Business-oriented Data Modelling Masterclass

Balancing Engagement, Agility and Complexity

**Three day workshop
by Alec Sharp**

///**Adept**Events

- Benefit from the skill and expertise of internationally acclaimed teacher Alec Sharp
- Learn an easy, language-oriented approach to initiating development of a data model
- Recognise the four basic patterns in data modelling, and when to use them
- Effectively use definitions and assertions ("rules") as part of data modelling
- Apply various techniques for discovering and meeting additional requirements
- Read a data model, and communicate with specialists using the appropriate terminology
- Handling interesting structures such as generalization and recursion
- Modelling time, history, and time-dependent business rules
- Prepare and deliver a data model review presentation

VENUE
Utrecht / Hilversum Area,
The Netherlands

TIME
9:30 – 17:00 hours

REGISTRATION
www.adeptevents.nl
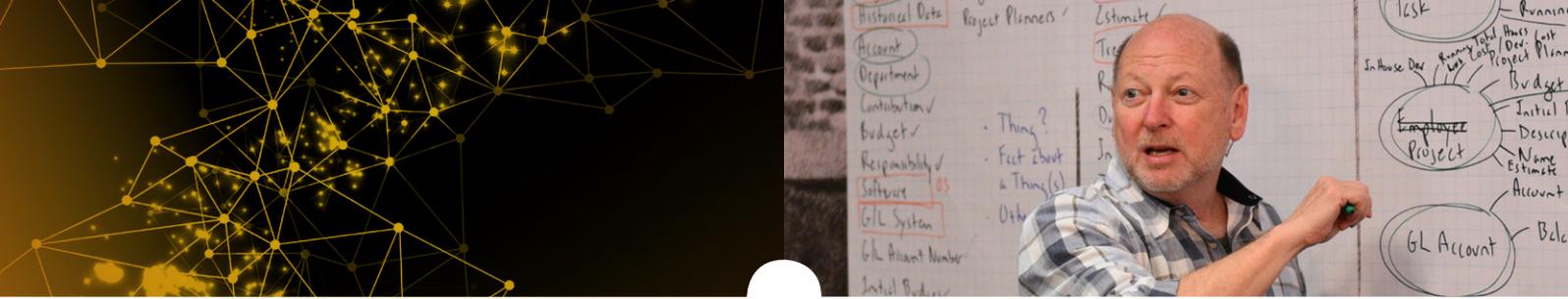
Business-oriented Data Modelling Masterclass

## Balancing Engagement, Agility and Complexity

This new 3-day interactive workshop combines the core content from two popular data modelling offerings by Alec Sharp – Business Oriented Data Modelling and Advanced Data Modelling. Suitable for both new and experienced modellers, this course first explores unique techniques for rapidly developing high-quality models while maintaining the involvement of business professionals. It then provides hands-on practice with skills in more challenging topics – generalisation, recursion, subtyping, modelling time and history, presenting models to non-technical groups, the connection between E-R modelling and dimensional modelling, and many more. In all cases, the underlying philosophy is that a data model is a description of a business, not of a database.

Three main themes are explored in a very practical way:
1. The foundations of data modelling – what a data model really is, and maximising its relevance
2. The human side of data modelling - improving communication skills and engaging the business
3. The complex side of data modelling - getting better at modelling difficult situations

After introducing entity-relationship modelling from a non-technical perspective, the basic components of a data model are thoroughly covered - entities, relationships, attributes, and rules. Practical tips, quality checklists, and warnings of common pitfalls are also shared. Through hands-on work, the workshop demonstrates why there is a global surge of interest in data modelling, especially conceptual data modelling or "concept modelling." It also show how a concept model can be a great platform on which to develop application requirements (use cases and services) and to identify business processes.

A repeatable method for developing a data model is emphasised. The first day of the workshop gets both new and experienced modellers to the same baseline on terminology, conventions, and the unique, business-friendly approaches this course provides. For the next two days, the course moves on to more advanced situations, such as the enforcement of complex business rules, handling recurring patterns, satisfying regulatory requirements to model time and history, capturing complex changes and corrections, dealing with existing databases or packaged applications, and integrating with dimensional modelling.
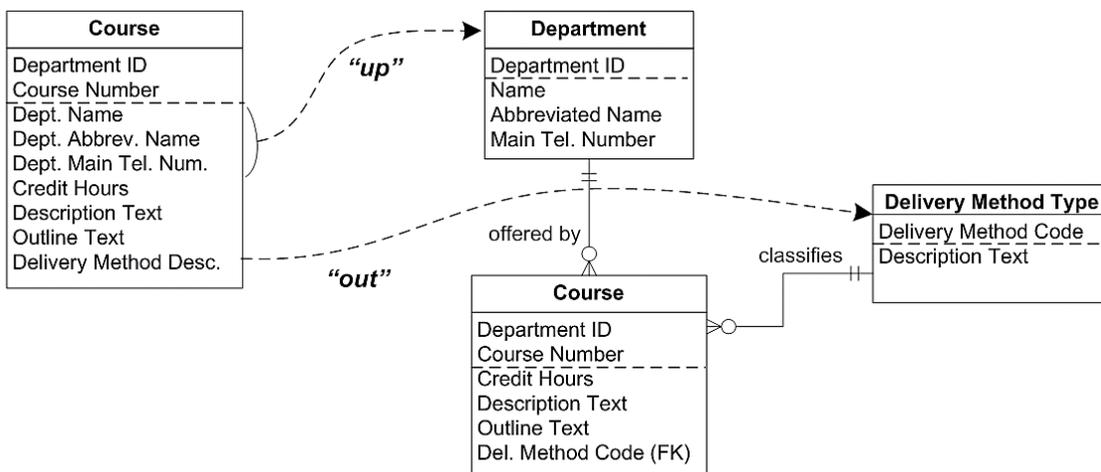
Learning Objectives

