Social Media Apps Programming

Developing iPhone / iPad Native Apps with Swift (XCode)

Min-Yuh Day, Ph.D.
Assistant Professor

Department of Information Management
Tamkang University

http://mail.tku.edu.tw/myday

2018-10-04
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Subject/Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2018/09/13</td>
<td>Course Orientation and Introduction to Social Media and Mobile Apps Programming</td>
</tr>
<tr>
<td>2</td>
<td>2018/09/20</td>
<td>Introduction to Android / iOS Apps Programming</td>
</tr>
<tr>
<td>3</td>
<td>2018/09/27</td>
<td>Developing Android Native Apps with Java (Android Studio)</td>
</tr>
<tr>
<td>4</td>
<td>2018/10/04</td>
<td>Developing iPhone / iPad Native Apps with Swift (XCode)</td>
</tr>
<tr>
<td>5</td>
<td>2018/10/11</td>
<td>Mobile Apps using HTML5/CSS3/JavaScript</td>
</tr>
<tr>
<td>6</td>
<td>2018/10/18</td>
<td>jQuery Mobile</td>
</tr>
<tr>
<td>7</td>
<td>2018/10/25</td>
<td>Create Hybrid Apps with Phonegap</td>
</tr>
<tr>
<td>8</td>
<td>2018/11/01</td>
<td>jQuery Mobile/Phonegap</td>
</tr>
<tr>
<td>9</td>
<td>2018/11/08</td>
<td>jQuery Mobile/Phonegap</td>
</tr>
<tr>
<td>Week</td>
<td>Date</td>
<td>Subject/Topics</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>10</td>
<td>2018/11/15</td>
<td>Midterm Exam Week / Project Presentation</td>
</tr>
<tr>
<td>11</td>
<td>2018/11/22</td>
<td>Case Study on Social Media Apps Programming and Marketing in Google Play and App Store</td>
</tr>
<tr>
<td>12</td>
<td>2018/11/29</td>
<td>Google Cloud Platform</td>
</tr>
<tr>
<td>13</td>
<td>2018/12/06</td>
<td>Google App Engine</td>
</tr>
<tr>
<td>14</td>
<td>2018/12/13</td>
<td>Google Map API</td>
</tr>
<tr>
<td>15</td>
<td>2018/12/20</td>
<td>Facebook API (Facebook JavaScript SDK) (Integrate Facebook with iOS/Android Apps)</td>
</tr>
<tr>
<td>16</td>
<td>2018/12/27</td>
<td>Twitter API</td>
</tr>
<tr>
<td>17</td>
<td>2019/01/03</td>
<td>Final Project Presentation</td>
</tr>
<tr>
<td>18</td>
<td>2019/01/10</td>
<td>Final Exam Week / Final Project Presentation</td>
</tr>
</tbody>
</table>
Android /iOS Apps Programming

Native Apps

Hybrid Apps

Mobile Web Apps
## App Development Comparison

<table>
<thead>
<tr>
<th></th>
<th>Device Access</th>
<th>Speed</th>
<th>Development Cost</th>
<th>App Store</th>
<th>Approval Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Native Apps</strong></td>
<td>Full</td>
<td>Very Fast</td>
<td>Expensive</td>
<td>Available</td>
<td>Mandatory</td>
</tr>
<tr>
<td><strong>Hybrid Apps</strong></td>
<td>Full</td>
<td>Native Speed</td>
<td>Reasonable</td>
<td>Available</td>
<td>Low Overhead</td>
</tr>
<tr>
<td></td>
<td></td>
<td>as Necessary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Web Apps</strong></td>
<td>Partial</td>
<td>Fast</td>
<td>Reasonable</td>
<td>Not Available</td>
<td>None</td>
</tr>
</tbody>
</table>

Outline

• Developing **iPhone / iPad Native Apps with Swift 4 (Xcode 9)**
  – Mac OS X 10.8, 10.9, 10.10, 10.11, 10.12, 10.13
  – Xcode 6, Xcode 7, Xcode 8, Xcode 9, Xcode 10
  – iOS 8, iOS 9, iOS 10, iOS 11, iOS 12

• Building Your First iOS App with Xcode 9

Xcode 8  Swift 3  Xcode 9  Swift 4
Building Your First iOS App with Xcode 9
iOS - Native App Development

Swift

Objective-C, C++, C

Software Source Code

Application Source Code

Resources (e.g. images)

SDK Tools

Compiler, Linker

Executable (Binary)

Packager

Distributable Package

.ipa

.app

App Stores

Xcode

Native App – Interaction with Mobile Device

Apple App Distribution Workflows

See what’s new for developers.

