
WebSphere Portal Development

Duration: 5 days

This class teaches students WebSphere Portal development using JSR 286 API. This will contain significant improvements to the previous ways of portal developments. The student will also learn JSF and Struts based portal developments. All the labs will be done using RAD v7.5.

This class also gives an overview of AJAX and how it may be used in a WebSphere Portal web site..

Topics

- Introduction to WebSphere Portal.
- Portal programming methodology.
- JSR 286 API.
- RAD Portal Toolkit.
- Using RAD Tools to customize Portal themes and skins.
- Developing Struts based portlets.
- Developing JSF based portlets.
- Using AJAX for web Developments.
- Developing WSRP.

Practical work

This course explores Portal Development and the move within organizations to adopt a Portal Application Framework. This course will equip developers and programmers with a working knowledge of all the components of WebSphere Portal Development, using a hands-on experience and applying some of the most popular J2EE API's.

This course covers and intensive hands on exercises; these exercises take audience through all major aspects of the design and development of WebSphere Portal Applications.

What you will learn

After completing this course, the attendees should be able to:

- Setup your environment to accommodate the latest Portal Toolkit
- Fully Understand the portlet programming model
- Develop portal site using RAD v7.5.
- Use RAD to develop cooperative portlets.
- Develop JSF and Struts portlets.
- Develop portlets using AJAX.
- Produce and Consumer portlets using WSRP

Audience

Developers who will like to learn about how to build Portal website using WebSphere portal server.

Prerequisites

Java programming. Beginner level knowledge of J2EE and XML.

Course Content

1. Overview of WebSphere Portal Server

- Understanding what is a Portal, Some WebSphere Portal Site.
- Understanding Portal Architecture and WebSphere Portal Products.
- WebSphere Portal Architecture Network
- Overview of WebSphere Portal Server and its Architecture
- Portlets, Page Aggregation, WebSphere Portal Built-in Portlets
- Portlet Application, Portlet State and Mode, WebSphere Portal Information
- Portlet Specification JSR-168, Portlet Specification JSR-286
- Overview of Portlet Security, Portal User Management and access control
- Portal credential vault service, Portal best practices

2. Using RAD for Portal Development and Deployment

- The RAD 7.5 Products, Eclipse Platform, Key Features in RAD v7.5
- Views, Perspective, and Editor Areas
- Basic Operations with RAD Views and Perspectives
- The Java Perspective, Portlet Development Support
- RAD 7.5 Installation, Portal Server v6.1 Installation
- Portal basic development, Project Structure, Portlet Project
- Create a Project Structure, Working With the Project
- portlet.xml Editor, Creating a Test Server, Managing the Server
- Unit Testing, How to export Portal Apps.

3. Understanding JSR 286 Programming

- What is JSR 286, and what is Alternatives API's
- Outlining the difference with Java SE and Java EE
- JSR connections to Servlets, a Portal Site, the Portlet
- JSR relationship to portlet Application, the portlet.xml File, Portlet Container
- Portal window and Portal Server.

4. Basic Portal Programming

- Using Model-View-Controller with respect to Portal Development.
- MVC, The Portlet Interface, Our first Portlet.
- Lifecycle of a Portlet, How the portlet handle a Request.
- Using the render method, Using two Phase Request Processing
- PortletRequest and PortletResponse Interfaces
- Some of the Processing API's, the RenderResponse Interface, PortletURL
- Portlet Processing method the processAction Method, The ActionRequest Interface
- The ActionResponse Interface, Render Parameter
- The GenericPortlet Class, User Session Management
- Relationship of PortletSession with HttpSession
- End of Portlet Life, Portlet Configuration, Portlet Initialization Parameter
- Portlet Context, Interacting With JSP, State Management
- Better View State Management

5. Steps to providing a Display

- Techniques in View Development, Custom Tags for JSP
- Custom Tags for Portal, Tags for JSR 286, Portal defineObjects Tag
- The actionURL, param, namespace, property, JSP Expression Tags
- Portal Support in the National Language
- Access of resource Bundle File
- JSTL Internationalization Tags
- Static Translation, Portlet Resource Bundle

6. Using Preferences with portlets

- Updating Portlet Preferences, Updating Preference
- Portlet Preferences, Reading Preferences
- Validating Preference Update, Validation
- Creating Portlet Preferences Using RAD 7.5

7. Portlet Services

- Developing a Portlet Service, Implementing a Portlet Service interface.
- Developing the Portlet Service Implementation
- AccountServiceImpl, Registering Portlet Services
- PortletServiceRegistryService
- Accessibility to Services from a Portlet, Content Access Service

8. Advanced Portal Programming

- Annotations, @RenderMode Annotation, @ProcessAction Annotation
- Portlet Caching, Validation-based Caching
- Accessing User Information from Portlet
- Enabling Caching in WebSphere Portal Server.
- Accessing User Information, Steps to Access User Information

9. Portlet Communication Overview

- Portlet Communication Techniques
- Comparison of Portlet Communication Techniques
- Which Portlet Communication Technique Should I Use?

