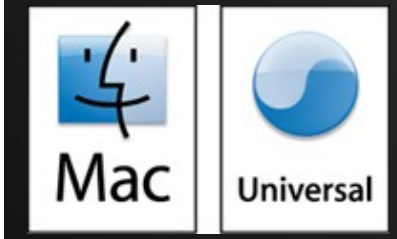
iContinuousIntegration

by Oleksandr Dodatko
EPAM Systems

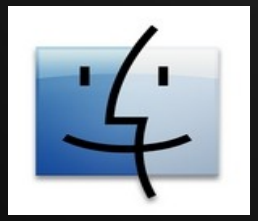
What's covered

Managing shared projects with xCode

Building a project without xCode GUI



Creating “universal binary” libraries



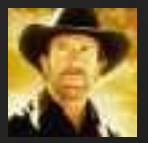
Deploying project and libraries for QA

More FUN for developers

Unit testing with GHUnit

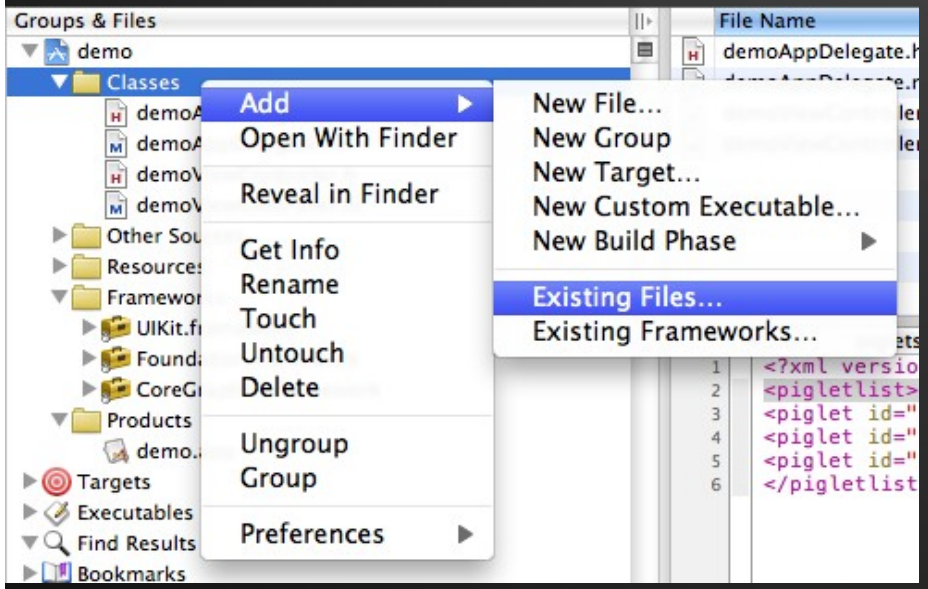
Using Hudson build server

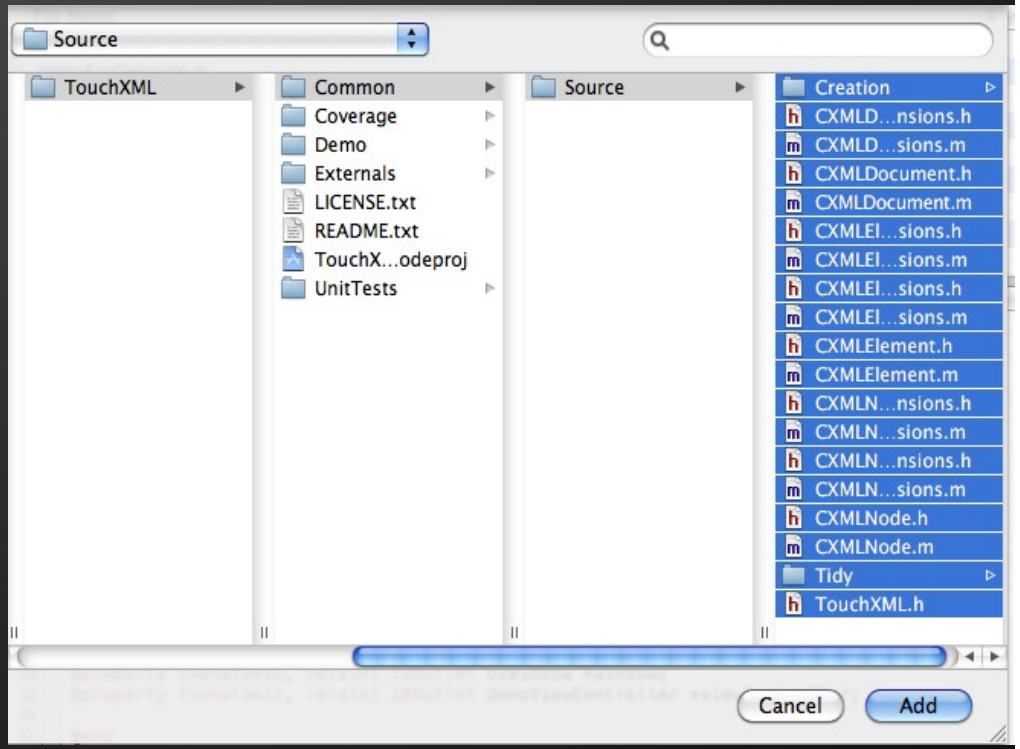
(it has Chuck Norris plug-in)



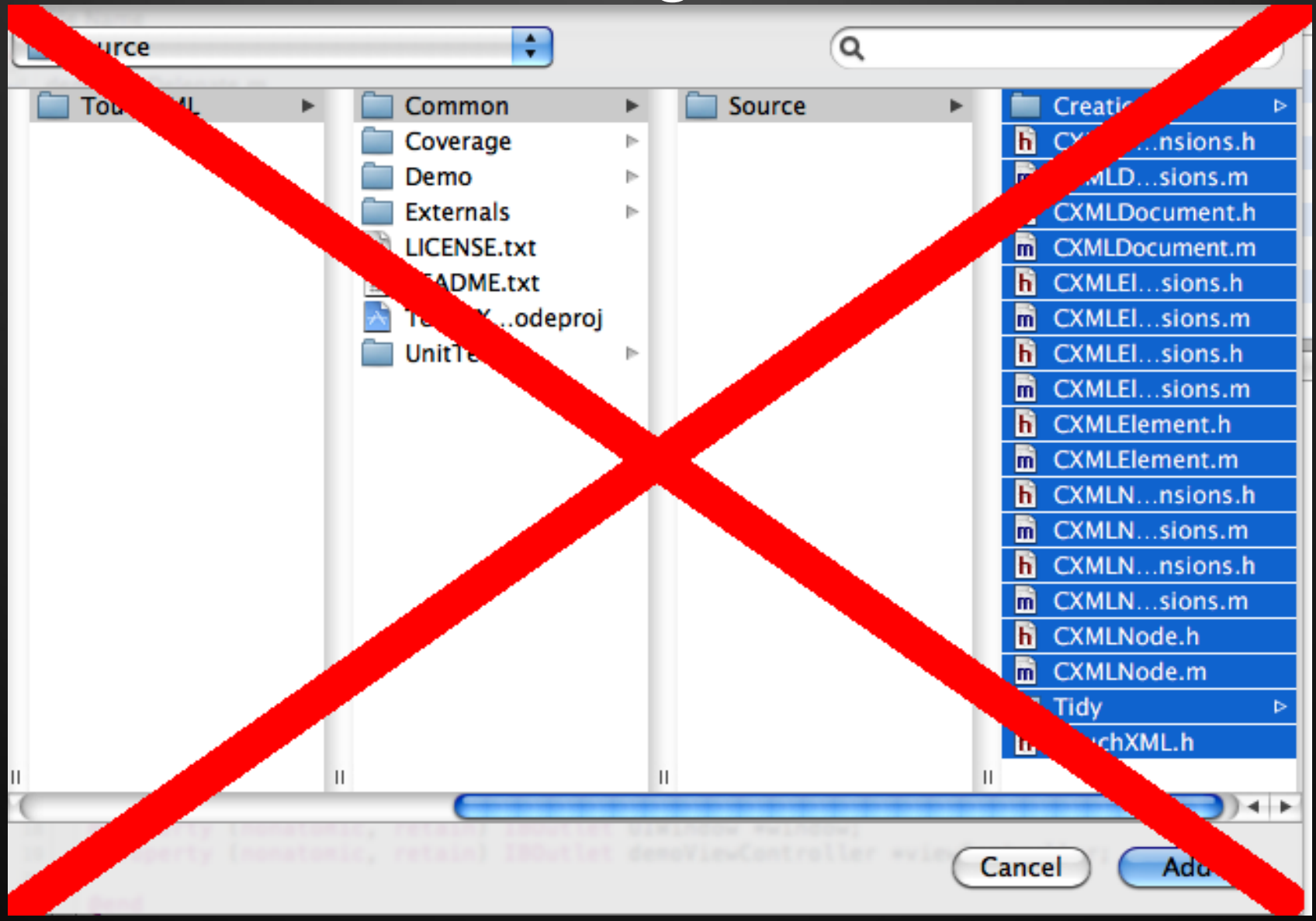
Running applications on simulator without xCode

