



Data Modeling and Metadata



Online Education • Certification • Enterprise Solutions

- Fundamentals of Data Modeling & Metadata Management
- Conceptual Data Modeling
- Logical Data Modeling
- DW and BI Data Modeling
- Data Integration Techniques for Designing an ODS
- Data Virtualization
- The Data Model Scorecard
- Data Profiling
- Data Parsing, Matching & De-duplication
- Data Quality Assessment
- Best Practices in Data Resource Management
- Metadata Management For Data Stewards



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Data modeling and metadata management expanded rapidly in recent years. Exponential increase in the number and complexity of databases and interfaces between them, as well as huge rise in importance of efficient data governance and data quality management changed the landscape of metadata management. Similarly, emergence of dimensional data shook the foundations of data modeling. Today we see new technologies driving further change in the modeling of structured data. Beyond structured data we find new challenges in unstructured data – text, images, voice, video, and more.

Our Data Modeling and Metadata Management curriculum includes 11 online courses from world leading experts: Angelo Bobak, Mike Brackett, David Haertzen, Steve Hoberman, Kathy Hunter, William McKnight, Arkady Maydanchik, Henrik Sørensen, Rick Sherman, and Dave Wells. Our robust Certified Information Management Professional (CIMP) program builds upon education to certify knowledge and understanding of data quality. Finally, eLearningCurve’s Enterprise Program is a flexible, scalable, cost-effective solution for teams and enterprises.

WHAT OUR CUSTOMERS ARE SAYING

“I learned so much out of the courses that I wanted to continue my learning.”

I liked CIMP certification a lot. By taking courses I did realize that our approach of data integration was wrong, we did not have the right priorities setup at the beginning and mainly because no one ever thought about data quality and data integration.

I learned so much out of the courses that I wanted to continue my learning even beyond the basic requirement of my current job. I learned a good deal about data management, data quality, foresight needed to embark on data projects and how to integrate business and IT. I am still learning and will continue to learn in this area as this is an upcoming area and more and more companies will be starting their data quality initiative in near future as and when they learn about the sorry state of their data.

Jagmeet Singh, CIMP Ex - Data Modeling & Metadata Management, Data Quality, Data Governance, IM Foundations, MDM USA

CURRICULA AT-A-GLANCE

Full course descriptions begin on page 8.

Fundamentals of Data Modeling and Metadata Management

Instructors: Arkady Maydanchik and Dave Wells

This 3-hour course provides foundation knowledge about the most commonly used data modeling techniques: entity-relationship modeling and dimensional modeling. A similar foundation is built for metadata management with attention to common metadata purposes and metadata discovery methods.

Conceptual Data Modeling

Instructor: David Haertzen

In this 3.5-hour course you will learn the secrets of successful conceptual data modeling through an effective mix of presentation and exercises. You will gain valuable insights into the job and responsibilities of the data modeler.

Logical Data Modeling

Instructor: David Haertzen

This 4.5-hour course covers the concepts, notation, and steps needed to create and extend logical data models. The course goes beyond fundamentals, and describes numerous data modeling situations and patterns.

BI & DW Data Modeling

Instructor: Rick Sherman

This 4-hour course includes a mix of data modeling concepts, best practices, applications and practical examples that will help you build effective data warehouse and business intelligence applications.

Data Integration Techniques for Designing ODS

Instructor: Angelo Bobak

Business data integration is a complex problem that must be solved when organizations change or enhance their internal structures. This 3-hour online course presents a simple yet thorough process that describes the challenges of building ODS.

Data Virtualization

Instructor: Dave Wells

Data virtualization is a core component of next-generation data integration architectures, techniques, and technology. This 3-hour online training course will introduce you to the concepts, techniques, and capabilities of data virtualization.

The Data Model Scorecard

Instructor: Steve Hoberman

We often build data models quickly and with the singular goal of database design. This 3-hour course presents Data Model Scorecard®, which provides the tools needed to measure and manage data model quality.

Data Profiling

Instructor: Arkady Maydanchik

Data profiling is the process of analyzing actual data and understanding its true structure and meaning. It is one of the most common and important activities in information management. This 5-hour course teaches all practical skills necessary to succeed in a data profiling initiative.

Data Parsing, Matching, and De-duplication

Instructors: K Hunter, W McKnight, H Sørensen

To take advantage of the worldwide marketplace, businesses need to manage data globally. This reality poses very specialized and unique kinds of problems in data management. In this 3-hour course you will learn to identify and avoid the pitfalls of global information.

Data Quality Assessment

Instructor: Arkady Maydanchik

This 6-hour course gives comprehensive treatment to the process and challenges of data quality assessment. It starts with systematic treatment of various data quality rules and proceeds to building aggregated data quality scorecard.

Best Practices in Data Resource Management

Instructor: Mike Brackett

The data is one of the four critical resources in an organization, along with the financial resource, real property, and the human resource. This 4.5-hour course provides an in-depth analysis of the impact of data disparity on the organization, and outlines best practices for data resource management.

Metadata Management for Data Stewards

Instructors: D Wells, M Brackett & A Maydanchik

The objective of this 4-hour course is to provide an overview of the fields of data modeling and metadata management with the goal of building strong fundamental knowledge for Data Stewards.



CIMP: Demonstrate Mastery. Achieve Success.

Certification is an important tool for job seekers and for employers seeking to hire the most qualified people. eLearningCurve offers a robust certification program, Certified Information Management Professional (CIMP) that builds upon education to certify knowledge and understanding of information management.

The CIMP – Data Modeling and Metadata designation makes a clear statement that you have learned from the industry leaders and have demonstrated thorough understanding of data modeling and metadata by passing several challenging exams.

For the true experts and standard bearers in the industry we offer the second level of CIMP certification - **CIMP Ex**. To earn the CIMP Ex designation you must demonstrate a combination of great **Expertise**, **Experience**, and **Excellence**.

WHAT SETS CIMP APART?

Rigorous exam system: We go beyond the basics. Rather than testing for knowledge that any industry professional should know, CIMP exams test an in-depth knowledge, comprehensive understanding, and ability to apply various concepts to a problem. You can be proud of your achievement of the CIMP designation, and hiring managers can be sure they are getting a highly knowledgeable employee.

