iPhone App Development

CM420-09-2016-C

Lesson 1

Lecturer

Bryant Tang

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FAQ

- What you have to bring in every class?

  Macbook & your heart **(on time, plz….)**

- What activities in class?

  Topic talk -> coding example -> exercise

- How to get the resource and material?

  Use Git (**https://github.com/bryanttang/iOS-Class-2016-9**)

Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
18	19 • iOS 7 PM	20	21	22 • iOS 7 PM	23	24
25	26 • iOS 7 PM	27	28	29 • iOS 7 PM	30	1 Oct
2	3 • Holiday 9 AM	4	5	6 • iOS 7 PM	7	8
9	10 • Holiday 9 AM	11	12	13 • iOS 7 PM	14	15
16	17 • iOS 7 PM	18	19	20 • iOS 7 PM	21	22
23	24 • iOS 7 PM	25	26	27 • iOS 7 PM	28	29

Schedule

Class-1 **19/09**	• Introduction • Xcode • Your first Project
Class-2 **22/09**	• Objective-C • Storyboard • Control an UI
Class-3 **26/09**	• UIView, UIViewController • Gesture • Animation
Class-4 **29/09**	• UI Constraint • Picker View
03/10	**Holiday**
Class-5 **6/10**	• UITableViewController • Custom Cell

Schedule

10/10	**Holiday**
Class-6 **13/10**	• Navigation Controller • Tab bar Controller
Class-7 **17/10**	• MapKit • Third Party Resource • Core Location • AlertView
Class-8 **20/10**	• Network Data (JSON, Image)* • Concurrent Programming • Plist
Class-9 **24/10**	• NSTimer • AVAudioPlayer • Swift
Class-10 **27/10**	• Distribute your app • Final exam and Demo

Grade

How to get the Certificate?

Attendence

80% attendence

+

Final Grade

In-class performance (10%)
Final Project (40%)
Final Exam (50%)

Summary

- Develop in iOS
- Development environment
- Objective-c Part 1

Benefits of iOS development

- Devices amount are limited
- Friendly development environment
- Simple app distribution channel
- Review process acts as a quality guard
- The OS is designed to work very great in mobile.

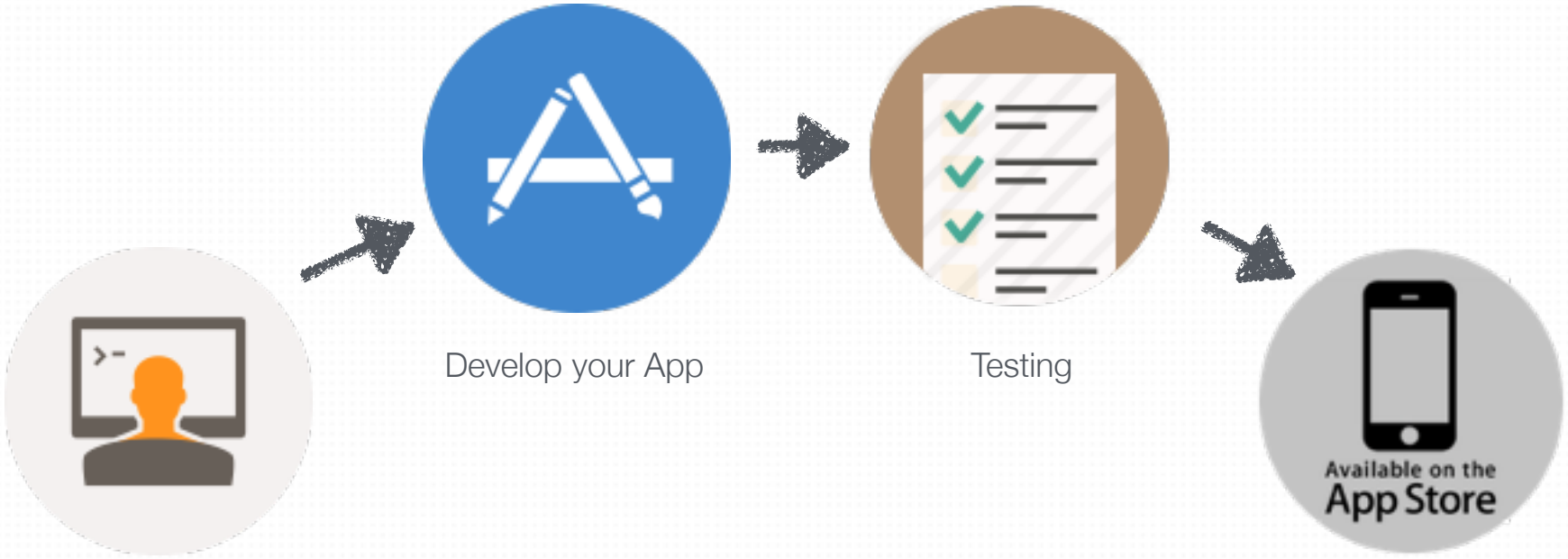
Weakness of iOS development

- Long waiting time for first submit
- Reviewing process take time
- More constrain(secure) for developing apps than other platform (Android)

We are going to learn…

- How to code by using Objective-C
- How to user storyboard to build an app
- How to use different user interface components in iOS.
- How to build apps and submit to App Store.

How do I have a app?



Become a developer

Develop your App

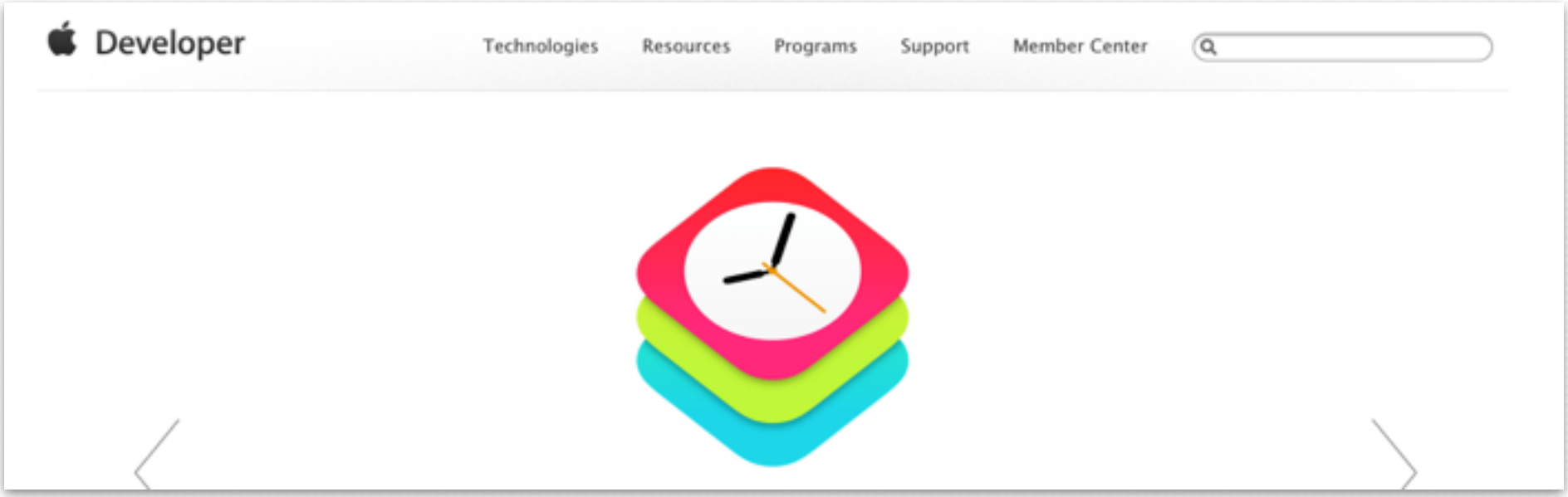
Testing

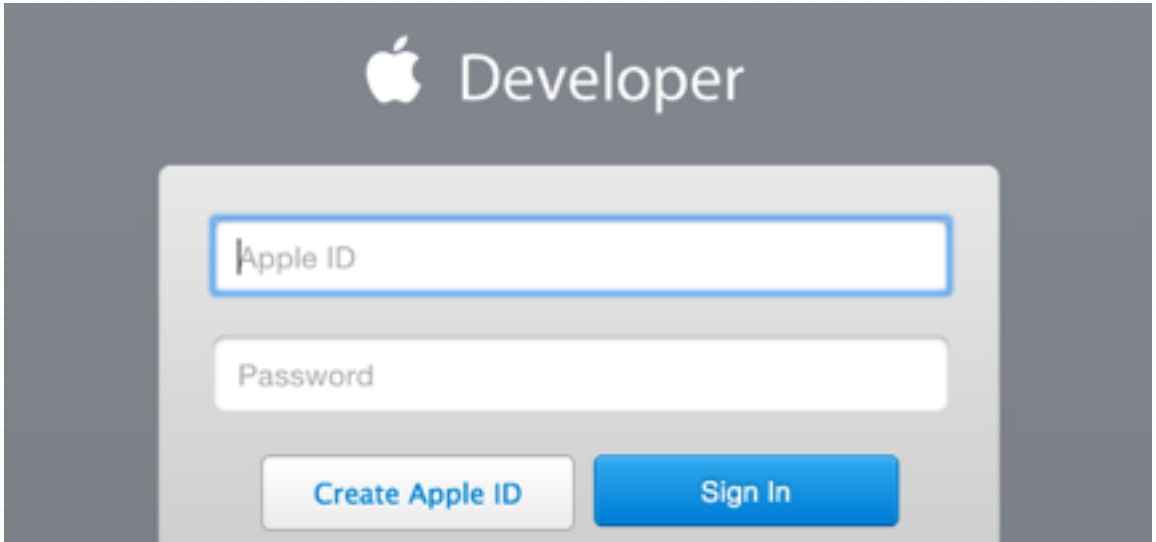
Submit to app store

Easy to become a iOS Developer

- Sign in an Apple account
- Enroll a program

Sign in Member Center





Become an iOS Developer

http://developers.apple.com

iOS

iOS Developer Program
Individual
$99 / Year

For an individual developer who will be creating free and commercial iOS apps for distribution on the App Store.

iOS Developer Program
Company
$99 / Year

For a company with a development team who will be creating free and commercial iOS apps for distribution on the App Store.

iOS Developer Enterprise Program
$299 / Year

For a company who will be creating proprietary, in-house iOS apps.

