

# iContinuousIntegration

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Introduce yourselves  
please

# I came to iOS from C++ and was disappointed

All code in a single project

Hard to reuse common functionality

No unit tests

No build automation

All other developers solved these problems years ago

# IOS developers do not use modern engineering practices

Only 10% do unit testing

33% use nothing but Apple supplied components

28% copy-paste third-parties to their projects

# Copy-paste style libraries

Regex Kit Lite

Touch XML

Touch JSON

Magical Record

Cocoa Lumberjack

and many more ...

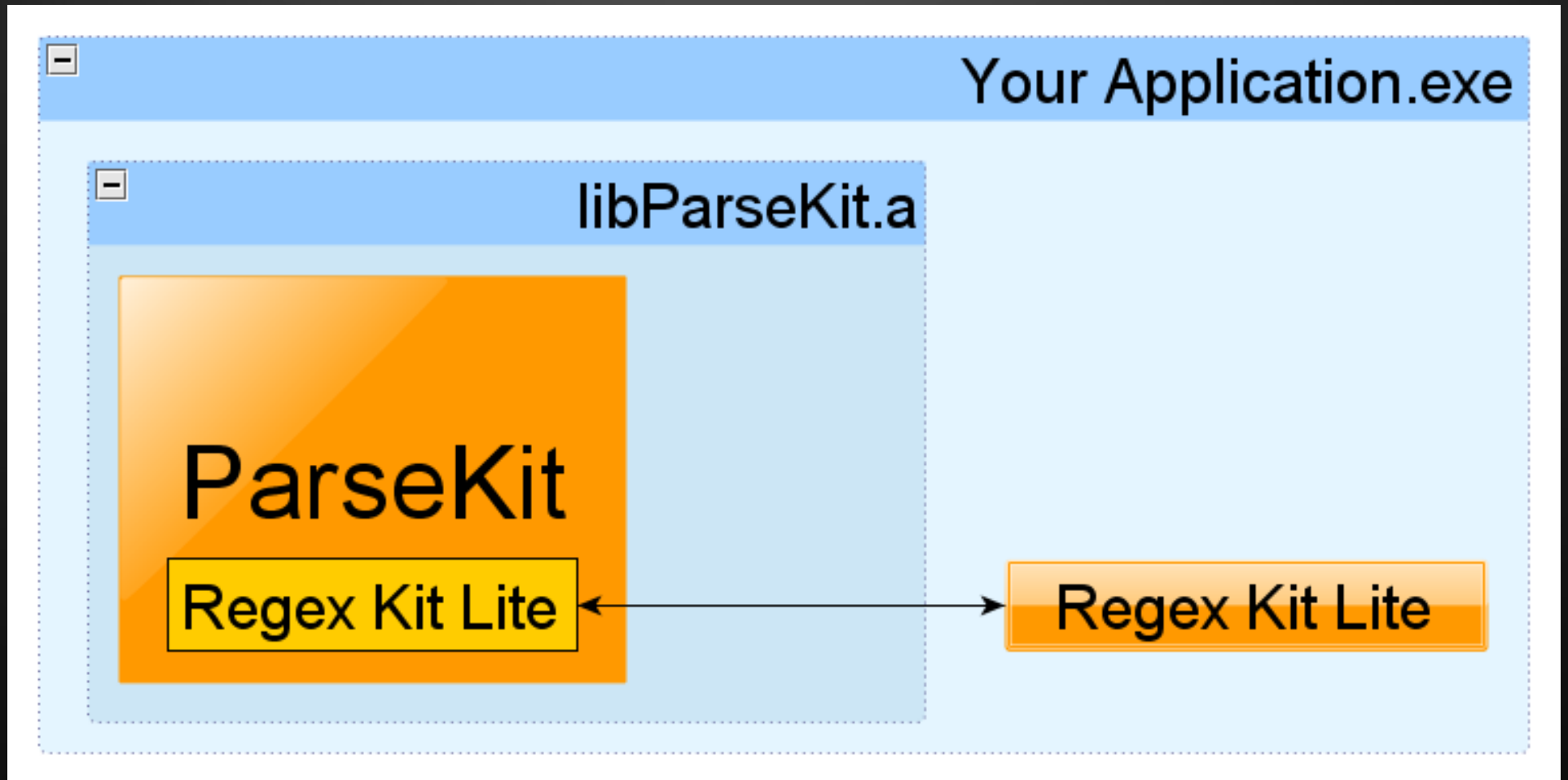
WHY ?

