J2EE Struts Programming using RAD

Course Summary

Description

This class introduces the student to Model-View-Controller architectures using the Apache Struts framework using the IBM RAD7 Integrated Development Environment (IDE).

Topics

- Introduction to the Course
- J2EE Review
- The Model-View-Controller Architecture
- Introduction to Struts
- Creating the View
- Struts Validation
- Creating the Model
- Exception Handling and Global Forwarding
- Internationalization and Struts
- Introduction to Tiles
- Struts Security
- Advanced Struts Topics
- Extending Struts
- Beyond Struts

Audience

This course is designed for experienced J2EE developers that wish to learn how to use the Struts framework to create object-oriented, maintainable Web applications.

Prerequisites

Students should have previous Java and HTML experience.

Duration

Five days

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

ProTech
protechtraining.com

"Charting the Course ...

... to Your Success!"

J2EE Struts Programming using RAD

Course Outline

I. Introduction to the Course
- A. Programming Apache Struts
- B. Legal Information
- C. Programming Apache Struts
- D. Introductions
- E. Course Description
- F. Course Objectives
- G. Sample Agenda
- H. Sample Agenda, cont'd
- I. Sample Agenda, cont'd
- J. Sample Agenda, cont'd

II. J2EE Review
- A. J2EE Review
- B. What is Java2 Enterprise Edition?
- C. Introduction to Servlets
- D. Why Use Servlets?
- E. Writing a Servlet
- F. A Simple Servlet
- G. A Simple Servlet, cont'd
- H. Generating HTML in a Servlet
- I. Introduction to JavaServer Pages
- J. Why Use JSPs?
- K. Separating Content from Presentation
- L. The Model-View-Controller Architecture
- M. What is a JavaBean?
- N. Using JavaBeans with JSPs
- O. JavaBeans vs Enterprise JavaBeans
- P. JavaBean Requirements
- Q. What is a Property?
- R. A Sample JavaBean
- S. A Sample JavaBean, cont'd
- T. A Sample JavaBean, cont'd
- U. A Sample JavaBean, cont'd
- V. Using a JavaBean from a JSP
- W. Bean Scopes
- X. Referencing a Bean
- Y. The useBean Action Syntax
- Z. The useBean Action Flowchart
- AA. Setting Properties
- BB. Retrieving Properties
- CC. Retrieving Properties, Another Way
- DD. Property Type Conversion
- EE. Custom JSP Actions - Tag Libraries
- FF. Uses of Custom Actions
- GG. Custom Actions vs JavaBeans
- HH. Using a Tag Library
- II. Chapter Summary

III. The Model-View-Controller Architecture
- A. The Model-View-Controller Architecture
- B. Servlets versus JSPs
- C. Combining Servlets and JSPs
- D. What is the MVC Architecture?
- E. MVC and Web Applications
- F. MVC Tradeoffs
- G. Transfering Control
- H. Forwarding Requests
- I. Forwarding Requests, cont'd
- J. Redirecting Requests
- K. Redirecting Requests, cont'd
- L. MVC Example: Student Information System
- M. MVC Example User Interface
- N. MVC Example User Interface, cont'd
- O. The Find Student HTML
- P. The List All Students HTML
- Q. The Controller Servlet
- R. The Controller Servlet, cont'd
- S. The Display Student JSP
- T. The Display Student JSP, Alternate
- U. The List All Students JSP
- V. Chapter Summary

IV. Introduction to Struts
- A. Introduction to Struts
- B. What is Apache Struts?
- C. Struts Version History
- D. Struts Architecture Highlights
- E. A Simple Request
- F. A Closer Look at ActionForm and Action
- G. ActionForm and Action Inheritance
- H. Development Steps
- I. Struts Custom Actions for HTML Forms
- J. Writing a Struts HTML Form
- K. Writing an ActionForm Class
- L. ActionForm Example
- M. ActionForm Example, cont'd
- N. Writing an Action
- O. Forwarding After an Action
- P. Action Example
- Q. Action Example, cont'd

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

J2EE Struts Programming using RAD

Course Outline (cont'd)

R. The struts-config.xml File
S. struts-config.xml Example
T. struts-config.xml Example, cont'd
U. Web Application Deployment Descriptor
V. Chapter Summary

V. Creating the View

A. Creating the View
B. The View
C. Struts Custom Tags
D. Struts Bean Tags
E. Struts Page Construction Tags
F. Struts Page Construction Tags, cont'd
G. Struts Page Tags Example
H. Struts Logic Tags
I. Struts Logic Tags, cont'd
J. Struts Nested Tags
K. Struts Nested Tags, cont'd
L. Struts ActionForms
M. Dynamic ActionForms
N. Retrieving DynaForm Properties
O. The JSP Standard Tag Library
P. Categories of JSTL Tags

Introduction to Expression Languages

Q. JSP EL Operators
R. JSTL EL Implicit Objects
S. EL Operator Examples
T. Accessing Variables
U. Core Tags
V. Core Tags: The c:if Tag
W. c:if Tag Example
X. Core Tags: c:choose, c:when, c:otherwise
Y. c:choose Example
Z. Core Tags: The c:forEach Tag
AA. c:forEach Tag Example
BB. c:forEach Tag Example 2
CC. Sample View with DynaForm and JSTL
DD. Sample: Input Form
EE. Sample: Input Form, cont'd
FF. Sample: Confirmation Page
GG. Sample: Action Class
HH. Sample: Action Class, cont'd
II. Sample: Action Class, cont'd
JJ. Sample: struts-config.xml
KK. Sample: struts-config.xml, cont'd
LL. Chapter Summary

