(BA004) Data and Object Modeling Workshop for the BA: Analyzing Business Rules with Class Diagrams and ERDs (with UML 2)

Duration: 2 days

CDUs (*Continuing Development Units*): 14

BABOK Compliance: BABOK Release 3

Description: Learn how to use static, structural analysis techniques to model a business domain. This is a hands-on practical workshop in the use of class diagrams, data models and other structural modeling diagrams to describe business requirements for an IT system. You will step through a complex real-life case study, learning at what points to develop and verify portions of the model. You will learn how to use structural analysis 'live' during interviews to define business concepts and objects and capture business rules and, later, how to use the structural model to verify use cases from the behavioural model. You will also learn how to convert UML class diagrams to ERDs (Entity Relationship Diagrams), so that you can adapt to any analysis environment – OOA (Object-Oriented Analysis), structured analysis or mixed. Please note that this course is available on request with workshops in IBM Rational ROSE.

Why Attend this Course?

Project failures or cost overruns can often be traced to Business Requirements documentation that is incomplete, inconsistent or ambiguous.

Object and data modeling address all three issues:

- **Complete** documentation is ensured through **model-driven interview techniques** that ensure that all the right questions get asked.
- **Consistent** documentation is obtained through techniques that centralize common business rules within the structural model.
- **Unambiguous** documentation is produced by conforming to the UML – a standard widely accepted and well-understood by developers.

What Makes this Course Stand Apart?

Focus on Business Analysis: Unlike many other courses in structural object and data modeling, this is not a course in design for developers. Our course is focused squarely on the needs of the Business Analyst, clearly explaining where and how structural modeling benefits the gathering and documenting of business requirements by the BA. Developers looking to expand into the BA role will also gain value from this course, as they learn how to apply UML techniques to the requirements-gathering "front-end" of a project.

Learn how, why and how much: You learn not only how to build the structural model, but also the business rationale for doing so, so that you willl be able to judge just how much structural modeling to perform for each project.

Structural modeling taught as a soft skill: Many courses focus on how to use structural modeling as a 'hard-skill' documentation technique. We view it as a 'soft-skill' interviewing technique as well. In this course, you'll learn to use structural modeling actively during interviews to quickly come to an understanding and consensus about complex business concepts and to ensure that important questions aren't missed during the interview.

Integration with use cases: We teach the trainee exactly how to integrate structural analysis with use-case analysis. Trainees learn at what steps during use-case analysis to create structural models and how the models fit into use case documentation.

Real-time training: Rather than present this discipline academically, by subject area, we walk the trainee through the modeling of a practical case study. The trainee learns not only what to do, but when to use each technique during the course of a project. We find this approach greatly enhances the ability of trainees to apply what they've learned in the workplace.

Hands-on tool experience (when requested)**:** Upon request, trainees may gain hands-on experience with IBM Rational Rose, providing the kind of BA perspective on the tool's use that can only be provided by an organization devoted to BA training.

Audience

- Business Analysts
- Data Base Administrators, Systems Analysts, Data Modelers expanding their role into the Business Analysis area

Prerequisites

None

Class Format

The course content is presented through:
- An integrated, realistic case study.
- Through lectures and mentoring.

Objectives

Upon completion of this course, you will be able to:
- **Use object modeling to help guide questions during interviews.**
- **Integrate object modeling with use-case analysis.**
- **Create UML class diagrams** that centralize business rules that apply across multiple use cases and business contexts.
- **Create links** from structural modeling diagrams to the use-case model, and vice-versa: from use cases to the diagrams.
- Judge **how much modeling** to do (and why) for different types of projects.
- **Convert class diagrams to entity relationship diagrams** (**ERD**) for use with Relational Data Base Management Systems (RDBMS).
- Understand the BA role on a Data Warehousing project and how to transition from relational transaction databases to a data warehouse.
- Upon request: Use a modeling tool (IBM **Rational Rose**, etc.) to model business requirements.

Content

- Principles of Object Oriented Analysis
  - > Benefit of Object Oriented Analysis
  - > Determining how much modeling to do when the project is for a front-end to an existing legacy system
  - > Objects, classes, inheritance, aggregation, polymorphism
- Creating the essential business class model
  - > Creating a common frame of reference of business concepts (classes) at the start of a project.
  - > Defining key entity (business) classes.
  - > Defining key associations during interviews with the client.
  - > Defining multiplicity during interviews with the client.
  - > Documenting entity classes with UML and Rational ROSE.
  - > Modeling roles in the class diagram: How to model people who interact in numerous ways with the business (e.g., a beneficiary who is also a policy owner).
- Creating the detailed business structural model
  - > Converting the essential business model into a detailed model by adding attributes and operations.
  - > Defining business data rules in the "Attributes" documentation of a class.
  - > Defining business procedural rules in the "Operations" documentation of a class.
  - > Distributing attributes and operations amongst classes when inheritance and aggregation are present in the model.
- Developing the structural model during use-case iterations
  - > Identifying business classes referred to by a use case.
  - > Verifying the use case against the existing class model.
  - > Updating the class model based on the use case.
  - > Linking the use case to the structural model.
- Developing the data model
  - > Reasons for converting the structural OO model (class diagrams) into a data model
  - > Creating Entity Relationship Diagrams (ERDs) from class diagrams
  - > Drawing Entities, Entity Relationships, Cardinalities
  - > Converting inheritance and aggregation relationships to data modeling elements
  - > How inheritance is implemented in a Relational Data Base Management System (RDBMS) such as ORACLE or DB2
- Introduction to Data Warehouses
  - > Mapping the Object Model to the Data Warehouse
- Advanced topics
  - > How the developer uses the business structural model to design the software
  - > Interfaces, Patterns
  - > Introduction to IDEF1
  - > Introduction to new technologies: DSLs (Domain Specific Languages), MDA (Model Driven Architecture), the metapattern