10. Credential Vault

- Credential Vault, Credential, Components of Credential Vault
- Credential Access Level, Single Sign-On Scenario
- CredentialVaultService, Methods of the CredentialVaultService
- Finding CredentialVaultService, Saving Credential
- Classes that Implement the Credential Interface
- PassiveCredential, UserPasswordPassiveCredential, ActiveCredential
- HttpFormBasedAuthCredential.

11. Portlet Event Communication

- Portlet Events, Create Event Payload
- Declare Event and Event Publisher in portlet.xml
- Declare Event Processor in portlet.xml, Event Publishing
- EventResponse Interface, Event Processing
- Event Publishing in Response to an Event, Source & Target Portlet
- Communication Between Portlets in Different Applications

12. JSF Portlet Development

- JavaServer Faces (JSF) Basics, Defining the Screen Layout
- Managed Bean, Assigning the Model, HTTP Request Handling
- Navigation, Advantage of JSF, Creating a JSF Portlet
- Navigation State Management, Creating a JSF Portlet Project

13. Non-Event Portlet Communication

- Public Render Parameters,
- using portlet.xml to declare Render Parameters
- Source Portlet modifications to set a Render Parameter
- Scope limitation to the Scope of Public Render Parameters
- Sharing Render Parameters Between Portlets in Different Applications
- Client-side Click-to-Action ("Live Text")
- Client-side Click-to-Action, Specify a Live Text Source
- Specify a Live Text Target, Using RAD 7.5 to Set up Client-side Click-to-Action
- Click-to-Action for Input and Output Property.

14. Using AJAX in a Portlet

- AJAX in a nutshell, the AJAX style, Aspects of AJAX
- Advantages of the AJAX Approach
- Creating the XMLHttpRequest Object, the XMLHttpRequest Object Basics
- The Timeline, Using AJAX from a Portlet, JSR-286 and AJAX
- ResourceURL, the ResourceServingPortlet Interface
- Ajax Portlet

15. Composite Applications

- Composite Application Elements
- Template, Enabling Composite Application Support
- Composite Application Design and Use
- Configuring A Template, Edit the Template Layout
- Creating and Configuring the Application
- Protecting Applications and Templates
- Defining Roles, Roles Portlet, Assign Application Members

16. The Portal Designer

- Portal Project and how to create a Portal Project
- Importing an Existing Portal Site, Using the New Portal Project Wizard
- Portal Project Structure, What is the Portal Designer?
- Portal Navigation, how to create a New Label and Page
- Deploying a Portal Project, Deploying to a Remote Server
- Deploying a Portal Project Using the Export and "Deploy Portal" Options

17. Service Data Objects

- Service Data Objects SDO and its components
- Data Object, Data Graphs, Data Mediator
- SDO Data Graph, Components of SDO
- Relational Record Properties, Relational Record Column Selection
- Relational Record Resulting Faces JSP, Data Source Explorer View
- XML Artifacts Created for Relational Record addressRecord
- XML Artifacts Created for Relational Record addressList
- Configure Database Connection Details, The SDO API
- Java API for SDO, DataObject Interface, DataGraph

18. Web Services for Remote Portlets

- Remote Portlets, WSRP Architecture, Benefits of WSRP
- Information Artifacts, WSRP Security Issues
- JSR-286 and WSRP 2.0., Pre-defined Container Events

19. Themes and Skins

- Elements of a Portal Site, Page and Label, Page/Label Hierarchy
- Portal Site Navigation, URL, Theme, Screen, The Home Screen
- Page Rendering, The Default.jsp, The Control.jsp
- Layout of HTML Skins, Directory Structure of Themes & Skins
- Creating a New Theme and Skin, Using the Portal Designer

20. Portal Development Best Practices

- Architecture Best Practices, Controller (Portlet) Guidelines
- View (JSP) Guidelines, Configuration Management
- Session Management, Security Guidelines
- Java Performance Tips, Portlet Performance Tips
- Performance Testing Guidelines

21. Portlet Build and Deployment Process

- Overview of the Build Process
- Installing a Portlet Web Module, Managing Portlet Web Modules
- Managing Portlet Applications, Managing Portlets, Adding a Portlet to a Page
- Configuring A Portlet, Copying A Portlet Application, Copy A Portlet
- Removing A Portlet From A Page, Uninstalling A Portlet Application