

# iContinuousIntegration

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# What's Covered



Managing shared projects with xCode



Building a project without xCode GUI



Creating “universal binary” libraries



Deploying project and libraries for QA



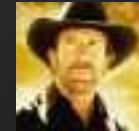
# More Fun for Developers



Unit testing with GHUnit



Using Hudson build server  
( it has Chuck Norris plug-in )



Running applications on simulator  
without xCode



# Build server should



Checkout project sources

Run build script

Deploy product archives

Publish test reports



# Build Script Should



Build main products

Create **\*.ipa** packages for main products

Build unit tests

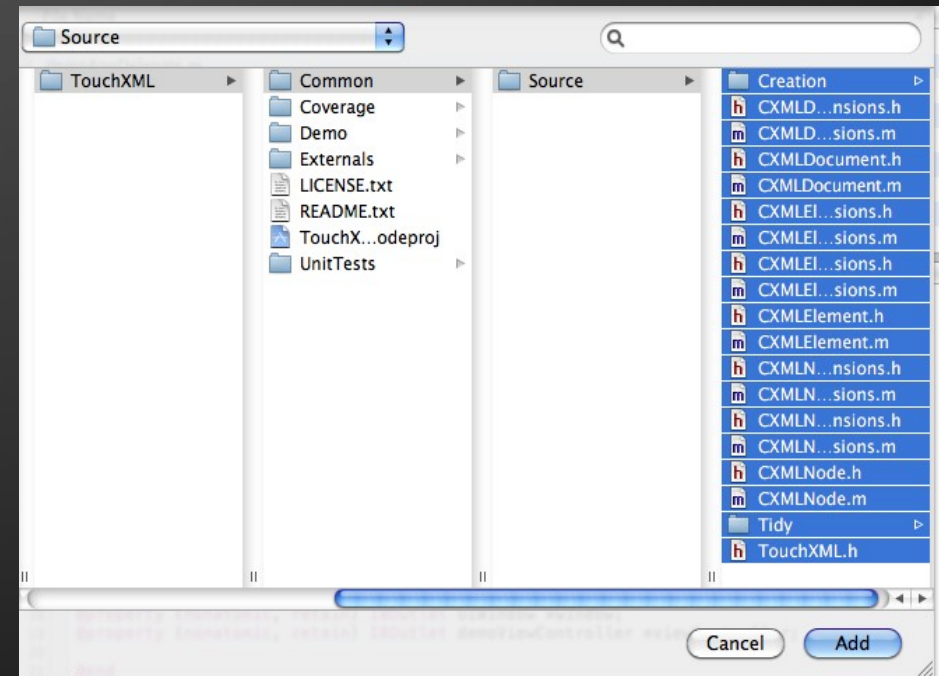
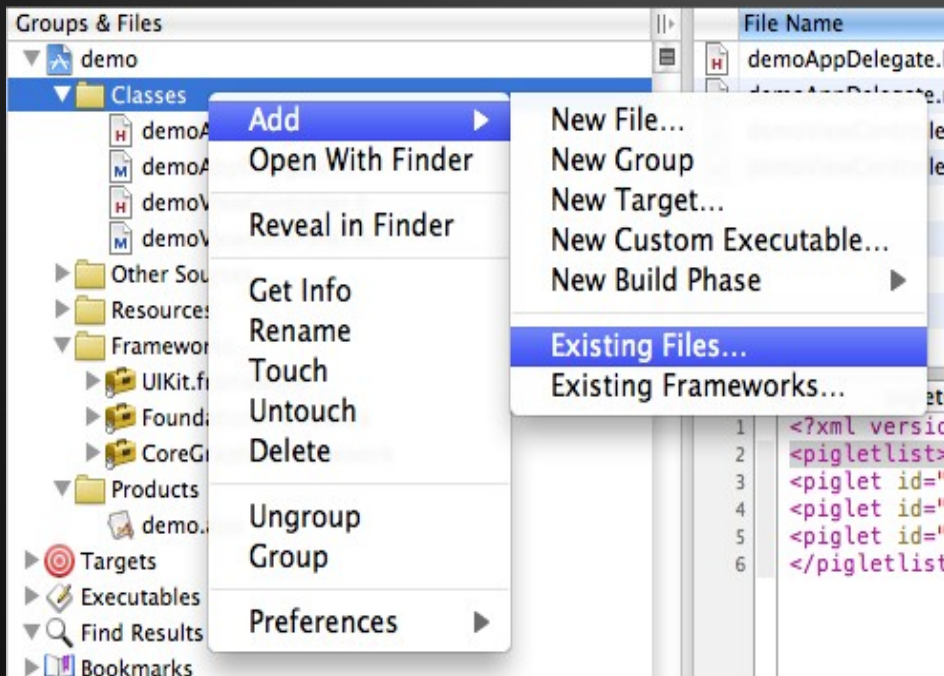
Run unit tests with **iphonesim**

