Preface

In June 1980, IBM announced several new office systems product offerings. In addition, IBM announced its intention to develop architectures for document interchange capability across a variety of products found in an office system environment. The paper by DeSousa on electronic interchange architecture discusses some of the work being done in this area.

Much of the work in recent data base research has centered around the relational view of data. The next two papers of this issue focus on this subject. Sandberg's paper is a tutorial on the basic concepts of relational data base management systems. A number of tutorial papers have already been published, as is illustrated by this paper's extensive bibliography. This primer analyzes characteristics of relational systems in comparison with those of network and hierarchical systems and discusses applications where these characteristics might be advantageous. The paper also directs the reader to additional material on this subject through annotated references.

The third paper, discussing the implementation of relational concepts, is authored by members of the System/R project team at the IBM San Jose Research Laboratory. System/R is an experimental relational data base system designed and built as part of a research program on the relational model of data. This paper summarizes the system's goals, design, and achievements with references to more detailed reports on specific aspects.

Capacity planning, the main subject of a recent issue of the *Journal*, is also the theme of Major's paper. In the earlier issue, a

capacity planning procedure for central processing unit estimation called USAGE was discussed. Major's paper presents an expansion of this method into the input/output area by applying the USAGE concepts to I/O paths and direct access storage devices.

Our final paper addresses the subject of facilitating the development of sensor-based applications. A prototypical system based on an IBM 5100 using the EDX operating system was used in an air quality monitoring application at the Palo Alto Scientific Center. The paper by Halpern and Rettberg discusses this project and the techniques involved in reducing implementation efforts.

This issue of the *Journal* includes a six-year index containing all papers published by the *IBM Systems Journal* from the first quarter of 1975 through this issue. The papers are organized by subject matter and by author. Reprints of the individual papers may be ordered through local IBM branch offices by using the order numbers listed in the index. The index itself, expanded to include abstracts of each paper, may be obtained in reprint form by using order number G321-5143.

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Editor