



PERSISTENT

GoF Design Patterns-1

Duration: 3 days

Introduction	Focus on good design, how to apply patterns in any OO language, lots of case studies
Learning Objectives	Get a deeper understanding of OO design Apply the right design principles Identify bad design Identify which pattern to use Use tried & tested solutions to common problems Avoid pitfalls
Prerequisites	Good knowledge of any OO language and object oriented principles, minimum 2 years of development experience required
Hardware/Software	Standard Windows machine, Visual Studio 2005/2008, MSDN, Linux Box, Eclipse IDE for Java
Recommended Books	Design Patterns Elements of Reusable Object-Oriented Software by <i>Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides</i> Design Patterns Explained - A new Perspective on Object Oriented Design by <i>Alan Shalloway, James R. Trott</i> Agile Principles Patterns and Practices in C# by <i>Robert C. Martin & Martin Micah</i>
Relevant Trainings	GoF Design Patterns (Level 2)
Remarks, If any.	Every pattern is preceded with a case study. The examples will be provided in C++, C# or Java

Contents		% Weightage of topic
Module 1	<u>Review of Object Oriented Technology</u>	5%
Module 2	<u>Introduction to Patterns</u>	0%
Module 3	<u>Creational Patterns</u> Overview of creational patterns Concept of factories Factory Method – efficient object creation Singleton – unique instance, multithreading issues, double checked locking Prototype - prevent expensive creation of objects from scratch	10%
Module 4	<u>Structural Patterns</u> Overview of structural patterns Adapter – mixing incompatible interfaces Proxy – representative, types Facade – simple interface for a complex system Decorator – alternative to inheritance	20%
Module 5	<u>Behavioral Patterns</u> Overview of behavioral patterns Modifying behavior through inheritance & composition Strategy - different algorithms Chain of Responsibility – multiple handlers for a request Observer – notifications, publish subscribe, push-pull model State - represent states as objects Command - encapsulate requests as objects	20%
Module 6	<u>Conclusion</u> Pros and cons of design patterns How and when to apply the right pattern Anti-Patterns – Overview	5%