Package **\*.ipa** and **\*.app** entries to **\*.zip** archive

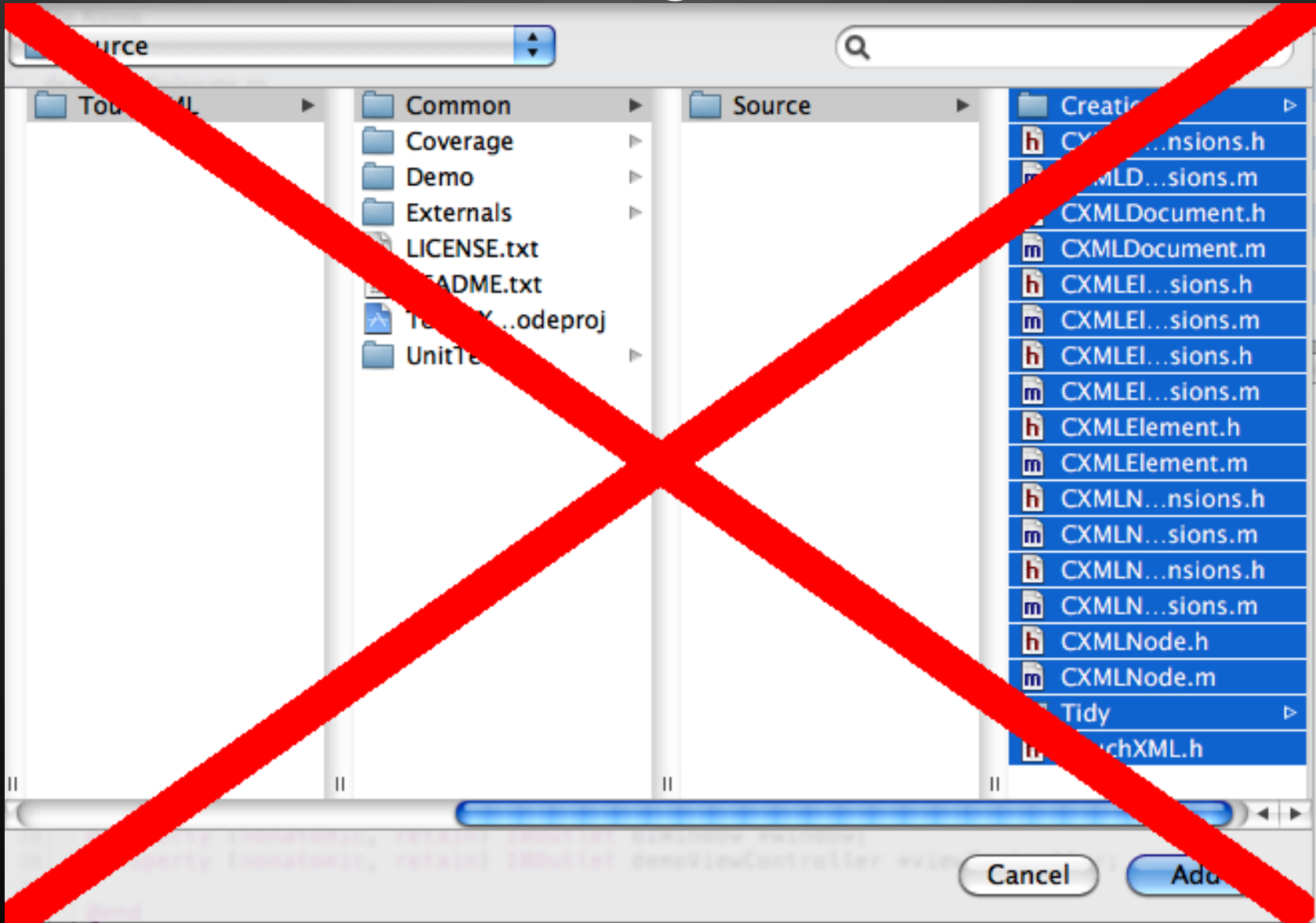
Prepare **unit test reports** for deployment