Note: A Dun & Bradstreet Number is required.

iOS Developer University Program
Free

For higher education institutions looking to introduce iOS development into their curriculum.

iOS Platform

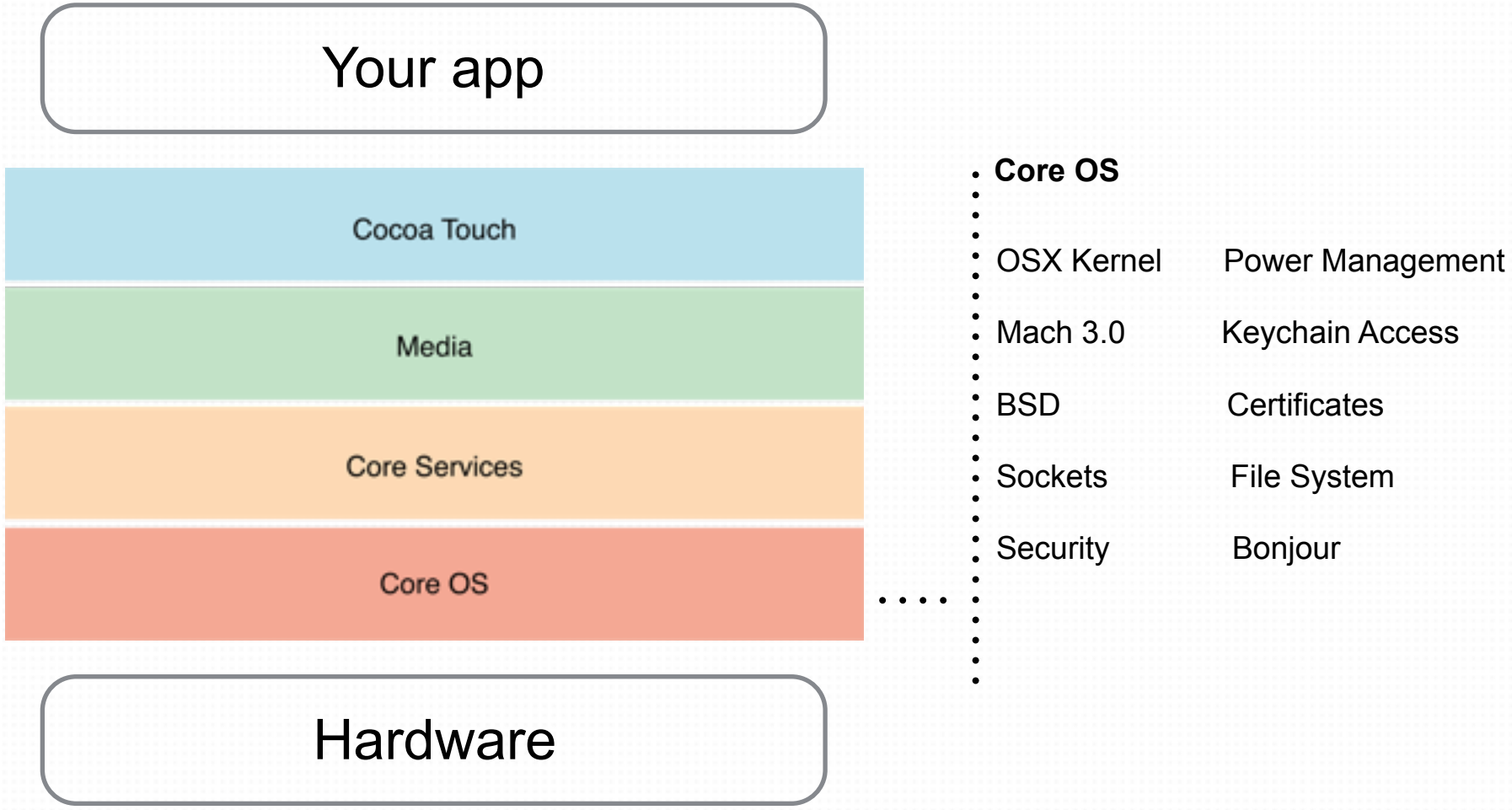
iOS Version

Version	**iPhone OS 2**	**iPhone OS 3**	**iOS 4**	**iOS 5**	**iOS 6**	**iOS 7**
Codename	Big Bear	Kirkwood	Apex	Telluride	Sundance	Innsbruck
New APIs	n/a	1000	1500	1500	n/a	1500
New Features	n/a	100	100	200	200	n/a
Tentpoles	4	12	7	10	10	10
	Enterprise enhancements	In app purchase	Multitasking	Notification Center	Apple maps	Control Center
	Microsoft Exchange	Peer-to-peer connectivity	Folders	Newsstand	Siri enhancements	Notification Center enhancements
	iPhone SDK	Accessories access	Mail enhancements	Reminders	Facebook integration	Multitasking enhancements
	App Store	Embedded Maps	iBooks for iPhone	Twitter integration	Shared Photo Streams	Camera enhancements
		Push notifications (redux)	Enterprise enhancements	Camera enhancements	Passbook	Photos enhancements
		Cut, copy, and paste	Game Center	Photo enhancements	FaceTime over cellular	Airdrop
		Landscape	iAd	Safari enhancements	Phone enhancements	Safari enhancements
		MMS		PC free	Mail enhancements	iTunes Radio
		Voice Memos		Game Center	Safari enhancements	Siri enhancements
		Calendar enhancements		iMessage	Accessibility enhancements	iOS in the Car
		Stocks enhancements		(iCloud)	(Chinese enhancements)	
		Spotlight search				
Additional Features	Contact search	Voice Control	FaceTime	Siri	Panoramas	n/a
	Quick look enhancements	Video Recording	720p	1080p		
	Mail enhancements					
	Scientific calculator					
	Parental controls					
	Languages					
	MobileMe					
	3G + GPS					

