dev/world

2018

xcodebuild for fun and profit

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thepatrick.io/talks.html

AUC

About Me

Patrick Quinn-Graham

Staff Engineer, Tokbox/Vonage

why are we here?

DevWorld2018 〉 iPhone 8 Plus | Finished running DevWorld2018 on iPhone 8 Plus

DevWorld2018 〉 DevWorld2018 〉 AppDelegate.swift 〉 No Selection

- DevWorld2018 M
  - DevWorld2018
    - AppDelegate.swift A
    - ViewController.swift A
    - Main.storyboard A
    - Assets.xcassets M
    - LaunchScreen.storyboard A
    - Info.plist A
  - DevWorld2018Tests
    - DevWorld2018Tests.swift A
    - Info.plist A
  - DevWorld2018UITests
    - DevWorld2018UITests.swift A
    - Info.plist A
  - Products

Filter

```swift
//
//  AppDelegate.swift
//  DevWorld2018
//
//  Created by Patrick Quinn-Graham on 4/8/18.
//  Copyright © 2018 Patrick Quinn-Graham. All rights reserved.
//

import UIKit

@UIApplicationMain
class AppDelegate: UIResponder, UIApplicationDelegate {

    var window: UIWindow?


    func application(_ application: UIApplication, didFinishLaunchingWithOptions launchOptions:
        [UIApplication.LaunchOptionsKey: Any]?) -> Bool {
        // Override point for customization after application launch.
        return true
    }

    func applicationWillResignActive(_ application: UIApplication) {
        // Sent when the application is about to move from active to inactive state. This can occur for
            certain types of temporary interruptions (such as an incoming phone call or SMS message) or when
            the user quits the application and it begins the transition to the background state.
        // Use this method to pause ongoing tasks, disable timers, and invalidate graphics rendering
            callbacks. Games should use this method to pause the game.
    }

    func applicationDidEnterBackground(_ application: UIApplication) {
        // Use this method to release shared resources, save user data, invalidate timers, and store enough
            application state information to restore your application to its current state in case it is
            terminated later.
        // If your application supports background execution, this method is called instead of
            applicationWillTerminate: when the user quits.
    }

    func applicationWillEnterForeground(_ application: UIApplication) {
        // Called as part of the transition from the background to the active state; here you can undo many of
            the changes made on entering the background.
    }

    func applicationDidBecomeActive(_ application: UIApplication) {
        // Restart any tasks that were paused (or not yet started) while the application was inactive. If the
            application was previously in the background, optionally refresh the user interface.
    }

    func applicationWillTerminate(_ application: UIApplication) {
        // Called when the application is about to terminate. Save data if appropriate. See also
```

Identity and Type

Name: AppDelegate.swift
Type: Default - Swift Source
Location: Relative to Group
AppDelegate.swift
Full Path: /Users/patrick/Developer/DevWorld2018/DevWorld2018/AppDelegate.swift

