

# Building a SQLite Framework in Swift

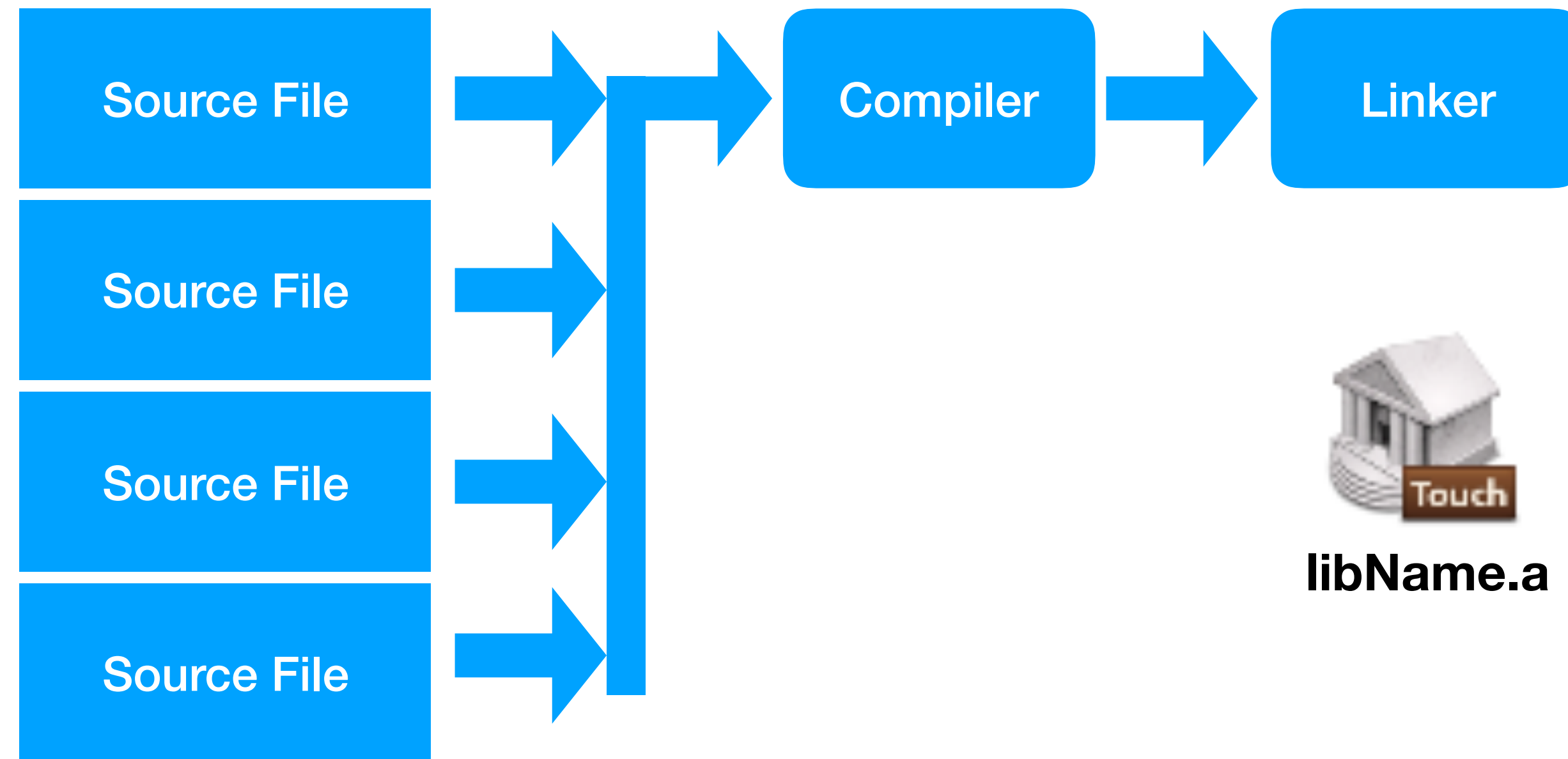
*Chris Woodard, Tampa Bay Cocoaheads*

# Recap

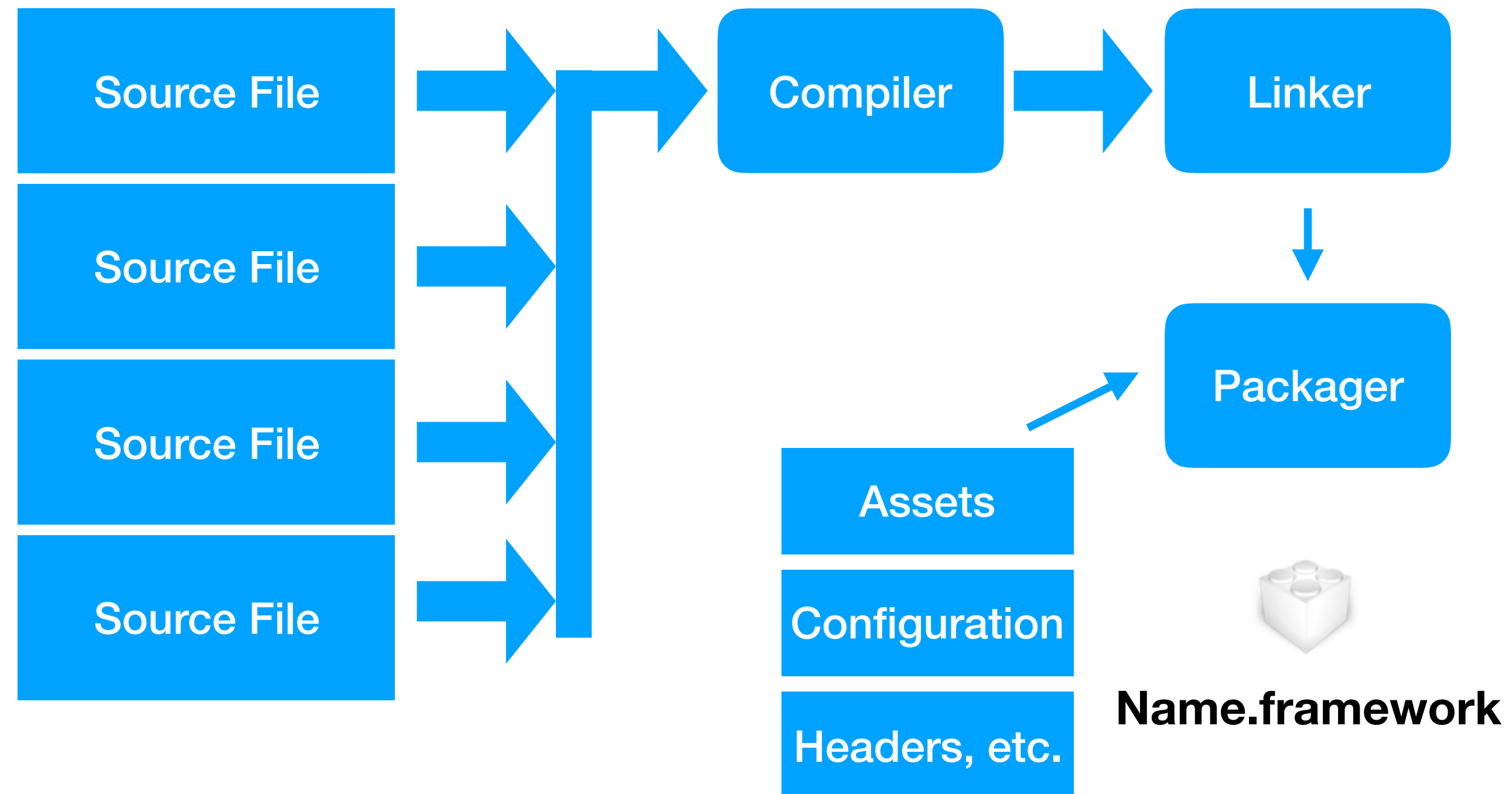
# Reusable Code

- Adding source code directly into your project
  - Updating, naming collisions
- Cocoapods / Alcatraz
  - Needing to update either one; may need to write your own pods
- Building a static library
- Building a framework

