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CS 141 – Concepts in Programming Languages 1

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Homework 1

Exercise 1

1. A programmer may not need all the functions of a more robust language, so may use a simpler one. Or a programmer may need a language that can accomplish the task better in one language than the other.
2. A programmer is more familiar with one over another. A person programs with the language that is most familiar.
3. Certain machine platforms are forced to use a certain language.

Exercise 2

1. FORTRAN – Created in 1957 for scientific research and analysis. According to Wikipedia, it is still in use, and is used to benchmark the world's fastest supercomputers, among other programs. There will be a small revision to it in 2015.
2. Lisp – Created in 1958, Lisp is an interesting programming language that uses symbolic processing. It was/is a favored programming language for artificial intelligence programs. Currently Lisp has a resurgence of interest with the open source Common Lisp and similar derivatives.
3. APL – Created in 1964, APL uses arrays and matrix processing. APL uses Greek characters in the programming language which is different. According to Wikipedia, APL is still used today.
4. BASIC – Created in 1964 and stands for Beginner's All-Purpose Symbolic Instruction Code. It was created for simplicity and to teach/learn programming. In a way, it is still used today in the form of visual basic or other similar languages influenced by BASIC.

Exercise 3

1. A compiled language is one where the program code is first made into machine language before being executed. C and C++ would be an example of compiled languages. For interpreted languages, each statement of the program is read and executed as the program runs, without the need to translate the program fully before execution. Python is an example of interpreted language.

Exercise 4

1. Turned in via dropbox.

Exercise 5

1. Turned in via dropbox.