UML for Database Design

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By IBM Rational authors, Eric J. Naiburg and Robert A. Maksimchuk. This book introduces the Unified Modeling Language (UML) and how it can be applied to database modeling and design. Read an excerpt.

By: Eric J. Naiburg and Robert A. Maksimchuk
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The Unified Modeling Language (UML), the standard graphical notation for modeling business and software application needs, has emerged as an effective modeling tool for database design. When used as a common modeling language for the many facets of system development, the UML can serve as a unifying framework that facilitates the integration of database models with the rest of a system design.

This pragmatic guide introduces you to the UML and leads you through the process of UML-based database modeling and design. The book presents the different types of UML diagrams, explaining how they apply to the database world, and shows how data modeling with the UML can be tied into the Rational Unified Process.

UML for Database Design is structured around the database design process: business use case modeling, business object modeling, database requirements definition, analysis and preliminary design, and, finally, detailed design and deployment. For each phase of development the book describes the overall objectives and workflow of that phase, the status of the case study, the relevant UML constructs, and the nuts and bolts of database modeling and design with the UML. Drawing on their extensive industry experience, the authors reveal the trials and tribulations of database development teams, lessons learned, and pointers for success.

Topics covered include:

- The business use case model
• Activity and sequence diagrams for modeling database functions and tasks
• Moving from the business to system model
• Class diagrams and statecharts
• Mapping classes to tables
• Transformation of attributes
• Rational UML Profile for Database Design
• Creating tables from classes DDL scripts, component diagrams, and deployment diagrams
• Jump starting the database design process

A case study runs throughout the book to illustrate key concepts and techniques, and appendixes containing the actual UML models from this case study are used to catalog the type and extent of models that would be developed for such a system. Practical, concrete, and based on real-life experience, UML for Database Design brings you exactly the information you need to begin working with the UML and take full advantage of the technology for high-quality database modeling and design.

Read the following excerpts (in PDF format):
Chapter 2: Database Design from Requirements to Implementation
Chapter 7: Database Design Models -- the UML Profile for Database Design

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