QUEST FOR KNOWLEDGE

MICROSOFT DATA WAREHOUSE IN DEPTH

DATE  16 – 19 April 2013
LOCATION  Stockholm
INSTRUCTORS  Warren Thornthwaite and Joy Mundy
INFORMATION AND REGISTRATION  www.Q4K.com
Kimball University
Kimball University (KU), operated by the Kimball group, is the definitive source for dimensional data warehouse education. KU provides the highest quality and most practical education consistent with KU instructors’ books and extensive experience in the dimensional approach. You’ll learn from the best in the business.

WARREN THORNTHWAITE
Warren Thornthwaite has been building data warehousing and business intelligence systems since 1980. Warren worked at Metaphor for eight years, where he managed the consulting organization and implemented many major data warehouse systems. After Metaphor, Warren managed the enterprise-wide data warehouse development at Stanford University. He then co-founded InfoDynamics LLC, a data warehouse consulting firm, with Joy Mundy. Warren joined up with WebTV to help build a world class, multi-terabyte customer focused data warehouse before returning to consulting. In addition to designing data warehouses for a range of industries, Warren has extensive experience helping clients develop scalable, practical information access architectures. He holds an MBA in Decision Sciences from the University of Pennsylvania’s Wharton School, and a BA in Communications Studies from the University of Michigan. He co-authored and The Data Warehouse Lifecycle Toolkit (2nd Edition), The Microsoft Data Warehouse Toolkit (2nd Edition) and The Kimball Group Reader.

JOY MUNDY
Joy Mundy has focused on data warehousing and business intelligence since the early 1990s, specializing in business requirements analysis, dimensional modeling, and business intelligence systems architecture. Joy co-founded InfoDynamics LLC, a data warehouse consulting firm, then joined Microsoft WebTV to develop closed-loop analytic applications and a packaged data warehouse. Before returning to consulting in 2004, Joy worked in Microsoft SQL Server product development, managing a team that developed the best practices for building business intelligence systems on the Microsoft platform. Joy began her career as a business analyst in banking and finance, and has never worked at Metaphor. She graduated from Tufts University with a BA in Economics, and from Stanford with an MS in Engineering Economic Systems. Joy co-authored and The Data Warehouse Lifecycle Toolkit (2nd Edition), The Microsoft Data Warehouse Toolkit (2nd Edition) and The Kimball Group Reader.
**Course description**

With SQL Server, Office, and SharePoint, Microsoft provides a complete suite of tools for you to build DW/BI systems. This course prepares you to deal with the many facets of developing, deploying, operating, and growing your Microsoft DW/BI system. The course is directed to SQL Server 2012 but most of the content applies to SQL Server 2005, 2008, and 2008 R2. Examples and demos are based on SQL Server 2012.

This lecture and demo course will provide you a detailed technical introduction to building a Microsoft DW/BI system that meets the needs of your business users. The course will provide Microsoft-specific detailed guidance for working through the data warehouse lifecycle, from requirements gathering and design through the ETL system, relational data warehouse, OLAP and data mining applications, to reporting and other BI applications. You will discuss issues around deploying, operating, and securing the Microsoft DW/BI system.

The goal of this course is to teach you the hard stuff: not which button to push, but how to design and build a successful Microsoft DW/BI system. The focus of the course is architectural, teaching you how to design and build the components of your DW/BI system. We expect students to be able to read documentation and follow Microsoft’s generally straightforward user interfaces. The pace of the course permits only demos by the instructor; do not expect hands on tutorials.

**Prerequisites**

Students should be familiar with the SQL Server product family, including the BI Studio, SQL Manager Studio, SSIS, SSAS, Reporting Services, and the relational database, at least at the tutorial level. You should also have a basic understanding of the principles of dimensional modeling.

You should also have a basic understanding of the principles of dimensional modeling; the course only covers dimensional modeling topics at a high level. These principles are summarized in the following articles:


**Registration Fee**

The fee for this 4-day course is EUR 2,695 per person. This includes four days of instruction, lunch and morning/afternoon snacks, course materials and a KU Certificate of Completion. Students receive also copy of *The Microsoft Data Warehouse Toolkit (2nd Edition)* and *The Kimball Group Reader*.

We offer the following discounts. Discounts cannot be combined.

- 10% Early Bird discount for students registering by **22 February 2013**
  Payment must be received before the cut off date to receive the discount.
- 10% discount for groups of 3 or more students from the same company registering at the same time.
- 20% discount for groups of 5 or more students from the same company registering at the same time. **Register 5 students, only pay for 4**.

