

J2EE Applications Programming/Development

Course Summary

Description

This course will teach students to build database enabled J2EE Web programming in the RAD environment using Servlets, Filters, JSP and related technology. The students will learn how to build a web application using the Model-View-Controller (or MVC or Model II) design. It will also include an overview of the Apache Struts framework. Servlets, filters and events will be covered extensively, including programming and configuring these components. Students will write simple JSPs, write and use JavaBeans. All aspects of JSP will be covered as well as an overview of EJB. Various aspects of accessing data and managing state efficiently are covered, including JDBC and HTTP session management.

Topics

- J2EE 1.4 Architecture
- IBM Rational Application Developer (RAD)
- Servlets Development and Configuration
- Java Server Pages (JSP) Development
- J2EE Web Application/Web Module Development
- JNDI Service
- JDBC Service
- Struts based Web Application Development
- Enterprise Java Beans (EJB) Overview
- Web Services in J2EE Application

Audience

This course is designed for Java Programmers and Enterprise/Web Application Developers.

Prerequisites

Students attending this course should have a working knowledge of Core (Basic) Java programming and platform.

Duration

Five days

J2EE Applications Programming/Development

Course Outline

I. J2EE 1.4 Architecture

- A. Web Client-Server Overview
- B. J2EE Architecture
- C. J2EE Component Technologies
- D. J2EE Modules
- E. J2EE Applications
- F. J2EE Deployment Descriptors
- G. J2EE Services
- H. J2EE Communication Technologies
- I. J2EE Connectors and Back-end Integration

II. IBM Rational Application Developer (RAD)

- A. IBM WebSphere Application Server
- B. IBM Rational Application Developer (RAD)
- C. Perspectives, Views and Editors
- D. Java Perspective
- E. Debug Perspective
- F. Web Perspective
- G. J2EE Perspective
- H. Java/J2ee Applications Development
- I. Server Administration

III. Servlets Development and Configuration

- A. Servlets and Web Servers
- B. The Servlet API
- C. Servlet Life-cycle
- D. Servlets and Multi threading
- E. HTTP Servlets Development
- F. HTTP Servlets methods
- G. Servlet Initialization Parameters
- H. Getting Input Parameters from user
- I. Http Session State
- J. Cookies
- K. URL Rewriting
- L. Configuring Servlets

IV. Java Server Pages (JSP) Development

- A. JSP Basic Tags
- B. JSP Implicit Objects
- C. JSP Compilation
- D. JSP Lifecycle
- E. JSP Advanced Tags
- F. Java beans and JSP
- G. JSP Custom Tags
- H. Configuring JSP
- I. Configuring Custom JSP tags
- J. Tag Library Descriptor

V. J2EE Web Application/Web Module Development

- A. What is a J2EE Web Application?
- B. Web Application Directory Organization
- C. Web Application Deployment Descriptors
- D. Configuring a Web Application properties
- E. Configuring Servlet properties
- F. Configuring Java Server Page properties
- G. Configuring Security, Resources and EJB References

VI. JNDI Service

- A. What is JNDI?
- B. JNDI API
- C. The javax.naming package
- D. Context and JNDI Environment Properties
- E. JNDI Name binding in Server Environment
- F. Steps to connect to JNDI and perform a JNDI Lookup
- G. JNDI Application Development

VII. JDBC Service

- A. JDBC Overview
- B. JDBC Drivers
- C. DataSource and Connection Pools
- D. Configuring Data Source
- E. Configuring Connection Pools
- F. JDBC Application Development

J2EE Applications Programming/Development

Course Outline (cont'd)

VIII. Struts based Web Application Development

- A. Model-View-Controller Architecture
- B. What is Struts?
- C. Model-View-Controller 2 Architecture
- D. The Model: System State and Business Logic JavaBeans
- E. The View: JSP Pages and Presentation Components
- F. The Controller: ActionServlet, Action and ActionMapping
- G. A Struts based Web Application Control Flow
- H. Developing Action classes
- I. The Struts JSP Tags
- J. The Struts Form beans
- K. The Struts Configuration file
- L. Configuring Web Application Deployment Descriptors
- M. How to develop Struts based web application using RAD?
- N. The Struts API

IX. Enterprise Java Beans (EJB) Overview

- A. What is EJB?
- B. EJB Specifications
- C. EJB Roles
- D. EJB Architecture
- E. EJB Servers
- F. EJB Containers
- G. Enterprise Beans
- H. Session Beans
- I. Entity Beans
- J. Message Driven Beans
- K. Home and Remote Interfaces
- L. LocalHome and Local Interfaces
- M. Session Bean Class
- N. Entity Bean Class
- O. Message Driven Bean Class

- P. Generating EJB Container (Wrapper) Classes
- Q. EJB Deployment Descriptors
- R. The ejb-jar.xml
- S. WebSphere specific DD files (WebSphere Extensions)
- T. Packaging and Deploying beans
- U. Client – EJB Interaction

X. Web Services in J2EE Application

- A. What is a Web Service?
- B. Web Service Interoperability (WS-I)
- C. Web services – document style
- D. Web services – RPC style
- E. W3C Standards - SOAP, WSDL and UDDI
- F. Web services Examples
- G. Web Services End Points
- H. Service End Point Interface (SEI)
- I. Service End Points in a Web Application
- J. Service End Points in n EJB Application
- K. Web Services Deployment Descriptors
- L. Developing a Web Service Application