Abstracts

Listed are abstracts from recent papers and books by IBM authors. Inquiries should be directed to the publications and publishers cited.

IBM's Systems Network Architecture, J. P. Gray and C. R. Blair (SCD Raleigh) *Datamation* **21**, No. 4, 51–56 (April 1975). SNA is compared with previous teleprocessing networks. Presented are basic functions, an overview, and migration aids. Brief technical descriptions of transmission control, path control, and logical units are included.

Performance analysis, Ron Ashany, Ed., *IBM Journal of Research and Development* **19**, No. 5 (September 1975) (G322-0084). This issue is the second of two dealing with performance measurement and evaluation. According to the preface, "the eight papers in this issue introduce some important and novel concepts in the analysis and design of computer systems. New viewpoints have been developed for the analysis of significant aspects such as multiprocessing, multiprogramming, system communication, storage management, scheduling, and validation of simulation models . . . Success in the application of the described models depends on careful formulation by the user and an understanding of the assumptions and restrictions involved in their use."

Contents: Computation of lower bounds for multiprocessor schedules, Dynamic partitioning of the main memory using the working set concept, Study of memory partitioning for multiprogramming systems with virtual memory, Introduction to regenerative simulation, Regenerative simulation of a queuing model of an automated tape library, Sequential server queues for computer communication system analysis, Analysis of a loop transmission system with round-robin scheduling of services, Optimal scheduling strategies for real-time computers.

The pros and cons of structured programming, F. T. Baker (FSD Gaithersburg, MD), *Data Management* **13**, No. 9, September 1975, p. 61–71. A review of experiences with what have been called the improved programming technologies: development support librarians, structured coding, top-down programming, and chief programmer teams.

Sorting and sort systems, Harold Lorin (Systems Research Institute, New York, NY), Addison-Wesley, Reading, Massachusetts (1975), 457 pp. Preparing a programmer to create sort programs is the intent of this book, which is divided into three parts: internal sorting, external sorts, and sorting systems. Part one, internal sorting, contains 11 chapters including exchange sorts, Shell's sorting methods, structure in sorting, tournament sorts, quicksort, high-order selection sorts, internal merging, and distributive sorts. Part two, external sorting, contains discussions of tape merging, merging methods, and random-access sorting. Part three, sorting systems, includes a chapter covering generalized sort development, timing, and simulation. Another chapter, special systems considerations, includes sections on relocation and virtual memory, multiprocessors, and other hardware possibilities. Bibliography.

Syntactic errors in computer programming, S. J. Boies and J. D. Gould (RES Yorktown Hts., NY), *Human Factors* **16**, No. 3, 253–257 (July 1974). A study of a large-scale computer system shows that only 12 to 17 percent of the FORTRAN, PL/I, and Assembler Language computer programs submitted to the language processor contained syntactic errors. Thus, syntactic errors do not appear to be a significant bottleneck in programming. This experiment is part of a larger effort to identify and reduce the behavioral bottlenecks in computer programming.