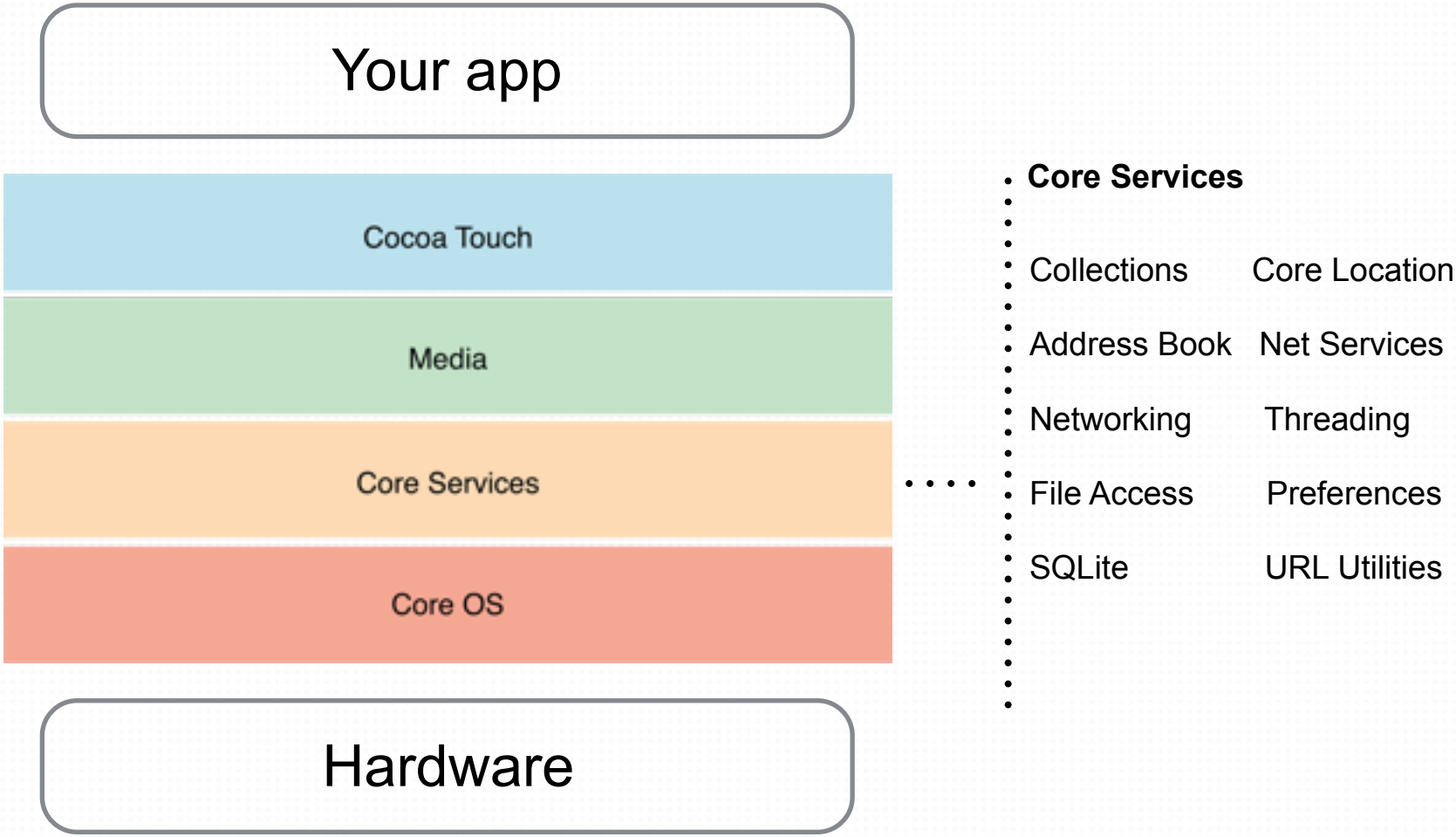
iMore

What's breakthrough in iOS 8

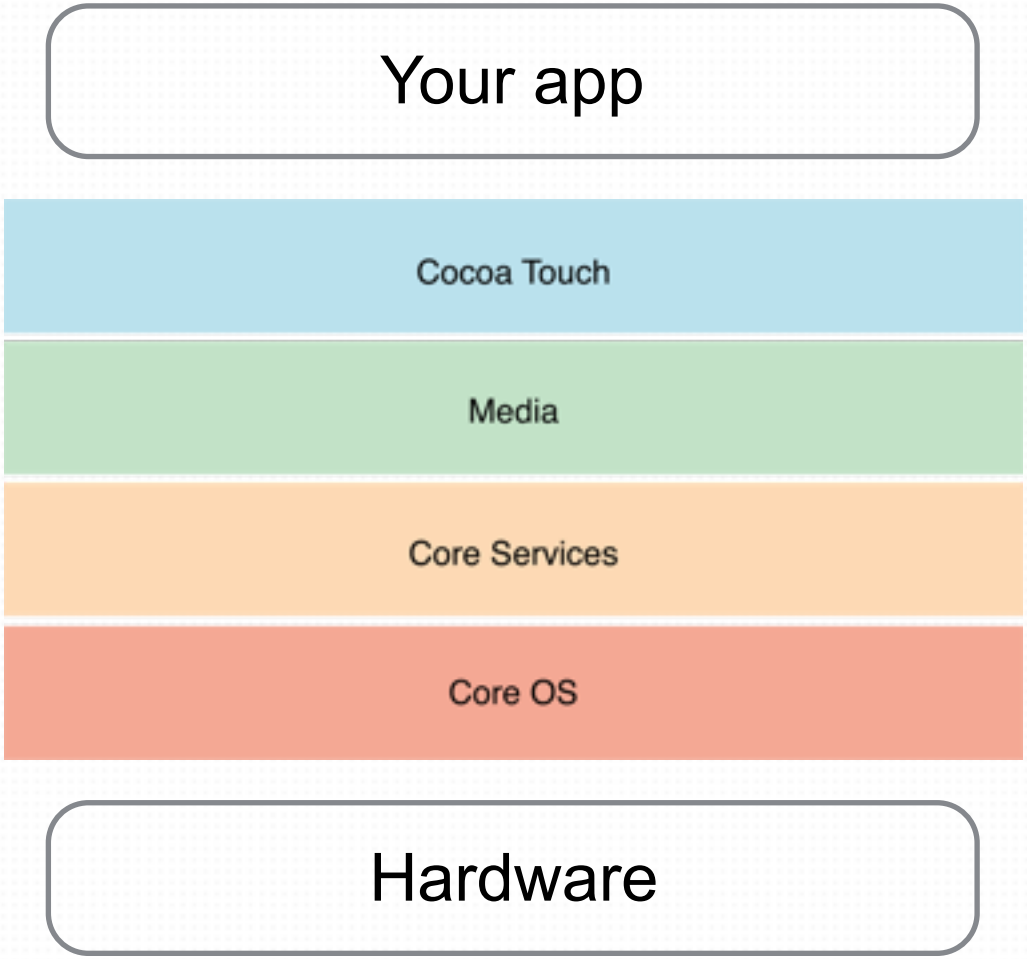
iOS Architecture



iOS Architecture



iOS Architecture



Media

Core Audio JPEG, PNG,TIFF

OpenAL PDF

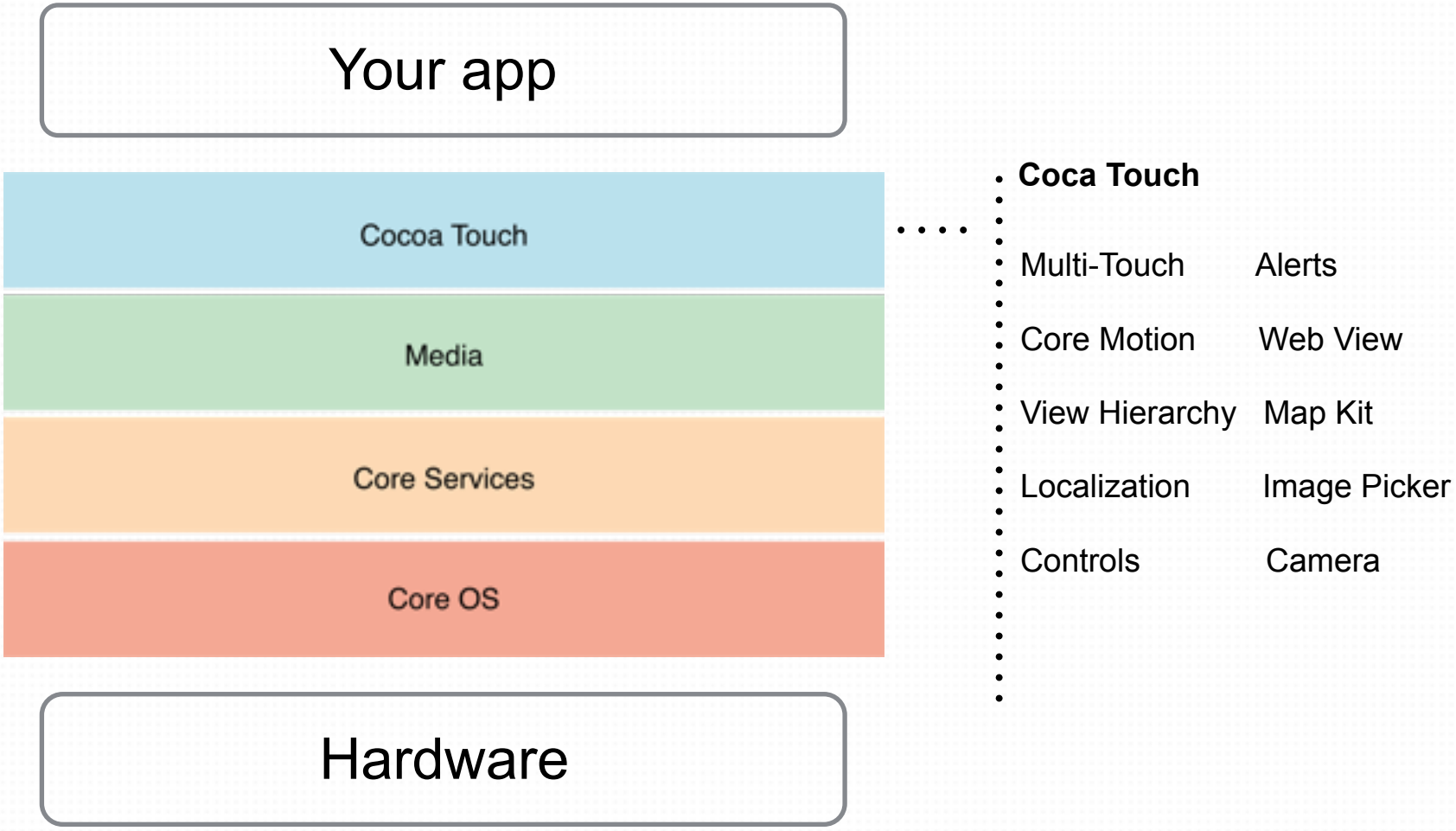
Audio Mixing Quartz(2D)

Audio Recording Core Animation

Video Playback OpenGL ES

Airplay

iOS Architecture



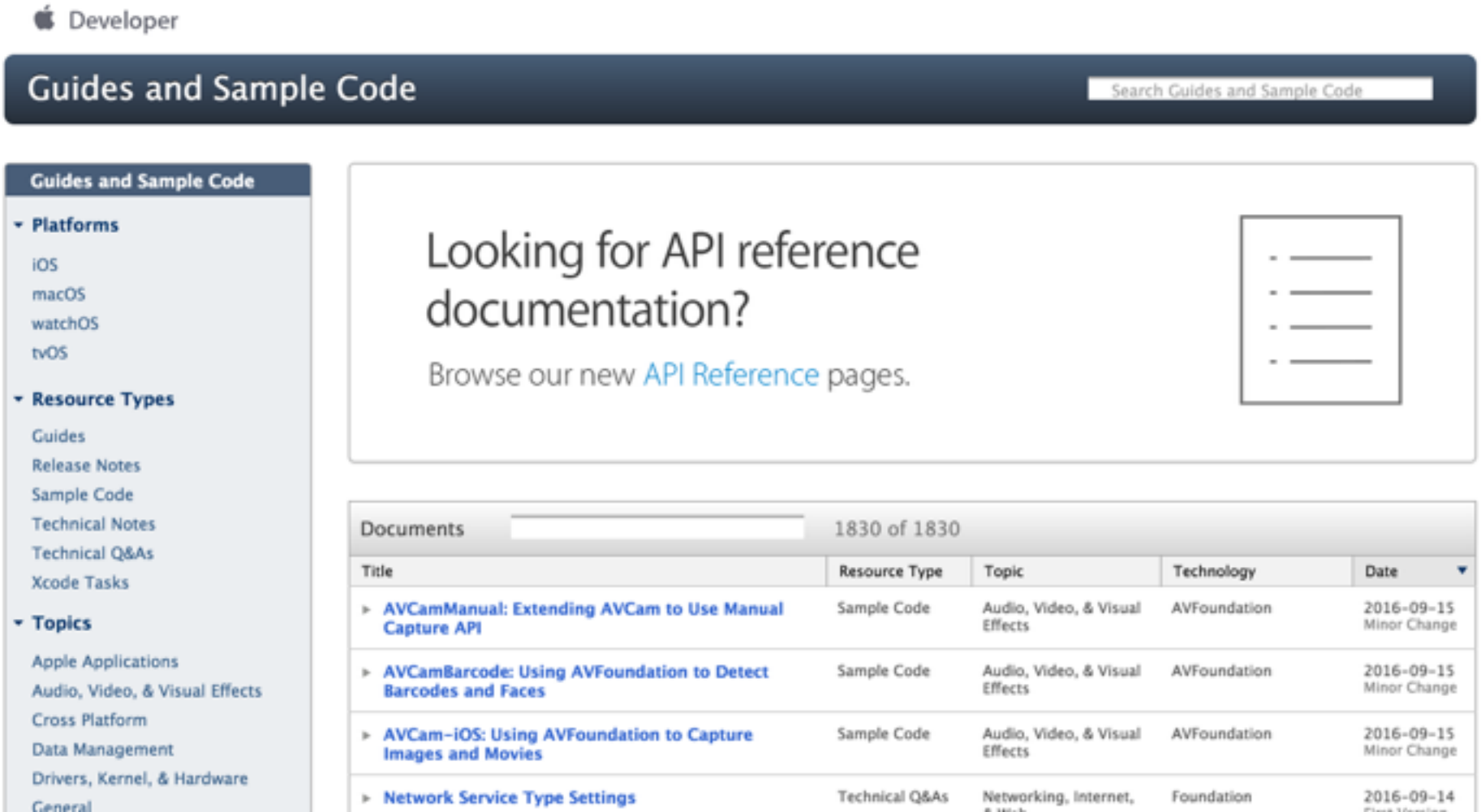
Development resource

Hello, WWDC16.

https://developer.apple.com/videos/wwdc2016/

iOS developer Library

https://developer.apple.com/library/ios/navigation/



Learning on iTunes

iTunes U > Stanford

Subscribe

Stanford
Category: Computer Science
Language: English
Published 18 Apr, 2016
When viewed using the iTunes U app for iOS, this course may also include enhanced materials such as instructor notes and assignments.

Developing iOS 9 Apps with Swift

Paul Hegarty

Details | Ratings and Reviews | Related

Description

Updated for iOS 9 and Swift. Tools and APIs required to build applications for the iPhone and iPad platforms using the iOS SDK. User interface design for mobile devices and unique user interactions using multi-touch technologies. Object-oriented design using model-view-controller paradigm, memory management, Swift programming language. Other topics include: animation, mobile device power management, multi-threading, networking and performance considerations.

more

Course Outline

I. Introduction to iOS, Xcode 7, and Swift
II. Using MVC in iOS
III. Swift and the Foundation Framework
IV. Views and Gestures
V. Core Data

more

▲	NAME	TIME	RELEASED	DESCRIPTION	POPULARITY	PRICE
1	1. Course Overview and Int...	1 hr 17 min		Paul Hegarty pr...		Get
2	Lecture 1 Slides					Get
3	Reading 1: Intro to Swift					Get
4	2. Applying MVC	1 hr 21 min		Paul Hegarty ex...		Get

Getting Your Hand Dirty

Development Environment

- **OS X v10.11.6**
- Download:

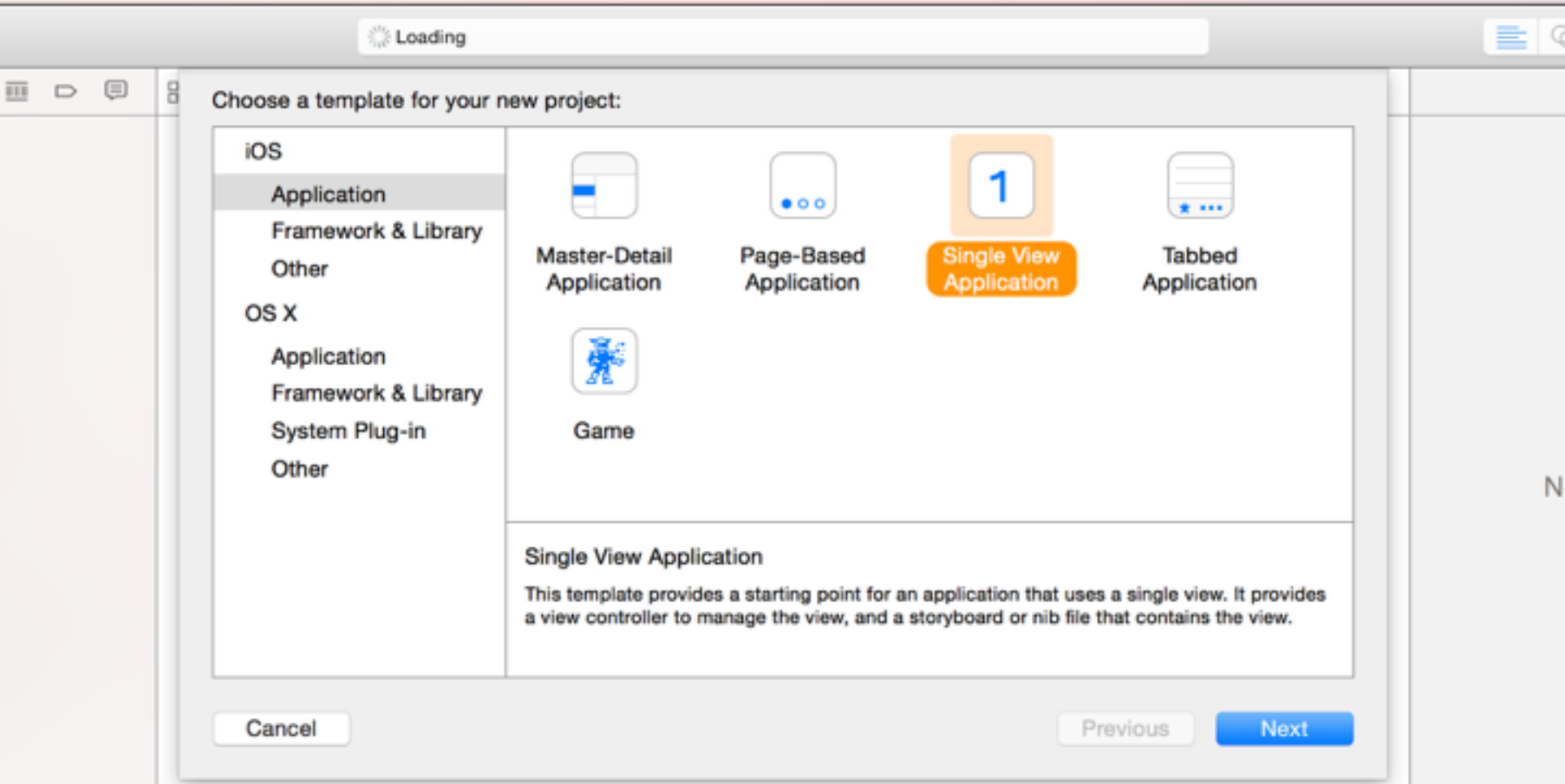
  https://developer.apple.com/xcode/downloads/

