

ALEXANDER MUNOZ | CS50 FOR MBA'S

IOS APP DEVELOPMENT WITH SWIFT

TODAY'S PLAN

- ▶ General overview of iOS programming
- ▶ Introduction to Swift 3.0
- ▶ Example project
- ▶ Next steps

**IOS VS
ANDROID??**

IOS

VS

ANDROID

- ▶ Xcode 8.3.1 IDE (Mac only)
- ▶ Swift, Cocoa Touch, iOS SDK (OOP)
- ▶ Less devices, more revenue

- ▶ Android Studio (Mac or PC)
- ▶ Java, Android SDK (OOP)
- ▶ More devices, less revenue



**SWIFT VS
OBJECTIVE-C???**

NO DEBATE.

SWIFT.



MODERN, HIGHER-
LEVEL, OOP LANGUAGE

SWIFT 3.0

GENERAL INFORMATION

- ▶ General

- ▶ Can be used for iOS, MacOS, watchOS, tvOS

- ▶ Safe

- ▶ Automatic memory management, strongly typed

- ▶ Modern

- ▶ Optionals, immutability, higher-order functions, guards, etc.

- ▶ Fun!

TO THE CODE!

SUMMARY OF BARE ESSENTIAL SWIFT SYNTAX

- ▶ Var binding (`var str = "Alex"`)
- ▶ Let binding (`let str = "Alex"`)
- ▶ String concatenation (`"Alex " + "says hi" => "Alex says hi"`)
- ▶ Looping (`for idx in 1...3 { }`)
- ▶ Arrays (`let movies : [String] = ["Godfather", "Dark Knight", "Notebook"]`)
- ▶ Functions (`func median (input_list:[Int]) -> Int { }`)

**“ THAT WAS NICE.
BUT WHERE’S THE APP...? ”**

–students everywhere

TO XCODE!

HMMM, HOW TO APPROACH THIS?

- ▶ So we have a design where a user can input grades
- ▶ We have a function that we made in the playground that let's us calculate GPA
- ▶ Well, let's just add each grade to a list when the user taps the "Next grade!" button
- ▶ Then when the user taps the "Done filling grades!" button, use our gpa() function from the playground
- ▶ Let's implement this! :)

MORE FUNCTIONALITY

- ▶ Check if grade not integer
- ▶ Display grades as they come in
- ▶ Reset grades for a new student
- ▶ Allow letter grades
- ▶ Design!

BACK TO XCODE!

WHAT'D WE LEARN IN XCODE?

- ▶ Xcode has 3 interfaces: Project Navigator, Storyboard, Coding Window
- ▶ The general iOS app construction pipeline is:
 - ▶ Make an interface in the Storyboard
 - ▶ Code up the interface in the Coding Window
 - ▶ Test in simulator
 - ▶ Repeat

WHAT TO DO FROM HERE?

- ▶ Play around with the source code here
- ▶ Read <https://developer.apple.com/swift/resources/>
- ▶ Make practice apps from start to finish
- ▶ Stack Overflow is your friend
- ▶ Feel free to ask questions!
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THANK YOU!
QUESTIONS?