**Magicalpanda** : “I'm not sure what the benefits are to everyone...”

**tonyxiao** : “I don't really care to compile from source”

**Magicalpanda** : “as long as I can still use the Source Code approach, I'm ok with having a separate target in the project that dumps out a static library”

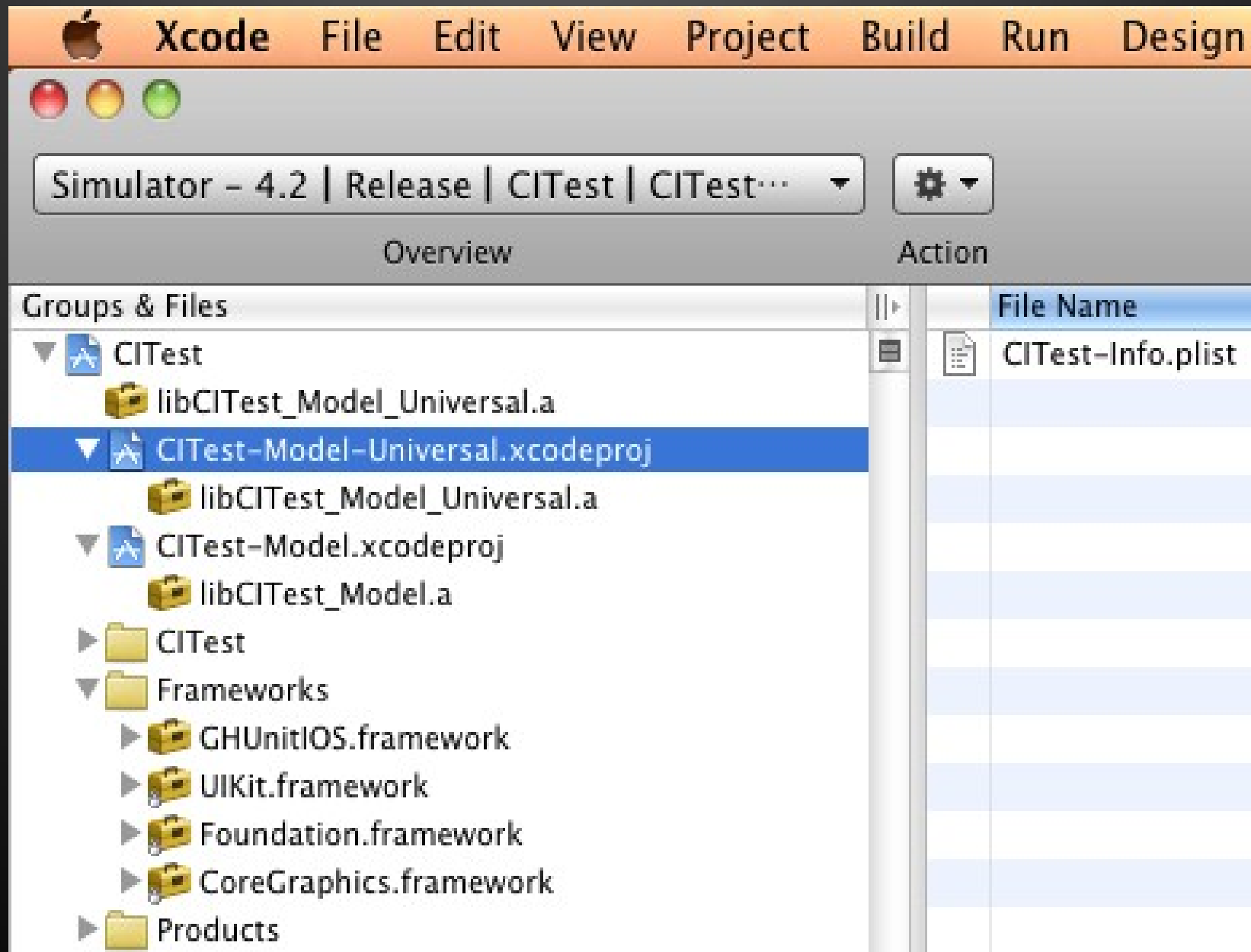
# Ok. Why should we care?