Education to support certification: We believe that the best way to ensure success is to combine meaningful industry experience with thorough academic study. To that end, CIMP exams are aligned with our courses, developed and taught by top industry educators and professionals.

Designed with busy, working professionals in mind: No time-consuming or costly travel is required to complete coursework or to take your CIMP examinations. All courses and exams are available online. All that's required of candidates is an internet connection and the desire to demonstrate mastery of data governance topics and achieve success.

HOW DO I ENROLL?

The most convenient and cost-efficient method to enroll in the CIMP program is with one of our Education Packages (see page 5 for details). Each package includes all courses and exams necessary to earn CIMP or CIMP Ex. Alternatively, you can enroll in courses one at a time.



For more information about CIMP, including customer stories on the Web visit <http://ecm.elearningcurve.com>.

EDUCATION PROGRAMS



Education Program packages allow you to purchase bundles of online data modeling & metadata courses at a significant discount. Whether you are looking for a comprehensive data modeling education covering all relevant topics, or want to focus on a specific topic or job role, there is a program for you.

CIMP Data Modeling and Metadata Program offers education in data modeling and metadata capped off with the Certified Information Management Professional (CIMP) designation in the Data Modeling and Metadata track. The CIMP credential makes a clear statement that you have learned from the industry leaders and have demonstrated understanding of the data modeling and metadata discipline by passing several challenging exams. The program includes five courses chosen from our data modeling and metadata curriculum. Students, their managers, or program sponsors may pick different course combinations that are most suitable to individual student's roles and needs.

CIMP Ex Data Modeling and Metadata Program ensures thorough understanding of data modeling and metadata expected from a true expert. The program includes all five "core" data modeling and metadata management courses and three elective courses, one of which can be chosen outside of the data modeling and metadata curriculum. Upon completion of the program you will meet the academic requirements of the highest level of CIMP – CIMP Ex.

Many information management disciplines, such as data quality, data governance, MDM, and metadata management are strongly interconnected. A true expert in one area would desire an in-depth knowledge in the other. **CIMP Ex Metadata and Data Quality Program** combines education in data quality and metadata, and contains 10 courses from our data quality and data modeling and metadata curriculums allowing you to earn a CIMP in Data Quality and Data Modeling and Metadata tracks.

We recognize that everyone's needs are unique. If you cannot find a program for you, simply e-mail support@elearningcurve.com and tell us what you are looking for and we will tailor the program for your needs.

ENTERPRISE SOLUTIONS



Today more than ever companies are watching expenses and looking for ways to streamline processes, make training convenient, and create a consistent, scalable learning environment.

eLearningCurve Enterprise is a flexible, convenient, and cost-effective way to train your employees and ensure that all team members have access to data modeling and metadata training they need when they need it. Whether your team or department work in the same office, or are on the other side of the world from each other, you can train them on time and on budget with eLearningCurve Enterprise.

Why eLearningCurve Enterprise?

- Comprehensive educational solution from a single provider
- Employees can take the courses they need when they need them
- Ensure all team members are trained to the same high standard
- Train employees no matter what their geographic location
- Employ a fully scalable education solution
- Minimize disruption to the business
- Maximize your employee training ROI
- Achieve 100% information comprehension
- Get "live" time with our instructors
- Stretch your training budget
- Get solutions for your specific needs

When you become an Enterprise customer we:

- Work with you to develop educational programs for different roles, positions, teams, departments
- Manage and track enrollment of all students in online classes and CIMP exams
- Track and report educational progress for each student
- Work with you to meet any specific educational needs, including:
 - Organize question and answer meetings (via Webinar) with course instructors for groups of students who complete online courses
 - Organize onsite sessions when appropriate, often for senior management.
 - Prioritize new course development, or customize existing courses, per customer needs
 - Create custom instances of our Learning Management System to reflect customer branding
 - Mount our online courses on the customer's Learning Management System

eLearningCurve Enterprise Benefits

PARTNERSHIP: *Comprehensive educational solution from a single provider.*

eLearningCurve will be your educational "partner-for-life" providing all employees with continuous information management education they need over the course of their careers. You can be sure that all employees, including new hires and transfers, come up to speed quickly and learn from a common state-of-the-art set of courses.

FLEXIBILITY: *Employees can take the courses they need when they need them.*

Educational needs vary from employee to employee and project to project. eLearningCurve's flexible program allows your employees to take the courses they need when they need them to best suit their role, projects, backgrounds or interests.

CONSISTENCY: *Ensure all team members are trained to the same high standard.* Train your existing team, and set up courses for new hires and transfers. Consider CIMP exams to verify that your employees utilize the same methodology, techniques, and terminology.

SCALABILITY: *Select an Education Partner who truly understands scalability.*

eLearningCurve Enterprise is 100% scalable. Roll out to a few employees, or your entire organization. If your team or department grows, it's no problem. Our solution can quickly and effortlessly accommodate groups of all sizes, even if they are geographically dispersed.

BREADTH: *Acquire comprehensive education and certification.*

We offer more than just a collection of courses, we offer information management education. Whether its data quality, data governance, MDM or another information management discipline or function we have you covered with a comprehensive set of courses, exams, and certification programs designed to impart knowledge, test understanding, and validate learning.

LOCATION: *Train employees no matter what their geographic location.*

Overcome geographical barriers to training. With eLearningCurve Enterprise you can train your entire team whether they are in the same office, or on the opposite sides of the world. Everyone can access our online courses from any place at any time.

LOGISTICS: *Minimize disruption to the business.*

It's not realistic for an entire department to take time off en masse for training. eLearningCurve's online format allows employees to study from their office or home, allocate full training days, or study an hour a day during lunch breaks.

ROI: *Maximize your employee training ROI.*

No need to worry about paying for flights, hotels and other travel expenses. 100% of what you spend goes towards learning, thus achieving top quality education at a fraction of the cost of in-person training.

