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Beginning JSP and Servlets

Duration: 5 Days

Overview:

Aspect Training's Beginning JSP and Servlets training course teaches beginning and early intermediate Java™ developers how to build database-driven Web applications using JavaServer Pages and Java Servlets.

Prerequisites:

Aspect Training's Beginning JSP and Servlets training course can be tailored to any level of Java experience. In general, we recommend that all attendees be fluent in HTML and have a prior knowledge of object-oriented or object-based programming, as well as some knowledge of SQL and relational databases.

Course Topics:

Servlets and JSP with JSP Standard Tag Library (JSTL)

Web Application Basics

How the Web works, Thin Clients, TCP/IP
HTTP overview, Brief HTML review
Overview of Java EE, servlets & Web applications.
Servlet Basics

Servlet API

HTML Forms
HTTP: Request-response, headers, GET, POST
Overview: How Servlets Work
Servlet Lifecycle: init(), service(), destroy()
Requests and responses

Core Servlet API: GenericServlet, ServletRequest, and ServletResponse
HTTP Servlets: HttpServletRequest, HttpServletResponse and HttpServlet
Accessing Parameters

Additional Servlet Capabilities

HTTP headers and MIME types
RequestDispatcher: Including and forwarding
Sharing data with the request object attributes
Sharing data with ServletContext attributes
Error Handling

Continued over....



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JavaServer Pages

Basics and Overview
JSP architecture
JSP tags and JSP expressions
Fixed Template Data
Lifecycle of a JSP
Model View Controller (MVC)
Model 1/Model 2 Architecture
Data Sharing among servlets & JSP
Object scopes or "buckets"
Request, application, session and page scope
Predefined JSP implicit objects (request, session, application, page)
<jsp:useBean>
<jsp:getProperty>, <jsp:setProperty>
<jsp:include>, <jsp:forward>

Using Custom Tags

Custom tags overview
Reducing JSP complexity
Tag Libraries
Tag Library Descriptor (TLD)
Loading a tag library in a web app
The JSTL
JSP Expression Language (EL)
Using custom tags
The c:url, c:param, c:forEach, c:out tags

More JSP Capabilities and Session Management

HTTP as a stateless protocol
Hidden form fields
Cookies: Overview, API, Using cookies
Session overview: Cookies and session tracking
HttpSession
Putting data into a session object
Retrieving data from a session object
Using session data in servlets and JSPs

Additional JSP Capabilities

Exception handling and error pages
Directives (page, include, others)
Import declarations
Multithreading considerations and data safety
SingleThreadModel interface

Additional JSP Capabilities

JSP Directives
JSP Error Pages
JSP and Java
Declarations, Scriptlet overview,
Scriptlet syntax

More JSTL

Overview of JSTL libraries
The JSTL Expression Language
Expressions, Type Coercion, Operators,
String concatenation, Implicit Objects
The Core JSTL Library
General Purpose: c:out, c:set, c:catch
Conditional: c:if, c:choose,
Overview of other capabilities

Additional Topics

Servlet Filter overview
Filtering examples, lifecycle, & filter chains
Filter API, Modifying a request, Modifying a response
Struts Overview
Advanced MVC – Struts overview
Command and State patterns
Struts View and Controller elements

Continued over...



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JDBC

Introduction

Relational Database and JDBC Overview
Overview, Table Relationships, Web
Based Data Access, JDBC Characteristics
JDBC Architecture, JDBC API Overview
DriverManager, JDBC Drivers
Naming databases with JDBC URLs
Connecting to a database
Connection interface, Establishing a
connection
DataBaseMetaData
Handling Database Exceptions

Data Access

DAO – Data Access Objects, O-R
Mapping, Value Objects
Processing Database Data
Executing statements, precompiled
statements and stored procedures
Processing ResultSets,
Dealing with Null data
Updating, inserting, retrieving data
Controlling Transactions
JDBC Driver Types
DataSource
Java EE and DataSource, Using JNDI
Connection Pooling
Overview, Usage, Advantages

Advanced Topics

Other Database Access Technologies
SQLJ, O-R Mapping Tools, JDO (Java
Data Objects), EJB Entity Beans
Advanced JDBC Features
Batch Updates, Scrollable Result Sets,
Rowsets, User Defined Types, BLOBS,
CLOBS

Component Integration and EJB

Database Integration

Web Architecture choices
Connecting servlets to a database via
DataSource

EJB

Overview of EJB
High-level EJB architecture
Roles within EJB
Client view of a session bean
JNDI (Java Naming and Directory
Interface)
Remote and Home Interfaces
Writing an EJB client

Other Technologies

XML and Web Services
JMS – Java Message Service