Computer Science 220 Final Report

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December 8, 2015

1 Background

The programming language that I had studied throughout the final project was Swift. Swift was created by Chris Lattner and Apple Inc. Chris Lattner started to development of the Swift programming language in 2010 along with many other programmers at Apple. This programming language took language ideas from many other lanauges such as Objective-C, Rust, Haskell, Ruby, Python, C# and many others. The first release of Swift appeared on June 2, 2014. It has since then been upgraded and on December 1, 2015, version 2.2 was made open srouce and has made available now for Apples's and Linux's platforms. The Swift programming lanauage was developed because Apple wanted to to create a programmiung language that is a easier to use instead of using Objecitve-C. There are many reasons to choose to learn Swift rather than learning and using Objective-C. One of the main reasons is that Swift is much more human readable than Objective-C.

2 Importance

The Swift Programming language is used for iOS, OS X, watchOS and tvOS development. The primary use of the Swift programming language is the development of products created by Apple. It is worth studying due to the fact that this is the language being used in the future for development for Apple software. As of right now, the most popular Integreated Development Environment being used when writting Swift is Xcode. As of right now, Xcode is the only Integreated Development Environment being able to emulate and produce iPhone, iPad, iPod Touch,

and Mac OS X applications. If one were to ever get involved in iOS mobile applications development and OS X development, then the best language that one would use would be Swift. One could have also used Objective-C but there are many reasons why one would use Swift compared to Objective-C.

3 Similarity

Compared to other languages, there is will only one programming language that can write for iOS and OS X programming and that is Objective-C. When choosing each of the two languages one should learn to write for iOS and OS X development, it would be Swift. There are many reasons why one would decide to learn Swift over Objective-C. Some of these reasons is that Swift is easier to read, swift is easier to maintain, Swift is safer, Swift is unified with memory management, Swift requires less code, Swift is faster, fewer namne collisions with open source projects, Swift supports dynamic libraries, Swift Playgrounds encourages interactive coding, and Swift is a future you can influence.

4 Classification of Criteria

This programming language of Swift was compiled. This means that Swift is a language where the implementations are general compilers and not interpreters. It is also a multi-paradigm language. This means that it is object-oriented, functional, Imperative, and block structured. When it is imperative, it means that it uses statements that change a program's state. When it is object-oriented, that menas that Swift is on the concept of objects which are data structures tht contains data, in the form of fields and code in the form of procedures which are known as methods. Functional is a style of building the structure and elements of computer programs which treat computation as the evaluation of math functions and changing data. When it is block-strucutred, it means that sections of code is written as section of code which is grouped together. These blocks consist of one of more declarations and statements. One key feature of Swift is option types. This allos references or values to operate in a manner similar to a pattern in where a pointer may be a value or null. In Swift, the syntax for that would either be a ! or a ?.

Swift is also statically typed language. This is means with Swift consits of defining interfaces between different parts of a computer progran and then checking if parts have connections in a consistent way.

References

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