On Demand Resource Tags

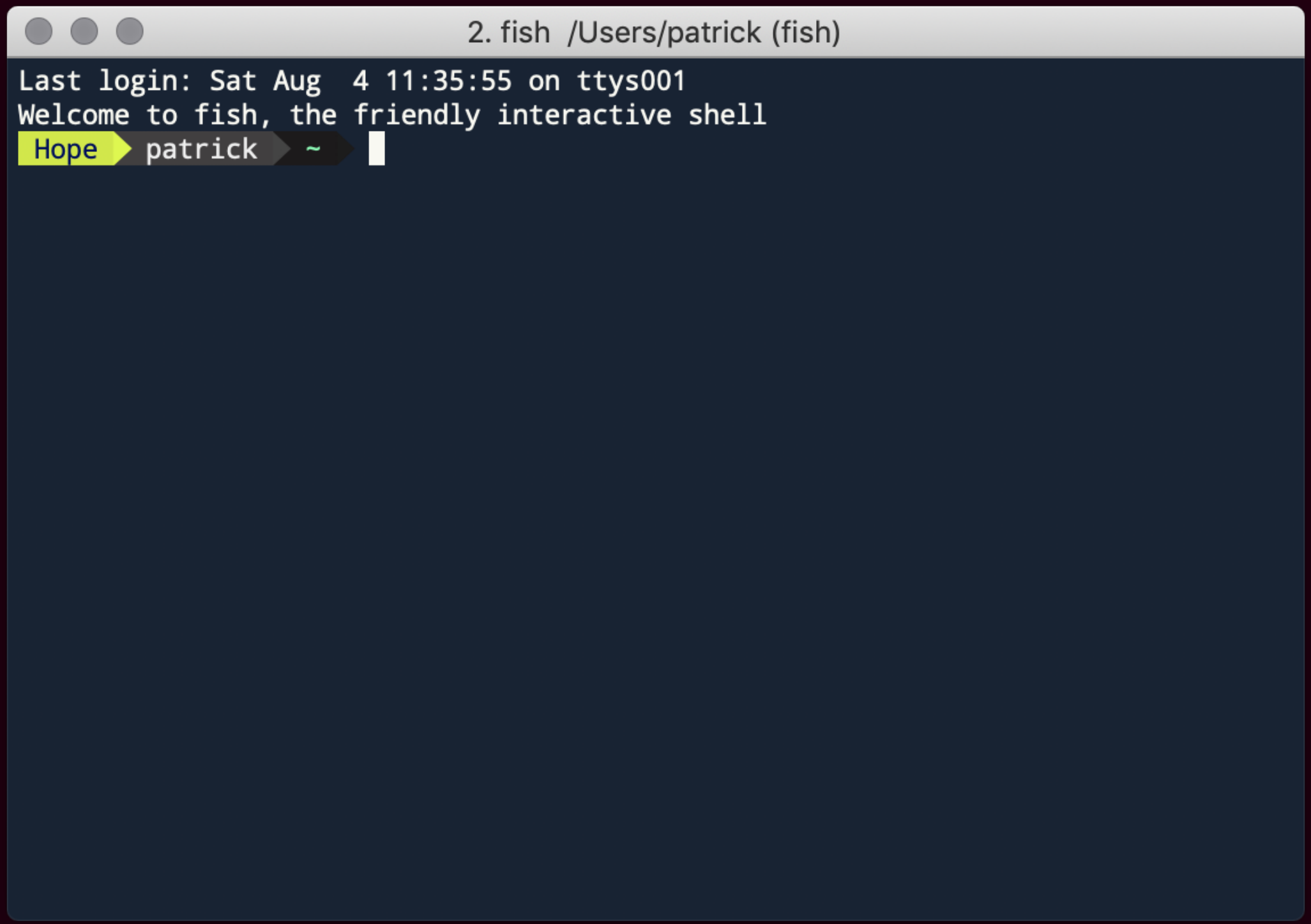
Only resources are taggable

Target Membership

- DevWorld2018
- DevWorld2018Tests
- DevWorld2018UITests

Text Settings

Text Encoding: No Explicit Encoding
Line Endings: No Explicit Line Endings
Indent Using: Spaces
Widths: Tab 4, Indent 4
Wrap lines


2. fish /Users/patrick (fish)
Last login: Sat Aug 4 11:35:55 on ttys001
Welcome to fish, the friendly interactive shell
Hope patrick ~

1. xcodebuild

```
# xcodebuild
```

build

your app, framework, ...

```
# xcodebuild test
```

test

ooh

```
# xcodebuild test -scheme SCHEME -destination DESTINATION
```

test on device

ooh-er!

```
# xcodebuild test -scheme SCHEME
  -destination platform=iOS,name=DEVICE_NAME

# xcodebuild test -scheme SCHEME
  -destination platform=iOS,id=SOME_DEVICE_UUID

# xcodebuild test -scheme SCHEME
  -destination platform=macOS,arch=x86_64
```

```
# xcodebuild test -scheme SCHEME
  -destination "platform=iOS Simulator,id=SIMULATOR_ID"

# xcodebuild test -scheme SCHEME
  -destination "platform=iOS Simulator,name=iPhone SE,OS=12.0"
```

