

# Subscription Object Oriented Analysis

## Description

This 7-lesson course provides a detailed examination of the use of the UML in creating a domain object model. It assumes you have requirements written as use cases and demonstrates how to create object models from those documents. This course is designed for Analysts, Designers, and Software Architects. It is part of a series that includes Object Oriented Design and Introduction to Software Architecture. Therefore, the course is focused on developing good domain object models that will be used to create detailed designs. The majority of the course is composed of lectures and exercises designed to develop the skill of producing good domain object models.

Participants will be exposed to UML analysis artifacts, including use case diagrams, activity diagrams, class diagrams, sequence diagrams, and collaboration diagrams. They will learn when to use each diagram to model domain information about a project.

This course is in the form of short readings followed by Lab exercises. A mentor/grader is assigned to you email to answer questions and evaluate your lab results by email. In addition, a course weblog is provided for students and mentors to write articles, post questions, and post answers. The course does not require any particular UML tool. Exercises can be completed using any drawing tool available. Understanding of the course material will be demonstrated by completion of the lab exercises, end-of-lesson quizzes and Pre/Post Assessments for the course.

## Overall Course Objective

Participants will develop the skill of producing good domain object models that will be used to create detailed designs.

## Course Objectives

- Describe the UML design artifacts - what they are, when they are produced, by whom, and for what purpose.
- Create class, sequence, and collaboration diagrams from use case diagrams, use case documents, and activity diagrams.
- Create detailed class designs using attributes and operations.
- Create detailed class relationship designs using associations and multiplicity.

## Scope and Intent

The purpose of this course is to help participants develop the skill of producing good domain object models that will be used to create detailed design. UML diagrams presented include use case, activity, class, sequence, and collaboration. Participants will understand when to use each kind of diagram and will be able to create the appropriate diagrams for their projects.

## Audience

This course is intended for:

- Analysts
- Designers
- Software Architects

# Outline of Lessons

1. Introduction to UML
  - Purpose and Background
  - Websites
  - Books
  - Tools
  - UML Diagrams - Use Case, Activity, Class, Sequence, Collaboration, Object, State, Component, Deployment
2. Use Cases and Activity Diagrams
  - Use Case diagrams
  - Use Case documents
  - Activity diagrams
3. Key Abstractions & Simple Sequence Diagrams
  - Basic Class Diagram
    - Classes
    - Associations
  - Basic Sequence Diagram
    - Objects
    - Messages
    - Sequencing
  - Relationships between class diagrams and sequence diagrams
4. Use Case Realizations
  - Creating a use case realization
  - Traceability to use cases
  - Detailed Sequence Diagram
    - Object creation and destruction
    - Conditional Messages
    - Time indicators
5. Collaboration Diagrams
  - Creating a Collaboration Diagram
    - Objects
    - Links
    - Messages
    - Sequencing
  - Relationship to Sequence Diagrams
6. Domain Class Diagrams
  - Attributes
  - Operations
  - Multiplicity
  - Role Names
7. Reviewing the Domain Model
  - Reviewing Use Case Realizations
  - Reviewing for Potential Problems
  - Reviewing with the End User
  - Reviewing with the Customer
  - Reviewing with the Development Team
  - Reviewing for Flexibility
  - Managing the Issues

## Duration

7 lessons, averaging 2 hours per lesson

## **Prerequisites**

Ability to use Adobe Reader to read documents.

Ability to use a drawing tool to produce diagrams.

It is helpful to have completed a course on writing use cases before this one, but is not required.

## **Source Materials**

- "UML Distilled, Third Edition", Martin Fowler, Addison Wesley, ISBN 0-321-19368-7
- "Applying Use Cases, Second Edition: A Practical Guide", Geri Schneider, Jason P. Winters, Addison Wesley, ISBN 0-201-70853-1

## **SME / Content Providers**

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## **Instructors**

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