

Introduction to Data Modeling

Modality: Self-Paced Learning

Duration: 12 Hours

SATV Value:

CLC:

NATU:

SUBSCRIPTION: Learn, Master

About this course:

The role of the data modeler has become even more critical to the ongoing lifecycle of development and maintenance, especially in this age of digital transformation. Analysts, developers, DBAs, and BI professionals need to develop their skills in analyzing and modeling data. Whether working with new or legacy data, you must define rules for quality, retention, and protection. And you need a good foundation of data and data design concepts before you begin sourcing, preparing, and manipulating data.

In this introductory course, learn how logical and physical data modeling can give you a better understanding of your organization's data, business rules, and information architecture decisions. Examine how data models are critical to your data security, privacy, and compliance posture. And get hands-on with real-world data—analyze it, implement business requirements, develop data models, and forward and reverse-engineer SQL Server databases.

Note: To complete the hands-on requirements, you'll work with Office 365, Visual Studio, and Azure SQL Database. Free or limited-time trials are available for these products. You will require an Azure subscription. You can sign up for a free Azure trial subscription (a valid credit card is required for verification, but you will not be charged for Azure services). Note that the free trial is not available in all regions. It is possible to complete the course and earn a certificate without completing the hands-on practices.

Course Objective:

- Fundamentals of normalization and why it's important to transactional databases
- How to develop logical and physical data models
- How to model data security, privacy and protection requirements
- When and where to model database-specific performance requirements
- How model-driven development fits in a DevOps or agile environment
- How to avoid schema drift and other data anti-patterns

Audience:

- Database Engineer

Prerequisite:

- A basic understanding of computers, a willingness to learn, and an ability to persevere and troubleshoot problems.

Course Outline:

Introducing Data Modeling

- Introducing Data Models
- Module 1 Lab and Assessment

Normalizing Data

- Introducing Normalization
- Module 2 Lab and Assessment

Designing Logical Data Models

- Introducing Entity Relationship Diagramming (ERD)
- Designing Entities, Attributes and Relationships
- Identifying Primary and Foreign Keys
- Modeling for Data Quality
- Modeling for Data Protection
- Module 3 Lab and Assessment

Designing Physical Data Models

- Modeling for Databases and Applications
- Designing Keys - Primary, Foreign, others
- Designing Tables, Columns, Constraints & Indexes
- Designing for Data Protection
- Module 4 Lab and Assessment

Leveraging Data Models in Agile and DevOps Projects

- Introducing Data Modeling Processes
- Leveraging Model-Driven Development
- Versioning, Testing and Deliverables
- Bringing it All Together
- Assessment

Final Assessment

- Final Assessment