RESULTS: *Achieve 100% information comprehension.*

Learn from top industry experts in data quality, data governance, master data management, data modeling, data warehousing, and business intelligence. Study at your own pace, listen to the material many times, and test your knowledge through CIMP certification exams.

SAVINGS: *Stretch your training budget.*

We offer various pricing options including volume discounts, pay-as-you-go model with increasing discounts, and other alternatives. We try to understand your needs and budget constraints, and meet them in the best way possible.

"LIVE" INTERACTION: *Spend time with our instructors.*

Arrange "live" Webinar sessions with the leading experts, practitioners, and educators, or purchase online/onsite training combination packages and get access to our education both online and "live" on-site.

CUSTOMIZATION: *Get solutions for your specific needs.*

Our Learning Management System can be customized to reflect your company's branding or we can mount our courses on your corporate LMS.

COURSE DESCRIPTIONS

Fundamentals of Data Modeling and Metadata Management

Instructor: Dave Wells and Arkady Maydanchik
Duration: 3 hours

Every information management professional needs to have some basic knowledge of data modeling and metadata management. You can't manage information effectively without understanding the data meaning, constraints and relationships, and these disciplines provide the essential tools to collect, record, and organize such knowledge.

This online training course is designed to provide foundation knowledge about the most commonly used data modeling techniques: entity-relationship modeling and dimensional data modeling. A similar foundation is built for metadata management with attention to common metadata purposes - classification, description, guidance, and control - as well as metadata discovery methods including applied data profiling.

You will learn:

- The core elements of describing data: meaning, constraints, and relationships
- Common metadata processes, practices, and standards
- The role and application of data profiling in metadata management
- The basics of entity-relationship data modeling
- The basics of dimensional data modeling

This course is geared towards:

- Aspiring data modelers who need to start with the basics
- Data and database analysts and designers
- Data stewards
- Data governance participants and practitioners
- Data quality professionals
- Anyone with a role in information management that includes need to understand the data

Course Outline

About the Course (8 min)

Understanding Data (15 min)

- Views of Data
- Projects Flow
- Describing the Data Meaning
- Describing the Data Constraints
- Describing the Data Relationships
- Describing the Data

Metadata Management (43 min)

- Metadata Defined
- Metadata Purposes
- Metadata Classification
- Metadata Management Processes
- Metadata Organizations
- Metadata Skills and Competencies
- Metadata Architecture
- Metadata Standards
- Metadata Tools and Technologies

Data Modeling (69 min)

- Data Modeling Defined
- Data Modeling Purpose
- Data Modeling and People
- Data Modeling Processes
- Entity-Relationship Modeling
- Supplemental Models/Additional E-R Concepts
- Dimensional Data Modeling

Data Profiling (42 min)

- What is Data Profiling
- Myth and Reality of Data Profiling
- Profiling Techniques
- Profiling Challenges
- Role of Profiling
- People and Technology

“I am *extremely* impressed with both the presentation and content. While the speaking-pace is rather quick, I can always pause and repeat the information.”

—Philip Perucci, USA

Conceptual Data Modeling

Instructor: David Haertzen

Duration: 3 hours, 30 minutes

Conceptual Data Modeling using the UML standard is a key method for getting a handle on the data requirements of an organization. Effective conceptual data modeling results in maximum benefits from information assets by increasing shared use and avoiding redundancy. Data that is relevant, timely, consistent, and accessible has increased value to the organization.

This online training course teaches conceptual data modeling from A to Z and includes an effective mix of presentation and exercises.

You will learn to:

- Terminology, goals, and components of conceptual data modeling
- How to benefit from conceptual data modeling
- How to create conceptual data models, including Domain Models and Class Models

This course is geared towards:

- Business Analysts and Architects
- Database Administrators and Analysts
- Data Administrators and Data Modelers
- Information Technology Managers, Project Managers
- Application Development Project Team Members

Course Outline

About the Course (6 min)

Introduction (43 min)

- Introduction to Conceptual Data Modeling
- UML - Unified Modeling Language
- Domain Modeling
- Class Modeling
- Conceptual Data Modeling Basic Methodology

Conceptual Data Modeling Methodology Part 1 (58 min)

- Phase 1: Understanding the Business
- Phase 2: Modeling Domains

Conceptual Data Modeling Methodology Part 2 (65 min)

- Phase 3: Modeling Classes
- Phase 4: Modeling Associations

Conceptual Data Modeling Methodology Part 3 (32 min)

- Phase 5: Modeling Properties
- Creating Deliverables
- In Conclusion

“Overall, an incredible course.”
—Philip Perucci, USA

Logical Data Modeling

Instructor: David Haertzen

Duration: 4 hours, 20 minutes

Logical Data Modeling also known as Entity/Relationship (E-R) Modeling is a key method for getting a handle on the data requirements of an organization. Logical data models provide a database independent solution to data requirements which then can be driven forward to become effective database designs.

This online training course covers the concepts and notation of logical data modeling and shows the steps needed to create and extend logical data models. Many exercises and examples are included to enhance learning.

In addition, the course goes beyond these fundamentals. The situation where a new data model must be created from scratch is one of many situations, so this course shows how to handle other situations such as: building from industry or canonical data models; extending legacy data models; and extending software package data models. In addition, data model patterns will be introduced such as: history and audit modeling, multi-business unit modeling, codes and reference data, and user defined attributes. Understanding these situations and patterns, is critical to success in data modeling.

