Data Modelling Fundamentals

Duration: 8 hours

Overview

As an IT professional, we would require sound, practical techniques to analyse and model data as part of the overall data management lifecycle. This course will help you learn to work and define sample data model segments in both "classic" entity-relationship notation and the "crow's foot" notation to help emphasize the best practices and techniques. With hands on assignments that emphasizes on the key learning objectives you can be confident with every chapter through the course that you're picking up the key points about data modelling.

Course Objectives:

In this course, you will learn:

- Techniques needed to build data models
- How to create semantic data models with concepts of entities, attributes, relationships, hierarchies, and other modelling constructs.
- How to apply key data modelling design principles using both classic entity-relationship notation and the "crow's foot" notation.
- How to convert conceptual data models to logical and physical data models.

Course Content:

Lesson 1: Data Modelling Fundamentals

- Introduction to Data modelling Fundamentals
- The role and purpose of Data modelling
- Basic concepts and terminology
- Navigate Your Alternatives Among Methodologies, Techniques, and Notations
- Data Modelling vs. Database Design
- Transactional Data Modelling vs. Analytical Data Modelling
- Summary

Lesson 2: The Building Blocks of Data Modelling

- Building Blocks of Data Modelling
- The Role of Entities in Data Modelling
- Add Attributes to Your Data Model
- Use Multi-Valued Attributes in Your Data Model
- Build Relationships into Your Data Model
- Summary

Lesson 3: Real-World Complexities to Entities and Attributes

- Importance of Real-World Complexities in Data Modelling
- Build Hierarchies for the Entities in Your Data Model
- Specify Constraints for Your Attributes

- Specify Cross-Entity Dependencies Through Strong and Weak Entities
- Summary

Lesson 4: Real-World Complexities to Relationships

- Importance of Relationship Cardinality and Complexities.
- Build Real-World Complexities into Data Model Relationships
- Define the Maximum and minimum Cardinality of a Relationship
- Use Crow's Foot Notation for Minimum and Maximum Cardinality
- Summary

Lesson 5: Move Across the Different Levels of a Data Model

- Harmonize Different Data Modelling levels
- Relational Database Normalization Overview
- Forward Engineering Your Conceptual Data Model
- Reverse-Engineer a Physical Model Back into a Conceptual Model
- Summary

Lesson 6: Software for Data Modelling

- The Importance of Data Modelling Software
- Build a Data Model with a Drawing Program
- Build a Model with a Data Modelling Software Tool