

Course 444: Advanced J2EE Using Spring 1.2 (5 days)

Course Description...

This five-day, comprehensive hands-on workshop is geared for developers who need to get up and running with developing enterprise application using the Spring Framework. Throughout the course students learn the best practices for writing enterprise applications in Java, using sound development techniques. This comprehensive course also covers essential Spring topics and skills.

The workshop is about 50% hands-on lab and 50% lecture. Over a dozen complete “mini-projects” are laced throughout the course, designed to reinforce fundamental skills and concepts learned in the lessons, all working in the Spring 1.2 environment. Because these lessons, labs and projects are presented in a building block fashion, students will gain a solid understanding of not only the core concepts, but also how all the pieces fit together in a complete application.

What You’ll Learn...

Students who attend Advanced J2EE Using Spring 1.2 will leave the course armed with the skills they require to develop solid enterprise applications written in Java and Spring, using sound coding techniques and best coding practices. This course quickly introduces developers to the various areas supported by Spring and educates them regarding Spring's strengths and weaknesses.

The Spring Framework is the latest offering in the Java frameworks arena. It is a powerful framework designed to support development in the Java/J2EE areas including support for other popular technologies like Hibernate and JDO. As an already maturing technology Spring implements best practices while making the job of implementing large scale Java applications simpler. The Spring Framework includes advanced support for persistence, object/relational mapping, web presentation, and report generation, and includes APIs tailored to all these technologies.

This course includes coverage of many of the essential Spring capabilities, and can be tailored to focus exactly on the areas that you are interested in.



Learning Objectives...

- Understand and use the Spring Framework
- Understand and use Spring APIs
- Use Spring to create Web applications to an introductory level.
- Test applications using JUnit
- Understand how to properly test your applications while developing them
- Best practices for Spring
- Understand Spring's strengths and weaknesses
- Debug Java programs developed using Spring
- Understand not only the fundamentals of the Spring Framework, but also it's importance, uses, strengths and weaknesses
- Understand the basics of Spring and how it relates to enterprise application development in a J2EE environment
- Learn to use Spring persistence and presentation APIs
- Understand how Spring views the design of applications versus a standard J2EE model
- Understand the Spring APIs and when to use them.
- Understand the Spring interfaces, templates and MVC model
- Learn good Java coding style using Spring
- Create well structured enterprise applications
- Compile and execute programs with the Sun Java 2 development tools and with an Integrated Development Environment (IDE) of your choice
- Use the core Spring concepts (IoC containers, templates, J2EE services)
- Understand AOP and its use in Spring
- Understand and use basic AOP interceptors
- Understand the basics of using Spring ORM to access JDBC, Hibernate or JDO (Java Data Objects) to access databases from Java
- Develop Web applications using Struts, JavaServer Faces or Tapestry(optional)

Who should attend...

This is an intermediate to advanced level Java course, designed for developers who wish to get up and running with Java immediately. Familiarity with an object-oriented language is required and real world programming experience is a must.

Prerequisites...

Ideally students should have taken Fast Track to J2EE, or have similar professional experience with object-oriented technologies, such as Java and C++.

See next page for a detailed course outline...



Course Outline...

Session 1 – Introduction to Spring

- Dependency Injection
- *Demo*
- Anatomy of a Spring Application
- *Lab: Your First Spring Application*
- Bean Factories and Contexts
- *Lab: Bean Factories and Contexts*
- Validation
- *Lab: Validation*

Session 2 – Spring and Aspect-oriented programming

- Introduction to AOP (optional)
- Spring AOP
- *Lab: Spring AOP*

Session 3 – Test-driven Development (optional)

- Introduction to TDD
- JUnit
- *Lab: JUnit*
- Testing with Spring
- *Lab: Testing with Spring*

Session 4 – Object/Relational Mapping

- Introduction to ORM
- JDBC/DAO (optional)
- *Lab: JDBC/DAO (optional)*
- Hibernate (optional)
- *Lab: Hibernate (optional)*
- JDO (optional)
- *Lab: JDO (optional)*

Session 5 – Spring ORM

- Spring JDBC (optional)
- *Lab: Spring JDBC (optional)*
- Spring DAO (optional)
- *Lab: Spring DAO (optional)*
- Spring Hibernate (optional)
- *Lab: Spring Hibernate (optional)*
- Spring JDO (optional)
- *Lab: Spring JDO (optional)*
- Spring Transaction Management
- *Lab: Spring Transaction Management*



Session 6 – Spring Presentation Framework

- JSPs and JSTL (optional)
- **Lab: JSPs and JSTL (optional)**
- Struts Review (optional)
- Spring and Struts
- **Lab: Spring and Struts**
- JavaServer Faces Review (optional)
- Spring and JavaServer Faces
- **Lab: Spring and JavaServer Faces**
- Tapestry Review (optional)
- Spring and Tapestry
- **Lab: Spring and Tapestry**

Session 7 – Putting It All Together

- ROI Books
- **Lab: ROI Books**

Session 8 – Additional Topics (optional)

- JasperReports
- **Lab: JasperReports**
- Spring Security Using Acegi
- **Lab: Spring Security Using Acegi**
- Remoting
- **Lab: Remoting**
- JMS, JMX and Scheduling Jobs

Session 9 – Competitors (optional)

- HiveMind and PicoContainer
- NetKernel

Hands-On Training!

There are over 20 hands-on mini-projects interspersed throughout this course, presented in a building block fashion...

Exercise 1 - Your First Spring Application

Exercise 2 - Bean Factories and Contexts

Exercise 3 - Validation

Exercise 4 - Spring AOP

Exercise 5 - JUnit

Exercise 6 - Testing with Spring

Exercise 7 - JDBC/DAO (optional)

Exercise 8 - Hibernate (optional)

Exercise 9 - JDO (optional)

Exercise 10 - Spring JDBC (optional)

Exercise 11 - Spring DAO (optional)

Exercise 12 - Spring Hibernate

Exercise 13 - Spring JDO

Exercise 14 - Spring Transaction Management

Exercise 15 - JSPs and JSTL

Exercise 16 - Spring and Struts

Exercise 17 - Spring and JavaServer Faces

Exercise 18 - Spring and Tapestry

Exercise 19 - ROI Books

Exercise 20 - JasperReports

Exercise 21 - Spring Security Using Acegi

Exercise 22 - Remoting

Please contact your ROI representative to discuss course tailoring!!!