Creating Custom Project Templates in Xcode 4

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Overview

- Not a complete how-to. Sorry.
- The Xcode 4 template system is not-documented so I’m going to share the results of my trials and errors.
- There are plenty of examples in the existing templates.

Why Custom Templates?

- Apply a set of personal build settings.
- Conformance to code layout and code standards.
- Custom project types - such as plugins.

- One less point of friction.

```
15  - (void)applicationDidFinishLaunching:(NSNotification *)aNotification
16  {
17      // Insert code here to initialize your application
18  }
19
20  /**
21      Returns the directory the application uses to store the Core Data store file. This code uses a directory named "
            HelloApp" in the user's Library directory.
22   */
23  - (NSURL *)applicationFilesDirectory {
24
25      NSFileManager *fileManager = [NSFileManager defaultManager];
26      NSURL *libraryURL = [[fileManager URLsForDirectory:NSLibraryDirectory inDomains:NSUserDomainMask] lastObject];
27      return [libraryURL URLByAppendingPathComponent:@"HelloApp"];
28  }
```

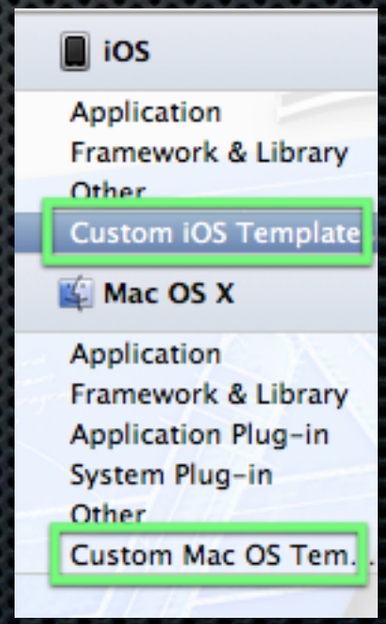
Seriously?!

Standard Locations

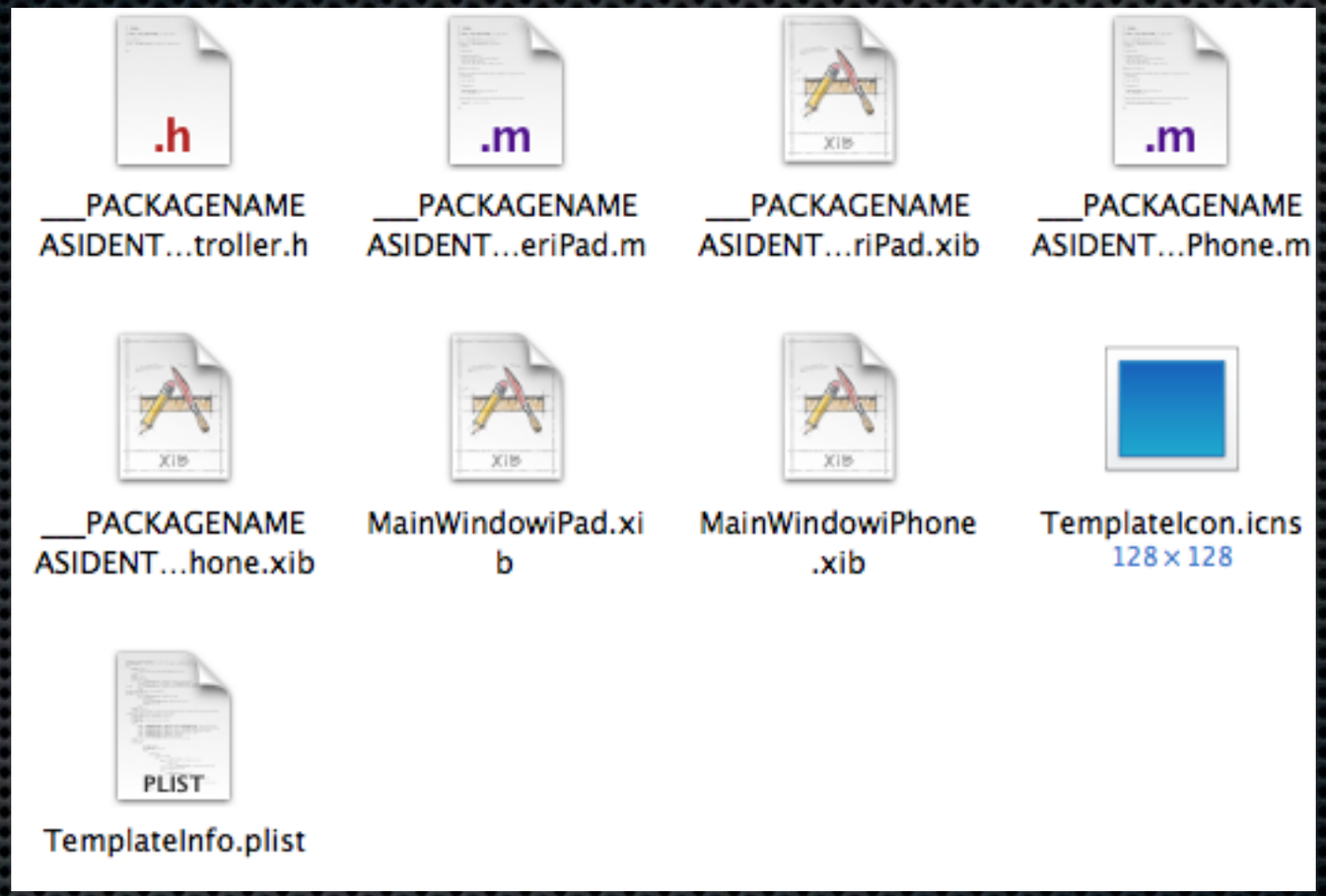
- Mac OS
  - /Developer/Library/Xcode/Templates/Project Templates/
- iOS
  - /Developer/Platforms/iPhoneOS.platform/Developer/Library/Xcode/Templates/Project Templates/
  - **Not** …/Xcode/Project Templates/

