THEME FEATURES

8 Guest Editor's Introduction: Technology and Architecture for Data Base Management—An Overview and Perspective  Harut Barsamian
Rapid growth of data bases in end-user applications and as powerful software development tools will make data management systems one of the greatest challenges of the 1980's and a landmark of that decade.

12 Storage Technology: Capabilities and Limitations  A. S. Hoagland
The disk remains the primary form of mass storage. Despite competing technologies, improvements in disk technology will ensure its widespread use throughout the remainder of the century.

19 Analysis of Memory Hierarchies for Sequential Data Access  Terry A. Welch
Analytic modeling techniques permit system designers to compare memory-system alternatives quickly and easily. An example is the use of buffers—or caches—on disks.

27 Current Trends in Data Base Systems  G. A. Champine
Tomorrow's data base systems will be organized around a common architecture, data distribution techniques, and new specialized processors.

42 System R: A Relational Data Base Management System  The System R Group
A relational approach makes this experimental data base management system unusually easy to install and use. Some of the decisions made in System R design in order to enhance usability also offer major bonuses in other areas.

SPECIAL FEATURES

50 A Keynote Address on Concurrent Programming  Per Brinch Hansen
Delivered at COMPSAC 78, this address draws a parallel between the major development phases of the first 20 years of concurrent programming and the present challenge of distributed computing.

58 Microprocessors in Japan—Status in 1978  Ryoichi Mori, Morihiko Tajima, Yoshikuni Okada, and Hiroaki Tajima
By the third quarter of 1978, ten Japanese companies were producing some 80 types of microprocessors, including 61 original products. Both the rate of new product introductions and the directions of these developments are impressive.

64 Microcomputer Applications in Japan  Ryoichi Mori, Yuzo Kita, Iwao Morishita, Akio Tojo, Akio Kokubu, Yoshikuni Okada, Shunichi Uchida, Kiyoto Ohkawa, and Seishi Nishikawa
JEIDA, the Japan Electronic Industries Development Association, recently surveyed the state of the applications art in Japan. The most striking features of the study were its scope and the richness of the answers obtained.

76 Conference Report: VLSI Architecture, Design, and Fabrication  Philip M. Neches

79 Open Channel: You Can't Just Plug Your Computer into the Wall!  James V. Dinkey