Learn about all the new technologies and powerful capabilities available in iOS 8, OS X Yosemite, and the new programming language, Swift, available in Xcode 6.
Download the latest development tools and SDKs.

iOS Apps  Mac Apps  Xcode

Source: https://developer.apple.com/
developer.apple.com

Become a member.

Enroll in an Apple Developer Program and get everything you need to develop and distribute your apps.

Learn more ›
This update of an Apress bestseller teaches you how to create your first iOS 7 app to run on iPhone or iPad, using plain English and practical examples. It cuts through the jargon that surrounds iPhone and iPad app development with simple, step-by-step instructions to get you started.

400 Pages
User Level: Beginner
Publishing October 23, 2013, but available now as part of the [Alpha Program](http://www.apress.com/9781430263616)

http://www.apress.com/9781430263616
**Start Developing iOS Apps Today**

**Setup**

**Start Developing iOS Apps Today** provides the perfect starting point for iOS development. On your Mac, you can create iOS apps that run on iPad, iPhone, and iPod touch. View this guide’s four short modules as a gentle introduction to building your first app—including the tools you need and the major concepts and best practices that will ease your path.

The first three modules each end with a tutorial, where you’ll implement what you’ve learned. At the end of the last tutorial, you’ll have created a simple to-do list app.

Start Developing iOS Apps Today

To develop iOS apps, you need:

- A Mac computer running OS X 10.8 or later
  - Mac OS X 10.8 (Mountain Lion)
  - Mac OS X 10.9 (Mavericks)
  - Mac OS X 10.10 (Yosemite)
  - Mac OS X 10.11 (El Capitan)
  - macOS Sierra (10.12)
  - macOS High Sierra (10.13)

- Xcode
  - Xcode 6
  - Xcode 7
  - Xcode 8
  - Xcode 9
  - Xcode 10

- iOS SDK

MacBook
Light. Years ahead.

Learn more ➤  Buy ➤

Source: https://www.apple.com/mac/
The notebook people love.

MacBook Air
MacBook and MacBook Air

MacBook
from $1299
- 12-inch (diagonal) LED-backlit Retina display
- 1.2GHz dual-core Intel Core m3, 1.3GHz dual-core Intel Core i5, or 1.4GHz dual-core Intel Core i7 processor
  Turbo Boost up to 3.6GHz
- Up to 10 hours battery life
- Up to 512GB SSD
- Force Touch trackpad
- 2.03 pounds

MacBook Air 13-inch
from $999
- 13.3-inch (diagonal) LED-backlit widescreen display
- 1.8GHz dual-core Intel Core i5 or 2.2GHz dual-core Intel Core i7 processor
  Turbo Boost up to 3.2GHz
- Up to 12 hours battery life
- Up to 512GB SSD
- Multi-Touch trackpad
- 2.96 pounds

MacBook Pro 15-inch
from $1999
- 15.4-inch (diagonal) LED-backlit Retina display
- 2.2GHz, 2.5GHz, or 2.8GHz quad-core Intel Core i7 processor
  Turbo Boost up to 4.0GHz
- Up to 9 hours battery life
- Up to 1TB SSD
- Force Touch trackpad
- 4.49 pounds

MacBook Pro 13-inch
from $1299
- 13.3-inch (diagonal) LED-backlit Retina display
- 2.3GHz dual-core Intel Core i5 or 2.5GHz dual-core Intel Core i7 processor
  Turbo Boost up to 4.0GHz
- Up to 10 hours battery life
- Up to 1TB SSD
- Force Touch trackpad
- 3.02 pounds


MacBook Pro 13-inch
from $1799
- Touch Bar and Touch ID
- 13.3-inch (diagonal) LED-backlit Retina display
- 3.1GHz or 3.3GHz dual-core Intel Core i5 or 3.5GHz dual-core Intel Core i7 processor
  Turbo Boost up to 4.0GHz
- Up to 10 hours battery life
- Up to 1TB SSD
- Force Touch trackpad
- 3.02 pounds