Xcode 7.3.1 or 8.0

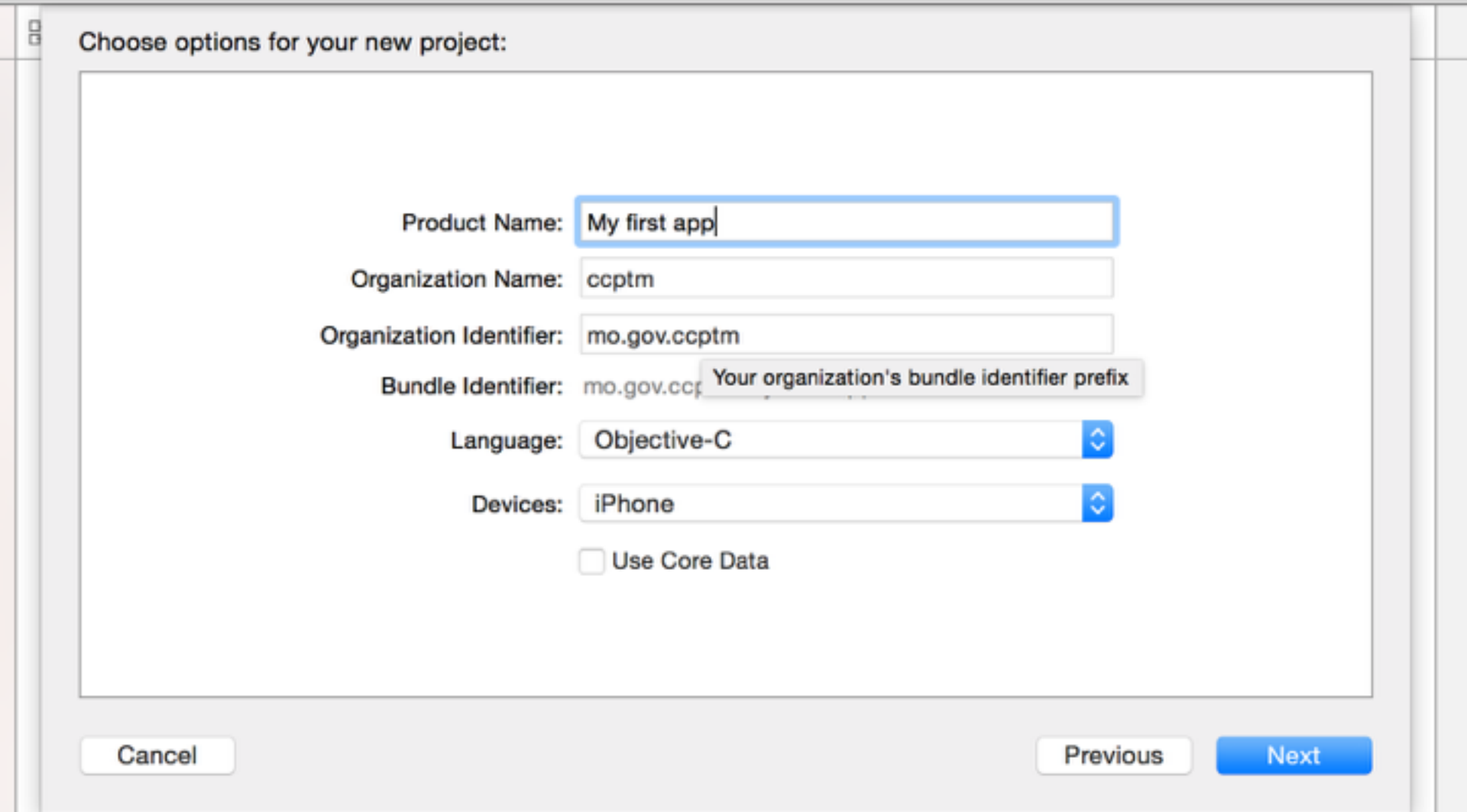
Open your first project

Open a new project

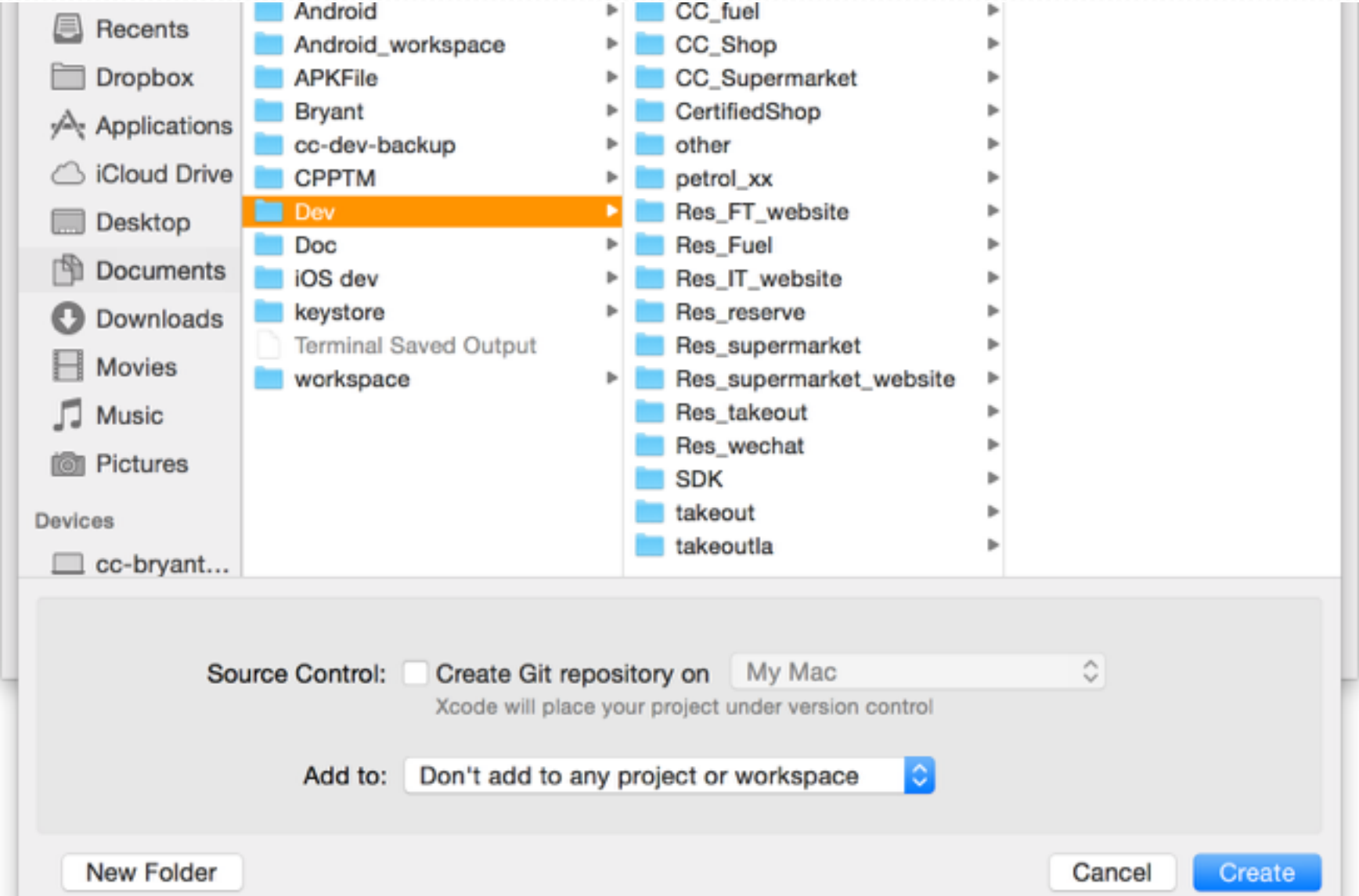
File -> New -> Project



App name & Information

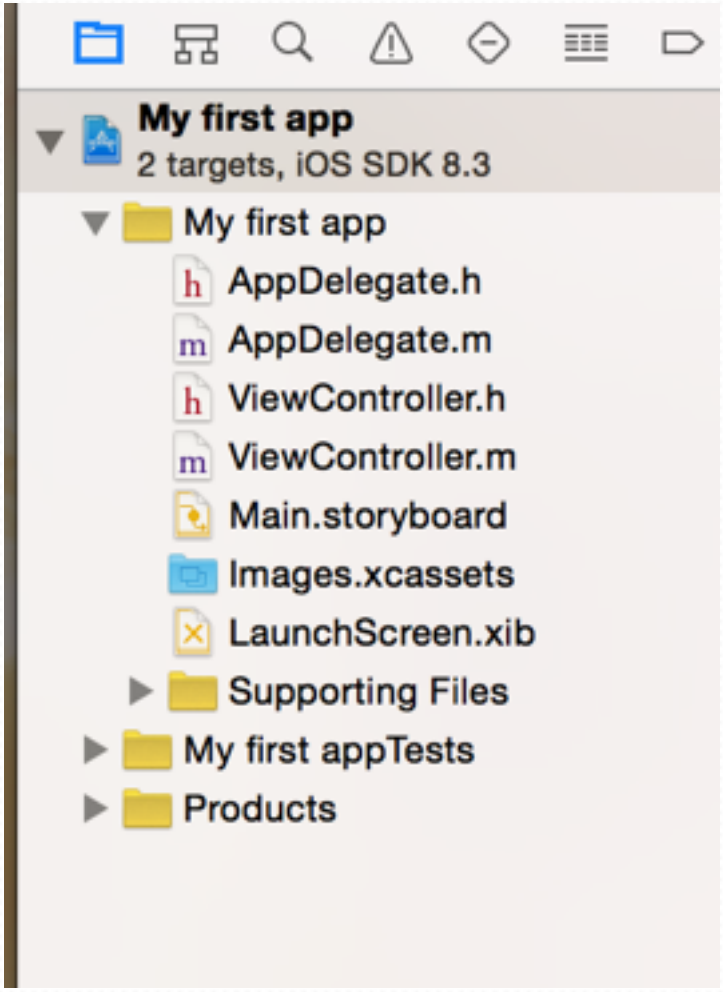


Save to . . .


