Portal Application Development Using RAD v7.0

Course Summary

Description

This course teaches student how to develop Portal Applications using Rational Application Developer for WebSphere Software. Students will explore the Portlet Application Programming Interfaces (APIs) and tag library, as well as various approaches to portlet development. The concepts taught in this course are reinforced by hands-on lab exercises.

Objectives
At the end of this course, students will be able to:

- Develop and debug portal applications
- Develop custom portlets using JSR 168, JSF, Struts and AJAX
- Use portal tolls in IBM Rational Application Developer for WebSphere Software including the Portal Designer and WebSphere Portal v6 Test Environment.

Topics

- WebSphere Portal Server Introduction
- Portlet Programming Basics
- RAD: Portal Tools
- Debugging Portlets
- JSR 168 Portlet API: Part 1
- JSR 168 Portlet API: Part 2
- JSR 168 Portlet Tag Library
- JSF Basics (*optional*)
- JSF Portlets
- Developing Portlets with AJAX
- Struts Overview (*optional*)
- Struts Portlets
- Internationalization Support
- Cooperative Portlets
- Portlet Services
- Credential Vault Service
- Composite Applications
- WSRP
- Portal Customization
- Basic Portal Administration
- Portlet Best Practices

Prerequisites

Students should have experience developing Java servlets and JavaServer Pages.

Duration

Five days

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Course Outline

I. WebSphere Portal Server Introduction
- A. Portal Features
- B. Key Concepts
- C. Page Layout and Aggregation
- D. WebSphere Portal Products
- E. WebSphere Portal Architecture

II. Portlet Programming Basics
- A. Portlet Container
- B. Portlets Versus Servlets
- C. Portlet APIs
- D. Portlet States and Modes
- E. Portlet Lifecycle
- F. Portlet Interactions
- G. Request Processing
- H. Core Objects
- I. Deployment

III. RAD: Portal Tools
- A. Hardware and Software Requirements
- B. Installing the Portal Tools for RAD
- C. Portal Development Process
- D. Portal Test Environment Configuration
- E. Creating Portal and Portlet Projects
- F. Project Structure
- G. Supported APIs
- H. Adding Portlets
- I. Views and Editors that Support Portlet Development
- J. Adding Portlet Tags
- K. Portlet Deployment Descriptor Editor

IV. Debugging Portlets
- A. Configuring a WebSphere Portal Test Environment
- B. Attaching to WebSphere Portal
- C. Debugging Portlets
- D. Common Mistakes

V. JSR 168 Portlet API: Part 1
- A. The Portlet Interface
- B. LifeCycle Methods
- C. Core API: GenericPortlet, PortletConfig, PortletContext and PortletSession
- D. Request Processing Objects: PortletRequest, PortletResponse and PortletURL
- E. Portlet Modes and States
- F. Action Processing

VI. JSR 168 Portlet API: Part 2
- A. Portlet Preferences and Preference Validation
- B. User Information and User Attributes
- C. Listeners
- D. Portlet Caching
- E. Known Limitations
- F. Configuration and Deployment

VII. JSR 168 Portlet Tag Library
- A. Tag Basics
- B. Commonly-used Portlet Tags
- C. Using JSTL in Portlets

VIII. JSF Basics (*optional*)
- A. JSF Architecture
- B. JSF Application Components
- C. Development Steps
- D. UI Component Model
- E. Page Development
- F. HTML UI Components and Faces Client Components
- G. Navigation Model, Navigation Rules and Navigation Cases
- H. Binding, Developing and Declaring Backing Beans
- I. Faces Request Life Cycle

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Course Outline (cont'd)

IX. JSF Portlets
- A. JSF Portlet Runtime
- B. Action Processing and Rendering
- C. Development Steps
- D. Creating JSF Portlet Projects and Portlets
- E. Project Structure
- F. Adding and Configuring JSF Portlet Components
- G. Using the Page Data and Client Data Views
- H. Editing Page Code Classes
- I. Accessing the Portlet API from JSF
- J. Value Binding
- K. Custom Validators
- L. Defining Deployment Settings and Page Navigation
- M. JSF Portlet Limitations

