The History of Programming

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The history of programming languages and likewise the history of programming must be placed in context of the major events occurring during each decade. Computers were first created in the 1940s with limited speed and memory capacity. Programmers were forced to write assembly language programs which was clumsy. To resolve this, programmers began designing the first programming languages. This led to a revolution of new programming languages during the 1950s. Possibly the most famous early programming language is FORTRAN by IBM due to its commercial availability, however a plethora of other simple coding languages were built up at the same time. FORTRAN was the first high-level language made for general purposes. Its initial implementation, however, had several deficiencies and bugs. Despite this, FORTRAN retains its status, even today, as a popular language for high-performance computing purposes.

From these initial attempts at programming languages came some of the most popular and most prevalent programming languages still used today. For example, the C programming language was developed in 1973. With these more refined programming languages came discussion on the personality and structure of programming. This period saw increasing discussion on the development of good software engineering practices. Certain coding structures such as the “goto” command were argued against and programming style became a serious point of contention. These arguments built up the foundational motifs of programming.

Moving forward comes a period of consolidation of these prior programming languages and the refinement of their core attributes. This period led to the development of languages such as C++, Wolfram Language, and MATLAB in the 1980s which built largely upon the structure set forth by the previous decades. These new languages were supplemented by increasing compiler speeds and advances in computer architecture that allowed more varied and more powerful applications.

Then comes a revolutionizing change in the 1990s with the creation of the Internet. The Internet was an entirely novel platform for programming languages. With it came languages like JavaScript that capitalized on its framework. Languages at this time mainly followed an object-oriented format.

Currently, the future of programming is undergoing development on multiple fronts. Cybersecurity is a major concern and numerous mechanisms are being added to reliably address this issue. Beyond this, quantum computing is undergoing early stages of research alongside artificial intelligence. Parallel computing is also capitalized on in models such as OpenMP to address limitations in hardware. In these ways and many others, the future of programming is undergoing significant evolution and it will be interesting to see where this change takes us.