On workshop completion, participants will be able to:

- Apply a variety of techniques that support the active participation and engagement of business professionals and subject matter experts
- Use entity-relationship modelling to depict facts and rules about business entities at different levels of detail, including conceptual (overview) and logical (detailed) models
- Learn an easy, language-oriented approach to initiating development of a data model
- Recognise the four basic patterns in data modelling, and when to use them
- Effectively use definitions and assertions ("rules") as part of data modelling
- Use an intuitive approach to data normalisation within an entity-relationship model
- Apply various techniques for discovering and meeting additional requirements
- Read a data model, and communicate with specialists using the appropriate terminology
- Understand "the four Ds of data modelling" – definition, dependency, demonstration, and detail
- Be able to implement lists, trees, and networks with recursive relationships

- Know how and when to use supertypes/subtypes (generalisation/specialisation) vs. roles vs. both
- Combine subtyping and recursion, as appropriate, to model difficult rules
- Recognise the "category vs. types vs. instances" problem, and model reference data properly
- Model "vectors" (attibutes that repeat a fixed number of times) properly – entity or attribute?
- Use multi-way associations, associations of associations, and relationship constraints to handle complex rules
- Handle circular relationships and cyclic dependencies properly with advanced normal forms
- Model history, corrections, and time-dependent business rules with "temporal data models"
- Understand the connection between analytic data structures (star schema or dimensional models) and ER models
- Rapidly develop a first-cut dimensional model from a well-structured ER model
- Prepare and deliver a data model review presentation.

Who is it for?

Roles that are currently benefitting from this workshop include:

- Specialist data modellers, data architects, data analysts, and DBAs who wish to hone their skills.
- Business analysts, business architects, enterprise architects, and application architects
- Business professionals, Subject Matter Experts, and Project / Programme Managers involved in the analysis, design, and development (or selection and configuration) of a system.
- BI (Business Intelligence) professionals, DW (Data Warehouse) professionals, big data specialists, data scientists, analytics specialists, and data lake implementers
- Application / solution developers (especially on Agile teams)
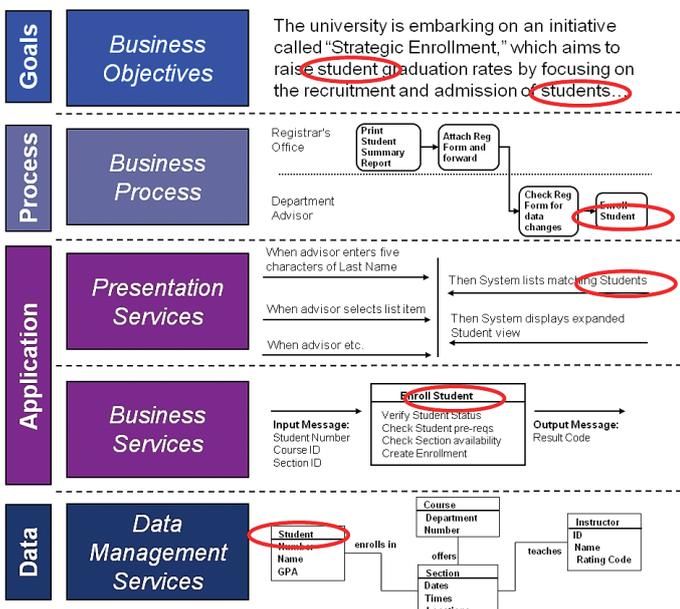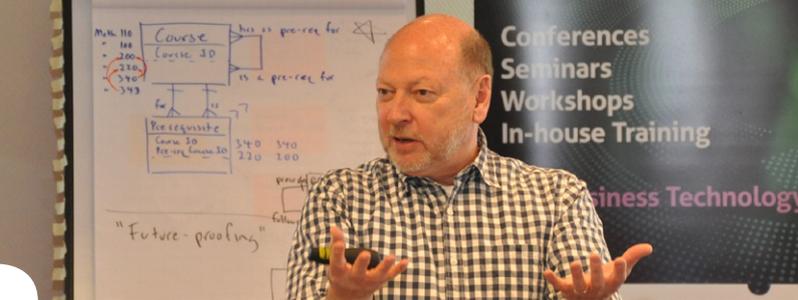
Essentials of Data Modelling
- What really is a data model or concept model?
- Essential components – entities, relationships, attributes, and rules
- Hands-on case study – how data modelling resolved business issues, and supported other business analysis techniques
- Guidelines for comprehension – how to lay out Entity-Relationship Diagrams ("ERDs")
- The narrative parts of a data model – definitions and assertions
- Group exercise – getting started on a data model, then refining it
- Common misconceptions about data models and data modelling
- The real purpose of a data model
- Contextual, Conceptual, and Logical Data Models – purpose, audience, definition, and examples
- Overview of a three-phase methodology for developing a data model