# “Commonly Used” Project Organization



# Wrong !!!



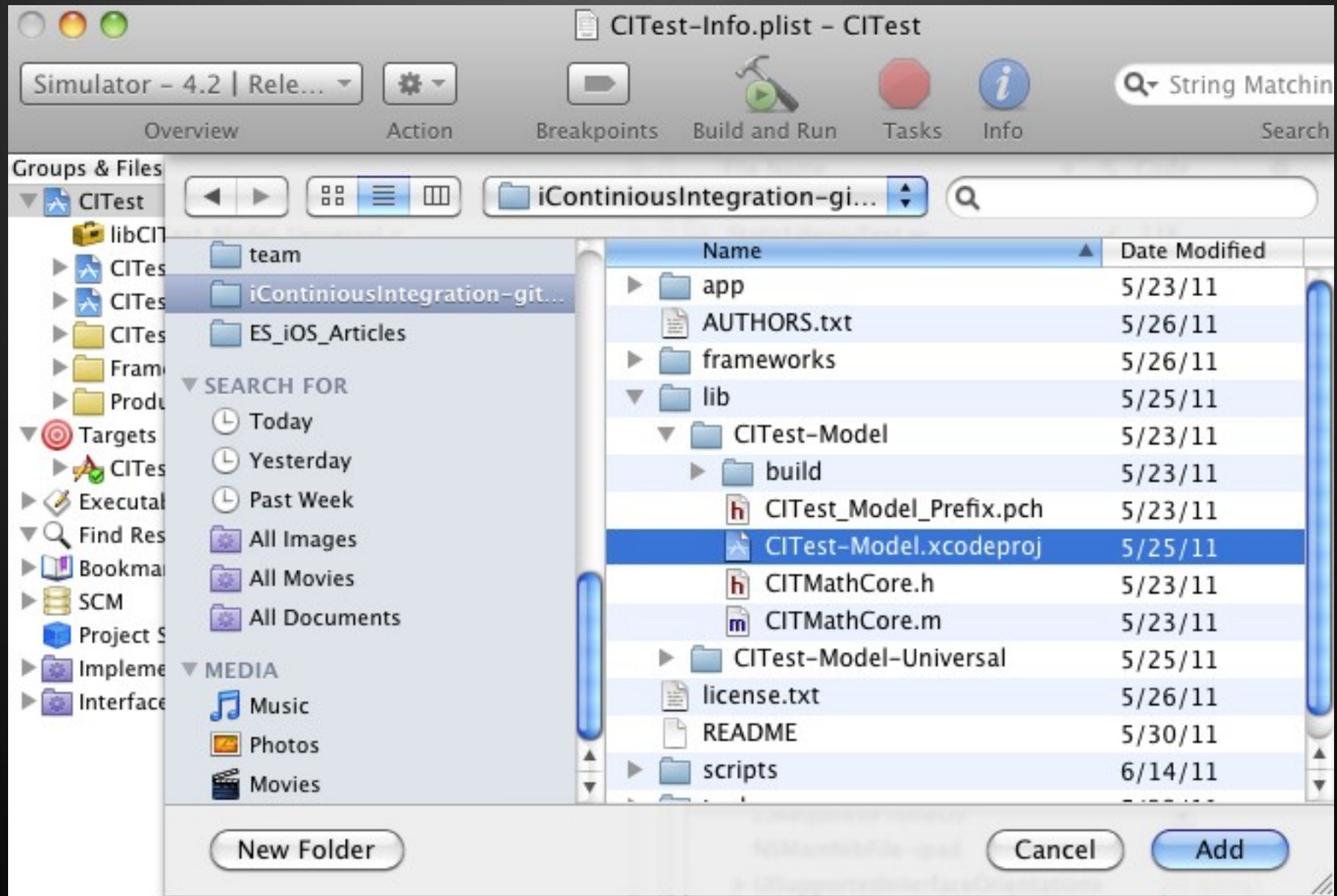


# ONE Product, ONE **XCODE** PROJECT

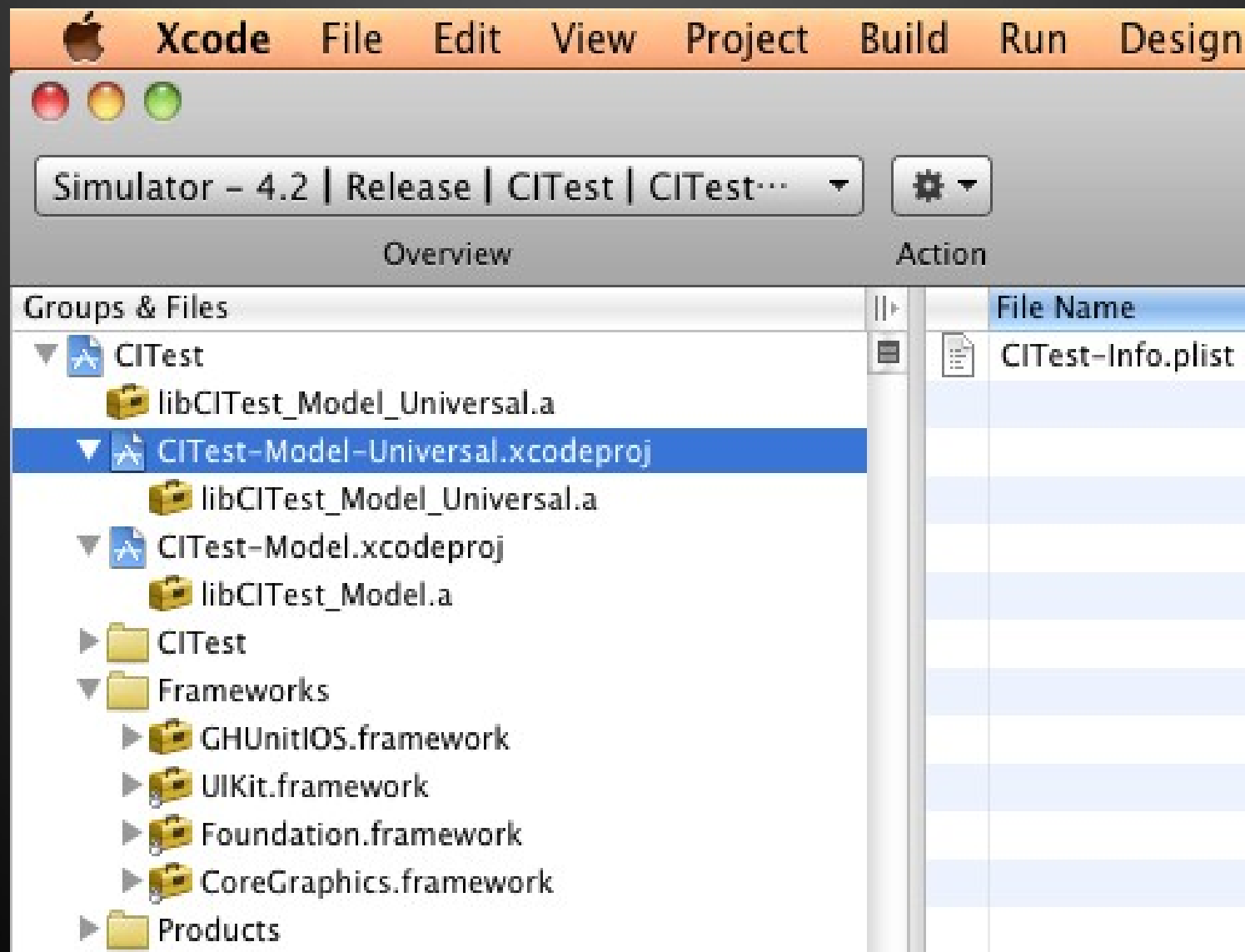




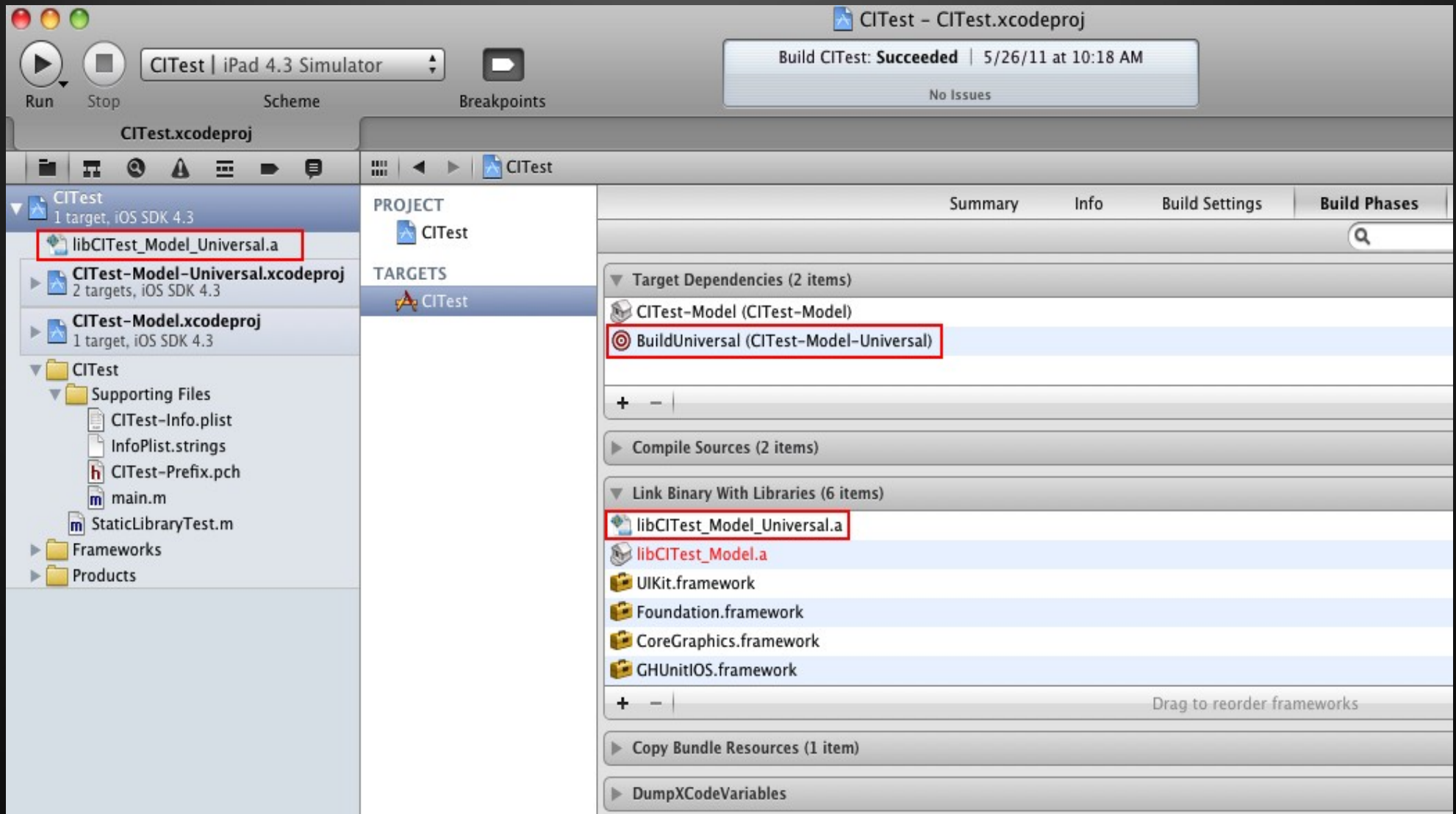
# Library Project How-To



# Library Project How-To



# Setting up dependencies



# Creating Universal Binaries

1. Build a library version for the device.
2. Build a library version for the simulator.
3. Combine them to a single binary
4. Deploy universal library to the “frameworks” directory.

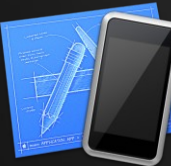


# Combining Binaries

lipo -create



"\${LIB\_BUILD\_DIR}/Release-  
iphoneos/libCITest\_Model\_Universal.a"



"\${LIB\_BUILD\_DIR}/Release-iphonesimulator/  
libCITest\_Model\_Universal.a"

-output "../frameworks/CITest-Model-  
Universal/Lib/libCITest\_Model\_Universal.a"

