

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

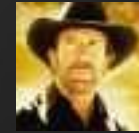
More FUN for developers



Unit testing with GHUnit

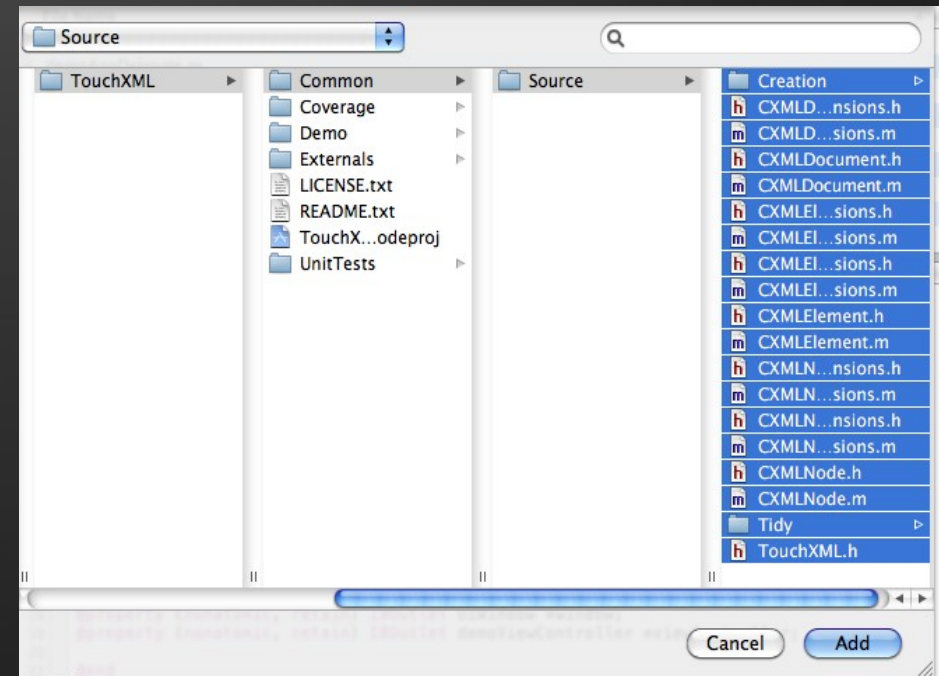
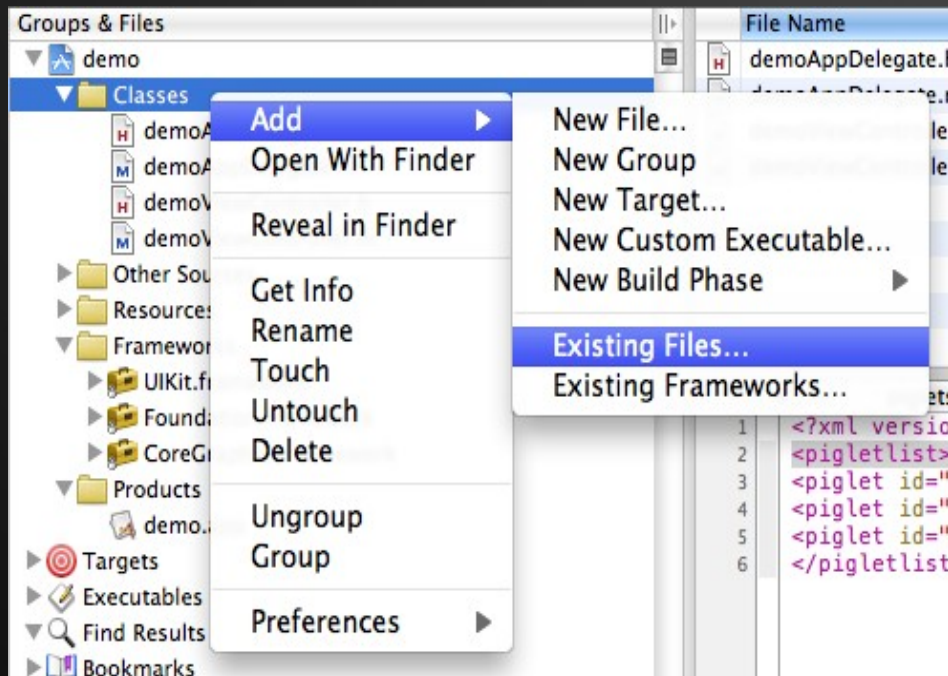


