# Data Modeling (Star & Snowflake Schema) Training Course

Professional Development Training Course Outline

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|---|---|---|---|
| **Category** | Business Intelligence | **Duration** | 5 Days |
| **Base Fee** | $1,500 USD | **Delivery Mode** | Online / On-site Hybrid |

## Course Introduction

Data Modeling is a critical aspect of modern data management and analytics, allowing organizations to structure, store, and retrieve data efficiently. The Star and Snowflake schema are two of the most widely adopted techniques in designing high-performance data warehouses. Data Modeling (Star & Snowflake Schema) Training Course equips participants with advanced skills to design, implement, and optimize data models that enhance business intelligence and decision-making. Through practical exercises, real-world case studies, and interactive sessions, learners will gain a deep understanding of how to structure data for analytical efficiency, scalability, and clarity.

In today's data-driven environment, organizations face challenges in managing large datasets and converting raw data into actionable insights. By mastering the principles of Star and Snowflake schemas, participants will improve query performance, optimize storage, and enhance reporting capabilities. This course emphasizes hands-on experience, best practices, and industry-standard techniques to prepare participants for real-world data modeling scenarios. Learners will leave with the ability to create robust, maintainable, and high-performing data models that support strategic business objectives.

## Programme Curriculum

**Data Modeling (Star & Snowflake Schema) Training Course**

**Introduction**

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**Course Objectives**

1. Understand the fundamentals of data modeling and its importance in data warehousing.
2. Explore the architecture and components of Star and Snowflake schemas.
3. Design efficient and scalable dimensional models for analytics.
4. Apply normalization and denormalization techniques to optimize schema design.
5. Develop fact tables and dimension tables for practical business scenarios.
6. Implement surrogate keys and handle slowly changing dimensions effectively.
7. Optimize query performance in data warehouses through schema design.
8. Use advanced modeling techniques to support real-time analytics.
9. Apply best practices for data integrity, consistency, and maintainability.
10. Evaluate different schema designs for business reporting requirements.
11. Implement ETL integration with Star and Snowflake schemas.
12. Analyze real-world business cases to develop data-driven solutions.
13. Gain hands-on experience with industry-standard tools for data modeling.

**Organizational Benefits**

- Improved data quality and consistency across business units.
- Enhanced reporting and business intelligence capabilities.
- Optimized query performance and faster analytics.
- Scalable data warehouse solutions for future growth.
- Reduced redundancy and improved storage efficiency.
- Streamlined ETL processes and data integration.
- Better decision-making through structured and accurate data.
- Standardized data models for cross-departmental reporting.
- Support for advanced analytics and predictive modeling.
- Increased ROI on business intelligence investments.

**Target Audiences**

1. Data Analysts
2. Business Intelligence Developers
3. Data Architects
4. Data Warehouse Developers
5. Database Administrators
6. IT Managers
7. Business Analysts
8. Reporting Specialists

**Course Duration:** 5 days

**Course Modules**

**Module 1: Introduction to Data Modeling**

- Importance of data modeling in business intelligence
- Key concepts: entities, attributes, and relationships
- Differences between transactional and analytical databases
- Overview of dimensional modeling techniques
- Benefits of using Star and Snowflake schemas
- Case Study: Modeling a retail sales dataset

**Module 2: Star Schema Design**

- Structure of fact and dimension tables
- Designing a simple Star schema for reporting
- Handling hierarchies in dimension tables
- Optimizing fact tables for query performance
- Best practices for Star schema implementation
- Case Study: Sales analysis for a retail chain

**Module 3: Snowflake Schema Design**

- Overview and components of Snowflake schemas
- Normalization techniques for dimension tables
- Trade-offs between Star and Snowflake schemas
- Performance optimization strategies
- Use cases where Snowflake schema is preferred
- Case Study: E-commerce customer behavior analysis

**Module 4: Fact Tables and Measures**

- Types of fact tables: transactional, periodic, and snapshot
- Defining key performance indicators (KPIs)
- Aggregation and calculation techniques
- Handling large datasets efficiently
- Fact table design best practices
- Case Study: Financial transaction reporting

**Module 5: Dimension Tables and Attributes**

- Types of dimensions: slowly changing, junk, degenerate
- Attribute selection and hierarchy design
- Surrogate key implementation
- Handling changing attributes over time
- Dimension table optimization
- Case Study: HR employee performance analysis

**Module 6: Advanced Modeling Techniques**

- Multi-fact table schemas
- Conformed dimensions and shared dimensions
- Factless fact tables and event tracking

- Schema design for real-time analytics
- Hybrid schema strategies
- Case Study: Online streaming platform analytics

**Module 7: ETL and Data Integration**

- ETL workflow for dimensional models
- Data cleansing and transformation techniques
- Automating ETL processes
- Integration with Star and Snowflake schemas
- Ensuring data accuracy and consistency
- Case Study: Integrating sales and inventory data

**Module 8: Performance Optimization and Best Practices**

- Indexing and partitioning strategies
- Query optimization techniques
- Data warehouse maintenance strategies
- Audit and monitoring for schema performance
- Documentation and standardization best practices
- Case Study: Optimizing queries for a large retailer

**Training Methodology**

- Interactive instructor-led sessions with real-world examples
- Hands-on exercises and practice on sample datasets
- Group discussions and problem-solving sessions
- Live demonstrations of Star and Snowflake schema implementation
- Real-world case studies to reinforce concepts
- Q&A sessions for personalized learning

**Register as a group from 3 participants for a Discount**

**Send us an email: info@fineskilltrainingcenter.org or call** *+254769199797*

***Certification***

*Upon successful completion of this training, participants will be issued with a globally- recognized certificate.*

***Tailor-Made Course***

*We also offer tailor-made courses based on your needs.*

**Key Notes**

**a.** The participant must be conversant with English.

**b.** Upon completion of training the participant will be issued with an Authorized Training Certificate

**c.** Course duration is flexible and the contents can be modified to fit any number of days.

**d.** The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

**e.** One-year post-training support Consultation and Coaching provided after the course.

**f.** Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

## Upcoming Scheduled Sessions

| Start Date | End Date | Location | Price |
|---|---|---|---|
| **23 Nov 2026** | 27 Nov 2026 | Online | $1,000 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $1,500 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $3,000 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $3,000 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $6,000 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $4,500 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $6,000 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $6,000 |

Ready to enroll or request a customized program? Book online or contact us:

**Register Online Now**

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com