Note: Groups that register at a discounted rate must retain the minimum group size or the discount will be revoked.
Course Outline

Introduction to the Kimball Lifecycle
- Roadmap for creating the data warehouse/business intelligence system

Project Planning and Management
- Assess readiness
- Define, plan, and manage the project

Defining Business Requirements
- Gathering business requirements
- Requirements prioritization session
- Exercise: Translating requirements into the DW Bus Matrix

Designing the Business Process Dimensional Model
- Basic dimensional modeling concepts
- Conformed dimensions
- Slowly changing dimensions
- Additional concepts in dimensional modeling
  - Hierarchies and snowflaking
  - Degenerate and junk dimensions
- Many to many dimensions
- Dimensional modeling process and design spreadsheet

Microsoft Data Warehouse/Business Intelligence System Architecture
- Common components of DW/BI system architecture
- Mapping MS components to the general DW/BI architecture
- Process: How to create an architecture plan
- Exercise/discussion: Develop/present summary architecture for attendees’ systems

System Setup
- System configuration: location of components, memory, and storage
- System sizing factors
- Installing SQL Server and issues to consider during installation and configuration

SQL Server Relational Data Warehouse, Physical Design
- Column names, data types, keys, and compression
- Initial index plan, including columnstore indexes
- Setting up the Resource Governor
- Fact table partitioning

Business Intelligence Applications
- Basic BI application concepts
- Reporting system design process
  - Standard report template
  - Report specifications
  - Reporting system navigation design – BI Portal
- BI application development process

Delivering BI Applications with Reporting Services
- Reporting Services overview
- Extended demo: Designing and deploying a report
  - Sourcing from the relational database
  - Sourcing from the Analysis Services database
  - Report Manager and the SharePoint BI portal
- Reporting Services metadata
- Other BI options: Report Builder, PowerPivot, Power View, PerformancePoint

Adding Business Value with Data Mining and Predictive Analytics
- Data mining overview
- SQL Server data mining architecture
- Data mining process
- Extended demo: Creating a data mining model
  - Developing the input data set
  - Selecting algorithms
  - Data mining designer
  - Using the data mining addins for Microsoft Office
- Validating the model and moving to production
- Data mining metadata and maintenance

The Metadata Morass
- Defining and managing metadata
- Metadata in SQL Server
- Simple business metadata data model

ETL System Design
- Develop a highlevel map
- Exercise: Highlevel map for Adventure Works customer dimension
- Develop standard design patterns for common tasks
- ETL system specification

Data Quality Services and Master Data Management
- Defining master data management (MDM)
- Introducing Microsoft Data Quality Services (DQS)
- Introducing Microsoft Master Data Services (MDS)
- Getting started with DQS and MDS

Introduction to Integration Services
- Introduction to Integration Services and development environment
  - Control Flow tasks and Data Flow components
  - Variables and Expressions
  - Managing Connections
  - Demo: creating a new package, introduction to variables
- Extracting data
  - Extract design tips: extended demo
- Capturing changed data
  - Alternative approaches
  - Changed Data Capture features
  - Identifying changed data by brute force
- Loading data
  - Extended demo: Data load best practices

Developing the ETL System
- Transformations for dimension tables
  - Cleaning and conforming, extended demo
  - Populating multi-valued or many-to-many dimensions
  - Incremental updates and managing slowly changing dimensions, demo
- Transformations for fact tables
  - Surrogate key pipeline; extended demos
  - Early arriving facts, late arriving facts; demos
  - Periodic snapshot facts; accumulating snapshot facts, demos
- Audit system overview
- Configurations and parameters

Introduction to Analysis Services
- What is Analysis Services
  - Overview
  - Multidimensional versus Tabular modes
- Why use Analysis Services?
  - Extended demo: Designing dimensions
  - Vocabulary of dimensions
  - Dimension Wizard
  - Dimension Editor

Developing the Analysis Services Multidimensional Database
- Getting started
  - Extended demo: creating a new dimension
    - Key properties to edit (and which properties most can ignore)
    - Hierarchies and attribute relationships
    - Processing and fine-tuning
  - Designing multidimensional cubes; extended demo
    - Terminology
    - Cube structure and physical facts
    - Dimension usage
    - Calculations, KPIs, and Actions
    - Physical design considerations
    - Cube processing

Developing the Analysis Services Tabular Database
- Extended demo: Designing tabular models
  - Design a dimension
  - Create facts and calculations
  - Relationships
  - Direct query versus in memory

