Data Modelling Fundamentals 3-day

Overview

This 3-day course addresses the core data management topic of data modelling. Often misunderstood and relegated to just the technical aspect of "database design", data modelling is one of the most important disciplines of data management. This course is designed and taught by the author of "Data Modelling for the Business" an industry recognized DAMA DMBoK(2.0) author, DAMA CDMP (Fellow), Vice President of Professional Development for DAMA International, Past President of DAMA UK, author & examiner of the professional CDMP certification and recipient of the DAMA Lifetime Achievement Award for Data Management Excellence. The course introduces students to data modelling, its purpose, the different types of models, how to construct and read a data model, and the wider use of data models beyond the traditional area of database design. The course also prepares students to sit the Data Modelling specialist CDMP examination.

Learning Objectives

This course explains the fundamental building blocks of data modelling. It will help students to understand the differences between relational and dimensional models. On completion they will be able to describe the purpose of Enterprise, Conceptual, Logical, and Physical data models, create a Conceptual and a Logical Data model and understand the compromises frequently necessary for good physical data models. They will also learn the different approaches for fact finding and how to apply normalisation techniques.

At the end of the course, delegates would have gained the following:

Level set understanding & terminology:
- Learn about the need for and the application of Data Models;
- See the areas where Data modelling adds value to Data Management activities;
- Understand the critical role of Data models in Master Data Management and Data Governance.

Pragmatic Learning
- Understand the difference between Enterprise, Conceptual, Logical, Physical and Dimensional Data models;
- Learn the best practices for developing Data models that can be read by humans;
- Through practical examples, learn how to apply different techniques in Data modelling

Course Outline:

Data Modelling basics

- What is Data Modelling and why does it matter
- What is the relationship between a data model and other types of models in a typical Enterprise Architectures
- What is a Conceptual Data model, why it's important and the pivotal role it plays in all architecture disciplines
- The major differences between Enterprise, Conceptual, Logical, Physical and Dimensional data models
- Data vs MetaData; what's the difference and why does it matter

Data model components

- Data Modelling Basics; Entities, Attributes, Relationships
- How to identify Entities and Subtypes
- Basic standards that you can use right away
- Relationships: Cardinality & Optionality, Identifying, Non-identifying, Recursive, and Many-to-Many
- Rules for handling Super types, subtypes, many to many and recursive relationships
- Keys: Primary, Natural, Surrogate, Alternate, Inverted, Foreign
- Attribute properties & attribute domains

Creating data models

- How to get started with data models
- What core information is needed to create a data model, how this can be easily communicated to business people, and what visual constructs to use to get their attention
- Templates and guidelines for a step-by-step approach to implementing a high-level data model in your organization
- How to capture requirements for data models
- Approaches for creating a data model (Top Down, Bottom Up, Middle out) and when to use them.

Using Data Models

- How to use high-level data models to communicate with business people to get the core information you require to build robust applications.
- The critical role played by Data Models in all disciplines of Information Management.
- Why Data Models are required for software package implementation
- Data models are not just for DBMS design, the other areas where models are critical.
- Maturity assessment to consider the way in which models are utilized in the enterprise and their integration in the System Development Life Cycle (SDLC).

Dimensional Data models the basics

- The basics of Dimensional models
- Differences between Dimensional & relational models
- The use of Dimensional data models in Business Intelligence & Data Warehousing
- Inmon vs Kimball Data Warehouse approaches
- How to cater for change in Dimensional models; the different types of slowly changing dimensions
- Columnar Database & Data warehouse – a forgotten treasure?

Improving your data models

- Data Modelling Notations and tooling
- Normalisation: 1st, 2nd and 3rd normal form and a brief overview of other normal forms
- Ten steps for checking the quality of your data models
- Layout, presenting, and communicating a data model to non-modellers

CDMP Specialist Exam Preparation

- Understand the synopsis of the CDMP Data Modelling specialist exam
- Throughout the course practice by taking sample questions in each section
- Optionally, at the end of the course, sit the live CDMP specialist examination.

Audience

Practitioners who will need to read, consume or create data models to gain a better understanding of data during Information Management initiatives including:

- Business Intelligence & Data Warehouse developers & architects
- Data Modellers
- Developers
- Data Architects
- Data Analysts
- Enterprise Architects
- Solution Architects
- Application Architects
- Information Architects
- Business Analysts
- Database Administrators
- Project / Programme Managers
- IT Consultants
- Data Governance Managers
- Data Quality Managers
- Information Quality Practitioners

Tutor Biography

Christopher Bradley has spent 40 years in the forefront of the Information Management field, working for International organisations in Information Management Strategy, Data Governance, Data Quality, Information Assurance, Master Data Management, Metadata Management, Data Warehouse and Business Intelligence.   Chris is an Information Strategist and a recognised thought leader. He advises clients including: Alinma Bank, American Express, ANZ, British Gas, Bank of England, BP, Celgene, Cigna Insurance, EDP, Emirates NBD, Enterprise Oil, ExxonMobil, GSK, HSBC, MoD, NAB, National Grid, Riyad Bank, SABB, SAMA, Saudi NIC, Saudi Aramco, Shell, Statoil, and TOTAL.

He is VP of Professional Development for DAMA-International, the inaugural Fellow of DAMA, past president of DAMA UK. He is an author of the DMBoK 2.0 and author and examiner for professional certifications. In 2016 Chris received the lifetime achievement award from DAMA International for exceptional services to furthering Data Management education & to the International Data Management community.

Recently he has delivered a comprehensive appraisal of Information Management practices at an Oil & Gas super major, Data Governance strategy for an Energy Utility, and developed an Information Management training program for a Government Organisation. Chris guides Global organizations on Information Strategy, Data Governance, Information Management best practice and how organisations can genuinely manage Information as a critical corporate asset. Frequently he is engaged to evangelise the Information Management and Data Governance message to Executive management, introduce data governance and new business processes for Information Management and to deliver training and mentoring.

Chris is Director of the E&P standards committee "DMBoard", sits on several International Data Standards committees, teaches at several Master's Degree University Classes Internationally. He authored "Data Modelling for the Business", is a primary author of DMBoK 2.0, a member of the Meta Data Professionals Organisation (MPO) and a holder at "Fellow" level of CDMP and examiner for several professional certifications.   Chris is an acknowledged thought leader in Data Management, author of several papers and books, and an expert judge on the annual Data Governance best practice awards.

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