DM-05 Logical Data Modeling

DM-05-00 About the Course (7 min)

DM-05-01 Introduction (54 min)

- Introduction to Data Modeling
  - What is Data Modeling?
  - Why Build Data Models?
  - Goals and Objectives of Data Modeling
  - Data Modeling Benefits
  - Three Level Schema
    - Conceptual Data Modeling
    - Logical Data Modeling
    - Physical Data Modeling
- The Entity Relationship Model
  - Entities and Attributes
    - Entity Definition
    - Entity Overview
    - Attribute Definition
    - Attribute Types
    - Anatomy of an Attribute
    - Derived Data
  - Relationships
    - Connectivity
    - Cardinality
    - Cardinality Examples
    - Minimum Cardinality
    - Maximum Cardinality
    - Identifying Relationship
    - Non-Identifying Relationship
    - Strong and Weak Entities
    - Aggregation
    - Associative Entity
    - Exclusive Super-type / Sub-type
    - Non-Exclusive Super-type / Sub-type
  - Normalization
    - Why Normalization?
    - Data Redundancy Implications
    - First Normal Form
    - Second Normal Form
    - Third Normal Form
    - Fourth Normal Form

        - Fifth Normal Form
        - Denormalization
- Introduction to LDM Methodology
    - Preparing for Logical Data Modeling
    - Logical Data Modeling Phases
    - Logical Data Modeling Steps
    - Data Model Levels
    - First Place Toys Case Study

DM-05-02 Determining Requirements (35 min)

- Determine Scope and Purpose
    - How to Determine Scope and Purpose?
    - Brainstorm and Validate
- Define Business Subject Areas
    - How to Define Business Subject Areas?
    - Brainstorm and Validate
- Identify Business Functions
    - Business Functions Overview
    - What are Business Capabilities?
    - Analyze Business Capabilities
    - Capability Hierarchy
    - APQC Process Classification
    - Identify Business Processes and Tasks
    - Decompose to Sub-processes and Tasks
    - Brainstorm and Validate Business Functions
    - SIPOC Template
    - Order Entry Functions Exercise & Review
    - Customer Maintenance Exercise & Review
- Identify Data Requirements
    - Data Requirement Definition
    - Data Requirements Levels
    - Use Case: Customer Search
    - User Interface: Customer Order Create
    - User Interface: Customer Search
    - User Interface: Customer Party Create
    - User Interface: Individual Demographics
    - Use Case Screen Shot: Organization Info

DM-05-03 Modeling Entities & Relationships (36 min)

- Modeling Entities
    - Setting the Context
    - Identify Candidate Entities
        - Entities
        - Kipling Questions and Universal Entities
        - Entity Identification Group Session
        - Exercise & Review
        - Naming Entities
    - Validate Entities
        - Validated Entities

        - Exercise & Review
        - Entity Instances Validation
    - Build Entity Inheritance Hierarchy
    - Refine Entity Definitions
        - Entity Definition Guidelines
        - Entity Definition Notes
        - Exercise & Review
- Modeling Relationships
    - Setting the Context
    - Identify Candidate Relationships
        - Overview
        - Exercise & Review
    - Validate Relationships
        - Overview
        - Exercise & Review
    - Determine Relationship Cardinality
        - Cardinality
        - Cardinality Examples
        - Exercise & Review
    - Identify Relationship Verb Phrase
        - What Is Relationship Verb Phrase?
        - Exercise & Review

DM-05-04 Modeling Attributes & Keys (60 min)

- Modeling Attributes
    - Setting the Context
    - Identify Candidate Attributes
        - Party Related Attributes
        - Individual Demographics Attributes
        - Organization Info Attributes
        - Exercise & Review
    - Validate Attributes
        - Exercise & Review
        - Model with Attributes
    - Refine Attribute Names & Definitions
        - Building Attribute Names
        - Prime Word Examples
        - Modifier Word Examples
        - Class Word Examples
        - Attribute Names Exercise & Review
        - Model with Renamed Attributes
        - Business Definitions of Attributes
        - Attribute Definition Exercise & Review
    - Specify Attribute Rules
        - Attribute Format
        - Attribute Domain and Constraints
        - Exercise & Review
- Modeling Keys
    - Setting the Context
    - Identify Primary Keys

        - Candidate Keys
        - Surrogate Keys
        - Surrogate Key Replaces Multi-Part Primary Key
        - Exercise & Review
    - Identify Alternate Keys
        - Overview
        - Exercise & Review
    - Resolve Many-To-Many Relationships
        - Associative Entity
        - Exercise & Review

DM-05-05 Professional Data Modeling (67 min)

- Rationalizing the Model
    - Resolve Entity Inheritance Hierarchies
        - Example – First Cut
        - Example – Questions
        - Example – Conclusion
    - Normalize Data Model
        - Normalization Goals
        - HR Normalization 1NF Exercise & Review
        - HR Normalization 2NF Exercise & Review
        - HR Normalization 3NF Exercise & Review
        - HR Normalization Summary
    - Check Consistency
        - Overview
        - Use the Data Model Scorecard
- Data Modeling Situations
    - Situation 1: Standard Data Models
        - Enterprise Canonical Models
        - Cross Industry Data Models
        - Cross Industry Data Model Examples
        - Industry Specific Data Models
        - Industry Specific Data Model Examples
        - Tips for Success
    - Situation 2: New Point Database
    - Situation 3: New Enterprise Database
    - Situation 4: Legacy Database
    - Situation 5: Software Package
- Data Modeling Deliverables
    - LDM Methodology Review
    - Logical Data Modeling Steps
    - Creating Logical Data Model Deliverables
    - Preparing for Logical Data Modeling
    - Data Modeling Workflow
    - Group Sessions
    - Logical Data Modeling Tools
    - Presenting the Deliverables
- In Conclusion