The VLDB Journal

The International Journal on Very Large Data Bases

Volume 2(1) (1993)

The *VLDB* Journal

The International Journal on Very Large Data Bases

Volume 2(1) (1993)

THE BOXWOOD PRESS
PACIFIC GROVE, CA, USA

Published quarterly by:

THE BOXWOOD PRESS
183 Ocean View Blvd.
Pacific Grove, CA 93950, USA
Telephone: (408) 375-9110/Fax: (408) 375-0430

FOREWORD

This issue marks the beginning of the second volume of the *VLDB Journal.* It is the first issue containing a collection of articles submitted in response to a general call for state of the art database systems research articles. Thus far, the interest in and response to the Journal has been beyond planning assumptions. The publication of a second volume is a clear sign of the Journal's long-term viability.

Researchers with material that fits the mission of the *VLDB Journal* are encouraged to submit their articles to either of the Editors-in-Chief. Information on forthcoming special issues appears at the back of this issue.

As we already mentioned in the previous issue we are interested in hearing your comments about the journal and any suggestions for changes or improvements. Please also send any comments or clarifying remarks on articles published in prior issues. Furthermore, if you believe you have found an essential error in an article, please write to one of the Editors-in-Chief with a statement of the problem and a proposed correction. The Journal will publish material of general interest to the database systems research community as "Letters to the Editor" or "Technical Correspondence." The *VLDB Journal* has the overall objective of disseminating research results and stimulating new research and development activities. In order to accomplish this objective, we ask for your participation.

Fred Maryanski Hans Schek
Editors-in-Chief

Call for Articles

The VLDB Journal: Special Issue on Prototypes of Deductive Database Systems

The VLDB Journal is planning a special issue on Prototypes of Deductive Database Systems. Potential authors are encouraged to submit original articles describing prototype deductive database systems. Articles should address the issues below:

- Query and Update Language Description
- Computational Model
- Optimization Techniques
- Implementation and System Architecture
- Performance Measurements
- Applications

Potential authors are encouraged to submit original, journal-quality articles to the special issue editor:

Professor Kotagiri Ramamohanarao
Department of Computer Science, University of Melbourne
Parkville, 3052 Victoria, AUSTRALIA
Fax: +61 3 282 2444 E-Mail: rao@cs.mu.oz.au

Send six copies of a complete manuscript of no more than 35 typewritten, double-spaced pages. For more specific information see the Guidelines for Manuscript Preparation of the *VLDB Journal* which can be obtained through the special issue editor or the responsible editor-in-chief, Hans -J. Schek (schek@inf.ethz.ch). All articles will be reviewed through the Journal's editorial board. Important dates:

March 1, 1993	Due date for manuscript
June 1, 1993	Notification of acceptance
August 1, 1993	Due date for final version

A preliminary statement of your intention to submit would be appreciated.

Call for Articles

The VLDB Journal: Special Issue on Persistent Object Systems

The *VLDB Journal* is planning a special issue on Persistent Object Systems. Persistent programming is concerned with the manipulation of data in a manner that is independent of the length of time that the data exists. Thus, data that is normally short-lived and manipulated by a programming language may be integrated with and used in the same manner as data that is long-lived and manipulated by a database management system. At this level of abstraction the programmer concentrates on the complexity of the application and is relieved of the burden of organizing these physical properties of the data. The advantages of persistent programming are economic and the concept of persistence can be extended to abstract over all the physical properties of data, such as how long it is kept, where it is kept and in what form it is kept.

Persistence is central to a number of advances in modern computer technologies and methodologies. Database programming languages are concerned with programming techniques and constructs for describing and manipulating persistent data. The articles in this special issue will report on new advances in theory, implementation, and applications of Persistent Object Systems.

Articles are invited that may be practical or conceptual in nature. Topics of interest include, but are not restricted to:

- Type Systems and Persistence. What are the appropriate technologies and type models for persistent data? The equivalence of schema and types. The provision of bulk types with associated algebras.
- Concurrency in Persistent Systems. The persistence abstraction raises the need to identify mechanisms for specifying the concurrent use of data and for building transaction-based systems.
- Binding in Persistent Object Systems. What mixture of binding is required for persistent data?
- Applications of Persistence. As yet persistent applications are few and not well published. We invite articles on applications built in a persistent manner.
- Architectures for Persistent Object Systems. These include hardware-addressing mechanisms, software applications architectures, and the design and construction of persistent object stores.
- Large-Scale Persistent Systems. How can the definition of the language and its implementation allow graceful growth for the applications where there are genuinely large volumes of data, and multiple users?
- Data Evolution in Persistent Object Systems. What mechanisms are required for evolving persistent data?
- Data Integration. Can persistent object systems be designed and constructed which allow the interchange of data between programs written in different languages, as filing systems do now?

