# SYBASE<sup>®</sup>



# Data Warehouse Lifecycle in Depth 26<sup>th</sup> – 29<sup>th</sup> October | Course Description

www.sybase.ae/Kimball

# Monday – 26<sup>th</sup> October

Introduction to the Kimball Lifecycle Approach Major task sequencing and roadmap

# Program/Project Planning and Management

Readiness factors Risk assessment and mitigation plans Scoping and business justification Team roles and responsibilities Project plan development and maintenance Program management

# **Business Requirements Definition**

Program versus project requirements preparation Requirements gathering participants Techniques for gathering requirements and handling obstacles Program/project requirements deliverables Requirements prioritization

# **Dimensional Modeling**

Role of dimensional modeling in Kimball versus Corporate Information Factory architectures Fact and dimension table characteristics 4-step process for designing dimensional models Denormalizing dimension table hierarchies Degenerate dimensions Surrogate key recommendations for dimension tables Star versus snowflake schemas Centipede fact tables with too many dimensions Factless fact tables Additive, semi-additive, and non-additive facts Value chain implications on data architecture Data Warehouse Bus Architecture and matrix for integration Conformed dimensions – identical versus shrunken roll-ups Exercise: Translate requirements into bus matrix

# Tuesday – 27<sup>th</sup> October

# **Dimensional Modeling continued**

Slowly changing dimensions – type 1, 2, 3 and advanced hybrid techniques Mini-dimensions for large, rapidly changing dimensions Dimension table role-playing Exercise: Small group design case study workshop #1 Dealing with facts at different header/line levels of detail Multiple currencies Junk dimensions for miscellaneous attributes Exercise: Design review to identify common flaws Exercise: Design enhancements to embellish existing design Dimensional modeling process flow, tasks, and deliverables Exercise: Small group design case study workshop #2 Transaction versus periodic snapshot versus accumulating snapshot fact tables Exercise: Convert E-R model into dimensional model

# Mature DW/BI System Check-ups

Symptoms of sponsorship, data, infrastructure, acceptance, and organizational/cultural disorders Prescribed treatment plans for common maturity problems

# Wednesday – 28<sup>th</sup> October

#### **Technical Architecture Design**

Architecture concepts Topology options: independent data marts, enterprise data warehouse, and the conformed data warehouse Common components and functionality ETL system Presentation servers (RDBMS/OLAP) Real time options: direct to source, ODS, real time layer BI application types and services Creating the architecture plan Exercise: Translating requirements into architecture implications

# **Product Selection and Installation**

Architecture-based evaluation approach and matrices Infrastructure considerations Metadata management Securing the system

#### **Physical Database Design**

Standards and naming conventions Physical model development Aggregation, indexing and storage plans Usage monitoring

# Extract, Transformation and Load

ETL planning Data profiling High-level and detailed ETL schematics Quality assurance and data validation system Warehouse operations system ETL workflow Extract to create, filter and transfer source data Cleaning and conforming dimensions and facts Exercise: Processing slowing changing dimensions type 2

# Thursday – 29<sup>th</sup> October

#### Extract, Transformation and Load continued

ETL workflow continued Preparing and delivering dimensions and facts Data integration and master data management Dealing with data quality issues Aggregate management Load cycle management Exercise: "High-level ETL schematic" case study

#### **BI** Applications

BI application types (ad hoc, standard reporting, analytic applications, dashboards) and audiences Specification of templates, applications and navigation framework Development of applications and BI portal

# **DW/BI System Deployment and Support**

System deployment Communication and documentation Training and support On-going user, data and system maintenance

**DW/BI System Growth** 

Planning for growth