

iPhone App Development

CM420-06-2015-C
Lesson 1

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FAQ

- What you have to bring in every class?

Macbook & your heart

- What activities in class?

Topic talk -> coding example -> exercise

- How to get the resource and material?

Use **Git** (will provide soon...)

Summary

- iOS Ecosystem
- Different types of iOS apps
- What is iOS
- Development environment
- Objective-c Part 1

iOS Ecosystem

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)

App Classification

Game



Candy Crush Soda Saga 4+

King.com Limited >

Editors' Choice

Details

Ratings and Reviews

Related



Offers In-App Purchases

This app is designed for both
iPhone and iPad

★★★★☆ (28)

Rating: 4+

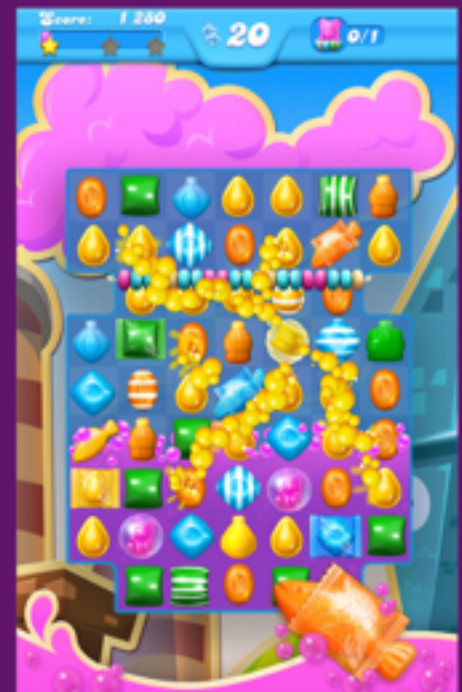
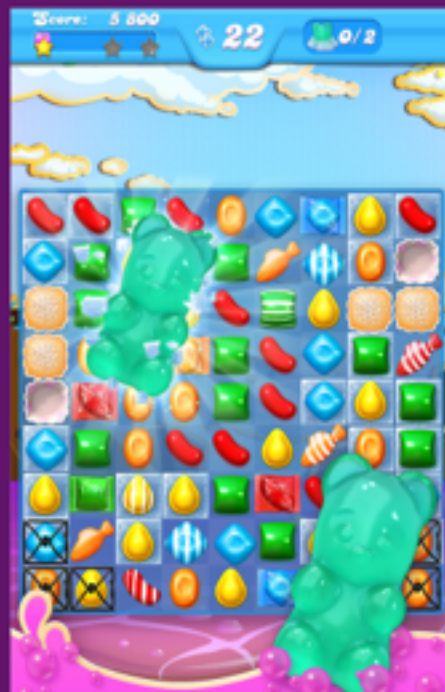
TOP IN-APP PURCHASES

- | | |
|------------------------|-------------|
| 1. S Gold Bar package | HK\$ 38.00 |
| 2. XS Gold Bar package | HK\$ 8.00 |
| 3. M Gold Bar package | HK\$ 78.00 |
| 4. XL Gold Bar package | HK\$ 318.00 |
| 5. L Gold Bar package | HK\$ 163.00 |
| 6. Sale Package 1 | HK\$ 15.00 |
| 7. Sale Package 3 | HK\$ 158.00 |
| 8. Sale Package 3 | HK\$ 78.00 |
| 9. Sale Package 2 | HK\$ 38.00 |
| 10. Sale Package 4 | HK\$ 238.00 |

Screenshots

iPhone

iPad



Life



+ Get

This app is designed for both
iPhone and iPad

Rating: 4+

LINKS

Privacy Policy

© 2015 Timable

Timable 4+

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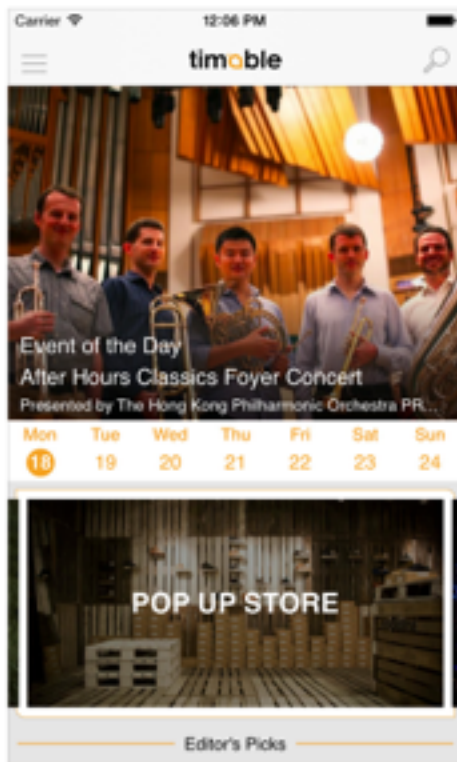
Ratings and Reviews

Related

Screenshots

iPhone

iPad



Utilities



This app is designed for both
iPhone and iPad

Rating: 4+

LINKS

Developer Website

© Splitwise, Inc.

Plates by Splitwise – split dinner bills with ease 4+

Splitwise, Inc. >

Details

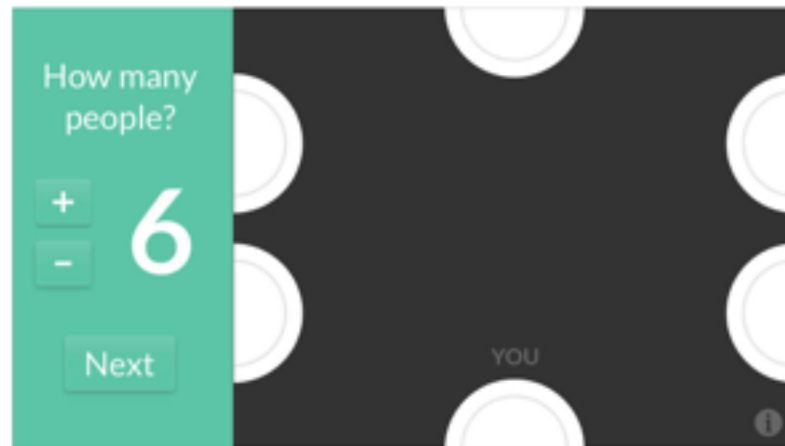
Ratings and Reviews

Related

Screenshots

iPhone

iPad



Travel



Get



Cathay Pacific 4+

Cathay Pacific Airways Limited >

Details

Ratings and Reviews

Related

iPhone Screenshots

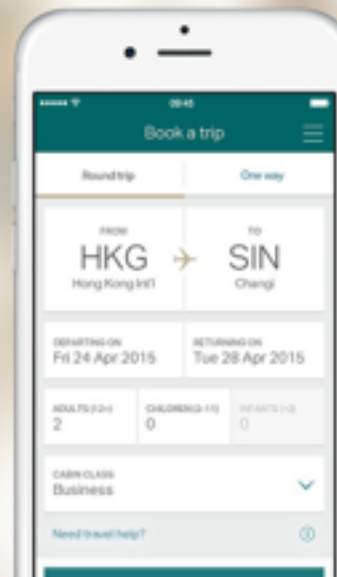
Welcome to our app

Have everything at
your fingertips



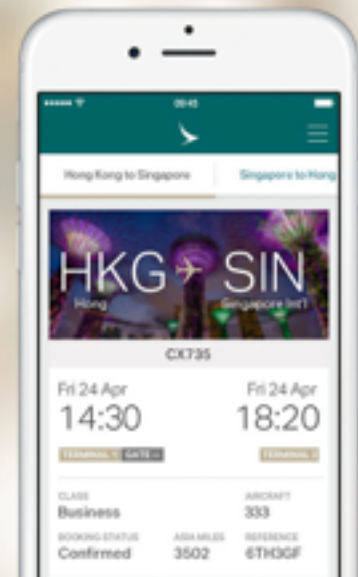
Book on the go

Search your preferred
flights conveniently



Review your bookings

See everything you need
in one place



Rating: 4+

LINKS

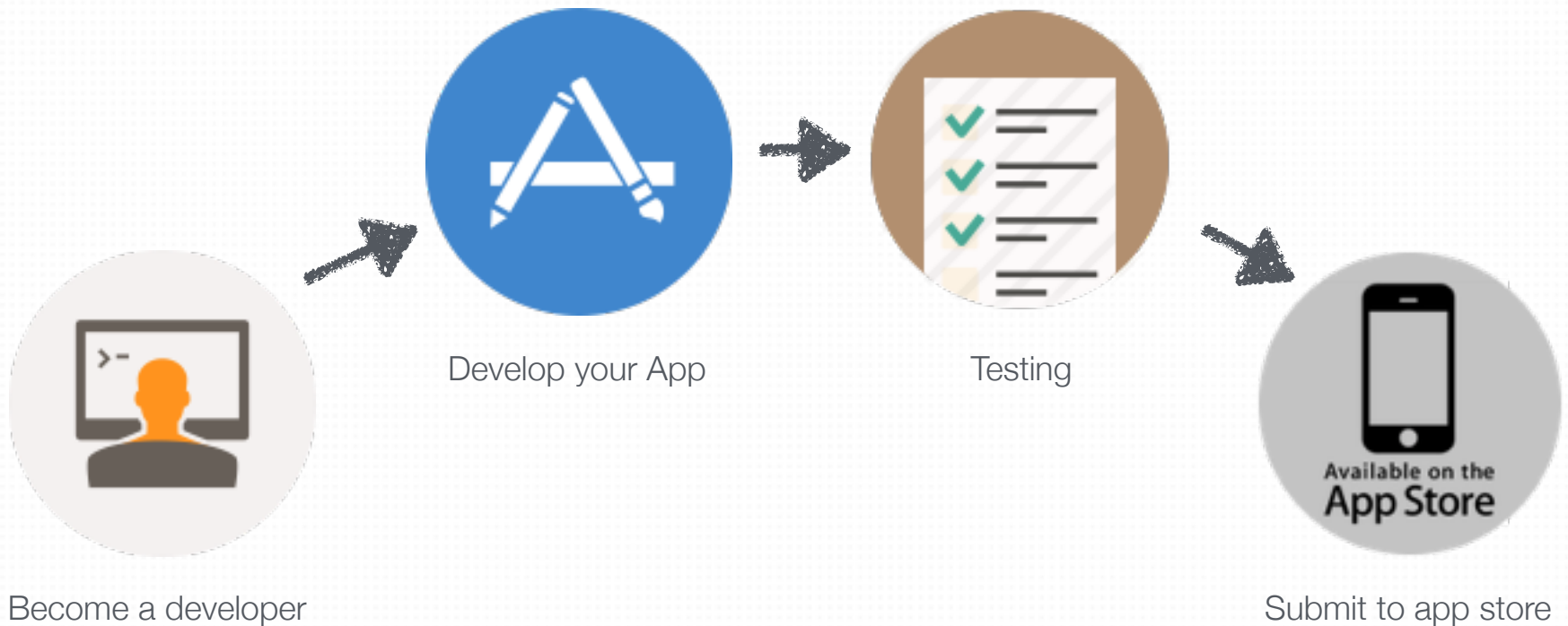
Developer Website

© Cathay Pacific Airways Limited

We are going to learn...

