Social Media Apps Programming

Developing iPhone / iPad Native Apps with Swift (XCode)

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1051SMAP04
TLMXM1A (8648) (M2143) (Fall 2016)
(MIS MBA) (2 Credits, Elective) [Full English Course]
Wed 8,9 (15:10-17:00) B310
## Course Schedule (1/3)

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Subject/Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2016/09/14</td>
<td>Course Orientation and Introduction to Social Media and Mobile Apps Programming</td>
</tr>
<tr>
<td>2</td>
<td>2016/09/21</td>
<td>Introduction to Android / iOS Apps Programming</td>
</tr>
<tr>
<td>3</td>
<td>2016/09/28</td>
<td>Developing Android Native Apps with Java (Eclipse) (MIT App Inventor)</td>
</tr>
<tr>
<td>4</td>
<td>2016/10/05</td>
<td>Developing iPhone / iPad Native Apps with Swift (XCode)</td>
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<tr>
<td>5</td>
<td>2016/10/12</td>
<td>Mobile Apps using HTML5/CSS3/JavaScript</td>
</tr>
<tr>
<td>6</td>
<td>2016/10/19</td>
<td>jQuery Mobile</td>
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</tbody>
</table>


# Course Schedule (2/3)

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<tr>
<th>Week</th>
<th>Date</th>
<th>Subject/Topics</th>
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<tbody>
<tr>
<td>7</td>
<td>2016/10/26</td>
<td>Create Hybrid Apps with Phonegap</td>
</tr>
<tr>
<td>8</td>
<td>2016/11/02</td>
<td>jQuery Mobile/Phonegap</td>
</tr>
<tr>
<td>9</td>
<td>2016/11/09</td>
<td>jQuery Mobile/Phonegap</td>
</tr>
<tr>
<td>10</td>
<td>2016/11/16</td>
<td>Midterm Exam Week (Midterm Project Report)</td>
</tr>
<tr>
<td>11</td>
<td>2016/11/23</td>
<td>Case Study on Social Media Apps Programming and Marketing in Google Play and App Store</td>
</tr>
<tr>
<td>12</td>
<td>2016/11/30</td>
<td>Invited Speaker: Prof. Yoshinobu Kano, Associate Professor, Faculty of Informatics, Shizuoka University</td>
</tr>
<tr>
<td>Week</td>
<td>Date</td>
<td>Subject/Topics</td>
</tr>
<tr>
<td>------</td>
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<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>13</td>
<td>2016/12/07</td>
<td>Google Cloud Platform</td>
</tr>
<tr>
<td>14</td>
<td>2016/12/14</td>
<td>Google App Engine and Google Map API</td>
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<td>15</td>
<td>2016/12/21</td>
<td>Facebook API (Facebook JavaScript SDK) (Integrate Facebook with iOS/Android Apps)</td>
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<tr>
<td>16</td>
<td>2016/12/28</td>
<td>Twitter API</td>
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<tr>
<td>17</td>
<td>2017/01/04</td>
<td>Final Project Presentation</td>
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<tr>
<td>18</td>
<td>2017/01/11</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>Device Access</th>
<th>Speed</th>
<th>Development Cost</th>
<th>App Store</th>
<th>Approval Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Apps</td>
<td>Full</td>
<td>Very Fast</td>
<td>Expensive</td>
<td>Available</td>
</tr>
<tr>
<td>Hybrid Apps</td>
<td>Full</td>
<td>Native Speed as Necessary</td>
<td>Reasonable</td>
<td>Available</td>
</tr>
<tr>
<td>Web Apps</td>
<td>Partial</td>
<td>Fast</td>
<td>Reasonable</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Outline

• Developing iPhone / iPad Native Apps with Swift 3 (Xcode 8)
  – Mac OS X 10.8, 10.9, 10.10, 10.11, 10.12
  – Xcode 6, Xcode 7, Xcode 8
  – iOS 8, iOS 9, iOS 10

• Building Your First iOS App with Xcode 8
Building Your First iOS App with Xcode 8
iOS - Native App Development

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.