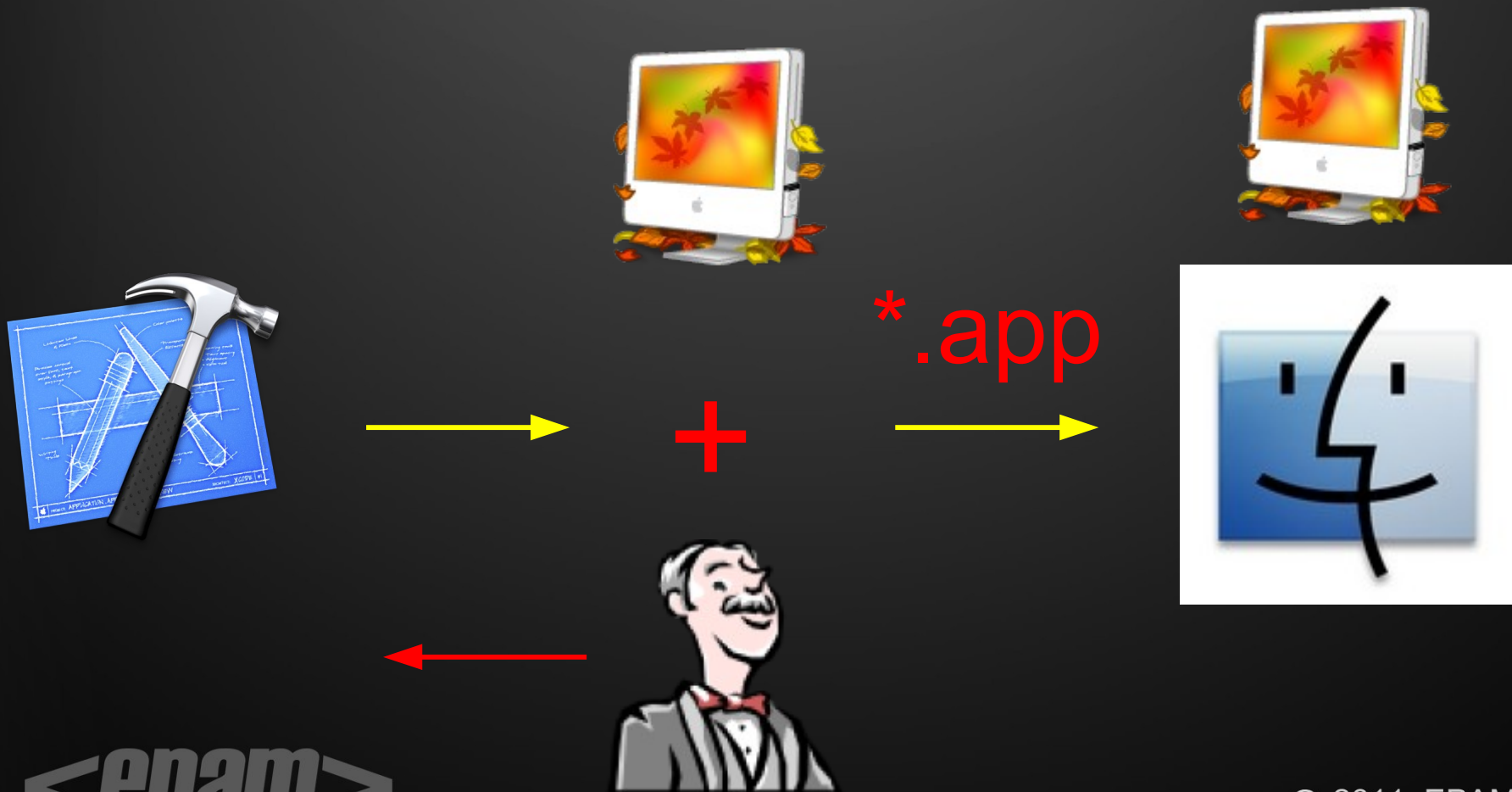


# Deployment : Desktop vs. Mobile



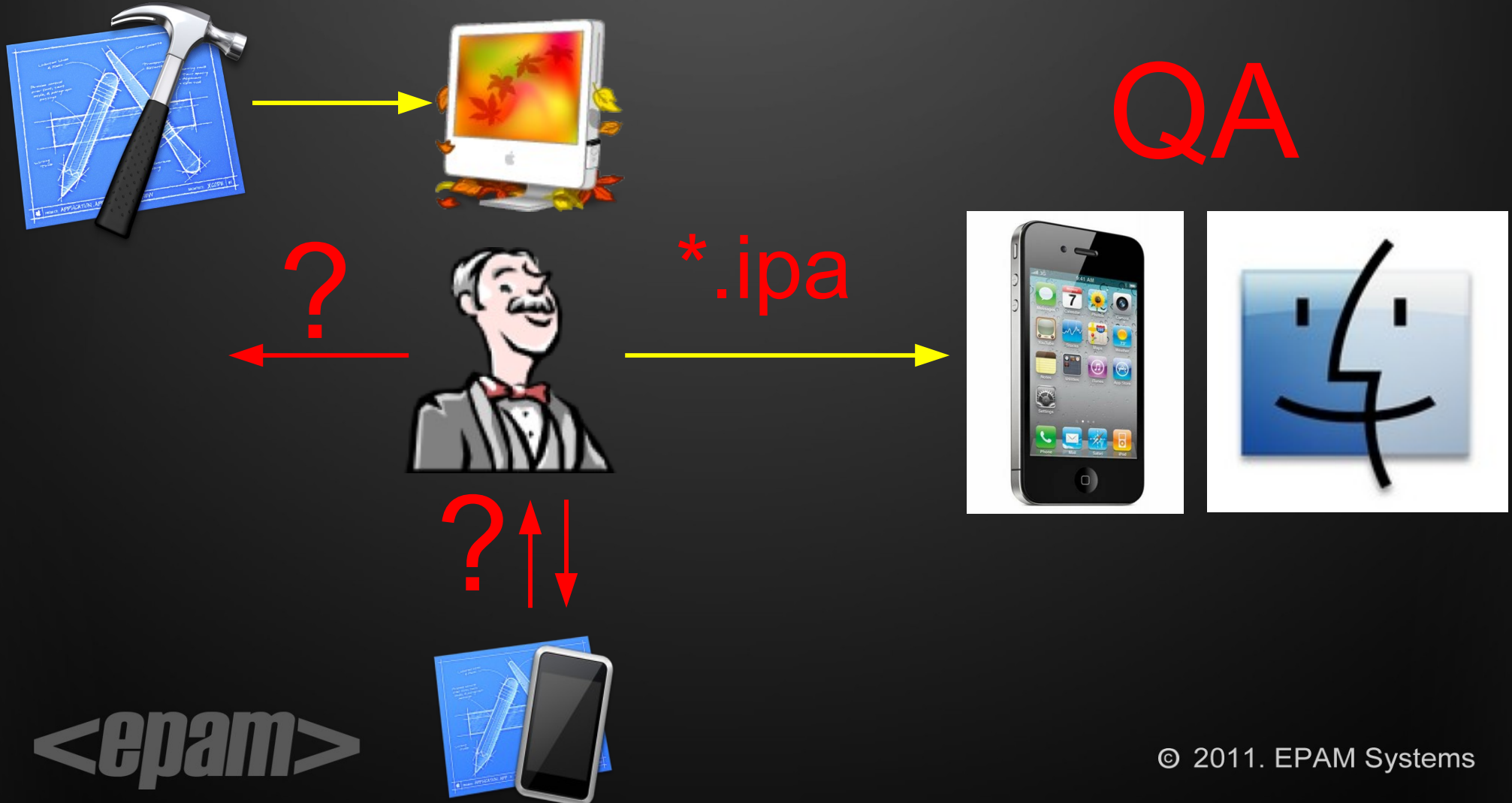


# Desktop Applications

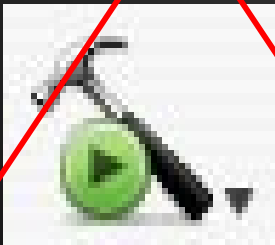




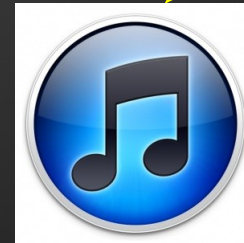
# iOS Applications



# Mobile QA



\*.ipa