- How to code by using Objective-C
- How to use 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?



Easy to become a iOS Developer

- Sign in an Apple account
- Enroll a program

Sign in Member Center



Technologies

Resources

Programs

Support

Member Center



Apple ID

Password

Create Apple ID

Sign In

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						



The biggest iOS
release ever.



What's breakthrough in iOS 8

- Swift
- Adaptive User Interface
- Health kit



Built-in Apps

A new way to experience your news and great features for the apps you use every day.



iPad Experience

Do more on the big iPad display — in two apps at once.



Intelligence

iOS 9 gets even smarter. And proactive suggestions make your device even more helpful.



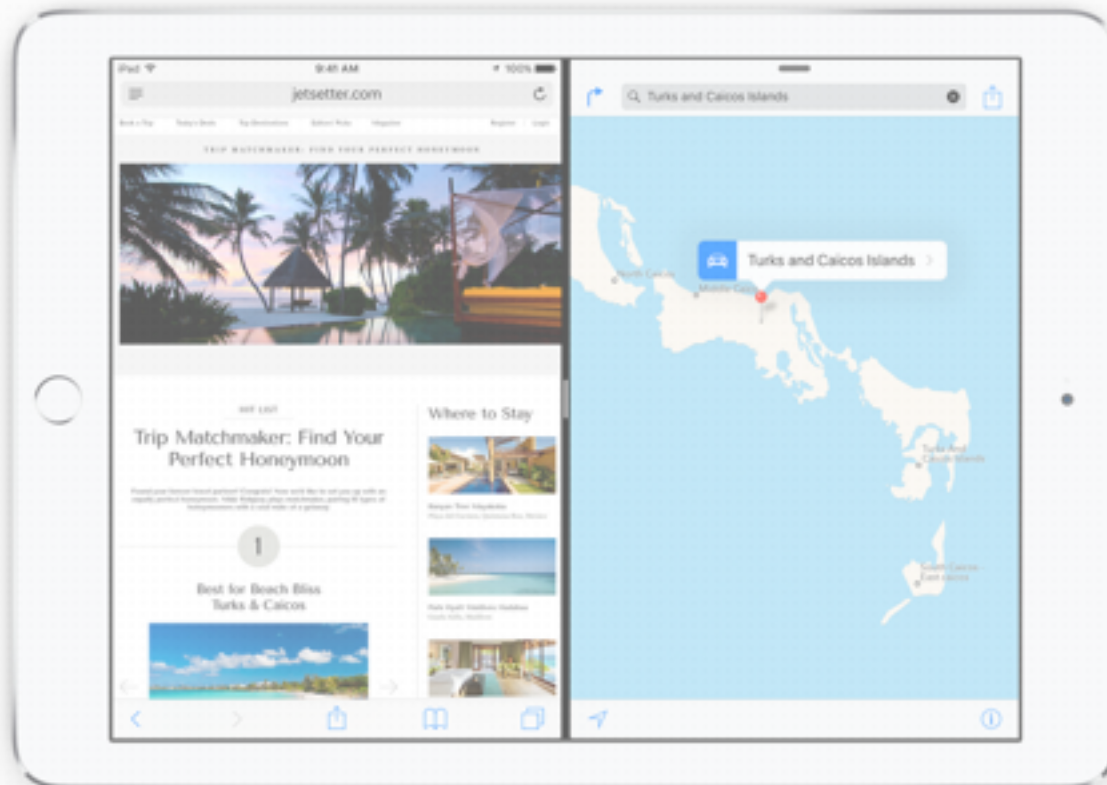
Foundation

Faster performance, improved security, convenient updates, and longer battery life.



Multitasking

Do this.
While you do that.



iOS Architecture

Your app

Cocoa Touch

Media

Core Services

Core OS

Hardware

Core OS

OSX Kernel

Mach 3.0

BSD

Sockets

Security

Power Management

Keychain Access

Certificates

File System

Bonjour

iOS Architecture

Your app

Cocoa Touch

Media

Core Services

Core OS

Hardware

Core Services

Collections Core Location
Address Book Net Services
Networking Threading
File Access Preferences
SQLite URL Utilities

iOS Architecture

Your app

Cocoa Touch

Media

Core Services

Core OS

Hardware

- **Media**

- Core Audio JPEG, PNG, TIFF

- OpenAL PDF

- Audio Mixing Quartz(2D)

- Audio Recording Core Animation

- Video Playback OpenGL ES

- Airplay

iOS Architecture

Your app

Cocoa Touch

Media

Core Services

Core OS

Hardware

.....

Cocoa Touch

Multi-Touch

Alerts

Core Motion

Web View

View Hierarchy

Map Kit

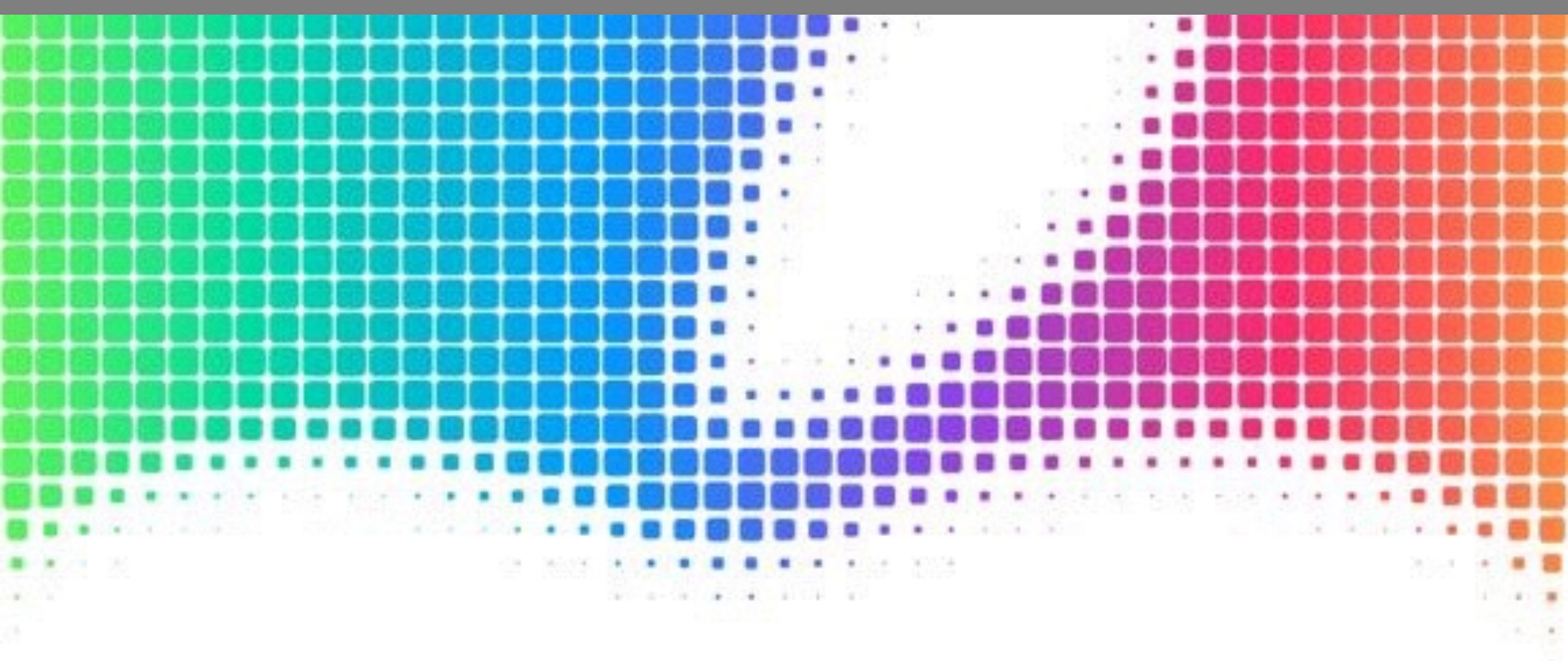
Localization

Image Picker

Controls

Camera

Development resource



WWDC 14

<https://developer.apple.com/videos/wwdc/2014/>

iOS developer Library

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



iOS Developer Library

iOS Developer Library

▼ Resource Types

- Getting Started
- Guides
- Reference
- Release Notes
- Sample Code
- Technical Notes
- Technical Q&As
- Video
- Xcode Tasks

▼ Topics

- Audio & Video
- Data Management
- General
- Graphics & Animation
- Languages & Utilities
- Mathematical Computation
- Networking & Internet
- Performance

Learn About iOS 8

Explore new technologies and documents in
What's New in iOS.



Documents

2596 of 2596

Title	Resource Type	Topic	Framework	Date ▼
▶ MetalVideoCapture	Sample Code		Metal	2015-02-21 First Version
▶ Swift app crashes when trying to reference Swift library libswiftCore.dylib.	Technical Q&As	Xcode Compiler Tools		2015-02-17 First Version
▶ HomeKit Developer Guide	Guides	Networking & Internet	HomeKit	2015-02-14 First Version
▶ Adventure: Building a SpriteKit Game Using Swift	Sample Code	Languages & Utilities Swift	SpriteKit	2015-02-14 Minor Change

Learning on iTunes

<https://itunes.apple.com/us/course/developing-ios-8-apps-swift/id961180099>



Subscribe

Developing iOS 8 Apps with Swift

Paul Hegarty

Details

Ratings and Reviews

Related

Description

Updated for iOS 8 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.