More Destinations

Read this

```
# xcodebuild test ... -workspace WORKSPACE
```

workspaces

```
# xcodebuild build-for-testing
# xcodebuild test-without-building
```

test without building every time

More on xcodebuild

Technical Note TN2339

2. IPAs

make an ipa

start with an archive

```
# xcodebuild archive -workspace WORKSPACE
  -scheme SCHEME
  -sdk iphoneos
  -configuration AppStoreDistribution
  -destination DESTINATION
  -archivePath $PWD/build/archive.xcarchive
```

make an ipa

then export

```
# xcodebuild -exportArchive
  -archivePath $PWD/build/archive.xcarchive
  -exportOptionsPlist exportOptions.plist
  -exportPath $PWD/build
```

make an ipa

```
...
    <key>method</key>
    <string>app-store</string>
    <key>teamID</key>
    <string>YOUR_TEN_CHARACTER_TEAM_ID</string>
...
```

upload an ipa to App Store Connect

```
# xcrun altool --upload-app -f MyApp.ipa
  -u MY_USERNAME -p MY_PASSWORD
```

xcrun

Find and execute the named command line tool from the active developer directory.

xcode-select

Print the current Xcode:

```
# xcode-select -p
```

Set another:

```
# xcode-select --s /Path/To/Xcode.app/Contents/Developer
```

3. simctl

List things

Simulators

```
xcrun simctl list devices
```

List things

Device types

```
xcrun simctl list devicetypes
```

List things

Runtimes

```
xcrun simctl list runtimes
```

Create a simulator

```
# xcrun simctl create DevWorld
  com.apple.CoreSimulator.SimDeviceType.iPhone-X
  com.apple.CoreSimulator.SimRuntime.iOS-12-0
```

Get an app into your simulator

Install it

```
# xcrun simctl install SIMULATOR_ID /path/to/Your.app
```

And launch it

```
# xcrun simctl launch SIMULATOR_ID com.your.app
```

Or open a URL

```
xcrun simctl openurl SIMULATOR_ID x-your-app://
```

More

[simctl: Control iOS Simulators from Command Line]

4. Patrick's weird tricks

running your app on a device?

not exactly

but you can cheat

spin the run loop!

```
func testRunner() {
    var dt = Date(timeIntervalSinceNow: 0.1)
    while true {
        RunLoop.current.run(mode: .default, before: dt)
        dt = Date(timeIntervalSinceNow: 0.1)
    }
}
```

the what loop?

Objective-C Macros

```
# xcodebuild build GCC_PREPROCESSOR_DEFINITIONS="MY_MACRO=@\"AWESOME\""

// and in objective-c:
-(void)awesomeFunction {
  NSLog(MY_MACRO);
}
```

Swift Flags

```
# xcodebuild ... OTHER_SWIFT_FLAGS="-D’COOL_FLAG’"

// your swift code
...
#if COOL_FLAG
  print(“WE Are Cool”)
#endif
...
```

Code signing

Code signing: Custom team

```
# xcodebuild DEVELOPMENT_TEAM=...
```

Code signing: Custom keychain

```
xcodebuild --keychain $PATH_TO_KEYCHAIN
```

Keychain Access | File | Edit | View | Window | Help

83% | Mon 11:32 am

New Password Item... ⌘N
New Secure Note Item... ⇧⌘N
New Keychain... ⌥⌘N
New Identity Preference...

Import Items... ⇧⌘I
Export Items... ⇧⌘E

Add Keychain... ⇧⌘A
Delete Keychain "login" ⌥⌘⌫

Close ⌘W

Go There
Get Info ⌘I

Lock Keychain "login" ⌘L
Lock All Keychains

Make Keychain "login" Default

Search

Keychains
- login
- iCloud
- System
- System Roots

Category
- All Items
- Passwords
- Secure Notes
- My Certificates
- Keys
- Certificates

Name	Kind	Expires	Keychain
iPhone Devel...am (3Z9N73PP5Z)	certificate	1 Aug 2019 at 10:19:05 pm	login
iPhone Distrib...m (WA4JA55S9R)	certificate	24 Aug 2019 at 3:24:58 p...	login
Mac Develope...m (3Z9N73PP5Z)	certificate	1 Aug 2019 at 10:19:27 pm	login

"Load" a keychain

```
# security -v list-keychain -s path/to/keychain
```

"Unlock" a keychain

```
# security -v unlock-keychain -p $PASSWORD path/to/keychain
```

