METHODS TO RUNTIME “MARZIPAN GLUE”

```
@implementation NSBundle (Marzipan)
+ (NSString *)currentStringsTableName { return nil; }
@end
```

```
@implementation NSObject (Marzipan)
- (CGFloat)_bodyLeading { return 0.0; }
@end
```

PATCHES INFO.plist

```
let infoPlist = [NSMutableDictionary dictionaryWithContentsOfFile:infoPlistPath];
infoPlist[@"LSRequiresiPhoneOS"] = @NO;
infoPlist[@"CFBundleSupportedPlatforms"] = @[@"MacOSX"];
infoPlist[@"MinimumOSVersion"] = @"10.14";
infoPlist[@"CanInheritApplicationStateFromOtherProcesses"] = @YES;
infoPlist[@"UIUserInterfaceStyle"] = @"Automatic";

[infoPlist removeObjectForKey:@"DTSDKName"];
// Also: DTSDKBuild, DTCompiler, DTPPlatformBuild,
//        DTPPlatformVersion, DTXcode, DTXcodeBuild, DTPPlatformName

if (INJECT_MARZIPAN_GLUE) {
    infoPlist[@"LSEnvironment"] = @{@"DYLD_INSERT_LIBRARIES":
        @"@executable_path/../Frameworks/MarzipanGlue.dylib"};
}

[infoPlist writeToFile:infoPlistPath atomically:NO];
```

MODIFIES MACH HEADER

```
struct build_version_command ucmd = *(struct build_version_command*)imageHeaderPtr;  
ucmd.platform = PLATFORM_IOSMAC;  
ucmd.minos = 12<<16|0<<8|0;  
ucmd.sdk = 10<<16|14<<8|0;
```

ADDS ENTITLEMENTS

```
entitlementsDict[@"com.apple.private.iosmac"] = @YES;  
  
let resignCommand = [NSString stringWithFormat:@"/usr/bin/codesign --force --sign -  
--entitlements \"%@\" --timestamp=none \"%@\" &> /dev/null", entitlementsPath, appBundlePath];
```

REAL-WORLD EXAMPLE PDF VIEWER FOR MAC

STEP 1

IOS 12 AS MINIMUM DEPLOYMENT TARGET

LC_BUILD_VERSION vs LC_BUILD_VERSION_MIN_MACOS

STEP 2: REMOVE FEATURES!

- » UIWebView (already deprecated, so get rid of it)
- » SFSafariViewController (not yet there)
- » CTTelephonyNetworkInfo
- » SLComposeViewController
- » MFMailComposeViewController
- » OpenGLES (Metal or bust)
- » AddressBook

NOT ALL SYMBOLS ARE THERE

./MarzipanPlatter-iOS

```
dyld: Symbol not found: _OBJC_CLASS_$_UIMarkupTextPrintFormatter  
Referenced from: /Users/steipete/Projects/HackingMarzipan/marzipanify/PDFViewer.app/  
Contents/MacOS/.PDFViewer (which was built for Mac OS X 12.0)
```

```
Expected in: /System/iOSSupport/System/Library/Frameworks/UIKit.framework/UIKit  
in /Users/steipete/Projects/HackingMarzipan/marzipanify/PDFViewer.app/Contents/MacOS/.PDFViewer
```

THIS IS NOT THE UIKIT YOU'RE LOOKING FOR

- » `UIImpactFeedbackGenerator`
- » `UIPrintInfo`
- » `PHCachingImageManager`
- » `UIDocumentBrowser`
- » `UIViewController`
`setNeedsUpdateOfHomeIndicatorAutoHidden`

AUTOMATE

```
#!/bin/bash
rm -rf PDFViewer.app
cp -r /Users/steipete/Builds/PDFViewer-.../Build/Products/Debug-iphonesimulator/PDFViewer.app .
./marzipanify PDFViewer.app
rm Entitlements*
lldb PDFViewer.app
```

Wait and type run

WHITELIST SWIFT

```
(lldb) run
Process 78797 launched: '/Users/steipete/Projects/HackingMarzipan/marzipanify
/MarzipanPlatter-iOS.app/Contents/MacOS/MarzipanPlatter-iOS' (x86_64)
```

```
dyld: Library not loaded: @rpath/libswiftAVFoundation.dylib
Referenced from: /Users/steipete/Projects/HackingMarzipan/marzipanify/
MarzipanPlatter-iOS.app/Contents/MacOS/MarzipanPlatter-iOS
```

