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CS 330: Programming Language Project (PLP)
Assignment 1: Language selection and overview

1. ***What is the name of your language?***

   Swift

2. ***When/where was it created, and by whom? Was it written to address a particular problem or need?***

   Swift was created in July 2010 by Chris Lattner along with Doug Gregor, John McCall, Ted Kremenec and Joe Groff at Apple Inc. The initial goal was to create "Objective-C without the baggage of C", and present a simpler syntax.[1]

3. ***Is it primarily structural, functional, scripted, object-oriented, or a combination of these? Or something else?***

   It's a combination of structural, functional and object-oriented programming. In structured programming languages, code makes use of control flow constructs such as sequential execution, selection (if, then, else) and repetition (for, while). This makes the code easy to follow and maintain.[2] In object-oriented programming, the software is designed to focus on the creation of objects as opposed to the underlying functions and logic.[3] Finally, functional programming 'treats computation as the evaluation of mathematical functions', meaning that for every input value, there is a defined and unchanging output value.[4]

4. ***Is it compiled or interpreted, or a combination? Does it use a virtual machine?***

   Swift is a compiled programming language and the code is directly translated into an executable version without the use of a virtual machine.[5]

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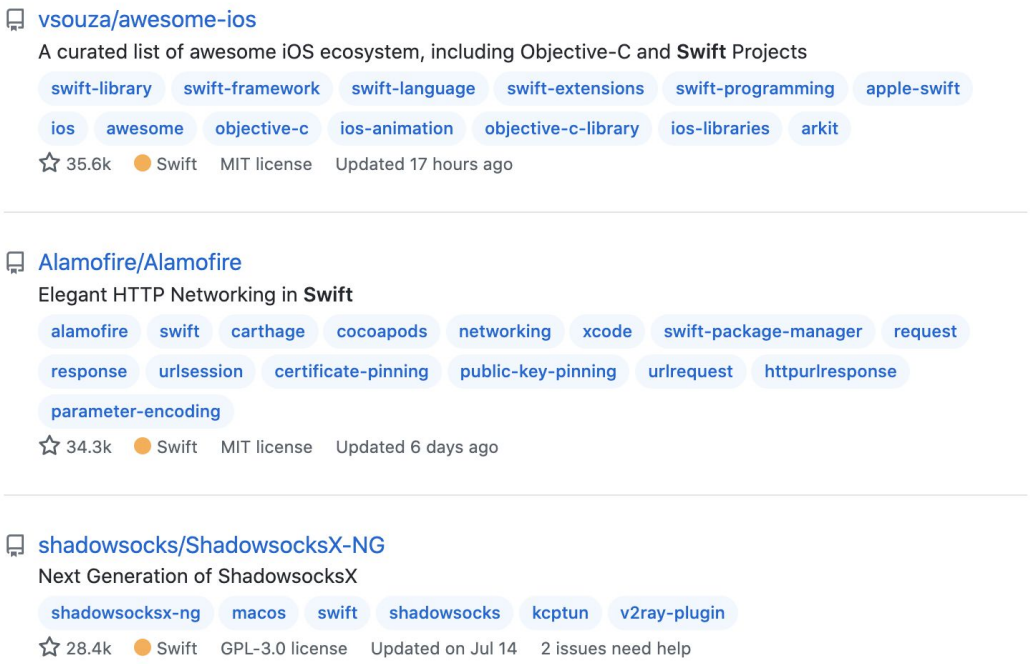
[1] "Swift (Programming Language)." *Wikipedia*, Wikimedia Foundation, 8 Sept. 2020, en.wikipedia.org/wiki/Swift_(programming_language).
[2] Busbee, Kenneth Leroy, and Dave Braunschweig. "Structured Programming." *Programming Fundamentals*, 15 Dec. 2018, press.rebus.community/programmingfundamentals/chapter/structured-programming/.
[3] Rouse, Margaret. "What Is Object-Oriented Programming (OOP)?" *SearchAppArchitecture*, TechTarget, 15 Apr. 2020, searchapparchitecture.techtarget.com/definition/object-oriented-programming-OOP.
[4] "Coding Games and Programming Challenges to Code Better." *CodinGame*, www.codingame.com/playgrounds/270/functional-programming-explained-to-my-grandma/what-you-will-learn.
[5] freeCodeCamp.org. "Interpreted vs Compiled Programming Languages: What's the Difference?" *FreeCodeCamp.org*, FreeCodeCamp.org, 4 Feb. 2020, www.freecodecamp.org/news/compiled-versus-interpreted-languages/.

5. ***What types of programming is your language primarily used for? If your language is multi-purpose, provide some examples of different projects it's been used for.***
   The primary uses of Swift include iOS and macOS native application development, but since it is open source, it has the potential to be used in many different contexts.

6. ***Search on Github.com for your language: what are the 3 most popular projects (the ones with the most stars) involving your language?***



https://github.com/search?l=Swift&o=desc&q=swift&s=stars&type=Repositories

7. ***Where will you get information about this language when it's time to start programming in it? Provide a list of the names of books, website URLs, or any other resources that relate to your language in particular.***
   https://swift.org/
   https://books.apple.com/us/book/the-swift-programming-language-swift-5-2/id881256329
   https://www.codecademy.com/learn/learn-swift
   https://www.udacity.com/course/learn-swift-programming-syntax--ud902
   https://developer.apple.com/swift/
   https://www.techrepublic.com/article/apples-swift-programming-language-the-smart-persons-guide/