

How to Model, Analyze, and Improve Business Data

Instructor-Led, On-Site Duration 2 days

Overview

Business data represents the real world and everything that your organization wants to know about it. Understanding how the business thinks about and uses its data is crucial for the development of any information technology (IT) project. The primary tool for communicating about business data is the business data model (business entity relationship diagram) which helps subject matter experts (SMEs), business analysts, system analysts, and data analysts discover the static structure and business rules of the data.

This hands-on training workshop is designed to give you a time proven set of business data analysis techniques, methods, and tricks to help you acquire, understand, document, and model business data. This information exists in two primary locations; user views (reports, screens, etc.) and in the minds of the business personnel who may not know that they have this knowledge. To discover, structure, and document this “data about data”, you will learn an intuitive, top-down approach to business data modeling and a rigorous, bottom-up approach.

Note: *This instructor-led course can be delivered in a series of virtual sessions via the Internet or live your site.*

Target Audience

Business Analysts

System Analysts

Business Process Owners

Test Engineers

Data Administrators

Anyone charged with managing, understanding and/or improving information use.

Data Analysts

Requirements Definition Specialists

Expansions

To meet specific training needs, this class can be combined with the following offers:

[How to Model, Analyze, and Improve Business Processes](#)

[How to Elicit \(Gather\), Write, and Analyze Business Requirements](#)

Developed and presented by:



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**Learning
Objectives**

Upon completion of this seminar, you will . . .

- Draw business data models
- Compare the pros and cons of data modeling
- Draw data model (entity relationship) diagrams
- Create a data model from requirements
- Morph an existing data model into a future data model
- Build a data model based on existing system documentation
- Assign attributes to the appropriate entity on the diagram
- Analyze data attribute's characteristics (metadata)
- Analyze user views, (screens, reports, etc.) to modify a data model
- Modify an existing data model based on new requirements
- Evaluate a data model for full normalization and correctness
- Report data constraints that influence the physical data structures

1 Introduction to Data Modeling

Of People and Data

- On Human Communication
- Things to Talk About . . .
- The Data Foundation
- Data, Information and Knowledge

2 Defining Business Data

Creating Data Models Intuitively

- Data Model Diagrams
 - Data Model Diagrams Alternative Graphic Conventions
 - Data Model Diagrams Additional Information
- Exercise: Data Model Diagram for Project Resources
- Data Model Evolution
- Levels of Data Models
- Defining Entities
- Exercise: Definitions for Education Department Data For Your Answer
- Exercise: Data Modeling from Descriptions
- Exercise: Identifying and Placing Attributes
- Simple Document for Invoicing System
- Exercise: Data Model from a Form
- Identifying Entities
- Exercise: New System Data Model from Scratch

Creating Data Models from User Views

- Normalization – a Bottom Up Approach
- The Order Document for the Invoicing System
 - Normalized Order
 - Normalization – Step 2
 - Normalization – Step 3
- Normalization Helpful Hints
 - On Merging Data Models
 - Exercise: Combining Two Data Models
 - Exercise: Normalize an Invoice
- Exercise: Attributes of All Invoicing System Forms
- Exercise: Complete Invoicing System Data Model
- Data Modeling - Two Approaches

Defining Data Model Attributes

- Attributes: Inside an Entity

Attribute Definition

Overview of UML Class Symbols

E/R (Entity-Relationship) Diagrams: A Summary

3 Using Data Models to Discover Requirements

Modifying Data Models

- Creating a New System Data Model
- Exercise: Potential Changes to Data Models
- Quality Check
- Data Stability
- Exercise: Modifying the Project Resources Data Model
- Previous Data Model for Project Resources
- Modifying Diagrams and Forms
- Exercise: Modifying a Data Model and Forms System
- As-Is Forms for the Invoicing System

Data Models as an Analysis Tool

- Integrating Models (Conserving Data)
- Integrating Data Models
- Horizontal Balancing
- Data Design
- Sample Models
- Exercise: New Information Requirements
- Exercise: New User View Exercise
- Invoicing System Data Model
- Invoicing System Attributes
- Data Models vs. Databases
- Exercise: Summary

4 Physical Reality and Data

Data Constraints

- Constraining Factor
- Performance Factors
- Performance Factors (Trade-Offs)
- Design Trade-Offs
- Performance Factors: Access & Frequency
- Performance Factors
- Data Volumes