- Distribution, Integrity, and Reliability in Persistent Object Systems. It has been suggested that a natural extension of persistence is to allow the programmer to code without being aware of the locality of data. What are the issues in language design which address this?
- Use of Tools in Persistent Object Systems. We invite articles on the description and use of these tools.
- Methodologies for Persistent Programming. What new programming methodologies are available to the programmer utilizing persistent systems for the construction, compilation, binding, and execution of applications.
- Compilers for Languages Supporting Persistence. Compiler technology should be able to take advantage of persistent programming languages being compiled and executed in a persistent environment. We invite articles that exploit this technology.
- Persistent and Database Programming Languages. We invite articles on innovations in the design and implementation of persistent programming languages.

Further information on suitable topics may be obtained from the Special Issue Editors.

Malcolm Atkinson	Ron Morrison
Department of Computing Science	Department of Mathematical and
University of Glasgow	Computational Sciences
8–17, Lilybank Gdns	University of St. Andrews
Glasgow G12 8RZ	North Haugh St. Andrews
Scotland	Fife KY16 9SS
UK	Scotland
+44 41 330 4359	+44 334 76161 Ext. 8121
mpa@dcs.glasgow.ac.uk	ron@dcs.st-and.ac.uk

Potential authors are encouraged to submit original, journal-quality articles to Malcolm Atkinson. Send six copies of a complete manuscript of no more than 35 typewritten, double-spaced pages. For more specific information see the Guidelines for Manuscript Preparation of the *VLDB Journal* which can be obtained through the Special Issue Editors or the responsible Editor-in-Chief, Hans -J. Schek (schek@inf.ethz.ch). All articles will be reviewed through the Journal's editorial board. Important dates:

June 1, 1993	Due date for manuscript
October 1, 1993	Notification of acceptance
December 1, 1993	Due date for final version

A preliminary statement of your intention to submit would be appreciated.

Articles will be selected with the advice of referees. Should there be an excess of good quality articles compared with the number that can be accommodated in one issue of the journal, then these will be considered for subsequent issues of the *VLDB Journal* if that is acceptable to their authors.

Call for Articles

The VLDB Journal: Special Issue on Spatial Database Systems

The *VLDB Journal* is planning a special issue on Spatial Database Systems, which provide the underlying database technology for geographic information systems and other applications dealing with large collections of geometric data. Topics of interest include, but are not limited to, the following:

- Spatial data models and query languages and their realization
- Spatial data types: definition and implementation
- Support for networks (highways, etc.)
- Maintaining geometric consistency of related spatial objects
- Correct finite resolution implementation of spatial types and operations
- Spatial access structures and geometric algorithms
- Query processing in spatial DBMS
- Cost modeling and optimization for query processing with spatial data
- Extensibility in spatial DBMS
- Coupling external spatial computation services with extensible DB systems
- Object-oriented and deductive techniques for spatial DBMS
- User interfaces and UI construction tools for spatial DBMS
- Graphical query languages
- Map generation from spatial databases

Potential authors are encouraged to submit original, journal quality articles to the special issue editor:

Ralf Hartmut Güting
Praktische Informatik IV Fernuniversität Hagen
Postfach 940 DW-5800 Hagen GERMANY
Fax: +49 2331 31794 E-Mail: gueting@fernuni-hagen.de

Send six copies of a complete manuscript of no more than 35 typewritten, double-spaced pages. For more specific information see the Guidelines for Manuscript Preparation of the *VLDB Journal* which can be obtained through the special issue editor or the responsible editor-in-chief, Hans -J. Schek (schek@inf.ethz.ch). All articles will be reviewed through the Journal's editorial board. Important dates:

July 1, 1993	Due date for manuscript
November 1, 1993	Notification of acceptance
January 1, 1994	Due date for final version

A preliminary statement of your intention to submit would be appreciated.