Source: https://developer.apple.com/
Download the latest development tools and SDKs.

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 ›

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

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
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)

• Xcode
  – Xcode 6
  – Xcode 7
  – Xcode 8

• 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

<table>
<thead>
<tr>
<th>MacBook</th>
<th>MacBook Air 11-inch</th>
<th>MacBook Air 13-inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>from $1299</td>
<td>from $899</td>
<td>from $999</td>
</tr>
</tbody>
</table>

- 12-inch (diagonal) LED-backlit Retina display
- 1.1GHz dual-core Intel Core m3, 1.2GHz dual-core Intel Core m5, or 1.3GHz dual-core Intel Core m7 processor
  Turbo Boost up to 3.1GHz
- Up to 10 hours battery life²
- Up to 512GB flash storage²
- 2.03 pounds³
- Available in rose gold, space gray, gold, and silver

- 11.6-inch (diagonal) LED-backlit display
- 1.6GHz dual-core Intel Core i5 or 2.2GHz dual-core Intel Core i7 processor
  Turbo Boost up to 3.2GHz
- Up to 9 hours battery life¹
- Up to 512GB flash storage²
- 2.38 pounds³

- 13.3-inch (diagonal) LED-backlit display
- 1.6GHz 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 life¹
- Up to 512GB flash storage²
- 2.96 pounds³

MacBook Pro

MacBook Pro 13-inch
from $1099

- 13.3-inch (diagonal) LED-backlit display
- 2.5GHz dual-core Intel Core i5 or 2.9GHz dual-core Intel Core i7 processor
  - Turbo Boost up to 3.6GHz
- Up to 7 hours battery life
- Up to 1TB 5400-rpm hard drive; or up to 512GB solid-state drive
- 4.5 pounds

MacBook Pro 13-inch with Retina display
from $1299

- 13.3-inch (diagonal) LED-backlit Retina display
- 2.7GHz or 2.9GHz dual-core Intel Core i5 or 3.1GHz dual-core Intel Core i7 processor
  - Turbo Boost up to 3.4GHz
- Up to 10 hours battery life
- Up to 1TB flash storage
- 3.48 pounds

MacBook Pro 15-inch with Retina display
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 flash storage
- 4.49 pounds

iMac

- **iMac 21.5-inch**
  - from $1099
  - 21.5-inch (diagonal) LED-backlit display
  - 1.6GHz dual-core or 2.8GHz quad-core Intel Core i5 processor
    Turbo Boost up to 3.3GHz
  - 1TB 5400-rpm hard drive; 1TB or 2TB Fusion Drive; or 256GB flash storage (SSD)
  - Magic Keyboard and Magic Mouse 2 or Magic Trackpad 2

- **iMac 21.5-inch with Retina 4K display**
  - from $1499
  - 21.5-inch (diagonal) LED-backlit Retina 4K display
  - 3.1GHz quad-core Intel Core i5 or
    3.3GHz quad-core Intel Core i7 processor
    Turbo Boost up to 3.8GHz
  - 1TB 5400-rpm hard drive; 1TB or 2TB Fusion Drive; or up to 512GB flash storage (SSD)
  - Magic Keyboard and Magic Mouse 2 or Magic Trackpad 2

- **iMac 27-inch with Retina 5K display**
  - from $1799
  - 27-inch (diagonal) LED-backlit Retina 5K display
  - 3.2GHz or 3.3GHz quad-core Intel Core i5 or
    4.0GHz quad-core Intel Core i7 processor
    Turbo Boost up to 4.2GHz
  - 1TB 7200-rpm hard drive; 1TB, 2TB, or 3TB Fusion Drive; or up to 1TB flash storage (SSD)
  - Magic Keyboard and Magic Mouse 2 or Magic Trackpad 2

Mac mini
from $499

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

Mac Pro
from $2999

- 3.7GHz quad-core, 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 flash storage (SSD)

Source: http://www.apple.com/mac/compare/
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

Learn More ›
OS X El Capitan

A refined experience and improved performance for your Mac.

Learn More ›
macOS Sierra

What can your Mac do now? Just ask.

macOS Sierra
Utilities

DOWNLOAD
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

Free
Category: Utilities
Updated: Sep 20, 2016
Version: 10.12
Size: 4.77 GB
Languages: English, Arabic, Catalan, Croatian, Czech, Danish, Dutch, Finnish, French, German, Greek, Hebrew, Hungarian, Indonesian, Italian, Japanese, Korean, Malay, Norwegian, Polish, Portuguese, Romanian, Russian, Simplified Chinese, Slovak, Spanish, Swedish, Thai, Traditional Chinese, Turkish, Ukrainian, Vietnamese
Seller: Apple Inc.
© 2016 Apple, Inc.
Rated 4+
macOS Sierra

To set up the installation of macOS Sierra, click Continue.
OS X El Capitan for Developers

https://developer.apple.com/osx/
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/
OS X Yosemite
for Developers

iOS 8 includes over 4,000 new APIs that let you add amazing new features and capabilities to your apps.

Source: https://developer.apple.com/ios8/
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.

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

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

Build
7A220

Posted Date
Sep 16, 2015

SDK
iOS 9

OS X v10.11

watchOS 2

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

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

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

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

Source: https://developer.apple.com/xcode/download/
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 8.0
Xcode 8 includes Swift 3, and SDKs for iOS 10, watchOS 3, tvOS 10, and macOS Sierra.
Xcode 4+

Essentials

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 8.0

Xcode 8 includes Swift 3, and SDKs for iOS 10, watchOS 3, tvOS 10, and macOS Sierra.

Information

Category: Developer Tools
Updated: 13 September 2016
Version: 8.0
Price: Free
Size: 4.43 GB
Family Sharing: Yes
Language: English
Developer: iTunes S.a.r.l.
© 1999–2016 Apple Inc.

Rated 4+
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/
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>
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<th>Download</th>
<th>Date</th>
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<tbody>
<tr>
<td>Xcode 8*</td>
<td>September 13, 2016</td>
</tr>
<tr>
<td>(Toolchain)</td>
<td></td>
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<tr>
<td>(Debugging Symbols)</td>
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<td>Ubuntu 15.10</td>
<td>September 13, 2016</td>
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<td>(Signature)</td>
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<td>Ubuntu 14.04</td>
<td>September 13, 2016</td>
</tr>
<tr>
<td>(Signature)</td>
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*Swift 3.0 is available as part of Xcode 8.

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 8 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/learnsidwift/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/](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/](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 "print"
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

```objective-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"
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)
print("Hello, world!")
Welcome to Xcode

Version 8.0 (8A218a)

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.

Check out an existing project
Start working on something from an SCM repository.

Show this window when Xcode launches
Xcode 8 Playground

Choose options for your new playground:

Name: MyPlayground
Platform: iOS

[Options for choosing the next steps]
Swift 3 in Xcode 8 Playground

```swift
// playground - noun: a place where people can play

import UIKit

var str = "Hello, playground"

print(str)
```

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

Your score is 90
Pass
iOS App Development Process

- Focus: Primary Target
- Think top down
- Consistent UI
- Gestures
- Orientation?
- Check target size
- Reduce settings

iOS App Development Process

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

Objects Communicate Through Messages

```swift
... [somePerson sayHello];
...
```

```swift
@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 layer

View Controller

Window

View

ImageView

Text View

Button

Use Storyboards to Define Navigation

Segue

View Controller

Storyboards

Incorporating the Data

Using Design Patterns

Model-View-Controller (MVC)

Target-Action

Restore Defaults

UIImageEventTouchUpInside

aControl
action=restoreDefaults:
target=controller

Controller

Delegation

IBOutlet and IBAction

• IBOutlet
  – Interface Builder Outlet

• IBAction
  – Interface Builder Action
Demo: Building Your First iOS App with Xcode 8 (Swift 3)
Building Your First iOS App with Xcode 8
Your First iOS App

Xcode 8 with Swift 3

Xcode 8

Swift 3
Welcome to Xcode

Version 8.0 (8A218a)

- 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.
- Check out an existing project
  Start working on something from an SCM repository.

Show this window when Xcode launches
Swift Language
Main.storyboard (UI)
Main.storyboard (UI)
Main.storyboard (UI)
ViewController.swift (Code)
Label

UILabel

Implements a read-only text view. A label can contain an arbitrary amount of text, but UILabel may shrink, wrap, or truncate the text, depending on the size of the bounding rectangle and properties you set. You can control the font, text color, alignment, highlighting, and shadowing of the text in the 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

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

Label - A variably sized amount of static text.
Text Field
Text Field
Text Field

- **View Controller Scene**
  - **View Controller**
    - Top Layout Guide
    - Bottom Layout Guide
    - View
  - **Round Style Text Field**
    - First Responder
    - Exit
    - Storyboard Entry Point

- **Text Field**
  - **Text**: Plain
  - **Color**: Default
  - **Font**: System 14.0
  - **Alignment**: Default
  - **Placeholder**: Placeholder Text
  - **Background**: Default
  - **Border Style**: Default
  - **Clear Button**: Never appears
    - Never appears
    - Clear when editing begins
  - **Min Font Size**: 17
    - Adjust to Fit
  - **Capitalization**: None
    - Default
  - **Correction**: Default
  - **Spell Checking**: Default
  - **Keyboard Type**: Default

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

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.

Text Field - 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.

TextField - 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
Build and Run
iOS Simulator: iPhone 7 - iOS 10
Simulator: Quit Simulator
Main.storyboard (UI)
ViewController.swift (Code)
// 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 and IBAction

• IBOutlet
  – Interface Builder Outlet

• IBAction
  – Interface Builder Action
```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.
}
```
```swift
import UIKit

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    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
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    }
}
```
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()
    }
    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
    }
    // Do any additional setup after loading the view, typically from a nib.
    // 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.
}
}
btnHello
@IBAction func btnHello(_ sender: AnyObject) {
}
Hold on control drag and drop to Assistant Editor
Hello World

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) {
    // Your logic here
}

import UIKit

class ViewController: UIViewController {

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

// Connect
Connection: Outlet
Object: ViewController
Name: txtYourName
Type: UITextField
Storage: Weak

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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() {
    // View Controller implementation
    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 = ""
@IBAction func btnHello()
@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

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 = ""
    }

}
import UIKit

class ViewController: UIViewController {
    // ViewController.swift
    // HelloWorld
    // Created by imyday on 10/5/16.
    // Copyright © 2016 imtku. All rights reserved.
    //
    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
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 = ""
}
```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.
}

let strYourName = String() // txtYourName.text
let strYourName = "Hello, " + strYourName
self.txtYourName.text = strYourName
}
```
Hello, Swift 3

Hello
Hello, Myday

Hello World

```
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 strYourNameString = txtYourName.text
        myLabel.text = "Hello, " + strYourNameString
        txtYourName.text = ""
    }

}
```
import UIKit

class ViewController: UIViewController {
    @IBOutlet weak var txtYourName: UITextField
    @IBOutlet weak var myLabel: UILabel!
    @IBAction func btnHello(_ sender: Any) {
        let strYourName: String! = txtYourName.text
        myLabel.text = "Hello, " + strYourName
        txtYourName.text = ""
    }
    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view.
    }
    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }
}

Hello World

Hello, Myday
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 = ""
}
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
Summary

• Developing iPhone / iPad Native Apps with Swift 3 (Xcode 8)
  – Mac OS X 10.8, 10.9, 10.10, 10.11, 10.12
  – Xcode 6, Xcode 7, Xcode 8
  – iOS 8, iOS 9, iOS 10

• Building Your First iOS App with Xcode 8
References

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  • https://www.youtube.com/watch?v=n5jXg_NNiCA