Prerequisites: C language and object-oriented programming experience exceeding Programming Abstractions level, and completion of Programming Paradigms.

[more](#)

Course Outline

- I. Introduction to iOS, Xcode 6 and Swift
- II. More Xcode and Swift; MVC
- III. Using MVC in iOS
- IV. Swift & Foundation
- V. Views

[more](#)

▲	NAME		TIME	RELEASED	DESCRIPTION	POPULARITY	PRICE
1	1. Logistics, iOS 8 Overview		1 hr 8 min		Paul Hegarty provides an o... <i>i</i>	<div></div>	Get ▾
2	Lecture 1 Slides					<div></div>	Get ▾
3	2. More Xcode and Swift, MVC		1 hr 14 min		Paul Hegarty continues his ... <i>i</i>	<div></div>	Get ▾

Stanford

Category: Computer Science

Language: English

Published 23 Jan, 2015

When viewed using the iTunes U app for iOS, this course may also include enhanced materials such as instructor notes and assignments.

Getting Your Hand Dirty

Development Environment



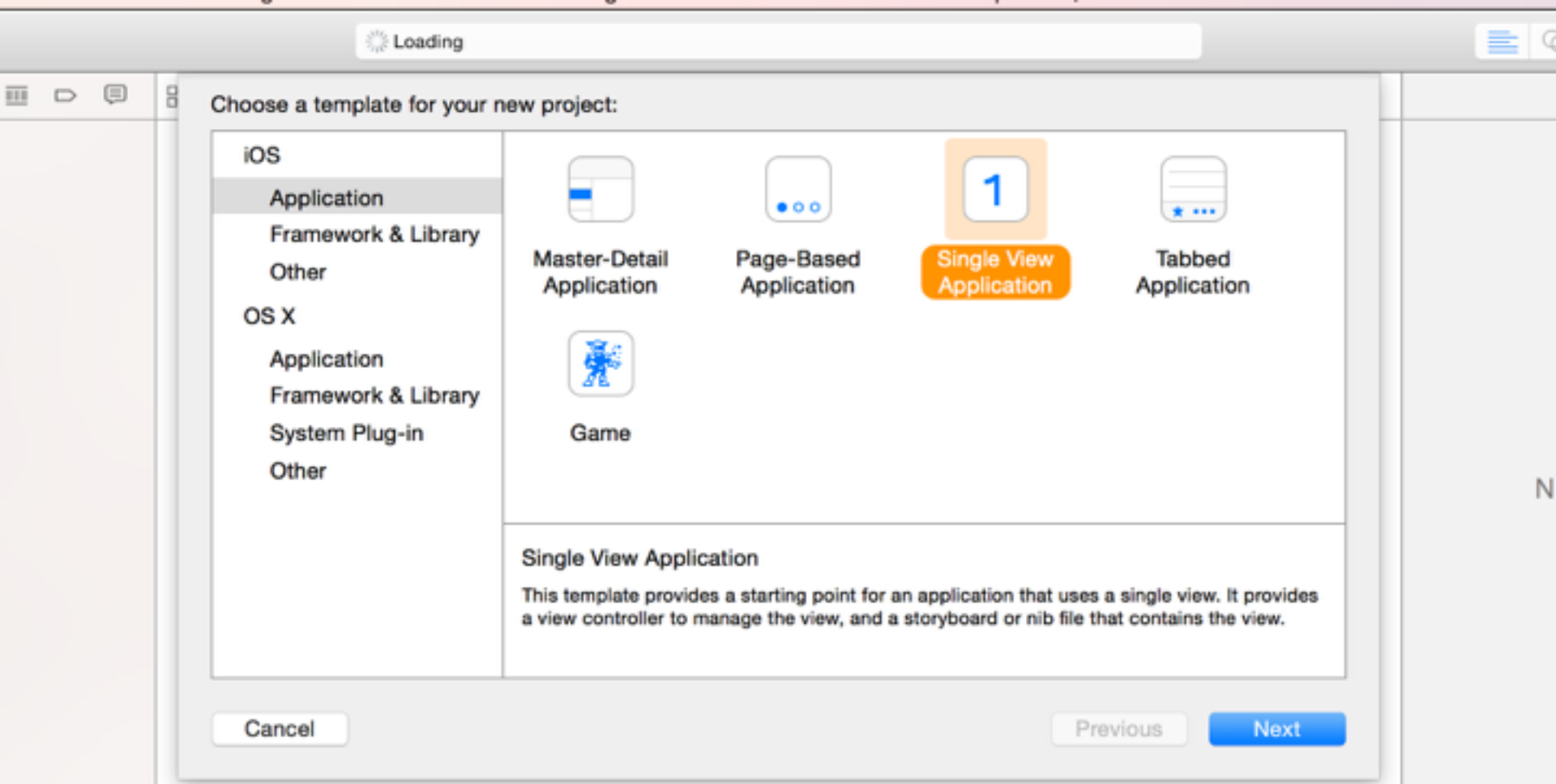
Xcode 6.1.1

- Updated: Dec 2, 2014
- Build: 6A2008a
- SDK: **iOS 8.1, Mac OS X v10.10**
- Download:
<https://developer.apple.com/xcode/downloads/>

Open your first project

Open a new project

File -> New -> Project



App name & Information

Choose options for your new project:

