

BOOK REVIEW — BUCHBESPRECHUNG

W. Prager: Introduction to Basic FORTRAN Programming and Numerical Methods

Blaisdell Publishing Company

New York—Toronto—London 1965. 214 pages.

Recently some artificial languages are developed for the programming of digital computers. One of them is the so-called *Fortran*, which is mainly used in connection with IBM computers. The book in question is based on lecture notes prepared for a one-semester course for students of applied mathematics. This restriction strongly influenced the choice and presentation of subjects, which are limited to the most important topics. The aim of the book is the desire to introduce students in engineering and sciences to automatic computation, as easily as possible, without incorrect simplifications.

In the introductory chapter the program for a simple computation is presented first in verbal form then in *Fortran*. The following chapter summarizes the main features of *Fortran* terminology and ground rules such as: external and internal notations, fixed-point and floated-point quantities, constants and variables, subscripted variables, functions, operations and expressions. The third chapter is devoted to the essential *Fortran* statements (punching of a program, arithmetic, input/output, *Stop* and *End*, unconditional *Go*, *To*, *If* statements). In chapter four several programs are discussed, which use only the aforementioned essential *Fortran* statements. Here flow charts are also given. The next two chapters are concerned with error analysis, with control of errors and

with additional *Fortran* statements, respectively.

In the following three chapters the computing with polynomials, the miscellaneous interpolation methods and the quadratures are treated. Chapter ten is dealing with the manipulations of alphanumeric information, the use of magnetic tapes and sorting. The last two chapters demonstrate the solution of algebraic equations with iterative methods and the integration of ordinary differential equations with Euler's method and some other techniques.

The book is completed with an instruction for preparation of programs and a list of textbooks for further study. A collection of exercises at the end of each chapter enable the reader to practice what he has studied and to check the progress attained. Finally, an index is to the help of the reader.

The book can be considered as an excellent introduction to the artificial machine languages *Fortran*, which is guaranteed by the personality of the author who has received honorary degrees from the University of Liege, the University of Poitiers, the Case Institute of Technology, and the Polytechnic Institute of Milano, he is a Fellow of the American Academy of Arts and Sciences and a Member of the Polish Academy of Sciences.

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