X. Developing Portlets with AJAX
- A. AJAX Overview
- B. The Advantages and Disadvantages of AJAX
- C. AJAX Request Types
- D. Configuring Parameters and Specifying Events
- E. Views that Support AJAX
- F. Using AJAX from a Portlet
- G. Handling AJAX Requests
- H. Making an AJAX Request

XI. Struts Overview (*optional*)
- A. MVC and Struts
- B. Model Components
- C. View Components
- D. Custom Tags
- E. Struts HTML Tags
- F. Struts Bean Tags
- G. Struts Logic Tags
- H. Controller Components: ActionServlet, ActionMapping, ActionForm and Action
- I. Strengths and Weaknesses

XII. Struts Portlets
- A. Struts Portlet Framework
- B. Action Processing and Rendering
- C. Error Processing and Response Objects
- D. URI/URL Construction
- E. Struts Tools
- F. Creating Struts-based Portlets
- G. Designing Struts Portlets using the Web Diagram
- H. Generating Struts Portlet Framework (SPF) Actions
- I. Struts Configuration

XIII. Internationalization Support
- A. Approaches to Internationalization
- B. Resource Bundles
- C. Supported Locales
- D. Accessing Resource Bundles
- E. JSLT Internationalization Tags
- F. Displaying Locale-Specific Messages
- G. Formatting Dates and Numbers
- H. Providing Translated Resources and Serving Translated Files

XIV. Cooperative Portlets
- A. Cooperative Portlets Framework
- B. Sharing Properties Between Portlets
- C. Property Broker
- D. Specifying Sources and Targets
- E. Describing Properties in WSDL
- F. Publishing Properties for a JSR 168 Portlet
- G. Processing Input Properties
- H. Portlet Wiring Tool
- I. Deployment Settings
- J. Internationalization

XV. Portlet Services
- A. Portlet Services Architecture
- B. CredentialVaultService, ContentAccessService, PropertyBrokerService
- C. Consuming Services
- D. Implementing a Custom Portlet Service

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Course Outline (cont'd)

XVI. Credential Vault Service
- A. The Purpose of the Credential Vault
- B. Credential Types
- C. Slots
- D. Vault Service API
- E. Accessing Credentials
- F. Deployment Settings
- G. Credential Vault Portlet
- H. Credential Issues

XVII. Composite Applications
- A. What are Composite Applications?
- B. Why Use Composite Applications?
- C. Design Process
- D. Templates
- E. Components and Applications
- F. Building a Template
- G. Parameterization
- H. Creating an Application
- I. Application Roles
- J. Membership

XVIII. WSRP
- A. Web Services for Remote Portlets Overview
- B. Why Use WSRP?
- C. Remote Portlets
- D. WSRP4J
- E. WSRP Producer
- F. WSRP Consumer

XIX. Portal Customization
- A. Portal Project Wizard and Portal Project Structure
- B. Portal Designer
- **C.** Portal Navigation and Hierarchy
- **D.** Defining Layout
- **E.** Creating and Editing Themes and Skins
- F. Editing Styles Within a Theme

XX. Basic Portal Administration
- A. Hardware and Software Requirements
- B. Portal Components
- C. Controlling the Administrative Server
- D. Controlling the WebSphere Portal Server
- E. Page Navigation
- F. Administration Portlets
- G. Portal Page Administration
- H. Deploying Portlets
- I. Defining Unique Names
- J. Managing Themes and Skins

XXI. Portlet Best Practices
- A. Portlet Application Principles
- B. Using the Model-View-Controller Pattern
- C. Portlet Do's and Don'ts
- D. WebSphere Guidelines
- E. JSP guidelines
- F. Data Management
- G. Session Usage
- H. Multiple Markup
- I. Performance

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