

## Day - 1

- - Java Fundamentals - Object-oriented Design
- - Basics
  - Coherence, Coupling, and God Classes
  - What Is an Object?
- - Module Overview
  - More Class Relationships
  - Encapsulation
  - Assigning Responsibilities
  - Demo: Exercising the System
  - Demo: the Single Responsibility Principle
  - Demo: Defending Encapsulation
  - Abstraction: Encapsulation or Inheritance?

- - Module Overview
  - Don't Repeat Yourself
  - The Liskov Substitution Principle
  - Overriding and Dynamic Dispatch
  - Demo: Dynamic Dispatch
  - Using Overridden Methods
  - Understanding Inheritance
  - Abstract Classes and the Open-closed Principle
- - Problems with println()
  - Money and Delegation: Getters and Setters Are Evil
- - The Is-a Test
  - Simple Extension and Template Method
  - Delegation Under Inheritance: Shape
  - Liskov Substitution: Stack, Ver. 1
  - Fragile Base Classes: Stack, Ver. 2

- - Module Overview
  - Interfaces What Are They, and Why Do We Need Them?
  - Demo: Paying through an Interface
  - Demo: The Fragile Base Class Problem
  - Delegation and the Decorator Pattern
  - The Strategy Pattern
  - The Interface Segregation Principle
  - The Dependency Inversion Principle
- - Getting Started
  - Learning Path
  - Spring Boot Overview
  - Features of Spring Boot
  - Summary

## Day - 2



- Defining Contracts
- Fixing Fragility
- Dependency Inversion



- The Open Closed Principle
- Builder



- Overview
- Demo: Spring Initializr
- Demo: Spring Boot CLI
- Demo: Auto Configuration
- Spring Boot Annotations
- Spring Boot Properties
- Spring Boot Profiles
- Summary



- Overview
- H2 Database
- Why Use Templating Engines?
- ORM with JPA
- Entities
- Demo: H2 Integration
- Demo: H2 Console
- Demo: Partials
- Summary



- Dependency Injection
- Summing Up



- Course Overview
- What is Object Orientation?
- From Use Cases to Conceptual Classes
- Class Relations
- Deriving Software Classes, Part 1
- Deriving Software Classes, Part 2
- Demo: Instance and Static Methods



- Overview
- MVC Design Pattern
- Demo: MVC in Action
- Packaging and Deployment
- Demo: Uber Jar
- Summary



- Overview
- REST Architecture
- Demo: RESTful Web Application
- Demo: Testing with URL
- Response Formats
- Exception Handling
- Demo: Exception Handling
- Summary