Introduction to Data Modeling and Design Using Erwin R7.3

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:

At the completion of this course, the student will be able to:
(Goals aimed at the business modeler)

- 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 7.3 (now GA)

(Goals aimed at the physical database designer)

- Apply database design fundamentals and standards for a variety of database engines.
- Understand how ERwin is used as an aid to the database administrator for database maintenance and development tasks.

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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... to Your Success!"

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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. Stored Displays - organizing views in a model
- C. Model Object Reporting
- D. Report Template Builder deliverables / publication
- E. 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. Forward Engineering Templates

IX. XML basics and script production
- A. History recording and reporting
- B. ERwin macros
- C. Erwin Domains
- D. XML and the Erwin metamodel
- E. ODBC extensions
- F. New SQL QUERY Tool

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