MacBook Pro 15-inch
from $2399
- Touch Bar and Touch ID
- 15.4-inch (diagonal) LED-backlit Retina display
- 2.8GHz, 2.9GHz, or 3.1GHz quad-core Intel Core i7 processor
  Turbo Boost up to 4.1GHz
- Up to 10 hours battery life
- Up to 2TB SSD
- Force Touch trackpad
- 4.02 pounds
iMac

iMac 21.5-inch
from $1099

- 21.5-inch (diagonal) LED-backlit display
- 2.3GHz dual-core Intel Core i5 processor
  Turbo Boost up to 3.6GHz
- 1TB 5400-rpm hard drive; 1TB Fusion Drive; or 256GB SSD²
- Magic Keyboard and

iMac 21.5-inch
from $1299

- 21.5-inch (diagonal) LED-backlit Retina 4K display
- 3.0GHz or 3.4GHz quad-core Intel Core i5 or 3.6GHz quad-core Intel Core i7 processor
  Turbo Boost up to 4.2GHz
- 1TB 5400-rpm hard drive; 1TB Fusion Drive; or up to 1TB SSD²

iMac 27-inch
from $1799

- 27-inch (diagonal) LED-backlit Retina 5K display
- 3.4GHz, 3.5GHz, or 3.8GHz quad-core Intel Core i5 or 4.2GHz quad-core Intel Core i7 processor
  Turbo Boost up to 4.5GHz
- 1TB, 2TB, or 3TB Fusion Drive; or up to 2TB SSD²

Mac mini
from $499

- Highly energy efficient
- Up to 3.0GHz dual-core
  Intel Core i7 processor
  Turbo Boost up to 3.5GHz
- Up to 1TB hard drive; 256GB, 512GB, or 1TB SSD; or 1TB or 2TB Fusion Drive

Mac Pro
from $2999

- 3.5GHz 6-core, 3.0GHz 8-core, or 2.7GHz 12-core Intel Xeon E5 processor
  Up to 30MB of L3 cache
- Up to 1TB SSD

Source: http://www.apple.com/mac/compare/
macOS High Sierra

Your Mac. Elevated.
OS X Yosemite

Every bit as powerful as it looks.

An elegant design that feels entirely fresh, yet inherently familiar. The apps you use every day, enhanced with new features. And a completely new relationship between your Mac and iOS devices. OS X Yosemite changes how you see your Mac. And what you can do with it. Upgrade for free at the Mac App Store.

Source: http://www.apple.com/osx/
OS X El Capitan
A refined experience and improved performance for your Mac.

Best New Apps & Games

OS X El Capitan
Utilities

165 Ratings
macOS Sierra

What can your Mac do now? Just ask.
macOS Sierra
By Apple
Open the Mac App Store to buy and download apps.

Description
Siri makes its debut on Mac, with new features designed just for the desktop. Your Mac works with iCloud and your Apple devices in smart new ways, and intelligent capabilities make your photos, music, and messaging even more enjoyable.

Apple Web Site › macOS Sierra Support ›

Screenshots
macOS Sierra

To set up the installation of macOS Sierra, click Continue.
macOS High Sierra

New technologies at the heart of the system make your Mac more reliable, capable and responsive — and lay the foundation for future innovations. macOS High Sierra also refines the features and apps you use every day. It’s macOS at its highest level yet.

- Easily organise, edit and view your photos in Photos.
- Make short videos from your Live Photos using new Loop and Bounce effects.
- Easily locate and organise your content with the new sidebar.
- Conveniently access all of your editing tools in the redesigned Edit View.
- Fine-tune colour and contrast in your photos with new Curves and Selective Color tools.
- Access third-party apps directly from Photos and save the edited images back to your Photos library. ...
Xcode 6

The complete toolset for building great apps.

Source: https://developer.apple.com/xcode/
Xcode 7

The complete toolset for building great apps.

Swift 2

Source: https://developer.apple.com/xcode/
Xcode 8

The complete toolset for building great apps.

Swift 3

Source: https://developer.apple.com/xcode/
Xcode 9

The complete toolset for building great apps.

Source: https://developer.apple.com/xcode/
iOS 9 SDK includes new APIs and services that enable new categories of apps and features. Multitasking and gaming APIs help enhance app functionality and create immersive games. Expanded search capabilities, and new support for CloudKit, HomeKit, HealthKit, and MapKit extend iOS to more places than ever before.

The iOS 10 SDK includes new APIs and services that enable new categories of apps and features. Your apps can now extend to Messages, Siri, Phone, and Maps to provide more engaging functionality like never before.

iOS 10

Source: http://www.apple.com/ios/ios-10/
iOS 10

The world’s most advanced mobile operating system.

iOS 10 is compatible with these devices.

