

UML Foundation

Description

The Unified Modeling Language (UML) is the market standard used to represent a software system in its various aspects. It is a powerful way to model, specify and communicate the needs and requirements that a desired system must meet, as well as the structure and dynamics of the proposed solution. This course covers the main conceptual diagrams of UML. The theory is reinforced by practical exercises based on a case study.

Course Content

Module 1: Introduction

- Lesson 1: What is quality?
- Lesson 2: What is a model?
- Lesson 3: Why model?
- Lesson 4: What is the object approach?
- Lesson 5: Some fundamental concepts of the object approach (notion of class, encapsulation, inheritance, specialization, generalization, polymorphism, aggregation)
- Lesson 6: History of UML
- Lesson 7: Overview of UML Diagrams

Module 2: Use Case Diagram

- Lesson 1: Introduction
- Lesson 2: The actors (main and secondary)
- Lesson 3: Use cases
- Lesson 4: Representation of a use case diagram
- Lesson 5: Relations between actors
- Lesson 6: Relations between actors and cases of utilisation
- Lesson 7: Use case relationships (including extensions and inclusions)
- Lesson 8: Additions (package, namespace, workbook, stereotypes, notes)

Module 3: Activity Diagram

- Lesson 1: Introduction
- Lesson 2: Activities
- Lesson 3: Actions (receiving, sending, waiting)
- Lesson 4: Decisions and conditions
- Lesson 5: Nodes (initial, final, flow, fork, merge)

Module 4: Description of a use case

- Lesson 1: Introduction
- Lesson 2: Actors (Stakeholders and their interests)
- Lesson 3: Trigger event
- Lesson 4: Pre-conditions (conditions required for the case to be applicable)
- Lesson 5: Nominal scenario (expected sequence of the case)
- Lesson 6: Alternative flows (exception handling)
- Lesson 7: Post-conditions (consequences of the exit of the case)
- Lesson 8: Constraints (non-functional information)

Module 5: Class Diagram

- Lesson 1: Introduction
- Lesson 2: Classes (with their attributes and methods)
- Lesson 3: Links between classes (with cardinality, aggregation, composition, generalization and inheritance)

Module 6: State diagram - transitions

- Lesson 1: Introduction
- Lesson 2: State (including initial and final)
- Lesson 3: Events (signal, call, change, time)
- Lesson 4: Transitions
- Lesson 5: Decision

Module 7: Sequence Diagram

- Lesson 1: Introduction
- Lesson 2: Actors
- Lesson 3: Lifelines
- Lesson 4: Activation box
- Lesson 5: Messages (synchronous and asynchronous, response, delete)
- Lesson 6: Operators (alternative, option, loop)

Lab / Exercises

Lab 1: Develop a Use Case Diagram Lab 2: Develop an Activity Diagram Lab 3: Develop a Use Case Lab 4: Develop a Class Diagram Lab 5: Develop a State Diagram Lab 6: Develop a Sequence Diagram

Documentation

- Digital courseware included

Participant profiles

- Business Analysts
- Architects
- Developers

Prerequisites

- No prerequisites

Objectives

- Understand the basics of UML
- Develop diagrams (use cases, activities, classes, states and sequence)
- Develop a use case

Niveau

Fondamental

Classroom Registration Price (CHF)

1600

Virtual Classroom Registration Price (CHF)

1500

Duration (in Days)

2

Reference

