



Data Warehouse Foundations and Dimensional Design Course

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Overview

Data Warehouse Foundations and Dimensional Design Course is a one-week course for data analysts, database professionals, BI developers, reporting specialists, and technical staff, who leave with a Data Warehouse Design Pack. Participants translate reporting needs into warehouse requirements, map sources, define grain, design facts and dimensions, plan ETL and ELT flows, specify quality and metadata controls, and prepare testing, access, loading, and operating procedures. Agile Leaders Training Center develops data warehouse foundations and dimensional design capability.

Who Should Attend

- Data analysis functions responsible for trusted analytical data
- Database functions responsible for structures, loading, and access
- Business intelligence functions responsible for semantic models and reporting sources
- Data engineering functions beginning warehouse design and integration work
- Reporting functions responsible for requirements, measures, and validation

The course assumes participants can read tables, keys, and basic SQL queries, and leaves out advanced database administration, cloud-platform configuration, programming, and certification preparation.

Departments and Industries

The course supports departments and industries building shared analytical data for reporting and decisions.

- Data, analytics, business intelligence, and information technology
- Finance, operations, performance management, and internal audit
- Healthcare, education, retail, and hospitality
- Manufacturing, transportation, utilities, and construction
- Financial services, telecommunications, technology, and professional services

Learning Objectives

By the end of this course, participants will be able to:

- Build warehouse requirements and architecture decisions
- Analyze sources, mappings, grain, facts, and dimensions
- Apply star-schema and dimensional-modeling methods
- Design ETL and ELT loading and quality controls
- Evaluate warehouse tests, access, metadata, and operations



- Create a data warehouse design pack

Course Agenda

Day 1: Frame Warehouse Requirements

- Analytics Need and Subject-Area Canvas
- Stakeholder Query and Measure Inventory
- Source System and Data Ownership Map
- Warehouse Scope and Architecture Decision
- Data Warehouse Requirement Catalogue

Day 2: Design the Dimensional Model

- Business Process and Grain Declaration
- Fact Table and Measure Specification
- Dimension Table and Attribute Design
- Star Schema Relationship Diagram
- Conformed Dimension Bus Matrix

Day 3: Map and Load Warehouse Data

- Source-to-Target Mapping Sheet
- Staging Area and Integration Flow
- ETL and ELT Selection Matrix
- Slowly Changing Dimension Method
- Incremental Load and Recovery Plan

Day 4: Control Quality and Operations

- Data Quality Rule Register
- Metadata and Lineage Catalogue
- Warehouse Reconciliation Test Pack
- Role and Data Access Matrix
- Load Monitoring and Support Runbook

Day 5: Practice Warehouse Design

- Exercise: Translate Reporting Needs into Requirements
- Exercise: Declare Grain and Design a Star Schema
- Exercise: Map Sources and Plan Data Loads
- Exercise: Validate Quality, Security, and Operations
- Capstone: Data Warehouse Design Pack



Practical Exercises

The course uses suggested activities based on reporting needs in healthcare, retail, manufacturing, and financial services.

- Suggested activity: convert decision questions into subject areas, measures, sources, scope, and warehouse requirements.
- Suggested activity: declare grain and design fact tables, dimensions, keys, relationships, and conformed attributes.
- Suggested activity: build source mappings and loading steps with quality, history, reconciliation, and recovery controls.
- Suggested activity: assemble a design pack linking architecture, models, tests, access, metadata, monitoring, and support.

FAQs

Who suits data warehouse foundations and dimensional design training, and what does it assume?

Data analysis, database, BI, reporting, and beginning data-engineering functions suit the training; it assumes familiarity with tables, keys, and basic SQL queries.

How does data warehouse training differ from database administration training?

Data warehouse training concentrates on analytical requirements, dimensional models, integration, history, quality, and reporting use, while database administration training concentrates on platform configuration, availability, backup, and technical operation.

Why is grain important in dimensional design?

Grain states what one fact-table row represents, guiding measures, dimensions, keys, loading rules, and valid aggregation before the model is built.

When should ETL or ELT be used in a data warehouse?

ETL or ELT should be selected according to target-platform capability, transformation location, data volume, governance, lineage, operational control, team skills, and recovery needs.

How should a data warehouse design be tested?

A warehouse design should be tested through source reconciliation, row and measure checks, relationship validation, history rules, access tests, load monitoring, failure handling, and reporting acceptance.



Conclusion

Participants take back a Data Warehouse Design Pack containing requirements, architecture decisions, grain, facts, dimensions, source mappings, load plans, quality rules, metadata, tests, access, monitoring, and support procedures. It changes disconnected reporting extracts into a traceable warehouse design. The pack supports review, build planning, validation, operation, and controlled extension.

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