Object Oriented System Architecture and Design using UML Training Course - OOSAD UML - 2 Days

This UML training course is aimed at system architects and developers who want to create a layered, component based, model of system architecture and design in order to maximise the maintainability, re-use and extensibility of the resulting code. The industry best practice modelling techniques are based on the Unified Modelling Language v2.0 and are taught within the context of a well defined model-driven software development process. The modelling employed is applicable to a wide variety of technologies and sufficiently detailed for code generation. Each technique is taught to the level required for competence on a real project. Understanding is tested and improved with exercises based on a real-world project example and using a suitable case tool.

Delegates will learn:

- The detail of object orientation
- The necessary detail of the Unified Modelling Language
- How to develop a flexible system architecture from an object oriented analysis model
- How to develop component and deployment models for the system
- How to model the design of a component using sub-systems and interfaces
- How to build libraries of re-useable classes using generalisation and inheritance
- How to model the use of technology and frameworks as series of design patterns
- How to integrate libraries and frameworks into the design of components
- How to generate frame code and keep the design and code models synchronised
- How to architect, design, build, test and deliver components as part of an incremental model-driven development process

Suitable for:

System Architects, System Designers, Developers and Programmers with at least 2 years experience, preferably in a modern object-oriented language. This course is not suitable for those seeking certification as a step towards a qualification. See UML Certification for a detailed discussion.

Pre-requisites:

Completion of the CRaG Systems Object Oriented System Analysis using UML Training Course or equivalent

On-Site Courses:

Training courses are delivered at the clients' site and attendance is limited to 12 students. Courses normally start at 9.30am on the first day and 9.00am on subsequent days. Courses normally finish at 5.00pm each day. The client is expected to provide an appropriate venue, equipment and refreshments. Required equipment includes an SVGA/XGA projector and screen, whiteboard or flipchart and at least one computer per two students loaded with a UML case tool. For a discussion on case tool use please see Case Tool Use on Courses. Printed course manuals for each student with copies of all presentations, exercises and solutions are provided. For a full discussion of on-site course issues please see On-Site Course Logistics.

Scheduled Public Courses:

This course is currently not available as scheduled public training. Please see the Scheduled Public Courses page for available courses.

Training Course Outline

Day 1

Introduction and Review

People - Course Structure - Use Cases and System Analysis - Architecture and Design - A Process for Modelling

Review Workshop (if required)

Architecture, Components and Implementation Diagrams

Packages and Dependencies - Stereotypes - Control Objects - Layered Architectures - Interfaces, Subsystems and Components - Task Modelling - Component Diagrams - Deployment Diagrams

Architecture Workshop

Class Relationships and Inheritance

Class Similarities and Differences - Generalisation Syntax - Generalisation Hierarchies - Multiple Inheritance - Polymorphism - Generalisation versus Interface - Class Dependency

Day 2

Generalisation Workshop

Design Patterns

Reflexive Aggregate - Collection Class - Observer - State Machine - Meta-Model - Modelling Patterns

Design Patterns Workshop

Detailed Design

Subsystem Design - Architectural Mechanisms - Linking to Libraries and Frameworks - Visibility and Other Properties - Completing the Model - Incremental Development - Traceability and Review

Design Workshop