Difference Between Objective C and Swift

Key Difference - Objective C vs Swift

Objective C and Swift are programming languages which are widely used for IOS and Mac application development. Objective C is a super-set of C language with object-orientation and other new features. Swift is a new language developed by Apple. The **key difference** between Objective C and Swift is that, **Objective C is a general-purpose programming language that adds Small talk style messaging to C programming language whereas Swift is general purpose programming language developed by Apple with safe programming patterns which can be used as an alternative to Objective C**. Swift can be used as an alternative to Objective C. Swift provides safe memory management, type interference and generics. Overall, Swift improves code readability and maintainability.

What is Objective C?

The C programming language was introduced around 1970. As C was a structured programming langue, it was required to have an object-oriented version of C language. Objective C is a superset of C language with Smalltalk style. Objective C is a reflective, class-based, object-oriented programming language. It supports object-oriented programming concepts which are inheritance, encapsulation, polymorphism etc. Objective C is based on C language. Any valid C program is also valid in Objective C.

Objective C is a super-set of C. Other than C language fundamentals, it has concepts such as classes, objects, properties, messaging and protocols. Protocols declare methods expected to be used for a particular situation. In Objective C, if the programmer wants to check the values in the classes, they can use key-value observation or write own custom setters. For initialisation calls "alloc" and "init" are used. To indicate the compiler, the new features than the regular syntax, there are @ symbols. Some examples are @interface, @implementation, @property, @protocol. There are extended data types such as NSArray, NSSet, NSDictionary. There are a lot of NS expressions can be seen in Objective C. For example, NSLog method is used to print logs.

What is Swift?

Some programmers found working with Objective C harder. Therefore, Apple introduced Swift language. It is mainly using for IOS and Mac application development. It is a modern programming language with safe programming patterns. It multi-paradigm language which supports object-oriented programming and functional programming.

Swift has some data types. Most frequently used data types are Int, Float, Double, Bool, String, Character, Optional, Tuples. Optional data type either can hold a value or not. Tuples can store multiple values as a single value. Swift contains Sets, Arrays, Dictionaries too. Swift provides type safety when compiling the code. If the programmer declared a variable as a string (e.g. var str ="hello"), then he cannot change that to an integer as str=10.Swift provides variable initialization, checking for array bounds and indexes, checking for integer overflows. There are closures which variable references and constants are defined inside functions are captured and stored. In Swift, functions are first-class objects. Functions can be returned from other functions.

Figure 01: Swift

In Swift, there is no need of using header files like in Objective C. Swift provides namespaces as many modern programming languages. It helps to separate the code into namespaces, so it is easy to organize the code. Swift gets regular updates to make applications robust and efficient. One popular version is Swift 4. It is a user-friendly language to build efficient applications.

What are the Similarities Between Objective C and Swift?

- Both languages are using for Mac and IOS development.
- Both are case-sensitive programming languages.
- Both are compiler based languages.
- Both support object-oriented programming.
- Whitespaces improve code readability. The compiler ignores them.

What is the Difference Between Objective C and Swift?

Objective C vs Swift	
Objective C is a general purpose, a programming language that adds Smalltalk style messaging to C programming language.	Swift is a general purpose, a programming language which was developed by Apple Inc which has safe programming patterns.
Paradigm	
Objective C supports reflective, class-based and object-oriented paradigms.	Swift supports Object-oriented and functional paradigms.
Use of Semicolon	
The semicolon is required at the end of the statement in Objective C.	The semicolon is required only if two statements are in the same line.
Variable Declaration	
In Objective C types must be declared explicitly.	Types are inferred in Swift. The compiler can find of the data type.
Main Features	
Objective C has classes, objects, messaging, protocols etc.	Swift has features such as closures, generics, namespaces etc.
Header Files	
There are header files in Objective C.	There is no need for header files in C.
Collections	
Use NS arrays, NS dictionaries in Objective C.	Collections are strongly typed using generics in Swift.
String Manipulation	
Formatter functions are used for string manipulation in Objective C.	Swift provides simple string manipulation functions.
Switch	
Objective C can avoid break statement to evaluate next case statements.	Swift use falls through to evaluate next case statements.

Code Readability	
Objective C code is harder to read than Swift code.	Swift code is easy to read than Objective C. The code is more clean and manageable than Objective C code.
Execution Time	
In Objective C, execution time is higher because the complete code is built whenever a change is made to the code.	In Swift, unchanged files are not compiled again. Therefore, the execution time is reduced.
Code Maintainability	
Objective C programs are harder to maintain.	Swift programs are easier to maintain.

Summary - Objective C vs Swift

This article discussed the difference between two programming languages Objective C and Swift. The difference between Objective C and Swift is that Objective C is a general-purpose programming language that adds Smalltalk style messaging to C programming language and Swift is general purpose developed by Apple with safe programming patterns. This is an alternative language for Objective C.Swift eliminates time-consuming features of Objective C. Swift reduce the code length, and the syntax is easier than Objective C. It is useful to write clean well-organised code than in Objective C.

Reference:

1.LinkedIn Learning Solutions, 'Objective-C tutorial: Why use Objective-C? | lynda.com'. YouTube, YouTube, 12 Mar. 2014. Available here
2.O'Reilly - Video Training, 'Learning Swift Programming Tutorial - Swift Vs Objective-C'. YouTube, YouTube, 21 Oct. 2014. Available here
3.'Swift 4 – Introduction' tutorialspoint.com. Available here

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