Reason: no suitable image found. Did find:

```
/Users/steipete/Projects/HackingMarzipan/marzipanify/MarzipanPlatter-iOS.app/
Contents/MacOS/./Frameworks/libswiftAVFoundation.dylib: mach-o, but not built for iOSMac
```

```
Process 78797 stopped
* thread #1, stop reason = signal SIGABRT
  frame #0: 0x000000010523a162 dyld`__abort_with_payload + 10
dyld`__abort_with_payload:
-> 0x10523a162 <+10>: jae 0x10523a16c ; <+20>
Target 0: (MarzipanPlatter-iOS) stopped.
```

WHITELIST SWIFT

Termination Reason: DYLD, [0x4] Symbol missing

Dyld Error Message:

Symbol not found: _\$S8Dispatch0A3QoS11unspecifiedACvau

Referenced from: /Users/USER/*/MarzipanP1/Users/steipete/Projects/HackingMarzipan/marzipanify/ViewerMac.app/Contents/MacOSatter-iOS.app/Contents/MacOS/MarzipanPlatter-iOS (which was built for Mac OS X 12.0)

Expected in: /Users/USER/*/MarzipanPlatter-iOS.app/Contents/MacOS/./Frameworks/libswiftDispatch.dylib

/System/iOSSupport/dyld/macOS-whitelist.txt

Append:

/Applications/ViewerMac.app/Contents/MacOS

APPKIT = NO FUN

```
*** Terminating app due to uncaught exception 'NSInternalInconsistencyException',
reason: 'AppKit is getting loaded into a disallowed context'
```

```
*** First throw call stack:
```

```
{
 0  CoreFoundation                      0x00007fff4b49343d __exceptionPreprocess + 256
 1  libobjc.A.dylib                     0x00007fff772e1720 objc_exception_throw + 48
 2  CoreFoundation                      0x00007fff4b4ae08e +[NSEception raise:format:arguments:] + 98
 3  Foundation                          0x00007fff4d82955d -[NSAssertionHandler
                               handleFailureInMethod:object:file:lineNumber:description:] + 194
 4  AppKit                             0x00007fff489175cb +[NSApplication load] + 672
 5  libobjc.A.dylib                     0x00007fff772d5629 call_load_methods + 693
 6  libobjc.A.dylib                     0x00007fff772d2758 load_images + 117
 7  ???                                0x0000000114ec7454 0x0 + 4646007892
 8  ???                                0x0000000114ed90c5 0x0 + 4646080709
 9  ???                                <...>
```

```
otool -L /System/Library/Frameworks/Photos.framework/Photos
```

```
/System/Library/Frameworks/Photos.framework/Photos:  
/System/Library/Frameworks/Photos.framework/Versions/A/Photos  
/System/Library/PrivateFrameworks/TCC.framework/Versions/A/TCC  
/System/Library/PrivateFrameworks/PhotosImagingFoundation.framework/Versions/A/PhotosImagingFoundation  
/System/Library/PrivateFrameworks/CloudPhotoServices.framework/Versions/A/Frameworks/  
    CloudPhotoServicesConfiguration.framework/Versions/A/CloudPhotoServicesConfiguration  
/System/Library/Frameworks/CoreLocation.framework/Versions/A/CoreLocation  
/System/Library/PrivateFrameworks/CloudPhotoServices.framework/Versions/A/CloudPhotoServices  
/System/Library/PrivateFrameworks/PhotosFormats.framework/Versions/A/PhotosFormats  
/System/Library/PrivateFrameworks/PhotoLibraryPrivate.framework/Versions/A/PhotoLibraryPrivate  
/System/Library/PrivateFrameworks/PhotoFoundation.framework/Versions/A/PhotoFoundation  
/System/Library/Frameworks/CoreServices.framework/Versions/A/CoreServices  
/System/Library/Frameworks/CoreGraphics.framework/Versions/A/CoreGraphics  
/System/Library/Frameworks/CoreMedia.framework/Versions/A/CoreMedia  
/System/Library/Frameworks/AVFoundation.framework/Versions/A/AVFoundation  
/System/Library/Frameworks/AppKit.framework/Versions/C/AppKit  
/System/Library/Frameworks/Foundation.framework/Versions/C/Foundation  
/usr/lib/libobjc.A.dylib  
/usr/lib/libSystem.B.dylib  
/System/Library/Frameworks/CoreFoundation.framework/Versions/A/CoreFoundation  
/System/Library/Frameworks/ImageIO.framework/Versions/A/ImageIO
```