You will learn:

- How to create, extend and apply logical data models
- How to use data modeling to meet business and performance requirements
- How to lead your team through the data modeling process
- How to avoid data modeling traps, problems, and time wasters
- How to make databases more robust through data modeling
- How to effectively communicate data models and database designs to others

This course is geared towards:

- Anyone who will be using or creating data models.
- Business Analysts and Architects
- Database Administrators and Analysts
- Data Administrators & Data Modelers
Information Technology Managers, Project Managers
- Application Development Project Team Members

Course Outline

About the Course (7 min)

Introduction (54 min)

- Introduction to Data Modeling
- The Entity Relationship Model
- Introduction to LDM Methodology

Determining Requirements (35 min)

- Determine Scope and Purpose
- Define Business Subject Areas
- Identify Business Functions
- Identify Data Requirements

Modeling Entities & Relationships (36 min)

- Modeling Entities
- Modeling Relationships

Modeling Attributes & Keys (60 min)

- Modeling Attributes
- Modeling Keys

Professional Data Modeling (67 min)

- Rationalizing the Model
- Data Modeling Situations
- Data Modeling Deliverables
- In Conclusion

“My focus will be on the conceptual/domain modeling - this was a good overview for me to understand what is expected in a more detailed layer of modeling.”
—David Huth, USA

BI & DW Data Modeling

Instructor: Rick Sherman

Duration: 4 hours, 15 minutes

A well designed data model is the cornerstone to building business intelligence and data warehouse applications that provide significant business value.

Effective data modeling results in transforming data into an enterprise information asset that is consistent, comprehensive and current. Data is transformed from operational or source systems into a data warehouse and often data marts or OLAP cubes for analysis. This course provides the fundamental techniques to designing the data warehouse, data marts or cubes that enable business intelligence reporting and analytics.

This online training course discusses the two logical data modeling approaches of Entity-Relationship (ER) and dimensional modeling. ER modeling is used to establish the baseline data model while dimensional modeling is the cornerstone to Business Intelligence (BI) and Data Warehousing (DW) applications. These modeling techniques have expanded and matured as best practices have emerged from years of experience in data modeling in enterprises of all sizes and industries. These techniques improve the business value of the data, enhance project productivity and reduce the time to develop applications. This course includes a mix of concepts, applications and practical examples.

You will learn:

- The basics of Entity-Relationship (ER) and dimensional modeling
- the benefits and applicability of Dimensional Data Modeling
- how to create Dimensional Data Models for BI and DW applications
- how to learn more about Data Modeling

This course is geared towards:

- Beginning Data Modelers
- Business Analysts and Architects
- Database Administrators and Analyst
- IT Managers, Project Managers
- Application Development Project Team Members
- People involved in design and maintenance of Data Warehousing and Business Intelligence applications
- People involved in data quality or data governance processes

Course Outline

About the Course (6 min)

Introduction to Data Modeling (75 min)

- Data Modeling Overview
- Entity-Relationship Modeling Overview
- Normalization

Dimensional Modeling Basics (88 min)

- What is Dimensional Modeling?
- Facts
- Dimensions
- Schemas
- Entity-Relationship vs. Dimensional Modeling
- Purpose of Dimensional Modeling
- Fact Tables
- Dimensional Modeling Vocabulary

Advanced Dimensional Modeling (84 min)

- Hierarchies
- Slowly Changing Dimensions
- Rapidly Changing Dimensions
- Casual Dimensions
- Multi-Valued Dimensions
- Snowflaking
- Junk Dimensions
- Value Brand Reporting
- Heterogeneous Products
- How Swappable Dimensions
- Too Few or Too Many Dimensions
- Benefits of Dimensional Modeling

“I liked the course, I think is clear and detailed.”

—Daniel Diaz Velazquez

“Loved the material, exactly what I was looking for. On-line is always difficult, especially in keeping the listener engaged but overall the information was interesting enough to stay focused.”

—Steve Overton, USA

Data Integration Techniques for Designing ODS

Instructors: Angelo Bobak

Duration: 3 hours

In today's modern business environment, corporate entities are constantly merging or splitting, internal divisions are sold to different companies, and new business lines are created in order to meet the challenges of difficult economic times. Business data integration is a complex problem that must be solved when organizations change or enhance their internal structures. New IT departments must be merged with old ones, and transactional, operational, and master data must be integrated in order to be managed efficiently, if the business is expected to grow and be profitable.

The goal of this course is to present a simple yet thorough process that describes the challenges of business data integration and the solutions to these challenges. It will show you how the application of a technique called "schema integration" addresses these challenges.

Schema integration is both a theory and process that was pioneered by experts in the field of data management. We will discuss the techniques of two of these pioneers, M. Tamer Ozsu and Patrick Valduriez in the design of an Operational Data Store (ODS) for a small business..

You will learn:

- The underlying architecture of the Operational Data Store (ODS)
- The different types of ODS Architectures
- The theory behind schema integration
- The schema integration process
- Identifying and resolving data conflicts when integrating data
- The importance of master data and data quality in schema integration

This course is geared towards:

- The Logical and Physical Data Modeler
- The Data Architect
- The Database Administrator
- Project Managers
- Data Warehouse Architects
- Anyone wishing to enter the field of database design and ODS implementation

Course Outline

About the Course (4 min)

Introduction to Operational Data Stores (45 min)

- Overview
- What is an ODS
- Master Data and The ODS
- Data Quality and the ODS
- Loading the ODS
- ODS and Data Warehouse Architectures

Theory of Scheme Integration (58 min)

- Overview
- Data Integration Pioneers
- Schema Integration Types
- Schema Integration Process
- Resolving Data Conflicts
- Profiling Data
- Defining the ETL Specifications to Merge Data
- Tracking Data Lineage
- Schema Integration ETL Tools

Maintenance (30 min)

- Overview
- Adding New Sources
- Adding New Destinations
- Modifying Existing Sources
- Modifying Existing Destinations
- Retiring Old Sources
- Retiring Existing Destinations
- Managing Security and Access
- Monitoring and Managing Storage Capacity
- Monitoring Performance
- Physical Design Techniques to Increase Performance
- Key Project Roles and Responsibilities

Case Study (38 min)

- Overview
- Databases to Integrate
- Data Dictionaries
- Tools You Will Need
- Performing the Integration
- Concluding Remarks

Data Virtualization

Instructor: Dave Wells

Duration: 3 hours

The work of data integration has become increasingly complex in recent years. Business needs for real-time and low latency data, expanded uses of unstructured data, and accelerated interest in big data analytics are but a few of the trends that change the data integration landscape. Extract-transform-load (ETL) processing was sufficient for the once relatively simple task of combining data from multiple transactional databases was to build a data warehouse, operational data store, or master data hub. Today's data integration challenges go well beyond the capabilities of ETL technologies with needs to integrate enterprise data with external data, Web data, clickstream data, end-user data, big data, cloud data, and more. To meet these new requirements, data integrators need more tools in the integration toolbox. Data virtualization doesn't replace ETL; it complements ETL and offers new tools to meet new integration needs.