Establishing the initial conceptual data model
- Top down vs. bottom up approaches to beginning a data model – when is each appropriate?
- A bottom-up approach focusing on collecting and analyzing terminology
- A structure for sorting terms and discovering entities
- Exercise – developing an initial conceptual data model
- Entities – what they are and are not
- Guidelines for naming and defining entities
- Three questions to help you quickly develop clear, useful entity definitions
- Exercise – identifying flawed entities
- Six criteria that entities must satisfy, and four common errors in identifying entities
- Identifying relationships
- Fundamental vs. irrelevant or transitive relationships
- Good and bad relationship names
- Multiplicity or cardinality – 1:1, 1:M, and M:M relationships, and useful facts about each
- Common errors and special cases – recursive, multiple, and supertype-subtype relationships
- Attributes – guidelines and types
- Attributes in conceptual models vs. logical models

Developing the initial logical data model by adding rigor, structure, and detail
- Transition to the logical model – shifting the focus from entities to attributes
- Multi-valued, redundant, and constrained attributes, with simple patterns for dealing with each
- An understandable guide to normalisation – first, second, and third normal forms
- Higher order (fourth and fifth) and Boyce-Codd normal forms
- Exercise – developing the initial logical data model
- Four types of entities – kernel, characteristic, associative, and reference
- Guidelines and patterns for dealing with each type of entity
- How to draw your E-R Diagram for maximum readability and correctness
- Optional and mandatory relationships
- Considering time and history when looking at relationships
- Typical attribute documentation
- A common source of confusion and disagreement – primary keys
- What primary keys are, what they're really for, and three essential criteria
- The four Ds of data modelling – definition, dependency, detail, and demonstration
- E-R Diagramming – symbol sets and their problems, rules for readability and comprehension

Correctly handling attributes
- Granularity – dealing with non-atomic and semantically overloaded attributes
- Dealing with reference data and the "types vs. instances" problem
- Three attributes that always need a qualifier
- Vector modelling – entity or attribute?

Interesting structures – generalisation, recursion, and the two together
- Generalisation (subtyping) – when to use it, and when not to
- Generalisation with and without specification
- Guidelines for using recursive relationships
- Generalisation and recursion working hand-in-hand as a cure for literalism
- Recognizing lists, trees, and networks, and modelling them with recursive relationships

- Modelling difficult rules by combining generalisation (subtyping) and recursion
- Staying clear on generalisation vs. roles, states, and aggregation

Modelling time, history, and time-dependent business rules
- Historical vs. audit data, and when to show them on a data model
- Thanks, Sarbanes-Oxley! Why we need "as-of reporting" and how to model data corrections
- "Do you need history?" – how to tell when your client is misleading you
- Modelling time – special considerations for recording past, present, and future values
- Four variations on capturing history in a data model
- Seven questions you should always ask when a date range appears

Modelling rules on relationships and associations
- Using multi-way associations to handle complex rules
- "Use your words" – how assertions, scenarios, and other techniques will improve your modelling
- Associative entities – circular relationships, shared parentage, and other issues

- Alternatives for modelling constraints across relationships
- Advanced normal forms – how to quickly recognize potential 4NF and 5NF issues
- A simpler view – why the five normal forms could be reduced to three

Preparing and delivering a data model review presentation
- Context – your audience, and why the model matters to them
- It's a story, not a data model! Building a storyboard
- Five key techniques for presenting data models or other technical subjects
- The mechanics of the data model review presentation
- A demonstration

Bridging the "E-R vs. Dimensional" divide – the world's shortest course on dimensional modelling
- The perils of dimensional modelling without understanding the underlying E-R model
- Spotting facts and dimensions – the relationship between dimensional models and E-R models
- Saving time – building a first-cut dimensional model from an ER model

ALEC SHARP

ALEC SHARP, a senior consultant with Clariteq Systems Consulting, has deep expertise in a rare combination of fields – process modelling, analysis, and redesign; business analysis and requirements specification; and business-oriented data modelling. Increasingly, his work involves facilitation and organisational change. His 35 years of hands-on consulting experience, practical approaches, and global reputation in model-driven methods have made him a sought-after resource in locations as diverse as Ireland, Illinois, and India.