**iPhone**
- iPhone 7
- iPhone 7 Plus
- iPhone 6s
- iPhone 6s Plus
- iPhone 6
- iPhone 6 Plus
- iPhone SE
- iPhone 5s
- iPhone 5c
- iPhone 5

**iPad**
- iPad Pro 12.9-inch
- iPad Pro 9.7-inch
- iPad Air 2
- iPad Air
- iPad 4th generation
- iPad mini 4
- iPad mini 3
- iPad mini 2

**iPod**
- iPod touch 6th generation

Xcode 6

Source: https://developer.apple.com/xcode/
Get the Tools

Mac App Store  Xcode  FREE  Download

Xcode 7

This release includes the Xcode IDE, Swift 2 compiler, Instruments, Simulator, and latest SDKs for OS X, iOS, and watchOS.

Source: https://developer.apple.com/xcode/download/
Xcode 8 requires a Mac running macOS Sierra 10.12 or OS X El Capitan 10.11.5 or later. Xcode 8 includes SDKs for iOS 10.0, watchOS 3.0, macOS Sierra 10.12, and tvOS 10.0.

Build 8A218a
Posted Date Sep 13, 2016
SDKs
iOS 10
macOS 10.12
watchOS 3
tvOS 10
Get the latest beta releases of Xcode, iOS, macOS, watchOS, tvOS, and more.

### Xcode 8.1 beta 2
- Download Xcode 8.1
- Release Notes

### Xcode 8
- Download Xcode 8
- Release Notes

Xcode is a development environment for creating applications for Mac, iPhone, iPad, Apple TV, and Apple Watch. It provides a unified workflow for user interface design, coding, testing, and debugging. The Xcode IDE combined with the Swift programming language makes developing apps easier and more fun than ever before.

### What's New in Version 8.0
Xcode 8 includes Swift 3, and SDKs for iOS 10, watchOS 3, tvOS 10, and macOS Sierra.
Xcode 8 includes everything you need to create amazing apps for iPhone, iPad, Mac, Apple Watch, and Apple TV. This radically faster version of the IDE features new editor extensions that you can use to completely customize your coding experience. New runtime issues alert you to hidden bugs by pointing out memory leaks, and a new Memory Debugger dives deep into your object graph. Swift 3 includes more natural and consistent API naming, which you can experiment with in the new Swift Playgrounds app for iPad.

Source: https://developer.apple.com/xcode/
Xcode

Xcode includes everything developers need to create great applications for Mac, iPhone, iPad, Apple TV, and Apple Watch. Xcode provides developers a unified workflow for user interface design, coding, testing, and debugging. The Xcode IDE combined with the Swift programming language make developing apps easier and more fun than ever before.

What's New in Version 9.0
Xcode 9 includes Swift 4 and SDKs for iOS 11, watchOS 4, tvOS 11, and macOS High Sierra 10.13

Information
Category: Developer Tools
Updated: 19 September 2017
Version: 9.0
Price: Free
Size: 5.39 GB
Family Sharing: Yes
Language: English
Developer: Apple Distribution International
© 1999–2017 Apple Inc.
Rated 4+
Compatibility: macOS 10.12.6 or later
Swift 3 is the first major release of the innovative programming language built completely in the open with the community of developers at Swift.org. This release unifies core API naming rules under a new public API Naming Guidelines document that makes writing Swift code feel even more natural. You can also experiment with Swift 3 in the new Swift Playgrounds app for iPad.

Source: https://developer.apple.com/xcode/
# Swift 3

## Download Swift

## Releases

### Swift 3.0

<table>
<thead>
<tr>
<th>Download</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Xcode 8</strong>* (Toolchain)</td>
<td>September 13, 2016</td>
</tr>
<tr>
<td>(Debugging Symbols)</td>
<td></td>
</tr>
<tr>
<td><strong>Ubuntu 15.10</strong> (Signature)</td>
<td>September 13, 2016</td>
</tr>
<tr>
<td><strong>Ubuntu 14.04</strong> (Signature)</td>
<td>September 13, 2016</td>
</tr>
</tbody>
</table>

*Swift 3.0 is available as part of Xcode 8.*
Download Swift

Releases

Swift 4.0

<table>
<thead>
<tr>
<th>Download</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xcode 9.0*</td>
<td>September 19, 2017</td>
</tr>
<tr>
<td>(Toolchain)</td>
<td></td>
</tr>
<tr>
<td>(Debugging Symbols)</td>
<td></td>
</tr>
<tr>
<td>Ubuntu 16.10</td>
<td>September 19, 2017</td>
</tr>
<tr>
<td>(Signature)</td>
<td></td>
</tr>
<tr>
<td>Ubuntu 16.04</td>
<td>September 19, 2017</td>
</tr>
<tr>
<td>(Signature)</td>
<td></td>
</tr>
<tr>
<td>Ubuntu 14.04</td>
<td>September 19, 2017</td>
</tr>
<tr>
<td>(Signature)</td>
<td></td>
</tr>
</tbody>
</table>