“Commonly used” Project organization



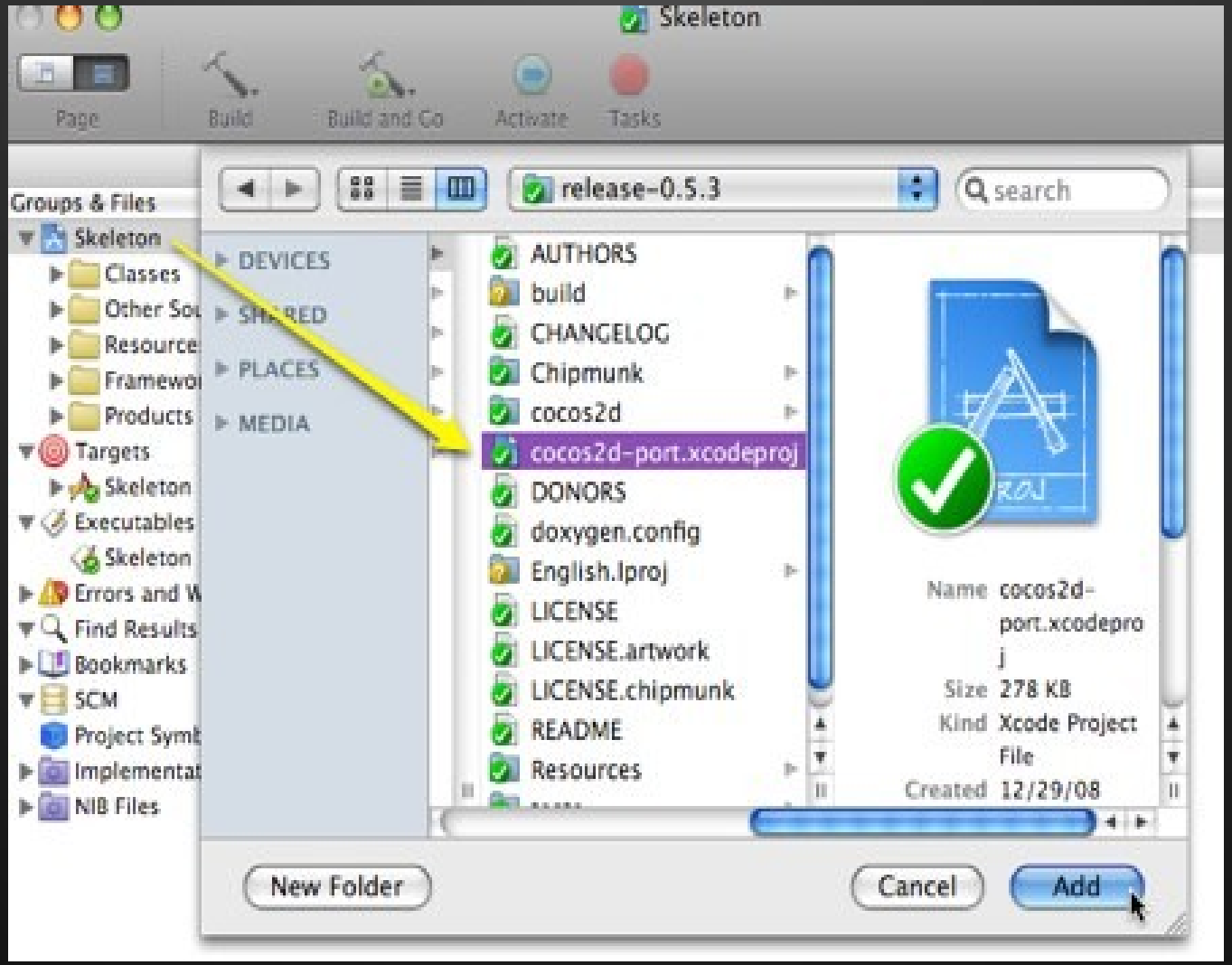


Wrong !!!


Common
Coverage
Demo
Externals
LICENSE.txt
Source
CXMLDocument.h
CXMLDocument.m
CXMLNode.h
CXMLNode.m
Tidy
Cancel

