Data Modelling Training

Training Topics:

Introduction to Logical Data Modeling
- Importance of logical data modeling in requirements
- When to use logical data models
- Relationship between logical and physical data model
- Elements of a logical data model
- Read a high-level data model
- Data model prerequisites
- Data model sources of information
- Developing a logical data model

Project Context and Drivers
- Importance of well-defined solution scope
- Functional decomposition
- Context-level data flow diagram
- Sources of requirements
- Data interpretation Mechanism
- Class diagrams
- Other documentation
- Transactional business systems
- Business intelligence and data warehousing systems
- Integration and consolidation of existing systems
- Maintenance of existing systems
- Enterprise analysis
- Commercial off-the-shelf application
Conceptual Data Modeling

- Discovering entities
- Defining entities
- Identifying attributes
- Documenting an entity
- Identifying attributes
- Distinguishing between entities and attributes

Conceptual Data Modeling-Identifying Relationships and Business Rules

- Model fundamental relationships
- Cardinality of relationships
  - One-to-one
  - One-to-many
  - Many-to-many
  - Is the relationship mandatory or optional?
  - Naming the relationships

Identifying Attributes

- Discover attributes for the subject area
- Assign attributes to the appropriate entity
- Name attributes using established naming conventions
- Documenting attributes

Advanced Relationships

- Model many-to-many relationships
- Model multiple relationships between the same two entities
- Model self-referencing relationships
- Model ternary relationships
- Identify redundant relationships

Completing the Logical Data Model

- Use super types and subtypes to manage complexity
- Use super types and subtypes to represent rules and constraints
Data Integrity through Normalization

- Normalize a logical data model
- First normal form
- Second normal form
- Third normal form
- Reasons for denormalization

Transactional vs. business intelligence applications

- Verification and Validation
- Verify the technical accuracy of a logical data model
- Verify the logical data model using other models
- Data flow diagram