Using Hudson build server
(it has Chuck Norris plug-in)

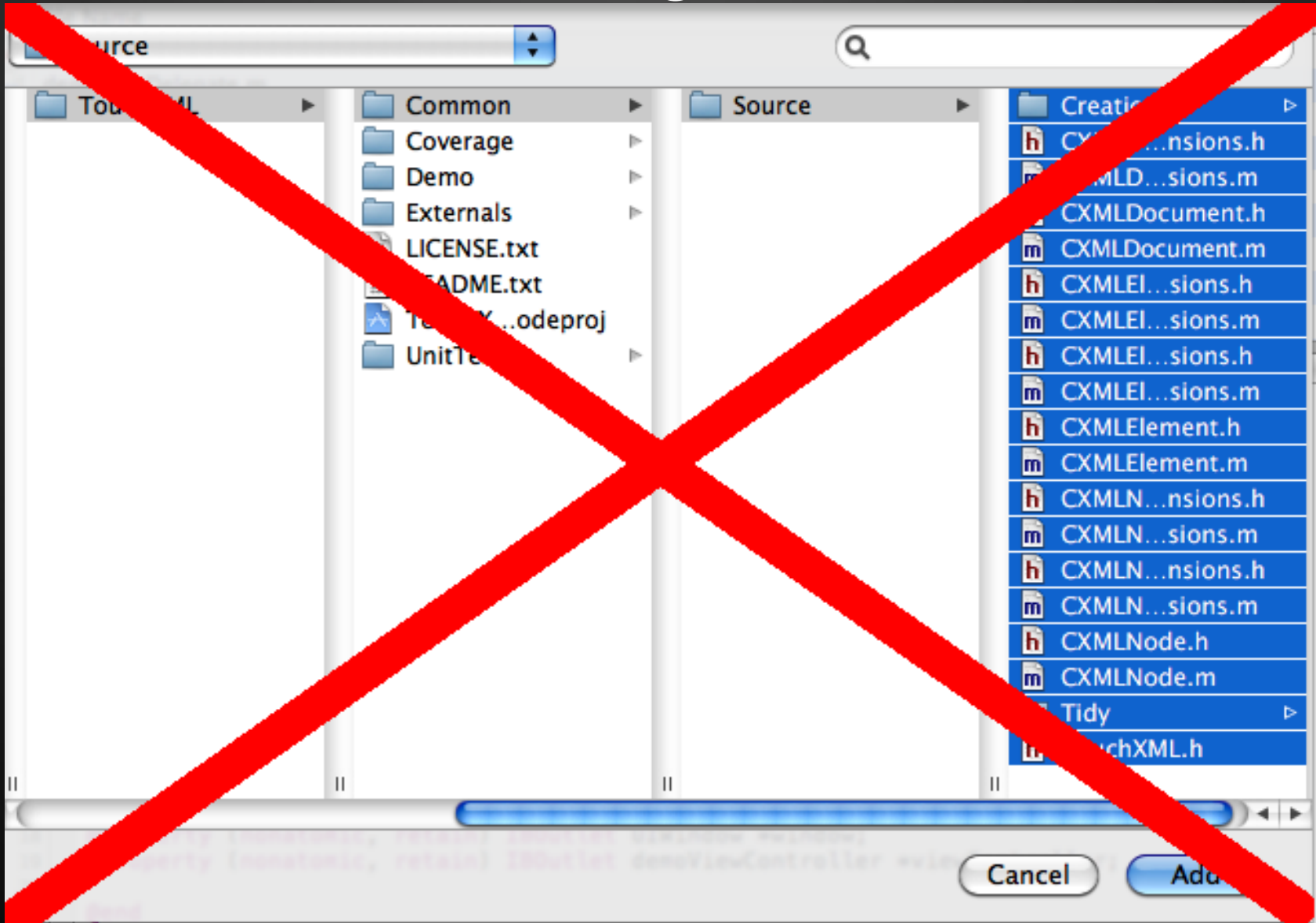


Running applications on simulator
