JavaServer Pages Programming with Eclipse

Course Summary

Description

This course teaches developers how to write Java Enterprise Edition (JEE) applications using JavaServer Pages version 2.x and related technologies.

Topics

- Introduction to the Course
- Web Architecture Review
- Introduction to J2EE
- Introduction to JavaServer Pages
- The JSP Expression Language and JSTL
- JavaBeans and JSPs
- Java Standard Tag Lbirary
- JDBC Programming

- Sessions and JSPs
- Writing Java Scripting Elements
- Writing Custom Tag Libraries
- Introduction to Servlets
- Web Applications
- Combining Servlets and JSPs
- Introduction to Struts

Audience

This course is designed for content developers and programmers who will write JEE applications

Prerequisites

Students should have experience with Java programming and HTML.

Duration

Four days

JavaServer Pages Programming with Eclipse

Course Outline

I. Introduction to the Course
  A. Programming JavaServer Pages
  B. Legal Information
  C. Programming JavaServer Pages
  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. Web Architecture Review
  A. Web Architecture Review
  B. What is HTML?
  C. What is HTTP?
  D. Common HTTP Methods
  E. What is a URL?
  F. HTML Boilerplate
  G. HTML Formatting
  H. HTML Lists
  I. HTML Tables
  J. HTML Tables, cont'd
  K. HTML Forms
  L. HTML Forms, cont'd
  M. HTTP Request Headers
  N. HTTP Response Headers
  O. The Future
  P. Introduction to XML
  Q. Chapter Summary

III. Introduction to J2EE
  A. Introduction to J2EE
  B. What is J2EE?
  C. Benefits of J2EE
  D. J2EE Vendors
  E. J2EE Development Tools
  F. J2EE Technologies
  G. Deployment Descriptors
  H. J2EE Development and Packaging
  I. J2EE Roles
  J. Introduction to Servlets
  K. Introduction to JSPs
  L. Introduction to EJBs
  M. Types of EJBs
  N. Introduction to JNDI

  O. Introduction to JDBC
  P. Introduction to JMS
  Q. Introduction to JavaMail
  R. Introduction to JTA
  S. Introduction to Web Services
  T. Chapter Summary

IV. Introduction to JavaServer Pages
  A. Introduction to JavaServer Pages
  B. What is CGI?
  C. A Sample Perl CGI Script
  D. What's Wrong with CGI?
  E. CGI Enhancements and Alternatives
  F. Microsoft's ASP
  G. A Sample ASP
  H. What is Java2 Enterprise Edition?
  I. Introduction to Servlets
  J. Why Use Servlets?
  K. Writing a Servlet
  L. A Simple Servlet
  M. A Simple Servlet, cont'd
  N. Generating HTML in a Servlet
  O. Introduction to JavaServer Pages
  P. Why Use JSPs?
  Q. JSP Compilation
  R. JSP Version History
  S. Model 1 versus Model 2
  T. Intro to the JSP Expression Language
  U. Chapter Summary

V. The JSP Expression Language and JSTL
  A. The JSP Expression Language and JSTL
  B. What is the JSP Expression Language?
  C. Expression Language History
  D. EL Operators
  E. EL Operators Examples
  F. EL Implicit Objects
  G. EL Implicit Objects Examples
  H. Accessing Form Parameters
  I. What is a Tag Library?
  J. Using a Tag Library
  K. What is the JSP Standard Tag Library?
  L. Categories of JSTL Tags
  M. JSTL Core Tags
  N. The c:if Tag
  O. c:if Tag Example

JavaServer Pages Programming with Eclipse

Course Outline (cont'd)

P. The c:choose, c:when Tags
Q. c:choose Example
R. The c:forEach Tag
S. c:forEach Example
T. c:forEach Example 2
U. The c:set Tag
V. c:setExample
W. The c:out Tag
X. Other Core Tags
Y. Chapter Summary

VI. JavaBeans and JSPs
A. JavaBeans and JSPs
B. Separating Business Logic from Presentation
C. The Model-View-Controller Architecture
D. What is a JavaBean?
E. Using JavaBeans with JSPs
F. JavaBeans vs Enterprise JavaBeans
G. JavaBean Requirements
H. JavaBean Features
I. What are Reflection and Introspection?
J. What is a Property?
K. What is a JavaBean Method?
L. A Sample JavaBean
M. A Sample JavaBean, cont'd
N. A Sample JavaBean, cont'd
O. A Sample JavaBean, cont'd
P. Using a JavaBean from a JSP
Q. Bean Scopes
R. Referencing a Bean with Actions
S. The useBean Action Syntax
T. The useBean Action Flowchart
U. Retrieving Properties
V. Setting Properties
W. Setting Properties from the Request
X. Setting Properties from the Request, cont'd
Y. Property Type Conversion
Z. Calling Methods
AA. Using Expressions to Read Properties
BB. Chapter Summary

VII. Java Standard Tag Lbirary
A. JSP Standard Tag Library
B. The JSP Standard Tag Library

C. Categories of JSTL Tags
D. Expression Syntax
E. Core Tags
F. Formatting Tags Overview
G. What is Internationalization?
H. J2SE Support for I18N
I. Language and Country Codes
J. Message Bundle Property Files
K. Determining the Localization Context
L. How Does JSTL Determine Locale?
M. I18N Example
N. Formatting Dates
O. Formatting Numbers
P. Database Tags Overview
Q. Database Tag Example
R. XML Tags Overview
S. XML Tags Example
T. Chapter Summary

