

# Enterprise Java Using Servlets, JSPs, and WSAD

## Course No.

3444

## Description

This course prepares students for creating Java enterprise applications. After learning the architectural foundations, students will learn how to write and deploy Servlets, and Java Server Pages using IBM WebSphere® and WebSphere Studio Application Developer (WSAD). Best practices and implementation patterns are stressed in lecture and extensive hands-on exercises.

## Prerequisites

Students should be proficient with Java, and be familiar with compiling and testing programs with WSAD

## Objectives

- Learn the Java servlet architecture
- Understand why to write servlets
- Understand how to write servlets
- Use JDBC with servlets
- Manage session state with servlets
- Use cookies in servlets
- Implement Java Server Pages (JSPs)
- Use built-in JSP server objects
- Use cookies and sessions in JSPs
- Create custom JSP tags
- Use Tag Descriptor Libraries
- Servlet and JSP design patterns
- Implement and deploy these Java enterprise technologies with WebSphere® and WSAD

## Major Topics

- Architectural Overview
- Servlet Basics
- Servlet Lifecycle and Communication
- JDBC with Servlets
- Session State
- Using Cookies
- Java Server Pages (JSPs)
- Custom JSP Tags
- Tag Descriptor Libraries
- Servlet/JSP communication

## Duration

5 days



## Course Contents

### 1. Architectural Overview

- Java enterprise development
- Model/View/Controller
  - How it maps to the frameworks
- WebSphere® application framework overview
  - Web Server
  - App Server
  - The Servlet Engine
  - The JSP Engine
  - EJB Server
  - Databases
  - Client platforms
- Current standards

### 2. Servlet Basics

- Servlet overview
- The Servlet API
- HTTP Basics
  - Requests
  - Responses
  - Headers
  - Get
  - Post
- Servlet Invocation
- Sending and receiving information
  - The HttpServletRequest object
  - The HttpServletResponse object
- Servlet Lifecycle
- Threading Issues
- Deploying Servlets
- Invoking a Servlet
- HttpServlet class structure and methods
- Servlet loading and reloading in WebSphere

### 3. Servicing Requests

- Initialization
- HttpServletRequest parameters
  - Getting parameter values
  - Getting parameter names
- Getting/setting status codes

### 4. Using JDBC with Servlets

- Overview of JDBC Architecture
- Connecting to the database

- Executing SQL statements
- Using ResultSets
- Using Prepared Statements
- Managing connections
  - Connection Pooling
- Using Transactions in servlets

### 5. Session Tracking

- Session tracking and management
  - Traditional methods: hidden form fields, URL rewriting, cookies
  - Session tracking API: using HttpSession: putValue(), getValue()
- Session Lifecycle
- Session Binding

### 6. Servlet Communication

- Servlet chaining
- Page caching techniques
- Communicating with Applets
- Servlet Chaining
- Servlet Filtering
- Redirection
- Request Dispatching
  - Forward
  - Include

### 7. Java Server Pages (JSPs)

- JSP Overview
- Relationship to Servlets
- JSP Execution
- JSP Elements
- JSP Directives
- Scriptlets
- Implicit Objects
- Declarations
- Expressions
- Comments
- Action Include
- Request Forwarding

### 8. Using JavaBeans with JSPs

- JavaBeans overview
- Architectural overview
- Passing JavaBeans
- The Bean Tag



- Bean Tag attributes
  - Name
  - Scope
  - Class and Type
- Getting/setting properties

## 9. JSP Tag Descriptor Libraries

- Custom tags overview
- Tag handler classes
- Tag descriptor libraries
- JSP taglib directive
- Basic tag definition

- Tags and attributes
- The Tag Body
- Nested Tags

## 10. Integrating Servlets and JSP

- Request Dispatching
- Forwarding Requests
- Communicating via JavaBeans
  - Set up by servlets
  - Used by JSP
- RequestDispatcher include