Product Name: My first app

Organization Name: ccptm

Organization Identifier: mo.gov.ccptm

Bundle Identifier: mo.gov.ccptm Your organization's bundle identifier prefix

Language: Objective-C

Devices: iPhone

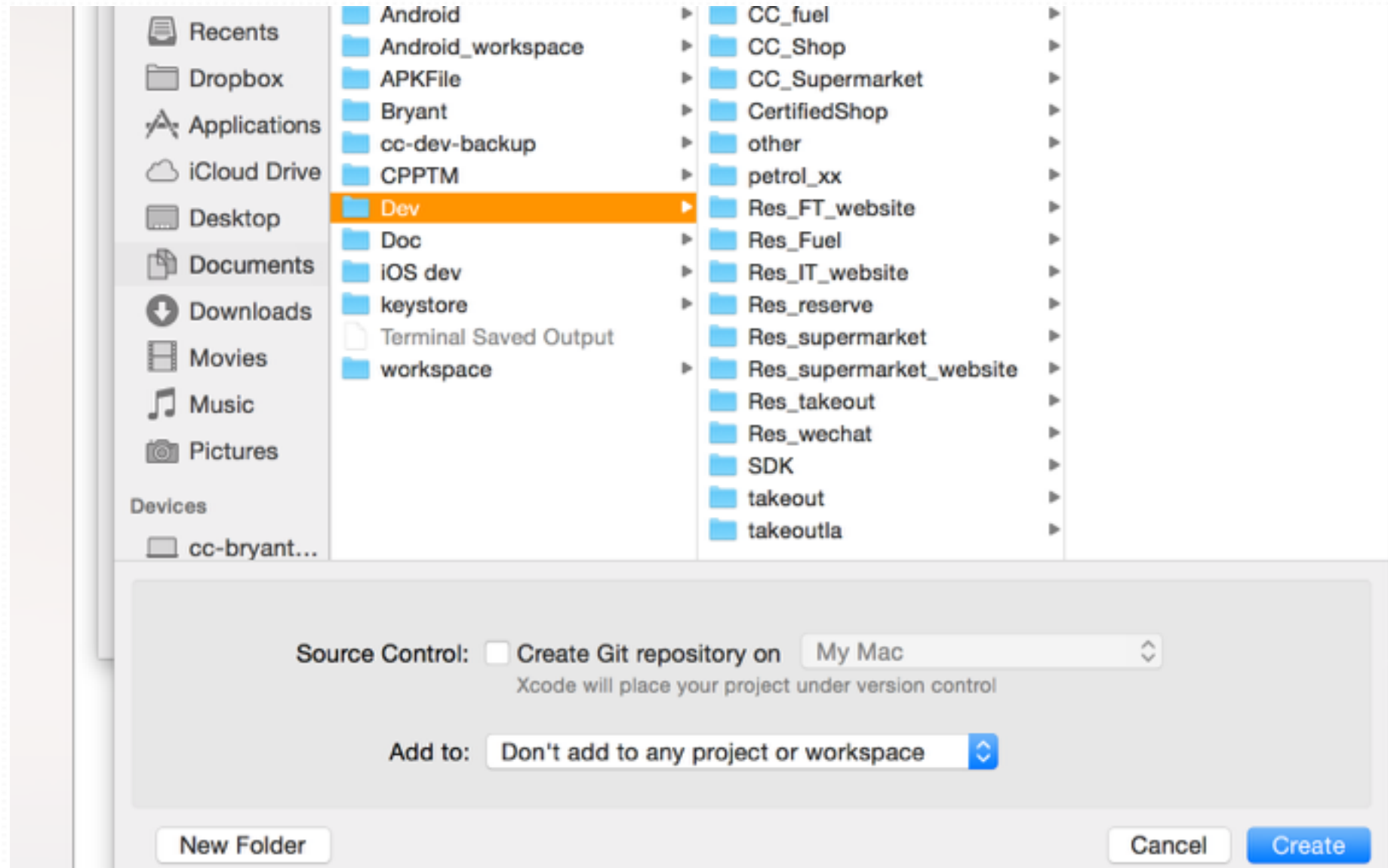
☐ Use Core Data

Cancel

Previous

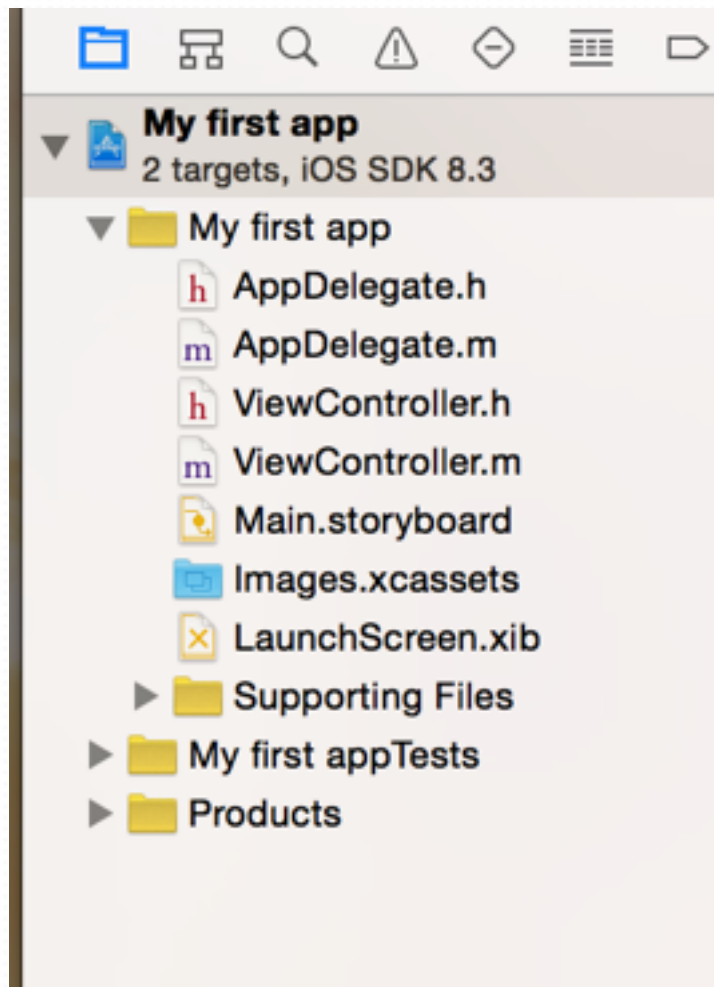
Next

Save to ...