without xCode

“Commonly used” Project organization



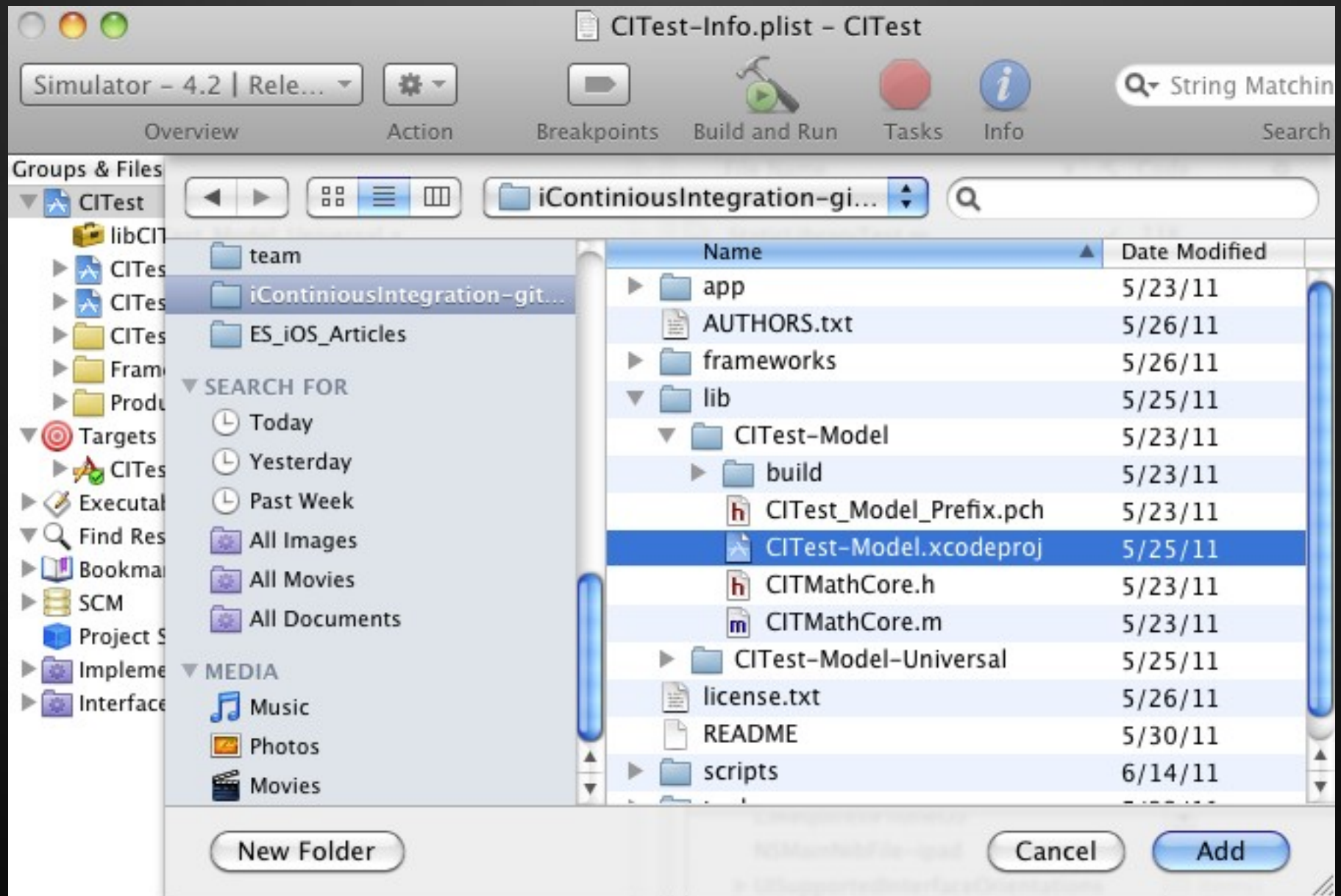
Wrong !!!