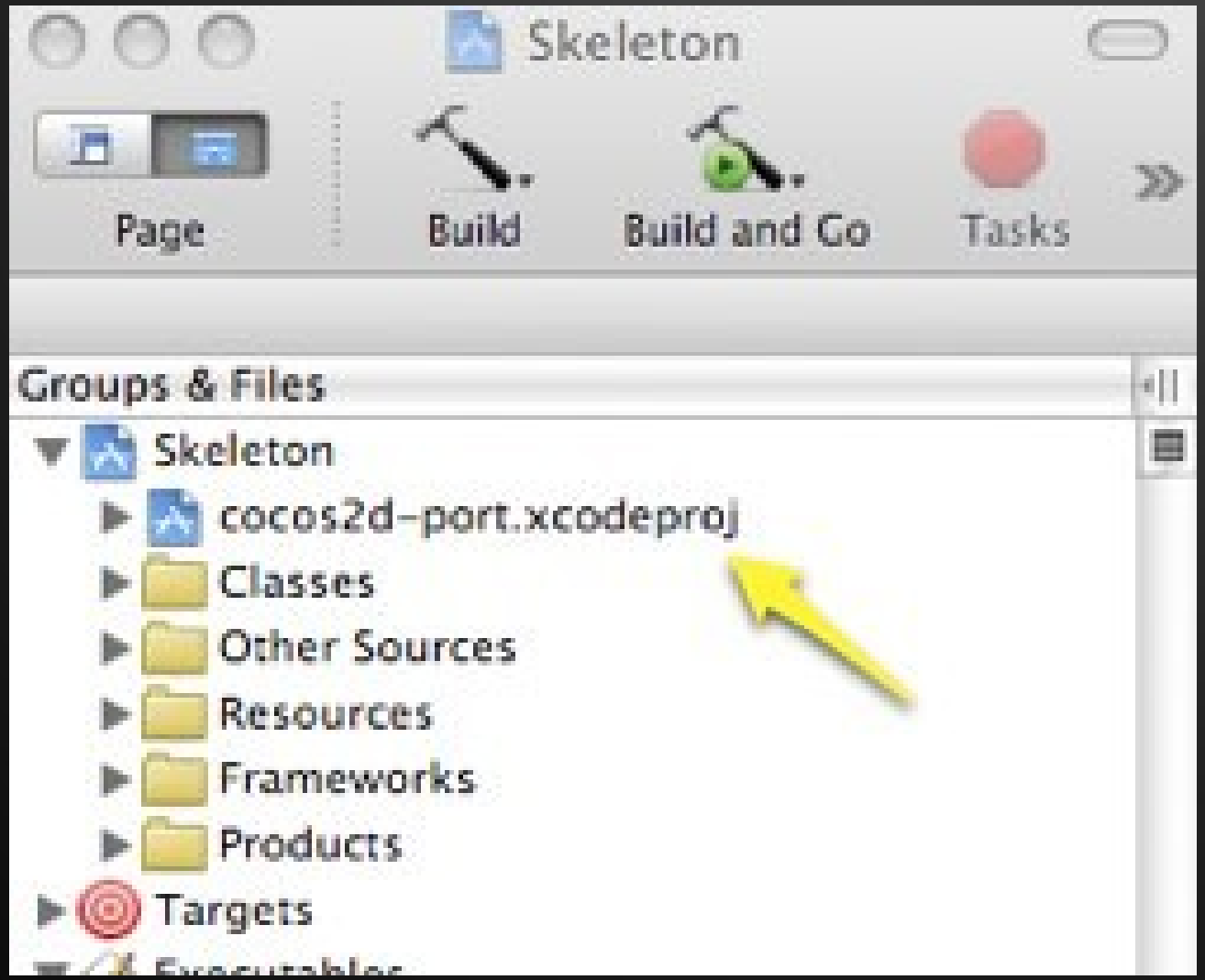
ONE Product,
ONE XCODE PROJECT

Library project howto



Easy, Modular Code Sharing Across iPhone Apps: Static Libraries and Cross-Project References