Data virtualization is a core component of next-generation data integration architectures, techniques, and technology. This online training course will introduce you to the concepts, techniques, and capabilities of data virtualization. It will prepare you to expand your data integration capabilities, deliver business-speed information, and make the most of recent advances in data integration technology.

You will learn:

- Data virtualization definitions, concepts, and terminology
- Business case and technical rationale for data virtualization
- Foundational principles of virtualization – abstraction, views, and services
- How to extend the data warehouse with virtualization
- How virtualization is applied for unstructured data, big data, and cloud data challenges
- How to mix and match virtualization with ETL technology to optimize data integration architectures and processes

This course is geared towards:

- BI, MDM, and data warehousing program and project managers
- Data integration architects, designers, and developers
- Data and technology architects

Course Outline

About the Course (6 min)

Data Virtualization Concepts & Principles (29 min)

- Overview
- Data Virtualization Basics
- Why Data Virtualization
- The Data Virtualization Foundation
- Review

Data Integration Architecture (19 min)

- Overview
- Integration Architecture Concepts
- Reference Architectures
- Integration Architecture Examples
- Review

Data Virtualization in Integration Architecture (49 min)

- Overview
- Virtualization in Data Integration Projects
- Data Virtualization Use Cases
- Data Warehousing Use Cases
- Data Federation Use Cases
- MDM and EIM Use Cases
- More Data Virtualization Applications
- Practical Data Virtualization
- Review

Data Virtualization Platforms (20 min)

- Overview
- Platform Requirements
- Platform Capabilities
- Platform Variations
- Some Platform Vendors
- Review

Implementing Data Virtualization (16 min)

- Overview
- Analysis
- Design and Modeling
- Development
- Deployment and Operation
- Review

Getting Started with Data Virtualization (28 min)

- Overview
- Skills, Competencies, and Human Factors
- Goal and Expectations
- Best Practices
- Case Studies
- Review

The Data Model Scorecard

Instructors: Steve Hoberman

Duration: 3 hours

A frequently overlooked aspect of data quality management is that of data model quality. We often build data models quickly, in the midst of a development project, and with the singular goal of database design. Yet the implications of those models are far-reaching and long-lasting. They affect the structure of implemented data, the ability to adapt to change, understanding of and communication about data, definition of data quality rules, and much more. In many ways, high-quality data begins with high-quality data models.

This online training course presents Steve Hoberman's Data Model Scorecard®, which provides the tools needed to measure and manage data model quality.

You will learn:

- The importance of having an objective measure of data model quality
- The categories that make up the scorecard including correctness, completeness, structural soundness, flexibility, standards, and model consistency
- How to apply the scorecard to different types of models
- Techniques to strengthen data models, including model reviews, model substitutes (screens, prototypes, sentences, spreadsheets and reports), and the use of automated tools to enforce modeling best practices and standards
- How to introduce the scorecard into a development methodology and your company culture

This course is geared towards:

- Data Modelers
- Data Analysts
- Data Architects
- Data Stewards
- Database Administrators

Course Outline

About the Course (8 min)

Scorecard Need (43 min)

- Why Measure Data Model Quality
- Traditional Review Methods
- Archer vs. Data Modeler
- Enter the Scorecard

Scorecard Categories (67 min)

- Category 1 - Model Type
- Category 2 - Correctness
- Category 3 - Completeness
- Category 4 - Structure
- Category 5 - Abstraction
- Category 6 - Standards
- Category 7 - Readability
- Category 8 - Definitions
- Category 9 - Consistency
- Category 10 - Data

Scorecard in Practice (54 min)

- Introducing the Scorecard into your Organization
- Scorecard Challenges
- Scorecard Tips
- Applying the Scorecard

“Very good class. The only negative thing to say was that the handouts were too crowded -- it needed to be two slides per page, not four. It was difficult to see sometimes. Otherwise, enjoyed the class very much.”
—Melissa Rayburn, USA

Data Profiling

Instructor: Arkady Maydanchik

Duration: 5 hours

Data profiling is the process of analyzing actual data and understanding its true structure and meaning. It is one of the most common and important activities in information management. Data profiling is the first critical step in many major IT initiatives, including implementing a data warehouse, building an MDM hub, populating metadata repository, as well as operational data migration and integration. It is also the key ingredient to successful data quality management.

While proliferation of commercial tools made data profiling accessible for most information management professionals, successful profiling projects remain elusive. This is largely because the tools allow gathering large volumes of information about data, but offer limited means and guidelines for analysis of that information.

In this online training course you will learn all practical skills necessary to succeed in a data profiling initiative.

You will learn:

- The what, why, when, and how of data profiling
- Various data profiling techniques, from simple column profiling to advanced profiling methods for time-dependent and state-dependent data
- How to efficiently gather data profiles
- How to analyze the data profiling information and ask the right questions about your data
- How to organize data profiling results
- How to perform dynamic data profiling and identify changes in data structure and meaning

This course is geared towards:

- Data quality practitioners
- MDM practitioners
- Metadata management practitioners
- IT and business analysts involved in data management
- Those responsible for implementation and maintenance of various data management systems

Course Outline

About the Course (7 min)

Introduction to Data Profiling (44 min)

- What is Data Profiling?
- Myth and Reality of Data Profiling
- Profiling Techniques
- Profiling Challenges
- Role of Profiling
- People and Technology

Column Profiling (89 min)

- Introduction
- Basic Counts
- Value Frequency Charts
- Value Distribution Characteristics
- Value Distribution

Profiling Time-Dependent Data (58 min)

- Introduction
- Timeline Profiling
- Timestamp Pattern Profiling
- Multi-Dimensional Profiling
- Event Dependency Profiling

Profiling State-Transition Models (49 min)

- Introduction
- Data Structures for State-Dependent Data
- Profiling Techniques

Other Profiling Techniques (65 min)

- Subject Profiling
- Relational Integrity Profiling
- Attribute Dependency Profiling
- Dynamic Data Profiling

“Terrific course. The content was great for both data profiling professionals and those that are new to the concepts.”
—Joseph Fagnoni, USA

Data Parsing, Matching and De-duplication

Instructors: Kathy Hunter, William McKnight, Henrik Sørensen

Duration: 4 hours, 20 minutes

Data parsing, standardization, matching, and de-duplication are the cornerstones of successful Master Data Management (MDM). They are also critical parts of successful data quality programs, and are key steps in building data warehouses as well as any data integration and consolidation initiatives. You could say that today few organizations can function effectively without implementing data parsing and matching processes often in many data domains.

