Integrating Struts 2.0 and JavaServer Faces (JSF)

Course Summary

Description

Created in collaboration with several leading J2EE and Struts authors and industry experts, Integrating Struts 2.0 and JavaServer Faces Developer's Workshop is a lab-intensive, hands-on programming course that will provide students with the skills required to design and build scalable, secure, maintainable web applications - leveraging our team's extensive experience in the delivery of scalable enterprise applications with complex web interfaces based on J2EE technologies. This course extends that discussion to cover integration with JavaServer Faces.

Objectives

At the end of this course, students will be able to:

- Design, implement, deploy, and troubleshoot Struts web applications
- Provide coverage of all the standard components, filters, renderers, converters, and validators, along with advice on how to use them to create solid applications
- Explore and use complex user interface layouts, prototyping, and integrating templates with back-end model objects
- Use advanced techniques like internationalization, integration with Struts, and extending JSF with custom components, renderers, converters, and validators

Topics

- Getting Started with Struts 2.0
- Your First Struts Application
- Mapping the Model to the View
- Validation and Type Conversion
- Localization and I18n
- Putting It All Together
- Introduction to JavaServer Faces
- JSF Architecture
- Request Processing
- JSF User Interface Components
- JSP 2.0 EL Expression Language
- Event Handling
- Data Validation
- Advanced Data Validation
- Data Conversion and Rendering
- Advanced Topics (Optional)
- What's New in JSF 1.2 (Optional)

Audience

This is an intermediate level Struts and JSF training course, designed for experienced J2EE developers that need to further extend their skills in web development and Struts.

Prerequisites

Students should have an extensive working knowledge in developing J2EE applications.

Duration

Five days

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... to Your Success!"

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Course Outline

I. Getting Started with Struts 2.0
- A. Jakarta Struts Project
- B. Review Filters, Servlets, JSP and Web Applications
- C. MVC and Struts
- D. What's new in Struts 2.0
- E. Struts 2.0 Architecture
- F. Struts 2.0 Components: FilterDispatcher, Interceptors, Actions, and Results

II. Your First Struts Application
- A. Creating the Application
- B. Configuring web.xml
- C. Configuring structs.xml: package, results, exceptions, and actions
- D. Action implementation
- E. Adding basic view components

III. Mapping the Model to the View
- A. Review using Custom Tags
- B. Introducing Struts 2 Tags
- C. Themes and Templates

IV. Validation and Type Conversion
- A. XWorks validation framework
- B. Implementing validation
- C. Type conversion

V. Localization and I18n
- A. Localization and Internationalization
- B. Resource Bundles
- C. Formatting Messages

VI. Putting It All Together
- A. Case Study
- B. Understanding the Design
- C. Implementing the Application

VII. Introduction to JavaServer Faces
- A. Benefits & Concerns of JSF
- B. JSF Development Roles
- C. JSF vs. Struts
- D. JSF Framework Structure

VIII. JSF Architecture
- A. JSF Architecture Overview & Physical Components
- B. Physical Components
- C. How Does JSF Work?
- D. Lifecycle Phases
- E. Writing a JSF Application

IX. Request Processing
- A. Request Processing
- B. Page Navigation
- C. JSF Objects
- D. The FacesContext Object; The UIViewRoot Object
- E. The UIComponent Interface
- F. The ExternalContext Object; The Application Object
- G. Accessing Backing Beans

X. Simple JSF User Interface Components
- A. Simple JSF User Interface Components
- B. JSF Custom Tag Libraries
- C. The HTML Tag Library
- D. The <h:commandButton> Tag; The <h:commandLink> Tag; The <h:inputText> Tag; The <h:outputText> Tag; The ; <h:outputLabel> Tag; The <h:messages> Tag; The <h:selectBooleanCheckbox> Tag
- E. Panels

XI. JSP 2.0 EL Expression Language
- A. JSP 2.0 EL Expression Language
- B. What is EL?
- C. EL Basics & EL Identifiers
- D. EL Implicit Objects
- E. EL Operators & EL Notes
- F. JSTL
- G. The <c:out> tag; The <c:set> Tag; The <c:remove> Tag; The <c:catch> Tag; JSTL Logic Tags; The <c:if> Tag; The <c:choose> Tag; The <c:forEach> Tag

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Course Outline (cont'd)

XII. Event Handling
- A. The Java 2 Event Model
- B. The JSF Event Model
- C. The ActionEvent Class
- D. The ValueChangeEvent Class
- E. Event Listeners in JSF
- F. The ActionListener
- G. The ValueChangeListener

XIII. Data Validation
- A. Data Validation & Validation
- B. Using Standard Validators
- C. Handling Error Output
- D. <f:validateLength>; <f:validateLongRange> & <f:validateDoubleRange>
- E. Custom Validators; Simple Validators
- F. Creating the Validator Class
- G. Creating the Tag Handler
- H. Registering the Validator Class
- I. Using the Validator Class

XIV. Advanced Data Validation
- A. Advanced Data Validation
- B. Typical Validator Problems
- C. The StateHolder Interface
- D. The saveState() Method
- E. The restoreState() Method
- F. The transient Attribute
- G. Validating Dependent Fields
- H. Class Diagram
- I. The MultiFieldValidator
- J. The DependentFieldValidator & DependentFieldValidatorTag
- K. Updating the faces-config.xml File
- L. Using the New Validator
- M. Implement MultiFieldValidator
- N. Using the Custom JSP Tag

XV. Data Conversion and Rendering
- A. Data Conversion and Rendering
- B. Converters & Custom Converters
- C. Writing the Converter Class
- D. Renderers
- E. Renderers in the "Real World"
- F. Creating the Renderer Class
- G. Creating the Tag Handler
- H. The TLD for the Tag Handler
- I. Registering the Renderer
- J. Using the Component

XVI. Advanced Topics (Optional)
- A. Zero Configuration
- B. Best Practices
- C. Leveraging the Struts 2.0 Architecture

XVII. What's New in JSF 1.2 (Optional)
- A. Software requirements
- B. Unified Expression Language
- C. View Creation and Content Interweaving
- D. JSTL Integration
- E. Additional Features

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