Custom Locations

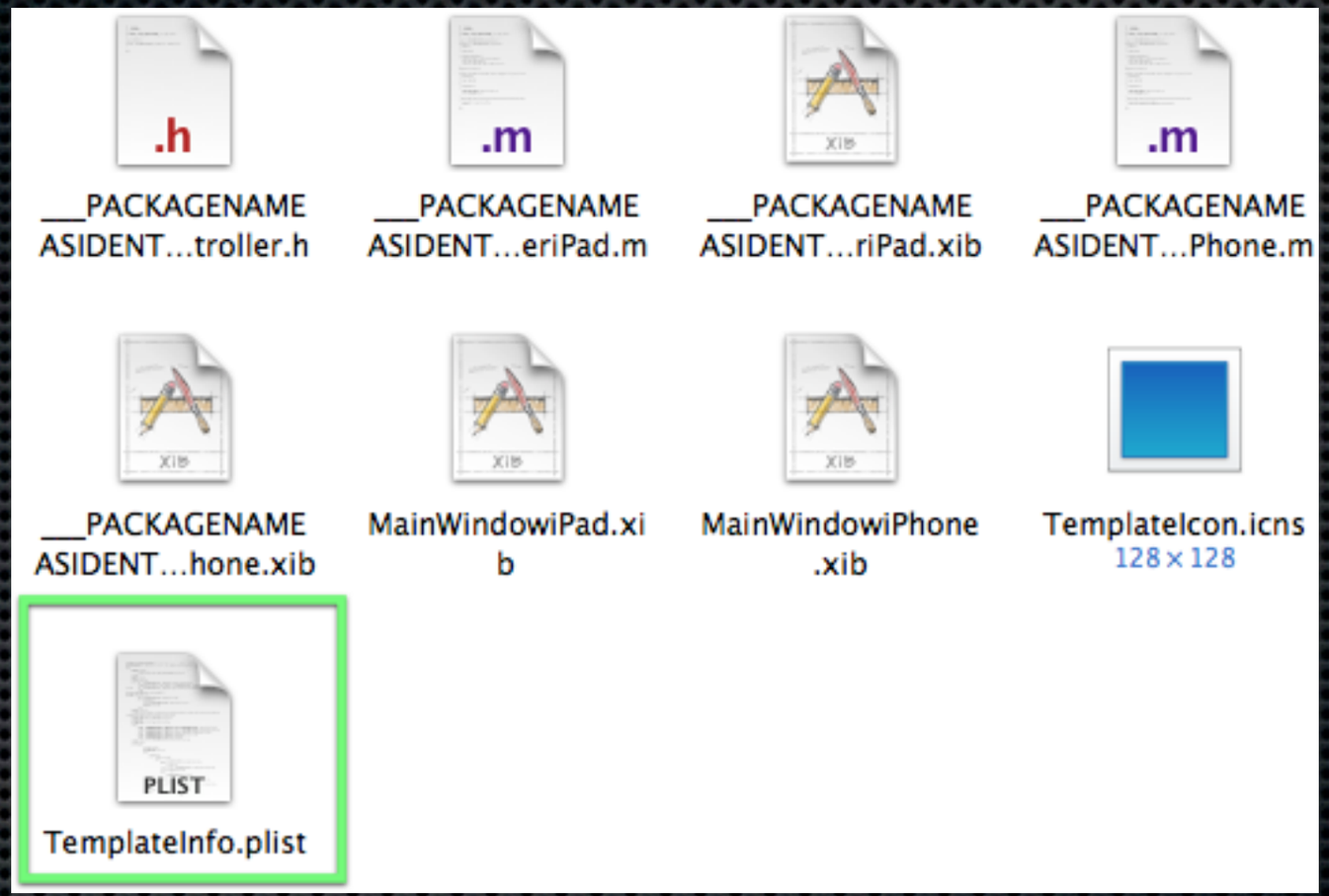
- ~/Library/Developer/Xcode/Templates/<group name>
- Remember to change the Identifier or it won't show up.
- Make sure that Concrete = YES, or it won't show up