This need is further magnified if your company has gone global and plans to create databases that combine name- and address-related data from all corners of the world. Managing global information effectively takes specialist knowledge and the ability to show consideration for the differences that exist throughout the world. Worldwide there are more than 10,000 languages, 130 address formats, 36 personal and hundreds of business name formats. All of these variables are further complicated by the need to respect national and regional cultures. Failure to consider formats, styles, and cultures has huge impact on quality of data and quality of business relationships.

This online training course is aimed at data quality and master data management (MDM) professionals as well as those responsible to work with global information. The field is broad and the details are many. The purpose of this course is to provide a broad and in-depth review of data parsing, standardization, matching, and de-duplication techniques, as well as extensive overview of specific problems and solutions when dealing with global data.

You will learn:

- Data parsing, standardization, matching, and de-duplication techniques
- How to find and use external reference data
- How data parsing and matching contribute to improving data quality, MDM, and data warehousing
- Which data domains, entities and data elements may benefit from data parsing and matching
- Challenges of global data and ways to overcome these challenges

This course is geared towards:

- Master data management professionals
- Data quality professionals
- Information architects
- Developers of data warehousing systems
- Business professionals who work with global data

Course Outline

About the Course (12 min)

Introduction (17 min)

Implementation Fundamentals (70 min)

- Parsing and Standardization
- Introduction to Data Matching
- Data Matching Techniques
- Data Matching Destinations
- Evaluating Data Matching Tools

External Reference Data (45 min)

- External Data Sources
- Syndicated Customer Data
- Syndicated Product Data
- Using the Web

Challenges of Global Data (58 min)

- Introduction to Global Information
- Global Data: What You Need to Know
- Variations by Country and Region
- Cultural and Legal Impacts
- Characters and Diacritics

Overcoming the Challenges of Global Data (59 min)

- Data Profiling
- Consistent Data Structures
- Preparing Global Data for Effective Use

**“Absolutely excellent course:
thought through and well
delivered.”**

—Marina Severinovskaya, USA

**“Good information on global
data!”**

—Gregg Bostwick, USA

Data Quality Assessment

Instructors: Arkady Maydanchik
Duration: 6 hours

More and more companies initiate data quality programs and form data stewardship groups every year. The starting point for any such program must be data quality assessment. Yet in absence of a comprehensive methodology, measuring data quality remains an elusive concept. It proves to be easier to produce hundreds or thousands of data error reports than to make any sense of them.

This online training course gives comprehensive treatment to the process and practical challenges of data quality assessment. It starts with systematic treatment of various data quality rules and proceeds to the results analysis and building aggregated data quality scorecard. Special attention is paid to the architecture and functionality of the data quality metadata warehouse.

You will learn:

- The what, why, when, and how of data quality assessment
- How to identify and use data quality rules for assessment
- How to ensure completeness of data quality assessment
- How to construct and use a data quality scorecard
- How to collect, manage, maintain, warehouse and use data quality metadata

This course is geared towards:

- Data quality practitioners
- Data stewards
- IT and business analysts and everyone else involved in data quality management

“It has been a very good experience learning about DQ Assessment in a formal way!”
—Vikram Khanna, USA

Course Outline

About the Course (9 min)

Introduction (53 min)

- Why Assess Data Quality
- Business Value of Data Quality Assessment
- Types of Data Errors
- Data Quality Assessment Approaches
- How Rule-Driven Approach Works
- Project Planning
- Project Steps

Data Quality Rules Overview (63 min)

- Attribute Domain Constraints
- Relational Integrity Constraints
- Complex Data Relationships

Rules for Historical Data (56 min)

- Historical Data Overview
- Timeline Constraints
- Value Pattern Rules
- Rules for Event Histories
- Rules for State-Dependent Objects

Finding Data Errors (76 min)

- Discovering Data Quality Rules
- Implementing Data Quality Rules
- Building Rule Catalog
- Building Error Catalog
- Fine-Tuning Data Quality Rules

Aggregate Data Quality Scores (66 min)

- School Report Card Example
- A First Look at DQ Scorecard
- Defining Aggregate Scores
- Score Tabulation

Building Data Quality Scorecard (61 min)

- Basic Scorecard Example
- Recurrent Data Quality Assessment
- Database and Enterprise-Wide DQ Scorecard

Best Practices in Data Resource Management

Instructors: Mike Brackett

Duration: 3 hours

Data is one of the four critical resources in an organization, equivalent with the financial resource, real property, and the human resource. Yet most organizations fail to manage the data with the same priority, discipline, and attention that is applied to the other critical resource. The time for disciplined management of the data resource is long overdue.

Most public and private sector organizations face many challenges with burgeoning quantities of disparate data. These disparate data are not well understood, have high redundancy, are not consistent, have low quality, and fail to adequately support the organization's business information demand. The only way to resolve this situation is to thoroughly understand how and why disparate data are created, and how those problems can be resolved.

This online training course begins with common definitions of data disparity and its impact on the organization, and proceeds to describe 10 sets of bad habits and good practices related to the architecture and governance components of data resource management.

You will learn:

- How to define and identify disparate data.
- How to identify the impact of disparate data on the business.
- How to define, identify, and manage data resource quality.
- The common problems with the architecture and governance of the data resource.
- The best practices to solve these architecture and governance problems.