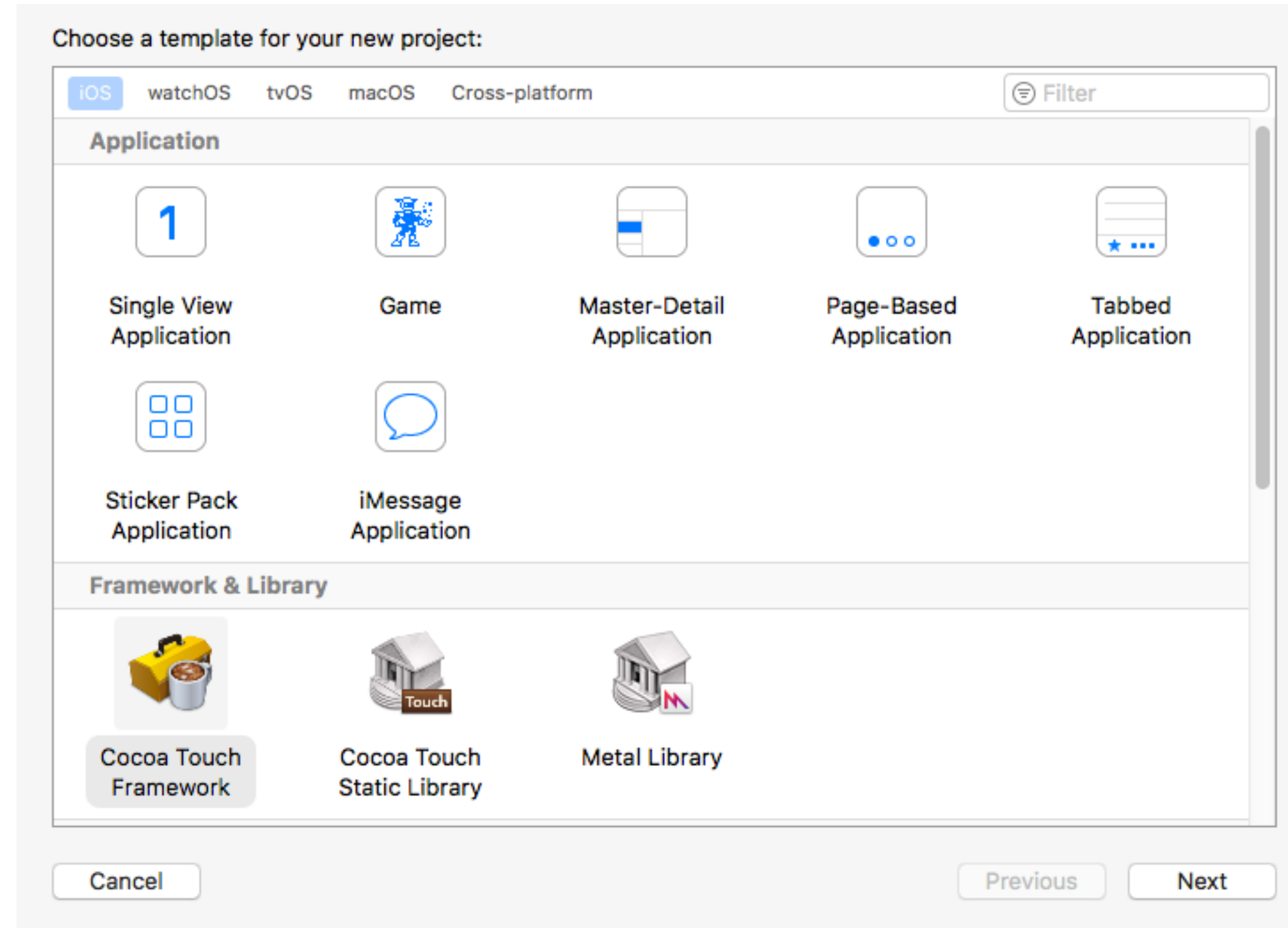
# Static Library



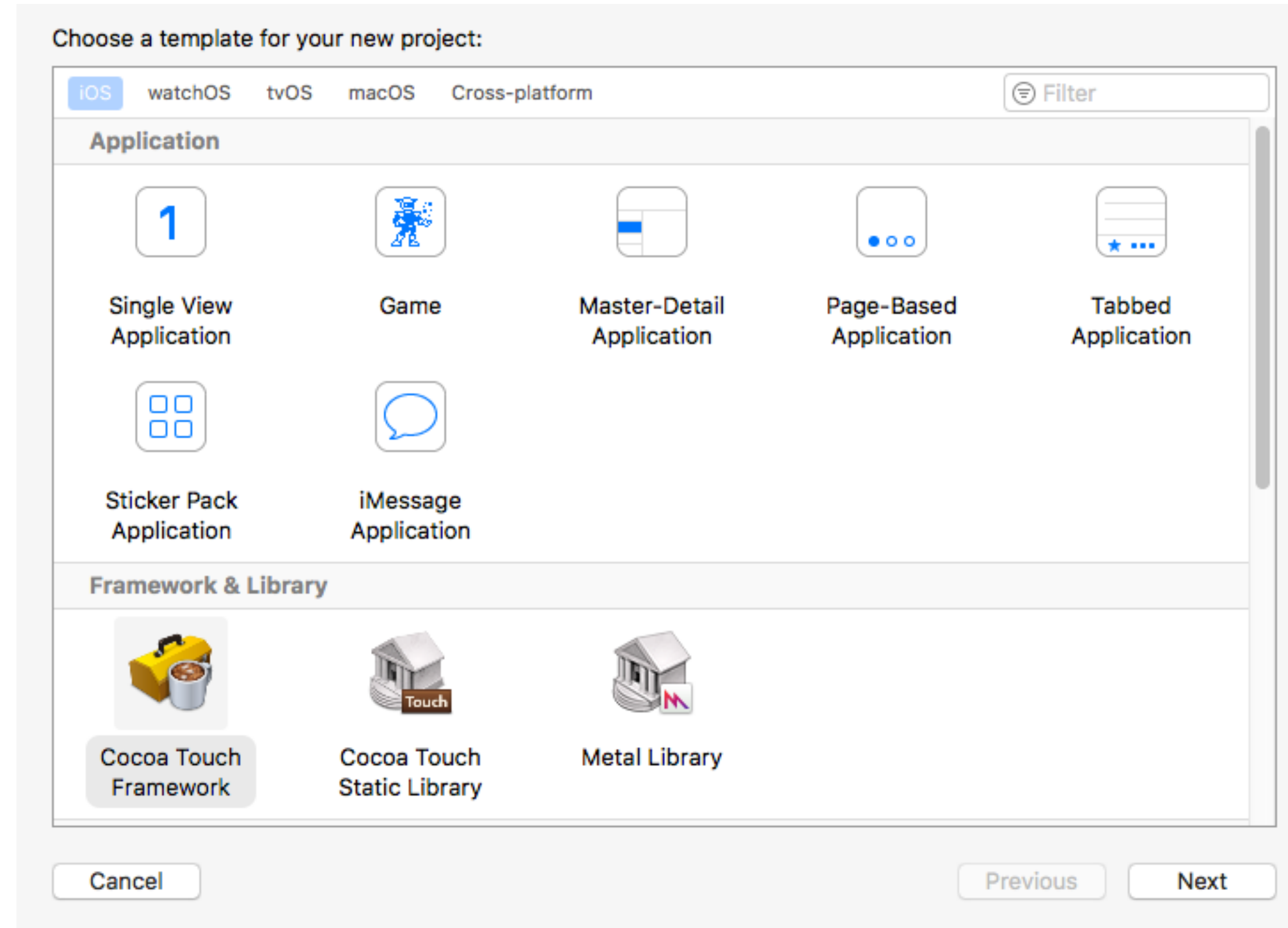
# Framework



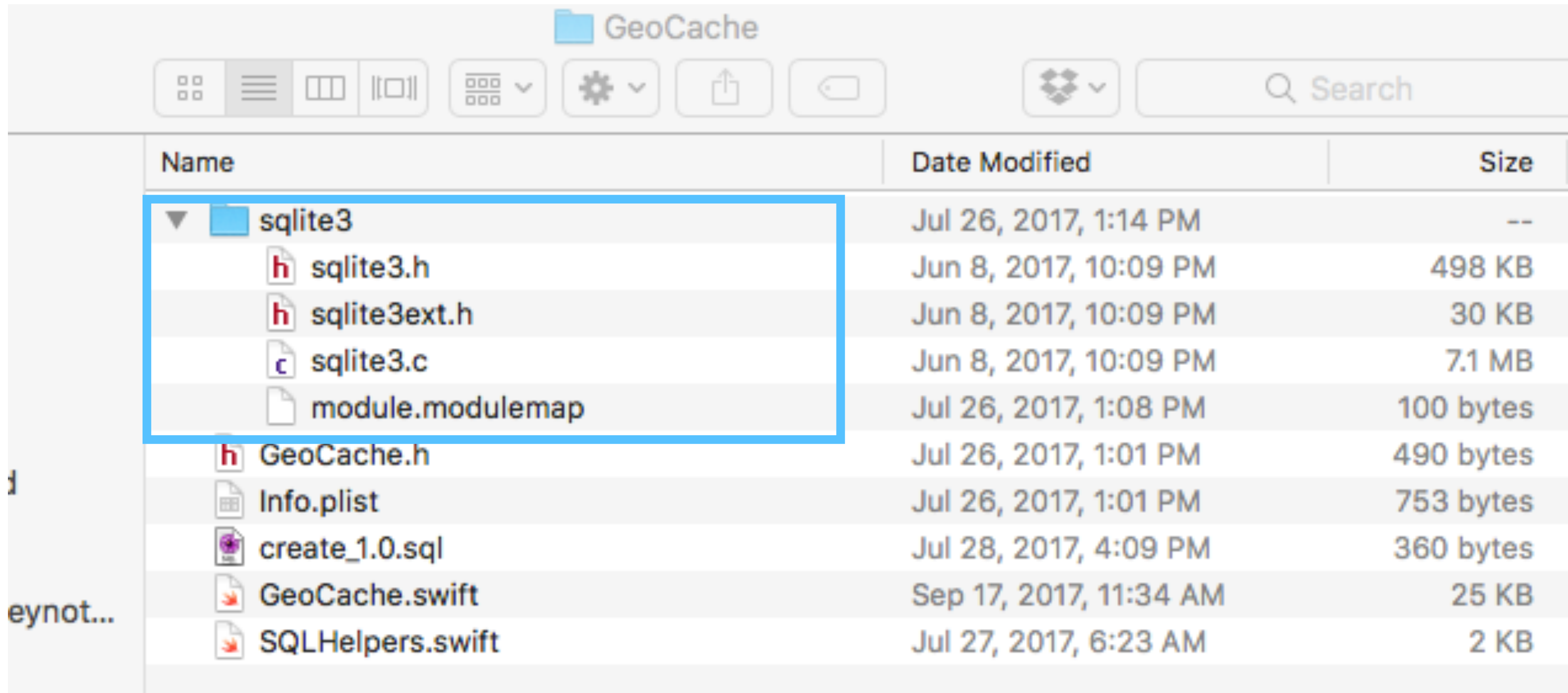
# Framework Mechanics



# Framework Mechanics



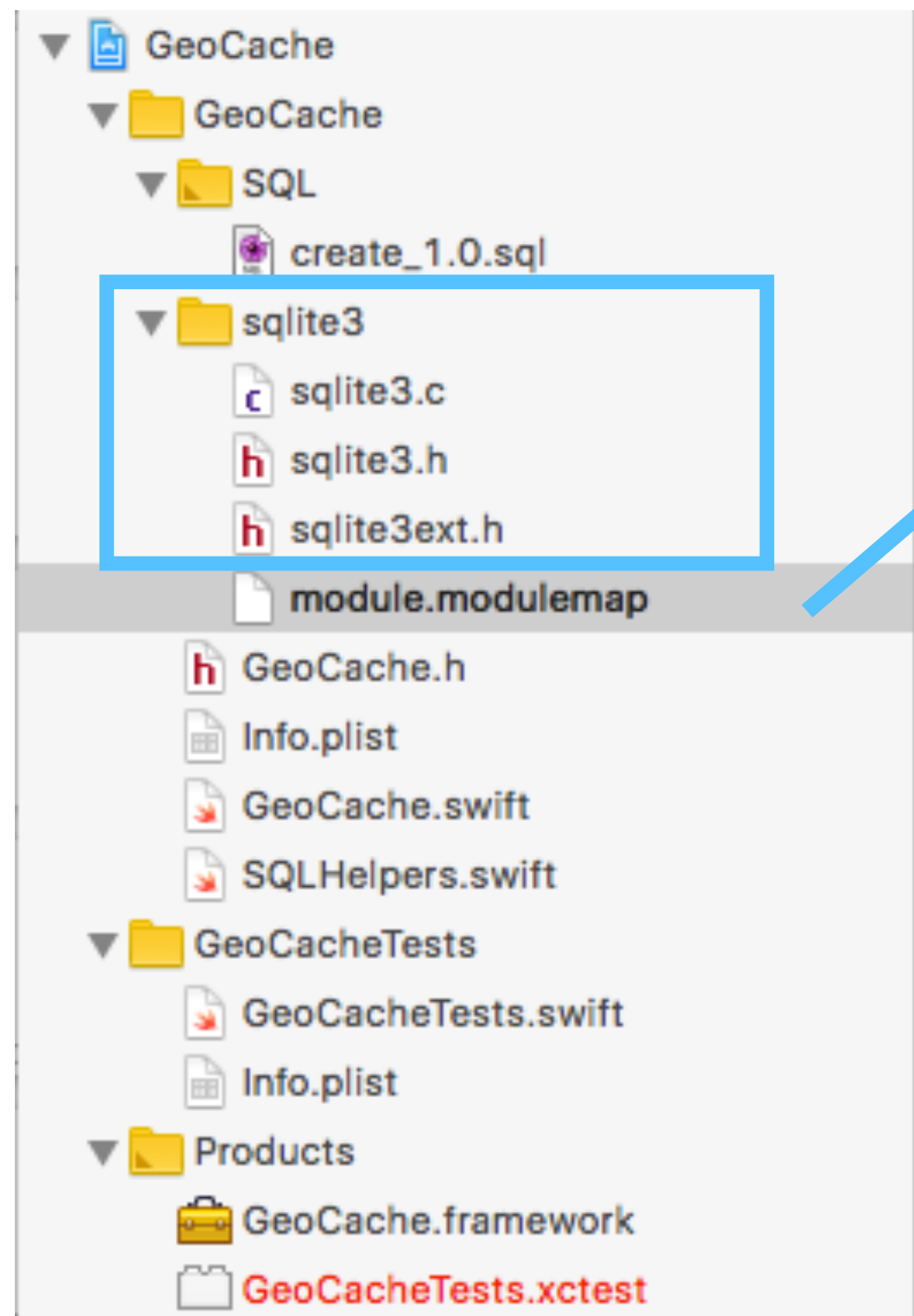
# Using C Source Code



| Name             | Date Modified          | Size      |
|------------------|------------------------|-----------|
| ▼ sqlite3        | Jul 26, 2017, 1:14 PM  | --        |
| h sqlite3.h      | Jun 8, 2017, 10:09 PM  | 498 KB    |
| h sqlite3ext.h   | Jun 8, 2017, 10:09 PM  | 30 KB     |
| c sqlite3.c      | Jun 8, 2017, 10:09 PM  | 7.1 MB    |
| module.modulemap | Jul 26, 2017, 1:08 PM  | 100 bytes |
| h GeoCache.h     | Jul 26, 2017, 1:01 PM  | 490 bytes |
| Info.plist       | Jul 26, 2017, 1:01 PM  | 753 bytes |
| create_1.0.sql   | Jul 28, 2017, 4:09 PM  | 360 bytes |
| GeoCache.swift   | Sep 17, 2017, 11:34 AM | 25 KB     |
| SQLHelpers.swift | Jul 27, 2017, 6:23 AM  | 2 KB      |