Library project howto



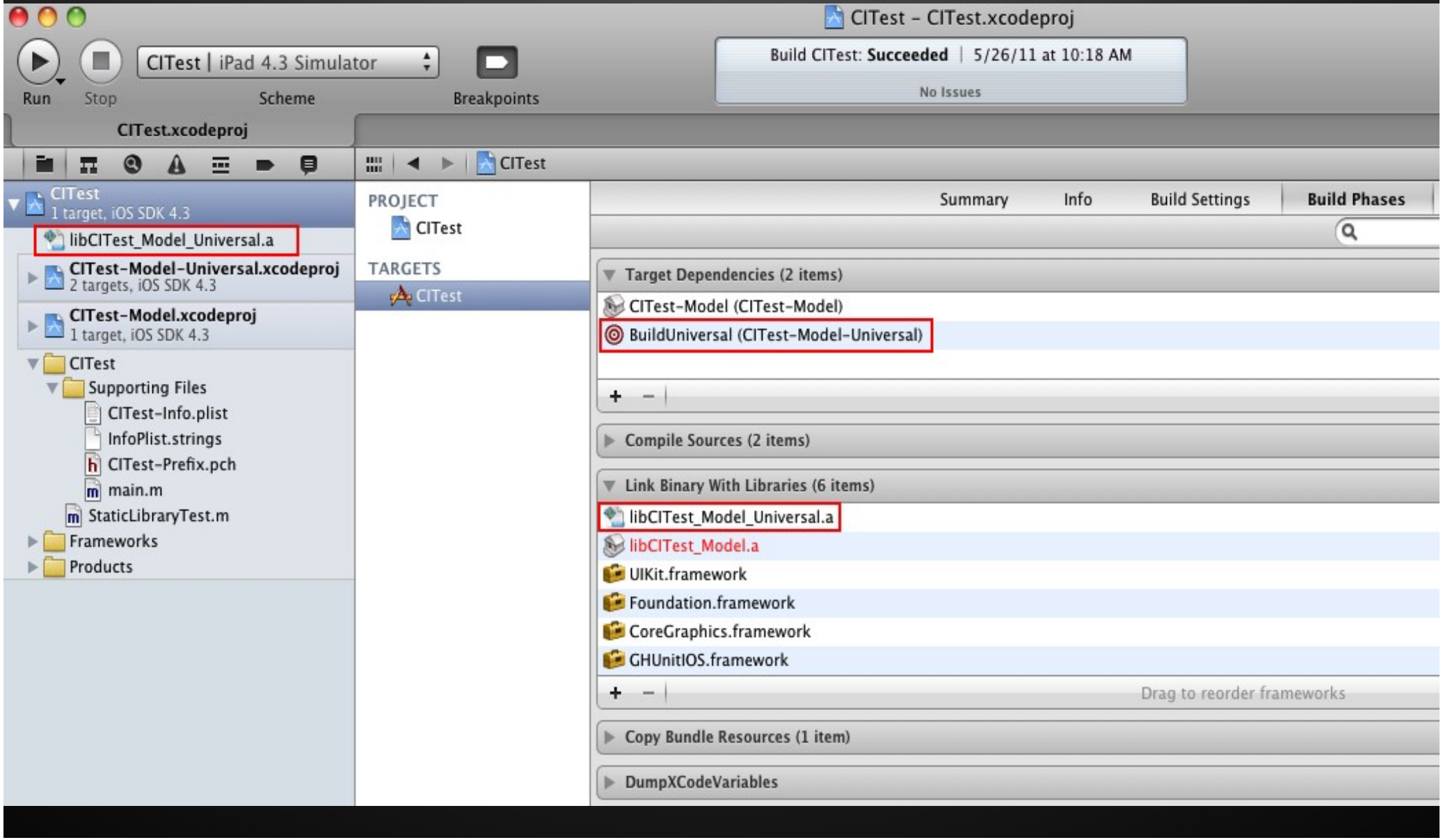
!!!!! Note !!!!!

Some more adjustments are still required.

!!!!! Note !!!!!