Source: https://swift.org/download/#releases
Xcode
Xcode

Source: Xcode 6 Documentation
Xcode

Inspector bar

Inspector pane

Library bar

Library pane

Filter bar

Source: Xcode 6 Documentation
Getting Started with Xcode 9 Development

1. Get a Mac
2. Register as an Apple Developer
3. Install Xcode
4. Enroll in the Apple Developer Program (Optional)

http://www.appcoda.com/learnswift/get-started.html
Swift.
A modern programming language that is safe, fast, and interactive.

https://developer.apple.com/swift/
Swift

• Swift is a powerful and intuitive programming language for iOS, OS X, and watchOS.
• Writing Swift code is interactive and fun, the syntax is concise yet expressive, and apps run lightning-fast.
• Swift is ready for your next project — or addition into your current app — because Swift code works side-by-side with Objective-C.

Source: https://developer.apple.com/swift/
Swift Language

• Swift is a new object-oriented programming language for iOS and OS X development.

• Swift is modern, powerful, expressive, and easy to use.

Source: https://developer.apple.com/swift/
Swift Language

• Unified
  A complete replacement for both the C and Objective-C languages.
  – Swift provides full object-oriented features, and includes low-level language primitives such as types, flow control, and operators.

• Fast
• Complete platform
• Safe by design
• Modern
• Interactive

Source: https://developer.apple.com/swift/
print("Hello world")
println("Hello world")

print("Hello World")

'println' has been renamed to 'print'

Fix-it  Replace "print" with "println"
let count = 10
var price = 23.55

let firstMessage = "Swift is awesome."
let secondMessage = "What do you think?"
var message = firstMessage + secondMessage

print(message)
Objective-C

```c
const int count = 10;
double price = 23.55;

NSString *firstMessage = @"Swift is awesome. ";
NSString *secondMessage = @"What do you think?";
NSString *message = [NSString stringWithFormat:@"%@%@", firstMessage, secondMessage];

NSLog(@"%@", message);
```
var s = "Hello" + " World"
```swift
var myVariable = 82
myVariable = 90
let myConstant = 82
```
let individualScores = [75, 43, 93, 87, 12]
var teamScore = 0
for score in individualScores {
    if score > 60 {
        teamScore += 3
    } else {
        teamScore += 1
    }
}
print(teamScore)
let individualScores = [75, 43, 93, 87, 12]
var teamScore = 0
for score in individualScores {
    if score > 60 {
        teamScore += 3
    } else {
        teamScore += 1
    }
}
print(teamScore)
The Swift Programming Language (Swift 4)

print("Hello, world!")
Welcome to Xcode

Version 9.0 (9A235)

- **Get started with a playground**
  Explore new ideas quickly and easily.

- **Create a new Xcode project**
  Create an app for iPhone, iPad, Mac, Apple Watch or Apple TV.

- **Clone an existing project**
  Start working on something from an SCM repository.

- Show this window when Xcode launches
Xcode 9 Playground

Choose a template for your new playground:

- iOS
- tvOS
- macOS

- Blank
- Game
- Map
- Single View
Swift 4 in Xcode 9 Playground

```swift
//: Playground – noun: a place where people can play

import UIKit

var str = "Hello, playground"
```

"Hello, playground"
Swift 4 in Xcode 9 Playground

//: Playground — noun: a place where people can play

```swift
import UIKit

var str = "Hello, playground"
print(str)
```

"Hello, playground"
"Hello, playground\n"
var message = "Hello World"
print(message)
var a = 7
var b = 2
var total = a + b
if (total < 10)
{
    print("Hello Swift 3")
}
Swift 4 in Xcode 9 Playground

```swift
import UIKit

var str = "Hello, playground"
print(str)

var message = "Hello World"
print(message)
var a = 7
var b = 2
var total = a + b
if (total < 10)
{
    print("Hello Swift 3")
}

"Hello, playground"
"Hello, playground\n"
"Hello World"
"Hello World\n"
7
2
9
"Hello Swift 3\n"
```

Hello, playground
Hello World
Hello Swift 3
```swift
var strS = "Your score is "
var score = 90
var yourScore = strS + String(score)
print(yourScore)
if (score >= 60) {
    print("Pass")
}
else {
    print("Fail")
}
```
''Playground - noun: a place where people can play''

```swift
import UIKit

var str = "Hello, playground"

var strS = "Your score is ")
var score = 90
var yourScore = strS + String(score)
print(yourScore)

if (score >= 60) {
    print("Pass")
} else {
    print("Fail")
}
```

"Hello, playground"
"Your score is 90"
"Your score is 90)
"Pass"
"Fail"
iOS App Development Process

iOS App Development Process

• Defining the Concept
• Designing a User Interface
• Defining the Interaction
• Implementing the Behavior

Objects Communicate Through Messages

Current Execution Point

... [somePerson sayHello]; ...

