Introduction to Data Modeling and Design Using ERwin R8.0

Course Summary

Description

The purpose of this course is to provide the student with the necessary tools to create a logical business model and accompanying physical model and relational database schema using sound modeling theory, applied using ERwin.

Objectives
At the end of this course, students will be able to:
- Apply logical data modeling fundamentals in isolation of a proprietary tool.
- Understand how ERwin is used to expand upon the fundamentals while providing an opportunity for high quality standards-based model development.
- Understand the new features in Erwin 8.0

Topics

- Introduction to Database Modeling and Database Design
- Logical Modeling
- Model Object Documentation
- Model Audit and Validation
- Model Presentation and publishing
- Advanced Modeling
- Physical Modeling and Database Design
- Building and Maintaining a Database
- Extended Modeling Functions
- Data Warehouse-Dimensional Modeling

Audience

Data modelers, data architects, business analysts, application builders, DBA's, and end users who will be participating in data modeling and database design, including those who may not be using ERwin, but do require an understanding of the process and fundamentals.

Prerequisites

No previous data processing experience is necessary. Familiarity with Microsoft Windows is recommended.

Duration

Four days

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Course Outline

I. Introduction to Data Modeling and Database Design
A. Why we data model and methodologies
B. Conceptual, logical, and physical modeling
C. Critical success factors for a modeling project

II. Logical Modeling
A. Model building blocks, components, standards
B. Build entities, attributes
C. Understand unique identifiers and access concepts
D. Keys – Primary, Foreign, Alternate, Surrogate
E. Build and edit relationships
F. Optionality, cardinality
G. Understand and normalize the model
H. Extended data typing and metadata

III. Model Object Documentation
A. Model notation, definitions and descriptions
B. Extended data typing
C. Metadata creation and standards

IV. Model Audit and Validation
A. Ensuring syntactical completeness
B. Ensuring conceptual completeness
C. Practical approach to model auditing

V. Model Presentation
A. Subject Areas – business dimensions within a model
B. Model Diagrams - organizing views of the data
C. Model printing

VI. Advanced Modeling
A. Understand complex relations
B. Understand modeling for history
C. Understand referential integrity
D. Resolve many to many relationships
E. Build entity type hierarchies
F. Build recursive relationships
G. Independent attributes

VII. Physical Modeling and Database Design
A. Logical/Physical model implementation considerations
B. How to define physical properties
C. Referential integrity constraints
D. Implementation options for maintaining referential integrity
E. Triggers and stored procedures

VIII. Building and Maintaining a Database
A. Physical model forward engineering
B. Database reverse engineering
C. Comparing a model to a database
D. Modifying an existing database through the model
E. Using Erwin macros to generate DDL
F. Forward Engineering Templates

IX. ODBC reporting and metadata access
A. Erwin ODBC interface
B. Erwin SQL Tool
C. Erwin metamodel
D. ODBC extensions
E. Executing Crystal reports
F. Using the Bulk Editor