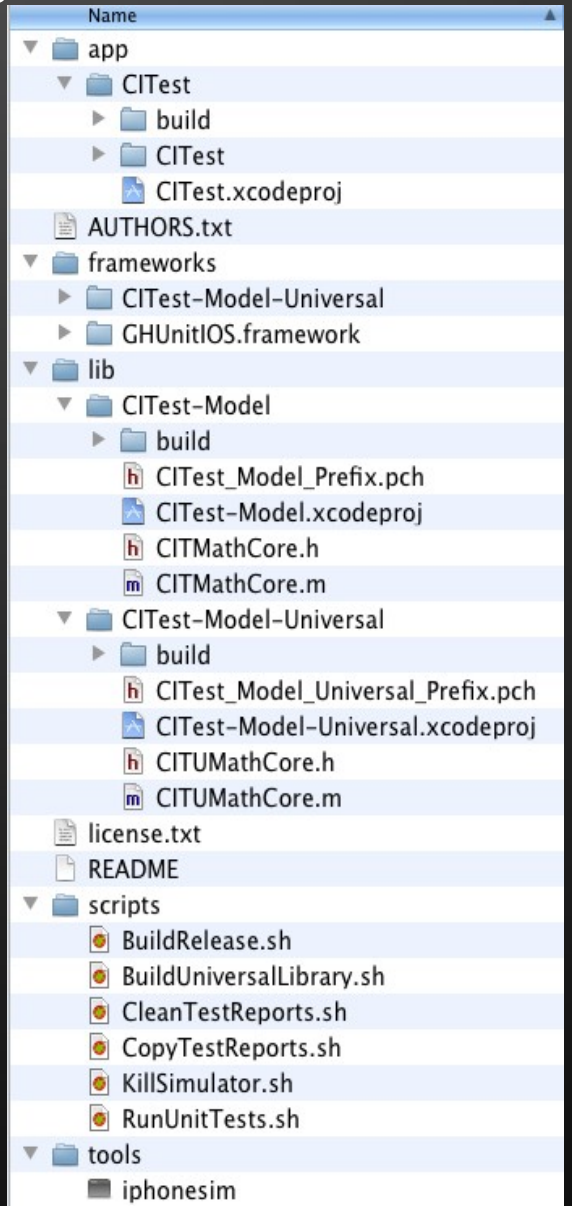
Easy, Modular Code Sharing Across iPhone Apps: Static Libraries and Cross-Project References