XYZPerson Implementation

@implementation XYZPerson

- (void)sayHello {
    NSLog(@"Hello, world!");
}
@end
Protocols Define Messaging Contracts

Designing a User Interface

Use Storyboards to Lay Out Views

Defining the Interaction

View Controllers

Application controller layer

View Controller

View layer

Window ➔ View ➔ Image View, Text View, Button

UIImageView

Lorem ipsum dolor sit er elit
lament, consectetaur cillum
adipiscing pecu, sed do eiusmod
tempor incididunt ut labo

Use Storyboards to Define Navigation

Storyboards

Incorporating the Data

Using Design Patterns

Model-View-Controller (MVC)

Target-Action

Delegation

IBOutlet and IBAction

• IBOutlet
  – Interface Builder Outlet
• IBAction
  – Interface Builder Action
Demo:
Building Your First iOS App with Xcode 9 (Swift 4)
Building Your First iOS App with Xcode 9
Your First iOS App

Xcode 8 with Swift 3
Xcode 9 with Swift 4
Xcode 10 with Swift 4.2

Xcode 10  Swift 4.2
Launchpad ➔ Xcode
Xcode 9

Welcome to Xcode

Version 9.0 (9A235)

Get started with a playground
Explore new ideas quickly and easily.

Create a new Xcode project
Create an app for iPhone, iPad, Mac, Apple Watch or Apple TV.

Clone an existing project
Start working on something from an SCM repository.

Show this window when Xcode launches
Xcode Single View App

Choose a template for your new project:

- Single View App
- Game
- Augmented Reality App
- Document Based App
- Master-Detail App
- Page-Based App
- Tabbed App
- Sticker Pack App
- iMessage App

Frameworks & Library:
- Cocoa Touch Framework
- Cocoa Touch Static Library
- Metal Library
Swift Language
Source Control: Create Git repository on My Mac

Xcode will place your project under version control
Identity

- **Display Name**: HelloWorld
- **Bundle Identifier**: com.imtku.HelloWorld
- **Version**: 1.0
- **Build**: 1

Signing

No accounts found
Add a developer account to sign your app.

Add Account...

Deployment Info

- **Deployment Target**: 10.0
- **Devices**: iPhone
- **Main Interface**: Main
- **Device Orientation**: Portrait
- **Status Bar Style**: Default

App Icons and Launch Images

- **App Icons Source**: AppIcon
Main.storyboard (UI)
Main.storyboard (UI)
Main.storyboard (UI)
ViewController.swift (Code)
Main.storyboard (UI)
ViewController.swift (Code)
Label

Label - A variably sized amount of static text.

Button - Intercepts touch events and sends an action message to a target object when it’s tapped.

Segmented Control - Displays multiple segments, each of which functions as a discrete button.

Text Field - Displays editable text and sends an action message to a target object when Return is tapped.
Button

- Implements a button that intercepts touch events and sends an action message to a target object when it's tapped. You can set the title, image, and other appearance properties of a button. In addition, you can specify a different appearance for each button state.

Label - A variably sized amount of static text.

Segmented Control - Displays multiple segments, each of which functions as a discrete button.

Text - Displays editable text and sends an action message to a target object when Return is tapped.
Text Field - Displays editable text and sends an action message to a target object when Return is tapped.

Label - A variably sized amount of static text.

Button - Intercepts touch events and sends an action message to a target object when it's tapped.

Segmented Control - Displays multiple segments, each of which functions as a discrete button.

Color - Text

Font - System 14.0

Alignment - Default

Placeholder - Placeholder Text

Background - Background Image

Disabled - Disabled Background Image

Border Style - Default

Clear Button - Never appears

Min Font Size - 17

Adjust to Fit

Capitalization - None

Correction - Default

Spell Checking - Default

Text Field Scene

Top Layout Guide

Bottom Layout Guide

View

Round Style Text Field
Text Field
Label

A variably sized amount of static text.
Label

- A variably sized amount of static text.