Recents
Dropbox
Applications
iCloud Drive
Desktop
Documents
Downloads
Movies
Music
Pictures
Devices
cc-bryant...
Android
Android_workspace
APKFile
Bryant
cc-dev-backup
CPPTM
Dev
Doc
iOS dev
keystore
Terminal Saved Output
workspace
CC_fuel
CC_Shop
CC_Supermarket
CertifiedShop
other
petrol_xx
Res_FT_website
Res_Fuel
Res_IT_website
Res_reserve
Res_supermarket
Res_supermarket_website
Res_takeout
Res_wechat
SDK
takeout
takeoutla
Source Control:
Create Git repository on
My Mac
Xcode will place your project under version control
Add to:
Don't add to any project or workspace
New Folder
Cancel
Create

File Architecture

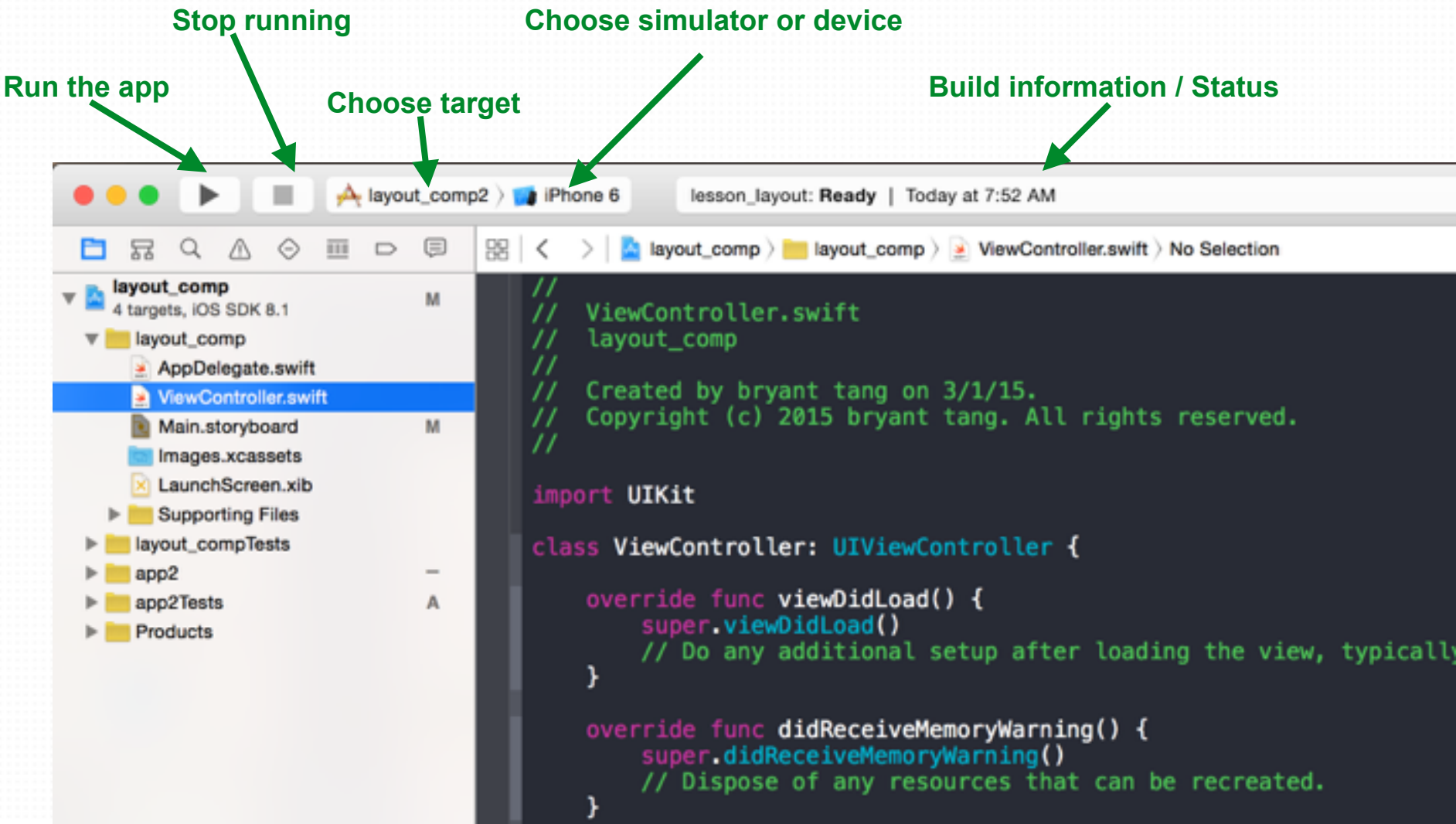
File architecture



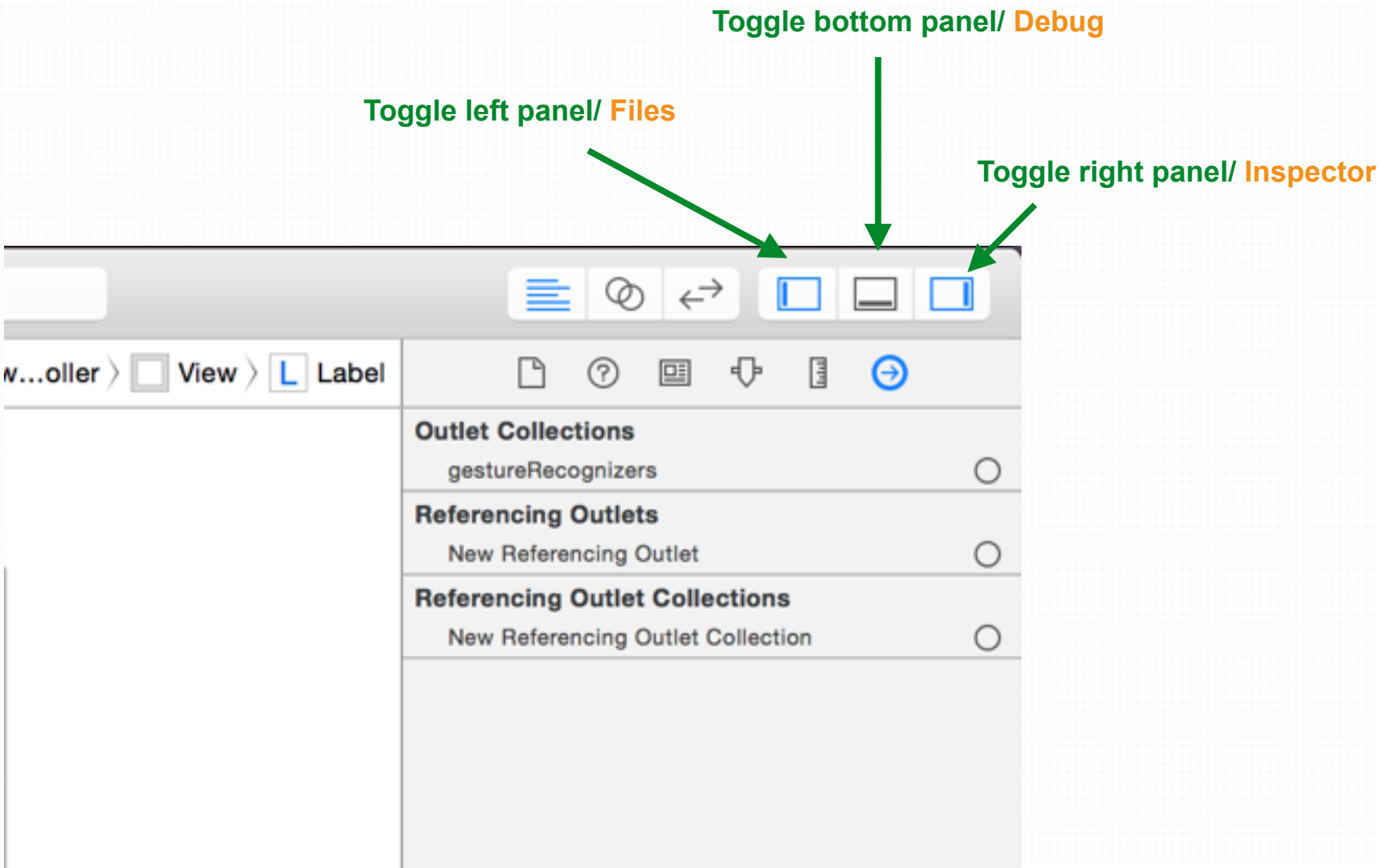
- Target
- AppDelegate
- Default View Controller
- Storyboard
- Images assets