Layout


___PACKAGENAME ASIDENT…troller.h
___PACKAGENAME ASIDENT…eriPad.m
___PACKAGENAME ASIDENT…riPad.xib
___PACKAGENAME ASIDENT…Phone.m
___PACKAGENAME ASIDENT…hone.xib
MainWindowiPad.xib
MainWindowiPhone.xib
TemplateIcon.icns
128 × 128
PLIST
TemplateInfo.plist

Layout


___PACKAGENAME ASIDENT…troller.h
___PACKAGENAME ASIDENT…eriPad.m
___PACKAGENAME ASIDENT…riPad.xib
___PACKAGENAME ASIDENT…Phone.m
___PACKAGENAME ASIDENT…hone.xib
MainWindowiPad.xib
MainWindowiPhone.xib
TemplateIcon.icns
128 × 128
PLIST
TemplateInfo.plist

Important Keys

Key	Note
Concrete	Visible in window
Identifier	Reverse domain based unique idenitfier
Ancestors	Inheritance (multiple allowed)
Description	The text displayed in window
Kind	Project or File
Definitions	Text to go in source files
Nodes	Creates files described by Definitons
Options	Extra choices
Platforms	Platform (duh!)
Projects	Build settings
Targets	Build settings/phases. Linked libraries

http://snipt.net/yonishin/about-xcode-4-project-template

Choose a template for your new project:

- iOS
  - Application
  - Framework & Library
  - Other
  - Custom iOS Templates
- Mac OS X
  - Application
  - Framework & Library
  - Application Plug-in
  - System Plug-in
  - Other
  - Custom Mac OS Tem...

