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Principles of Programming Languages  
21 September 2020

## Swift Overview

Swift first appeared in 2014 in the Worldwide Developers Conference. The development of Swift was spearheaded by the developer named Chris Lattner alongside many other Apple developers. It was developed for Apple Inc's operating systems used in their products such as the iPad, Mac, Watch and many others. The Swift was created because Apple wanted a programming language that was able to catch bugs and common errors more easily. Apple coined the term "protocol-oriented language," for Swift. It derives from its unique protocol extensibility system that applies to types, structs, and classes. In 2015, Swift won Most Loved Programming Language by Stack Overflow Developer Survey.

Language ideas for Swift were taken from Rust, Objective-C, Ruby, Haskell, C#, CLU, Python, and a range of other programming languages, but it was originally mainly developed to avoid the difficulties of Objective-C, which was the language heavily used to develop iOS applications. Swift is called "Objective-C without the C" by Apple, combining both C and Objective-C, but without the direct built-in C compatibility and the constraints that come along with it.

Swift enables interactivity in development, with the 'Playgrounds' feature that has inline code execution to help programmers create a chunk of code or write an algorithm while receiving feedback along the way. Additionally, Swift contains features such as closures, generics, type inference, simplifying commonly used patterns in Objective-C and making it easier and more convenient to use. The notable advantages of Swift over other languages include readability with its clean and simple syntax, less coding for the same task compared to C, fewer crashes and better performance speed overall, while being extremely friendly to novice programmers.

Swift is a powerful and easy to understand programming language for macOS, iOS, watchOS, tvOS. Swift is a fast, interactive and modern programming language. Swift is 8.4x faster as compared to python in performance. The advantages of using Swift are it's easy to read as it draws syntax from other languages as mentioned above. It has a concise syntax which significantly increases the programmer testing rates for the program. It also uses automatic memory management. Automatic memory management is a technique in which an operating system or application automatically manages the allocation and deallocation of memory. Swift

has an interactive feature called playground. This means it runs the code whilst you type it in the Xcode integrated development environment. It uses type inference and has powerful string processing capabilities which makes it easy to use as scripting language without sacrificing any performance. Swift is loaded with high end features like generics which allows you to write flexible, and reusable functions and types that can work with any type. Swift is used to build IOS apps and games.

#### Citation

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3, [clearbridgemoible.com/8-advantages-choosing-swift-objective-c-ios/](http://clearbridgemoible.com/8-advantages-choosing-swift-objective-c-ios/)

4, <https://www.knowledgehut.com/blog/programming/swift-vs-python>