He is also a popular conference speaker, mixing content and insight with irreverence and humour. Among his many top-rated presentations are "The Lost Art of Conceptual Modelling – Where Did it All Go Wrong?," "The Human Side of Data Modelling – Communicating With Stakeholders and Other Mere Mortals," "Getting Traction for 'Data' – What the Experts Forget," "Adventures in Reverse Engineering – What You've Got, and Why You Don't Like It," and "The T-Shaped Data Professional – Achieving Data Management Goals by Other Means." His 90-minute briefing "Five Things You Need To Know About Business Processes" has been delivered to senior executives at major organisations around the globe.

Alec literally wrote the book on business process modelling, "Workflow Modelling: Tools for Process Improvement and Application Development." Popular with process improvement specialists, business analysts, consultants, and business professionals, it is consistently a top-selling title on business process modelling, analysis, and design, and is widely used as an MBA textbook. He was awarded DAMA's Professional Achievement Award, a global award given to one professional a year for contributions to the Data Management profession.

Alec's popular workshops "Working With Business Processes," "Advanced Business Process Techniques," "Business-Oriented Data Modelling," "Advanced Data Modelling," and "Requirements Modelling" are conducted on four or five continents each year, at many of the world's best-known organisations. His classes are practical and energetic, consistently earning "excellent" ratings.

Information

DATE AND TIME

The workshop will take place once or twice a year with the exact date and time available on our website. The programme starts at 9:30 am and ends at 5:00 pm on both days. Registration commences at 8.30 am and we recommend that you arrive early.

VENUE

Adept Events works with several venues in and near Amersfoort and Utrecht. We strive to provide you with the location details as soon as possible. The exact venue will be on our website and in the confirmation e-mail that you will receive one week prior to the event. Always check our website prior to your departure to ensure you have the exact location and directions.

HOW TO REGISTER

Please register online at **www.adeptevents.nl**. For registering by print, please scan the completed registration form and send this or your Purchase Order to **customerservice@adeptevents.nl**. We will confirm your registration and invoice your company by e-mail therefore please do not omit your e-mail address when registering.

REGISTRATION FEE

Taking part in this three-day workshop will only cost 1791 Euro when registering 30 days beforehand and 1990 Euro per person afterwards (excl. 21% Dutch VAT). This also covers documentation, lunch, tea/coffee.

Note: This seminar may also be offered 'Online' or as 'Face-to-face and live streaming'. In that situation, the prices for attending online differ from the prices listed here. On the **Registration Fee** page of our website you will always find the current rates for all available formats of this seminar.

Members of the DAMA are eligable for 10 percent discount on the registration fee.

In completing your registration form you declare that you agree with our Terms and Conditions

Team discounts

Discounts are available for group bookings of two or more delegates representing the same organization made at the same time. Ten percent off for the second and third delegate and fifteen percent off for all delegates when registering four or more delegates (all delegates must be listed on the same invoice).
This cannot be used in conjunction with other discounts.
All prices are VAT excluded.

PAYMENT

Full payment is due prior to the workshop. An invoice will be sent to you containing our full bank details including BIC and IBAN. Your payment should always include the invoice number as well as the name of your company and the delegate name.
Payment by credit card is available for attendees from countries outside the IBAN region. This is not an automated process via our website but requires a manual transaction by phone or Skype. For Credit Card payment please contact our office by e-mail or through our contact form mentioning your phone number to obtain your credit card information. Never mention your credit card details in our registration form, contact form or in e-mail messages.

Cancellation Policy

Cancellations must be received in writing at least three weeks before the commencement of the workshop and will be subject to a € 75,- administration fee. It is regretted that cancellations received within three weeks of the workshop date will be liable for the full workshop fee. Substitutions can be made at any time and at no extra charge.

Cancellation Liability

In the unlikely event of cancellation of the workshop for any reason, Adept Events' liability is limited to the return of the registration fee only. Adept Events will not reimburse delegates for any travel or hotel cancellation fees or penalties. It may be necessary, for reasons beyond the control of Adept Events, to change the content, timings, speakers, date and venue of the workshop.

MORE INFORMATION

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Would you like to run this course in-company for a group of persons? We can provide a quote for running an in-house course, if you offer the following details. Estimated number of delegates, location (town, country), number of days required (if different from the public course) and the preferred date/period (month). Please find more info on the **In-house page on our website**.