# Building Without xCode GUI

xcodebuild -project CITest.xcodeproj

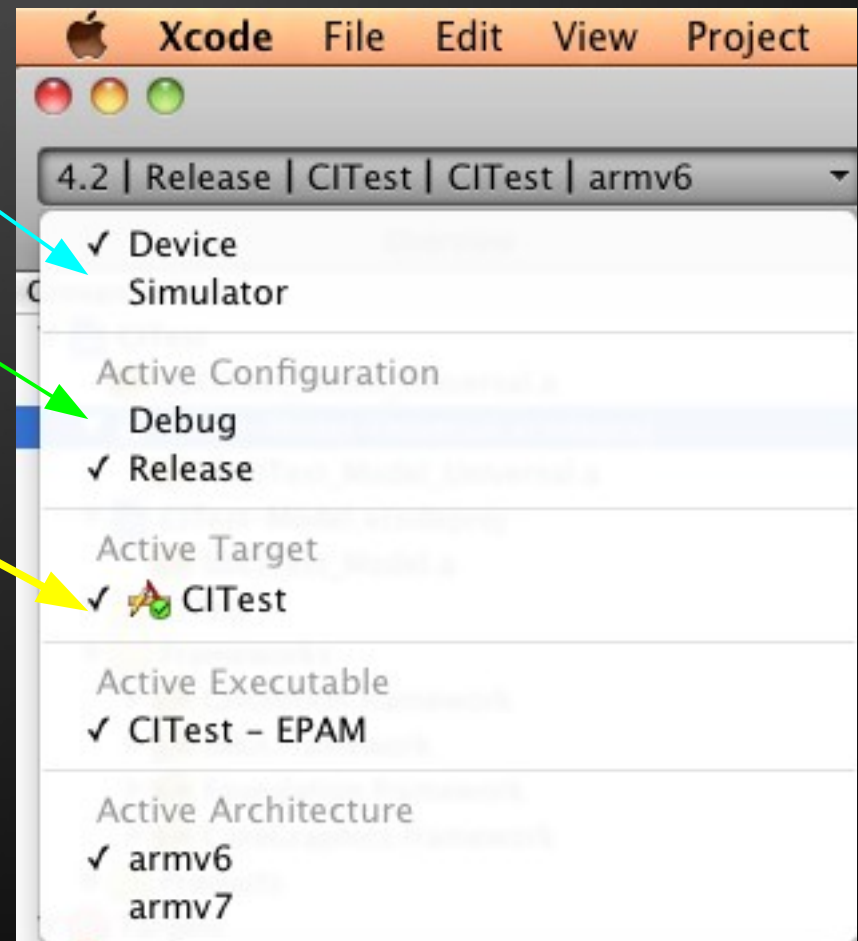
-sdk iphonesimulator4.3

-configuration Release

-target CITest

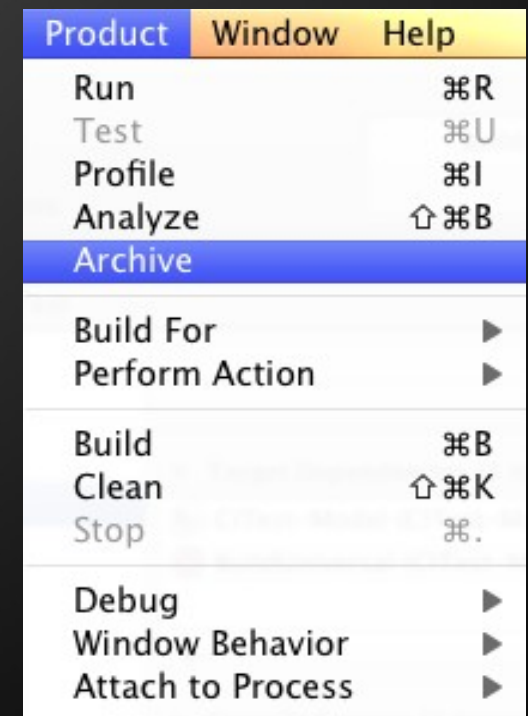
-parallelizeTargets

clean build



# Creating Installable \*.ipa File

```
/usr/bin/xcrun -sdk iphones PackageApplication  
-v "${BUILD_DIR}/Release-iphones/CITest.app"  
-o "${DEPLOYMENT_DIR}/CITest.ipa"  
--sign "${DEVELOPER_NAME}"  
--embed "${PROVISIONING_PROFILE}"
```



```
DEVELOPER_NAME="iPhone Developer: Oleksandr Dodatko (ABCDEFGH123456)"
```