SET DEPLOYMENT TARGET TO IOS 12

```
watchsimulator
```

```
16
17 // http://promisekit.org/news/2016/08/Multiplatform-Single-Scheme-Xcode-Projects/
18 // watchOS build fails if we do not set it exactly like that
19 TARGETED_DEVICE_FAMILY = 1,2,3,4
20
21 // Deployment targets
22 MACOSX_DEPLOYMENT_TARGET = 10.12
23 IPHONEOS_DEPLOYMENT_TARGET = 12.0
24 TVOS_DEPLOYMENT_TARGET = 10.0
25 WATCHOS_DEPLOYMENT_TARGET = 4.0
26
```

PATCH MISSING METHODS

setNeedsUpdateOfHomeIndicatorAutoHidden]:
unrecognized selector sent to instance 0x10d83f600'

Fix: (UIKit+iOSMacFixes.m)

```
@interface UIViewController (MarzipanSupport)
- (void)setNeedsUpdateOfHomeIndicatorAutoHidden;
@end
```

```
@implementation UIViewController (MarzipanSupport)
- (void)setNeedsUpdateOfHomeIndicatorAutoHidden {}
@end
```

My Documents

Sort A-Z Newest First

PSPDFKit 03.09.18 iChats 03.09.18 Quick Start 10:28 Sandbox 10:30 Untitled PDF 10:38 What's New... PDF 03.09.18 What's New... PDF 03.09.18

+

Edit

BECOME A BETTER MAC CITIZEN

The screenshot shows the macOS Home app window titled "Alserbach". The top navigation bar includes "Home", "Rooms", and "Automation" tabs, along with a "+" button and a dropdown menu. A yellow overlay covers the main content area, displaying the following text:
Terrasse Oben Light Panels not responding.
Wohnzimmer light on.
Wohnzimmer power point on.
Below this, a "Details >" link is visible. The yellow overlay also contains sections for "Favourite Scenes" and "Favourite Accessories", each with a grid of cards. The "Favourite Scenes" section includes cards for "Inner Peace", "Meteor Shower", "Nightclub", "Paint Splatte", "Magic Strobe", "Nemo", "Northern Lights", and "Pulse Pop Be".

Home Rooms Automation

+
Add Automation...
Add Scene...

Alserbach

Terrasse Oben Light Panels not responding.
Wohnzimmer light on.
Wohnzimmer power point on.

Details >

Favourite Scenes

Inner Peace Meteor Shower Nightclub Paint Splatte
Magic Strobe Nemo Northern Lights Pulse Pop Be

Favourite Accessories

Branch: master ▾

[macOS_headers](#) / [macOS](#) / [Applications](#) / [Home](#) / 1 / [HOWindowToolbarController.h](#)

[Find file](#) [Copy path](#)