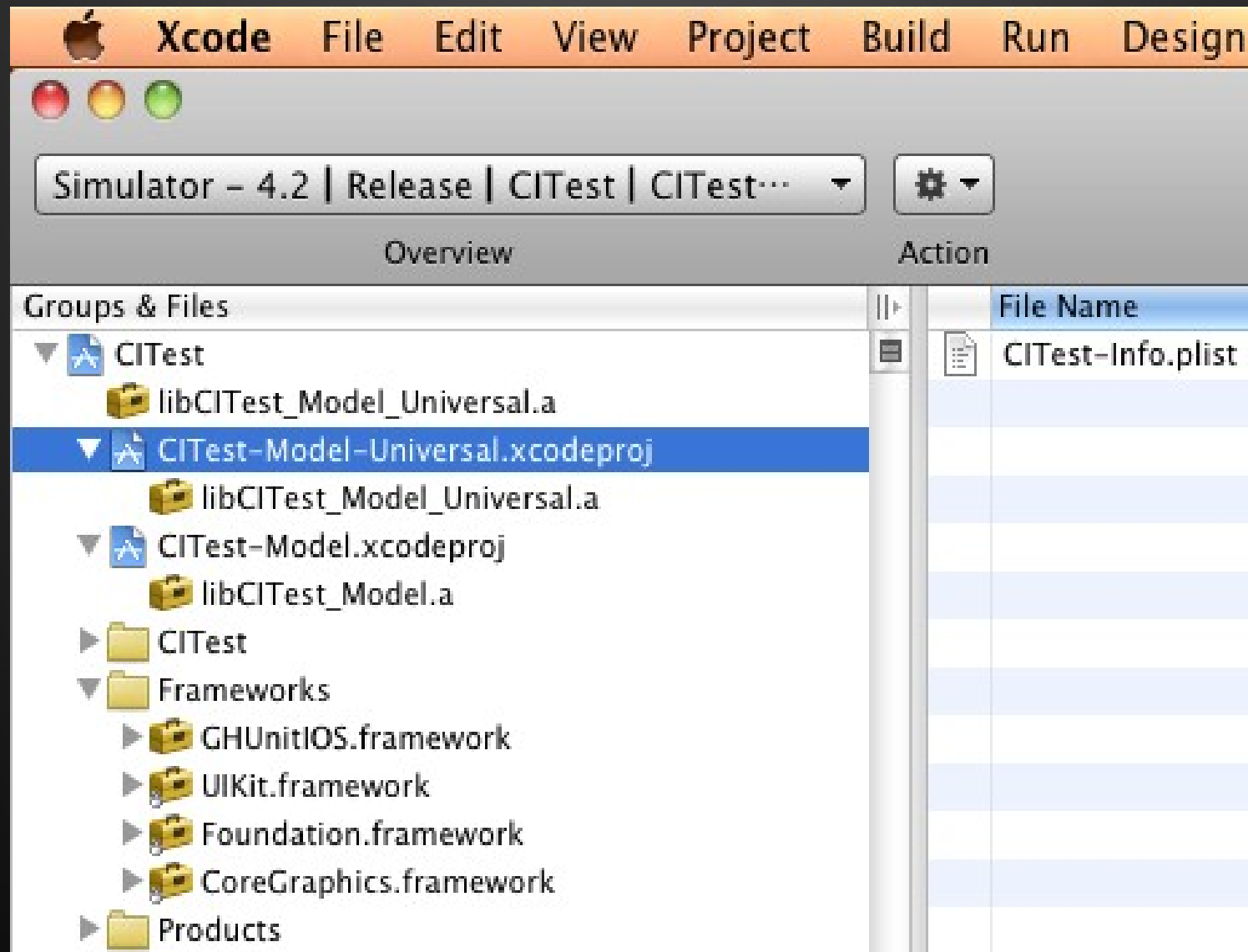
ONE Product,
ONE **XCODE** PROJECT



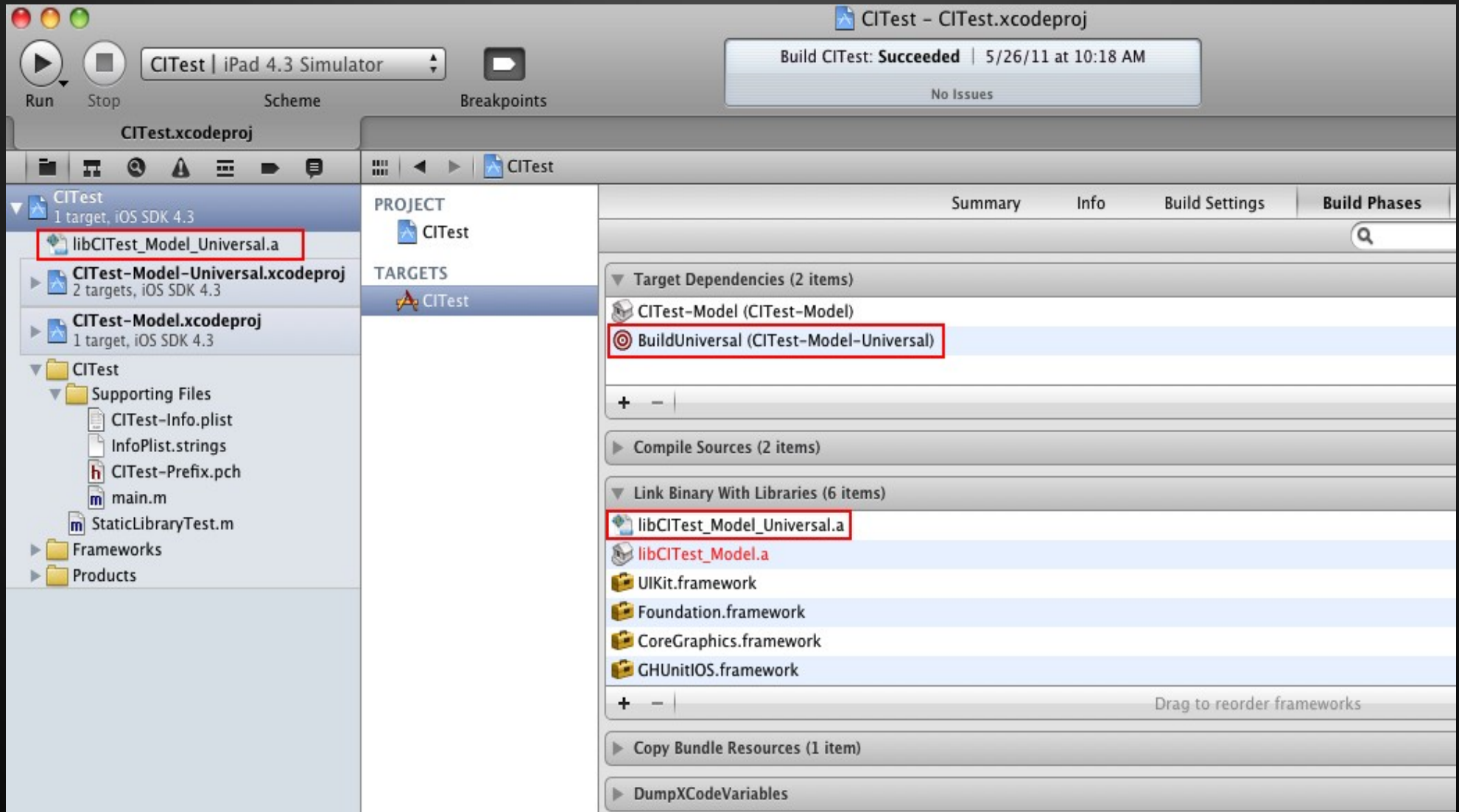