Change how long before you need to unlock the keychain again

```
# security -v set-chain-settings -t $TIMEOUT -l path/to/keychain
```

5. libimobiledevice

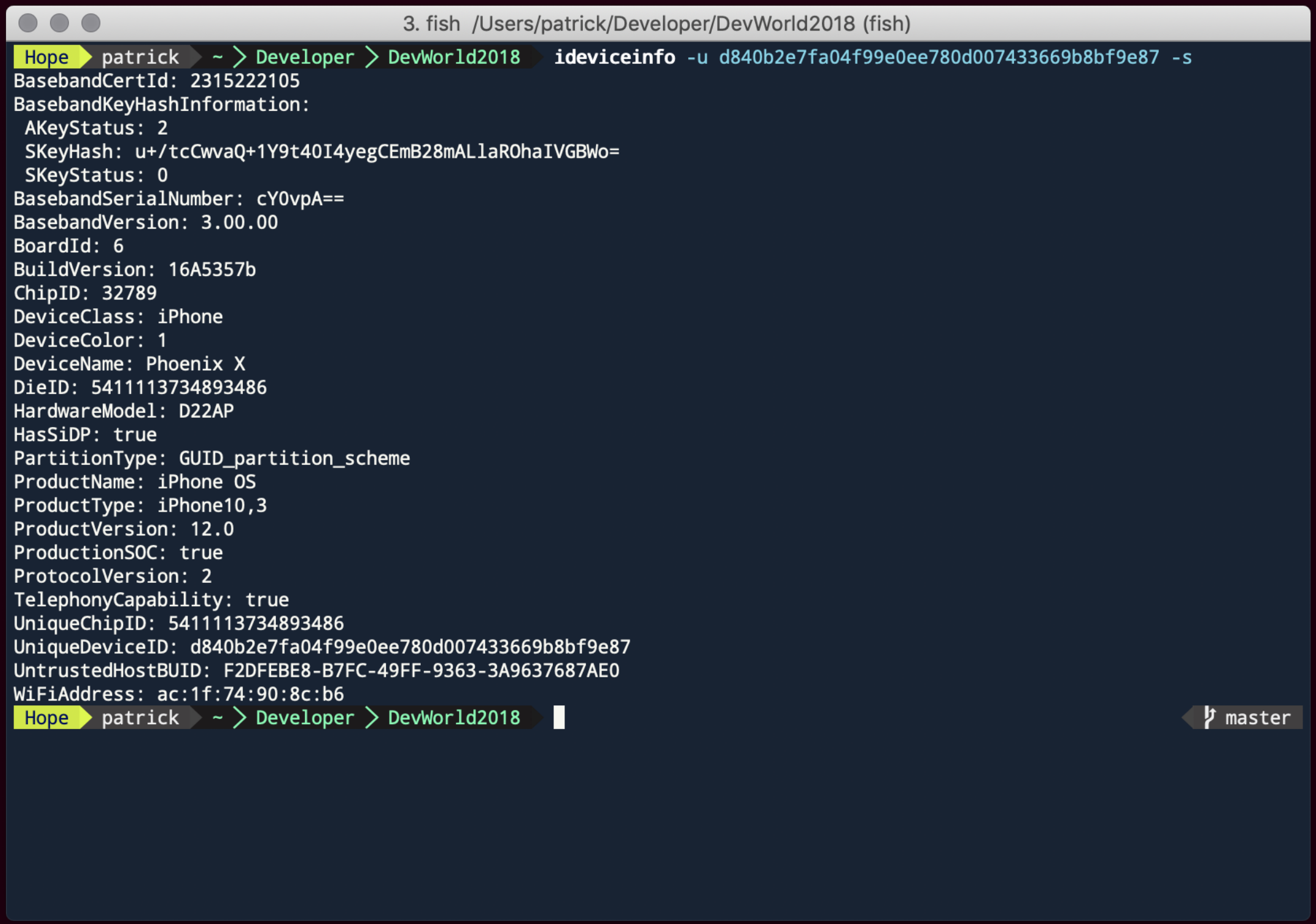
www.libimobiledevice.org

List devices

```
# idevice_id -l
d840b2e7fa04f99e0ee780d007433669b8bf9e87
```

Device info

```
# ideviceinfo -u $UUID -x -s
```


3. fish /Users/patrick/Developer/DevWorld2018 (fish)
Hope patrick ~ > Developer > DevWorld2018 ideviceinfo -u d840b2e7fa04f99e0ee780d007433669b8bf9e87 -s
BasebandCertId: 2315222105
BasebandKeyHashInformation:
AKeyStatus: 2
SKeyHash: u+/tcCwvaQ+1Y9t40I4yegCEmB28mALlaROhaIVGBWo=
SKeyStatus: 0
BasebandSerialNumber: cY0vpA==
BasebandVersion: 3.00.00
BoardId: 6
BuildVersion: 16A5357b
ChipID: 32789
DeviceClass: iPhone
DeviceColor: 1
DeviceName: Phoenix X
DieID: 5411113734893486
HardwareModel: D22AP
HasSiDP: true
PartitionType: GUID_partition_scheme
ProductName: iPhone OS
ProductType: iPhone10,3
ProductVersion: 12.0
ProductionSOC: true
ProtocolVersion: 2
TelephonyCapability: true
UniqueChipID: 5411113734893486
UniqueDeviceID: d840b2e7fa04f99e0ee780d007433669b8bf9e87
UntrustedHostBUID: F2DFEBE8-B7FC-49FF-9363-3A9637687AE0
WiFiAddress: ac:1f:74:90:8c:b6
Hope patrick ~ > Developer > DevWorld2018
master

