



Master Data Management, Data Quality and Metadata Management



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Technical depth: Practitioner · **Practical mode:** Lab

Introduction

Duplicate customers, inconsistent product codes and undefined fields cost organisations money every day through failed deliveries, wrong invoices, unreliable reports and stalled system migrations. Most of these problems start in master data that nobody measures, defines or owns. This Core Concept course equips data professionals to profile data, measure its quality against international standards, document it with usable metadata and build trusted golden records through matching and survivorship rules. Participants work hands on with sample datasets from several sectors and leave with a Data Quality and Master Data Improvement Plan for one critical data domain.

Course Objectives

- Profile source data with SQL and OpenRefine to quantify completeness, validity, uniqueness and consistency problems
- Define measurable data quality rules and thresholds based on the ISO/IEC 25012 model and ISO/IEC 25024 measures
- Document critical data elements in a business glossary and data dictionary that follow ISO/IEC 11179 naming principles
- Configure deterministic and probabilistic matching and survivorship rules that produce a reliable golden record
- Trace recurring data defects to their root causes and design stewardship workflows that prevent them
- Produce a Data Quality and Master Data Improvement Plan for one critical data domain

Target Audience

- Data stewards maintaining customer, supplier, product or asset records
- Data and reporting analysts who investigate and correct data errors
- Master data administrators working in ERP and CRM environments
- Business process specialists responsible for data entry standards and controls
- Data catalogue and metadata coordinators documenting data definitions
- System migration team members preparing data for new platforms

Course Outline

Day 1: Data Quality, Metadata and Master Data Foundations

- Cost of Poor Data Quality: The 1-10-100 Rule and Impact Cases
- Master, Reference and Transactional Data Classification Matrix
- DAMA-DMBOK2 Data Quality Dimensions and Definitions
- Critical Data Element Identification Worksheet
- Current-State Data Issue Inventory and Stakeholder Survey

Day 2: Standards and Models for Quality, Metadata and Master Data

- ISO/IEC 25012 Data Quality Model: Inherent and System-Dependent Characteristics
- ISO/IEC 25024 Data Quality Measures and Target Thresholds
- ISO 8000-61 Data Quality Management Process Reference Model
- ISO/IEC 11179 Metadata Registry Principles and Data Element Naming
- MDM Implementation Styles: Registry, Consolidation, Coexistence and Centralised Hub

Day 3: Profiling, Rules and Metadata in the Lab

- Data Profiling Lab with SQL and OpenRefine
- Data Quality Rule Writing and Validation with Great Expectations
- Business Glossary and Data Dictionary Build Using Dublin Core Elements
- Source-to-Report Data Lineage Mapping
- Data Quality Scorecard and Trend Dashboard Set-Up

Day 4: Matching, Golden Records and Defect Prevention

- Deterministic and Fellegi-Sunter Probabilistic Record Matching
- Survivorship Rules and Golden Record Design
- ISO 8000-110 Master Data Specification and Exchange Requirements
- Data Defect Root Cause Analysis Using DMAIC
- Data Steward Workflow and Exception Queue Design

Day 5: Lab Practice and the Improvement Plan

- Customer Master Deduplication Lab on a Multi-Source Dataset
 - Supplier and Material Master Cleansing Lab
 - Metadata Catalogue Entries for a Critical Data Domain
 - Data Quality and Master Data Improvement Plan Drafting
 - Plan Walkthrough and Peer Review
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Skills You Will Gain

- Data Profiling
- Data Quality Measurement
- Data Quality Rule Design
- Metadata Documentation
- Record Matching and Deduplication
- Golden Record Management
- Data Defect Root Cause Analysis
- Data Stewardship Workflow Design

Why Attend This Course

- Return to work with a Data Quality and Master Data Improvement Plan for a critical data domain, already reviewed by peers
- Show business owners the size of a data problem in figures they can prioritise, rather than anecdotes
- Handle duplicate and conflicting records with repeatable rules instead of one-off manual clean-ups
- Compare stewardship practice with data professionals from other sectors and countries facing similar data issues

Conclusion

Trusted reports, smooth migrations and reliable automation all depend on master data that is measured, defined and owned. This course moves from the foundations of data quality, metadata and master data, through the international standards and MDM styles that structure them, to profiling, rule writing and metadata work in the lab, and then to matching, golden records and defect prevention. The final day applies these techniques to realistic datasets and produces a Data Quality and Master Data Improvement Plan that participants take back to their organisation.