DATA MODELLING CONCEPTS COURSE

(Course Code: DM1)

CONTENTS

Data Modeling Concepts Course

Why Should People Learn Data Modeling?

Consider this problem. You have just landed in a strange airport. You need to get into the city. What do you do?

- Hire a taxi? The driver knows the city … He'll take you.

- But you need a car to get around while you are there.

- OK. Rent a car? But how do you find your way?

- Get a City Map - or better still - a Street Directory.

With a Street Directory the inside cover shows the layout of the city, overlaid by a grid network. Each grid corresponds to a page with greater detail. You can then find where you are, where you want to go, and how to get there. But there may be many routes you can choose:

- Depending on traffic rules and traffic conditions

- Depending on the time requirements (ie. Performance)

- Depending on technology: taxi, car, bus, train, walking

So how do business managers and their staff find data and information they need for decision-making?
- Ask the end-users of the data. But who are they?

- And what if the data exists in different versions? Which version is correct?

Similarly, a data model is the "Corporate Street Directory". It includes data maps and data details in a Repository. It is analogous to the city map and details of streets. A data model, therefore:

- Depends on business rules and business conditions

- Depends on the time requirements (ie. Performance)

- Depends on the technology used: mainframe, micro, network etc

A data model should be based on an organisation's strategic, tactical and operational business plans, if information systems are to be built that are aligned with the corporate goals. But most organisations have not, until recently, recognised the importance of data models - which are as vital to the construction of an information system as an architect's plans are for the construction of a house or a skyscraper.

Today, a data model is an essential prerequisite for development of Application Data Bases, Data Warehouses, for Internet/Intranet systems and for business transformation to take advantage of the Internet and corporate Intranet technologies.

Purpose of the Course

This course teaches business managers and their staff ("business experts") as well as analysts, data administrators and data base administrators ("IT experts") how to work together in a design partnership to develop a data model for their organization.

This data model provides a blueprint of the data needed to support business processes, and the information needed by management for decision-making. A data model is a prerequisite for:

Development of integrated data bases to be used for Applications and for redevelopment of Legacy Systems

Development of a Corporate Repository for Data and Information Warehouses

Identification of re-engineered business process opportunities

Business Re-Engineering to take advantage of the Internet and Intranets

Prerequisites

This course has no prerequisites.

Audience for the Course

Business managers and their staff who need to understand the concepts of data modeling, so they can participate actively in partnership with IT staff in data modeling sessions that draw on their business expertise.

IT managers, data administrators and systems development staff who also need to understand the concepts of data modeling to participate with business managers and staff in data modeling sessions, and so enable the IT staff to draw on their systems development expertise in a design partnership with the business experts.

Objectives of the Course

On completion of the course, both business experts and IT experts will understand:

How data modeling and data mapping are used to represent expert business knowledge.

How data entities, attributes and associations are used to represent business meaning in a design partnership with business and IT staff.

How data modeling can be used to represent management information needs and the underlying data in data models that enable rapid business change.

How data modeling can identify business requirements for data bases, Internet/Intranet and Data Warehousing projects.

How data modeling can be used for Forward Engineering, Reverse Engineering and Business Reengineering projects

Certified Business Data Modeler

Participants in this course can qualify as a Certified Business Data Modeler by completing the Business Normalization Concepts course, and also completing the Data Modeling Case Study Workshop.

The student edition of the Visible Advantage modeling tool is supplied to each student. This is a limited capacity, but full-function modeling tool that is used in conjunction with the case study workshop. It includes laboratory exercises and instructions for entering your case study solution into Visible Advantage so that you can check the validity of the solution before its submission.

The Visible Advantage encyclopedia must be returned to us by email as your solution for the CBDM Exam, for individual assessment. If required, we will set additional remedial study and exercises until each student demonstrates a full understanding of the relevant Data Modeling and Business Normalization concepts.

Following completion of the workshop, the student edition of Visible Advantage is retained by each student and can be used for small projects, if required. The encyclopedia from each small project can be automatically merged into larger project encyclopedias, using the enterprise edition of Visible Advantage - if relevant. This enables students to apply the skills they have learned to specific areas of your enterprise where they have particular expertise.

To register for Certification, please order the CBDM course online, providing also an email address. We will email to you a password and further details so that you can download and install the courses and workshop materials.

Course Outline

Data Modeling Concepts: Introduces and defines the components of a data model - data entities, attributes and associations, and their representation in data maps and entity lists.

Data Entity Types: Defines and illustrates the use of each data entity type - principal (supertype) entities, secondary (subtype) entities, type entities, role entities, intersecting entities that are used to represent business activities, processes and systems, and structure entities that are used to capture expert knowledge for development of dynamically-updated expert data bases.

Data Mapping Conventions: Introduces conventions used to document data maps, and represent business strategies for strategic analysis of business alternatives.

Strategies and Associations: Shows how data maps can be used for rapid feedback to management for refinement of strategic alternatives.

Data Attribute Types: Defines and illustrates the use of primary and foreign keys, compound keys and candidate keys. Defines and illustrates non-key attributes including secondary keys (ie. selection attributes), derived attributes, elemental attributes, group attributes and repeating groups.

Course Exercises: Five course exercises of increasing difficulty are included for student completion throughout the course, together with sample solutions.

Duration of the Course

The course material, when presented as PDFs of PowerPoint Instructor Notes, will take approximately 4 - 6 hours to complete. With completion of the five included course exercises, a total of 8 - 10 hours will be required depending on each student's progress.

Course License Agreement

The courses and workshop are delivered in an electronic format as a password-protected compressed file, downloaded using an email message which also contains the Course License Agreement. Before downloading, decompressing or expanding the courses and installing them on a machine for use, please read the terms of the Agreement carefully. If you do not agree with them, you should promptly destroy all copies of the file, whether electronic, printed or otherwise and notify Information Engineering Services Pty Ltd in writing by post, electronic mail or facsimile of its destruction. On receipt of this notification, your money will be refunded. You will otherwise be taken to have accepted and agreed to all the terms of the Agreement, and will therefore be bound by it.