Struts 2 for Enterprise Java Web Development: Hands-On - 4 Days

Building Flexible Web 2.0 Applications

Course 937 Overview

You Will Learn How To

- Build scalable enterprise web applications with Struts 2
- Streamline the development cycle and apply best practices for testing web applications
- Detect and report user input errors with the Struts 2 validation framework
- Access data with OGNL and generate results with JSP and Freemarker
- Write and configure Struts 2 interceptors to achieve modularity and sophisticated functionality
- Exploit the Struts 2 Tag Library to seamlessly integrate Ajax functionality

Course Benefits

Struts 2 is an enhanced Java web framework that allows developers to create flexible, maintainable and easily configured web applications with reduced effort. In this course, you gain a thorough knowledge of the architecture of Struts 2 and the application development process. Through hands-on exercises, you learn to take advantage of the core components of the framework.

Who Should Attend

Those interested in developing Java web applications with Struts 2. Knowledge of Java at the level of Course 471, "Java Programming Comprehensive Introduction," and real-world Java programming experience is assumed.

Hands-On Training

Hands-on exercises provide you with practical experience in developing Java web applications with Struts 2, including:

- Implementing ModelDriven actions
- Adding common functionality with interceptors
- Generating dynamic views with the built-in features of the Struts 2 Tag Library
- Detecting input errors with the validation framework
- Building alternative outputs using Jasper Reports and SiteMesh
- Accessing model data with standards-based OGNL
- Providing a rich client experience with Ajax

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Course 937 Outline

Setting the Landscape

Launching a Struts 2 application

- Defining the need for a Struts 2 architecture
- Specifying the application structure
- Preparing the development environment

Getting started with Struts 2

- Identifying key application components
- Implementing the request processing cycle
- Linking the flow by configurations

Configuring Struts 2

Actions, results and interceptors

- Categorizing requests with namespaces and packages
- Exploiting configuration conventions

Setting the default features

- Inspecting out-of-the-box functionality
- Building dependencies with Inversion of Control

Implementing Struts 2 Actions

Controlling application flow

- Utilizing the ActionSupport base class
- Eliminating redundant code with ModelDriven actions

Simplifying the development process

- Best practices for unit testing your actions
- Improving maintainability through message localization

Gathering and Validating User Input

Building Struts 2 views

- Defining an improved approach to page generation with Struts 2 tags
- Leveraging the Struts 2 On-Demand model for data access
- Gathering user data effortlessly
- Controlling page flow with model data

Struts 2 validation architecture

- Positioning the Struts 2 validation model
- Exploring the built-in validation rules
- Applying validation interceptors
- Efficiently handling validation failures

Extending the validation framework

- Creating your own validation rules
- Configuring validation through Struts 2 annotations
- Integrating custom validation with built-in rules

Adding Functionality with Interceptors

Unleashing the Struts 2 interceptor architecture

- The role of interceptors
- Processing requests with the interceptor chain
- Working with the default interceptor stack
- Customizing request processing with prepackaged interceptor stacks

Extending built-in interceptor functionality

- Implementing application specific interceptors
- Simplifying interceptor configuration with annotations

Object Graph Navigation Language (OGNL)

Push-pull processing of the model with OGNL

- Reading and writing object properties
- Accessing complex types: lists, sets and maps

Manipulating data on the Value Stack

- Navigating complex graphs with OGNL operators
- Invoking non-property methods

Generating Dynamic Views

Dispatching the request

- Selecting the correct output page
- Combining multiple actions in a logical sequence
- Considering presentation technology alternatives
- Enabling other result types with the plug-in architecture

Template-driven output with SiteMesh

- Installing and integrating SiteMesh with Struts 2
- Decorator and Composite patterns in SiteMesh
- Writing the SiteMesh decorators

Enhancing the User Experience

Struts 2 presentation tags

- Improving application response with lightweight presentation tags
- Reducing developer effort through user interface tags

Specifying the layout

- Eliminating repetitive code with templates
- Choosing the look and feel using Struts 2 themes

Creating responsive interfaces with Ajax

- Building Web 2.0 functionality with Ajax
- Exploiting first-class support for Ajax in Struts 2
- Installing an Ajax API for asynchronous requests

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