VI. Struts Validation

A. Struts Validation
B. What is Validation?
C. Validation Scenarios
D. Using Client-Side Validation
E. Using Server-Side Validation
F. Client-Side vs Server-Side Summary
G. Struts Validation Techniques
H. Programmatic ActionForm Validation
I. Programmatic ActionForm Validation, cont'd
J. Displaying Validation Errors
K. Programmatic Action Validation
L. Configuring Validation
M. The Struts Validation Framework
N. Validation Framework History
O. Validations Supported by the Validation Framework
P. Configuring Struts Validation Framework
Q. The Validator-rules.xml File
R. The Validator.xml File
S. Error Message Strings
T. Error Message String Construction
U. Required-Field Validator
V. Data Type Validators
W. Range Validators
X. String Length Validators
Y. Regular Expression Validators
Z. ValidateWhen Validator
AA. ValidateWhen Validator Grammar
BB. ValidateWhen Validator Configuration
CC. Miscellaneous Validators
DD. Enabling JavaScript in the Input Form
EE. Client-Side Validation
FF. Chapter Summary

VII. Creating the Model

A. Creating the Model
B. Model Review
C. Scopes Review
D. Servlet API for Scoped Variables

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

J2EE Struts Programming using RAD

Course Outline (cont'd)

E. Storing a Reference at Session Scope
F. Retrieving a Session-Scoped Reference
G. JSP Expression Language Review
H. Forwarding versus Redirecting Review
I. Requesting a Transfer
J. Separating Business Logic from Struts
K. Accessing Relational Data
L. The Data Access Object Pattern
M. Using an Object/Relational Mapper
N. Chapter Summary

VIII. Exception Handling and Global Forwarding
A. Exception Handling and Global Forwarding
B. Exception Handling: Ostrich Approach
C. Exception Handling: Programmatic
D. Exception Handling: Declarative
E. Exception Handling: Declarative, cont'd
F. Exception Handling: Global
G. Global Forwarding
H. Writing a Custom Exception Handler
I. Custom Exception Handler, cont'd
J. Custom Exception Handler, cont'd
K. Chapter Summary

IX. Internationalization and Struts
A. Internationalization and Struts
B. What is Internationalization?
C. J2SE Support for I18N
D. Language and Country Codes
E. Message Bundle Property Files
F. Struts Support for I18N
G. How Does Struts Determine Locale?
H. Using the bean:message Struts Action
I. bean:message Struts Action, cont'd
J. JSTL Support for I18N
K. Chapter Summary

X. Introduction to Tiles
A. Introduction to Tiles
B. Common Layouts and Content
C. Introduction to Tiles
D. Alternatives to Tiles
E. What is a Tile?
F. Steps for Using Tiles
G. Tiles Layouts
H. Tiles Layouts, cont'd
I. Tiles Layouts, cont'd
J. Common Content Tiles
K. A Tiles Page
L. Another Tiles Page
M. Tiles Redundancy
N. Page Definitions
O. Writing a Definition
P. Using XML-Based Definitions
Q. An XML-Based Definitions File
R. Using the Definition
S. Configuring the Tiles Plugin
T. Extending a Definition
U. Tiles: Behind the Scenes
V. Tiles: Behind the Scenes, cont'd
W. Chapter Summary

XI. Struts Security
A. Struts Security
B. Security and Struts
C. What is Security?
D. Authentication and Authorization
E. Programmatic versus Declarative Security
F. Security Roles
G. Security Interaction Diagram
H. Steps for Declarative Security
I. Authentication Techniques
J. HTTP Basic Authentication
K. Form Validation
L. Form Validation, cont'd
M. Secure Authentication
N. Restricting Resources by Role
O. Assigning Users to Roles
P. Programmatic Security
Q. Chapter Summary

XII. Advanced Struts Topics
A. Advanced Struts Topics
B. Introduction to Modules
C. What Comprises a Module?
D. Transferring Control Between Modules
E. Configuring Modules

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

J2EE Struts Programming using RAD

Course Outline (cont'd)

F. Action Superclasses
G. Prewritten Actions
H. Introduction to DispatchAction
I. Using DispatchAction
J. DispatchAction Input JSP
K. DispatchAction Configuration
L. DispatchAction Coding
M. Multiple Buttons: Another Way
N. Multiple Buttons: The Form
O. Chapter Summary

XIII. Extending Struts

A. Extending Struts
B. Extending Struts
C. Struts Plugins
D. Configuring a Plugin
E. Struts Behind the Scenes
F. Struts Behind the Scenes, cont'd
G. RequestProcessor processXXX Methods
H. Configuring Subclasses in Struts-config
I. Struts Extension Example
J. Struts Extension Example, cont'd
K. Configuring the Request Processor
L. Chapter Summary

XIV. Beyond Struts

A. Beyond Struts
B. Introduction to Shale
C. Shale Features
D. Shale Validation
E. Intro to Struts2
F. Struts2 Features
G. Comparing Struts1 and Struts2
H. Struts2 HelloWorld Example
I. Struts2 HelloWorld Example, cont'd
J. Struts2 HelloWorld Example, cont'd

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically