

Search the menus (Option+)

+ - Undo Redo Copy Paste Find Replace Background Layout Theme Transition

Today's Session

- What's needed for designing an iPhone app
- Overview of Swift programming language (quick comparison to Java/other text-based languages)
- Demo using Xcode to build a simple app
 - Coding up some UI elements, running on simulator
- If you are running a Mac and installed Xcode, you can open it up now; if not, just watch and enjoy and ask questions!
- As we go, type in questions in chat, raise hand, or just unmute and ask away!



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Building an iOS App: What's Needed

1. **iOS is the operating system used by iPhone apps (there is also iPadOS, watchOS, tvOS, macOS); for comparison**
2. **To create an app for iPhone (or any Apple product), you need:**
 - a. a Mac computer
 - b. Xcode (the IDE for all Apple products) -- FREE
 - Big Sur (macOS 11): download through Mac's App Store*
 - Previous macOS versions: download [here](#)*
 - c. an iPhone for testing your app (optional; you can also use simulators)
3. **To get your app onto Apple's App Store, you need an Apple Developer account (\$99 per year)**
 - a. But building apps for your own device is free!



The Swift logo, featuring a red square with a white bird icon, is positioned to the left of the word "Swift" in a large, black, sans-serif font. Below this, the text "THE SWIFT PROGRAMMING LANGUAGE" is written in a smaller, bold, black, sans-serif font. At the bottom, "SWIFT 5.4" is written in a smaller, black, sans-serif font. The entire content is enclosed in a blue rectangular frame with corner and mid-point handles.

-

11:38 AM Fri May 21

Leave

Zoom

Unmute

Start Video

Share Content

Participants

More

Building a Simple iPhone App - x

A Swift Tour — The Swift Progr x

Mail - Miller Michael - Outlook x


+

docs.swift.org/swift-book/GuidedTour/GuidedTour.html

savedNEW

Reading List

ON THIS PAGE

Swift

2

Today's Swift

- What's new in Swift 5.4
- Overview of Swift 5.4
- Swift 5.4 highlights
- Swift 5.4 release date
- Swift 5.4 release notes

3

Building an iOS App: What's New

- Swift 5.4 highlights
- Swift 5.4 release date
- Swift 5.4 release notes

4

Building an iOS App: Overview

- Swift 5.4 highlights
- Swift 5.4 release date
- Swift 5.4 release notes

5

Swift Language Overview

- Swift 5.4 highlights
- Swift 5.4 release date
- Swift 5.4 release notes

6

App Development

- Swift 5.4 highlights
- Swift 5.4 release date
- Swift 5.4 release notes

7

Swift App

- Swift 5.4 highlights
- Swift 5.4 release date
- Swift 5.4 release notes

8

After your app is completed


- Swift 5.4 highlights
- Swift 5.4 release date
- Swift 5.4 release notes

A Swift Tour

Swift Language

program in a new language should print the word "Hello, World!" This can be done in a single line:


- Here is the official Swift Language Overview
- Quick tour of Swift
- Comparison of Swift to other languages
 - Types, variables, constants
 - Arrays
 - Loops
 - Functions & methods
 - Classes
 - Inheritance & overriding

Swift

THE SWIFT PROGRAMMING LANGUAGE

SWIFT 5.4

+



Michael Miller

-

Michael Miller's screen

Search the menus (Option+)

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App Development

- **user interface (UI)** (i.e. buttons, text labels, text entry, scroll tables -- everything you see and interact with on the screen!) **vs. implementation** (the code behind the scenes that powers those interface elements to “do stuff”)
- You “connect” UI elements to code



Apple Xcode File Edit View Find Navigate Editor Product Debug Source Control Window Help

MySimpleApp iPhone SE (2nd generation) MySimpleApp: Ready | Today at 11:46 AM

MySimpleApp

- MySimpleApp
 - AppDelegate.swift
 - SceneDelegate.swift
 - ViewController.swift
 - Main.storyboard
 - Assets.xcassets
 - LaunchScreen.storyboard
 - Info.plist
 - Products

General Signing & Capabilities Resource Tags Info Build Settings Build Phases Build Rules

PROJECT

- MySimpleApp

TARGETS

- MySimpleApp

Identity

Display Name: MySimpleApp

Bundle Identifier: mmiller.MySimpleApp

Version: 1.0

Build: 1

Deployment Info

Target	Device
iOS 13.5	<input checked="" type="checkbox"/> iPhone
	<input checked="" type="checkbox"/> iPad
	<input type="checkbox"/> Mac (requires macOS 10.15)

Main Interface: Main

Device Orientation

- ☒ Portrait
- ☐ Upside Down
- ☒ Landscape Left
- ☒ Landscape Right

Status Bar Style: Default

- ☐ Hide status bar
- ☐ Requires full screen
- ☐ Supports multiple windows

App Icons and Launch Images

App Icons Source: AppIcon

Launch Screen File: LaunchScreen

Frameworks, Libraries, and Embedded Content

Name	Embed
Add frameworks, libraries, and embedded content here	

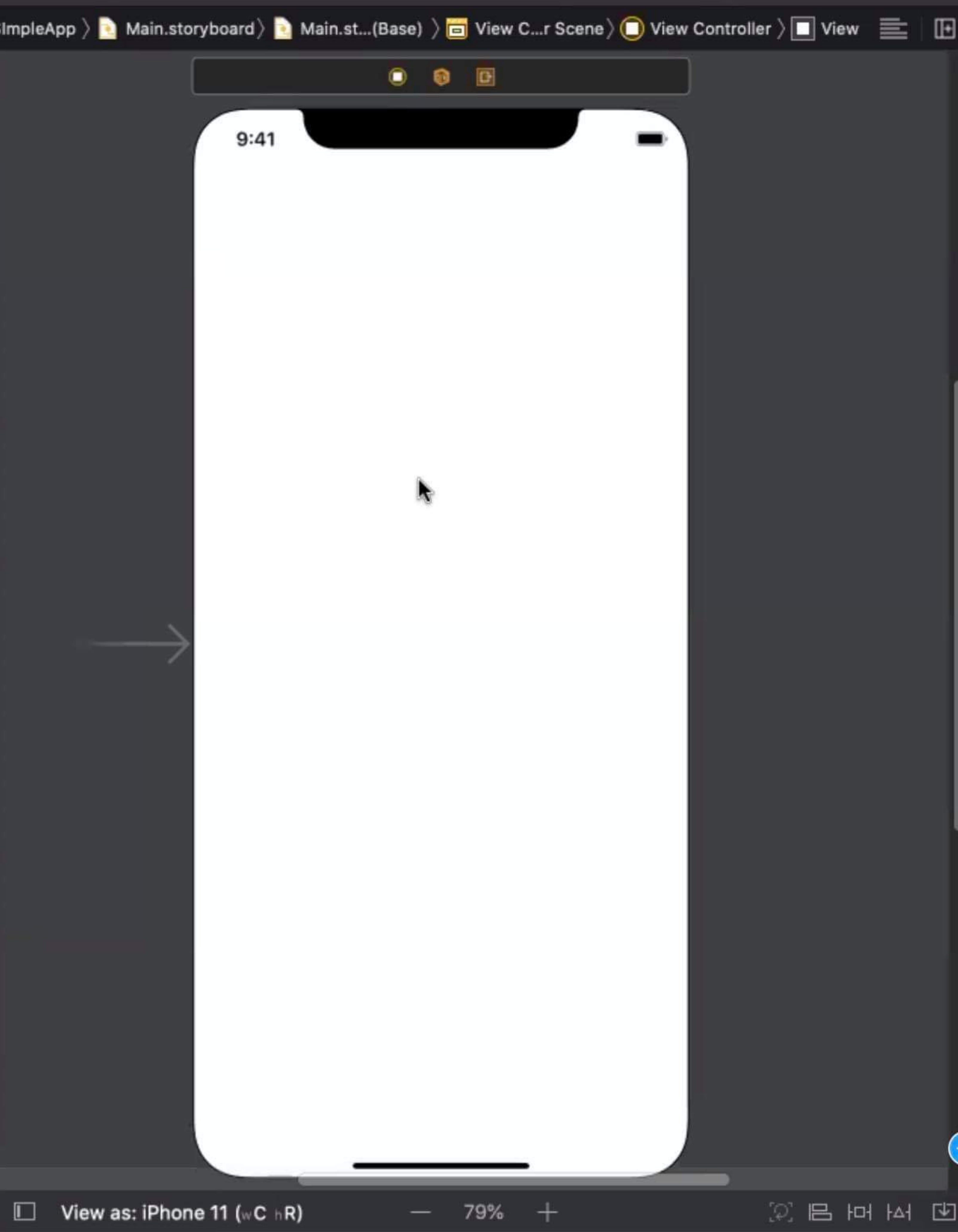


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View Controller Scene

- View Controller
 - View
 - Safe Area
 - First Responder
 - Exit
 - Storyboard Entry Point



View

Content Mode: Scale To Fill

Semantic: Unspecified

Tag: 0

Interaction: ☒ User Interaction Enabled, ☐ Multiple Touch

Alpha: 1

+ Background: System Background

+ Tint: Default

Drawing: ☒ Opaque, ☐ Hidden, ☒ Clears Graphics Context, ☐ Clip to Bounds, ☒ Autorelease Subviews

Stretching: X: 0, Y: 0, Width: 1, Height: 1



FileEditViewF

MySimpleApp

MySimpleApp

AppDelegate.swift

SceneDelegate.swift

ViewController.swift

Main.storyboard

Assets.xcassets

LaunchScreen.storyboard

Info.plist

Products

No Device

No devices connected to 'My Mac'...

Build Only Device

Generic iOS Device

iOS Simulators

iPad (7th generation)

iPad Air (3rd generation)

iPad Pro (9.7-inch)

iPad Pro (11-inch) (2nd generation)

iPad Pro (12.9-inch) (4th generation)

iPhone 8

iPhone 8 Plus

iPhone 11

iPhone 11 Pro

iPhone 11 Pro Max

iPhone SE (2nd generation)

Add Additional Simulators...

Source ControlWindowHelp

Ready | Today at 11:48 AM

Mai...oard> Mai...ase> Vie...cene> Vie...roller> View> L Hello World!

9:41

Hello World!

View as: iPhone 11 (w C h R)79%

Label

Text Plain

Hello World!

Color Default (Label C...

Font System 17.0

Dynamic Type Automatically Adjusts Font

Alignment

Lines 1

Behavior Enabled

Highlighted

Baseline Align Baselines

Line Break Truncate Tail

Autoshrink Fixed Font Size

Tighten Letter Spacing

Highlighted Default

Shadow Default

Shadow Offset 0 -1

Width Height

View

Content Mode Left

Semantic Unspecified

Tag 0

Interaction User Interaction Enabled

Multiple Touch

Alpha 1

Background Default

Tint Default

Drawing Opaque

Hidden

Clears Graphics Context

Clip to Bounds

Autosize Subviews

Stretching 0 0



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```
1 //
2 // ViewController.swift
3 // MySimpleApp
4 //
5 // Created by Michael Miller on 5/21/21.
6 // Copyright © 2021 Michael Miller. All rights reserved.
7 //
8
9 import UIKit
10
11 class ViewController: UIViewController {
12
13     @IBOutlet weak var helloLabel: UILabel!
14
15     @IBAction func tapButton(_ sender: Any) {
16         helloLabel.text = "Welcome!"
17         helloLabel.textColor = UIColor.cyan
18     }
19
20
21     override func viewDidLoad() {
22         super.viewDidLoad()
23
24     }
25
26
27 }
28
29
```




- 3 Building an iOS App: What's Needed
- 4 Building an iOS App: Overview
- 5 Swift Language Overview
- 6 App Development
- 7 Simple App
- 8 After your app is completed
- 9 QA
- 10 Future Reading

After your app is completed

- Thorough testing on all devices you want your app to run on
- Make sure your app meets the guidelines of Apple products
- Prepare your app for Apple Review (choosing an icon for your app, images for the store, description, etc.)
- Make sure you have paid your \$99 Apple Developer annual fee and upload to App Store Connect to begin review
- Submit and hope they accept it!


Guidelines
Learn about requirements for app design, App Review submission, using Apple product images in your marketing materials, and more.
[View guidelines >](#)


Submitting your apps
Learn how to prepare your iPhone, iPad, Mac, Apple TV, and Apple Watch apps for submission to App Review.



- 4 Building an iOS App: Overview
- 5 Swift Language Overview
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- 9 Q & A
- 10 Further Reading

Further Reading

- **Want to learn more?** There are **TONS** of great resources for learning iOS development (many free)
- A few places to start:
 - [Official Apple Developer Tutorials](#)
 - [Hacking with Swift](#)
 - [Ray Wenderlich](#)
 - [Udacity](#)
- Want some individual guidance? Email me! mmiller25@schools.nyc.gov
- You can do it -- it just takes time, dedication, and effort!