w0lfschild macOS 10.14 : BUILD 18A293u

7e4b399 on 4 Jun

1 contributor

75 lines (66 sloc) | 4.02 KB

[Copy](#) [Raw](#) [Blame](#) [History](#)   

```
1 //  
2 // Generated by class-dump 3.5 (64 bit) (Debug version compiled Jun 9 2015 22:53:21).  
3 //  
4 // class-dump is Copyright (C) 1997-1998, 2000-2001, 2004-2014 by Steve Nygard.  
5 //  
6  
7 #import <objc/NSObject.h>  
8  
9 #import "HFItemManagerDelegate-Protocol.h"  
10 #import "HUToolbarStateManagerDelegate-Protocol.h"  
11  
12 @class HOAppNavigator, HOMainTabBarController, HOMenuToolbarItemManager, NSArray, NSMutableArray, NSString, UIWindow, _UIMenuBar  
13  
14 @interface HOWindowToolbarController : NSObject <HFItemManagerDelegate, HUToolbarStateManagerDelegate>  
15 {  
16     UIWindow *_window;  
17     HOAppNavigator *_appNavigator;  
18     HOMenuToolbarItemManager *_itemManager;  
19     HOMainTabBarController *_tabBarController;  
20     _UIWindowToolbarController *_toolbarController;  
21     NSArray *_standardToolbarItems;  
22     _UIWindowToolbarPopupButtonItem *_locationMutton;  
23     _UIMenuBarMenu *_locationMenu;  
24     NSMutableArray *_locationMenuItem;  
25     _UIWindowToolbarSegmentedControlItem *_segmentedControlItem;  
26     _UIWindowToolbarPopupButtonItem *_addMutton;  
27     _UIMenuBarItem *_addAutomationMenuItem;  
28 }
```

```
1 //  
2 //     Generated by class-dump 3.5 (64 bit) (Debug version compiled Jun  9 2015 22:53:21).  
3 //  
4 //     class-dump is Copyright (C) 1997-1998, 2000-2001, 2004-2014 by Steve Nygard.  
5 //  
6  
7 #import <objc/NSObject.h>  
8  
9 @class NSArray, NSSet, NSString;  
10 @protocol UHAToolbarInterface, UHAWindowInterface;  
11  
12 @interface _UIWindowToolbarController : NSObject  
13 {  
14     id <UHAToolbarInterface> _toolbar;  
15     id <UHAWindowInterface> _hostWindow;  
16     NSArray *_itemIdentifiers;  
17     NSString *_centeredItemIdentifier;  
18     NSSet *_templateItems;  
19     BOOL _hasExplicitToolbar;  
20 }  
21  
22 + (id)sharedWindowToolbarController;  
23 @property(copy, nonatomic) NSSet *templateItems; // @synthesize templateItems=_templateItems;  
24 @property(copy, nonatomic) NSString *centeredItemIdentifier; // @synthesize centeredItemIdentifier=_centeredItemIdentifier;  
25 @property(copy, nonatomic) NSArray *itemIdentifiers; // @synthesize itemIdentifiers=_itemIdentifiers;  
26 - (void).cxx_destruct;  
27 - (void)_refreshToolbar;  
28 @property(nonatomic) BOOL autoHidesToolbarInFullScreen;  
29 - (id)_toolbarCreatingIfNeeded:(BOOL)arg1;  
30 - (BOOL)_hasExplicitToolbar;  
31 - (BOOL)_wantsToolbar;  
32 - (void)updateForMainWindow:(id)arg1;  
33 - (void)updateForMainHostWindowDidChangeNotification:(id)arg1;  
34 - (void)dealloc;  
35 - (id)init;  
36  
37 @end
```

```
UIKit+iOSMac.h — Edited
Viewer > Viewer > UIKit+iOSMac.h > _UIWindowToolBarItem
10 #import <Foundation/Foundation.h>
11
12 @class NSString, UHAToolBarItem;
13
14 @interface _UIWindowToolBarItem : NSObject
15
16 @property(readonly, copy, nonatomic) NSString *label;
17 @property(readonly, copy, nonatomic) NSString *identifier;
18 - (id)initWithIdentifier:(id)arg1;
19
20 @end
21
22 @interface _UIWindowToolBarButtonItem : _UIWindowToolBarItem
23
24 @property(nonatomic) SEL action; // @synthesize action=_action;
25 @property(nonatomic) __weak id target; // @synthesize target=_target;
26
27 @property(copy, nonatomic) NSString *imageName;
28 @property(copy, nonatomic) NSString *label;
29 @property(nonatomic, getter=isEnabled) BOOL enabled;
30 @property(copy, nonatomic) NSString *title;
31
32 - (void)performAction;
33 - (id)_ourBackingItem;
34 - (id)initWithIdentifier:(id)arg1;
35
36 @end
37
38 @class NSArray, NSSet, NSString;
39 @protocol UHAToolbarInterface, UHAWindowInterface;
40
41 @interface _UIWindowToolbarController : NSObject
42 /*
43     id <UHAToolbarInterface> _toolbar;
44     id <UHAWindowInterface> _hostWindow;
45     NSArray *_itemIdentifiers;
46     NSString *_centeredItemIdentifier;
47     NSSet *_templateItems;
48     BOOL _hasExplicitToolbar;
49 */
50
51 + (id)sharedWindowToolbarController;
52 @property(copy, nonatomic) NSSet *templateItems; // @synthesize templateItems=_templateItems;
53 @property(copy, nonatomic) NSString *centeredItemIdentifier; // @synthesize centeredItemIdentifier=_centeredItemIdentifier;
54 @property(copy, nonatomic) NSArray *itemIdentifiers; // @synthesize itemIdentifiers=_itemIdentifiers;
55 - (void)_refreshToolbar;
56 @property(nonatomic) BOOL autoHidesToolbarInFullScreen;
57 - (id)_toolbarCreatingIfNeeded:(BOOL)arg1;
58 - (BOOL)_hasExplicitToolbar;
59 - (BOOL)_wantsToolbar;
60 - (void)updateForMainWindow:(id)arg1;
61 - (void)updateForMainHostWindowDidChangeNotification:(id)arg1;
62
63 @end
64
```

```
class iOSMacToolbarController {

    init() {
        print("iOSMac Marzipan extensions initializing.")

        guard (NSClassFromString("_UIWindowToolbarButtonItem") != nil) else {
            print("iOSMac UIKit Extensions not found.")
            return
        }

        let titleButton = _UIWindowToolbarButtonItem(identifier: "com.pspdfkit.viewer.test")
        titleButton?.title = "A button"

        guard let toolbarController = UIApplication.shared.keyWindow! .
            value(forKey: "_windowToolbarController") as? _UIWindowToolbarController else {
            print("iOSMac KVO error.")
            return
        }

        toolbarController.itemIdentifiers = ["com.pspdfkit.viewer.test"]
        toolbarController.templateItems = [titleButton]

        print("iOSMac extension initialized.")
    }
}
```

```
iphonesimulator/ViewerMac.app/ViewerMac
```

```
Undefined symbols for architecture x86_64:
```

```
  "_OBJC_CLASS_$_UIWindowToolbarButtonItem", referenced from:
```

```
    objc-class-ref in iOSMacToolbarController.o
```

```
  "_OBJC_CLASS_$_UIWindowToolbarController", referenced from:
```

```
    objc-class-ref in iOSMacToolbarController.o
```

```
ld: symbol(s) not found for architecture x86_64
```

```
clang: error: linker command failed with exit code 1 (use -v to see invocation)
```

```
symbol(s) not found for architecture x86_64
```