Navigation-based Application

OpenGL ES Application

Split View-based Application

Tab Bar Application

Utility Application

View-based Application

Window-based Application

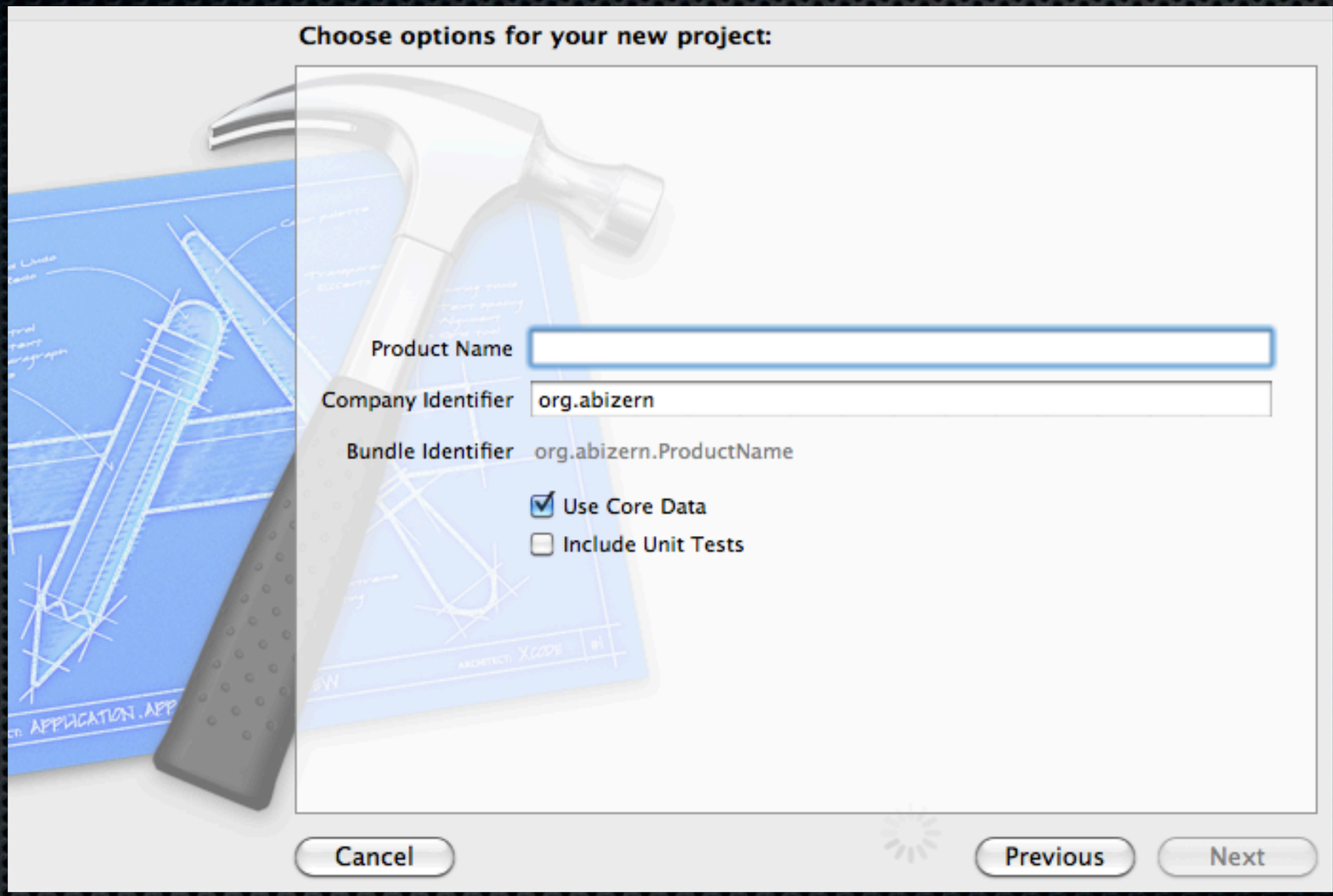
Navigation-based Application

This template provides a starting point for an application that uses a navigation controller. It provides a user interface configured with a navigation controller to display a list of items.

Cancel

Previous

Next


Choose options for your new project:
Product Name
Company Identifier
org.abizern
Bundle Identifier
org.abizern.ProductName
Use Core Data
Include Unit Tests
Cancel
Previous
Next

Definitions

- Text snippets.
- Specific code sections (may be bracketed by ‘Begining’ and ‘End’.
- Names of files to create and their locations.

Nodes

- Creates files for the project
- Specify what code sections or snippets goes into those files
- Specify the location of the files e.g. en.lproj for xibs