Development Environment

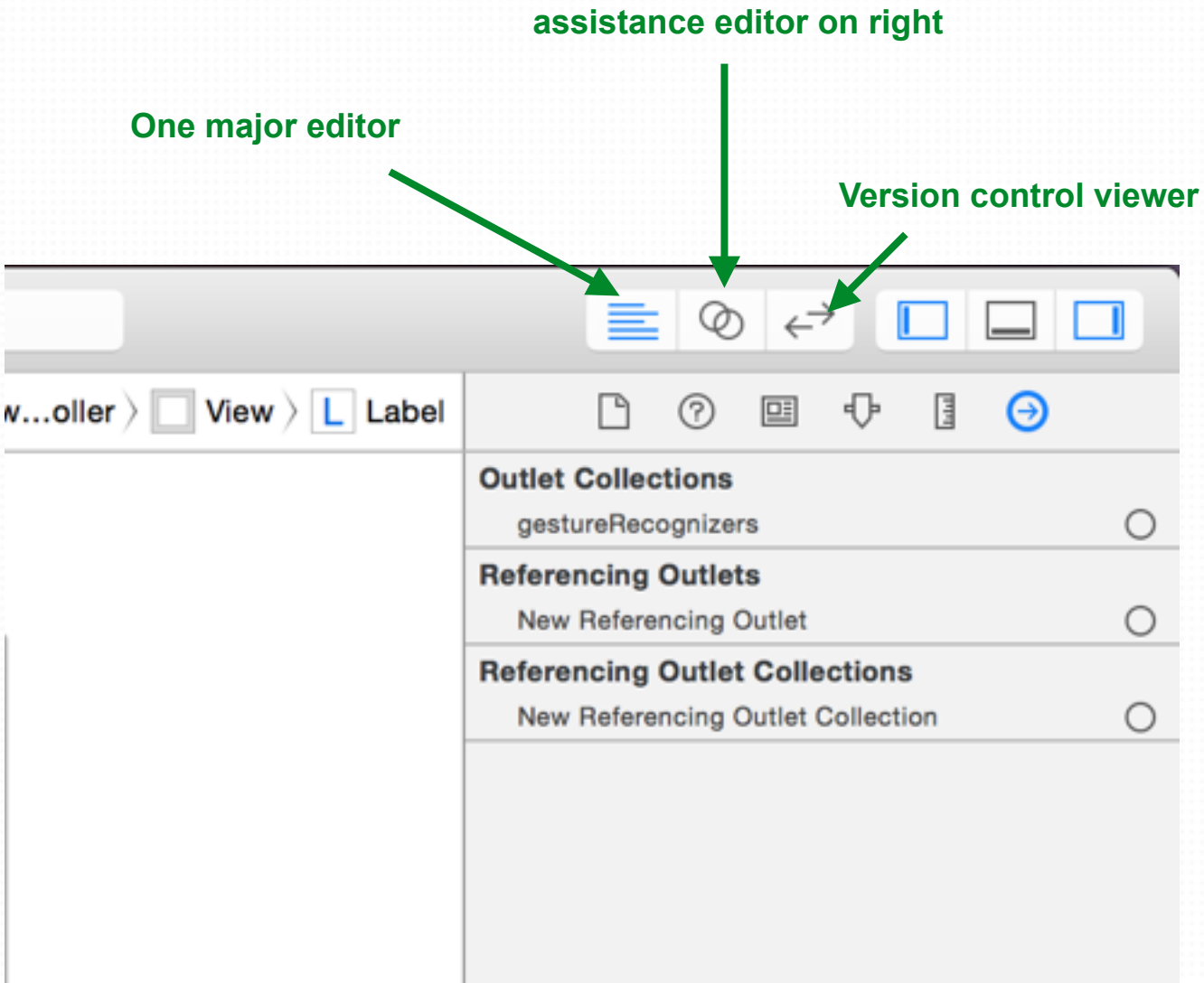
Xcode


Stop running
Choose simulator or device
Run the app
Choose target
Build information / Status
layout_comp2
iPhone 6
lesson_layout: Ready | Today at 7:52 AM
layout_comp
layout_comp
ViewController.swift
No Selection
layout_comp
4 targets, iOS SDK 8.1
layout_comp
AppDelegate.swift
ViewController.swift
Main.storyboard
Images.xcassets
LaunchScreen.xib
Supporting Files
layout_compTests
app2
app2Tests
Products
//
// ViewController.swift
// layout_comp
//
// Created by bryant tang on 3/1/15.
// Copyright (c) 2015 bryant tang. All rights reserved.
//
import UIKit
class ViewController: UIViewController {
override func viewDidLoad() {
super.viewDidLoad()
// Do any additional setup after loading the view, typically
}
override func didReceiveMemoryWarning() {
super.didReceiveMemoryWarning()
// Dispose of any resources that can be recreated.
}

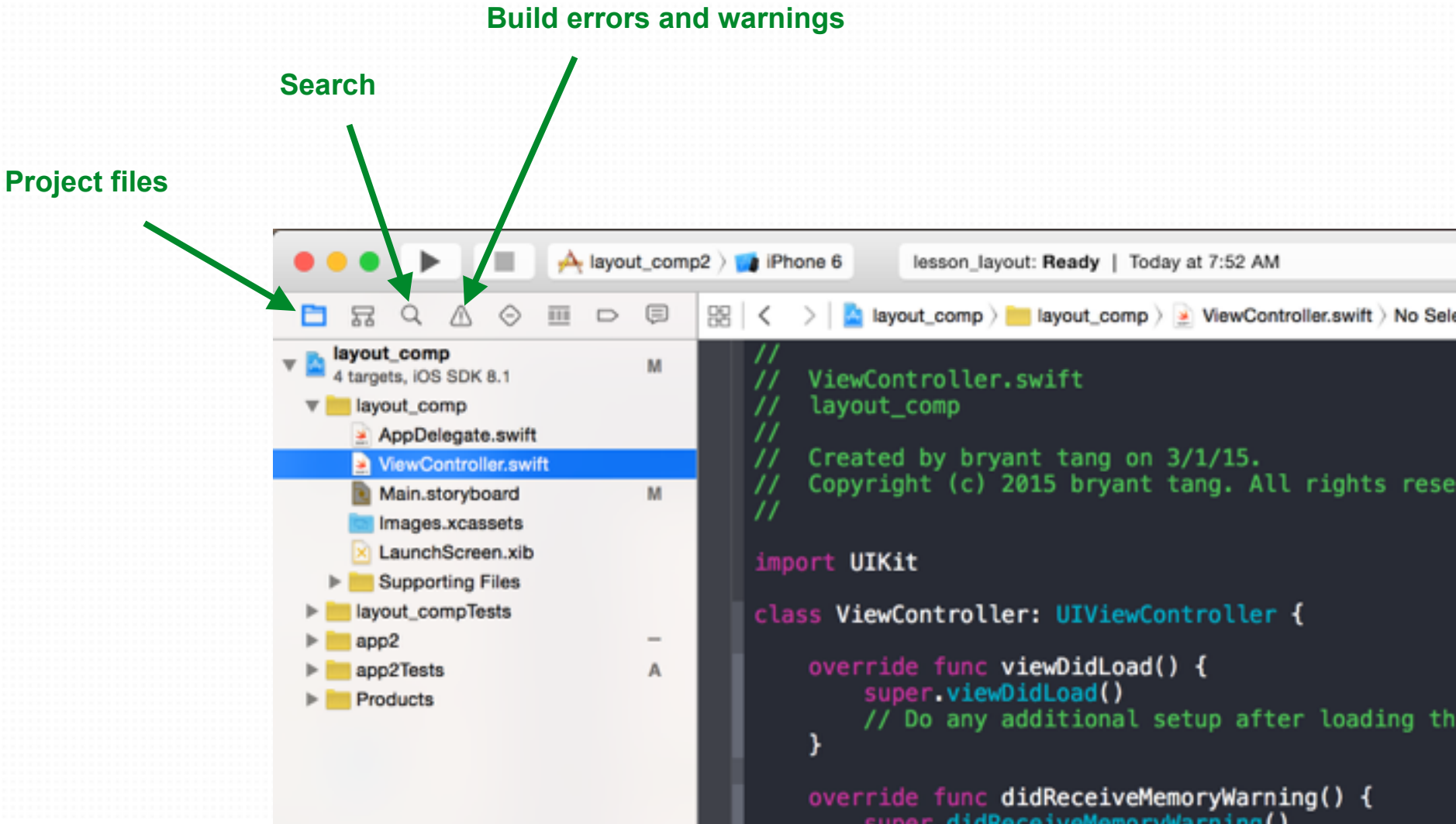
Xcode


Toggle bottom panel/ Debug
Toggle left panel/ Files
Toggle right panel/ Inspector
w...oller
View
Label
Outlet Collections
gestureRecognizers
Referencing Outlets
New Referencing Outlet
Referencing Outlet Collections
New Referencing Outlet Collection

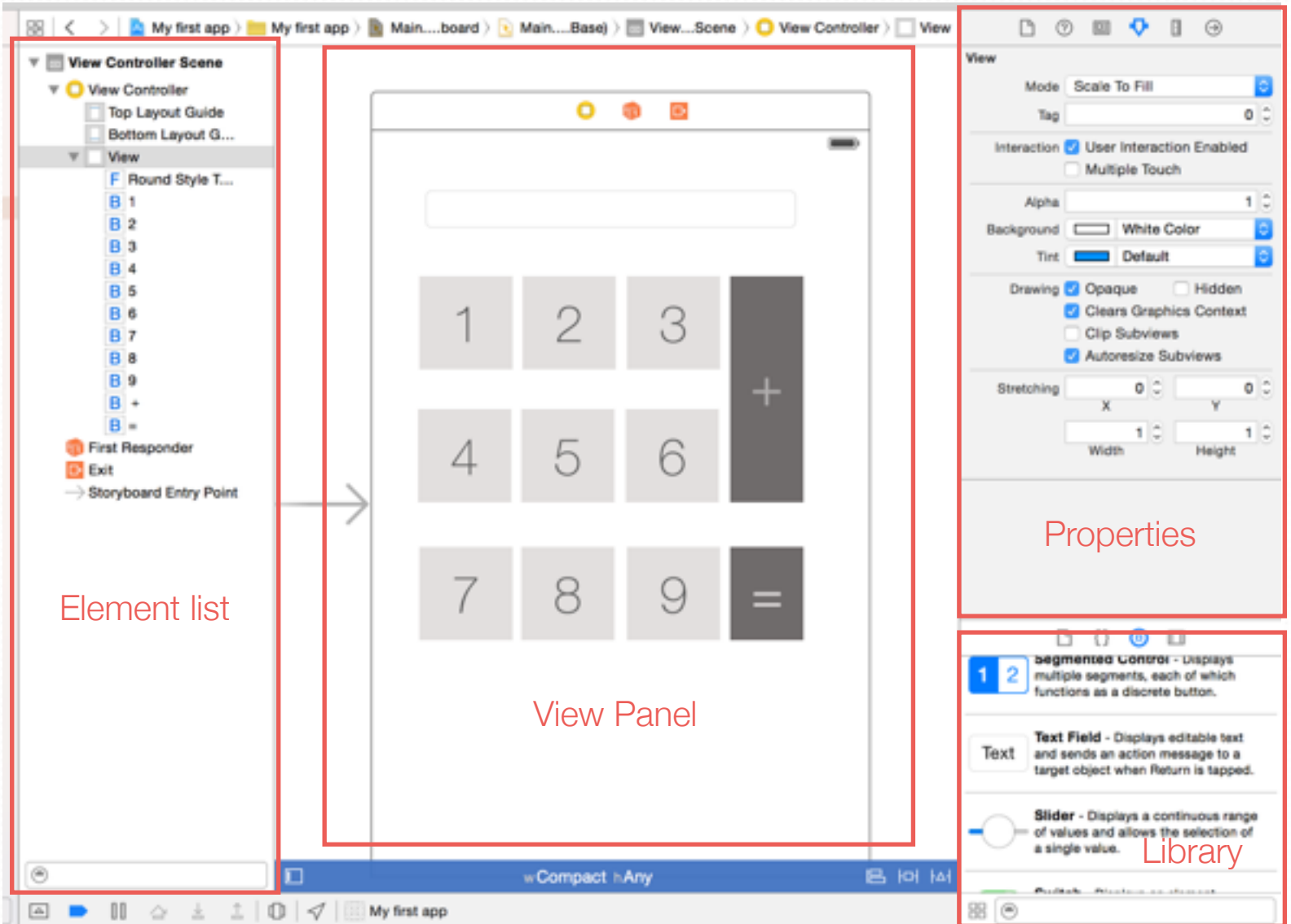
Xcode


assistance editor on right
One major editor
Version control viewer
w...oller
View
Label
Outlet Collections
gestureRecognizers
Referencing Outlets
New Referencing Outlet
Referencing Outlet Collections
New Referencing Outlet Collection

Xcode

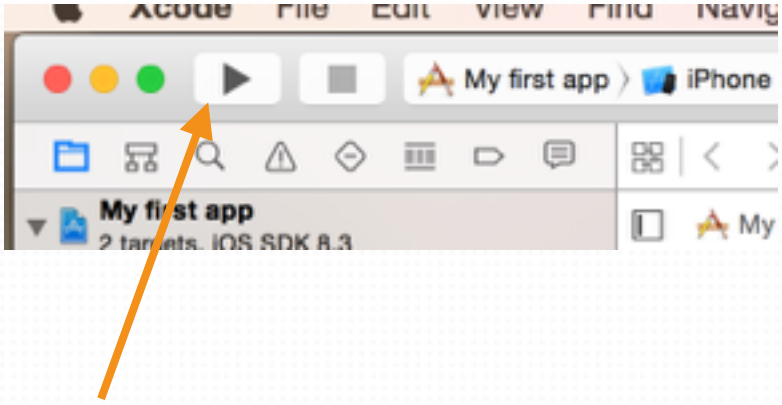

Build errors and warnings
Search
Project files
layout_comp2 〉 iPhone 6
lesson_layout: Ready | Today at 7:52 AM
layout_comp 〉 layout_comp 〉 ViewController.swift 〉 No Sele
layout_comp
4 targets, iOS SDK 8.1
layout_comp
AppDelegate.swift
ViewController.swift
Main.storyboard
Images.xcassets
LaunchScreen.xib
Supporting Files
layout_compTests
app2
app2Tests
Products
//
// ViewController.swift
// layout_comp
//
// Created by bryant tang on 3/1/15.
// Copyright (c) 2015 bryant tang. All rights rese
//
import UIKit
class ViewController: UIViewController {
override func viewDidLoad() {
super.viewDidLoad()
// Do any additional setup after loading th
}
override func didReceiveMemoryWarning() {