File Architecture

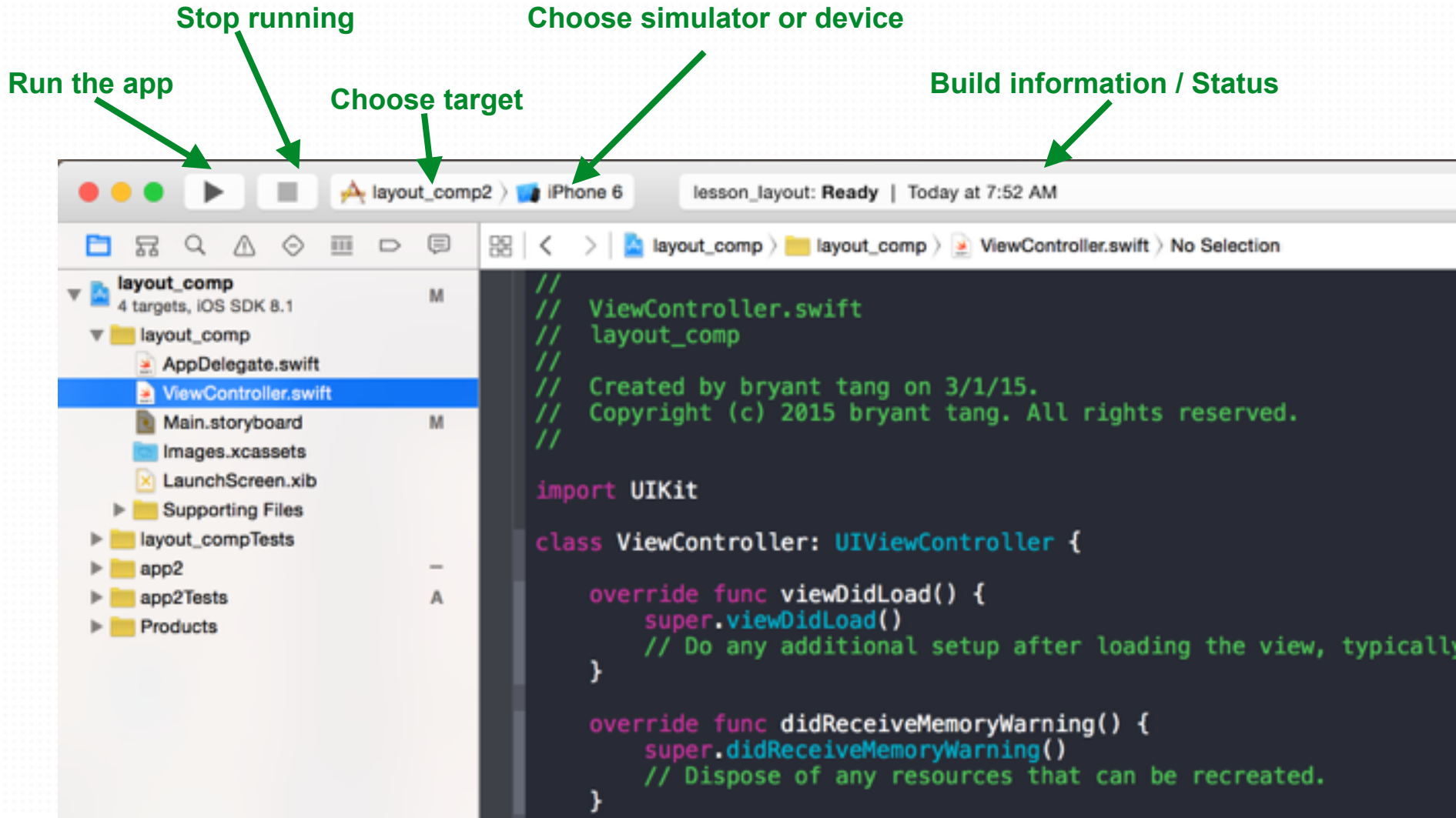
File architecture



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

Development Environment

Xcode

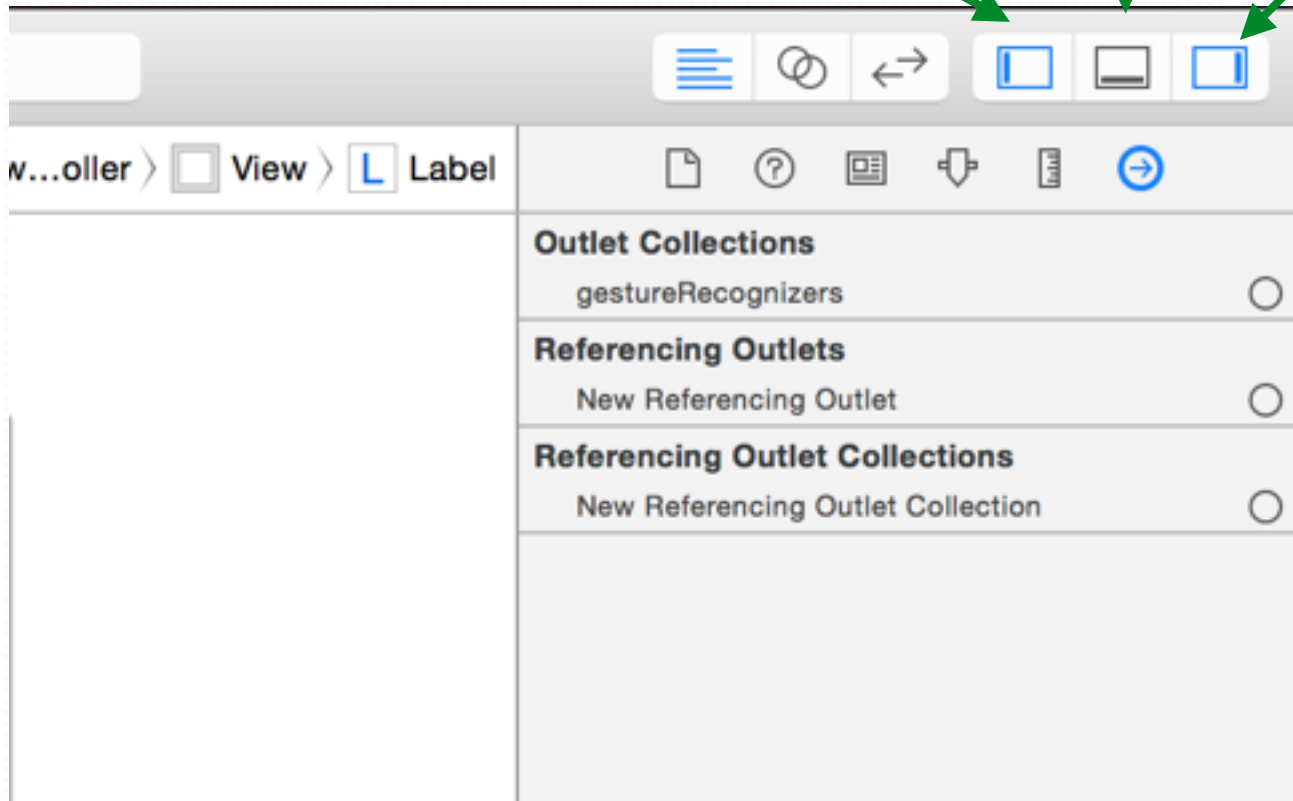


Xcode

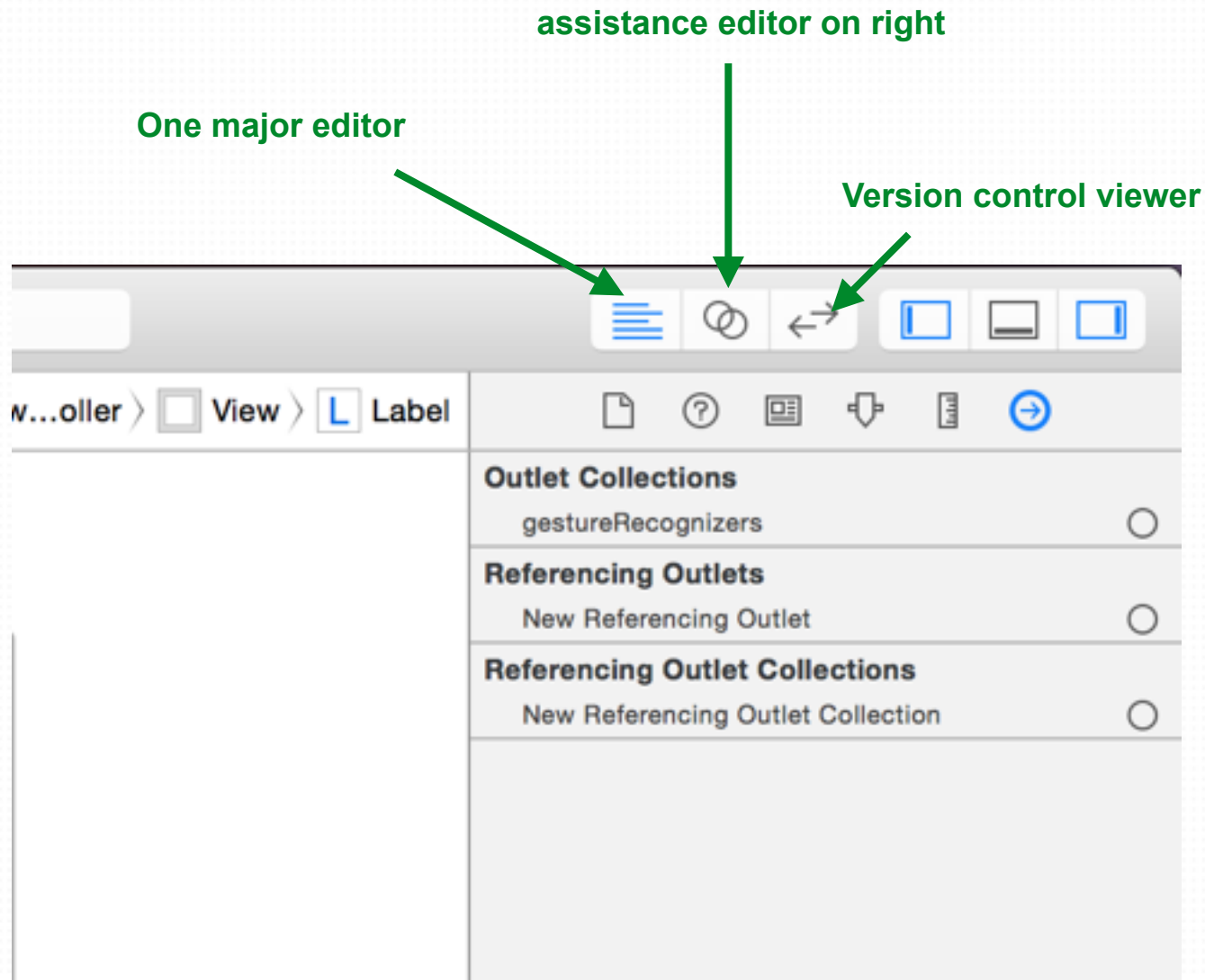
Toggle bottom panel/ **Debug**

Toggle left panel/ **Files**

