

Listed are synopses of recent books and papers that should be of interest to the readers of the *IBM Systems Journal*. Inquiries should be directed to the publishers or publications cited.

Computer systems performance modeling, Charles H. Sauer (RES Yorktown Heights, NY) and K. Mani Chandy (University of Texas at Austin), Prentice-Hall, Inc., Englewood Cliffs, NJ, 1981. 352 pp. (ISBN 0-13-165175-7). Modeling is a way to judge the performance of a system while there is still time to effect changes in the design and development of that system. As the approach to computing becomes more scientific, performance modeling is becoming an integral part of the operation of a computer department. This book has been developed as a guide for practicing systems designers and developers, to make modeling methodology available to as wide an audience of computer professionals as possible. Performance estimation methods that can be used throughout the evolution of a system are described, avoiding sophisticated mathematics wherever possible. The book can also be used as an introductory text in performance modeling.

This book contains several interesting features. After the first eight chapters have introduced basic principles and provided the necessary background in modeling techniques, Chapter Nine analyzes six different published and proven case studies. These include batch, multiprocessing, and data management systems, as well as an interactive system, a virtual machine system, and a communications system. In the last chapter, the author discusses the management aspects of modeling projects, including evaluation of modeling technology and organizational structures.

Using structured design, Wayne P. Stevens (DPD White Plains, NY), John Wiley & Sons, Inc., New York, NY, 1981. 213 pp. (ISBN 0-471-08198-1). This book, subtitled *How to Make Programs Simple, Changeable, Flexible, and Reusable*, is a "how-to" discussion of structured design. The concepts of structured design are well-known; one of the classic papers on the subject was published in the *IBM Systems Journal* in 1974 with Mr. Stevens as one of the authors. The primary purpose of this work, then, is to increase the data processing person's ability to use these concepts. Therefore, major emphasis is given to examples and guidelines.

The book begins with several chapters on the concepts of structured design, such as structure charts, binding, and coupling. This is followed by a chapter containing the author's compilation of tips and techniques for improving modular structures. The rest of the book is devoted to examples of the use of structured design. This emphasis on the application of the principles of structured design nicely balances the material already published on the theory.

Implementing the X.21 interface, Vladimir Yanoschak (DPD Research Triangle Park, NC), *Data Communications* 10, No. 2, 83-97 (February 1981). The X.21 interface is a general-purpose interface between data terminal equipment and data circuit-terminating equipment. IBM has analyzed the design criteria for interfacing to X.21 networks as a part of the development of products attachable to the Japanese X.21 network already in operation. This article, exploring some of the design considerations applicable to the X.21 interface, is the first of three consecutive articles on the X.21 interface. The second article (March 1981) discusses the improved performance possible from combining SNA and X.21, while the third article (April 1981) describes a simulation tool for the X.21 standard.

Suggested reading

Network problem-determination aids in microprocessor-based modems, Simon Huon (IBM Laboratory, La Gaude, France) and Robert Smith (DPPG White Plains, NY), *IBM Journal of Research and Development* **25**, No. 1, 3-16 (January 1981). Recent significant developments in large-scale integration (LSI) and in digital signal-processing techniques have combined to provide the base for a new generation of modems. LSI microprocessors provide superior modem function as well as a design base for the addition of new function. The extendability afforded by a microprocessor-based modem design is being used to provide advanced communications network management functions. This paper describes the design objectives, implementation decisions, and design rationale for implementing these characteristics in the IBM 3863, 3864, and 3865 family of data modems.

Integrated data analysis and management for the problem solving environment, R. Erbe, R. Hartwig, H. Lehmann, G. Mueller, and U. Schauer (IBM Scientific Center, Heidelberg, Germany), *Information Systems* **5**, No. 4, 273-285 (1980). The ability of an end user, unskilled in data processing, to easily and comfortably access the extensive computerized data available for problem solving is becoming critical. An experimental decision support system called Integrated Data Analysis and Management System (IDAMS) was developed to provide such an interface. The system, written using the interactive APL language, relational data bases, and graphical capabilities, is described in this paper. The objective in developing this system was to provide insight into the requirements of end-user systems.

The Duke personal computer project: A strategy for computing literacy, Thomas M. Gallie, Charles H. Lochmüller, Sharon S. Poss, Mel Ray, John O. Rousseau, and David A. Smith (Duke University, Durham, NC), *Perspectives in Computing* **1**, No. 1, 4-8 (February 1981). This article is taken from the first issue of *Perspectives in Computing*, a new multidisciplinary publication designed to demonstrate a variety of problem-solving computer applications in research and education. The magazine is published four times a year by International Business Machines Corporation and is intended primarily for the academic community. Each issue contains a number of articles on computer applications in different disciplines. The article referred to above discusses the approach used by Duke University to establish computer literacy on its campus. Application examples are taken from a variety of disciplines.