Spring and Hibernate

1: Spring Basics

- o What is Spring Framework
- o Inversion of Control
- o Dependency Injection
- o Bean Factory
- o Developing First Spring Application

2: Spring Container

- o Built-in Bean Factories
- o Application Context
- o Wiring Beans
- o Bean Lifecycle in Container
- o Spring Events

3: Spring AOP

- o Introduction to AOP
- o Role of AOP in Spring
- o AOP Advice
- o AOP Pointcuts
- o Spring AOP Introductions
- o ProxyFactoryBean

4: Spring Data Access

- o JDBC Abstraction Layer
- o Data Access Exceptions
- o DAO Support

5: Spring O-R /mapping

- o What is O-R Mapping
- o O-R Mapping support in Spring
- o Hibernate Support / Mapping

6: Spring Transaction Management

- o Transaction Abstraction in Spring
- o Transaction Strategies
- o Programmatic Transaction
- o Declarative Transaction

7: Spring Remoting and Enterprise Services

- o Introduction to Spring Remoting
- o Java RMI in Spring
- o Accessing JNDI
- o Invoking EJB from Spring
- o Web Service in Spring using JAX-RPC Support
- o Messaging Support in Spring using JMS
- o Sending Mail with Spring Mail
- o Scheduling using Timer Support

8: Spring Web MVC Framework

- o Web MVC Architecture
- o Role of DispatcherServlet
- o Controller
- o Handler
- o View Resolving
- o Data Binding
- o File Upload Support

9: Securing Spring Application

- o Acegi Security System for Spring
- o Authentication
- o Access Control
- o Web Application Security
- o Method Invocation Security

Relational Persistence Using Hibernate

1: Introduction to Hibernate

- o Drawbacks of direct JDBC
- o Plain Old Java Object (POJO)
- o What is O-R Mapping
- o Simple Database Application

2: Hibernate Configuration

- o Required JAR Files
- o Hibernate configuration File
- o Hibernate properties File
- o Hibernate XML File
- o SQL Dialects

3: Hibernate Concepts

- o Id and Primary Key
- o Id Generation Methods
- o SessionFactory
- o Session
- o Transaction
- o Developing CRUD Application

4: Hibernate O-R Mapping

- o Mapping Declarations
- o Modeling Composition with Relationship
- o Modeling Composition with Components
- o One-to-One Association
- o One-to-Many Association
- o Many-to-Many Association
- o Uni and Bidirectional Associations
- o Hibernate Value Types
- o Custom Types

5: Manipulating and Querying

- o Persistent Objects
- o Object Loading
- o Executing Queries
- o Iterating Results
- o Scalar Results
- o Bind Parameters Pagination

6: Hibernate Query Language

- o Select clause
- o From clause
- o Where clause
- o Aggregate functions
- o Expressions
- o Sorting
- o Grouping
- o Sub queries

7: Criteria Queries

- o Creating Criteria
- o Narrowing the Result
- o Ordering the Result

8: Native SQL

- o Using SQL Query
- o Named SQL Query
- o Using Stored Procedure for Querying
- o Creating Custom SQL for CRUD

9: Transaction and Concurrency

- o Session and Transaction Scopes
- o Database Transaction Demarcation
- o Optimistic Concurrency Control
- o Pessimistic Concurrency Control
- o Connection Release Modes