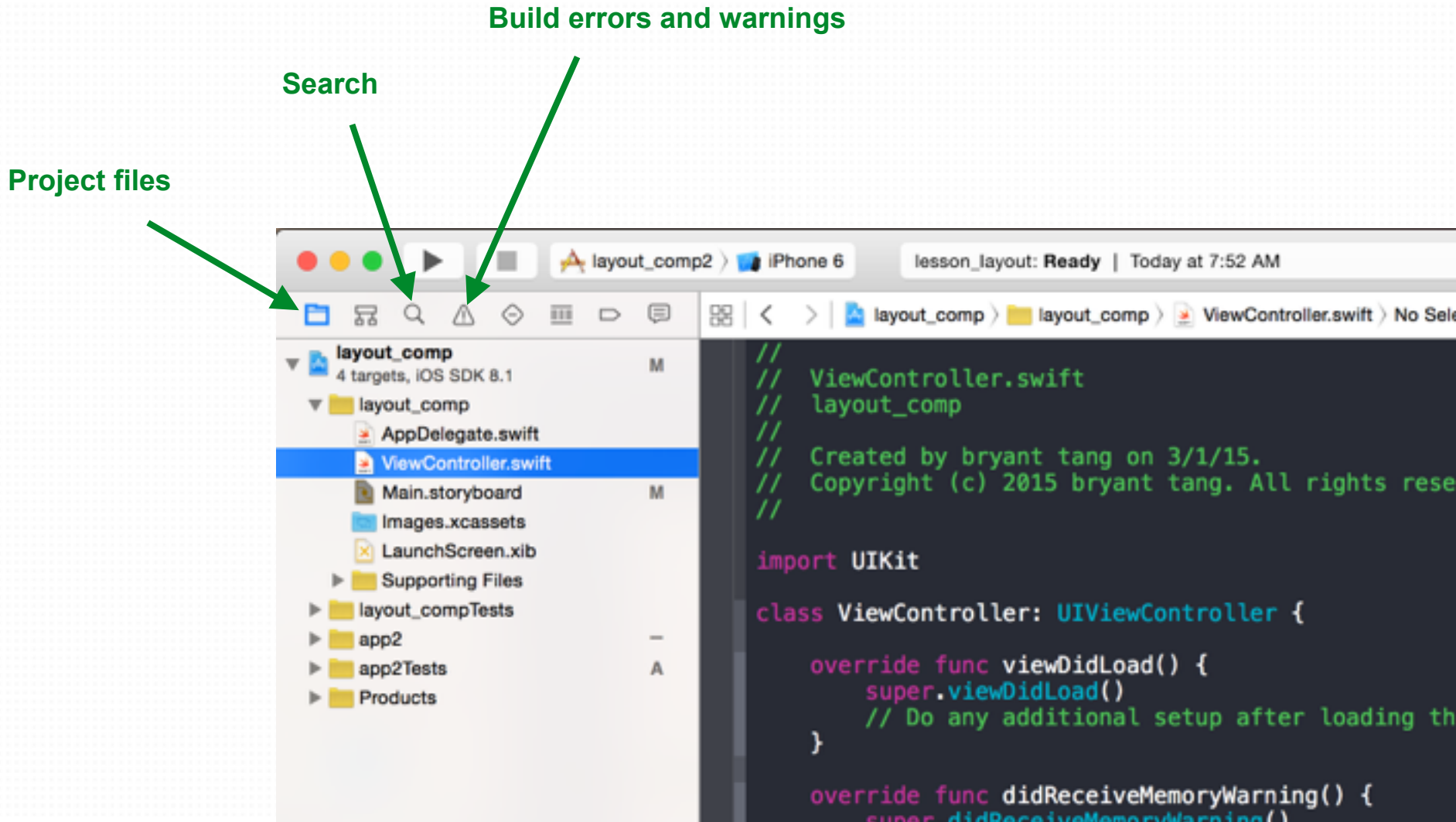
Toggle right panel/ **Inspector**



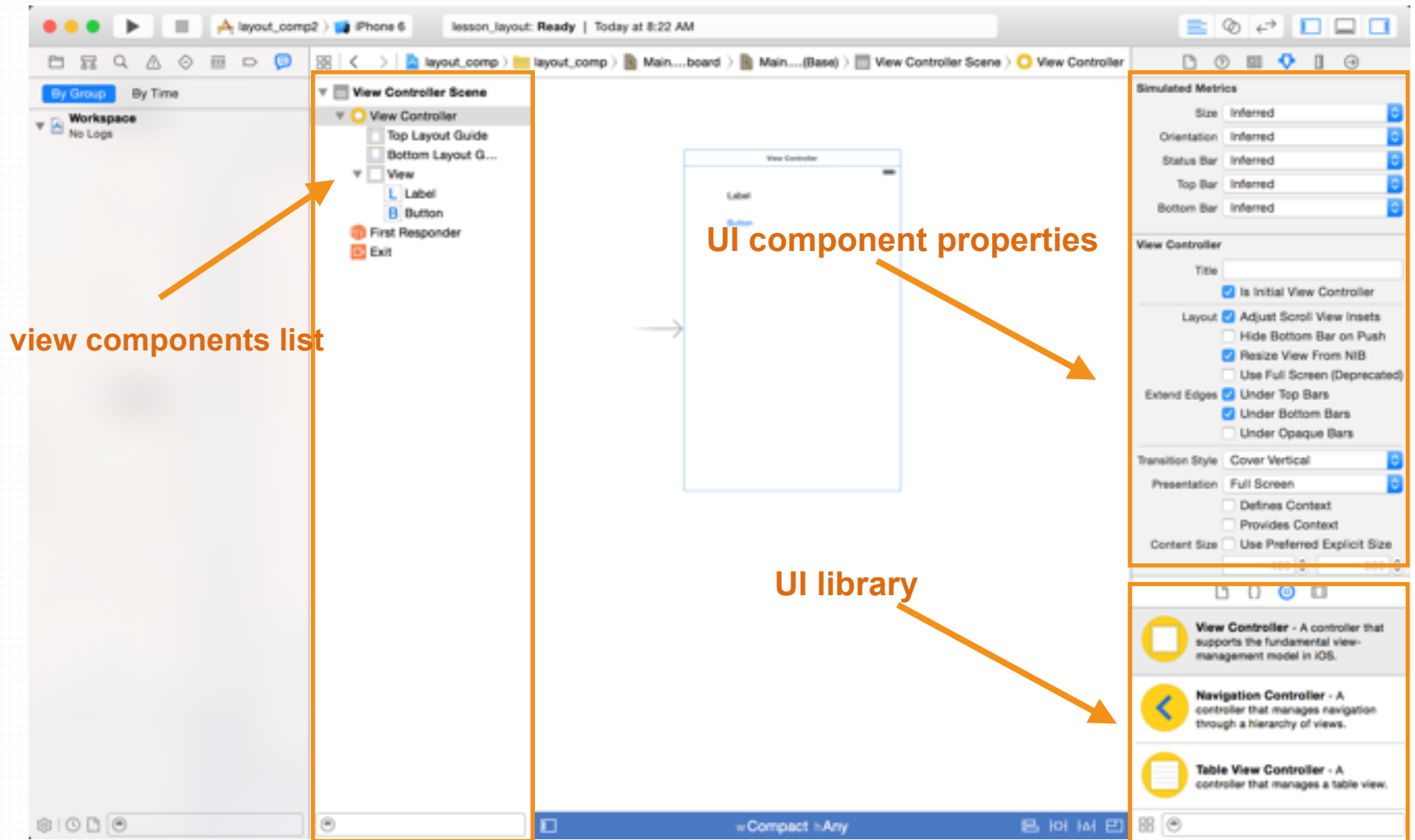
Xcode



Xcode

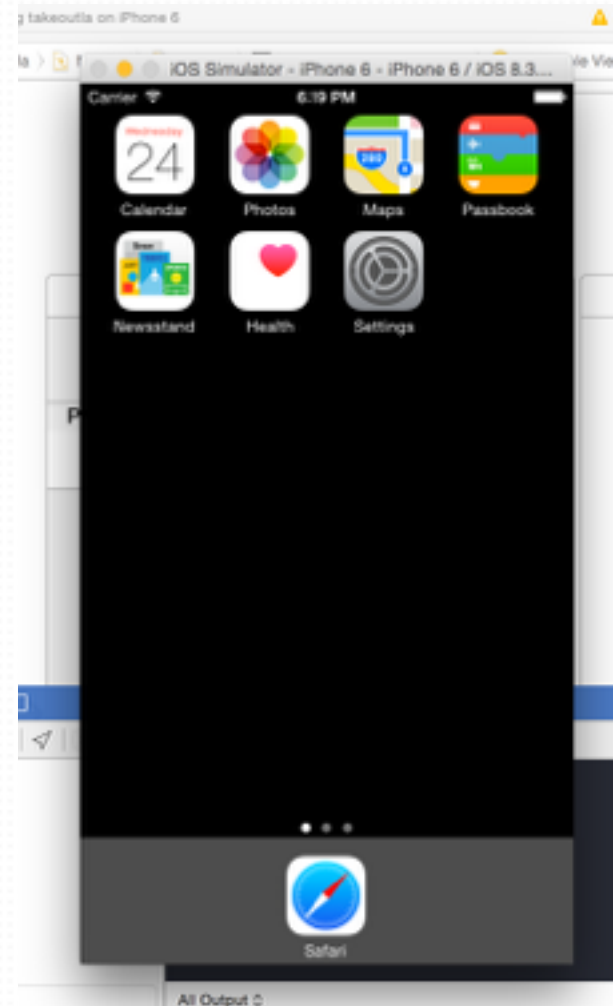
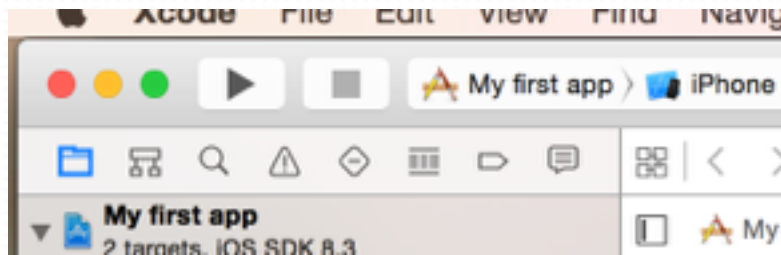


Storyboard



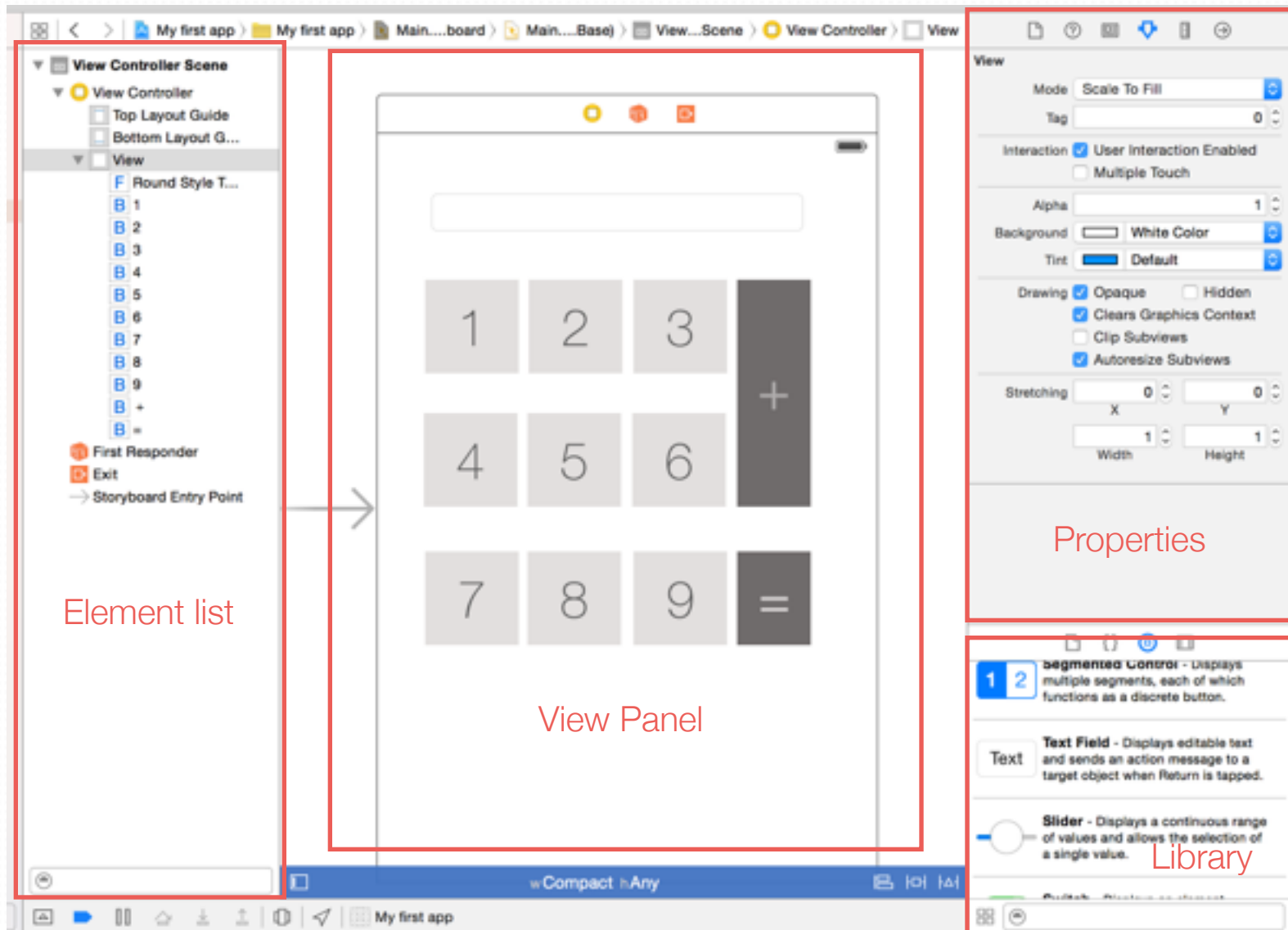
How to run a project?

