

### **Part 1 Data Modeling for Business Intelligence**

#### **1.1 Data Modeling Concepts**

The Data Modeling Life Cycle

Kinds of Data Systems

Data Taxonomy

Data Modeling Framework for BI

The Data University Case Study

#### **1.2 Logical Data Models**

What to Model

Understanding Data Sources

Logical E-R Modeling

Logical Dimensional Modeling

Logical Models and Business Metrics

Logical Models and Business Analytics

Logical Models and Master Data Management

Logical Models and Nonrelational Data

#### **1.3 Physical Data Models**

Defining Physical Modeling

Data Structure in Transaction Systems

Structural Modeling and Data Integration

Structural Modeling and Business Analytics

Physical Design Overview

Some Optimization Techniques

Physical Design and Implementation

## **Part 2    Dimensional Data Modeling**

### **2.1    Dimensional Modeling Concepts**

Dimensional Modeling in Context

Dimensional Modeling Basics

Comparing E-R and Dimensional Models

Concepts Summary

### **2.2    Requirements Gathering for Dimensional Modeling**

Business Context for Data Modeling

Business Questions as Requirements Models

Fact/Qualifier Analysis

Requirements Gathering Summary

### **2.3    Logical Dimensional Modeling**

Modeling Meters and Measures

Modeling Dimensions

More about Meters and Measures

Model Verification

Logical Modeling Summary

### **2.4    From Logical Model to Star Schema**

Star Schema Dimensions

Star Schema Fact Tables

Star Schema Design Challenges

Modeling Process Summary

**2.5 Dimensional Data and Business Analytics**

Delivering Business Value

Effective Dimensional Modeling

**Part 3 Data Modeling in the Age of Big Data****3.1 Big Data Fundamentals**

What Is Big Data?

Big Data Opportunities

NoSQL Technologies

Big Data Challenges

Exercise 1 – Big Data Opportunities

**3.2 Modeling and Data**

Models

Modeling for Relational Storage

Modeling for Nonrelational Storage

Complementary Approaches

Exercise 2- Modeling Purposes

**3.3 Key-Value Stores**

Key-Value Stores Defined

Key-Value Data Representation

Use Cases

Examples

Exercise 3 – Key-Value Pairs Modeling

**3.4 Document Stores**

Document Stores Defined

Document Data Representation

Use Cases

Examples

Exercise 4 – Document Modeling

### **3.5 Graph Databases**

Graph Databases Defined

Graph Data Representation

Use Cases

Examples

### **3.6 Embracing Big Data**

Big Data in the Enterprise

Managing Big Data Assets

Capture Nonrelational Data

Explore Nonrelational Data

Archive Nonrelational Data

Deploy Nonrelational Data

Augment or Extend with Nonrelational Data

The Human Side of Big Data

What's Next?

## **Workshop**

- **Working with Your People, Projects, Processes and Data**
- **Choose from the following list of topics for a tailored workshop**

*(It is recommended that you select two topics for approximately 4.5 hours of workshop activity.)*

- Understanding Data Sources
- Data Warehouse Modeling (relational, not dimensional)
- Dimensional Data Mart from Requirements to Star Schema
- Big Data Modeling as Exercises
- Big Data Modeling as Client Use Case