

59[12].—T. E. HULL & D. D. F. DAY, *Computers and Problem Solving*, Addison-Wesley (Canada) Ltd., Don Mills, Ontario, 1970, xi + 276 pp., 25 cm. Price \$6.50.

The authors have put two books under one cover. The first would aptly be titled "Computer Fundamentals" and the second "Collected Problems without Solutions". The first part of this volume provides the student with a clear introduction to the concept of an algorithm through flow charting. The flow charting procedures are then related to computers by the introduction of both Fortran and a sample machine language. The sections on Fortran are clear but their order of presentation may be questioned as indicated by the authors in the introduction. The Fortran discussion is interspersed with references to machine code and, in fact, the section titled Fortran Arithmetic has its examples done in machine code. Early sections rely on material that is not explained in depth until later sections, as input/output. Three quarters of the way through the Fortran explanation, a problem section appears, followed by more Fortran language material, subroutines and more I/O. The solutions to the problems themselves are not presented within the text, although details are given in the answers to exercises. The otherwise extreme clarity of Part One is obscured by its organizational format. A clever instructor, however, may be able to reorganize the material to advantage.

Part Two of the book is composed entirely of problems touching all aspects of computing. It will broaden the horizon of any student with regard to possible uses of programming knowledge. The authors have taken an "open ended" approach to problem solving. They present the problem and give the student no direction as to its solution. The problem areas range from numerical analysis, statistics, string processing, computer graphics, and business applications to compilers and interpreters. Part Two on its own can provide any instructor with a wealth of well-defined projects to motivate the programming student and would go well with some other text on programming fundamentals.

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60[12].—KENNETH P. SEIDEL, *Cobol*, Goodyear Publishing Co., Pacific Palisades, California, 1971, viii + 122 pp., 23 cm. Price \$3.95.

This is an easily read and moderately complete book about COBOL as used on the IBM 360, RCA Spectra 70, and XDS-Sigma Systems. It is definitely not a text for a beginning course in data processing, as it provides no introduction to basic computer concepts. From the start, the text plunges into COBOL fundamentals and takes the reader through the language in the order in which COBOL programs are written. The identification division, environment division, data division, working storage, and procedure are explained in an easily usable form, along with one or two examples carried through to solutions. The section on the data division is preceded by a well conceived chapter on data file structure, necessary to the COBOL programmer. Only one complete program is presented as illustration. This is a major failing of the book. Unless the reader is well acquainted with the art of programming,

he may be hard pressed to apply the limited examples in the book to other problems. Advanced topics in COBOL are covered as far as inter-module linkage, which again assumes more foreknowledge on the reader's part. Before concluding with the COBOL sort feature, a well thought-out guide to COBOL language debugging is presented in a form that quickly points the beginning user to his sources of error. Any programming language book would do well to use this section as a model. In summation, this is a fine book for the experienced programmer wishing to add another language to his list.

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