JSP Programming using RAD7 *CDT735*

This course makes extensive use of hands-on examples and exercises to familiarize the student with JSP programming. Students will learn to program JSPs which do and do not interact with servlets and web pages. We will develop systems which implement the Model 2 Architecture. While the emphasis of this course is on the programming of JSPs, participants will also gain expertise in working with many of the features of IBM's Rational Application Developer V7: features which make it the platform of choice for JSP development.

Audience
- Java programmers who want to increase their knowledge of the Java language
- Java programmers who will be building enterprise applications using J2EE

Prerequisites
- Prior programming experience or training in Java Programming suing RAD7
- Prior programming experience or training in Servlet Programming using RAD7 is required
- Prior programming experience or training in HTML and/or JavaScript is recommended but not required

Course Length
- Two days
- Ideally, this course would be taught immediately or shortly after our Servlet Programming course

Learning Objectives
- Understand the JSP life cycle
- Develop and test JSPs using RAD7
- Create JSPs which use data retrieved from HTML/XHTML forms
- Create JSPs which use JavaBeans passed from other servlets
- Create JSPs which use JDBC to access relational databases
- Write JSPs which work alone and in conjunction with other servlets
- Develop systems in which web pages, servlets, and JSPs work together consistent with the Model 2 Architecture
- Access databases using JNDI

Teaching Methods
- Lecture
- Hands-on examples
- Supplemental hands-on exercises

Course Outline *QF6*

Introduction
- What is a JSP?
- JSPs: When and why?
- Components of a JSP

Our First JSP
- Creating a JSP
- Including an expression
- Running a JSP on the server

Scripting
- Scriplets
- Comments, expressions, and declarations

Life Cycle of a JSP
- jspInit()
- jspDestroy()
- <body></body>

Init Parameters
- Creating JSP init parameters
- Accessing JSP init parameters
- Creating context init parameters
- Accessing context init parameters

Simple JSPs
- More scripting
- Text fields and request.getParameter()
- Declaring variables
- Defining methods
- Hidden fields
- Radio buttons
- Submit button
- method = "Get" vs. method = "Post"

Implicit Objects
- Implicit objects available to the JSP programmer
- Object scope: application, page, request, session

Database Query from a JSP
- Getting the key fields from a FORM
- Accessing the database with JDBC
- Formatting and displaying the results
- <%@ page import %>
- Error processing

Error Pages
- Defining exceptions
- Defining an error page JSP
- <%@ page isErrorPage="true" %>
- throwing an Exception from a JSP
- <%@ page errorPage="MyErrorPage.jsp" %>

Model 2 Architecture: JSP/Servlet Interaction
- What is Model 2 Architecture?
- Review of JavaBeans
- Passing a bean to the JSP: request.setAttribute
- Forwarding to the JSP: RequestDispatcher.forward
- <jsp:useBean>
- <jsp:getProperty>

JNDI
- Create a JNDI Data Source
- CLASSPATH
- Database Connection
- Create SQL Statement
- Generate Java Bean
- Query page
- Results page