! **linker command failed with exit code 1 (use -v to see invocation)**

! **Activity Log Complete 04.09.18, 11:30 4.7 seconds**

1 error, 18 warnings



General

Capabilities

Resource Tags

Info

Build Settings

Build Phases

Build Rules

PROJECT



TARGETS



Basic Customized

All

Combined

Levels

+

Q other link

X

▼ Linking

Setting



-ObjC -WI,-U,_OBJC_CLASS_\$_UIWindowToolbarItem...

► Other Linker Flags

Quote Linker Arguments

Yes ↗

-ObjC
-WI,-U,_OBJC_CLASS_\$_UIWindowToolbarItem
-WI,-U,_OBJC_CLASS_\$_UIWindowToolbarController

+

-

ViewerMac

ViewerTests

PDF Stickers

PDFActions

PDF Widget

ViewerUITests

IT'S NEVER THAT EASY...

```
dyld: Symbol not found: _OBJC_CLASS_$_UIWindowToolbarButtonItem
```

```
Referenced from: /Users/steipete/Library/Developer/CoreSimulator/Devices  
/43869E4F-C148-4D80-9E85-82466FAA8FED/data/Containers/Bundle/Application/  
6AFDFACD-0CD8-46FA-9F91-75B67B7A78F9/ViewerMac.app/ViewerMac
```