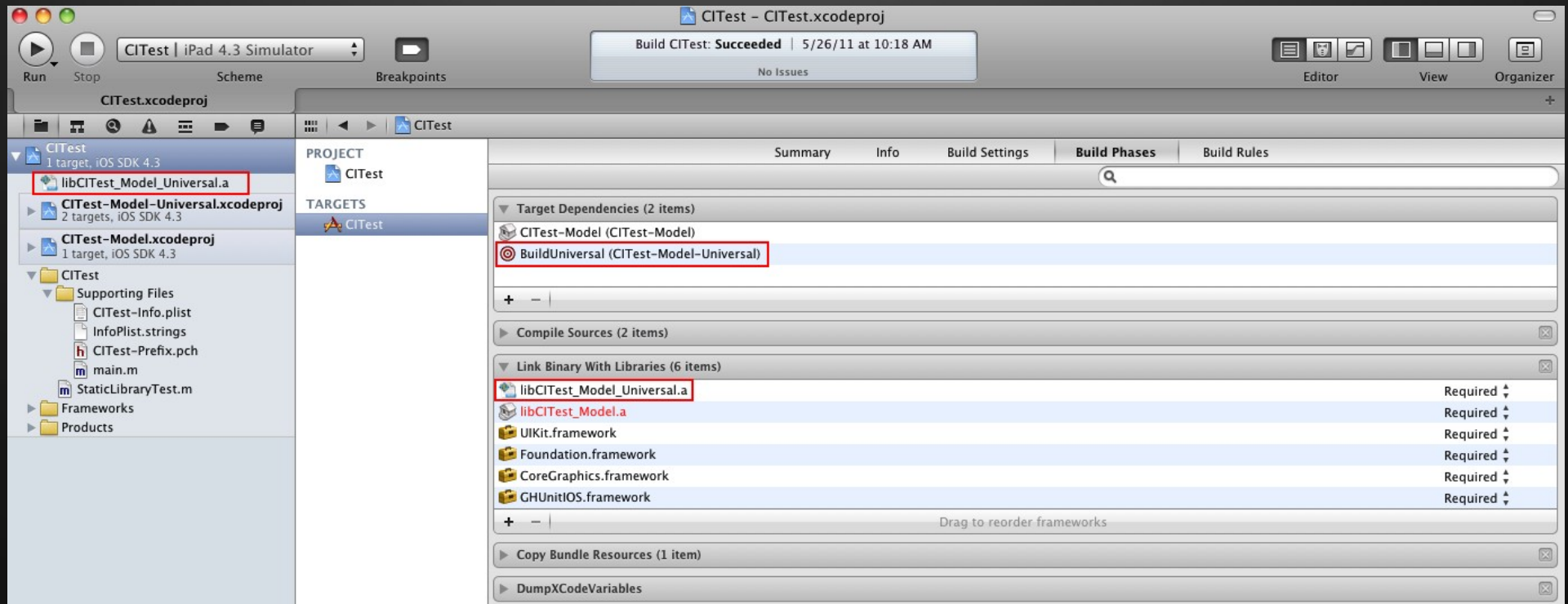


# Use Static Libraries

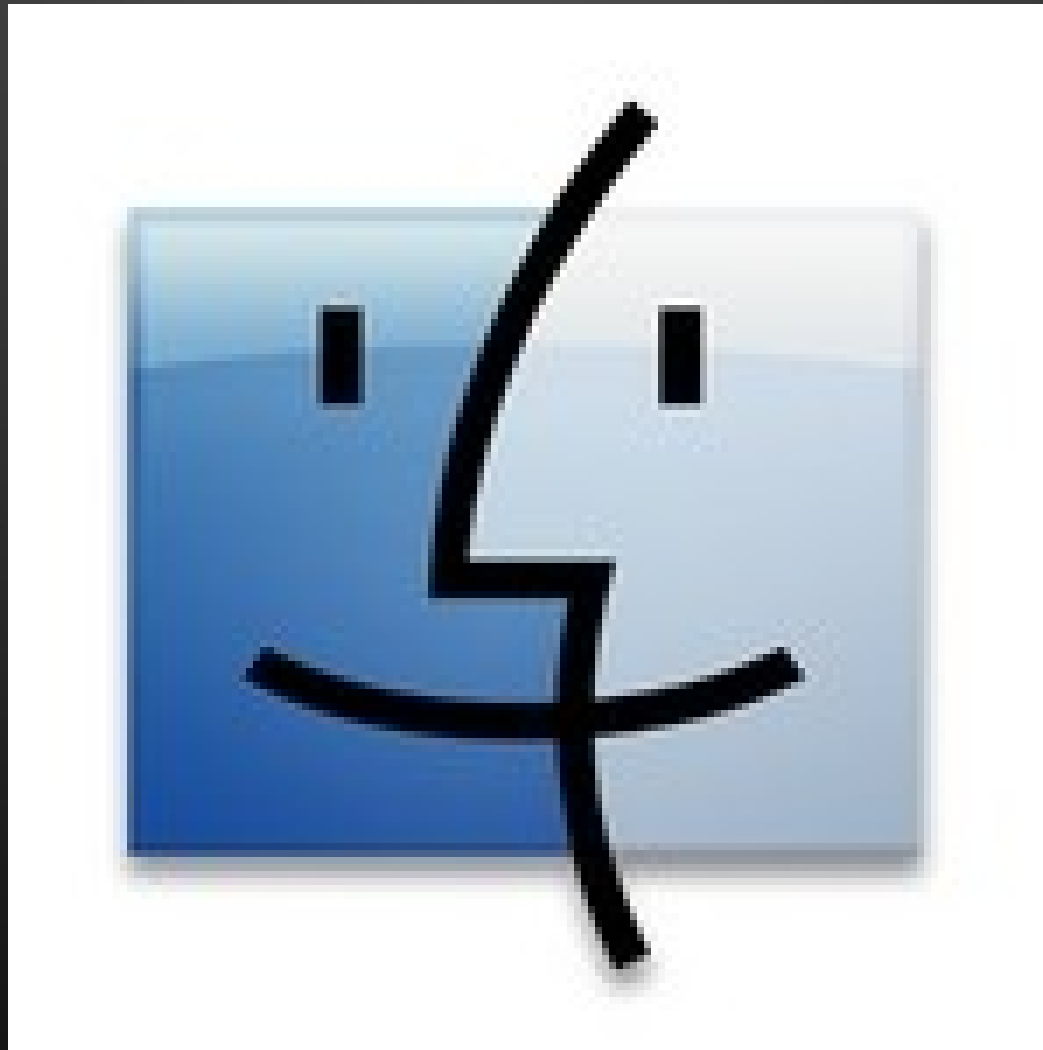
# Add a Library Sub-project



# Set up Dependencies



Do not forget about the header path



# Library Usage Benefits

Clear design

No linker conflicts

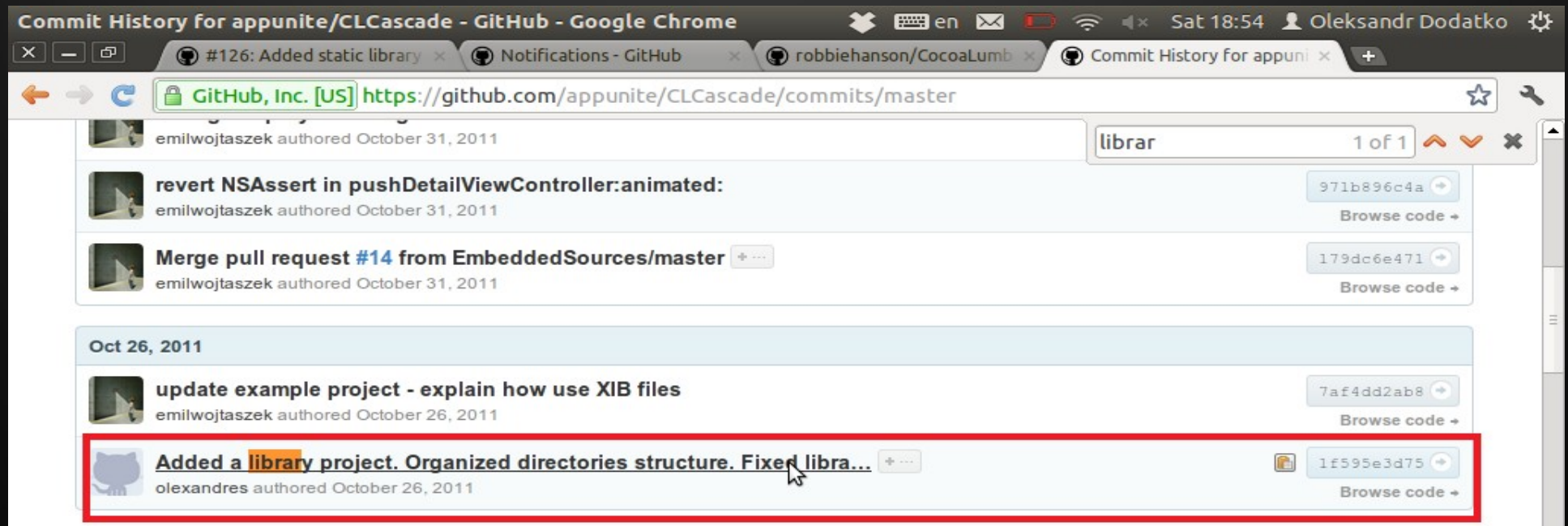
A better way to reuse code

# Yes. It works!

“ BTW, thanks for your pull request. I have't had time to review it all yet, **but most of it looks good.** “

Saul Mora. Founding Panda. saul@magicalpanda.com

appunite / CLCascade has **accepted** our patch



The screenshot shows the GitHub commit history for the repository appunite/CLCascade. The browser window has multiple tabs open, including '#126: Added static library', 'Notifications - GitHub', 'robbiehanson/CocoaLumberjack', and 'Commit History for appunite/CLCascade'. The address bar shows the URL 'https://github.com/appunite/CLCascade/commits/master'. The commit history is filtered by the search term 'librar'. The most recent commit is by 