



PROGRAMMING LANGUAGES FROM PAST TO PRESENT-A STUDY OF ORIGINALITY AND ITS EXISTENCE

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Abstract: Since the invention of Charles Babbage's analytical engine in 1837, computers have always needed instructions to perform tasks-instructions that come in the form of coding languages. Beginning more than 150 years ago with Ada Lovelace's translation algorithm, one thing is constant about these languages is they are constantly evolving. Newer and better features are continuously introduced, and the result is a staggering number of coding languages that all serve different, specific purposes. With decades of innovation at its core, the history of programming languages makes for a highly complex family tree. This timeline gives you a brief look at where coding is now, as well as how far it has come.

Index Terms: Programming language, Future of Programming Language, Future of a programmer in context to Sikkim, Areas of application.

I. Introduction

A computer is a computational device which is used to process the data under the control of a computer program. Program is a sequence of instruction along with data. While executing the program, raw data is processed into a desired output format. These computer programs are written in a programming language which are high level languages. High level languages are nearly human languages which are more complex than the computer understandable language which are called machine language or low level language. The list of all the programming languages that evolved from the beginning to this point are listed below with its applications in real life.

II. Different Programming Languages Used Over the Years

1950s

Autocode (1952): This family of "simplified coding systems" was created in the 1950s specifically for use with the digital computers at the universities of Manchester, Cambridge and London. Considered by many to be the first compiled programming language ever invented, Autocode was developed by Alick Glennie to be both comprehensible and high-level.

Fortran (1957): Fortran is a general-purpose, imperative programming language suited to numeric computation and scientific computing. In use for over half a century, Fortran was developed by IBM in 1957 for both scientific and engineering applications.

1960s

Algol 68 (1968): Short for Algorithmic Language 1968, Algol 68 was an imperative programming language designed as a successor to Algol 60. With a wider scope of application and rigorously defined syntax, this language was the first to be fully defined before it was implemented.

1970s

Pascal (1970): Named in honor of the French mathematician Blaise Pascal, this programming language was developed by Niklaus Wirth. Pascal enabled programmers to define their own complex datatypes and made it easier to build dynamic and recursive data structures like lists, trees and graphs.

C (1972): One of the most widely used programming languages of all time, C is a general-purpose language designed for structured programming. C program source text is free-format, using the semicolon as a statement terminator and curly braces for grouping blocks of statements.

1980s

C++ (1980): This programming language was designed mainly for system programming but has expanded to be used in desktop, servers and performance-critical applications. It inherited most of C's syntax and has imperative, object-oriented and generic programming features.

Perl (1987): Perl is a family of high-level, general-purpose programming languages. It borrows features from other programming languages, such as C, AWK and sed. Originally, the only documentation for Perl was a single manual page, but it has gone through several revisions and changes.

1990s

Python (1991): Python's design philosophy focuses on readability. A successor to the ABC language, its syntax allows programmers to express concepts in fewer lines of code than is possible in languages such as C++ or Java.

Java (1995): This programming language was designed to have as few implementation dependencies as possible, giving it a wide variety of applications. It is intended to let application developers "write once, run anywhere," so that Java can run on any platform that supports it without the need to recompile.

PHP (1995): PHP is a server-side scripting language used for both Web development and general-purpose programming. This language can be mixed with HTML code or used in combination with templating engines and web frameworks. It was originally not meant to be a programming language, but grew organically over time.

2000s

C# (2001): This multi-paradigm programming language was developed by Microsoft within the .NET framework. It was intended to be simple, modern and object-oriented.

Visual Basic .NET (2001): A successor to the original Visual Basic language, Visual Basic .NET is a high-level programming language implemented on the .NET framework. It uses statements to specify actions and is one of the two main languages targeting the .NET framework, along with Visual C#.

2010s-Present

Swift (2014): Swift was created by Apple for iOS and OS C development. It was introduced in 2014 at Apple's Worldwide Developers Conference. Designed to work with Apple's Cocoa and Cocoa Touch frameworks, Swift is meant to be more concise and resilient to erroneous code.

III. The Future of Programming

The ongoing advancement of coding languages means that trained programmers are in high demand. Employment growth for computer programmers is expected to keep pace with the national average opens in new window at 8 percent. The average salary for these tech professionals is impressive, at over \$74,000 per year. Software developers are even more in demand, with a projected growth of 22 percent through the year 2022 opens in new window. In terms of salary, software developers can expect to earn median pay of \$93,350 per year.