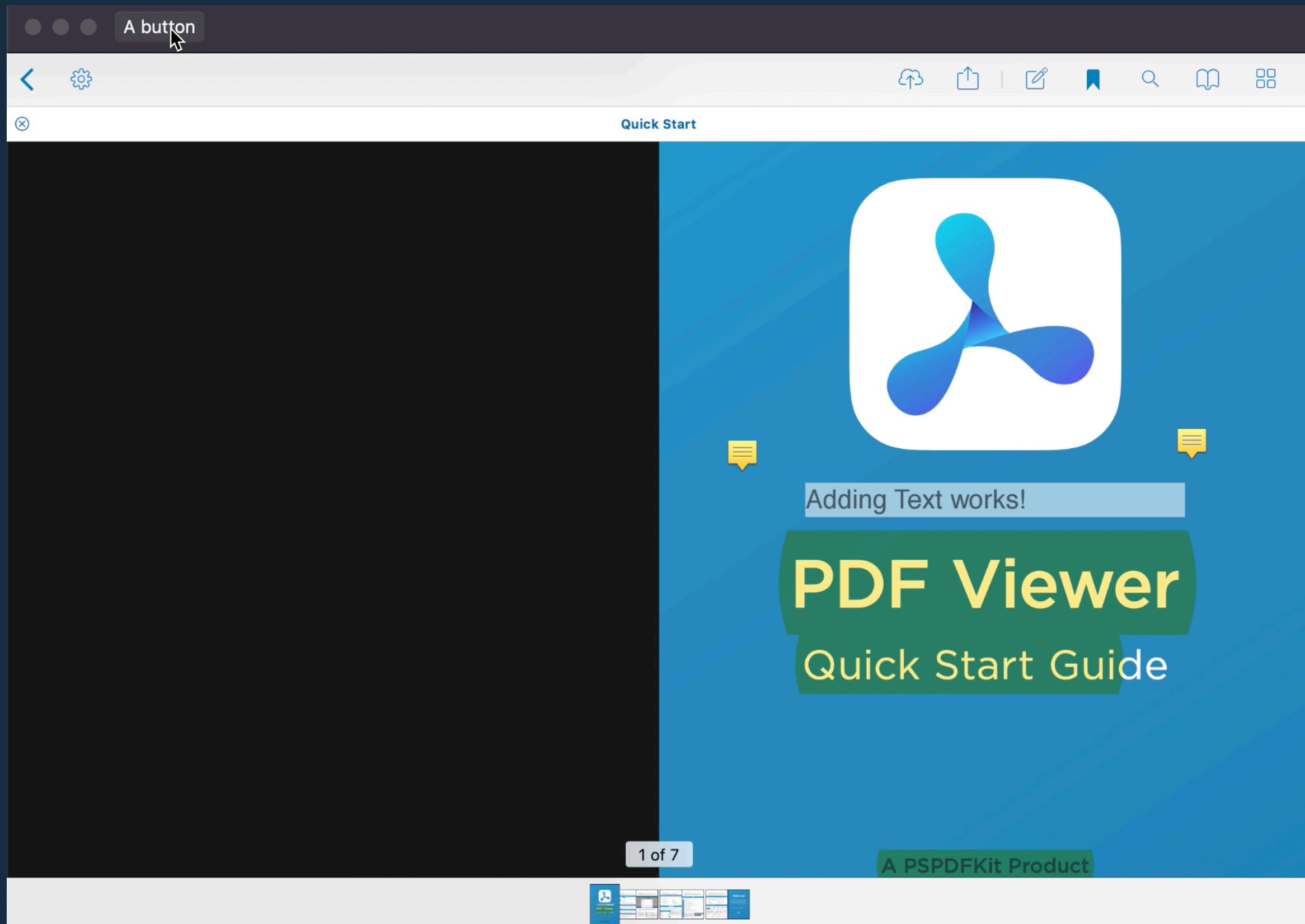
```
Expected in: flat namespace
```

```
in /Users/steipete/Library/Developer/CoreSimulator/Devices/  
43869E4F-C148-4D80-9E85-82466FAA8FED/data/Containers/Bundle/Application/  
6AFDFACD-0CD8-46FA-9F91-75B67B7A78F9/ViewerMac.app/ViewerMac
```

```
(lldb)
```

