



Logical Data Modeling

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Module 0. About the Course (7 min)

Module 1. 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



Module 2. 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

Module 3. 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



DM-05: Logical Data Modeling

- 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

Module 4. 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



Module 5. 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*