



# Swift



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# About Me

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# Outline

- What is Swift?
- Why did Apple create Swift?

# What is Swift?

- A new programming language created by Apple
- Announced at WWDC June 2014
- Has been in development for 4 years

# Basic Swift Info

- A multi-paradigm programming language
- Compiles to native code appropriate for targeted CPU (e.g. arm64, i386)
- Integrates with existing Cocoa and Cocoa Touch libraries

# Why Swift?

- Objective-C is a fine language
- But it does have some limitations because it is comparable with ...

# C

- It has served us well for 40+ years but
- It isn't safe (buffer overflows, pointer arithmetic, etc.)
- Powerful, but perhaps over powerful for most modern applications

# The key is LLVM

- LLVM - open source compiler technology sponsored by Apple
- New modularized compiler chain
- Designed to integrate into modern IDEs and Debuggers





# Swift Fixes Some Problems with ObjC

- Modern development language syntax and features
- Type safety
- Speed - compiler optimizations not possible with ObjC because of its compatibility with C

## Hello World in Swift

```
var message = "Hello World"
println(message)
//or
var 🌍 = "Hello World Emoji Style"
println(🌍)
// or
message = "👋🌍"
println(message)
```

# **Can I Program iOS/OSX without Learning Objective-C????????**

- No
- Swift runs inside of the Objective-C runtime
- All the Cocoa and CocoaTouch APIs are written in Objective-C
- Swift and Objective-C interoperate
- Swift uses the same memory management system as Objective-C
- Current projects can adopt Swift incrementally
- Swift project will need to use C and Objective-C APIs

# Getting Swift

- Yes you need an Apple Developer Account (\$99 is pretty cheap for everything you get)
- Download Xcode6

# Running Swift

- `xcrun swift` - to run the Swift REPL command line
- Playgrounds - new Xcode “project” that enables you to experiment with Swift in a more visually interactive format
- Traditional Xcode projects can now pick Swift as a language