

Book Reviews

JAY-LOUISE WELDON

Data Base Administration

Plenum, New York, 1981. 250pp. \$22.50.

In the preface, Ms Weldon states that in the abundance of database literature, especially books, there is a dearth of database administration. This book will help fill that gap admirably. In order not to deter the prospective reader, let me first dispose of the few minor criticisms. As so many academic authors tend to do, she compiles more references than most readers would have time to pursue. The serious reader can readily access ACM and BCS journals anyway. Again, like most US (and many Canadian) authors, she behaves as if BCS and other European groups never publish anything worth referencing.

PART I: ORGANIZATION OF DBA is slightly academic in presenting many alternatives. To be fair, it does home in on a preferred model. It also identifies variants in large complex decentralized organizations. The pen portraits of DBA manager and staff tend to be idealistic—but there is nothing wrong in aiming for the best! It also treats very large DP organizations as the norm.

PART II: DB PLANNING is a very brief section and incontrovertible. It advocates that DBA is involved in selecting the database to be implemented as well as the DBMS. This may be a good idea, but not always practicable.

PART III: DB DESIGN is logically presented. One minor point is that what many term 'data model building' is called 'logical data base design'. But the content and principles enunciated on data analysis, entity modelling, normalization etc. are fine and, hopefully, useful. It points out the distinction, that the DBA acts in an advisory role in 'logical' design and as THE responsible party in 'physical' design—with which one must wholly agree.

PART IV: DB OPERATION & CONTROL provides a good guideline on database integrity, access control and performance monitoring and tuning. It was pleasing to see standards and policy emphasized, rather than merely enumeration of procedures and actions to be performed.

PART V: MANAGING THE USER INTERFACE. This part covered the administering of data including the use of a data dictionary. Here is one of the few non-North American references—BCS DDSWP 1977 report! DB standards were also adequately covered. The only omission is that of report writer and query language. These were mentioned in a few sentences in passing. With the progressive acceptance of DBMS, the selection, installation and usage of these end-user tools (or 'interfaces') are becoming increasingly important, particularly where a good dictionary is used as well.

PART VI: CASE HISTORIES. This was a good idea. However, the three examples were more 'object lessons' rather than proper studies.

The DBMS short list was fairly representative. However, in the section on data dictionary, the omission of Arthur Anderson's Lexicon—the father of data dictionaries, was a sad one. It came as no surprise that ICL's DDS was also left out. Unfortunately, large parts of North America still think Britain's computing pride and joy, is a prime source of chemicals.

Let me close by recommending Ms Weldon's book to both students and DBA practitioners—to both novices, who can learn to start right, and veterans, who might learn something about the way they currently work.

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P. GROGONO

Programming in Pascal with Pascal/1000

Addison-Wesley, Reading, Massachusetts, 1981. 379pp. £5.95.

This book is in essence a reprint of the author's earlier *Programming in Pascal* (Addison-Wesley, 1980) with interpolations on the additional features of the Hewlett-Packard Pascal/1000 compiler.

There is much that is good about this book. It includes a reasonable first introduction to ideas of proper testing and formal verification; it advocates both explicitly and by example a clean and disciplined style of problem decomposition and program coding; it includes examples of Pascal used for commercial DP problems as well as the more usual numerical and symbol processing applications.

Unfortunately there are also a number of weaknesses. First, and least significant, there is a very large number of trivial but annoying misprints in the text, suggesting that the proof-reading was perfunctory. More important is the organization and presentation of material. The special features of Pascal/1000, although listed in an appendix and mentioned as special in the text, are not adequately distinguished from 'standard' Pascal, so that someone learning from the book would be less aware than he should be of which parts of it are not transferable to other systems. In any case, the speed of progress of the book makes it unsuitable as a first text in programming, although its starting point suggests that the author intends it to be usable as such.

The first few programs are almost without exception incorrect, in that they fail when presented with null input; there is no need for

this, since the author could easily have introduced WHILE rather than REPEAT as his first looping construct.

On the whole, the book is best suited for an experienced programmer wishing to learn Hewlett-Packard Pascal; such a user might, however, be equally well served by any of the many other Pascal texts now available, together with a Pascal/1000 reference manual.

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Combinatorial Methods of Discrete Programming

Collet's Holdings, Wellingborough for Akademiai Kiadó, 1980. 283pp. \$25.00

The subject matter of this book deals variously with integer programming, dynamic programming and other combinatorial problems which arise in optimization. The contents of the twelve chapters are: Models of discrete programming, Implicit enumeration methods, Branch and bound algorithms, Dynamic programming, A multiphase dual algorithm, A modified additive algorithm, Benders decomposition, Modified filter method, Heuristics, Set covering problem, Complex algorithms and Recent directions of research. I cannot speak too authoritatively on the contents but I get the impression that it is an up-to-date survey of developments in many branches of discrete programming, both East and West, yet written in a unified form and including some new contributions from the author. The earlier chapters introduce the better known material, including a particularly useful chapter on model problems—knapsack, travelling salesman, fixed charge etc. Also I liked Chapter 12 on recent developments in the subject. I feel that one could learn a lot about the subject from the book with only a reasonable working knowledge of linear programming and matrix algebra. The book is very clearly written, readable, has a nice blend of theory and practice, and should appeal to both the academic and the user. There are frequent numerical examples and the book could well be a useful text book at senior undergraduate or more likely postgraduate level. I am particularly impressed with the standard of typesetting and binding which is not at all inferior to the Western product. Assuming the UK price is the equivalent of \$25, it is very reasonably priced by current standards.

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Typeset by CCC, printed and bound in Great Britain by William Clowes (Beccles) Limited, Beccles and London