JEE 6 Web Application Development using Rational Application Developer v8.0

Course Summary

Description

This workshop will teach students to build database enabled J2EE Web programming knowledge and skills in the Rational Application Developer environment using Servlets, Filters, JSP and related technology. The students will learn how to build a web application using the Model-View-Controller (or MVC or Model II) design paradigm. It will also include an overview of Servlets, JSP and filters will be covered extensively, including programming and configuring these components. All aspects of JSP will be covered. Students will write simple JSPs, write and use JavaBeans. Various aspects of accessing data and managing state efficiently are covered, including JDBC and HTTP session management.

Topics

- Getting Started with Rational Application Developer
- Servlets
- Overview of HTML
- JavaServer Pages
- JavaBeans
- Integrating Servlet and JSP
- Model View Controller Paradigm
- JDBC
- JSP Standard Tag Library v1.2
- Configuring Servlet/JSP Using web.xml and Annotation
- Servlet and JSP Filters
- Using Annotations in Servlets
- Overview of Asynchronous Servlet
- J2EE Architecture Overview (optional)

Audience

This course is intended for Java developers who want to understand, design and build Web applications using the latest Java technologies.

Prerequisites

The student should have a working knowledge of Java programming and some experience with HTML.

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!"

JEE 6 Web Application Development using Rational Application Developer v8.0

Course Outline

I. Getting Started Rational Application Developer
- A. Rational Software Delivery Platform
- B. Architecture Managements
- C. Java Development
- D. JEE Development
- E. Web Development
- F. IBM Java IDE Release History
- G. Perspective Layout
- H. File Hierarchy in Rad
- I. Terminologies
  1. Workbench
  2. Workspace
  3. Perspective
  4. Views
  5. Editor

II. Servlets
- A. What is a servlet?
- B. Typical Uses of Servlets
- C. How Servlets Work
- D. Java Servlet Architecture
- E. Servlet's Lifecycle
- F. The service() method
- G. Writing HelloServlet
- H. Deployment Descriptor
- I. Use of Annotation
- J. The ServletRequest Object
- K. Handling Form Data
- L. doGet() vs doPost()
  1. Using doGet()
  2. Using doPost()
- M. The ServletResponse Object
- N. Session Management

III. Overview of HTML
- A. HTML
- B. HTML Tags
- C. HTML Document
- D. HTML Data Structure
- E. HTML Form Creation
- F. HTML <form> tags
- G. HTML <input> tags
- H. An HTML Input Form - an Example

IV. JavaServer Pages
- A. JavaServer Pages
- B. Why Use JSP?
- C. How JSP Works
- D. JSPs Life
- E. JSP Tags
  1. Directives
  2. Action
  3. Scripting elements
  4. Comment
- F. JSP Directive
  1. The page Directive
  2. The include Directive
  3. The taglib Directive
- G. Scripting Elements
  1. Scriptlets
  2. Expression
  3. Declaration
  4. Comments
  5. Using JSPs Scripting Elements
- H. JSP Implicit Objects

V. JavaBeans
- A. JavaBeans
- B. JavaBean Structure
- C. A Simple Example
- D. Standard Actions
  1. <jsp:useBean>
  2. <jsp:getProperty>
  3. <jsp:setProperty>
- E. JavaBeans in JSP

VI. Integrating Servlets and JSPs
- A. Calling a Servlet from JSP
  1. Using the FORM tag
  2. <jsp:include> Action
  3. <jsp:forward> Action
- B. Call a JSP from a Servlet
  1. Using RequestDispatcher
  2. Using the sendRedirect() Method
  3. sendRedirect() vs forward()

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

JEE 6 Web Application Development using Rational Application Developer v8.0

Course Outline (cont'd)

VII. Architecting Web Applications
- A. Model 1 architecture
- B. Model 2 architecture
- 1. Model
- 2. View
- 3. Controller
- C. Advantages of Model 2 Architecture

VIII. JDBC
- A. What is JDBC
- B. Software Requirements
- C. JDBC Driver Types
- D. JDBC 1.0
  - 1. Load the Driver
  - 2. Establish a Connection
  - 3. Execute SQL statements
- E. Statement
  - 1. execute()
  - 2. executeQuery()
  - 3. executeUpdate()
- F. ResultSet
- G. Inserting a record
- H. Updating a record
- I. Deleting a record
- J. Prepared statement
- K. Callable statement
- L. DataSource
- M. Resource Annotation

IX. Overview of JSP Standard Tag Libraries 1.2
- A. JSTL v1.2 Libraries
- B. Expression Language (EL)
- C. EL Implicit Variables
- D. JSTL Operators
- E. Using the JSTL
- F. Core Library Actions
  - 1. <c:out> Action
  - 2. <c:set> Action
  - 3. <c:if> Action
  - 4. <c:forEach> Action
  - 5. <c:choose> Action
  - 6. <c:when> Action
  - 7. <c:otherwise> Action

X. Configuring Servlets and JSPs
- A. Ways to Configure Servlets and JSPs
  - 1. Deployment Descriptor
  - 2. Annotation
  - 3. Programatically
- B. Deployment descriptor
- C. Order of Elements
- D. Adding a Aervlet
  - 1. <servlet> element for Servlet
  - 2. <servlet> element for JSP
  - 3. <servlet-mapping> element
- E. Custom URL for a Servlet
- F. Custom URL for a JSP
- G. Initializing Parameters
- H. Context Parameters
- I. Welcome Pages
- J. Loading Servlet on Startup
- K. Defining Error Pages
- L. Annotations

XI. JSP and Servlet Filter
- A. Servlet and JSP Filters
- B. What is a Filter?
- C. Typical Uses of Filter
- D. How Filters Work
- E. Filter's Lifecycle
- F. Writing the SimpleFilter
- G. Deployment Descriptor
- H. Multiple Patterns in Mapping
- I. Filter Chain
- J. Using Annotations

XII. Using Annotations in Servlets
- A. Annotations
- B. Allowable Annotations in a Servlet
- C. PostConstruct Annotation
- D. PreDestroy Annotation
- E. Resource Annotation
  - 1. Environment Entry Variable

XIII. Asynchronous Servlet
- A. Asynchr0nous Servlet
- B. Why Need Asynchronous Servlet ?
- C. Additional Classes

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

JEE 6 Web Application Development using Rational Application Developer v8.0

Course Outline (cont'd)

1. **AsyncContext Interface**
2. AsyncListener Interface
3. Executor Interface

D. How it Works?
E. An Example

XIV. Overview of JEE 6 Architecture

A. JEE 5 Architecture
B. JEE 5 Modules
C. HTTP Servlet
D. JavaServer Pages
E. Model View Controller
F. Struts
G. JavaServer Faces
H. JSP Standard Tag Libraries
I. Enterprise JavaBeans
J. Web Services
K. J2EE Services
   1. Naming Service
   2. Database Access Service
   3. Transaction Service
   4. Messaging Service
   5. JavaMail Service
   6. Security Service

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