

(BA005) Business Process Modeling (with UML 2 and BPMN)

Duration: 2 days

CDUs (Continuing Development Units): 14

BABOK Compliance: BABOK Release 2

Description: This is a hands-on practical workshop for the BA in business process modeling using workflow models and state-machine diagrams (Harel statecharts) to describe the sequencing of events within a process. Trainees step through a complex real-life case study, learning not only how to draw the diagrams but how and when to effectively use the techniques during a projects' life cycle. Trainees learn how to use business process diagrams to model existing and to-be processes, to define workflow for business use-cases, to supplement the documentation of system use-cases and to define lifecycle rules for business objects. The course covers the most popular standards for business process modeling: UML 2 – a wide-spectrum standard that covers the complete IT project lifecycle – and BPMN – a standard specifically created for business process modeling that is gaining widespread popularity. Trainees will learn to employ UML activity diagrams and BPMN Business Process Diagrams (BPD) to model workflow as well as UML-state machine diagrams to analyze the lifecycle of key business objects. As a supplement, IDEF workflow conventions developed by the military are also included in the printed course material and may be optionally included in class-time instruction.

Why Attend this Course?

Interviews with business stakeholders can often lead to conflicting requirements regarding workflow:

- Business process modeling is an effective way to illustrate these differences and to develop a consensus amongst stakeholders during follow-up interviews or JAD Sessions.

Workflow modeling is a key activity in process improvement:

- The techniques provide an effective means of analyzing existing workflow and comparing proposed improvements.

Complex sequencing rules described by the BA are often misunderstood by developers:

- The techniques in this course result in standardized visual documentation that cannot be misinterpreted by the development team.

The rules that determine how the business treats a business object over its lifecycle are often spread across the requirements documentation.

- The state-machine modeling technique taught in this course results in a visual summary of the object's lifecycle from the time the business becomes aware of it until it is no longer used. UML standardization means these requirements won't be misinterpreted by the development team.

What Makes this Course Stand Apart?

Learn when to apply which techniques: The trainee learns not only what to do, but when to use each technique during the course of a project.

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

Experience: Our course is written and delivered by professionals with extensive practical experience in workflow modeling for IT business system within the context of use-case analysis.

Audience

- IT Business Analysts and their managers
- Systems Analysts and programmers interested in expanding their role into the business area.

Prerequisites

None

Class Format

The course content is presented:

- Through lectures and mentoring.

Objectives

Upon completion of this course, you will be able to:

- **Define workflow rules for a business process.**
- **Consolidate the viewpoints of stakeholders during requirements-gathering sessions** using activity diagrams.
- **Describe business use-case workflow with activity diagrams.**
- **Tie together system use-cases** using activity diagrams with and without partitions (swimlanes) and object flows.
- **Augment system use-case documentation** with activity diagrams.
- **Create UML state-machine diagrams that describe the life cycle of a business object.**
- **Link use-cases to state-machine diagrams.**
- **Convert activity diagrams to BPMN format (BPD).**
- **Supplement: Convert activity diagrams to IDEF format.** (Included in course material; covered in lectures upon request.)
- **Supplement: Understand alternative approaches to the UML standard, including flowcharting, block diagrams and Data Flow Diagrams (DFD).** (Included in course material; covered in lectures upon request.)

Content

- Features of workflow modeling
 - > Evolution of Business Process Modeling
 - > Structured Analysis vs. UML approaches to Business Process Modeling
 - > Unified Modeling Language (UML) notation
 - > Project lifecycle phases
 - > As-Is and To-Be models
 - > Business and Systems Models
 - > Business Process Modeling over the project lifecycle
 - > Rules of precedence
 - > Basic workflow structures: sequential sequencing, repetition, selection, parallel activities
 - > UML standards for workflow: activity, state and sequence diagrams
 - > Representing Use-case Scenarios and Flows graphically as an appendix to the text
- Creating activity diagrams
 - > Activities
 - > Sub-activities
 - > Transitions
 - > Guards
 - > Split and merge
 - > Fork and Join
 - > Partitions/Swimlanes
 - > Advanced activity diagramming techniques:
 - Object flows
 - Using Expansion Regions to model non-sequential activities
 - Using Expansion Region stereotypes to further specify timing considerations
 - Indicating interactions between processes using Signals and Events
 - Sub-activities
 - Tips and Best Practices for creating the workflow model and for communicating it to stakeholders
- Creating workflow textual documentation:
 - > Pre and post-conditions
 - > Metrics
- Creating UML state-machine diagrams
 - > Selecting Business Objects for state-machine modeling
 - > States
 - > State transitions
 - > Transition guards, events and send events
 - > State activities
 - > Composite states: Orthogonal (concurrent) states and Superstates
 - > State History
- Alternatives to the UML
 - > BPMN (Business Process Modeling Notation) and BPD (Business Process Diagram)
 - Flow objects:
 - Events
 - Activities
 - Gateways
 - Connecting objects
 - Sequence Flow
 - Message Flow
 - Swimlanes
 - Pool
 - Lane
 - Converting activity diagrams to BPDs
 - > Data Flow Diagrams (DFD)
 - > Flowcharts
 - > Supplement: Workflow standards developed by the military: IDEF0, IDEF3
 - > Supplement: Block diagrams

BABOK 2 Alignment

This course addresses the following BABOK knowledge areas and tasks:

Knowledge Area (KA)	Mapping to the Course
Enterprise Analysis	The course provides guidance and hands-on experience in workflow modeling, used to analyze As-Is and To-Be (solution) business processes in order to identify gaps. An important input for identifying gaps is the Enterprise Architecture (EA); this course covers the following components of the EA: business process workflow models and state-machine Diagrams. The course also provides guidance and hands-on experience in defining the solution scope using workflow modeling.
Elicitation	The course provides guidance in the use of the following techniques, listed in the BABOK for specifying and modeling requirements (a task within this KA): <i>Process Modeling, State Diagrams</i> .
Solution Assessment and Validation	<i>Process Modeling</i> is used for allocation of and progressive implementation of activities and subprocesses. Process models are also used within the context of assessing organizational readiness.