# How About Unit Testing?

Picking a framework

Running a test

Collecting results



# Test Frameworks Chart

	SenTest	Google	GHUnit
Xcode integration	+	+	---
UIKit Support	---	---	+
Bundles support	---	---	+
Xml reports	---	---	+
			(lack of support for hudson CI)
Runs on device	+ ( Runtime tests only )	+ ( Runtime tests only )	+
Runs on simulator	+ ( logic tests only )	+ ( logic tests only )	+
Debugging (out of box)	---	---	+
UI snapshots comparing	---	+	---

# GHUnit Configuration

Add GHUnit.framework

Replace Main.h with the one from GHUnit

Remove “MainNibFile” entry from the info.plits

- GHUNIT\_AUTORUN  
WRITE\_JUNIT\_XML
- GHUNIT\_AUTOEXIT
- // Not supported in the official GHUNIT



# Running a Test

iphonesim launch

"\$DEPLOYMENT\_DIR/CITest.app"

4.2

ipad

**NOTE** : Use only **FULL PATH** to the app  
as shown above



# Collecting Test Results

```
TEMP_DIR=$(/usr/bin/getconf DARWIN_USER_TEMP_DIR)
```

All Test results are here :

**\$TEMP\_DIR/test-results**



# Terminating the Simulator

```
killall -s -KILL -c "iphonesim"
```

```
killall -KILL -c "iphonesim"
```

```
killall -s -KILL -c "iPhone Simulator"
```

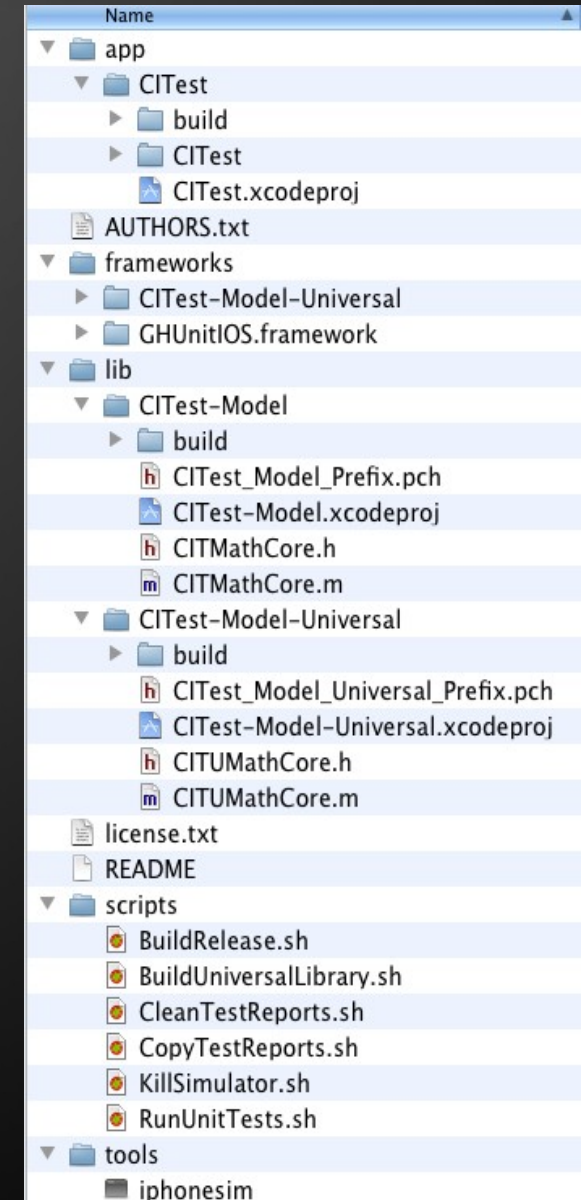
```
killall -KILL -c "iPhone Simulator"
```

Do it before you run a test app



# Defining the Project Structure

app  
lib  
frameworks  
scripts  
tools  
test  
certificates  
deployment



# Contacts

EPAM systems (Dnipropetrovsk) <http://www.epam.com/>

Github page : <https://github.com/EmbeddedSources>

<https://github.com/EmbeddedSources/iOS-articles>

<https://github.com/dodikk/iContinuousIntegration>

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