

Developing JEE Web Applications

Duration:	3 days
Type:	intermediate

Description

This course is an in-depth introduction to JEE 5 Web Application development. The Servlet and JSP API's are covered in detail as well as real world issues such as threading, MVC frameworks and unit testing.

By default Spring MVC is used as an example web framework, but alternatives such as Struts 2 and JSF can be used as required.

Prerequisites

Delegates should be competent Java developers who are proficient in HTML. Prior experience editing XML documents is an advantage.

List of Modules

Introduction to the JEE

- The evolution of Enterprise Java
- JEE components, services and protocols
- An in-depth look at a JEE Container
- JEE architectures in common use
- Open source tools used with JEE

Java Naming and Directory Interface

- The need for a single JEE naming service
- Common uses of JNDI in JEE applications
- Understanding the JNDI naming tree
- Navigating the tree with Context objects

Packaging Applications in a Web Archive

- The structure of a WAR file
- Adding static content to a WAR
- Introducing the deployment descriptor
- Specifying the application welcome page
- Adding classes and libraries to a WAR
- Building and deploying a simple Servlet
- Concurrency issues with Servlet objects
- Understanding dynamic class reloading
- Container specific deployment issues
- Adding filters to Web Applications

Developing Java Servlets

- The organization of the Servlets API
- Loading initialization parameters
- Accessing HTTP parameters
- HTTP error codes and redirection
- Understanding session and context objects
- Storing client specific data as attributes
- Forwarding a request to another Servlet
- Including the content of other resources
- Exception handling in Servlets

Developing Simple Java Server Pages

- The JSP compilation model
- Examining a generated Servlet class
- Placing Java code inside scriptlets
- Placing Java code in expressions
- Adding declarations to a JSP Page
- Using the include directive
- Controlling JSP compilation via the attributes of the page directive
- Exception handling in JSP Pages

Advanced Java Server Pages

- Writing JSP pages as XML documents
- Using actions for request dispatching
- Using actions to manipulate JavaBeans
- Using form based authentication to validate users

Unit Testing Web Frameworks

- An overview of web testing frameworks
- Low level web testing with HttpUnit
- High level testing with HtmlUnit and JWebUnit
- Browser based testing using WatiJ and Selenium

Developing JSP Tag Libraries (Overview)

- Understanding the tag extension API
- Writing Tag Library Descriptors (TLD's)
- Creating simple custom actions

The Role of MVC in Web Application Design

- Model 1 verses Model 2 Design
- The role of a Front Controller Servlet
- The role of an Application Controller
- Using Value and Transfer Objects
- Where should validation occur?
- Approaches to O/R mapping

An Example MVC Web Framework

- Introduction to Spring and Dependency Injection
- Components of the Spring MVC web framework
- Configuring the Spring Dispatcher Servlet
- Decorating controllers with annotations
- Triggering a JSP via a View Resolver