

The Data Warehouse Lifecycle

CDT602

This course provides the students with the skills necessary to design a successful data warehouse. It uses Ralph Kimball's data warehouse design methodology and is based on his book: The Data Warehouse Lifecycle Toolkit published in 1998.

Audience

- This course is targeted at technical staff, team leaders and project managers who need to understand how to design a data warehouse using Ralph Kimball's data warehouse design methodology.

Prerequisites

- Students should have at least some experience with any relational database management system.

Course Length

- Four Days

Learning Objectives

- Project Management and Requirements
- Designing the Data Warehouse—Part 1
- Designing the Data Warehouse—Part 2
- Building Dimensional Models
- Data Warehouse Architecture
- Back Room Technical Architecture
- Front Room Technical Architecture
- Infrastructure and Metadata
- Creating the Architecture Plan and Selecting Products
- Designing Aggregates
- Completing the Physical Design
- Data Staging
- Building End User Applications
- Planning the Deployment
- Maintenance and Growth of the Data Warehouse

Course Outline

HC4

Project Management And Requirements

- The Business Life Cycle
- Project Planning and Management
- Collecting the Requirements

Designing The Data Warehouse—Part 1

- The Case For Dimensional Modeling
- Fact and Dimension Tables
- Drilling Up and Down
- Primary, Foreign, and Surrogate Keys
- Additive, Semiadditive, and Nonadditive Facts
- Families of Fact Tables
- Factless Fact Tables

Designing The Data Warehouse—Part 2

- Extended Dimension Table Designs
- Extended Fact Table Designs
- Advanced Relational OLAP Querying and Reporting

Building Dimensional Models

- Getting Started With the Matrix Method
- Managing the Dimensional Modeling Project

Data Warehouse Architecture

- Defining the Columns
- Defining the Rows
- Logical and Physical Models
- Services and Data Stores
- Flow From Source System to User Desktop

- Key Technical Architecture Features WINS Server
- Evolution of the Data Warehouse Architecture

Back Room Technical Architecture

- Back Room Data Stores
- Back Room Services
- Back Room Asset Management

Front Room Technical Architecture

- Front Room Data Stores
- Front Room Services

Infrastructure And Metadata

- Infrastructure
- Metadata and the Metadata Catalog

Creating The Architecture Plan And Selecting Products

- Creating the Architecture
- A Product Evaluation Methodology

Designing Aggregates

- Deciding What to Aggregate
- Processing Aggregates
- Administering the Aggregates
- An Aggregate Navigation System
- An Aggregate Navigation Algorithm

Completing The Physical Design

- Develop Standards
- Develop the Physical Model
- Develop the Initial Index Plan
- Design and Build the Database Instance

- Develop the Physical Storage Structure
- Implement Usage Monitoring

Data Staging

- Plan Effectively
- Dimension Table Staging
- Fact Table Loads and Warehouse Operations
- Data Quality and Cleansing

Building End User Applications

- Role of the End User Application
- Application Specification
- End User Application Development

Planning The Deployment

- Determine Desktop Installation Readiness
- Develop the End User Education Strategy
- Develop an End User Support Strategy
- Develop the Deployment Release Framework
- Document the Deployment Strategy

Maintenance And Growth Of The Data Warehouse

- Manage the Existing Data Warehouse Environment
- Prepare for Data Warehouse Growth and Evolution