Library project howto



Library project howto

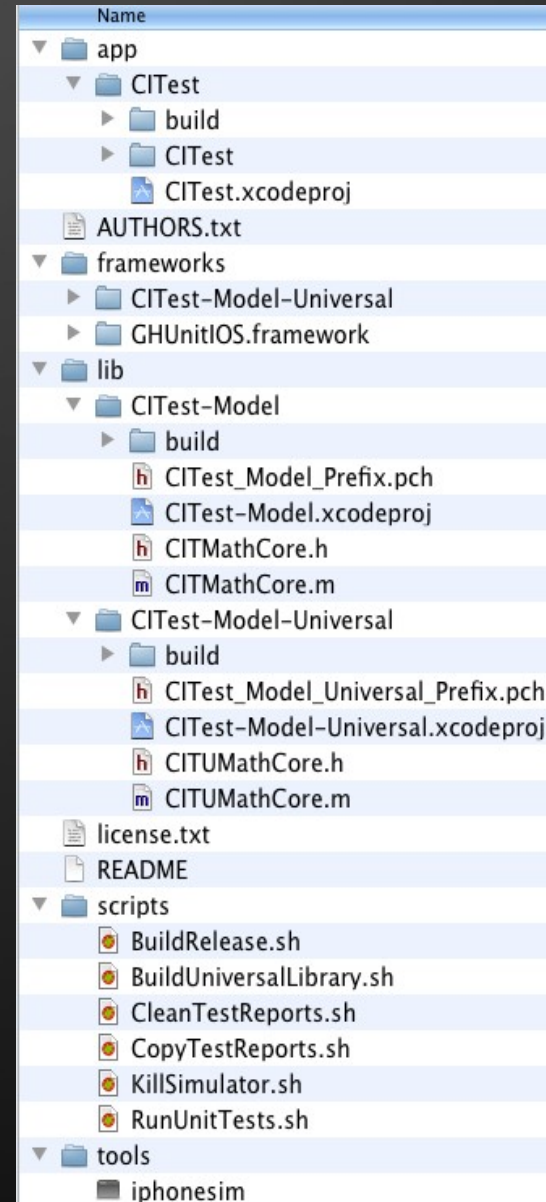


Setting up dependencies



