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Special Issue on Prototypes of Deductive Database Systems

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SCOPE AND PURPOSE

The Journal is a quarterly publication of the VLDB Endowment. As a database systems journal it is dedicated to the international publication of scholarly contributions to the advancement of information system architectures, the impact of emerging technologies on information systems, and the development of novel applications. It presents significant advances in the design, implementation, and evaluation of systems for databases and for other information collections. Its scope ranges from the development of special-purpose hardware, the design of innovative software approaches, integrated system architectures, the design analysis and performance evaluation of systems to new techniques for presenting and capturing information.

For submission and subscription information, see inside back cover

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Foreword

This is a Special Issue of the *VLDB Journal* dedicated to Prototype Deductive Database Systems. Its main emphasis is on both "prototype" and "system." As we know, an enormous amount of research on deductive databases and recursive database query processing has been conducted during the past decade. There have been quite a few well-implemented research prototypes which can provide us with some real performance measurements of deductive database systems, based on which we can evaluate their applicability and practicality to solve real-world problems. Some of these implemented prototypes may even be well on their way to becoming real products. Through these implementations, the early enthusiasm and ideas expressed in many conference papers can be supported by demonstrable and evaluated systems.

The above belief and observation served as the starting point for Professor Kotagiri Ramamohanarao, the invited editor of this issue, to initiate a "call for papers" on Prototype Deductive Database Systems. The call was distributed at the end of 1992 and the response indeed met our expectations and justified the idea of a Special Issue; more than 15 papers were submitted. As the invited editor, K. Ramamohanarao coordinated the reviewing process. All submitted papers were reviewed following the regular review rules of the *VLDB Journal.*

This issue contains three selected contributions which deal with the CORAL, the Glue-nail, and the DECLARE and SDS research prototypes, respectively. It also includes an introduction to the Special Issue written by the invited editor with J. Harland as the co-author, and an invited research contribution on the ADITI system, a research prototype developed by K. Ramamohanarao and his team.

We would like to thank Rao for his excellent effort and for his contributions to this issue, without which this issue would not have become a reality.

Hans-J. Schek
Coordinating Editor-in-Chief
March, 1994

Special Issue Editorial

There has been a significant amount of research performed on deductive database systems in recent years, and much progress has been made in areas such as query optimization. More recently, implementations of deductive database systems have begun to appear. Hence, this Special Issue appears at a time when deductive databases are beginning to evolve from a research tool into practical database systems.

This issue contains an overview article, which motivates the need for deductive database systems, and covers issues such as language features and implementation strategies, and briefly describes various prototype systems, including systems not covered elsewhere in this issue. There are four main articles in this issue, describing the systems CORAL, Glue-Nail, DECLARE & SDS, and Aditi.

I would like to thank Professor Hans Schek for giving me the opportunity to be the editor for this Special Issue, all those who submitted papers, and all who refereed papers for this issue.

I hope that this Special Issue stimulates further research in the area of deductive databases and I hope that commercial quality deductive database systems will soon be readily available.

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