

of the problem by various methods and does not provide enough details on the analysis of the results. Mathematical programming problems of any size generally take too long to solve by hand and by far the most important aspect is the interpretation of the results. Chapter 5, whilst introducing graphical and simplex methods, is slightly better in this respect. However, the BASIC program given to illustrate the simplex method is rather restrictive in its uses. There exist a number of educational Mathematical Programming packages* which could, perhaps more usefully, have been employed here to enable the student to concentrate on the interpretation of the results, rather than the actual solution process.

Although the subject of Chapter 6, Probability and Statistics is not exactly an OR technique, it is so commonly used within OR that it should nonetheless be included in any introduction to the subject. All the essential topics are covered, from estimating probabilities through to the use of Poisson and Normal distributions. Finally, linear regression analysis is discussed and accompanied by another useful BASIC program.

Chapter 7 introduces the theory of Queueing, concentrating on the M/M/1 queue. The idea of the M/M/k queue is introduced but analysis of such queues is beyond the scope of this book. Even so, a BASIC program handling such queues is provided. For more complex queues it suggests queue simulation is used, an example of which is provided.

In Chapter 8, Stock Control, the different categories of stock, the economic batch size, and the effect of discounts are all discussed from the buyers point of view. The manufacturing cycle then introduces the suppliers perspective, re-order systems and buffer stocks.

Chapter 9, Games and Strategies, brings the book to a natural end. It begins with 2×2 games, pure and mixed strategies and leads on to $2 \times n$ and then $m \times n$ games. The final section shows how an $m \times n$ game problem can be transformed into an equivalent linear program.

I would recommend this book for a first year university course in OR. Due to the way the techniques are described, any student with a good GCSE grade in mathematics should not have any problems. Relevant mathematical results and formulae are explained in Appendix A.

This book provides a good all-round introduction to the very broad subject of OR. It also includes chapters on Time Value of Money and Probability and Statistics, which although not strictly OR techniques, are commonly used within the sphere of OR. In describing the traditional techniques, it does not suffer from getting 'bogged down' in theory—well-documented examples are provided throughout. Each chapter also provides a short bibliography for the interested reader and numerous example questions with answers.

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Representing and Reasoning With Probabilistic Knowledge

FAHIEM BACCHUS

The MIT Press, Cambridge, MA, USA, 1990. 233 pp. £26.95

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This book presents a highly technical study in symbolic logic and gives an approach which includes the situation where statements are not merely true or false but have a probability of being true. Proof theory and rules of inference are discussed.

The book is two degrees removed from the OR practitioner. It would have no relevance to the analyst setting up an expert system or an application of artificial intelligence. I suspect—though I may be wrong—that the paradigm suggested is not immediately translatable into an inference machine for such a system. It is more likely that the book has its place in the academic development of the logic on which such inference machines are based. Professor Bacchus has written a book for this specialist market.

K. J. EVANS

*For example, the commercial package XPRESS-MP is also available in an educational package from Dash Associates, Blisworth House, Church Lane, Blisworth, Northants NN7 3BX, UK.