**Button** - Intercepts touch events and sends an action message to a target object when it's tapped.

**Segmented Control** - Displays multiple segments, each of which functions as a discrete button.

**TextField** - Displays editable text and sends an action message to a target object when Return is tapped.
Button

Hello World

**Button** - Intercepts touch events and sends an action message to a target object when it's tapped.

**Segmented Control** - Displays multiple segments, each of which functions as a discrete button.

**TextField** - Displays editable text and sends an action message to a target object when Return is tapped.
Button

Hello World

- Label - A variably sized amount of static text.
- Button - Intercepts touch events and sends an action message to a target object when it's tapped.
- Segmented Control - Displays multiple segments, each of which functions as a discrete button.
- Text - Displays editable text and sends an action message to a target object when Return is tapped.
Set the active scheme

iOS Simulator: iPhone
iOS Simulators: iPhone 7

Hello World
Build and Run
Hello World

Hello
Main.storyboard (UI)
ViewController.swift (Code)
ViewController.swift (Code)
IBOutlet and IBAction

• IBOutlet
  – Interface Builder Outlet

• IBAction
  – Interface Builder Action
import UIKit

class ViewController: UIViewController {
    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view,
        // typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }
}
import UIKit

class ViewController: UIViewController {

override func viewDidLoad() {
    super.viewDidLoad()
    // Do any additional setup after loading the view, typically from a nib.
}

override func didReceiveMemoryWarning() {
    super.didReceiveMemoryWarning()
    // Dispose of any resources that can be recreated.
}
}
Hold on control drag and drop button to Assistant Editor
import UIKit

class ViewController: UIViewController {

    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }
}
```swift
import UIKit

class ViewController: UIViewController {
    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }
}
```
btnHello
btnHello

IBAction (Interface Builder Action)
Hold on control drag and drop to Assistant Editor.
import UIKit

class ViewController: UIViewController {

override func viewDidLoad() {
    super.viewDidLoad()
    // Do any additional setup after loading the view, typically from a nib.
}

override func didReceiveMemoryWarning() {
    super.didReceiveMemoryWarning()
    // Dispose of any resources that can be recreated.
}

@IBAction func btnHello(_ sender: AnyObject) {
}

IBOutlet (Interface Builder Outlet)
Hold on control drag and drop to Assistant Editor
myLabel
IBOutlet (Interface Builder Outlet)
import UIKit

class ViewController: UIViewController {

override func viewDidLoad() {
    super.viewDidLoad()
    // Do any additional setup after loading the view, typically from a nib.
}

override func didReceiveMemoryWarning() {
    super.didReceiveMemoryWarning()
    // Dispose of any resources that can be recreated.
}

@IBOutlet weak var txtYourName: UITextField!
@IBOutlet weak var myLabel: UILabel!

@IBAction func btnHello(_ sender: AnyObject) {
}
}
@IBAction func btnHello()
@IBAction func btnHello() {

    // ViewController.swift
    // HelloWorld
    // Created by imyth on 10/5/16.
    // Copyright © 2016 imtu. All rights reserved.
    //
    import UIKit

    class ViewController: UIViewController {

        override func viewDidLoad() {
            super.viewDidLoad()
            // Do any additional setup after loading the view, typically from a nib.
        }

        override func didReceiveMemoryWarning() {
            super.didReceiveMemoryWarning()
            // Dispose of any resources that can be recreated.
        }

        @IBOutlet weak var txtYourName: UITextField!
        @IBOutlet weak var myLabel: UILabel!

        @IBAction func btnHello(_ sender: AnyObject) {
            let strYourName = txtYourName.text
            myLabel.text = "Hello, " + strYourName
            txtYourName.text = ""
        }
    }

    @IBOutlet weak var txtYourName: UITextField!
    @IBOutlet weak var myLabel: UILabel!
@IBAction func btnHello()

@IBOutlet weak var txtYourName: UITextField!

@IBOutlet weak var myLabel: UILabel!

@IBAction func btnHello(_ sender: AnyObject) {
    let strYourName: String! = txtYourName.text
    myLabel.text = "Hello, " + strYourName
    txtYourName.text = ""
}
Build and Run
import UIKit

class ViewController: UIViewController {
    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }

    @IBOutlet weak var txtYourName: UITextField!
    @IBOutlet weak var myLabel: UILabel!

    @IBAction func btnHello(_ sender: AnyObject) {
        let strYourName: String! = txtYourName.text
        myLabel.text = "Hello, " + strYourName
        txtYourName.text = ""
    }
}
Hello World

Hello

World

// ViewController.swift
// HelloWorld
// Created by iMyday on 10/5/16.
// Copyright © 2016 imtku. All rights reserved.
//

import UIKit

class ViewController: UIViewController {

    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }

    @IBOutlet weak var txtYourName: UITextField!
    @IBOutlet weak var myLabel: UILabel!

