Computers require instructions that it understands in order to perform all of the functions that we, as humans enjoy today. These instructions take the form of programming languages. Programming Languages are artificial languages that can be used to control the behaviors and functions of computers. Like human speech and languages, programming languages also use syntactic and semantic rules to determine structure and meaning. Over time new languages have been developed and modified to make coding increasingly developer friendly.

Some of the earliest examples of programming was in the 19th century with the programmable looms and player piano scrolls(Evolution of Programming Languages, 2013). Also, Ada Lovelace is credited with the first computer programming language, in which she wrote and algorithm for the Analytical Engine(DuPaul, 2018). In the 20th century punch cards were developed to direct mechanical processing, lambda calculus was an influence in the design of the language(Evolution of Programming Languages, 2013). The next computing languages to be developed were Fortran, lisp, and Cobol in the late 1950’s. Their primary uses were for supercomputing, AI development, and business software(DuPaul, 2018).

The Pascal language was the next to follow in 1970 and is a high-level programming language. Its primary uses were for teaching programming and it was very popular in the 1980’s (DuPaul, 2018). A high-level programming language is one with strong abstraction from the details of the computer. Windows commonly used a derivative of Pascal called Object Pascal for their application development (DuPaul, 2018). C programming language shortly followed Pascal in 1972 and was created for the Unix systems. It was very popular and many derivatives including C#, Java, JavaScript, Perl, PHP, and Python(DuPaul, 2018). Its primary uses included cross-platform programming, system programming, Unix systems, and computer game development (DuPaul, 2018).

The C++ language was developed in 1983 and expanded on the C language. It is a high-level, general purpose language that added message passing functionality base on Smalltalk language (DuPaul, 2018). Apple programming uses C++ for its OS X and IOS operating systems. Perl followed C++ and in 1987 was another high-level general-purpose language (DuPaul, 2018). It was created for report processing on Unix systems. Its primary purposes include CGI, database applications, system administration, network programming, and graphics programming (DuPaul, 2018). Amazon is known for using the Perl language.

Python and Ruby came next in 1991 and 1993. Python was created to support a variety of programming styles and be fun to use (DuPaul, 2018). Tutorials, sample code, and instructions often contain Monty Python references (DuPaul, 2018). Python is used for web applications, software development, and information security. Google, Yahoo!, and Spotify are known for using this language. Ruby was also designed to be a more fun and enjoyable programming experience (DuPaul, 2018). Ruby is used for web application development and is used by Twitter, Hulu, and Groupon (DuPaul, 2018).

JAVA, PHP, and JavaScript all were produced in 1995. JAVA was another general purpose and high-level language that was made for an interactive TV project (DuPaul, 2018). JAVA’s uses include Network programming, web application, software development, and Graphical User Interface development. PHP is an open-source language that was built for dynamic web pages. Its primary uses are building and maintaining dynamic web page as well as server-side development (DuPaul, 2018). JavaScript was created to extend web page functionality and is used by dynamic web pages for form submission/validation, interactivity, animations, user activity tracking , and more. Its primary uses also include PDF documents, web browsers, and desktop widgets (DuPaul, 2018).

The future of programming languages looks very inviting and promising to the programmer. Developers are finding new ways to implement a new way to complete certain instructions that save time and are easier to use for programmers. Some new languages that have been or are being developed are taking desired features from two languages and incorporating them into one. For example, iOS Swift includes the best features in the Python and Ruby languages(Coding Dojo, 2017). I could and would like to see this continue to happen until the point when there is simply one language to use that embodies all the desirable feature that programmers can imagine. Also, computer logic and human logic is very different in my personal experience and I would like to think that as time continues that computer and human logic would get closer together in comparison. It would be easier to understand which may help bring new breakthroughs in technology in general. I would also like to see a day were a computer can effectively and efficiently detect and write code through a human's voice. This would greatly add and benefit the development of Artificial Intelligence but also may make programming much faster.

Programming languages have been developed consistently over time. Starting with Ada Lovelace and a program she wrote for the Analytical engine through to the modern and new languages of today like, JAVA, Python, and C++. I believe that programming languages will continue to develop as time continues and will make programming of the future easier, faster, and more efficient.

Works Cited

Coding Dojo. “7 New Programming Languages To Learn in 2016.” *Coding Dojo Blog*, 24

May 2017,

[www.codingdojo.com/blog/new-programming-languages-to-learn-2016/](http://www.codingdojo.com/blog/new-programming-languages-to-learn-2016/).

DuPaul, Neil. “The History of Programming Languages Infographic.” *CA Veracode*, 7

Sept. 2018,

[www.veracode.com/blog/2013/04/the-history-of-programming-languages-infographic](http://www.veracode.com/blog/2013/04/the-history-of-programming-languages-infographic).

“Evolution of Programming Languages.” *GKToday*, Nov. 2013,

[www.gktoday.in/gk/evolution-of-programming-languages/](http://www.gktoday.in/gk/evolution-of-programming-languages/).