Press the run button,
then the simulator will appear



Storyboard

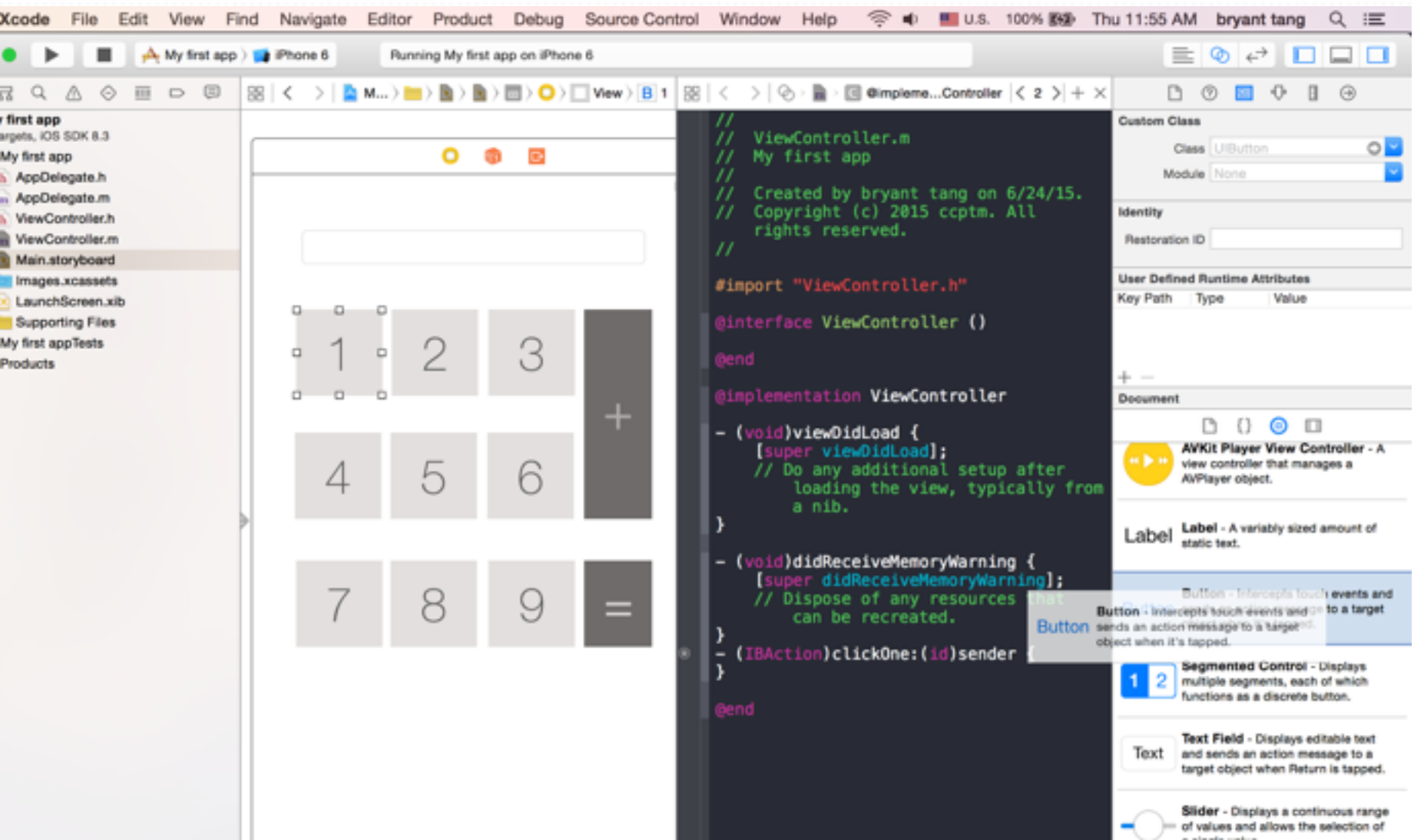
Storyboard



My First App

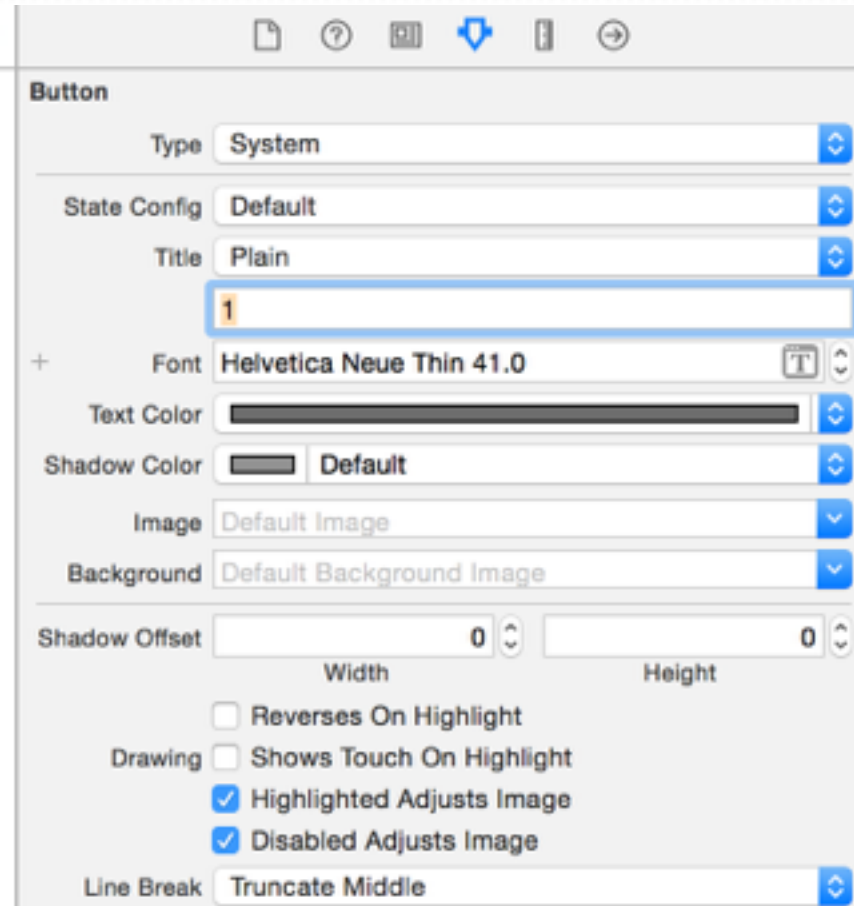
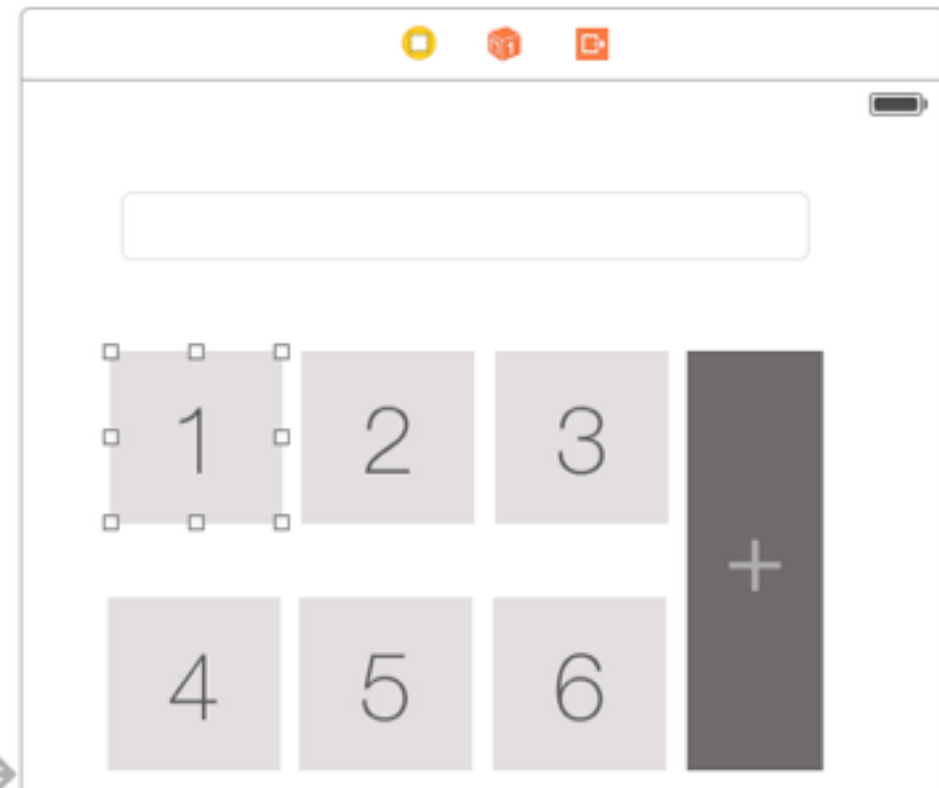
Calculator

Add elements on storyboard




Edit properties of element

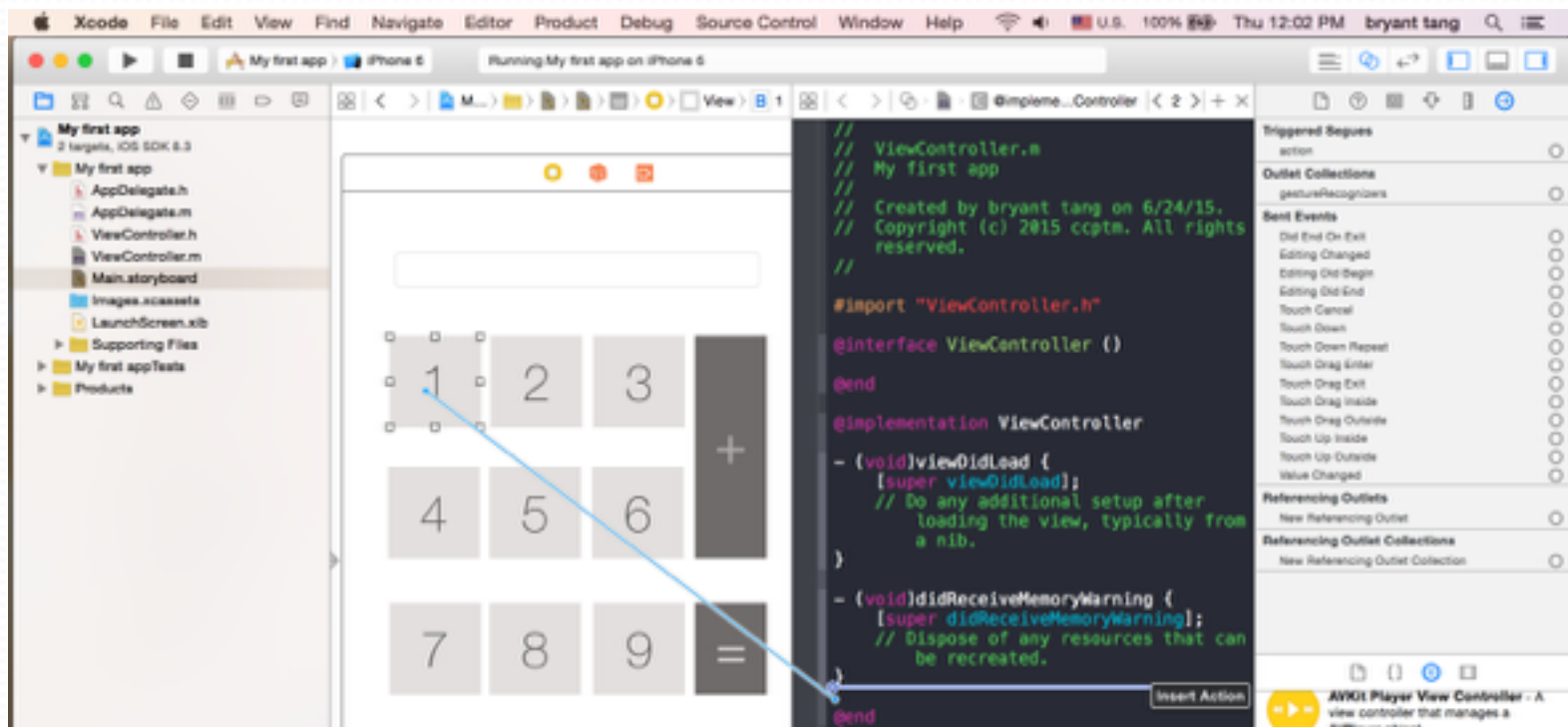
My...pp > Ma...rd > M...ase) > Vie...ne > Vie...ller > View > B 1