'emilwojtaszek' on October 31, 2011, with the message 'Merge pull request #14 from EmbeddedSources/master'. Below this, a commit by 'emilwojtaszek' on October 31, 2011, is highlighted with a red box. The commit message is 'Added a library project. Organized directories structure. Fixed libra...'. The commit hash is '1f595e3d75'. The commit is by 'olexandres' and is dated October 26, 2011. The commit message is partially obscured by a red box.

Commit History for appunite/CLCascade - GitHub - Google Chrome

#126: Added static library x Notifications - GitHub x robbiehanson/CocoaLumberjack x Commit History for appunite/CLCascade x

GitHub, Inc. [US] https://github.com/appunite/CLCascade/commits/master

emilwojtaszek authored October 31, 2011

librar 1 of 1

revert NSAssert in pushViewController:animated:  
emilwojtaszek authored October 31, 2011 971b896c4a Browse code +

Merge pull request #14 from EmbeddedSources/master  
emilwojtaszek authored October 31, 2011 179dc6e471 Browse code +

Oct 26, 2011

update example project - explain how use XIB files  
emilwojtaszek authored October 26, 2011 7af4dd2ab8 Browse code +

Added a library project. Organized directories structure. Fixed libra...  
olexandres authored October 26, 2011 1f595e3d75 Browse code +

Find our forks at  
[github.com/EmbeddedSources](https://github.com/EmbeddedSources)

Let's discuss unit tests



# I recommend ...

Easy to debug failed tests

Easy to use files with test data bundles

Generates jUnit compatible reports

GHUnit : unit test is  
an iOS application

# Unit test life cycle

Pass test data files to the test program

Launch the test program

Publish test reports

iOS sandbox makes things  
complicated

# Application Launch Demo

# Launching app without xCode

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**

# Before you run a test...

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

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

```
GHUNIT_AUTORUN
```

```
WRITE_JUNIT_XML
```

```
GHUNIT_AUTOEXIT
```