Storyboard

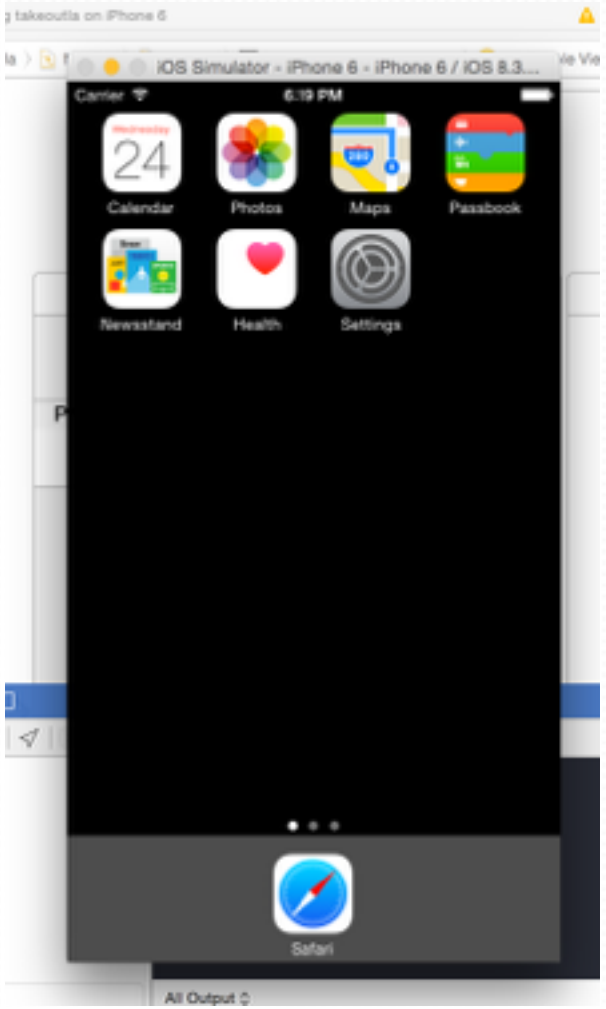

My first app
My first app
Main....board
Main....Base)
View...Scene
View Controller
View
View Controller Scene
View Controller
Top Layout Guide
Bottom Layout G...
View
Round Style T...
1
2
3
4
5
6
7
8
9
+
=
First Responder
Exit
Storyboard Entry Point
Element list
1
2
3
4
5
6
7
8
9
+
=
View Panel
wCompact hAny
My first app
View
Mode
Scale To Fill
Tag
0
Interaction
User Interaction Enabled
Multiple Touch
Alpha
1
Background
White Color
Tint
Default
Drawing
Opaque
Hidden
Clears Graphics Context
Clip Subviews
Autoresize Subviews
Stretching
0
X
0
Y
1
Width
1
Height
Properties
1
2
multiple segments, each of which functions as a discrete button.
Text
Text Field - Displays editable text and sends an action message to a target object when Return is tapped.
Slider - Displays a continuous range of values and allows the selection of a single value.
Library

How to run a project?

