DATA MODELING COURSE CONTENT

1. 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

2. Project Context and Drivers

- Importance of well-defined solution scope

- Functional decomposition diagram

- Context-level data flow diagram

- Sources of requirements

  o Functional decomposition diagrams

  o Data flow diagrams

  o Use case models

  o Workflow models

  o Business rules

  o State diagrams

  o Class diagrams

- o   Other documentation

- Types of modeling projects

  - o   Transactional business systems

  - o   Business intelligence and data warehousing systems

  - o   Integration and consolidation of existing systems

  - o   Maintenance of existing systems

  - o   Enterprise analysis

  - o   Commercial off-the-shelf application

3. Conceptual Data Modeling

- Discovering entities

- Defining entities

- Documenting an entity

- Identifying attributes

- Distinguishing between entities and attributes

4. Conceptual Data Modeling-Identifying Relationships and Business Rules

- Model fundamental relationships

- Cardinality of relationships

  - o   One-to-one

  - o   One-to-many

  - o   Many-to-many

- Is the relationship mandatory or optional?

- Naming the relationships

5. Identifying Attributes

- Discover attributes for the subject area

- Assign attributes to the appropriate entity

- Name attributes using established naming conventions

- Documenting attributes

6. Advanced Relationships

- Modeling many-to-many relationships

- Model multiple relationships between the same two entities

- Model self-referencing relationships

- Model ternary relationships

- Identify redundant relationships

7. Completing the Logical Data Model

- Use supertypes and subtypes to manage complexity

- Use supertypes and subtypes to represent rules and constraints

8. Data Integrity Through Normalization

- Normalize a logical data model

  o First normal form

  o Second normal form

  o Third normal form

- Reasons for denormalization

- Transactional vs. business intelligence applications

9. Verification and Validation

- Verify the technical accuracy of a logical data model

- Use CASE tools to assist in verification

- Verify the logical data model using other models

  o Data flow diagram

  o CRUD matrix

Contact for Data Modeling Training: +919885022027