

Objects and SQL: Strange Relations?

Panel Discussion

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The multi-billion dollar market for SQL database management software is supported by ongoing national and international standardization efforts. Under the auspices of ANSI and ISO, committees of experts are actively working to add object extensions to SQL. There is no clear marketplace consensus, however, on how to best accommodate objects in the relational database world. Vendors of object-oriented database management systems believe that they represent the next generation of technology. Others, including participants in the Object Management Group, are convinced that database is only a small part of the object-oriented challenge. Some question the focus on SQL; they want to jettison SQL's many compromises by returning to the theoretical relational model while integrating object and relational concepts.

This panel will present and contrast various approaches for accommodating object orientation and current relational database practice. Panel participants will give short overview presentations describing the techniques that they and the organizations they represent propose for bringing the object and relational paradigms together. In addition to describing the technical approach, they will address the pragmatic aspects of how the efforts they are involved in could be introduced into and accepted by the marketplace.

Within ANSI and ISO, development of upward compatible enhancements to standard SQL has focused on specifying an abstract data type construct as the fundamental building block for object-oriented extensions. With the working title of SQL3, these enhancements represent the collective efforts of many relational DBMS vendors and users. If consensus approval for this approach can be achieved among participants in the standardization bodies, SQL3 object extensions could be approved by ANSI and ISO between mid-1997 and 1998. Dr. Nelson Mattos, an active participant in the X3H2 (ANSI SQL) and ISO/IEC SC21 WG3 Database Languages committees, will represent these forums and their SQL-centric approach.

A small group of experts formed to define a standard for object database management systems under the banner of the Object Database Management Group (ODMG). Their objective was twofold: first, to define a set of standards allowing object DBMS customers to write portable applications; and secondarily, to facilitate

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interoperability among object-oriented DBMS products. ODMG defined an object model, an object definition language, and a non-procedural object query language (OQL) for querying and updating object databases. Ad hoc cooperative efforts by ANSI/ISO and ODMG participants are currently pursuing the objective of bringing future OQL and SQL language specifications together, a possibility that was recognized as desirable by ODMG participants from the outset. Speaking for ODMG on the panel will be Dr. Francois Bancilhon, a member of the ODMG Board and a key technical contributor to the ODMG/Object Query Language specification effort.

With a charter that includes more than just database, the object management group (OMG) is concerned with objects in general, and distributed processing in particular. Database management is merely one part of their view of object-oriented processing. In a recent request for technology, OMG considered competing proposals based on the ANSI/ISO SQL3 and ODMG/OQL specifications. With their broader perspective, OMG may provide further motivation for convergence of these and other alternative approaches to object-oriented database management. Dr. Richard Mark Soley, Vice President and Technical Director of the Object Management Group, will provide insight on the OMG perspective.

C.J. Date, an independent author, lecturer and consultant, specializing in relational database management, has written over the years about the deficiencies of SQL. He calls for a return to common sense in the following abstract of the position statement he will deliver on the future direction for database management.

What should be the future direction for data management? More specifically, what should be done about the apparent conflict between objects and relations? An extraordinary amount of nonsense has been written in the trade press and elsewhere on these questions; the literature is full of confusion and (deliberate?) misrepresentation of the issues. *The Third Manifesto*, by Hugh Darwen and Chris Date, argues that the correct way forward is to do *nothing* to the relational model (except implement it, which doesn't seem to have been tried very much). A full implementation of the relational model, and in particular of *domains*, would provide all of the functionality promised by object-oriented systems, and more.

After their overview presentations, panel members will address questions from the floor and from other participants.