

Business Process Modeling (with UML 2 and BPMN) Course Summary

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.

Objectives

At the end of this course, students 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.)

Topics

- Features of workflow modeling
- Creating activity diagrams
- Creating workflow textual requirements documentation:
- Creating UML state transition diagrams
- Alternatives to the UML

Audience

This course is designed for IT Business Analysts and their managers also Systems Analysts and programmers interested in expanding their role into the business area.

Prerequisites

There are no prerequisites for this course.

Duration

Two day

Business Process Modeling (with UML 2 and BPMN) Course Outline

I. Features of workflow modeling

- A. Evolution of Business Process Modeling
- B. Structured Analysis vs. UML approaches to Business Process Modeling
- C. Unified Modeling Language (UML) notation
- D. Project lifecycle phases
- E. As-Is and To-Be models
- F. Business and Systems Models
- G. Business Process Modeling over the project lifecycle
- H. Rules of precedence
- I. Basic workflow structures: sequential sequencing, repetition, selection, parallel activities
- J. UML standards for workflow: activity, state and sequence diagrams
- K. Representing Use-case Scenarios and Flows graphically as an appendix to the text

II. Creating activity diagrams

- A. Activities
- B. Sub-activities
- C. Transitions
- D. Guards
- E. Split and merge
- F. Fork and Join
- G. Partitions/Swimlanes
- H. Advanced activity diagramming techniques:
 - 1. Object flows
 - 2. Using Expansion Regions to model non-sequential activities
 - 3. Using Expansion Region stereotypes to further specify timing considerations
 - 4. Indicating interactions between processes using Signals and Events
 - 5. Sub-activities
 - 6. Tips and Best Practices for creating the workflow model and for communicating it to stakeholders

III. Creating workflow textual documentation:

- A. Pre and post-conditions
- B. Metrics

IV. Creating UML state-machine diagrams

- A. Selecting Business Objects for state-machine modeling

- B. States
- C. State transitions
- D. Transition guards, events and send events
- E. State activities
- F. Composite states: Orthogonal (concurrent) states and Superstates
- G. State History

V. Alternatives to the UML

- A. BPMN (Business Process Modeling Notation) and BPD (Business Process Diagram)
- B. Flow objects:
- C. Events
- D. Activities
- E. Gateways
- F. Connecting objects
- G. Sequence Flow
- H. Message Flow
- I. Swimlanes
- J. Pool
- K. Lane
- L. Converting activity diagrams to BPDs
- M. Data Flow Diagrams (DFD)
- N. Flowcharts
- O. Supplement: Workflow standards developed by the military: IDEF0, IDEF3
- P. Supplement: Block diagrams

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