Unit tests reduce risks due to  
early error discovery

Jenkins job should build and deploy  
in one click

There should be no interaction with  
the user

# Building without xCode

xcodebuild -project CITest.xcodeproj

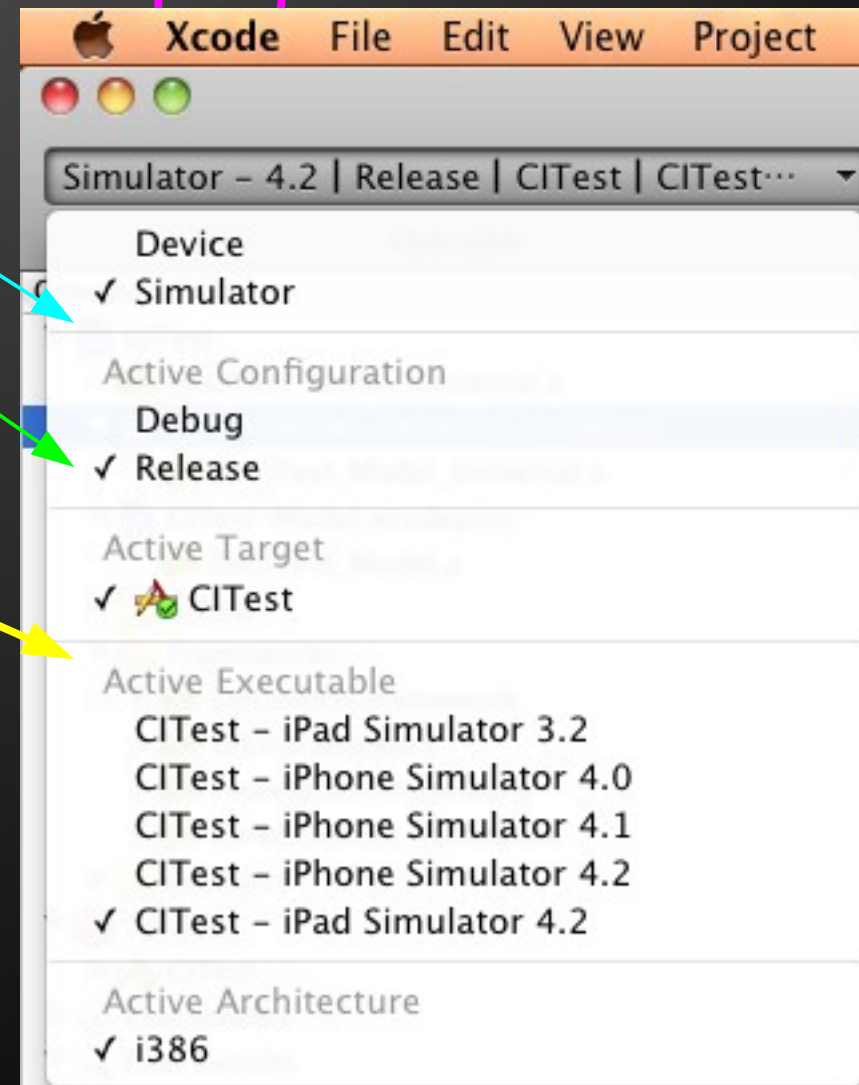
-sdk iphonesimulator4.3

-configuration Release

-target CITest

-parallelizeTargets

clean build



# Deliver your beta builds as \*.ipa files using TestFlight



# Creating Installable \*.ipa File

```
/usr/bin/xcrun -sdk iphones  
PackageApplication
```

```
-v "${BUILD_DIR}/Release-  
iphones/CITest.app"
```

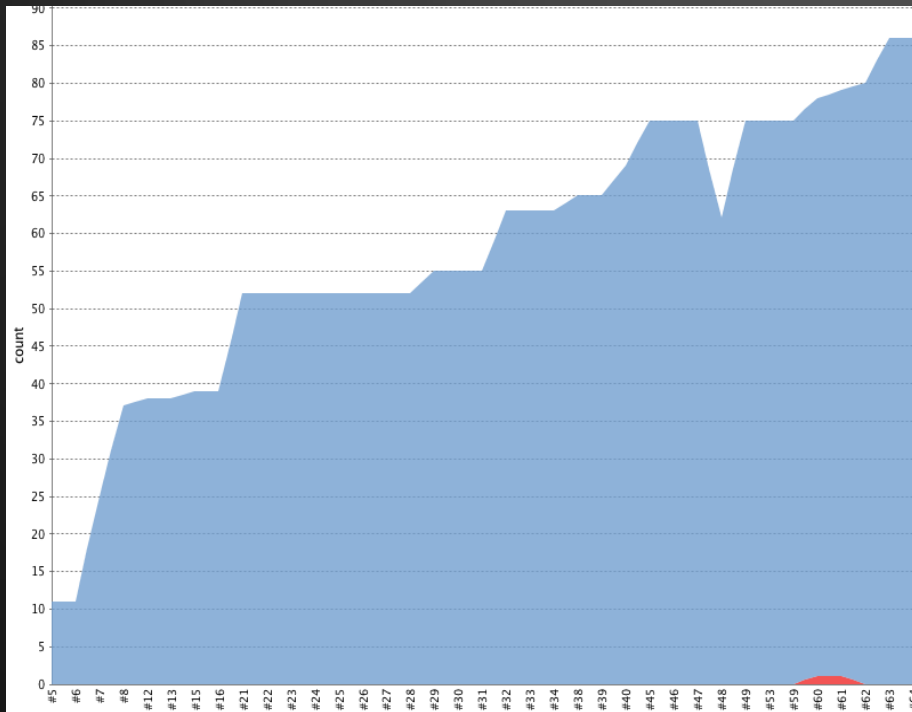
```
-o "${DEPLOYMENT_DIR}/CITest.ipa"
```

