

# SERVLET & JSP PROGRAMMING USING ECLIPSE/JBOSS-IDE AND JBOSS

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## DESCRIPTION:

*This course introduces the students to learn to develop and test server-side applications based on the Java 2 platform, Enterprise Edition (J2EE) component model using the Eclipse and JBoss platform (using the JBoss-IDE plugin). Develop and test server-side applications that use servlets and JavaServer Pages (JSPs) for the control and flow of e-business applications.*

## DURATION:

Five (5) Days.

## COURSE OBJECTIVES:

Upon successful completion of this course, the student will be able to:

- Use Eclipse as an truly integrated development environment
- Build servlets according to the current Servlet 2.3 specification
- Build JSPs according to the current JSP 1.2 specification
- Build custom JSP tag libraries
- Integrate servlets and JSPs into a complete J2EE application
- Deploy a J2EE application to JBoss

## AUDIENCE:

Java programmers who build server-side web applications interested in leveraging Eclipse and JBoss to streamline their development cycle.

## PREREQUISITES:

Students should understand essential concepts of Object-Oriented Programming and be able to write simple Java programs with assistance.

## TOPICS OUTLINE:

### I. J2EE Overview

- J2EE Based Web Application Architecture
- MVC Model and Components for Web Application Development

### II. Servlets - Basic

- Servlet Overview
- HTTP Servlet API
- Servlet Life Cycle
- Example
- Developing Servlets
- Code, Test and Debug a Servlet

### III. Servlet Interaction Interface

- Request
- Response
- ServletContext
- Servlet Session Tracking

### IV. JSPs

- JSP Overview
- JSP Directives
- JSP Expressions
- JSP Scriptlets
- JSP Declarations
- Examples
- Developing and Testing JSP
- Editing JSP
- Predefined Variables
- Examples

### V. Using Java Beans in a JSP

- Objectives
- What is a JavaBean?
- Structure of a JavaBean
- Life Cycle
- Properties
- A very Simple Bean
- Using JavaBeans in JSP

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## ***V. Using Java Beans in a JSP (Continued)***

- The jsp:useBean Tag
- The jsp:useBean Scope
- The jsp:useBean in Action
- The jsp:getProperty Tag
- The jsp:setProperty Tag
- Another Example
- Mixing Scriplets and Bean Tags

## ***VI. JSP Programming Techniques***

- Form Input Validation
- Session Management
- Error Handling
- Cookies

## ***VII. Servlet Programming - Advanced***

- Programming with the MVC Model
- JDBC and Database Connection Pooling
- Session Tracking
- Integrating Servlet and JSP
- Examples

## ***VIII. Web Applications and MVC Patterns***

- Tiered Architectures
- Presentation Layer
- Middle Tier
- Model View Controller
- Extensible Markup Language

## ***IX. Filters***

- Concepts
- The Filter API
- A Simple Filter
- Configuring Filters
- Mapping Filters to Web Resources
- Request and Response Wrappers

## ***X. Assembling Web Applications***

- Assembling J2EE Applications

## ***XI. Introduction to Struts***

- Struts as an MVC Application Framework
- What Struts Provides
- Integrating Your Model
- Describing Your Controller
- Implementing Your View
- The Struts Configuration File
- Packaging a Struts-based Application

## ***XII. Custom Tag Libraries***

- Using a Custom Tag Library
- Creating a Custom Tag Library
- Sample Custom Tag Library Components
- Packaging and Installation
- Advanced: Handling Tag Bodies

## ***Appendix A – Quick HTML Reference***

- Introduction: HTML and the Web
- The Basic Structure of HTML Documents - Laying Out Text in HTML
- Enhancing Your Tags: HTML Attributes Images and Backgrounds
- Links to Other Pages, E-mail, and More
- Adding Color to Your Pages
- HTML Tables
- An Introduction to Frames
- Adding Links Between Frames
- Client-Side Image Maps
- Review of HTML Tables
- Using Tables to Create a More Complex Design
- Fluid Tables vs. Fixed-Width Tables
- Nested Tables
- The Tag
- The Future: XHTML

## ***Appendix B – ANT***

- Introduction to Ant
- Ant Build Files
- Built-in Ant Tasks
- Creating a Simple Build File in Ant

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## ***Appendix B – ANT (Continued)***

- Running Ant
- Working with J2EE and Ant

## ***Appendix C – XML***

- Data and Document Structure
- Markup Languages
- What is XML?
- Why XML?
- An Example of XML Document
- Well-formed vs. Valid XML Document
- Enforcing Validity: DTDs
- Presentation Style
- Sections of an XML Document
- XML Elements
- Nesting and Hierarchy of XML Elements
- Tag Attributes
- Naming Rules
- Empty and Non-Empty Elements
- Other XML Tags
- Entity References
- Character References
- Namespaces
- Processing Instructions