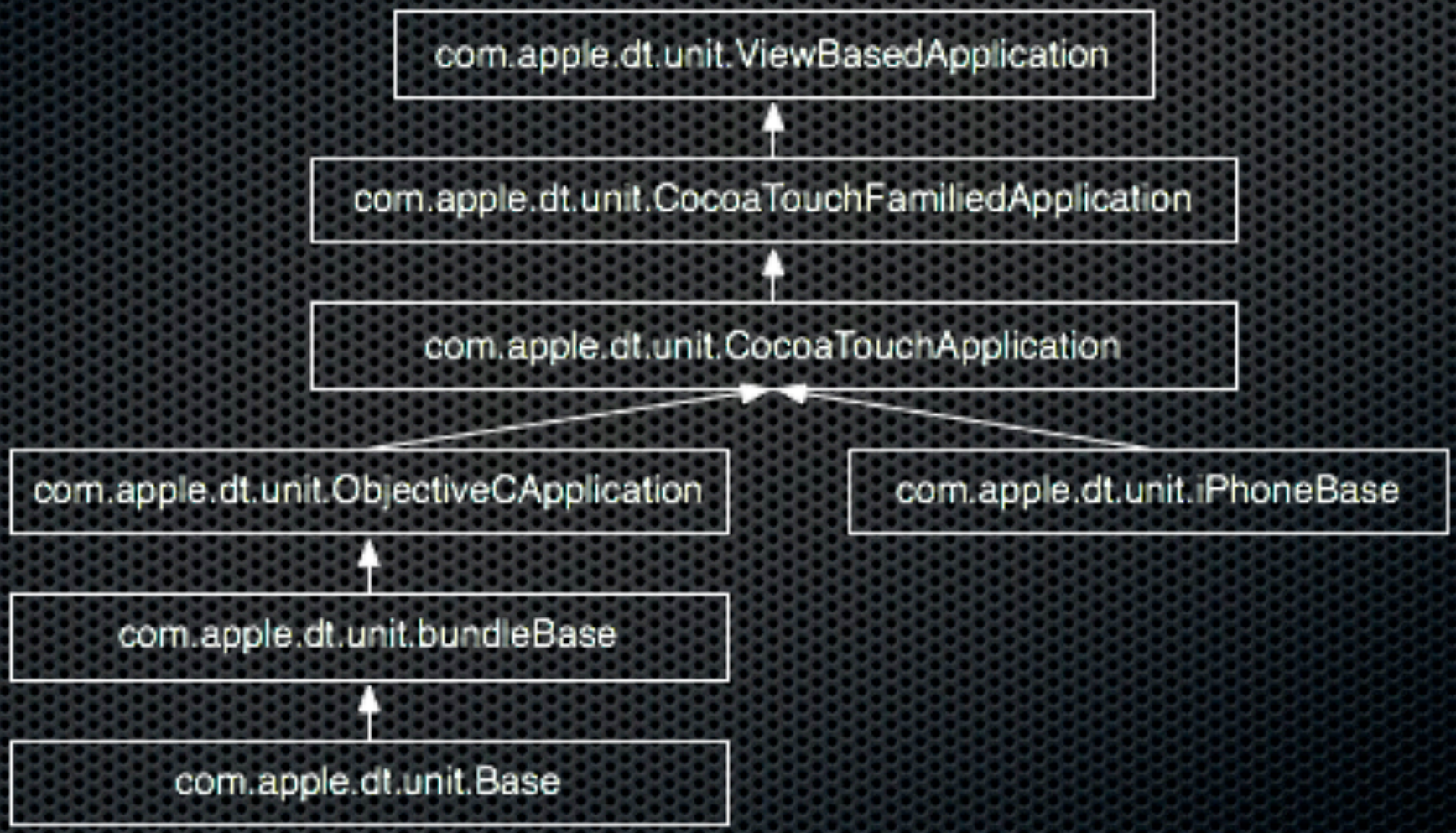
Options

- Allows options to be presented
  - NotPersisted <true/>
- Changes to Definitions and Nodes can be made based on these options

Example

- iOS View based project
- Create it to follow my own preferences
- Run Static Analyser
- Custom pch macros
- Opening braces on the same line

Template Hierarchy



com…unit.bundleBase

TemplateInfo.plist

TemplateInfo.plist 〉 No Selection

Key	Type	Value
▼ Ancestors	Array	(1 item)
Item 0	String	com.apple.dt.unit.base
▼ Definitions	Diction…	(4 items)
▼ ___PACKAGENAME___-Info.plist	Diction…	(6 items)
Beginning	String	<?xml version="1.0" encoding="UTF-8"?>
End	String	</dict>
Group	String	Supporting Files
Indent	Number	1
SubstituteMacros	Boolean	YES
▶ TargetIndices	Array	(0 items)
___PACKAGENAME___-Info.plist:CFBundleIdentifier	String	<key>CFBundleIdentifier</key>
▶ en.lproj/InfoPlist.strings	Diction…	(1 item)
en.lproj/InfoPlist.strings:Instructions	String	/* Localized versions of Info.plist keys */
Identifier	String	com.apple.dt.unit.bundleBase
Kind	String	Xcode.Xcode3.ProjectTemplateUnitKind
▼ Nodes	Array	(3 items)
Item 0	String	___PACKAGENAME___-Info.plist:CFBundleIdentifier
Item 1	String	en.lproj/InfoPlist.strings:Instructions
Item 2	String	___PACKAGENAME___-Prefix.pch
▶ Options	Array	(2 items)
▼ Targets	Array	(1 item)
▼ Item 0	Diction…	(1 item)
▼ SharedSettings	Diction…	(4 items)
RUN_CLANG_STATIC_ANALYZER	String	YES
GCC_PRECOMPILE_PREFIX_HEADER	String	YES
GCC_PREFIX_HEADER	String	___PACKAGENAME___/___PACKAGENAME___-Prefix.pch
INFOPLIST_FILE	String	___PACKAGENAME___/___PACKAGENAME___-Info.plist

