

Recent Developments for Data Models (and Query Languages)

<http://www.lgis.informatik.uni-kl.de/cms/courses/datenmodelle/>



Outline

Overview

I. Object-Relational Database Concepts

1. User-defined Data Types and Typed Tables
2. Object-relational Views and Composite Types
3. User-defined Routines and Object Behavior
4. Application Programs and Object-relational Capabilities

II. Online Analytic Processing

5. Data Analysis in SQL
6. Windows and Query Functions in SQL

III. XML

7. XML and Databases
8. SQL/XML
9. XQuery

IV. More Developments (if there is time left)

temporal data models, data streams, databases and uncertainty, ...



Books

- "Advanced SQL:1999 – Understanding Object-Relational and Other Advanced Features", Jim Melton, Morgan Kaufmann, 2003.
- "Objektrelationale und objektorientierte Datenbankkonzepte und –systeme", Andreas Geppert, dpunkt Verlag, 2002.
- "Understanding SQL and Java Together - A Guide to SQLJ, JDBC, and Related Technologies", Jim Melton, Andrew Eisenberg, Morgan Kaufmann, 05/2000.
- "XQuery – Ein Lehrbuch", Wolfgang Lehner, Harald Schöning, dpunkt Verlag, 2004.
- "XQuery from the Experts: A Guide to the W3C XML Query Language", Howard Katz, Don Chamberlin, Denise Draper, Mary Fernandez, Michael Kay, Jonathan Robie, Michael Rys, Jerome Simeon, Jim Tivy, Philip Wadler, Addison Wesley, 2003.



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Papers and Specifications

- Malcolm P. Atkinson, François Bancilhon, David J. DeWitt, Klaus R. Dittrich, David Maier, Stanley B. Zdonik: The Object-Oriented Database System Manifesto. SIGMOD Conference 1990: 395
- Stefan Deßloch: SQL-Norm und Java. Datenbank-Spektrum 1: 25-32 (2001)
- Surajit Chaudhuri, Umeshwar Dayal: An Overview of Data Warehousing and OLAP Technology. SIGMOD Record 26(1): 65-74 (1997)
- David C. Fallside, XML Schema Part 0: Primer, 2 May, 2001, <http://www.w3.org/TR/xmlschema-0/>
- Andrew Eisenberg, Jim Melton: SQL/XML is Making Good Progress. SIGMOD Record 31(2): 101-108 (2002)
- Andrew Eisenberg, Jim Melton: Advancements in SQL/XML. SIGMOD Record 33(3): 79-86 (2004)
- Fatma Özcan, Donald D. Chamberlin, Krishna G. Kulkarni, Jan-Eike Michels: Integration of SQL and XQuery in IBM DB2. IBM Systems Journal 45(2): 245-270 (2006)
- Donald D. Chamberlin: XQuery: An XML query language. IBM Systems Journal 41(4): 597-615 (2002)
- XQuery 1.0: An XML Query Language (Second Edition), W3C Recommendation 14 December 2010, Editors: Scott Boag, Don Chamberlin, Mary F. Fernandez, Daniela Florescu, Jonathan Robie, Jerome Simeon, <http://www.w3.org/TR/xquery/>



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