

References

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Book reviews

Computer Data Processing, by G. B. Davis (2nd edition), 1973; 662 pages, (McGraw-Hill, £6.35.)

This is a text-book of data processing aimed at students having their first encounter with computing. Substantial changes have been made to the original edition.

The book is clearly-written and copiously illustrated. There are simple exercises at the end of every chapter and three self-test quizzes. The claim that it is suitable for self-study is justified.

Until I reached page 122, I read every word and mentally answered the exercises. This diligence was founded more on a desire to be scrupulously fair than any other reason. I then realised, with dismay, that there were still 540 pages to go and the Journal would be lucky to get my review before the 3rd edition appeared, unless I changed my tactics. I therefore apologise in advance for the less intense examination of the balance of the book.

This experience serves to emphasise the encyclopaedic proportions of the work. There are very few topics, relevant to the subject, which do not receive at least a mention. In his preface, Professor Davis argues that 'given the rate at which we forget, it is usually better to err on the side of telling too much than too little'.

The result of this philosophy might be catalogued as follows: unit record equipment and systems—45 pages; computer hardware and number systems—122 pages; information system design and development—108 pages; programming—138 pages; management—108 pages; miscellaneous—121 pages.

In achieving this breadth, it is understandable that depth has suffered. I do not think the treatment of most of the topics included would satisfy a specialist in that area, even as an introduction, at any rate because of what is omitted if not for what is said. For this reason, I cannot see students of, say, a degree level course with a major data processing content being advised to buy the book; they would be better served by a collection of more specialised books.

A weakness in the text is its inadequate exposure of practical, human problems facing data processing personnel, whether in their dealings with each other and users or in the design of man/machine interfaces. Also, to a reader who is accustomed to the elegant simplicity of the NCC standards, the ANSI/ISO flowcharting symbols used throughout the book will appear cluttered and cumbersome. A small point is that to understand some examples and exercises a knowledge of American terms is required (e.g. 'sophomore', 'non-alumni contributors', 'FICA-tax').

A particular strength of the book is its description of hardware devices; I cannot put my finger on another work which explains such a variety so well. The whole book is also commendably up to date.

As a text-book, then, it might be set for someone not specialising in the area but who needs a wide appreciation of data processing; for example, a student of business subjects. As general reading, it would interest a newcomer to the computing profession who wished to broaden his knowledge. A teacher might want a copy on his library shelves for his students specialising in data processing, if only for the factual hardware content and the well selected bibliography. For all these uses, the price per page gives good value for money.

ANDREW PARKIN (Leicester)

Automated Analysis of Drugs and Other Substances of Pharmaceutical Interest, by C. T. Rhodes and R. E. Hone, 1974; 291 pages. (Butterworths, £5.95 hardcover, £3.95 paperback.)

This book gives a wide and brief coverage of automated analysis of drugs, which is of great value to analysis in the pharmaceutical industry, to pharmacologists and to clinical chemists. There is a growing demand for such analyses with the rapidly increasing number of drugs, and with the increase in statutory requirements for quality control of drug manufacture.

The scope of application of automated analysis of drugs (or metabolites) in biological fluids is wide; it includes studies on new drugs, on new formulations (for bioavailability), and on all drugs where a delicate control of dosage is required.

The book provides a general outline of the principal approaches, citing only a few examples of each. Thus, it first deals with scope of the subject, then the use of automated apparatus for chemical and physical measurements, data processing, evaluation of dosage forms, and the scope of automated procedures in drug analysis in biological fluids. This is followed by a narrower but deeper coverage of analysis of selected groups of drugs, particularly antibiotics (including specialised microbiological techniques), steroids and vitamins. Specific examples of the methods of estimation of certain elements such as halogens, drugs containing certain chemical groups (e.g. amine groups), and certain enzyme analyses are cited.

The concluding chapter partly answers the expected questions from those who wish to make the best of their presently available facilities for the development of some kind of automated drug analysis. Many interested research workers would have liked to see some coverage of analysis of a few new or relatively new groups of drugs, of automated biological and immunoassay procedures, and of the comparison of drug analysis by various methods.

J. W. BLACK (London)

An Introduction to Automated Electrocardiogram Interpretation, by P. W. MacFarlane and T. D. V. Lawrie, 1974; 115 pages. (Butterworths Computers in Medicine Series, £2.20.)

This short book makes an admirable introduction to the present state of the art. The authors describe briefly the principles of electrocardiography and techniques of ECG recording and data transmission, and then go on to explain the general principles of economical analogue to digital conversion. They discuss in somewhat greater detail the algorithms underlying the automatic interpretation of the trace and illustrate this in particular by the technique of analysis of arrhythmias.

The reader should not assume that there is any detail in the text which would be sufficient to help someone to program a computer to analyse electrocardiograms. However the book can be strongly recommended to cardiologists and hospital administrators who are concerned with the economics and cost/benefit aspects of automated electrocardiographic interpretation, and the book contains at the end some realistic assessment of what this technique has to offer to a group of cooperating hospitals.

C. J. DICKINSON (London)