This course is geared towards:

- Anyone who has responsibility for the architecture or governance of the data resource.
- Data resource quality practitioners at all levels.
- Business executives and managers who struggle with the business impacts of poor quality data.
- IT managers who are challenged to deliver reliable and trusted data to support the business information demand.
- Data and information system architects who need to break the cycle of disparate data creation.

Course Outline

About the Course (5 min)

Introduction (26 min)

- Current Situation
- Halting Data Disparity

Architecture (93 min)

- Data Names
- Data Definitions
- Data Structures
- Data Integrity Rules
- Data Documentation

Governance (53 min)

- Data Orientation
- Data Availability
- Data Responsibility
- Data Vision
- Data Recognition

Conclusion (9 min)

“Very interesting course with lots of useful information. Great to have a notes booklet with only two slides per page and plenty of room for taking notes. Great that the slides were very extensive and self-explanatory.”
—Helle Lindsted, Denmark

Metadata Management for Data Stewards

Instructors: D Wells, M Brackett & A Maydanchik

Duration: 4 hours

You can't manage information effectively without understanding the data meaning, constraints and relationships. Metadata management and data modeling disciplines provide the essential tools to collect, record, and organize such knowledge. Understanding these disciplines is essential to the success of data stewards. This online training course is designed to provide foundation knowledge about the most commonly used metadata management, data modeling, and data profiling techniques.

You will learn:

- the core elements of describing data: meaning, constraints, and relationships
- common metadata purposes: classification, description, guidance, and control
- common metadata processes, practices, and standards
- the basics of entity-relationship and dimensional data modeling
- fundamentals of data profiling

This course is geared towards:

- data stewards
- business or IT professionals who want to become data stewards
- business or IT counterparts working with data stewards
- information management professionals who want to learn about data modeling and metadata management

Course Outline

Understanding Data (15 min)

- Views of Data
- Projects Flow
- Describing the Data Meaning
- Describing the Data Constraints
- Describing the Data Relationships
- Describing the Data

Introduction to Metadata Management (43 min)

- Metadata Defined
- Metadata Purposes
- Metadata Classification
- Metadata Management Processes
- Metadata and IT Projects
- Metadata and People
- Metadata Organizations
- Metadata Skills and Competencies
- Metadata Architecture
- Using Metadata
- Metadata Standards
- Metadata Tools and Technologies

Introduction to Data Modeling (69 min)

- Data Modeling Defined
- Data Modeling Purpose
- Data Modeling and People
- Kinds of Data Models
- Data Modeling Processes
- The “Things” in Data Models
- Entity-Relationship Modeling
- Supplemental Models
- Dimensional Data Modeling

Data Names, Definitions, and Structures (39 min)

- Data Names
- Data Definitions
- Data Structures

Introduction to Data Profiling (69 min)

- What is Data Profiling?
- Myth and Reality of Data Profiling
- Column Profiling
- Other Profiling Techniques
- Profiling Challenges
- Role of Profiling
- People and Technology

OUR INSTRUCTORS

Mike Brackett

Mike Brackett has been in the data management field for over 40 years, during which he developed many concepts and techniques for designing applications and managing data resources. He is the originator of the common data architecture concept, the data resource framework, the data naming taxonomy, the five-tier five-schema concept, the data rule concept, the BI value chain, the data resource data concept, and the architecture-driven data model concept, and new techniques for understanding and integrating disparate data.

Angelo Bobak

Angelo Bobak is a seasoned data architecture professional and published author with over 20 years' experience in Business Intelligence, Data Architecture, Data Modeling, Master Data Management, and Data Quality. Currently he is working at ATOS Origin NA as a Director/Senior Data Architect in the areas of Global Master Data Management, Data Integration and Data Quality. Past experience includes positions as an IT consultant, manager and data architect with companies such as Siemens, Praxair, Avaya, Pepsi and several financial institutions on Wall Street such as Merrill Lynch, Bankers Trust and International Securities Exchange (ISE).

David Haertzen

David Haertzen is chief instructor for First Place, is webmaster of Infogoal.com, and has over 20 years of experience in the Information Technology field. Working with a wide range of businesses and government agencies has given David insights into the practical application of data modeling in many environments. He has developed models covering subject areas such as: human resources, assets, customers, employees, products, services, organizations, locations, orders, inventory, processes, and projects using a variety of tools including: Erwin, Rational Rose, and Visio.

Steve Hoberman

Steve Hoberman is a trainer, consultant, and writer in the field of data modeling. Steve is a columnist and frequent contributor to industry publications. He is the author of several data modeling books including Data Modeling Made Simple, Data Modeler's Workbench, and Data Modeling for the Business. With interest in building a data modeler's community, he founded the Design Challenges group, which today boasts more than 3,000 data management practitioners who tackle monthly data modeling puzzles. (You can sign up for his Design Challenges at www.stevhoberman.com) Steve is an innovator in data modeling and the inventor of the Data Model Scorecard®, which has quickly become the standard for data model quality.

Kathy Hunter

Kathy always says she has data in her blood. Joining Harte-Hanks in 2002, she built an information management practice and, with her highly skilled team, was responsible for instituting their highly successful Global Data Management solution set. From information quality and data governance through to providing global data solutions and guidance she attained a reputation for expert knowledge and successful delivery in global information management to her clients. Kathy is known for her pragmatic approach to topics, providing helpful hints and practical examples in order to solve tough problems.

William McKnight

William is president of McKnight Consulting Group. He is a Southwest Entrepreneur of the Year Finalist, a frequent best practices judge, has authored hundreds of articles and white papers and given hundreds of international keynotes and public seminars. His team's implementations from both IT and consultant positions have won Best Practices awards. William is a former Information Technology Vice President of a Fortune 50 company, a former engineer of DB2 at IBM and holds an MBA from Santa Clara University.

Arkady Maydanchik

For more than 20 years, Arkady Maydanchik has been a recognized leader and innovator in the fields of data quality and information integration. As a practitioner, author and educator he has been involved in some of the most challenging projects industry has seen. These projects were often the result of major corporate mergers and the need to consolidate and integrate databases of enormous variety and complexity. Arkady's client list includes such household names as Dun & Bradstreet, Hewitt Associates, Kimberly Clark, Raytheon, Sprint, Verizon, and Xerox.

