

The Development of FORTRAN and ALGOL

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	On Time/Format	1	
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ABSTRACT

This article describes the historical development of the languages ALGOL and FORTRAN and how they related and assisted each other.

Keywords

Development, FORTRAN, ALGOL

1. INTRODUCTION

FORTRAN and ALGOL, FORTRAN just barely being the predecessor, were two of the first mainframe programming languages that were procedural and made the solutions to complex algorithms much more easily handled. The two languages had many commonalities built upon each other from release to release. While both languages were equally powerful, or more powerful than the other in certain areas, FORTRAN had far more mainstream popularity.

2. DEVELOPMENT OF FORTRAN

The first compiler for FORTRAN, the mainframe programming language developed by John W. Backus for the IBM 704, was released in 1957. The first release of FORTRAN saw only thirty-two statements, a few of which were the GOTO, DO loops, limited IF statements, and FORMATTED and UNFORMATTED I/O. FORTRAN II, first seen in 1958, saw the introduction of procedural programming; functions and structure were introduced.

FORTRAN IV, the 1961 release, finally removed machine-dependent features of FORTRAN II, and when FORTRAN 66 came out, FORTRAN was labeled the “industry standard.”

3. DEVELOPMENT OF ALGOL

ALGOL was developed to fix some of the apparent problems known in FORTRAN. Developed by a joint committee in Europe, ALGOL 58 was released in 1958 with less than thirty-five reserved words and no I/O capabilities, so programs couldn't be purely transferable from one machine to another. I/O functionality was officially introduced as something called “Transput” in ALGOL 68. ALGOL was largely an algorithmic

language that made immense improvements to solving scientific problems.

4. ALGOL AND FORTRAN

Prior to 1954, the vast majority of programming was done in machine language or assembly language. Programming in this manner was quite expensive, so languages such as FORTRAN and ALGOL were huge for programming [2].

ALGOL suffered in the commercial world due to FORTRAN's large amount of success and the fact that FORTRAN was released just before ALGOL. The popularity of FORTRAN (and the improved I/O functionalities) led to its ultimate success that ALGOL could not attain. FORTRAN had the support of IBM, but ALGOL had only the support of a few scientists.

5. CONCLUSIONS

FORTRAN was one of the first largely successful programming languages, and it led to the development of other such procedural and structured programming languages. ALGOL, while it was not the most successful language, still assist in the development of future languages, and without the trials and errors in its development, we wouldn't have the fine tuned languages that we have available to us today.

6. REFERENCES

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