

Java EE Patterns

Overview

The Patterns course provides students with a thorough description of software design patterns that can be used with the Java Platform, Enterprise Edition (Java EE platform) technology to effectively solve complex business problems. Studying design patterns, such as the patterns presented in this course, assists developers in learning tried and proven techniques for solving specific types of common design problems. The design patterns described in this course help developers design enterprise applications that are more flexible, maintainable, reliable, and efficient.

Audience

Students who can benefit from this course include individuals responsible for the design of distributed software applications. This includes Java technology programmers, Java EE software developers and Enterprise architects.

Prerequisites

A minimum of 6 months programming experience in the Java language prior to attending this course will be necessary to be successful in understanding the course material. Students should be comfortable with JSP, Servlets and basic XML, read and work with Object-Oriented modeling techniques, such as the Unified Markup Language (UML).

Course Format

This is a hands-on course. We apply a powerful learning cycle of short lecture, examples and labs on each topic. Each student gets lab code and the entire course content printed out (organized in a ring binder).

Course Duration

Five days (35 hours), 9:00 AM-5:00 PM (1h lunch break); typically ends by 4:00 PM on the last day.

Course Details

1. Exploring Object-Oriented Design Principles and Design Patterns
 - Fundamental object-oriented design concepts
 - Fundamental object-oriented design principles

- Characteristics of design patterns
- 2. Using Gang of Four Behavioral Patterns
 - Basic characteristics of the Behavioral patterns
 - Strategy pattern
 - Command pattern
 - Iterator pattern
 - Observer pattern
- 3. Using Gang of Four Creational Patterns
 - Basic characteristics of the Creational patterns
 - Factory Method pattern
 - Abstract Factory pattern
 - Singleton pattern
- 4. Using Gang of Four Structural Patterns
 - Basic characteristics of the Structural patterns
 - Facade pattern
 - Proxy pattern
 - Adapter pattern
 - Composite pattern
 - Decorator pattern
- 5. Using Architectural Building Blocks
 - Architectural patterns to design patterns
 - Model View Controller pattern
 - Layers pattern
 - Tiers and layers in Java EE platform applications
- 6. Introducing Java EE Patterns
 - Java EE pattern philosophy
 - Java EE patterns and tiers in the Java EE pattern catalog
- 7. Using Integration Tier Patterns
 - Features and purpose of the Integration Tier patterns
 - Service Activator pattern
 - Data Access Object (DAO) pattern
 - Domain Store pattern
 - Web Service Broker pattern
- 8. Using Presentation-to-Business Tier Patterns
 - Basic characteristics of the Presentation-to-Business tier Java EE patterns
 - Service Locator pattern
 - Session Facade pattern
 - Business Delegate pattern
 - Transfer Object pattern
- 9. Using Intra-Business Tier Patterns
 - Basic characteristics of the Intra-Business tier Java EE patterns
 - Application Service pattern
 - Business Object pattern

- Transfer Object Assembler pattern
 - Composite Entity pattern
 - Value List Handler pattern
10. Using Presentation Tier Patterns
- Basic characteristics of the Presentation tier Java EE patterns
 - Model 2 Architecture and the Apache Struts Framework
 - Intercepting Filter pattern
 - Front Controller pattern
 - Application Controller pattern
 - Context Object pattern
11. More Presentation Tier Patterns
- View Helper pattern
 - Composite View pattern
 - Dispatcher View pattern
 - Service to Worker pattern
12. Exploring AntiPatterns
- AntiPatterns
 - Integration Tier AntiPatterns
 - Business Tier AntiPatterns
 - Presentation Tier AntiPatterns
13. Java EE BluePrints Design Guidelines
- Java Pet Store demo software
 - Java EE patterns used in the Java Pet Store demo software