6. Grab bag

xcpretty

```
# gem install xcpretty
```

https://github.com/supermarin/xcpretty

```
2018-08-27 10:29:03.727368+1000 DevWorld2018UITests-Runner[16560:574282] [AXMediaCommon] Unable to look up screen scale
2018-08-27 10:29:03.727451+1000 DevWorld2018UITests-Runner[16560:574282] [AXMediaCommon] Unexpected physical screen orientation
Test Suite 'All tests' started at 2018-08-27 10:29:04.080
Test Suite 'DevWorld2018UITests.xctest' started at 2018-08-27 10:29:04.081
Test Suite 'DevWorld2018UITests' started at 2018-08-27 10:29:04.081
Test Case '-[DevWorld2018UITests.DevWorld2018UITests testExample]' started.
    t =     0.00s Start Test at 2018-08-27 10:29:04.082
    t =     0.01s Set Up
    t =     0.02s     Open io.thepatrick.DevWorld2018
    t =     0.03s         Launch io.thepatrick.DevWorld2018
    t =     2.52s             Wait for io.thepatrick.DevWorld2018 to idle
    t =     3.73s Tear Down
Test Case '-[DevWorld2018UITests.DevWorld2018UITests testExample]' passed (3.934 seconds).
Test Suite 'DevWorld2018UITests' passed at 2018-08-27 10:29:08.016.
         Executed 1 test, with 0 failures (0 unexpected) in 3.934 (3.935) seconds
Test Suite 'DevWorld2018UITests.xctest' passed at 2018-08-27 10:29:08.017.
         Executed 1 test, with 0 failures (0 unexpected) in 3.934 (3.936) seconds
Test Suite 'All tests' passed at 2018-08-27 10:29:08.018.
         Executed 1 test, with 0 failures (0 unexpected) in 3.934 (3.938) seconds


Test session results and logs:
        /Users/patrick/Library/Developer/Xcode/DerivedData/DevWorld2018-hipwifbgpbmkgkgjafgibmeapefu/Logs/Test/Test-DevWorld2018-2018.08.27_10-29-01-+1000.xcresult

2018-08-27 10:29:08.299 xcodebuild[16547:574011]  IDETestOperationsObserverDebug: Writing diagnostic log for test session to:
/Users/patrick/Library/Developer/Xcode/DerivedData/DevWorld2018-hipwifbgpbmkgkgjafgibmeapefu/Logs/Test/Test-DevWorld2018-2018.08.27_10-29-01-+1000.xcresult/1_Test/Dia
gnostics/DevWorld2018Tests-9A87A476-F658-406C-82A0-8DEAB9552E12/DevWorld2018Tests-4772AECD-624A-4F1B-946B-70D018171A32/Session-DevWorld2018Tests-2018-08-27_102908-WMy
epU.log
2018-08-27 10:29:08.299 xcodebuild[16547:574002] [MT] IDETestOperationsObserverDebug: (137CB38B-8F6D-44D9-9E6B-CBB2A0090076) Beginning test session DevWorld2018Tests-
137CB38B-8F6D-44D9-9E6B-CBB2A0090076 at 2018-08-27 10:29:08.300 with Xcode 10L221o on target <DVTiPhoneSimulator: 0x7fe228915a20> {
