Difference Between Xcode and Swift

Key Difference - Xcode vs Swift

Xcode and Swift are two terms which are commonly associated with IOS and Mac software development. This article discusses the difference between these two terms. Xcode is a powerful development environment, and Swift is a programming language. The **key difference** between Xcode and Swift is that **Xcode is an Integrated Development Environment (IDE) developed by Apple to build Mac while IOS applications and Swift is a powerful programming language developed by Apple with safe programming patterns to develop IOS and Mac applications.** Swift provides safe memory management and the code written in Swift is easily readable and maintainable.

What is Xcode?

Apple developed the Xcode which is an Integrated Development Environment (IDE) to build IOS and Mac applications. It was first released in 2003. It is available via Mac app store, and it is free. Registered developers can download previous versions through Apple website. Xcode consists of editors, compilers and other necessary tools to develop robust and efficient applications. It is customizable so that the programmer can change accordingly. The Interface Builder provided by the Xcode is useful for creating Graphical User Interfaces without much code. It provides the connection of the UI controls with the implemented code. IDE is also consist of Apple developer documentation which is useful for programmers.

Another advantage of Xcode is that it provides version control through GIT and subversions. It is easy to do branch and merge operations perfectly for distributed teams. It is easy to compare two versions of files, see commit logs and who made changes to the code using version editor. Test-driven testing is also done easily.
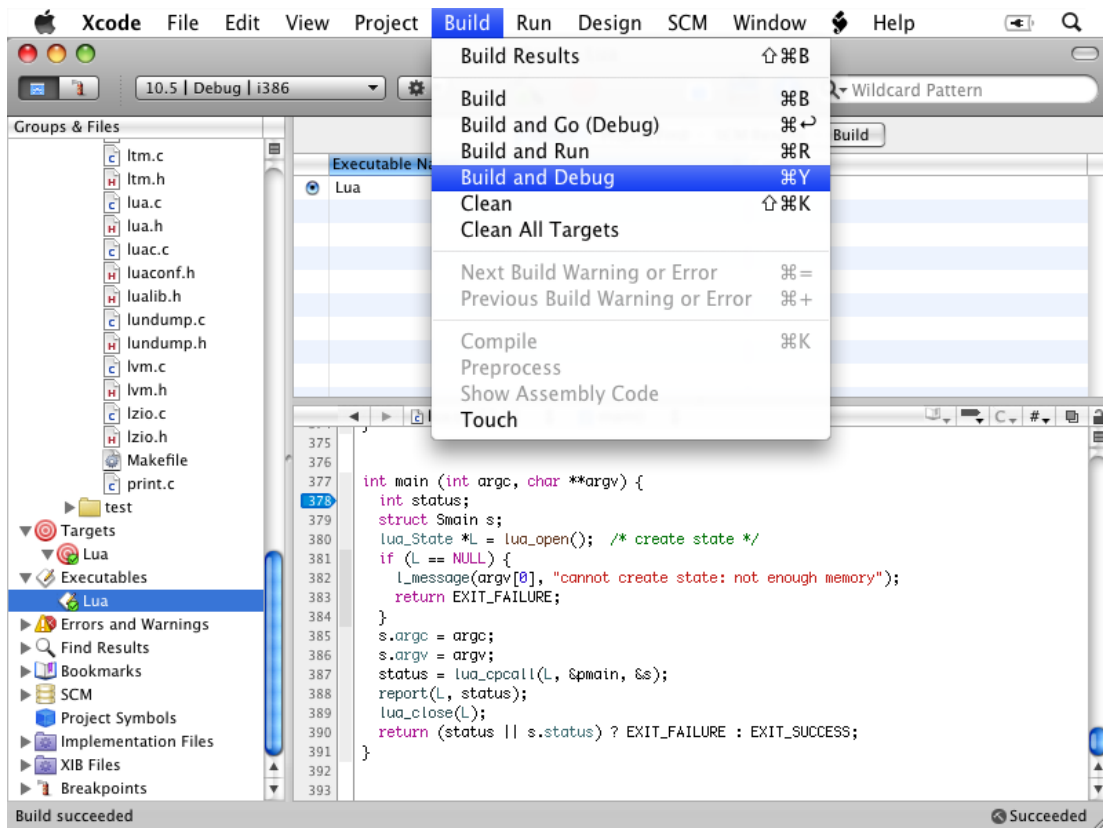
Figure 01: Xcode

Xcode operates the best as a single window interface. It provides Universal Binaries which allows the software to run on PowerPC and Intel-based platforms. Xcode supports programming languages C, C++, Java, Objective C and many more. Overall, it is a rich and powerful environment with necessary tools to develop apps for Mac, iPhone, IPad, Apple Watch.

What is Swift?

Apple developed Swift which is a programming language. It is an alternative to Objective C. Objective C is a language based on C with new features. It is object-oriented and provides new features to C. Programmer who do not have C programming background found hard to code with Objective C. Therefore, Apple introduced a new language which is known Swift. It is a modern programming language with safe programming patterns. Memory management is done automatically. Swift is a multi-paradigm language. It supports functional programming and object-oriented programming.

Figure 02: Swift

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. Collections such as Arrays and Dictionaries are strongly typed using generics. It is not required to end the statements with a semicolon in Swift. There is no need for using header files. It also provides namespaces. The programmers can arrange the separately in namespaces. It makes the code more organised and manageable.

What are the Similarities Between Xcode and Swift?

- Xcode and Swift both are related to Mac and IOS applications.
- Apple Inc developed both.

What is the Difference Between Xcode and Swift?

Xcode vs Swift	
Xcode is a rich and powerful Integrated Development Environment (IDE) to build Mac and IOS applications.	Swift is a programming language developed to build Mac and IOS applications.
Language Features	
Xcode is not a programming language.	Swift is a programming language. It provides functions, tuples, dictionaries, structures, classes, properties and many more.
Tools	
Xcode consists of necessary tools to develop IOS and Mac Applications. e.g. Version Control.	Swift is a programming language, so it does not have tools for development.

Summary - Xcode vs Swift

It is required to do software development methodically. An Integrated Development Environment provides tools for building software products. One such IDE is Xcode. Swift is a powerful programming language which has improved syntax. It is a language with safe programming patterns with object-oriented features, protocols, generics etc. The difference between Xcode and Swift is that Xcode is an Integrated Development Environment (IDE) developed to build IOS and Mac applications, and Swift is a programming language to develop IOS and Mac OS applications. Xcode and Swift, both were developed by Apple.

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