Java Servlet Programming

Course Summary

Description

This workshop will teach students about the capabilities and architecture of Servlets. The course will also discuss the advantages of Servlets over CGI and how to use JDBC. In conclusion, the course will address exception handling and session management.

Objectives

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

- Use WSAD to develop, debug and test Servlets
- Create web application using WSAD
- Manage session-related information from Servlets
- Communicate between Servlets pages
- Process forms with Servlets
- MVC and Layered Architecture and Design
- Build Database-Driven Applications With JDBC and Servlets
- Handle Exceptions

Topics

- Servlets
- Java Server Pages
- Java Server Pages – Part 2
- Java Beans
- JDBC
- Architecting Web Applications

Audience

This course is designed for programmers.

Prerequisites

The student must have a working knowledge of Java programming and object oriented programming.

Duration

Three days

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Course Outline

I. Servlets
   A. What is a Servlet?
   B. Typical uses of Servlets
   C. Advantages over CGI
   D. How Servlets work
   E. Servlet's lifecycle
   F. Java Servlet architecture
   G. Service() method
   H. Writing HelloServlet
   I. Running the HelloServlet
   J. The ServletRequest Object
   K. Handling form data
   L. doGet() vs doPost()
   M. Using doGet()
   N. Using doPost()
   O. The ServletResponse Object
   P. The ServletContext Object
   Q. Session management

II. Java Server Pages
   A. Why use JSP ?
   B. How JSPs work
   C. JSPs life
   D. A simple JSP
   E. Creating JSPs
   F. Scripting elements
      1. Scriptlets
      2. Expression
      3. Declaration
      4. Comments
   G. Using scripting elements
   H. JSPs implicit objects

III. Java Server Pages – Part 2
   A. JSP directives
   B. Page directives
   C. Include directives
      1. Taglib directives

IV. JavaBeans
   A. Java Beans defined
   B. Java Bean structure
   C. Properties
   D. Adding Java Beans in JSP
      1. <jsp:useBean>
      2. <jsp:setProperty>
      3. <jsp:getProperty>
   E. Inserting Java Beans in Servlets
   F. Exeption handling
   G. What is an exception
   H. Error and exception
   I. Exception hierarchy
   J. Runtime exception
   K. Local exception handling
   L. Throwing an exception
   M. Simple rules for exception handling

V. JDBC
   A. What is JDBC
   B. JDBC driver types
   C. Basic JDBC interaction
      1. Load the driver
      2. Establish a connection
      3. Execute SQL statements
   D. Statement
      1. Execute()
      2. ExecuteQuery()
      3. ExecuteUpdate()
      4. ResultSet
      5. Inserting a record
      6. Updating a record
      7. Deleting a record
      8. Prepared statement
   E. Servlet and JSP interaction
   F. Calling a JSP from a Servlet
   G. Using the RequestDispatcher

VI. Architecting Web Applications
   A. Model one architecture
   B. Model two architecture