Real Time Business Intelligence
- Defining realtime BI
- Making the case for (and against) real-time
- Alternative approaches to providing real-time data
  - Executing reports in realtime
  - Loading DW/BI system in realtime
  - Using Analysis Services with real-time data

Securing the Microsoft Data Warehousing and Business Intelligence System
- Developing a security plan
- Securing core SQL Server components

Deployment: The Great Unveiling
- Setting up the environments
- Testing
- Deploying to production
- User readiness

Operations, Maintenance, and Growth
- Providing ongoing user support
- Monitoring the DW/BI system
- Killing queries
- Backup and recovery
16 – 19 April 2013

MICROSOFT DATA WAREHOUSE IN DEPTH

FAX REGISTRATION FORM +31 76 572 21 96

Course Details

Microsoft Data Warehouse in Depth ■ 16-19 April 2013 ■ Stockholm ■ EUR 2.695 (ex. vat)

Company Details

Company Name: 
Contact Name: 
Address: 
Postal Code: 
City: 
Country: 
Postal Address: 

E-mail: 
Telephone: 
Fax: 
Website: 
Invoice Address: 

VAT Number: 
Purchase Order no.: 

Student Details

First Name: 
Last Name: 
Job Title: 

Gender: ☐ Male ☐ Female 
E-Mail: 
Telephone: 

Authorization

Name: 
Job Title: 
Date: 
Signature: 

Registration Information

Confirmation and Invoicing: upon receipt of your registration our customer service department will send you a customer information pack including details of payment and hotel information. Full payment is due prior to the course start date.

Cancellations and Substitutions: Cancellations must be received in writing 20 working days prior to the course start date and are subject to a 20% administration fee. Otherwise the full registration fee remains due. As an alternative to cancellation you may transfer your place for the course to a colleague without extra costs, but Quest For Knowledge has to be informed about this transfer in advance. Quest For Knowledge reserves the right to cancel any course at anytime without any liability whatsoever, safe for the refund of the registration fee.
Organized by

**Quest For Knowledge**

Architecting an IT environment that stands the test of time begins with a sharp vision on the durability of all of its components. Quest for Knowledge (Q4K) concentrates on education and training on software and concepts that have a bright future in one of these interrelated disciplines: Data Warehousing, Business Intelligence and Customer Relationship Management. The Q4K Data Warehouse and Business Intelligence curriculum provides in the most comprehensive education and training available in the Benelux. With in depth Data Warehouse courses and a series of product oriented training classes for leading Business Intelligence solutions, Q4K training provides you with the best knowledge transfer and a sound foundation to make your projects successful. Visit our website www.Q4K.com or request our training catalog for a complete overview.

**Kimball University**

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With the support of

**Avega Group**

Avega Group is a consultancy company with specialized subsidiaries within IT and business development. Our mission is to match our customers’ needs with our employees’ expertise and focus, creating mutual success. Through our ability to attract and retain the most qualified consultants in each specialist area, we can support our customers in the development of the Nordic region’s most complex and exciting projects. Within Business Intelligence, we provide specialists in all relevant areas; Bimangement and governance, project management, architecture, data modeling, ETL development, and report development. Through our consultants extensive experience, we are experts on the leading BI platforms, including Microsoft, IBM/Cognos, SAP/BO, Oracle and QlikView. Founded in 2000 and by focusing on quality in everything we do, we have grown organically and have always been profitable. Avega Group AB is since 2010 listed on NASDAQ OMX Stockholm, has approximately 400 employees, and is based in Stockholm, Malmo and Gothenburg.

**Bizware**

Bizware is a consultancy firm focused on helping clients develop successful Data Warehousing and Business Intelligence solutions. The Bizware team currently consists of 28 dedicated employees, all working in these fields. Critical success factors in Data Warehousing and Business Intelligence is a combination of a structured approach and the engagement of expert consultants. Bizware consultants each have over 10 years experience in the successful development of Data Warehousing and Business Intelligence solutions for major Swedish and international companies. Bizware projects range from the small to the very large, but focus mainly on Enterprise class Data Warehousing and Business Intelligence projects. We capture the large volumes of multi-source, multi-format transaction data, transform, clean and deliver them to our clients business-critical applications. Bizware competency covers the entire Data Warehousing and Business Intelligence project, all the way from feasibility study, through requirements analysis, development, testing, delivery and the transition into daily operations. Areas of expertise: Strategic advice and procurement assistance, Developing the Data Warehouse and Developing Business Intelligence systems.