Action Connection - storyboard vs code

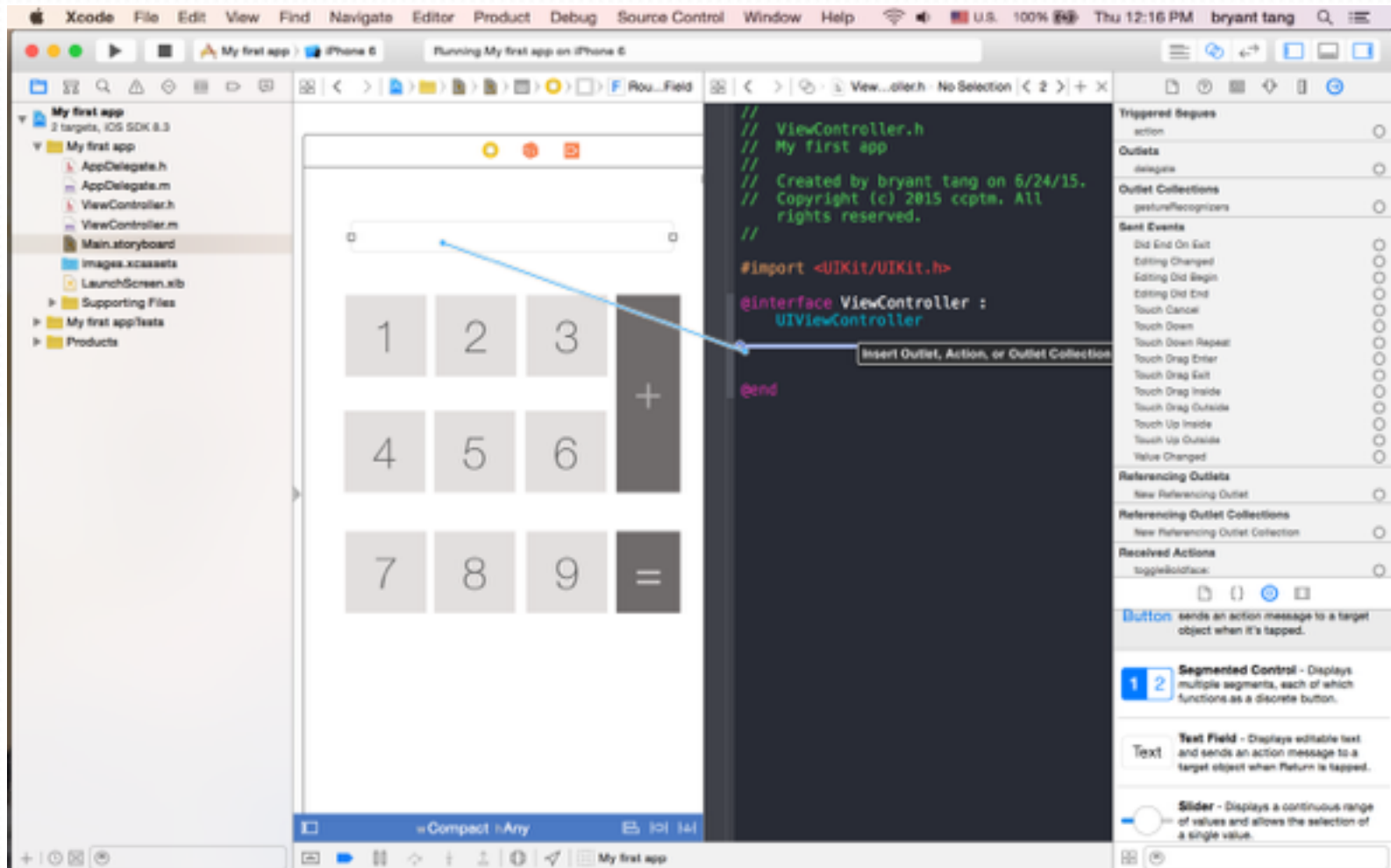
- **Storyboard** - layout design and work flow
- **Program** (.h or .m) - Control the element
- Connect - Storyboard and .m file

Use  to view both 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

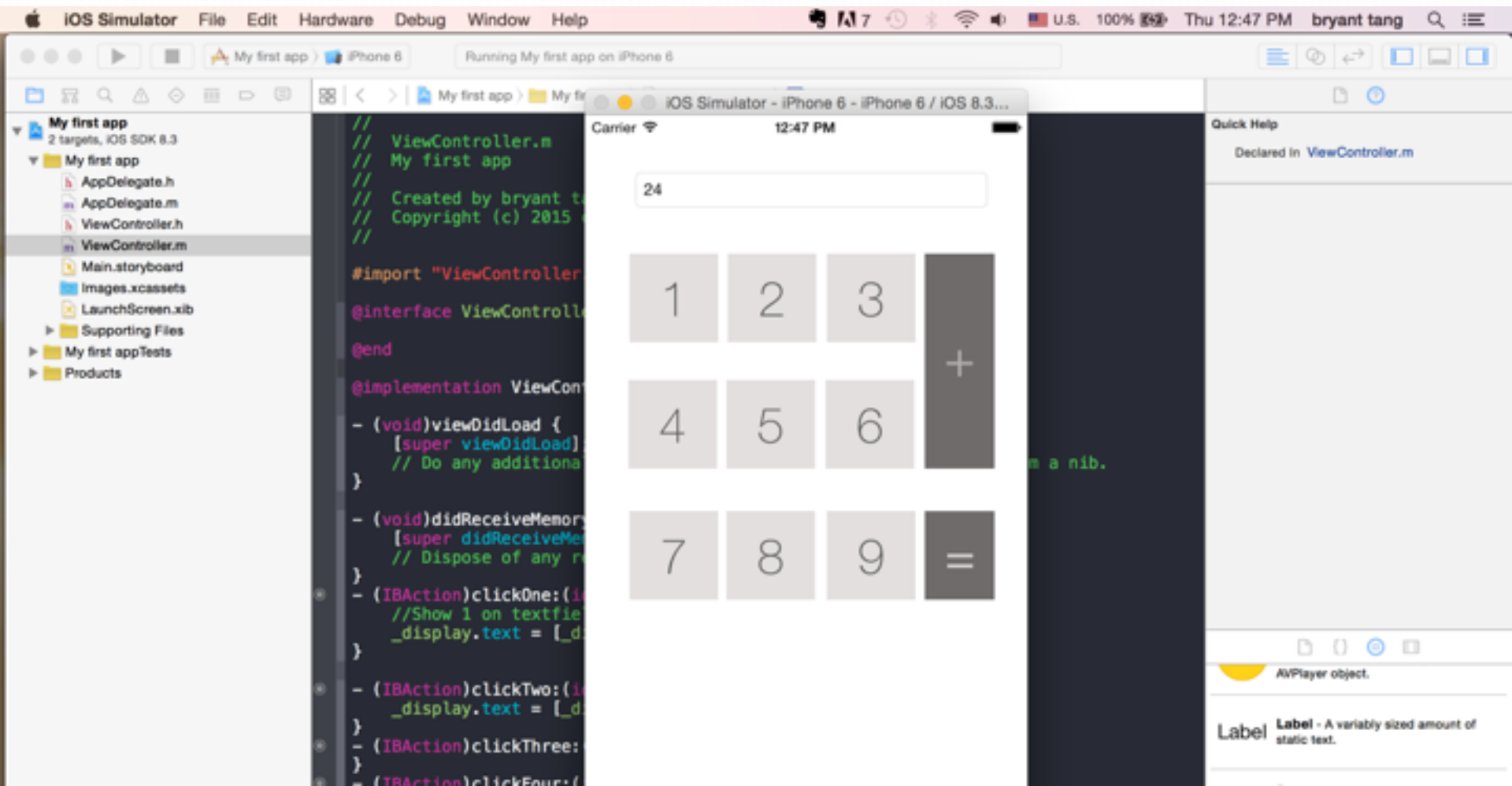
```
- (IBAction)clickPlus:(id)sender {  
    store = store + [_display.text intValue];  
    _display.text = @"";  
}
```

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

```
- (IBAction)clickEqual:(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



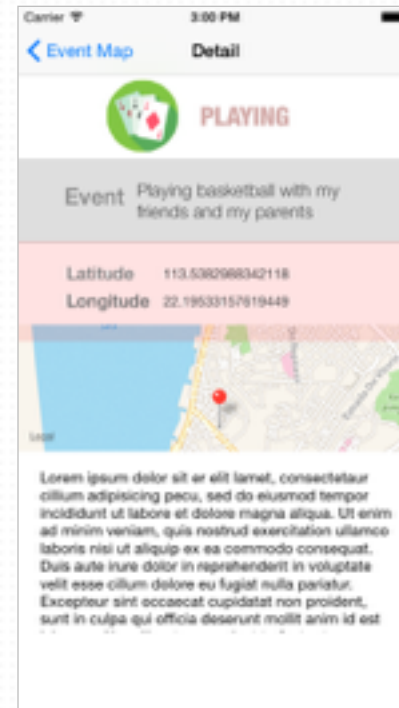
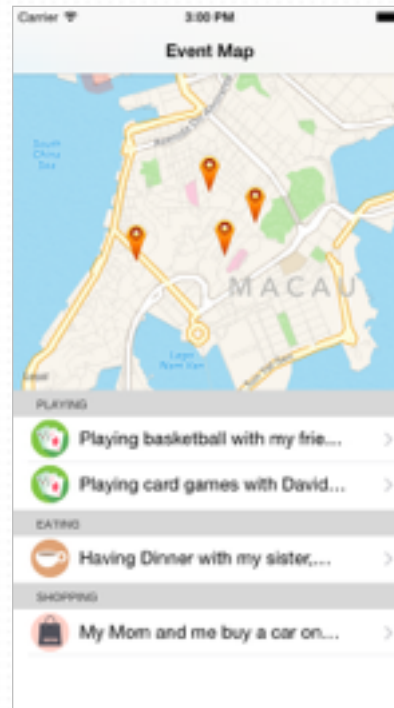
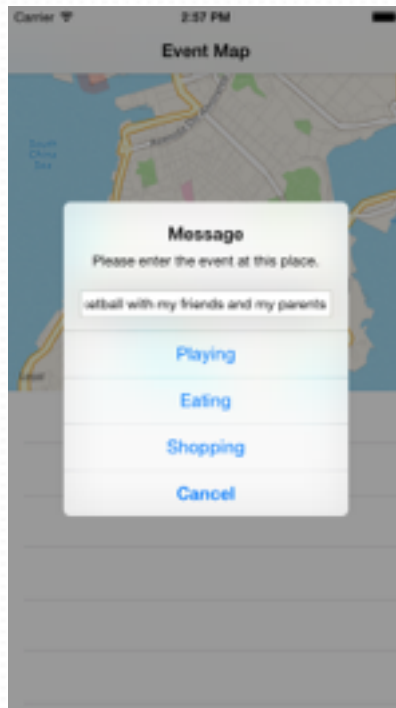
Practice

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'

CM420-3-2015 Final Project

Event Recorder



CM420-3-2015 Final Project