IV. The Future of a Programmer in context to Sikkim

The difficulties that being a programmer and trying to establish your own career in Sikkim will take some time for us. The technology trends in Sikkim is quite new to the people but slowly and gradually we will progress as the year passes by. The main reason behind the slow progress is because of the awareness level of the people followed by some technical constraints in terms of internet connectivity and the less use of application software. Nevertheless due to some good schemes by the government like Entrepreneur's Hub Scheme, Chief Minister Startup Scheme, etc the opportunities are coming for us to excel in this field.

V. The 7 Most In-Demand Programming Languages of 2020**1. Java**

Java decreased in popularity by about 6,000 job postings in 2018 compared to 2017, but is still extremely well-established. Java is over 20 years old, used by millions of developers and billions of devices worldwide, and able to run on any hardware and operating system through

the Java Virtual Machine. All Android apps are based on Java and 90 percent of Fortune 500 companies use Java as a server-side language for backend development. Java Enterprise Edition 8 and Java 9 both launched in September 2017 as the Eclipse Foundation took over managing Java EE from Oracle.

2. Python

Python grew in popularity by about 5,000 job postings over 2017. It is a general-purpose programming language used for web development and as a support language for software developers. It's also widely used in scientific computing, data mining and machine learning. The continued growth and demand for machine learning developers may be driving the popularity of Python.

3. JavaScript

JavaScript, the grandfather of programming languages, is roughly as popular today as it was in our last blog post. That's no surprise to us – JavaScript is used by over 80% of developers and by 95% of all websites for any dynamic logic on their pages. Several front-end frameworks for JavaScript such as React and AngularJS have huge future potential as IoT and mobile devices become more popular, so we doubt we'll see JavaScript drop in popularity anytime soon.

4. C++

C++ changed very little in popularity from early 2017 to now. An extension of the old-school "C" programming language, C++ is usually used for system/application software, game development, drivers, client-server applications and embedded firmware. Many programmers find C++ complex and more difficult to learn and use than languages like Python or JavaScript, but it remains in use in many legacy systems at large enterprises.

5. C#

C# (pronounced "C sharp") went down slightly in demand this year. C# is an object-oriented programming language from Microsoft designed to run on Microsoft's .NET platform and to make development quicker and easier than Microsoft's previous languages. C# 7.2 came out in November, adding several new features geared towards avoiding unnecessary copying. C#, like C++, is heavily used in video game development, so any aspiring video game developers would do well to learn both of them.

6. PHP

PHP, a scripting language used on the server side, moved up to number six in our ranking over number nine last year. Most developers use PHP for web development, either to add functions that HTML can't handle or to interact with MySQL databases.

7. PERL

Perl dropped by about 3,000 job postings and stayed in seventh. Perl 5 and Perl 6 are both chugging along and Perl continues to be popular for system and network administrators and as a glue language.

VI. Areas of Applications

The various areas where these programming languages are used are as follows:

1. JAVA: Android apps, Web applications, Banking softwares, Scientific applications, etc.
2. PYTHON: Software development, games and 3D graphics, Scientific and numeric applications.
3. JAVA SCRIPT: Dynamic web pages, validating data.
4. C++: System software design, games, embedded software.
5. C#: Software development, video games, etc.
6. PHP: Web applications, dynamic webpages.
7. PERL: Biometrics, Games and multimedia.

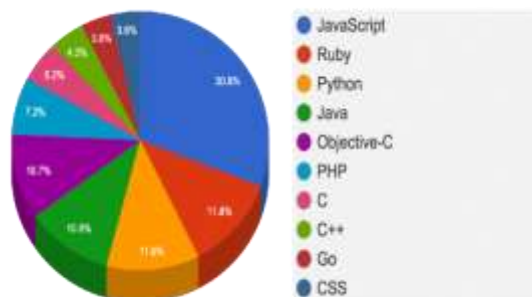


Fig 1. Common Programming Languages and its use.

VII. Conclusion

Every programming language has played their part in their respective field based on technology. As a programmer the main part is to choose from any of the programming languages as per their demand. The fundamental aspect remains the same for all the programming language. The syntax may change but the logic building remains same. As in today's scenerio languages like Python, Swift and Java are playing a significant role in any development. Its the programmer who has the supreme authority to choose as per the need and his/her understanding of the language.

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