Defining project structure

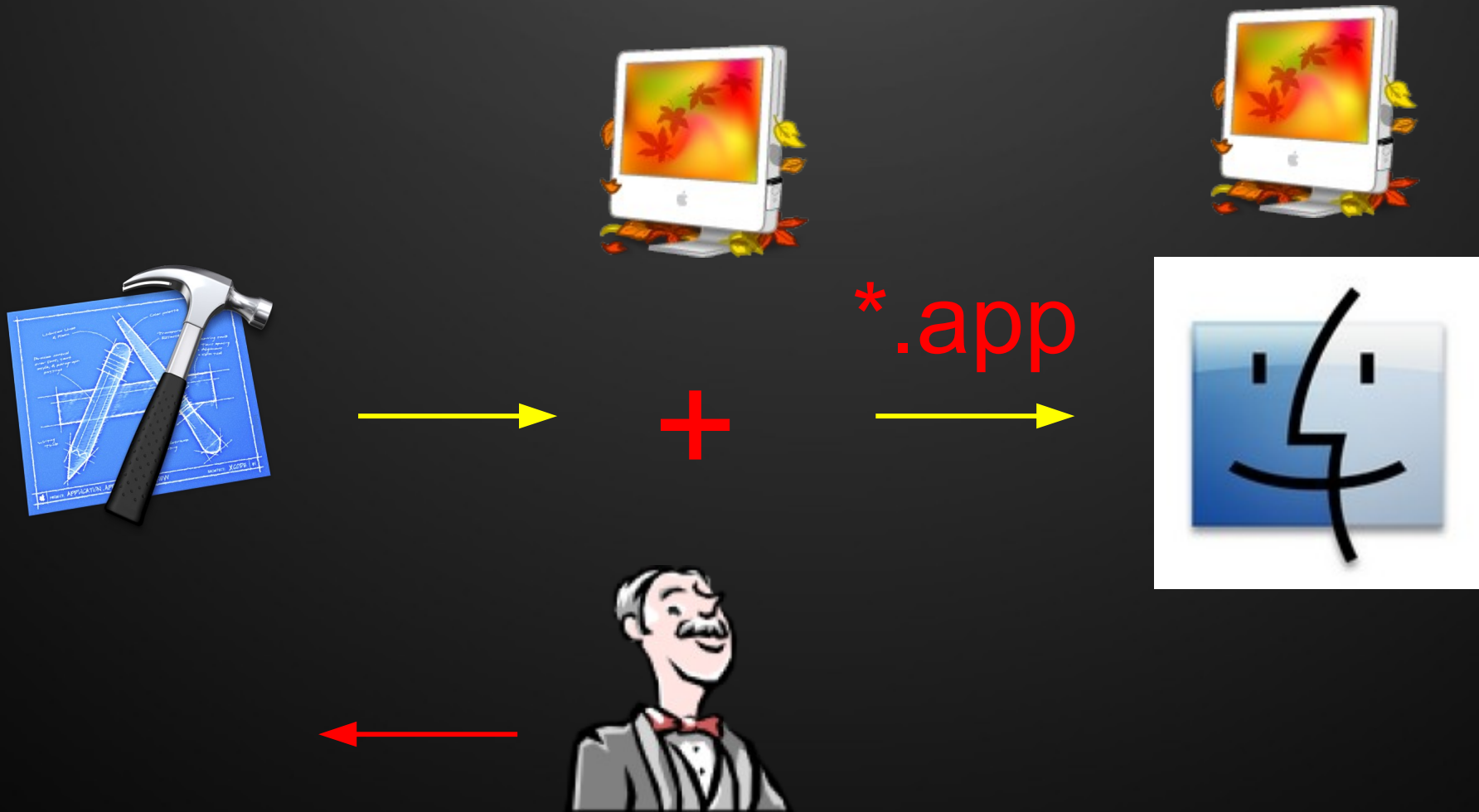
app
lib
frameworks
scripts
tools
test
certificates
deployment