VIII. JDBC Programming
A. JDBC Programming
B. Database Fundamentals
C. Introduction to ODBC
D. Introduction to JDBC
E. What Can You Do with JDBC?
F. JDBC History
G. JSP Database Architectures
H. JDBC and MVC
I. Connection Pools
J. JDBC URLs
K. SQL Exceptions
L. The JDBC API for Data Sources
M. Opening a Connection, JDBC 1.x
N. Configuring a Datasource, JDBC 2.x
O. Locating a Datasource, JDBC 2.x
P. Opening a Connection, JDBC 2.x
Q. The JDBC API for Connections
R. The JDBC API for Statements
S. Executing a Simple Query
T. Processing a ResultSet
U. SQL Types and Java Types
V. Processing a ResultSet, cont'd
W. Closing a Connection
X. Inserting a Record
Y. Updating a Record

JavaServer Pages Programming with Eclipse

Course Outline (cont'd)

Z.   Removing a Record
AA. Using Prepared Statements
BB. Using Prepared Statements, cont'd
CC. Using an O/R Framework
DD. Chapter Summary

IX. Sessions and JSPs
A.   Sessions and JSPs
B.   HTTP is a Stateless Protocol
C.   What is a Session?
D.   Remembering State
E.   The Session API
F.   Sessions and the JSP Expression Language
G.   The useBean Tag and Sessions
H.   The useBean Tag and Sessions, cont'd
I.   The useBean Action Flowchart
J.   The session Implicit Variable
K.   Configuring Sessions
L.   Using URL Rewriting
M.   Using URL Rewriting, cont'd
N.   JSTL c:url Action
O.   Chapter Summary

X. Writing Java Scripting Elements
A.   Writing Java Scripting Elements
B.   Writing Java Scripting Elements
C.   JSP Translation and Compilation
D.   Disadvantages of Scripting Elements
E.   Writing Scripting Elements
F.   JSP Expressions
G.   Variables in a JSP
H.   Implicit Variables
I.   Implicit Variables, cont'd
J.   Declared Variables
K.   Variables in Scripting Elements
L.   Declared Methods
M.   The Request Implicit Variable
N.   The Request Implicit Variable, cont'd
O.   The PageContext
P.   Chapter Summary

XI. Writing Custom Tag Libraries
A.   Writing Custom Tag Libraries
B.   Custom JSP Actions - Tag Libraries
C.   Custom Actions vs Java Beans

D.   Writing Custom Actions
E.   Introduction to Tag-File Actions
F.   Writing a Tag-File Action
G.   Deploying a Tag-File Action
H.   Using the Tag-File Action
I.   Standard JSP Actions for Tag Files
J.   Tag File Directives
K.   The tag Directive
L.   Tag Directive Examples
M.   The attribute Directive
N.   Attribute Directive Example
O.   Using Dynamic Attributes
P.   Dynamic Attributes Example
Q.   Dynamic Attributes Example, cont'd
R.   Processing Fragment Attributes
S.   Fragment Attribute Example
T.   Writing a Tag-File Action with a Body
U.   Tag-File Action Body Example
V.   The variable Directive
W.   Tag Variable Scopes
X.   Tag Variable Example
Y.   Tag Variable Example, cont'd
Z.   Introduction to SimpleTags
AA. SimpleTags versus Classic Tags
BB. Writing a SimpleTag
CC. Example SimpleTag
DD. Configuring a SimpleTag
EE. Using a SimpleTag
FF. Attributes and SimpleTags
GG. SimpleTag Attribute Example
HH. SimpleTag Attribute Example, cont'd
II. SimpleTag Attribute Example, cont'd
JJ. SimpleTag Attribute Example, cont'd
KK. Writing a SimpleTag with a Body
LL. Writing a SimpleTag with a Body, cont'd
MM. Writing a SimpleTag with a Body, cont'd
NN. Packaging a Tag Library
OO. Chapter Summary

XII. Introduction to Servlets
A.   Introduction to Servlets
B.   What is a Servlet?
C.   Why Use Servlets?
D.   Servlet Containers
E.   The Servlet API

JavaServer Pages Programming with Eclipse

Course Outline (cont'd)

F. Writing a Servlet
G. A Sample Servlet
H. Chapter Summary

XIII. Web Applications
A. Web Applications
B. What is a Web Application?
C. Web Application Directory Structure
D. The URL for the Web Application
E. The Deployment Descriptor
F. Packaging the Web App into a .war File
G. Deploying the Web Application
H. The Servlet Context
I. Chapter Summary
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 Display Student JSP
S. Deploying the Web Application
T. Chapter Summary

XV. Introduction to Struts
A. Introduction to Struts
B. What is Apache Struts?
C. Struts Architecture Highlights
D. A Simple Request
E. A Closer Look at ActionForm and Action
F. ActionForm and Action Inheritance
G. Development Steps
H. Struts Custom Actions for HTML Forms
I. Writing a Struts HTML Form
J. Writing an ActionForm Class
K. ActionForm Example
L. ActionForm Example, cont'd
M. Writing an Action
N. Forwarding After an Action
O. Action Example
P. Action Example, cont'd
Q. The struts-config.xml File
R. struts-config.xml Example
S. struts-config.xml Example, cont'd
T. Chapter Summary

XIV. Combining Servlets and JSPs
A. Combining Servlets and JSPs
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