



SERVLETS & JSP DEVELOPMENT WITH WEBSHERE STUDIO APPLICATION DEVELOPER V5.1.1

Course Duration: 5 Days

Course Overview: Learn to develop and test server-side applications based on the Java 2 platform, Enterprise Edition (J2EE) component model using the IBM WebSphere software platform of products and tools. Develop and test server-side applications that use servlets and JavaServer Pages (JSPs) for the control and flow of e-business applications.

Topics Covered:

- Develop and test servlets
- Develop and test JavaServer Pages (JSPs)
- Develop and test J2EE applications following the Model/View/Controller architecture
- Integrate business logic using Java Beans and Java Database Connectivity (JDBC)
- Apply best practices to servlet and JSP development

Students will have the opportunity to build a simple Java program, servlets and JSPs using WSAD v5.1. Students will also deploy a J2EE application into WebSphere Application Server v5.

LEARNING OBJECTIVES

- After completing this course, the student should be able to:
- Use WSAD v5.1 as a 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
- Test servlets and JSPs using the WebSphere Test Environment
- Deploy a J2EE application to WebSphere Application Server

Who Should Attend: Java programmers who build server-side web applications interested in leveraging WSAD v5.1 to streamline their development cycle.

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

COURSE OUTLINE

Introduction

- WebSphere Studio Site Developer
- WebSphere Studio Application Developer
- Major differences with Visual Age for Java

Introduction to J2EE and WebSphere v5.1

- J2EE-based Web application architecture
- Application server functionality
- WebSphere platform introduction

J2EE Programming Using IBM WebSphere Studio Application Developer WSAD v5.1

- Perspectives and views
- WSAD J2EE development
- WSAD project concepts
- EJB project
- Web project
- The WebSphere Test Environment in WSAD

Servlets - Basic

- Servlet overview
- HTTP Servlet API
- Servlet life cycle
- Example
- Developing servlets
- Create a Web project in WSAD
- Code, test and debug a servlet

Servlet interaction interface

- Request
- Response
- ServletContext
- Servlet session tracking

JSPs

- JSP overview
- JSP directives
- JSP expressions
- JSP scriptlets
- JSP declarations
- Examples
- Developing and testing JSP
- JavaServer Pages in WSAD
- Editing JSP
- Predefined variables
- Examples
- JSP page design in WSAD
- JSP testing in WSAD
- JSP debugging in WSAD

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
- The <jsp:useBean> tag
- The <jsp:useBean> Scope
- The <jsp:useBean> in Action
- The <jsp:getProperty> tag
- The <jsp:setProperty> tag
- Another example
- Mixing scriptlets and bean tags

JSP Programming Techniques

- Form input validation
- Session management
- Error handling
- Cookies

Servlet Programming - Advanced

- Programming with the MVC model
- JDBC and database connection pooling
- Session tracking
- Integrating servlet and JSP
- Examples
- DB2 UDB JDBC drivers in WSAD
- Create a JavaBean with WSAD
- Add attributes and getters and setters with WSAD

Filters

- Concepts
- The Filter API
- A simple filter
- Configuring filters
- Mapping filters to web resources
- Request and Response wrappers
- Creating filters with WSAD

Architecting MVC Applications

- Model-View-Controller architecture
- Advantages and disadvantages
- Model 1 architecture
- Model 2 architecture

Assembling Web applications with the WebSphere Application Assembly Tool

- J2EE application assembling modules
- Assembling Web applications with the WebSphere Application Assembly Tool
- Installing Web applications in WebSphere Application Server

Installing Web Modules inside WebSphere Application Server

- Editing the J2EE deployment descriptor using WSAD and the AAT.
- Architecture of WebSphere Application Server administration
- Using the WebSphere Administration Console to add enterprise applications

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

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

Appendix A - Tag Handlers

- Tag handler lifecycle
- Processing the tag
- Writing output
- taglib element in the DTD
- tag element in the DTD
- Using pagecontext
- Exception handling

Appendix B - Advanced Tag Library Features

- Including tag body
- Manipulating tag body
- Repeating tag body
- Accessing parents