WEAK-LINKING HEADERS

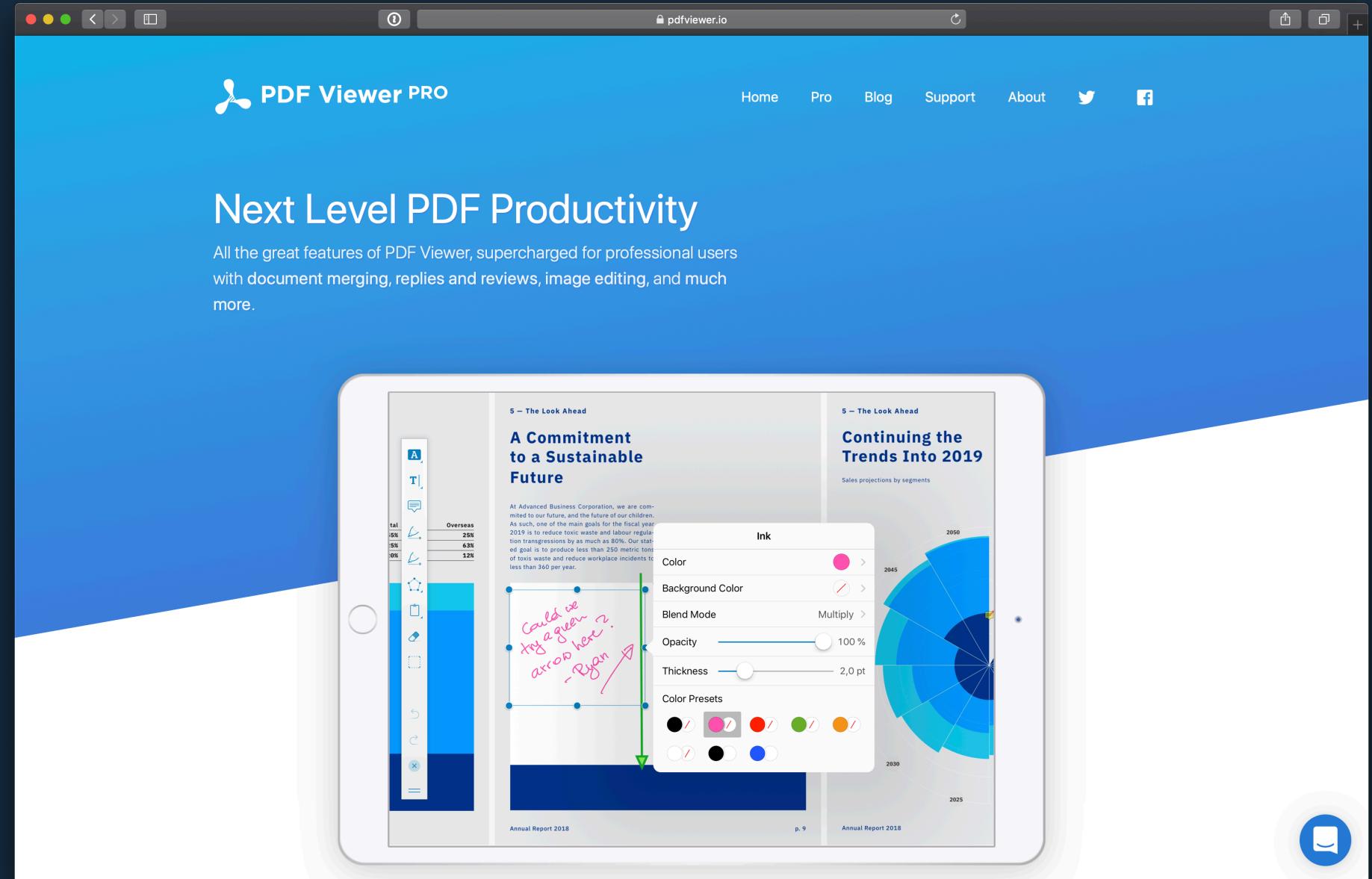
```
__attribute__((weak_import)) @interface _UIWindowToolbarItem : NSObject
```



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- » Adam Demasi - @hbkirb <http://kirb.me/2018/06/07/iosmac-research.html>
- » Vlas Voloshin - @argentumko <https://www.youtube.com/watch?v=EpUnke2yDug>

PDFVIEWER.IO



THANKS!

- » Peter Steinberger, @steipete on Twitter
- » pdfviewer.io (iOS & Android, no macOS just yet :)
- » Let the madness begin.