    @IBAction func btnHello(_ sender: AnyObject) {
        let strYourName:String! = txtYourName.text
        self.myLabel.text = "Hello, " + strYourName
        self.txtYourName.text = ""
    }
}
Hello, Myday

Hello
Hello, Swift 3

Hello

import UIKit

class ViewController: UIViewController {

override func viewDidLoad() {
    super.viewDidLoad()
    // Do any additional setup after loading the view, typically from a nib.
}

override func didReceiveMemoryWarning() {
    super.didReceiveMemoryWarning()
    // Dispose of any resources that can be recreated.
}

@IBOutlet weak var txtYourName: UITextField!

@IBOutlet weak var myLabel: UILabel!

@IBAction func btnHello(_ sender: AnyObject) {
    let strYourName: String! = txtYourName.text
    myLabel.text = "Hello, " + strYourName
    txtYourName.text = ""
Hello, 5th Edition

import UIKit

class ViewController: UIViewController {

override func viewDidLoad() {
    super.viewDidLoad()
    // Do any additional setup after loading the view, typically from a nib.
}

override func didReceiveMemoryWarning() {
    super.didReceiveMemoryWarning()
    // Dispose of any resources that can be recreated.

    outlet var txtYourName: UITextField!
    outlet var myLabel: UILabel!

    @IBAction func btnHello(_ sender: AnyObject) {
        let strYourName: String! = txtYourName.text
        myLabel.text = "Hello, " + strYourName
        txtYourName.text ="
    }
}
Hello, Myday

Hello

Hello World

@IBOutlet weak var txtYourName: UITextField!
@IBOutlet weak var myLabel: UILabel!

@IBAction func btnHello(_ sender: AnyObject) {
    let strYourName: String! = txtYourName.text
    myLabel.text = "Hello, " + strYourName
    txtYourName.text = ""
}
ViewController.swift

```swift
class ViewController: UIViewController {

    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }

    @IBOutlet weak var txtYourName: UITextField!
    @IBOutlet weak var myLabel: UILabel!

    @IBAction func btnHello(_ sender: AnyObject) {
        let strYourName: String = txtYourName.text
        myLabel.text = "Hello, " + strYourName
        txtYourName.text = ""
    }
}
```
// ViewController.swift
// HelloWorld
//
// Created by iMyday on 10/5/16.
// Copyright © 2016 imtku. All rights reserved.
//
import UIKit

class ViewController: UIViewController {

    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }

    @IBOutlet weak var txtYourName: UITextField!

    @IBOutlet weak var myLabel: UILabel!

    @IBAction func btnHello(_ sender: AnyObject) {
        let strYourName: String! = txtYourName.text
        myLabel.text = "Hello, " + strYourName
        txtYourName.text = ""
    }

}
@IBOutlet weak var txtYourName: UITextField!

@IBOutlet weak var myLabel: UILabel!

@IBAction func btnHello(_ sender: AnyObject) {
    let strYourName: String! = txtYourName.text
    myLabel.text = "Hello, " + strYourName
    txtYourName.text = ""
}
import UIKit

internal class ViewController: UIViewController {

override internal func viewDidLoad()

override internal func didReceiveMemoryWarning()

@IBOutlet weak internal var txtYourName: UITextField!

@IBOutlet weak internal var myLabel: UILabel!

@IBAction internal func btnHello(_ sender: AnyObject)
}
Hello, Myday

Hello
Summary

• Developing **iPhone / iPad Native Apps with Swift 4 (Xcode 9)**
  – Mac OS X 10.8, 10.9, 10.10, 10.11, 10.12, 10.13
  – Xcode 6, Xcode 7, Xcode 8, Xcode 9, Xcode 10
  – iOS 8, iOS 9, iOS 10, iOS 11, iOS 12

• **Building Your First iOS App with Xcode 9**
References

• Start Developing iOS Apps Today,
  • https://developer.apple.com/library/ios/referencelibrary/GettingStarted/RoadMapiOS/
  • https://developer.apple.com/library/ios/referencelibrary/GettingStarted/RoadMapiOS/RoadMapiOS.pdf
– The Swift Programming Language,
– Apple - WWDC 2014
  • https://www.youtube.com/watch?v=w87fOAG8fjk
– Apple - WWDC 2015
  • https://www.youtube.com/watch?v=_p8AsQhaVKI
– Apple - WWDC 2016 Keynote
  • https://www.youtube.com/watch?v=n5jXg_NNiCA
– What's New in Swift 4 - Apple WWDC 2017
  • https://www.youtube.com/watch?v=3y42Qg6MTvk