SPIRO - PROFESSINAL STUDENT PROCESS ACADEMY
(TRAINING DIVISON OF SPIRO SOLUTIONS PVT. LTD)
ISO 9001:2008 CERTIFIED ,NASSCOM LISTED COMPANY

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Java- EE Web Application Development with Apache Struts 1

Duration:60 HOURS |Price: INR 7000 SAVE NOW! INR 6000 until December 1, 2011

Students Will Learn

- Java EE Web Application Architecture
- Servlets and JSPs
- NDI, RMI, & JDBC
- JMS (Java Messaging Service)
- Developing Struts Applications
- Developing a Struts Controller
- Developing a Struts View

Course Description: This hands-on course provides participants with the knowledge and experience necessary to develop and deploy large, robust and complex Java web applications utilizing the Apache Struts 1 framework. The Apache Software Foundation has provided numerous open-source tools, which set the standard for web application development. These include the Apache web server and the Tomcat Servlet Container. Apache Struts 1 provides a flexible controller layer for JSP-based applications, with significant facilites for validation, internationalization and page layout. Struts is an implementation of the Model-View-Controller (MVC) pattern, a recommended architectural design pattern for interactive applications. The Struts controller is based on standardized technologies including Servlets, JSP Pages, Tag libraries, JavaBeans and XML. Students will learn how to use the Struts framework to write, assemble, configure and deploy complex web applications.

This course covers architectural design issues as well as specific coding models for Java EE components, and is up to date with the latest Java EE 5, JSP 2.1 and Servlet 2.5 specifications. Security, transaction management, inter-component communication and deployment issues are discussed in detail, with hands-on labs to solidify understanding. Since coding and deployment files are standardized by the Jave EE specifications, students may readily apply the skills learned in this class to write code for any compliant server, including Apache Tomcat, JBoss, WebSphere, Oracle, WebLogic and many others. Students will understand the role and architecture of the most important containers in the Java EE specification: the Web Container (which hosts HTML pages, Servlets and JSP Pages) and the EJB Container (which hosts Enterprise JavaBean components). Participants will learn how to use important Java EE services and protocols including JNDI, JDBC and JMS. Students will learn how to utilize ANT, a flexible and powerful XML-based build utility, to compile, deploy and execute stand-alone and enterprise Java applications. Comprehensive hands-on lab exercises reinforce instructor lectures and build direct competence in the topics presented throughout the course.

This course assumes that students possess a thorough knowledge of how to use Servlets, Java Server Pages, Tag Libraries, ANT and JDBC to exploit the services of the Java EE platform.

Course Prerequisites: Java SE 5 programming experience and an understanding of object-oriented design principles. Fundamental knowledge of XML and HTML is helpful but not required.

Java EE Web Application Development with Apache Struts 1 Course Overview

Enterprise Application Architecture　　　　　　　　　**Developing the Struts Controller**

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- Issues in Building Web Applications
- Web Development Challenges
- Frameworks and Design Patterns
- The Model-View-Controller Pattern
- Benefits of MVC

Struts and MVC

- Struts Core Technologies
- The Struts Controller
- Struts in Action
- The Struts Model
- The Struts View
- Basic Struts Development Process

Introduction to Struts

- Installing Struts
- Struts Libraries
- Struts Configuration Files
- Deploying Resource Bundles
- Deploying to Tomcat

Developing the Struts View

- Using JSP Pages for the View
- Using Struts Tag Libraries
- Struts HTML tags for Form Layout
- Struts Logic Tags
- Using JSTL (Java Standard Tag Library)

Internationalization

- Understanding Locales
- Setting the Struts Locale
- Locale-specific Output
- Developing Locale-Specific Resource Bundles
- Selecting Character Encodings
- Using LookupDispatchAction

Developing the Data Model

- Decoupling the Model
- Developing Business Objects
- Accessing JDBC DataSources

Laying out Pages with Tiles

- Building a Tile Layout
- Developing a Template
- Using The Tiles Plug-In
- Defining Tiles in tiles-defs.xml
- Extending Tiles Definitions
- Forwarding to Tile Definitions

- Registering the Action Servlet
- Editing the web.xml File
- The struts-config.xml File
- Defining Action Mappings and Forwards
- Defining an Action Form
- Defining Form Properties
- Dynamic Action Forms
- Developing Struts Actions
- Forwarding From an Action
- Using Predefined Actions: ForwardAction, IncludeAction, DispatchAction

Developing Servlets

- Servlet classes and interfaces
- Working with Request and Response objects
- Processing GET and POST Requests from Web Clients
- Retrieving Parameters from HTML Client Forms
- Generating Dynamic HTML Responses
- Initializing Servlets
- Destroying and Freeing Resources in Servlets
- Controlling Single and Multi-Threading in a Servlet
- Deploying Servlets to a Web Application Server
- Building the WAR file
- The web.xml descriptor file

