For the purpose of checking the effectiveness of the smallest factor of v_i, i.e. v_1, another modified strategy in which the use of v_1 is omitted has also been tested. The results have shown that the performance without v_1 is worse for all the problems other than problem 1a.

From these comparisons, it can be concluded that the modification with the five v-factors leads to an appreciable improvement of the maximum neighbourhood algorithm.

References

Box, M. J. (1966). A comparison of several current optimization methods, and the use of transformations in constrained problems, *The Computer Journal*, Vol. 9, No. 1, pp. 67-77.

Marquardt, D. W. (1963). An algorithm for least-squares estimation of nonlinear parameters, *JSIAM*, Vol. 11, No. 2, pp. 431-441.

Ono, K. (1971). Private communication.

Rosenbrock, H. H. (1960). An automatic method for finding the greatest or least value of a function, *The Computer Journal*, Vol. 3, No. 3, pp. 175-184.

Book review

Information Systems, COINS IV, edited by Julius T. Tou, 1974; 506 pages. (*Plenum Publishing Corporation*, $39.00.)

This book contains the proceedings of the fourth in a series of conferences held in the USA. COINS is an acronym for Computer and Information Sciences, which most will agree is a very broad topic. The theme of this conference held in late 1972 in Miami Beach was 'Information Systems'—still a rather broad field. The specific topics discussed at the conference included data base management, software development, information retrieval, pattern recognition, data analysis and urban information systems.

The book includes 24 papers, of which eight could be classified as dealing with generalised data base management topics, and of those, three discussed relational models. The quality of these eight papers is good, but most are definitely dealing with more research oriented topics in data base management. The claim on the flyleaf that the book is 'an invaluable source book for corporate management . . .' is defendable only for the paper by Everest entitled 'The Objectives of Database Management'. (Everest is the only author to prefer the germanism 'database' rather than the original 'data base'.) His paper is very readable and a useful and clear exposition of what data base management is all about.

The three relational papers include yet another tutorial on the topic, this time by C. J. Date, and two papers from authors who have attempted to implement the concepts. The first is by Whitney of General Motors Research and the other by three authors from IBM Sweden. This ends with a lament: 'to provide both advanced functions and reasonable performance is not an easy task'. True, but who should control the trade-off between the two?

An interesting, but hard to read, paper by Hardgrave addresses the problem of 'a retrieval language for tree-structured data base systems'. The author has been involved with System 2000 at the University of Texas at Austin and addresses some problems—un-fortunately not widely recognised—of evaluating boolean expressions against tree-structures such as those in TDMS (and its grand-child System 200). Anyone trying to advance the state of the art in non-procedural languages bumps into this one sooner or later.

Another valuable paper is that by Sibley and Merten entitled 'Transferability and Translation of Programs and Data'. The title speaks for itself, but again the level of exposition is not for 'corporate management'.

Leaving data base management and proceeding to the rest of the book, there are three papers on the subject of document retrieval. One of these, by Crouch and Crouch, is analytic in that it looks at four 'information storage and retrieval systems' of mid-sixties vintage and assesses how they fit into a general framework. Such work is valuable and ought to be undertaken more often. So many people would rather build their own system than take the time to analyse other peoples.

A paper on management information systems in general is entitled 'EMISARI: A Management Information System Designed to Aid and Involve People'. It is written by six authors from an ominous sounding organisation called the Office of Emergency Preparedness. It is claimed that the system 'represents a major departure from conventional MIS design. It is oriented not toward data per se but rather toward the activities of the people who generate and use the data'. Studying the paper, it is not clear that the approach is so very special. It does not use a generalised DBMS and is hence a tailored system.

There are many other papers in the proceedings and different papers will interest different readers. This is the kind of book which should find a place in a university departmental library, but not many individual buyers will wish to invest $39 (US price) to have it on their own shelves.

T. W. Olle (West Byfleet)