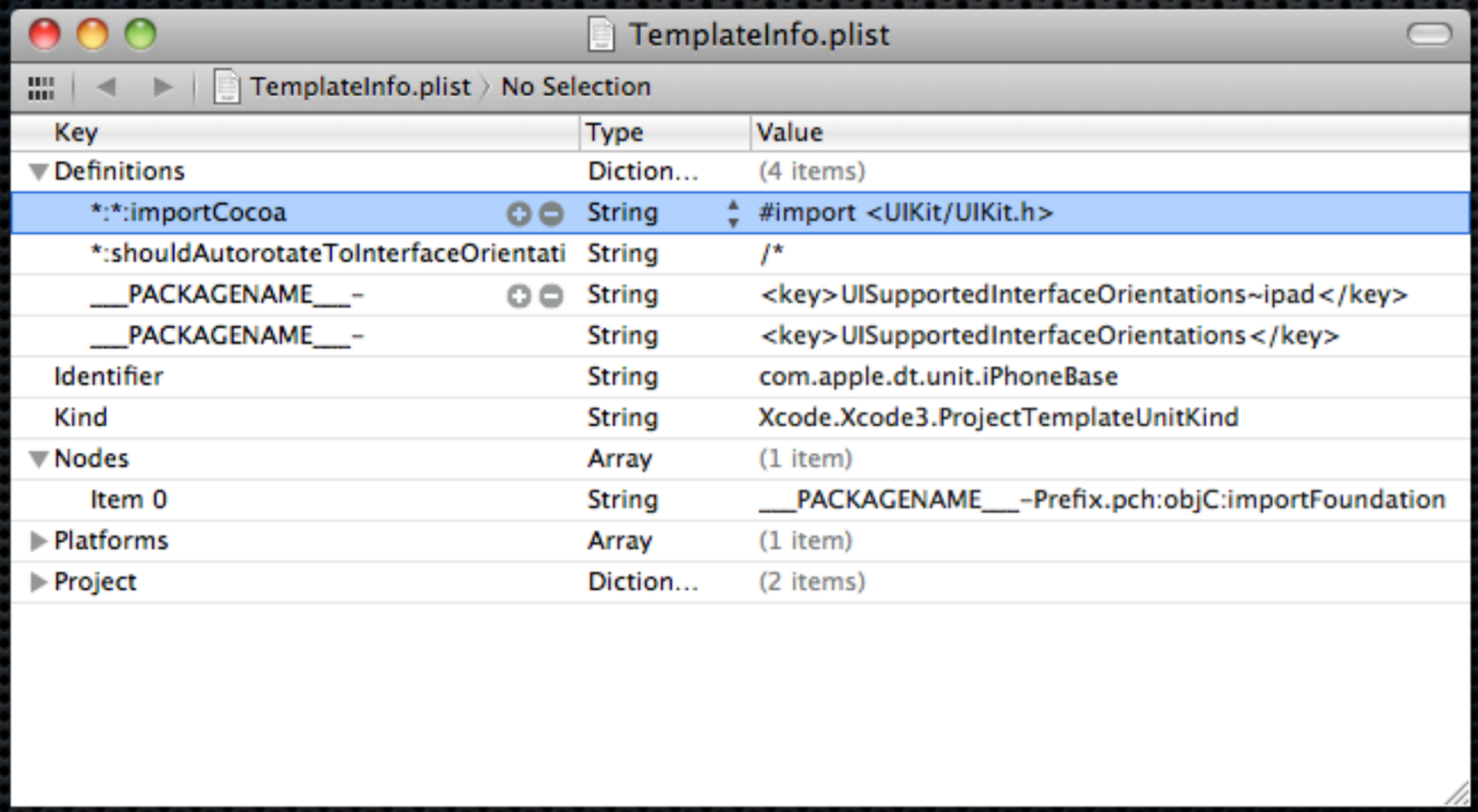
com.apple.dt.unit.Base

TemplateInfo.plist

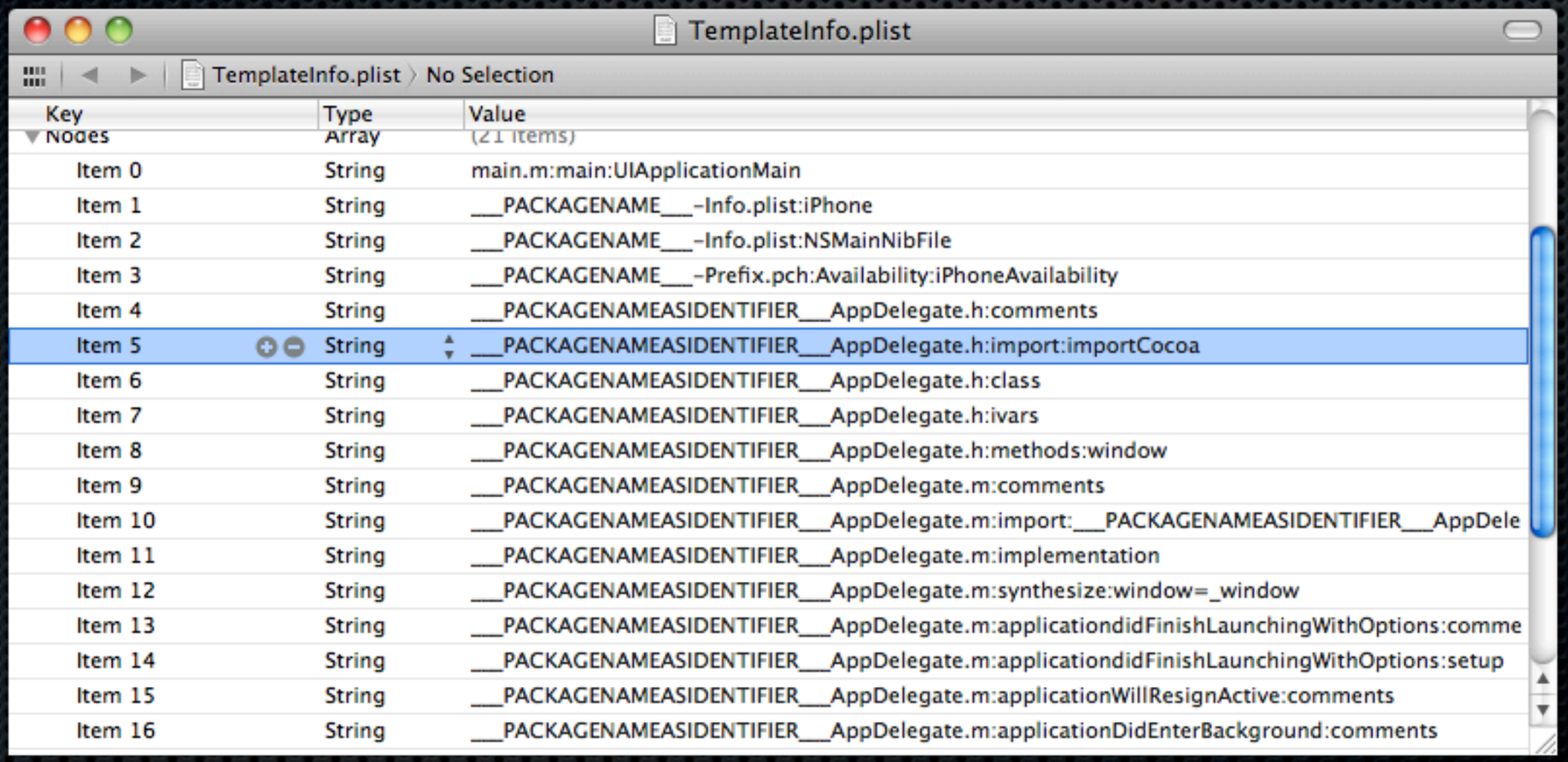
TemplateInfo.plist 〉 No Selection

Key	Type	Value
▼ Definitions	Diction…	(4 items)
*:comments	String	//
:import:	String	#import "___*___"
▼ ___PACKAGENAME___-Prefix.pch	Diction…	(3 items)
Beginning	String	//
Group	String	Supporting Files
▼ TargetIndices	Array	(0 items)
▼ ___PACKAGENAME___-Prefix.pch:objC	Diction…	(3 items)
Beginning	String	#ifdef __OBJC__
End	String	#endif
Indent	Number	1
Identifier	String	com.apple.dt.unit.base
Kind	String	Xcode.Xcode3.ProjectTemplateUnitKind
▶ Options	Array	(1 item)
▶ Project	Diction…	(2 items)
▶ Targets	Array	(1 item)

