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QUALITY, AGILITY, ADAPTABILITY
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Design Patterns (Java)

Duration: (5 half Day 4hrs each session)

Course Outline "

Day 1:

- Inheritance vs Delegation
- Principles of good design:
    - Liskov Substitution principle
    - Don't Repeat yourself
    - Self-documenting code
    - Null object
    - Single responsibility principle
    - Interface segregation principle
    - Open Closed principle
    - Dependency Inversion Principle
    - Samurai principle

  For each design principle/guideline there will be an example given. For most principles there will also be one or more exercises.
- Explanation of the following design patterns with class diagram, example, and code:
    - Strategy
    - Observer
    - Decorator

Day 2:

Explanation of the following design patterns with class diagram, example, and code:

- Factory and Abstract Factory
- Singleton
- Command
- Adapter
- Facade

Day 3:

Explanation of the following design patterns with class diagram, example, and code:

- Template
- Iterator
- Composite
- State
- Proxy
- Bridge

Day 4:

- Explanation of the following design patterns with class diagram, example, and code:
  - Builder
  - Flyweight
  - Chain of Responsibility
  - Interpreter

Day 5:

- Explanation of the following design patterns with class diagram, example, and code:
  - Mediator
  - Memento
  - Prototype
  - Visitor
- Summary of design patterns.
- Case study

Notes:

- Perquisite: Participants must know the basics of Java language and basic class diagram notations in UML.
- Topics may be moved from one day to another. All topics will be covered by the end of the training.
- For most design patterns, the participants will have to do an exercise.