19CSE100- PSAT-Pograming Language Survey Assignment

SWIFT PROGRAMING

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Overview

DESIGNED BY : Chris Lattner, Doug Gregor, John McCall, Ted Kremenek, Joe Groff, and Apple Inc.

DEVELOPED BY : Apple Inc. and open-source contributors

Swift is a multi-paradigm, general-purpose programming language that was created by Apple Inc. and the open-source community. Swift was created as a successor for Apple's previous programming language Objective-C, which had been mostly untouched since the early 1980s and lacked current language capabilities. Swift was first published in 2014.

WHAT IS SWIFT USED FOR ?

Swift is mainly used for developing mobile and desktop applications of Apple's devices. Although that is one of its primary functions, Swift was created to make writing, maintaining, and correcting programs easier for developers. Other examples of where this language is used can be found below.

macOS Development

macOS is Apple's operating system for its desktops and computers. Although iOS development is still the most popular use for Swift, many people prefer using laptops and computers for work and entertainment. Technically, you can still create apps using Objective-C as it shares some common processes with Swift, but many developers today prefer using Swift instead.

iOS Development

Swift and Objective-C integrate perfectly with iOS, despite the fact that you may use more robust languages in the development process. As opposed to the current Objective-C codebase, Swift includes all the contemporary code features that make programming simpler, hence it is preferred by the majority of developers. Swift is up to 8.4 times quicker than Python 2.7 and 2.6 times faster than Objective-C. It is therefo superior option for programming.

LIST OF COMPANIES THAT USE SWIFT

1. **APPLE**
   Apple is perhaps the biggest company that uses Swift. This language is their primary tool for building apps for Mac, iOS, the Apple Watch, and Apple TV

2. **COURSERA**
   Coursera is one of the world's most popular open online course providers. It offers students a ton of online courses from top institutions across the world. This company uses Swift to build and maintain its iOS-based applications.

3. **FACEBOOK/META**
   Recently rebranded to Meta, Facebook is one of the largest companies in the world. The company used Objective-C for its group's function before it switched to Swift. Today, Facebook uses Swift to make it easier for developers to build their iOS-based apps and to improve user experience.

- **ADVANTAGES**

1. Swift is open-sourced and easy to learn.
2. Swift is fast, safe and expressive.
3. Swift is approachable and familiar (C and C++ code can be added by Swift programmers into Swift applications.)
4. Swift is the future of Apple development.
5. Swift is enterprise-ready.

- **DISADVANTAGES**

1. The language is still quite young and the talent pool is limited.
2. Swift is considered a "moving target" as it is a new language and the number of swift programmers is few.
3. Poor interoperability with third-party tools and IDEs
4. Lack of support for earlier iOS versions.

PARADIGM

The paradigm of a programming language refers to the style or approach to programming it encourages. Swift is primarily an object-oriented programming (OOP) language, which means it is based on the concept of objects that have properties and methods, and can interact with other objects. Additionally, Swift also incorporates functional programming (FP) concepts and features, such as closures, higher-order functions, and immutability, which allows developers to write more concise, expressive, and safer code.

```
//BASIC SWIFT PROGRAM
var str1 = "Hello !"
var str2 = "How are you?"
print (str1)
print (str2)
```

OUTPUT

```
Hello !
How are you?
```

Var keyword is used for variable and let keyword is used for constant. There is no need for";" for termination, in case the programmer uses it compiler won't show an error.

References

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