com…unit.iPhoneBase



…CocoaTouchApplication



…ViewBasedApplication

TemplateInfo.plist

TemplateInfo.plist 〉 No Selection

Key	Type	Value
Concrete	Boolean	YES
▼ Definitions	Diction…	(4 items)
*:macros	String	// Useful Macros.
___PACKAGENAMEASIDENTIFIER___App	String	@property (nonatomic, retain) IBOutlet ___PACKAGENAMEASIDENTIFIER___ViewController *v
___PACKAGENAMEASIDENTIFIER___App	String	
▶ ___PACKAGENAMEASIDENTIFIER___View	Diction…	(2 items)
Description	String	This template provides a starting point for an application that uses a single view. It provide
Identifier	String	com.apple.dt.unit.viewBasedApplication
Kind	String	Xcode.Xcode3.ProjectTemplateUnitKind
▼ Nodes	Array	(9 items)
Item 0	String	___PACKAGENAMEASIDENTIFIER___AppDelegate.h:class:___PACKAGENAMEASIDENTIFIER___
Item 1	String	___PACKAGENAME___-Prefix.pch:macros
Item 2	String	___PACKAGENAMEASIDENTIFIER___AppDelegate.h:methods:viewController
Item 3	String	___PACKAGENAMEASIDENTIFIER___AppDelegate.m:import:___PACKAGENAMEASIDENTIFIER_
Item 4	String	___PACKAGENAMEASIDENTIFIER___AppDelegate.m:synthesize:viewController=_viewContro
Item 5	String	___PACKAGENAMEASIDENTIFIER___AppDelegate.m:dealloc:_viewController
Item 6	String	___PACKAGENAMEASIDENTIFIER___ViewController.h
Item 7	String	___PACKAGENAMEASIDENTIFIER___ViewController.m
Item 8	String	en.lproj/___PACKAGENAMEASIDENTIFIER___ViewController.xib
▶ Options	Array	(1 item)

…CocoaTouchApplication

TemplateInfo.plist

TemplateInfo.plist 〉 No Selection

Key	Type	Value
▼ Definitions	Diction…	(23 items)
*:viewControllerMethods	String	- (void)viewWillAppear:(BOOL)animated
___PACKAGENAME___-Info.plist:iPhone	String	<key>CFBundleDisplayName</key>
___PACKAGENAME___-Info.plist:NSMainNibFile	String	<key>NSMainNibFile</key>
___PACKAGENAME___-Prefix.pch:Availability:iPhoneAvailability	String	#import <Availability.h>
▶ ___PACKAGENAMEASIDENTIFIER___AppDelegate.h	Diction…	(1 item)
▶ ___PACKAGENAMEASIDENTIFIER___AppDelegate.h:ivars	Diction…	(3 items)
___PACKAGENAMEASIDENTIFIER___AppDelegate.h:methods:window	String	@property (nonatomic, retain) IBOutlet UIWindow *window;
▼ ___PACKAGENAMEASIDENTIFIER___AppDelegate.m	Diction…	(1 item)
End	String	@end
▼ ___PACKAGENAMEASIDENTIFIER___AppDelegate.m:applicationDidBecomeActive	Diction…	(3 items)
Beginning	String	- (void)applicationDidBecomeActive:(UIApplication *)application
End	String	}
Indent	Number	1
___PACKAGENAMEASIDENTIFIER___AppDelegate.m:applicationDidBecomeActive:c	String	/*
▼ ___PACKAGENAMEASIDENTIFIER___AppDelegate.m:applicationDidEnterBackgroun	Diction…	(3 items)
Beginning	String	- (void)applicationDidEnterBackground:(UIApplication *)application
End	String	}
Indent	Number	1
___PACKAGENAMEASIDENTIFIER___AppDelegate.m:applicationDidEnterBackgroun	String	/*

There is an easier way

- create your own abstract base class for common options
  - Static Analyser
- Create a subclass of a template and customise everything at a higher level
  - Less re-use but easier.

Other Examples

- http://blog.boreal-kiss.net/2011/03/11/a-minimal-project-template-for-xcode-4/
- https://github.com/cocos2d/cocos2d-iphone/tree/develop/templates/Xcode4_templates
- https://github.com/Abizern/Sandvox-2-PlugIn
- Blog posts/resources to follow

Be Careful

- Back up your templates before you mess with them.
- Xcode starts up with the last template used, so if you have a corrupted plist it'll crash (not that it needs much of an excuse)
- Quicklook is a handy smoke test.
- We all know what "undocumented" means, don't we?
- Start small, but be brave.

Thank you!

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