ADE200 : UML Overview

Code :	ADE200	**Duration :**	1 day	**Category :**	Analysis and Design

Audience :

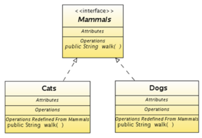
Developers, designers, architects, managers and other interested persons who want to get an overview of the Unified Modeling Language (UML) standard for modeling systems.

Prerequisites :

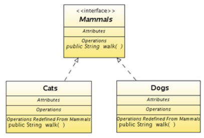
Knowledge of and experience with system development and object orientation is beneficial to a good understanding but not strictly required.

Realization :

The theory is treated on the basis of presentation slides and is interspersed with exercises. UML models are used as demonstration of the concepts. The course material is in English.



UML Overview



Contents :

This course gives an overview of the UML language for modeling systems. It discusses the UML syntax, symbols, diagrams and views. After an introduction to the UML specification and the meaning of UML as a meta language, the courses addresses Structural Modeling and the diagrams used like class and object diagrams, component and deployment diagrams. Also domain modeling and the modeling of possible relationships between classes are discussed like inheritance, associations, aggregations, compositions and dependencies. Next attention is paid to Use Case Modeling, the Use Case Diagram, the role of actors and the accurate description of the interaction steps. The next subject is Dynamic Behavior Modeling where interaction diagrams like sequence diagrams and collaboration diagrams are discussed. The modeling of system states using state chart diagrams, the difference between passive and active objects and the role of threads is also part of the subject matter. There is also attention for the role of activity diagrams in which concepts such as control and data flow and swim lanes are discussed. Finally a number of advanced concepts such as the UML modeling of packages and subsystems and the use of stereotypes, constraints, tagged values and the Object Constraint Language (OCL) are part of the program.

Module 1 : UML Introduction

UML language
Modeling reasons
UML Goals
UML Specification
UML Building Blocks
Well Formedness Rules
Semantic Rules
Syntactic Rules
Metamodel Architecture
UML Metamodel Laye

Module 2 : Structural modeling

Structural Modeling?
Core elements
Core Relationships
Structural Diagrams
Classes and Objects
Types
Interfaces
Associations
Composition
Generalization
Dependencies
Packages
Links
Component Diagrams
Deployment Diagrams
When to model Structure
Structural Modeling Tips

Module 3 : Use Case Modeling

Use Case Modeling?
Core Elements
Core Relationships
Use Case Diagram
Use Case Relationships
Actor Relationships
Use Case Description
When to model Use Cases
Use Case Modeling Tips

Module 4 : Interactions

Interactions
Core Elements
Core Relationships
Instances and Links
Sequence Diagrams
Collaboration Diagrams
Arrow Label
Kinds of Arrows
Recursions
Conditions
When to model Interactions
Modeling Tips

Module 5 : State Machines

State Machine Concepts
State Machine Diagram
Diagram Elements
State Machine Usage
Event Driven Behavior
State Machines and Objects
Object Behavior
Objects and Threads
Passive Objects
Active Objects
Entry and Exit Actions
Order of Actions
Internal Transitions
State Activities
Guards
History Stat

Module 6 : Activity Graphs

Activity Diagram Applications
Control Flow
Object and Data Flow
State Machine
Basis in State Machines
Steps in Activity Diagrams
Actions and Sub Activities
Coordinating Steps
Decisions
Sync State
Convenience Features
Swimlanes
When to use Activity Diagrams
Modeling Tips Activity Diagrams

Module 7 : Advanced Concepts

Model Management
Packages
Core Concepts
Visibility
Import and Access
Package Inheritance
Subsystems
Specification and Realization
Extension Mechanisms
Semantic Variations in UML
Stereotypes
Constraints
Tagged Values
Profiles
Object Constraint Language (OCL)