Press the run button,
then the simulator will appear

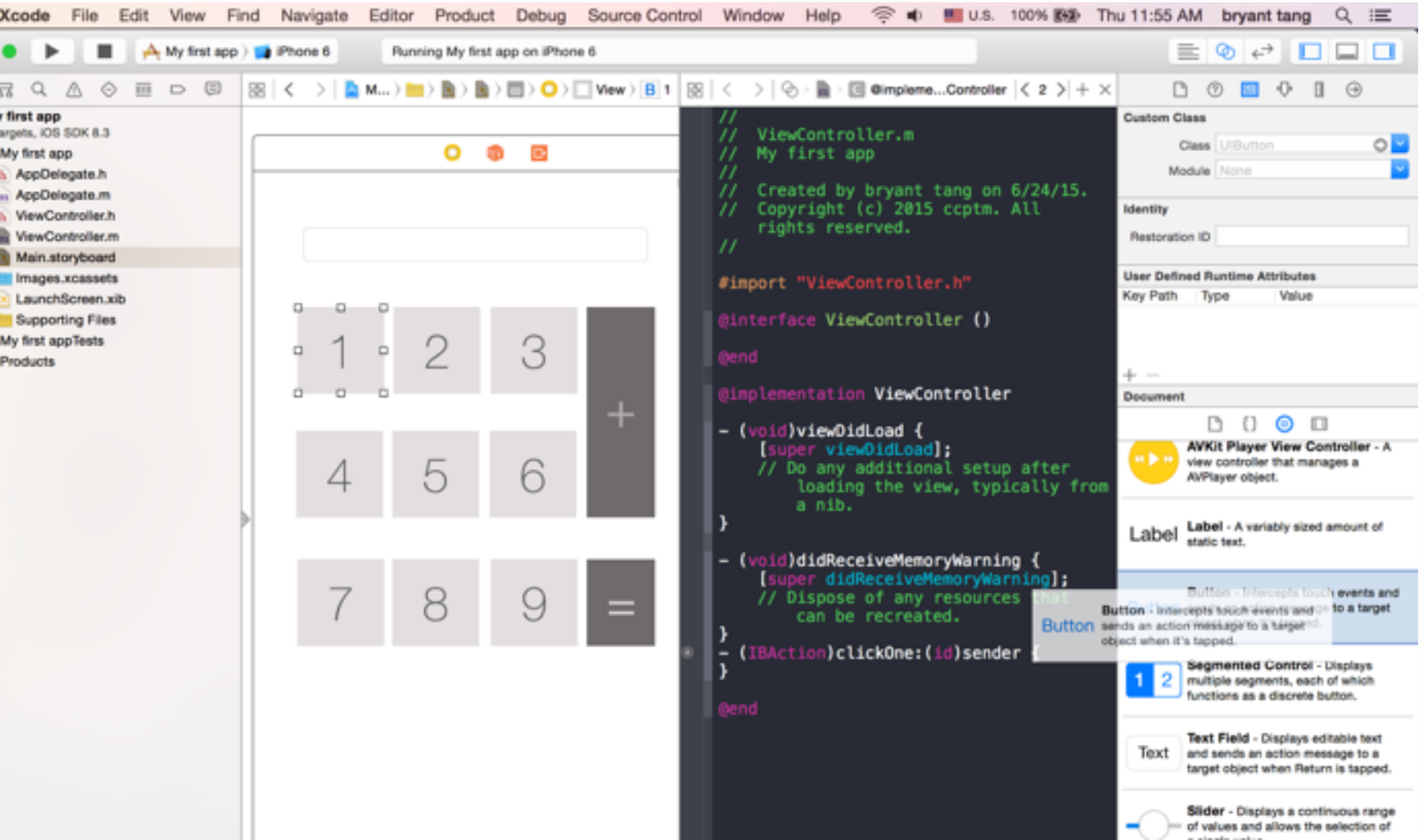


Run button

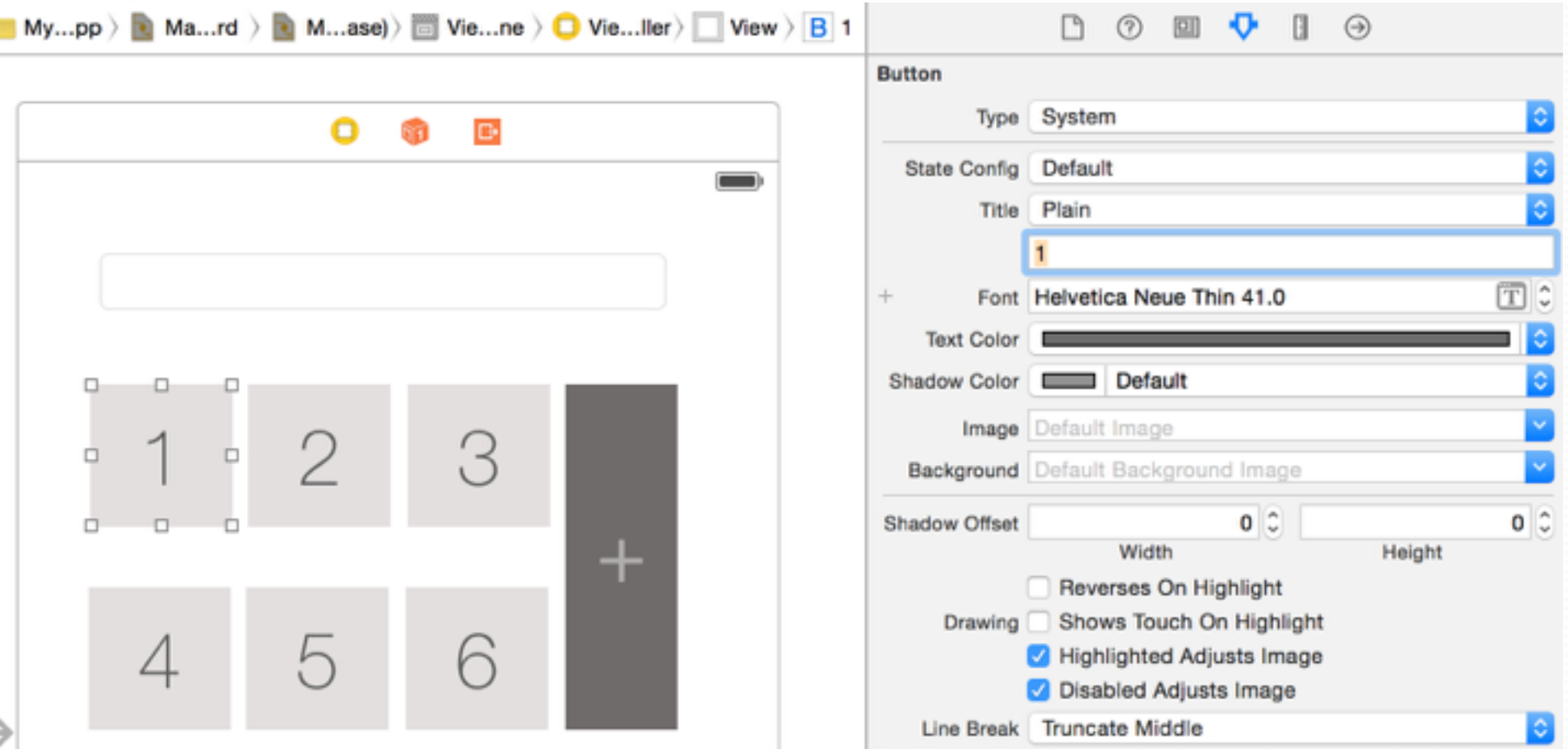


Calculator

Add elements on storyboard



Edit properties of element

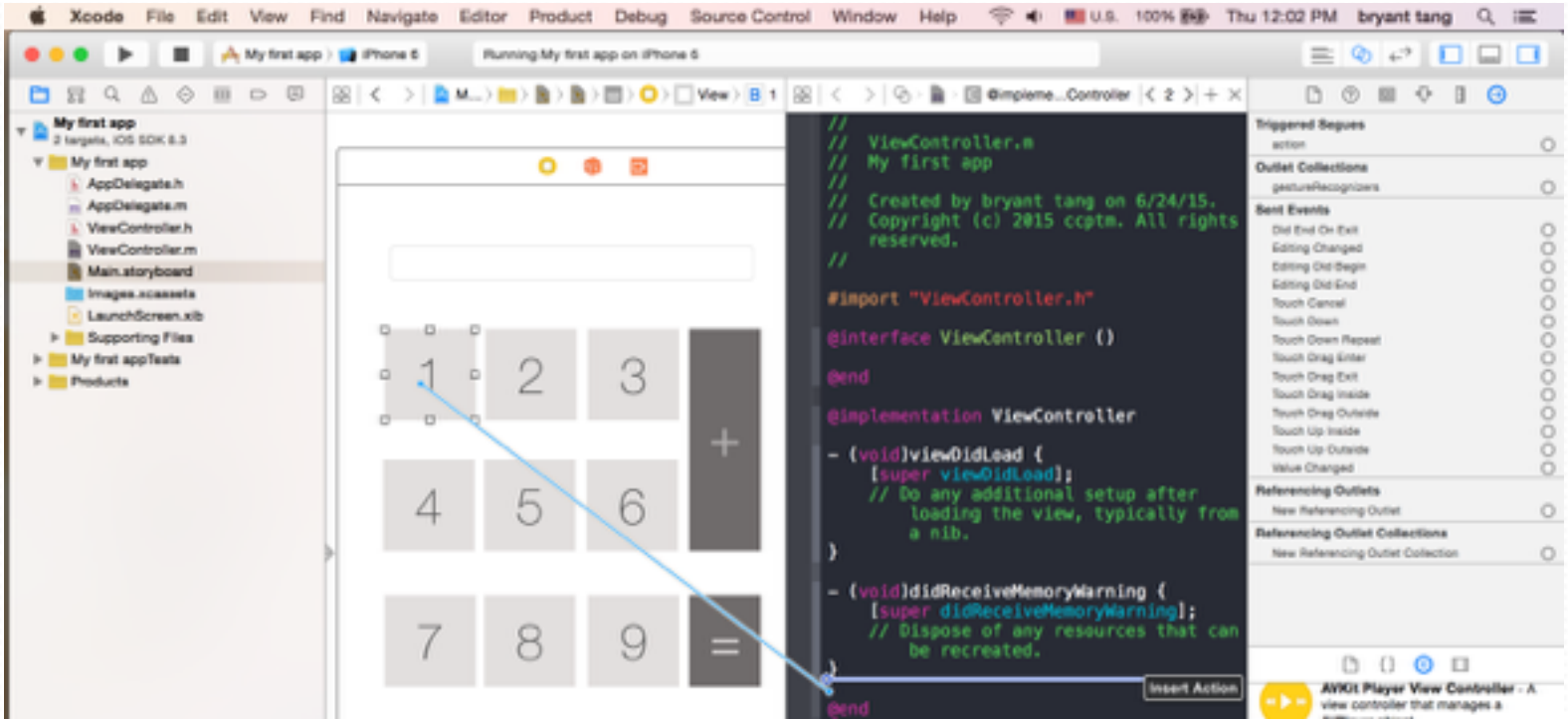


Action Connection - storyboard vs code

- Storyboard - layout design and work flow
- Program (.h or .m) - Control the element
- Connect - Storyboard and .m file

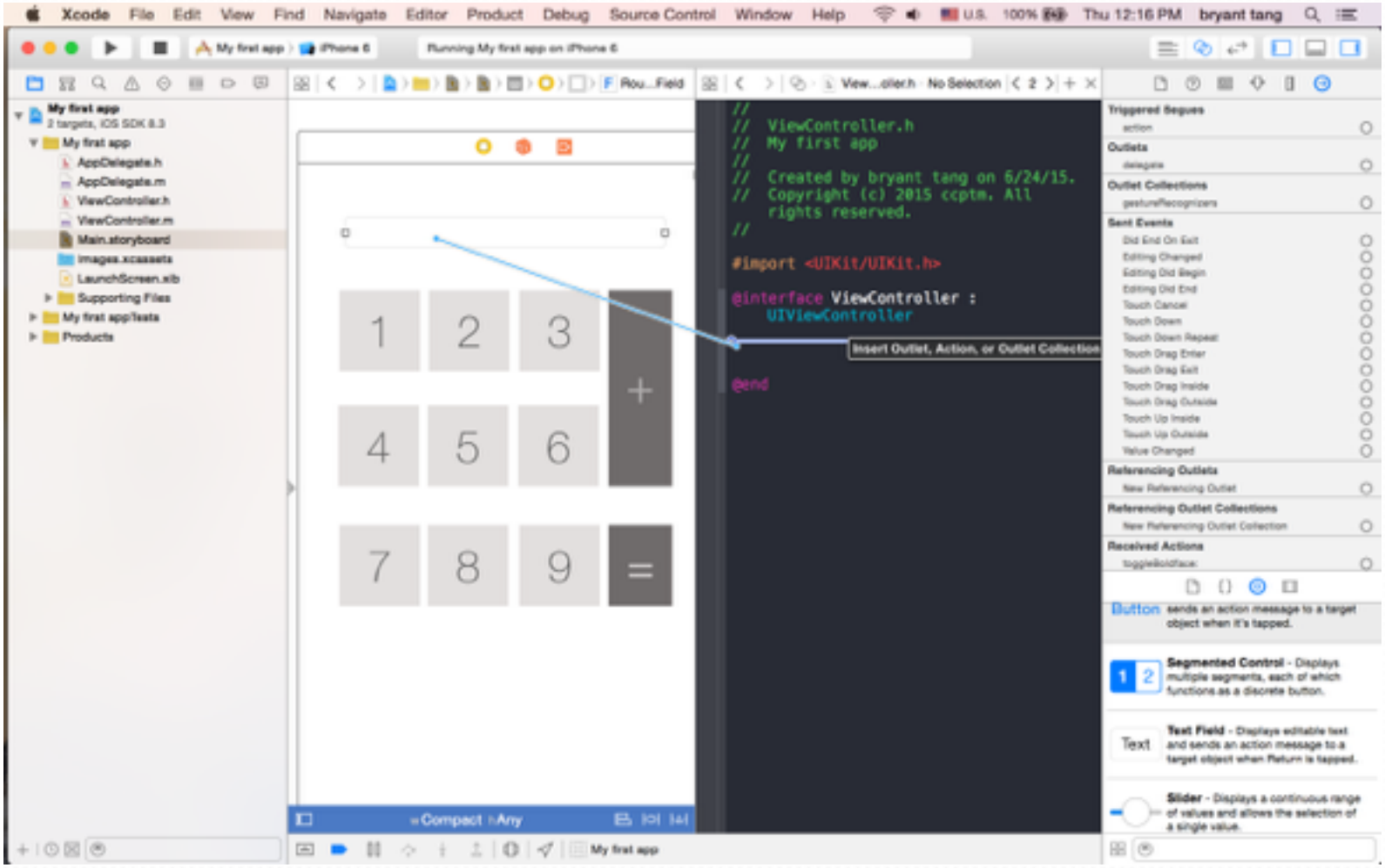
Use to view bath storyboard and program

Press"control" ,hold and drag from the element



Element Connection

- Connect - Storyboard and .h file



Objective-C Basic Coding

display one when press '1'

```
- (IBAction)clickOne:(id)sender {
    //Show 1 on textfield
    _display.text = [_display.text stringByAppendingString:@"1"];
}
```

Press '+' - save the input and clean display

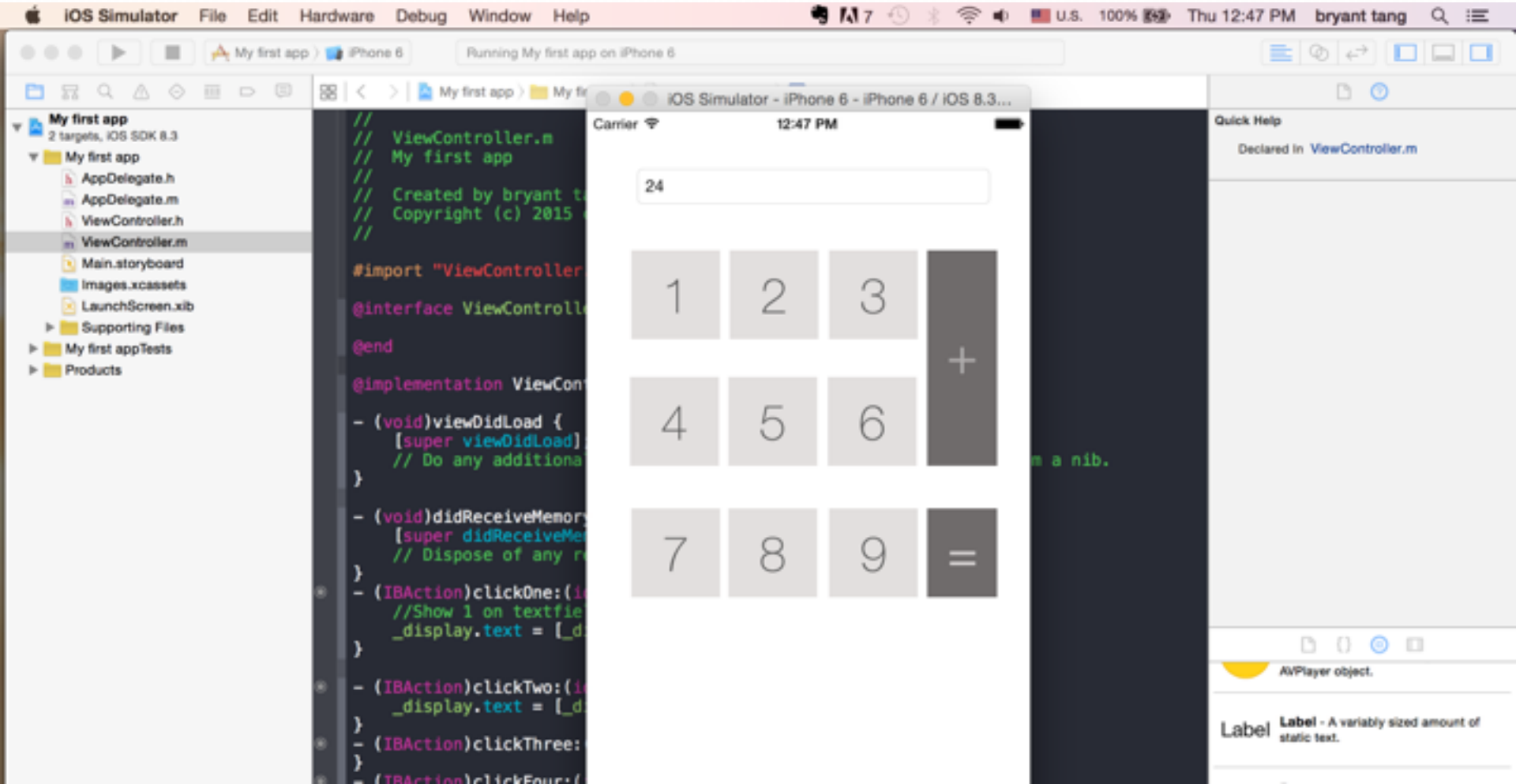
```
- (IBAction)clickPlus:(id)sender {
    store = store + [_display.text intValue];
    _display.text = @"";
}
```

Press '=' - Add two input and show on display

```
- (IBAction)clickEquel:(id)sender {
    result = store + [_display.text intValue];
    _display.text = [NSString stringWithFormat:@"%d",result];
    store = 0;
}
```

Objective-C Basic Coding

Run your app by press ‘command + r’ or



Practice

Browse the App Store. Find some apps that impress you. Discuss why they are good.

Improve your first app by adding a ‘Reset’ button or adding another functions like ‘-’ or ‘x’

Resource

https://github.com/bryanttang/iOS-Class-2016-9