Displaying Errors and Messages

- Defining Messages
- Returning Action Messages
- Displaying Error Lists

Input Validation

- Struts Features for Validation
- Form Validation
- Using the Validator Plug-in
- Displaying Validator Messages
- Enabling AJAX-based Validation

Customizing the Struts Controller

- Inside the Struts ActionServlet
- Configuring the RequestProcessor
- Defining Commands
- Dividing an Application into Modules
- Logging and Debugging

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Introduction to Java EE Web Applications

- Server-Side Application Development using Java EE
- The Role of Java EE Containers, Components and Services
- Using Web-Based Components in Application Design
- Structure of Java EE Web Components
- Deploying Web Applications
- Java EE Web Container Services

Introduction to Servlets

- Servlet Architecture and advantages
- The Role of Servlets in Web Application Design
- Servlet Runtime Environment
- Servlet Lifecycle

Deploying and Using Tag Libraries

- Motivation for Tag Libraries
- Implementing the Model-View-
- Controller Pattern
- JSP built-in Actions
- The JSP Standard Tag Library (JSTL)
- Deploying and using Tag Libraries

Writing Tag Handlers

- Analyzing Tag Library Descriptor Files
- Creating Tag Library Descriptor Tags
- Using Tag Handler Methods to
- Generate Dynamic Web Content
- Handling Tag Attributes and Attribute Validation
- Processing Tag Body Content
- Working with the TagExtraInfo Class
- Developing and Deploying Tag Files

Developing Secure Web Applications

- Understanding JAAS Concepts
- Java EE Authentication and Authorization
- Defining Security Roles
- Declaring Security Constraints
- Using Programmatic Security
- Using Java SE Security Features
- Encryption, Message Digests and Keys

Object Serialization

- Purpose of Serialization in the Java EE Framework
- Creating Serializable Objects
- Reading and Writing SerializableObjects
- Controlling Serialization

Using ANT

- Understanding the ANT build file
- Designing ANT Targets
- Using ANT Standard Tasks
- Using ANT Properties
- Compiling and Executing Java Applications
- Building WAR, EAR and JAR Deployment Files

Developing JavaServer Pages (JSPs)

- Understanding JSP/Servlet Translation
- Elements of JSP Syntax
- JSP Page Directives
- JSP Declarations
- Displaying JSP Expressions
- Writing Scriptlets
- Deploying JSPs
- Using JavaBeans in JSPs
- JavaBean Architecture
- Creating JavaBeans
- Using JavaBeans in JSP Pages
- XML-format JSP Documents

Session Management and Communication Between Web Components

- Storing Shared, Scoped Information
- Java EE Session Management
- Maintaining Sessions via URL Rewriting
- Using Cookies
- Using Hidden Form Fields to Track Session IDs
- Using the HttpSession Interface
- Transferring Control via Request Dispatching
- Request Redirection

Java Naming and Directory Interface (JNDI)

- Role of JNDI in the Java EE Architecture
- JNDI Service Providers
- Importing and Utilizing JNDI Packages
- Binding Objects with JNDI
- Looking up Objects with JNDI
- Using the Environment Naming Context (ENC)
- Declaring Resource References

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Advanced Topics - Filters, Listeners and Resource Injection

- Using Filters to process Requests and Responses
- Controlling the Filter Chain
- Writing Filters
- Wrapping Requests and Responses
- Writing and Deploying Listeners
- Using Annotations in Servlet 2.5 Applications
- Controlling Resource Injection
- Using Special Resource Types

Using the Java Messaging Service (JMS)

- Architecture of JMS
- Using Classes and Interfaces in the JMS API
- Developing a JMS Producer and Consumer

Accessing Databases with JDBC

- Understanding the JDBC Connectivity Model
- Accessing Data Sources through JNDI
- Connecting to a Database
- Executing SQL Queries and Updates
- Processing Result Sets
- Using Scrollable and Sensitive Result Sets
- Working with ResultSetMetaData Classes
- Utilizing Parameterized Statements
- Calling Stored Procedures
- Handling SQLExceptions
- Controlling Transactions
- Using Batch Updates

Introduction to Enterprise JavaBeans

- How EJBs are Used
- Bean Developer, Bean Deployer and Application Assembler Roles
- Session, Entity and Message Driven Beans
- EJB Container Services
- Deploying Enterprise Java Beans
- Creating the EJB Deployment Descriptor
- Accessing Enterprise Java Beans

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Student Testimonials

"This is my second class from SPIRO. I have been very impressed with the caliber of the instructors. They bring a wealth of real world experience to the classroom. I've taken many classes from many vendors and SPIRO is head and shoulders above anyone else. The instructor did an excellent job!"
— Mahesh Kumar

"Instructor very knowledgeable. A lot of material covered in a short time, but this was exactly the depth/breadth of subject coverage I wanted. Worth the week/trip."
— Jayalakshmi

"I really enjoyed the course and learned a lot. I thought the lab partnership concept was great. Great instructor with lots of knowledge. My overall experience was wonderful!"
— Ibrahim