               SimDevice: iPhone SE (DC316313-9883-4AF1-B979-3BB55C58AE9E, iOS 12.0, Booted)
} (12.0 (16A5339e))
2018-08-27 10:29:10.958849+1000 DevWorld2018[16563:574369] libMobileGestalt MobileGestalt.c:890: MGIsDeviceOneOfType is not supported on this platform.
Test Suite 'All tests' started at 2018-08-27 10:29:11.079
Test Suite 'DevWorld2018Tests.xctest' started at 2018-08-27 10:29:11.080
Test Suite 'DevWorld2018Tests' started at 2018-08-27 10:29:11.080
Test Case '-[DevWorld2018Tests.DevWorld2018Tests testExample]' started.
Test Case '-[DevWorld2018Tests.DevWorld2018Tests testExample]' passed (0.001 seconds).
Test Case '-[DevWorld2018Tests.DevWorld2018Tests testPerformanceExample]' started.
/Users/patrick/Developer/DevWorld2018/DevWorld2018Tests/DevWorld2018Tests.swift:37: Test Case '-[DevWorld2018Tests.DevWorld2018Tests testPerformanceExample]' measured
 [Time, seconds] average: 0.000, relative standard deviation: 147.452%, values: [0.000008, 0.000001, 0.000001, 0.000001, 0.000001, 0.000001, 0.000001, 0.000001, 0.000
001, 0.000001], performanceMetricID:com.apple.XCTPerformanceMetric_WallClockTime, baselineName: "", baselineAverage: , maxPercentRegression: 10.000%, maxPercentRelati
veStandardDeviation: 10.000%, maxRegression: 0.100, maxStandardDeviation: 0.100
Test Case '-[DevWorld2018Tests.DevWorld2018Tests testPerformanceExample]' passed (0.259 seconds).
Test Suite 'DevWorld2018Tests' passed at 2018-08-27 10:29:11.341.
         Executed 2 tests, with 0 failures (0 unexpected) in 0.260 (0.261) seconds
Test Suite 'DevWorld2018Tests.xctest' passed at 2018-08-27 10:29:11.341.
         Executed 2 tests, with 0 failures (0 unexpected) in 0.260 (0.261) seconds
Test Suite 'All tests' passed at 2018-08-27 10:29:11.342.
         Executed 2 tests, with 0 failures (0 unexpected) in 0.260 (0.262) seconds


Test session results and logs:
        /Users/patrick/Library/Developer/Xcode/DerivedData/DevWorld2018-hipwifbgpbmkgkgjafgibmeapefu/Logs/Test/Test-DevWorld2018-2018.08.27_10-29-01-+1000.xcresult

2018-08-27 10:29:11.606 xcodebuild[16547:574002] [MT] IDETestOperationsObserverDebug: 9.061 elapsed -- Testing started completed.
2018-08-27 10:29:11.606 xcodebuild[16547:574002] [MT] IDETestOperationsObserverDebug: 0.000 sec, +0.000 sec -- start
2018-08-27 10:29:11.606 xcodebuild[16547:574002] [MT] IDETestOperationsObserverDebug: 9.061 sec, +9.061 sec -- end
** TEST SUCCEEDED **

Hope patrick ~ > Developer > DevWorld2018 master
```

