

This course introduces the participants to the Java Design Principles and patterns.

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## Audience

- This course is designed for developers, designers and architects.

## Prerequisites

- A basic knowledge of Object-Oriented Programming and Java is needed.

## Course Length

- Two Days

## Learning Objectives

- Solve common design problems using existing solutions
- Use patterns at various stages of Software Development Life Cycle (SDLC)
- Understand the constituents of a patterns

## Teaching Methods

- Lectures
- Hands-on workshops

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## Course Outline

WTJ9

### Introduction to Patterns

- Importance of Patterns
- Origin
- Design Patterns Diagrams/UML
- When to apply Patterns

### Overview of Object-Oriented Concepts and Responsibilities

- Encapsulation
- Inheritance
- Polymorphism
- Abstraction
- Cohesion
- Coupling

### Design Principles

- Open Closed Principle
- Interface Segregation
- Dependency Inversion
- Favoring Composition
- Common Closure

### Creational Patterns

- Singleton
- Factory Method
- Abstract Factory

### Behavioral Patterns

- Template Method
- Strategy
- Iterator
- Observer
- Command
- Visitor
- Memento

### Structural Patterns

- Adapter
- Façade
- Composite
- Decorator
- Proxy
- Flyweight
- Bridge