

UML Overview

A Tour for Analysis and Design

The Unified Modeling Language (UML) is the industry standard notation for describing object-oriented systems. It can be used as a medium for describing existing systems as well as for communicating the requirements and structure of new ones. The notation includes a number of diagram types that can be applied from analysis, through design and to system deployment. Although independent of development lifecycle, UML is intended to support iterative-and-incremental, architecture-driven development.

The *UML Overview* course presents the core modelling notation of UML 2.0 through lectures.

Objectives

- Present an overview of the UML notation and how it fits into a development lifecycle
- Appreciate the relationship between UML and conventional OO concepts
- Understand what UML features are available for modelling the static and dynamic aspects of an object-oriented system

Audience

The course is suitable for software developers familiar with object-oriented principles and practices. Any previous experience with object-oriented programming or notations is advantageous.

Content

Modelling Purpose of a model · UML · UML evolution · UML metamodel · Static and dynamic models · Logical and physical models

Use Cases Scope and system boundary · Use cases and actors · Documenting use cases · Use case inclusion · Use case instances · Use case guidelines

Classes and Objects Class and object diagrams · Operations and attributes · Feature types and constraints · Visibility · Class specialisation and generalisation · Interfaces and realisation

Object Relationships Dependency, association, aggregation and composition object relationships · Multiplicity · Navigability · Qualified associations · Association classes

State and Activity Object lifecycles · Objects and events · State machine diagrams · Composite states · Activities · Activity diagrams · Partitioning and swimlanes

Interaction Interaction diagrams · Sequence diagrams · Selection and iteration · Concurrency · Communication diagrams · Other interaction diagrams

Packages and Components Packages and package relationships · Layering · Components and component diagrams · Composite structure diagrams · Artefacts and deployment diagrams

Development Process The Rational Unified Process · Inception, elaboration, construction and transition · Other processes · Applying UML

Additional Details

Duration 1 day

Setup Projection facilities for a laptop · Whiteboards and/or flip charts

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