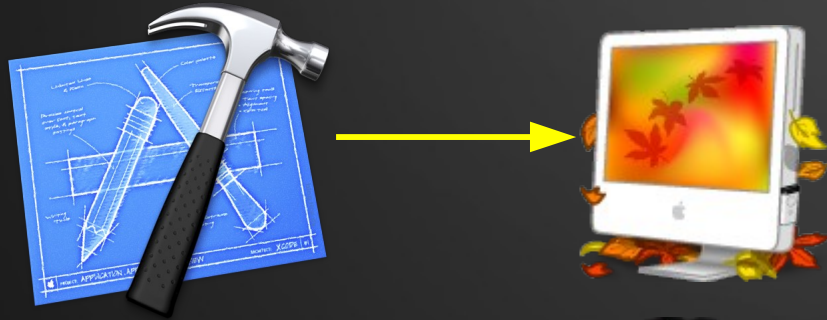
Deployment : Desktop vs. mobile



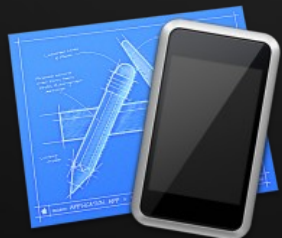
Desktop applications



Mobile



*.ipa



QA

Mobile QA



• *.ipa



Building without xCode GUI

xcodebuild -project \$PROJECT_NAME.xcodeproj

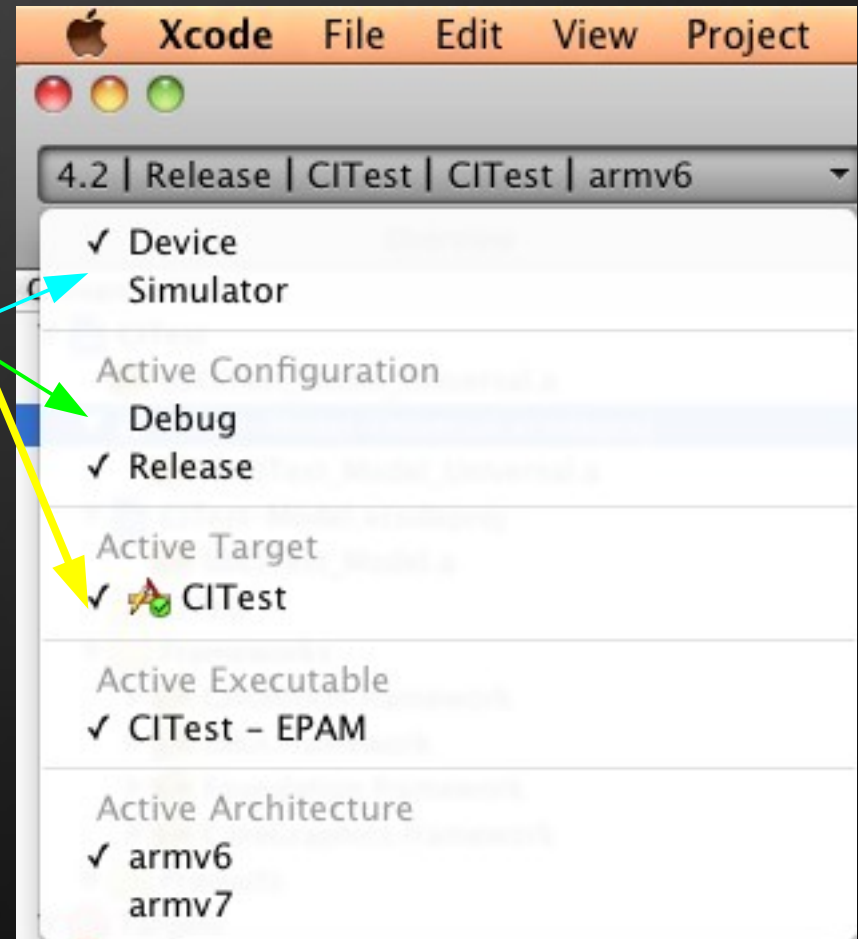
-target \$TARGET_NAME

-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 "\${PROVISIONING_PROFILE}"

Product	Window	Help
Run		⌘R
Test		⌘U
Profile		⌘I
Analyze		⇧⌘B
Archive		
Build For		▶
Perform Action		▶
Build		⌘B
Clean		⇧⌘K
Stop		⌘.
Debug		▶
Window Behavior		▶
Attach to Process		▶

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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.plists

```
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"
```

Do it before you run a test app

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

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

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

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

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