Setting up dependencies



Defining project structure

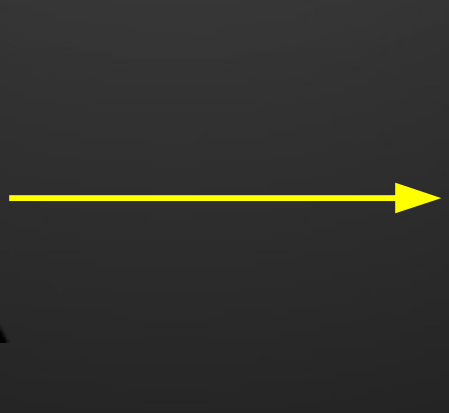
app
lib
frameworks
scripts
tools
test
certificates
deployment

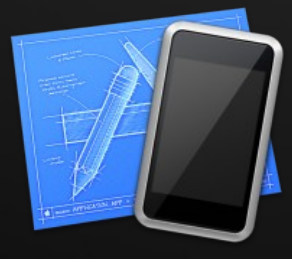


Deployment : Desktop vs. mobile

Desktop applications

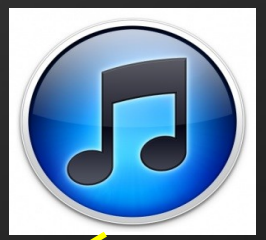
Mobile





Mobile QA

*.ipa



Building without xCode GUI

```
xcodebuild -project $PROJECT_NAME.xcodeproj
 -target $TARGET_NAME
-configuration Release
-parallelizeTargets
-sdk iphonesimulator4.3
clean build
```

Creating *.ipa file

/usr/bin/xcrun

-sdk iphoneos PackageApplication

-v "${BUILD_DIR}/Release-iphoneos/${PROJECT_NAME}.app"

-o "${DEPLOYMENT_DIR}/${PROJECT_NAME}.ipa"

--sign "${DEVELOPER_NAME}"

--embed "${PROVISONING_PROFILE}"

DEVELOPER_NAME="iPhone Developer: Oleksandr Dodatko (ABCDEFG123456)"

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

```
setenv( "GHUNIT_AUTORUN" , "YES", 1 );
setenv( "WRITE_JUNIT_XML", "YES", 1 );

// Not supported in the official GHUNIT
setenv( "GHUNIT_AUTOEXIT" , "YES", 1 );
```

Running test

```
"$TOOLS_DIR/iphonesim"
 launch "$DEPLOYMENT_DIR/CITest.app"
 4.2
 ipad
```

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

Collect results

```
TEMP_DIR=$(/usr/bin/getconf DARWIN_USER_TEMP_DIR)
TEST_DIR_NAME=test-results
TEST_RESULTS_DIR=$TEMP_DIR$TEST_DIR_NAME

## Now we can just copy test results
cd "$TEST_RESULTS_DIR"
   pwd
   cp *.xml "$TEST_PUBLISH_DIR"
cd "$LAUNCH_DIR"
```

Terminating simulator

killall -s -KILL -c "iphonesim"

killall -KILL -c "iphonesim"

killall -s -KILL -c "iPhone Simulator"

killall -KILL -c "iPhone Simulator"

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"
```

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

Build server should

- Checkout project sources
- Run build script
- Deploy product archives
- Publish test reports

Contacts

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

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