Rick Sherman

Rick is the founder of Athena IT Solutions, a Boston area business intelligence and data warehousing consulting firm that provides solutions for customers of all sizes and industries. His hands-on experience includes a wide range of data integration tools. Rick also teaches data warehousing, data integration and business intelligence for a masters' degree program at Northeastern University's graduate school of engineering.

Henrik Sørensen

Henrik Liliendahl Sørensen has over 30 years of experience in working with Master Data Management and Data Quality and is a charter member of the International Association of Information and Data Quality. Currently Henrik works with Master Data Management at Tata Consulting Services and as Practice Manager at Omikron Data Quality besides writing on a well trafficked blog about data quality, master data management and the art of data matching. Henrik is the founder of the Data Matching and the Multi-Domain MDM groups on LinkedIn.

Dave Wells

Dave Wells is a consultant, teacher, and practitioner in the field of information management. He brings to every endeavor a unique and balanced perspective about the relationships of business and technology. This perspective—refined through a career of more than thirty-five years that encompassed both business and technical roles—helps to align business and information technology in the most effective ways. Dave is a frequent contributor to trade publications and is a co-author of the book *BI Strategy: How to Create and Document*. He also speaks at a variety of industry events.

OUR CUSTOMERS

E-LearningCurve has over 2,500 students in 70+ countries around the globe. Our enterprise customers include numerous Fortune 500 and Global 1,000 companies as well as governmental institutions in various countries.



CUSTOMER STORIES

“I feel the CIMP certification gives me the foundation I need to be highly successful.”

I recently received my CIMP certification in Data Governance from eLearning Curve. I found all the classes to be of high quality and loaded with plenty of content. I thought the material was well presented and I give high marks to all the instructors for their subject matter knowledge and delivery style. Not having had any formal training in Data Governance, I feel the CIMP certification gives me the foundation I need to be highly successful in my current role. I look forward to utilizing what I have learned as I continue my career path as a Data Governance professional. I would recommend eLearning Curve’s CIMP- Data Governance certification to anyone who wishes to learn more about Data Governance or wants to pursue a career in Data Governance.

Steve DelBianco, CIMP – Data Governance, USA

“The instructors are experienced, knowledgeable, well known in the field, and extremely engaging.”

I recently completed six of the classes on eLearningCurve focusing on a Data Quality track and I strongly recommend them to those professionals who are engaged in Data Management projects and programs. The classes are very well organized and a must for learning the proper terminology and getting a solid foundation upon which to build with experience. The instructors are experienced, knowledgeable, well known in the field, and extremely engaging. They always start off by presenting the basics and ensuring that the course is suited for the least and the most experienced – this is not an easy task and I must commend the team for a great accomplishment. The exams are serious: taking the class while multitasking and then taking the exam is a recipe for failure. And it should be. The levels of professionalism and integrity are up to the highest standards - passing the exams and getting CIMP certification is an accomplishment!

Oana Garcia, CIMP - Data Quality, USA

“As a team leader I expect this to improve considerably the team performance.”

I have acquired CIMP in Data Quality recently. I have been working in Data Quality field for 10 years and this certification helped me to deepen and structure my knowledge. To pass the CIMP examination one needs deep understanding of the subject and the ability to apply the knowledge in different everyday situations. I have some colleagues who have recently started their "way in data quality field" and I have recommended they take the certification. As a team leader I expect this to improve considerably the team performance. I also want to point out the attitude of people working for eLearningCurve: I have always received the necessary support or recommendations whenever asked. This made the learning process not only valuable from knowledge acquireance point of view but also very pleasant from emotional point of view.

Ilze Smeltere, CIMP - Data Quality, Latvia

“I am very impressed with the form, content, presentation quality and delivery format of the courses I have taken.”

As a data practitioner with more than 10 years of experience in data strategy, architecture and standards in some global corporations I have come across quite a few on-line and classroom training course over the years. I have taken 6 courses on data quality, governance and strategy so far from eLearningCurve. I am very impressed with the form, content, presentation quality and delivery format of the courses I have taken so far. eLearningCurve has partnered with the best in the industry to develop a comprehensive curriculum. The courses are well designed and will be helpful for someone who is new to the data practice and experienced professionals who want to use these as refresher as well. I have no hesitation in saying that, these courses are one of the best in the industry I have seen so far.

Sumanda Basu, CIMP - Data Governance, Data Quality, USA

“I particularly liked the depth of the courses which even went into the financial aspect of projects, business cases, benefits, etc.”

I recently certified in CIMP Data Governance with eLearningCurve. My role is primarily BI-focused but more and more we are focusing on data governance and MDM. The courses gave me the bridge I needed to understand the wider sense of data governance and MDM and how we can implement such initiatives in our business.

I particularly liked the depth of the courses which even went into the financial aspect of projects, business cases, benefits, etc. This is always a barrier to getting projects approved. I would certainly recommend this certification path to anyone thinking about or embarking on such projects.

Justin Warburton, CIMP – Data Governance, United Kingdom

“I was very pleased with the courses and the certification process with eLearningCurve.”

I was very pleased with the courses and the certification process with eLearningCurve. The individual courses were very well prepared and clearly presented. I believe that this knowledge is critical for both novice and experienced data management professionals.

Clarence W. Hempfield, Jr., CIMP – Data Quality, USA

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About eLearningCurve

eLearningCurve offers comprehensive online education programs in various disciplines of information management. With eLearningCurve, you can take the courses you need when you need them from any place at any time. Study at your own pace, listen to the material many times, and test your knowledge through online exams to ensure maximum information comprehension and retention.

eLearningCurve also offers two robust certification programs: CIMP & CDS. Certified Information Management Professional (CIMP) builds upon education to certify knowledge and understanding of information management. Certified Data Steward (CDS) is a role-based certification designed for the fast growing data stewardship profession.

Finally, eLearningCurve's Enterprise Program is a flexible, scalable, cost-effective solution for teams and enterprises.