# Using C Source Code



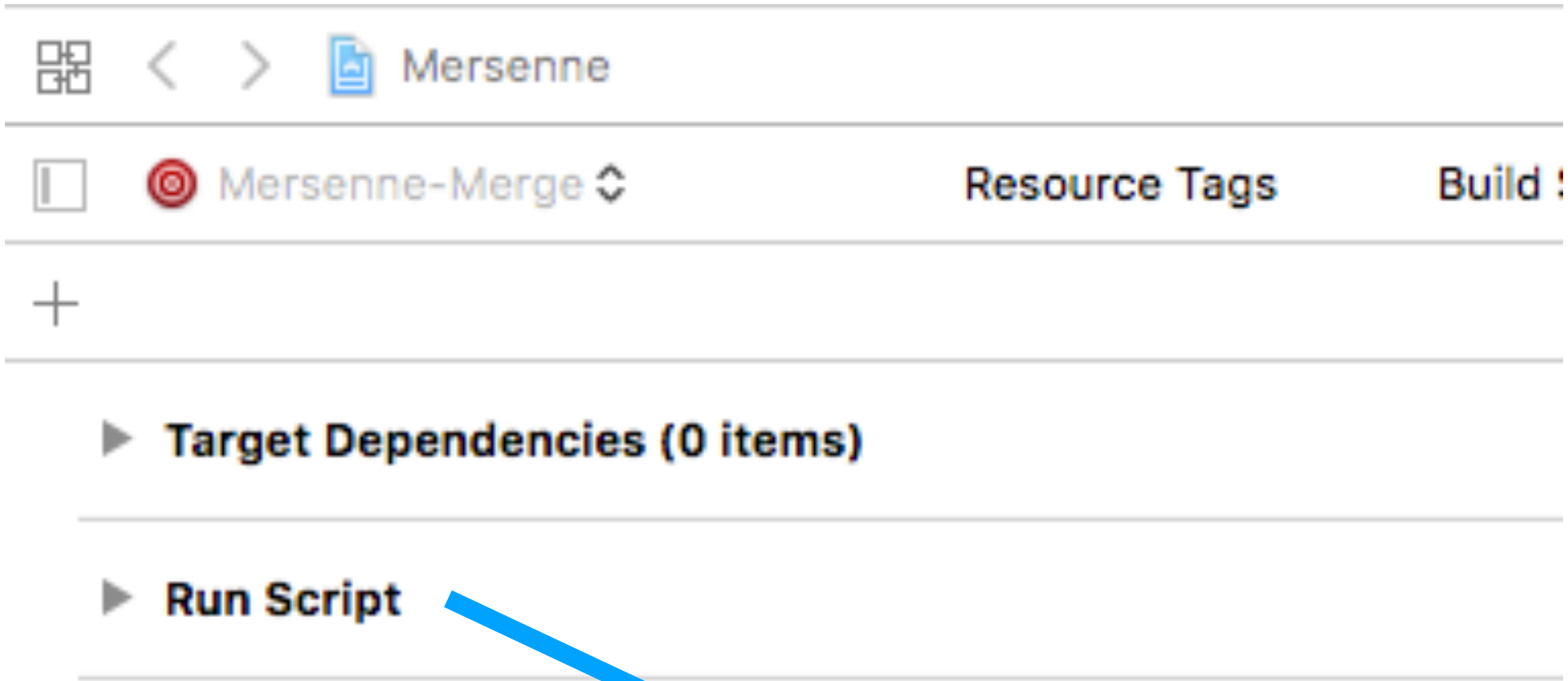
```
1 module sqlite3 [system][extern_c] {  
2     header "sqlite3.h"  
3     header "sqlite3ext.h"  
4     export *  
5 }  
6
```

# Using C Source Code

The screenshot shows the Xcode interface for a project named "GeoCache". The "Build Settings" tab is selected. The left sidebar shows the project structure with "GeoCache" and "GeoCacheTests" targets. The main area displays various build settings for the "GeoCache" target. The "Import Paths" setting under "Swift Compiler - Search Paths" is highlighted with a blue box, showing the path "/Users/chriswoodard/XCode Projects/GeoCache/GeoCache/sqlite3".

| Setting                            | Value  |
|------------------------------------|--|
| Reflection Metadata Level          | All  |
| Swift Compiler - Language          | Swift  |
| Swift Language Version             | Swift 3.2  |
| Swift Compiler - Search Paths      | /Users/chriswoodard/XCode Projects/GeoCache/GeoCache/sqlite3 |
| Swift Compiler - Warnings Policies | No   |
| User-Defined                       | <Multiple values>  |
| MTL_ENABLE_DEBUG_INFO              | YES  |

# Building for Simulator and Device



## # 7

```
# Replace the framework executable within the framework with
# a new version created by merging the device and simulator
# frameworks' executables with lipo.
```

```
lipo -create -output "${HOME}/Desktop/${FRAMEWORK_NAME}.framework/${FRAMEWORK_NAME}" \
"${SRCROOT}/build/Debug-iphonios/${FRAMEWORK_NAME}.framework/${FRAMEWORK_NAME}" \
"${SRCROOT}/build/Debug-iphonesimulator/${FRAMEWORK_NAME}.framework/${FRAMEWORK_NAME}"
```

# Resources

- <https://medium.com/swift-and-ios-writing/using-a-c-library-inside-a-swift-framework-d041d7b701d9>
- <https://www.raywenderlich.com/126365/ios-frameworks-tutorial>
- <http://arsenkin.com/ios-universal-framework.html>