

greatly resembling PL/I and one which processed all of the worked examples on an IBM 360 Model 40.

Unlike so many other books in the field, this text does not assume a high level of familiarity with computer languages, and the exercises seem to be well geared to introduce the novice to the basic notions without his having to seek the assistance of outside help. The ideas are presented clearly and a variety of techniques is employed, thus making the book both informative and pleasant to read—a most unusual combination.

The contents of the book could be thoroughly digested in a period of only a few hours, and the reader should be able to write a computer program after a short while. But, as the authors state in the preface, a mastery of the material covered will not transform one into a “programmer.” Considerable practice and experience will, indeed, be necessary before proficiency can be attained.

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27 [12].—CHARLES PHILIP LECHT, *The Programmers ALGOL: A Complete Reference*, McGraw-Hill Book Co., New York, 1967, xxiii + 251 pp., 28 cm. Price \$8.95.

This book might be more appropriately called an elementary primer. Like a primer, it has large type, excessive white space, “controlled” introduction of material and incessant repetition. Unlike a “complete reference” it lacks an index and a reasonable glossary (it has an unreasonable glossary of 19 entries).

According to the preface, the book was derived not from the official report of the ALGOL authors, but from the manual for the GE 625/635 ALGOL compilers. ALGOL coding is printed in a hardware representation rather than in the reference language. About 30 percent of the book is devoted to one manufacturer’s approach to input/output. Of the seven primitive I/O procedures recommended by IFIP/WG 2.1, only three are mentioned.

Although the author claims the advantages of basing his work on an actual compiler, he frequently fails to clarify what position “his” compiler takes on well-known ambiguities in the ALGOL report. He attempts to make ALGOL easier to swallow—cutting it up into bite-size pieces by unwinding some of the recursion in the definitions—a format which requires much repetition. As a result, some rules have been stated in a short form which is harder to take than the original official formulation. For example, it takes some ten pages to get to the description of statements of the form: *if  $b_1$  then  $s_1$  else if  $b_2$  then  $s_2$  else . . . if  $b_{n-1}$  then  $s_{n-1}$  else  $s_n$ .*

For the most part, it is not easy to find in this book any discussions of the subtler or more uncertain points of ALGOL such as those raised by Knuth and Merner in “ALGOL 60 Confidential” or those explicitly left unresolved in the revised ALGOL report (which of course had to be resolved somehow in the compiler on which the book is based).

Some important omissions are the following:

- (a) No mention is made of the initial values of *own* variables.

(b) The description of *own* variables do not distinguish whether the static or dynamic interpretation is intended.

(c) The effect of a "go to" into a conditional statement is not spelled out, although an example (p. 75) shows a simple case.

(d) It is not stated whether all the primaries of a simple Boolean are evaluated every time (for consistency in the operation of side effects).

(e) Simple arithmetic expressions are not defined well enough to forbid Bottenbruch's counterexamples:  $2a + b$ ,  $a \uparrow -2$ ,  $2(x + y)$ .

Following are some misprints and confusing words that were noted:

(a) pp. 34, 76, 251; the characters ( , +, 0, ., 5, and) following ENTIER should be taken from the hardware representation character set.

(b) p. 38, rules 3, 4: two characters are chopped off at the end of each of these lines.

(c) p. 84, rule 6: "is by their appearance" means "is by the order of their appearance."

(d) p. 86, ex. 4: for "(A, I, N)" read "(A, 1, N)".

(e) p. 100, rule 4: since call by name is being described, delete "or assigned the value of."

(f) p. 111, rule 8: replace second sentence with: "If there is, rules 4 and 8 on pages 106 and 107 are applicable."

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28 [12].—R. E. SMITH, *The Bases of FORTRAN*, Control Data Institute, Minneapolis, Minn., 1967, vii + 253 pp., 26 cm. Price \$3.50.

A cursory glance through the contents of this book on Fortran would lead one to believe that it is a professional's manual for baseball players. Upon closer inspection, however, one finds that it is an attempt to present the basic concepts of Fortran programming in an appealing, informal way, without causing the reader to become overwhelmed by the subject matter as in the rigid system followed by most books on the subject.

Indeed, the author's approach to programming is quite unusual. The book is studded with most interesting anecdotes, challenging problems and thought-provoking questions seemingly unrelated to programming. Actually they are very much to the point. The ideas are cogent, and the diligent reader might well succeed in his efforts. It is questionable, however, considering the limited number of programs and techniques discussed in detail, that the average reader will be able to cope with the various problems presented in the text. Nevertheless, the approach is commendable. But after having mastered this book, the interested reader would be advised to follow up on this Fortran I presentation.

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