3. fish /Users/patrick/Developer/DevWorld2018 (fish)

```
Hope patrick ~ > Developer > DevWorld2018 xcodebuild test -scheme DevWorld2018 -destination "platform=iOS Simulator,id=DC316313-9883-4AF1-B979-3BB55C58AE9E" |
xcpretty
▸ Linking DevWorld2018
▸ Processing Info.plist
▸ Processing Info.plist
▸ Linking DevWorld2018UITests
▸ Processing Info.plist
▸ Linking DevWorld2018Tests
2018-08-27 10:33:40.023 xcodebuild[2971:11848]  IDETestOperationsObserverDebug: Writing diagnostic log for test session to:
/Users/patrick/Library/Developer/Xcode/DerivedData/DevWorld2018-hipwifbgpbmkgkgjafgibmeapefu/Logs/Test/Test-DevWorld2018-2018.08.27_10-33-37-+1000.xcresult/1_Test/Diagnostics/DevWorld2018Tests-EE30574B-A3CF-450E-9D47-492B4FBA37A1/DevWorld2018Tests-B7D8E4E9-BD1E-456F-8F95-C9F1A92243C0/Session-DevWorld2018Tests-2018-08-27_103340-nPsP40.log
2018-08-27 10:33:40.023 xcodebuild[2971:11831] [MT] IDETestOperationsObserverDebug: (534C8BA8-8660-455B-91D0-D3B428B37F4F) Beginning test session DevWorld2018Tests-534C8BA8-8660-455B-91D0-D3B428B37F4F at 2018-08-27 10:33:40.023 with Xcode 10L221o on target <DVTiPhoneSimulator: 0x7fe8067b68e0> {
                SimDevice: iPhone SE (DC316313-9883-4AF1-B979-3BB55C58AE9E, iOS 12.0, Shutdown)
} (12.0 (16A5339e))
All tests
Test Suite DevWorld2018Tests.xctest started
DevWorld2018Tests
    ✓ testExample (0.002 seconds)
    ◷ testPerformanceExample measured (0.000 seconds)
    ✓ testPerformanceExample (0.320 seconds)


        Executed 2 tests, with 0 failures (0 unexpected) in 0.322 (0.324) seconds

2018-08-27 10:33:52.496 xcodebuild[2971:11847]  IDETestOperationsObserverDebug: Writing diagnostic log for test session to:
/Users/patrick/Library/Developer/Xcode/DerivedData/DevWorld2018-hipwifbgpbmkgkgjafgibmeapefu/Logs/Test/Test-DevWorld2018-2018.08.27_10-33-37-+1000.xcresult/1_Test/Diagnostics/DevWorld2018UITests-5C876B36-08C7-4315-A565-34CCCB20CFCB/DevWorld2018UITests-D866C658-2DB6-442D-BA6F-DAA19C20F981/Session-DevWorld2018UITests-2018-08-27_103352-h7Wn75.log
2018-08-27 10:33:52.496 xcodebuild[2971:11831] [MT] IDETestOperationsObserverDebug: (94211883-3E9A-45A6-916D-6BCB26AEC69D) Beginning test session DevWorld2018UITests-94211883-3E9A-45A6-916D-6BCB26AEC69D at 2018-08-27 10:33:52.497 with Xcode 10L221o on target <DVTiPhoneSimulator: 0x7fe8067b68e0> {
                SimDevice: iPhone SE (DC316313-9883-4AF1-B979-3BB55C58AE9E, iOS 12.0, Booted)
} (12.0 (16A5339e))
All tests
Test Suite DevWorld2018UITests.xctest started
DevWorld2018UITests
    ✓ testExample (4.057 seconds)


        Executed 1 test, with 0 failures (0 unexpected) in 4.057 (4.059) seconds

2018-08-27 10:34:00.465 xcodebuild[2971:11831] [MT] IDETestOperationsObserverDebug: 20.450 elapsed -- Testing started completed.
2018-08-27 10:34:00.465 xcodebuild[2971:11831] [MT] IDETestOperationsObserverDebug: 0.000 sec, +0.000 sec -- start
2018-08-27 10:34:00.465 xcodebuild[2971:11831] [MT] IDETestOperationsObserverDebug: 20.450 sec, +20.450 sec -- end
▸ Test Succeeded
Hope patrick ~ > Developer > DevWorld2018                                                                    master
```

fastlane

App automation done right

fastlane

code signing

certificates

fastlane

code signing

provisioning profiles

7. Questions?

thepatrick.io/talks.html

The end