

Design Patterns – Course Outline

1 Duration

- 3 days

2 Objectives

After this course the attendees will

- Understand Intent, motivation, applicability, structure, implementation, known uses of various design patterns
- Though primarily the scope is covering all 23 patterns from GoF, course will also cover some of the Enterprise patterns from Java EE core patterns that are still relevant and some from Martin Fowler's Pattern oriented Enterprise Architecture and overview of other patterns / anti-patterns

3 Audience

This course is for Java developers and module leads who dislike reinventing wheels especially in this reusable software world

4 Pre-requisite

- Basic Java programming knowledge and experience
- Basic understanding of UML diagrams

5 Hardware & Network Requirements

- Desktop/Laptop with minimum 8 GB RAM
- Open Internet connection

6 Software Requirements

- Windows / Linux / Mac OS
- Java 11 (preferred)
- Eclipse / STS / IntelliJ IDE

7 Outline

Hands-on: Demonstration of individual patterns and hands-on for selected patterns

Module-1: Introduction to Design Patterns

- What is Design Pattern
- Need for Design Patterns
- Types of Design Patterns

Module-2: Creational Patterns

- Singleton
- Factory
- Abstract Factory
- Prototype
- Builder

Module-3: Structural Patterns

- Adapter
- Composite
- Proxy
- Bridge
- Decorator
- Facade
- Flyweight

Module-4: Behavioral Patterns

- Chain of responsibility
- Command
- Iterator
- Mediator
- Memento
- Observer
- State
- Strategy
- Template
- Visitor
- Interpreter

Module-5: Enterprise Patterns

- Core Java EE Patterns (selected) - MVC, Filter, Interceptor, FrontController, DAO
- Web presentation pattern – Repeated Menu Pattern

Module-6: Other Patterns

- Overview of Concurrency Patterns
- Overview of EAI Patterns
- Overview of Anti Patterns