+44 7989 401397
info@olsensoft.com

Spring and Hibernate Development (5 days)

Course overview

The Spring Framework is one of the leading lightweight architectures for creating enterprise-scale applications in Java. Hibernate is a popular object-relational mapping tool, and is well-suited to Spring-based solutions. This course provides thorough coverage of both technologies, and shows how they can be used together effectively.

You will learn how to use Spring to create enterprise-scale components including Web applications, Web services, data-access components, and messaging components. You will also learn how to use Hibernate to map Java classes to databases, and how to execute queries using a variety of techniques.

What you'll learn

- Creating and using Spring beans
- Implementing dependency injection
- Using Spring data access and transaction APIs
- Creating Spring MVC Web applications
- Defining and using Web services using Spring
- Understand Hibernate mapping and API choices
- Mapping classes to tables
- Using JPA and/or HQL to query entities
- Mapping associations

Prerequisites

- At least 6 months Java programming experience
- Familiarity with relational databases and SQL

Course details

- Spring Framework - Essentials: Overview of Spring; Dependency injection and Inversion of Control (IoC); Aspect-Oriented Programming (AOP) with Spring; Test-Driven Development principles; Defining a first application
- Using Inversion of Control (IoC): Implementing IoC in Spring; Implementing dependency injection via beans and bean factories; Spring bean definition profiles and environments
- More about Spring Bean Configuration: Property editors; Type converters; Autowiring and component scanning; Spring Expression Language; Spring unified property management; Bean definition profiles; Caching

- Java-Based Bean Configuration: Using the @Configuration annotation; Dependency injection in Java-based configuration; Using Spring support for XML namespaces in Java-based configuration; Accessing properties
- Understanding the Application Context Lifecycle: Bean factory post processing; Bean post processing; Implementing @PostConstruct and @PreDestroy methods; Understanding dynamic proxies
- Aspect-Oriented Programming (AOP): Spring AOP architecture; Defining pointcuts; Defining joinpoints; Implementing advice methods; Understanding pointcut designators; Implementing introductions
- Spring Data Access: Spring data access concepts; JdbcTemplate; Spring repositories and application architecture; JPA integration; Hibernate integration
- Spring Transactions: Local vs. global transactions; Understanding PlatformTransactionManager; Declarative transactions; @Transactional; Advising transactions; Roll-backs; Bean-specific transactions
- Creating Web Applications with Spring Web MVC: Overview of MVC; Spring MVC implementation; Configuring a dispatcher servlet; Defining a controller; Mapping request parameters; Mapping path variables; Accessing HTTP cookies, headers, and session state
- Going Further with Spring Web MVC: Form handing; Formatting; Validation; Java-based MVC configuration; Ajax support; Asynchronous requests
- Spring Web Services: Hosting SOAP web services in Spring; Implementing RESTful services; Using Spring REST annotations; Implementing RESTful clients
- Getting Started with Hibernate: Object-relational mapping (ORM) concepts and issues; Overview of mapping; Introduction to HQL and JPA
- Query Techniques: Finding objects by primary key; Querying for entities; Using functions; Ordering, paging, and filtering; Projections; Handling simple associations; Named queries
- Mapping Classes by using Annotations: Getting ready for annotations; Using annotations; Strategies for generating IDs; Embedded objects
- Managing Entities: Entity states; Managing attached entities; Managing detached entities
- Mapping Associations: Relationships and associations; Defining 1-1 associations; Defining 1-many associations; Defining many-many associations; Defining join classes; Cascading