Create one more target for static analyzer  
in each of your projects

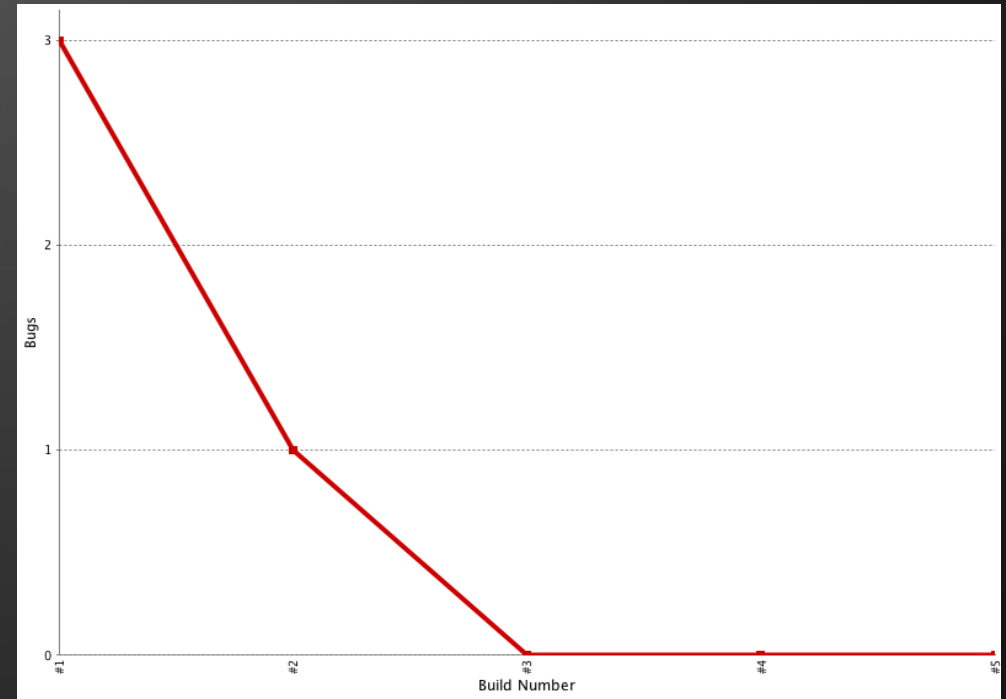


# You'll get

Unit test trend



Clang trend



Oh, One more thing...



Custom iOS frameworks –  
a more native way to  
reuse the code

# A framework is

A special kind of **NSBundle**

A directory with a special structure

A fat universal binary for BOTH the **device** AND the **simulator**

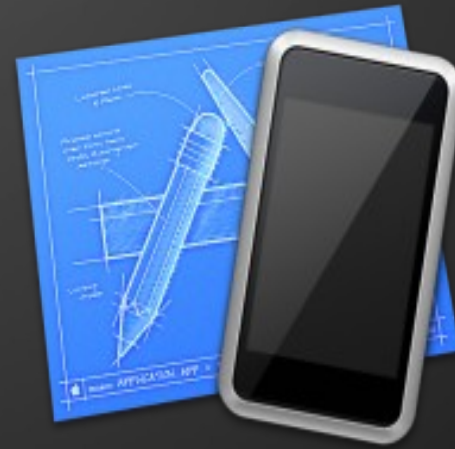
# Framework directory structure

MyFramework.framework

----->	MyFramework	(universal static library)
----->	Headers	(symlink)
----->	Resources	(symlink, optional)
----->	Versions	Actual files should be here
-----		
-----	--->A	(all symlinks lead here)

# Creating a universal binary

`lipo -create`



`-output <OUTPUT_PATH>`

# Thank you for your time

You apply

You receive

Unit tests

Early errors discovery

Automated builds

Reduced project risks

TestFlight deployment

High application quality

# Contacts

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Github page :

<https://github.com/dodikk>

<https://github.com/EmbeddedSources>