Transitioning to Rational Application Developer v6.0

Course Summary

Description

This course teaches students how to use IBM Rational Application Developer (RAD) v6.0 for J2EE development. The course focus is on teaching students how to use the tool to implement J2EE components, not on the underlying J2EE technology. The concepts taught in this course are reinforced by hands-on lab exercises.

Objectives

At the completion of this course, the students will be able to use the RAD v6.0 integrated development environment tools to develop Swing Java and J2EE applications utilizing JSP, JSF, servlets, JavaBeans, EJBs, XML and Web services.

Topics

- Introduction to J2EE Architecture
- RAD Concepts
- RAD: The Java Perspective
- RAD: UML Visual Editing
- RAD: Debug Perspective
- Application Assembly Overview
- RAD: Import and Export Wizards
- RAD: Web Perspective
- RAD: Server Perspective
- RAD: Page Designer Basics
- RAD: Image Tools
- RAD: Web Site Designer

- RAD: page Designer Advanced Features
- RAD: Data Sources
- RAD: Junit
- RAD: J2EE Perspective
- ANT
- RAD: Web Services Development
- WSAD: Web Services Client Development
- RAD: XML Perspective
- RAD: Profiling Tools
- RAD: Log and Trace Analyzer
- RAD: Struts

Prerequisites

Students should have Java programming experience, server-side development experience and familiarity with HTML. Students must be able to develop JSPs, servlets, and simple EJBs without assistance using another development environment.

Duration

Five Days

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Course Outline

I. Introduction to J2EE Architecture
   A. Enterprise Application Overview and Development Cycle
   B. J2EE Architecture and Development Roles
   C. Containers
   D. EJB, Servlet and JSP
   E. JDBC, JNDI and JTA
   F. JavaMail, JMS and RMI Over IIOP
   G. J2EE Connector Architecture
   H. Deployment Descriptors

II. RAD Concepts
   A. Workbench Features and Supported Standards
   B. Eclipse
   C. Perspectives
   D. Creating Projects and Setting Project Properties
   E. Adding Application Components
   F. Enabling Roles
   G. Using Editors and Views
   H. Fast Views
   I. Customizing Perspectives and Creating User Defined Perspectives
   J. Getting Help and Using Cheat Sheets

III. RAD: The Java Perspective
   A. Toolbar and Views
   B. Creating Packages and Classes
   C. Code and Content Assist
   D. Import Assistance and Refactoring
   E. Generating, Overriding and Implementing Methods
   F. Quick Fix Capabilities
   G. Using Bookmarks and Navigating the Workspace
   H. Code Review
   I. Productivity Tips and Keyboard Shortcuts

IV. RAD: UML Visual Editing
   A. Setting Diagram Preferences
   B. Creating Class Diagrams
   C. Visualizing Java Components
   D. Adding Fields, Methods and Relationships
   E. Class Diagram Editor Features

   F. Browse and Topic Diagrams

V. RAD: Debug Perspective
   A. Debugger Views
   B. Line Breakpoints, Exception Breakpoints, Method Breakpoints and Watchpoints
   C. Step-by-Step Debugging
   D. Remote Debugging
   E. Debugging Options

VI. Application Assembly Overview
   A. Application Assembly and Packaging
   B. Deployment Descriptors (EJB, Web, Connector and Client Modules)
   C. IBM Extensions and Bindings

VII. RAD: Import and Export Wizards
   A. Supported Files and Resources
   B. Importing EARs, JARs, Projects, Tag Libraries
   C. Server Configuration Issues
   D. RAD Source Files
   E. Exporting Resources
   F. Generating a JAR Description
   G. Specifying a Manifest File

VIII. RAD: Web Perspective
   A. Toolbar and Views
   B. Creating Web Projects
   C. Web Project Features
   D. Creating Servlets
   E. Editing Deployment Descriptors (web.xml, ibm-web-bnd.xmi and ibm-web-ext.xmi)
   F. Productivity Tips

IX. RAD: Server Perspective
   A. Creating a Server and Server Configuration
   B. Server Types
   C. WebSphere Versions 5 and 6 Comparison
   D. Defining the Target Server
   E. Testing an Application
   F. Editing the Server Configuration
   G. Reloading Resources Running on the Server

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Course Outline (cont'd)

X. RAD: Page Designer Basics
  A. Page Designer Toolbar and Views
  B. Creating a JSP
  C. JSP Models: Struts, Portlet and Struts Portlet
  D. Adding HTML Tags, JSP Tags and Form Tags
  E. Inserting JavaBeans
  F. Editing Style Sheets

XI. RAD: Image Tools (*optional*)
  A. WebArt Designer Overview
  B. Image Galleries
  C. WebArt Designer Tools and Wizards
  D. Saving Images for the Web
  E. Image File Optimization
  F. AnimatedGIF Designer

XII. RAD: Web Site Designer
  A. Web Site Designer Features and Views
  B. Adding Pages to a Web Site
  C. Defining Web Site Structure
  D. Creating and Applying Page Templates
  E. Providing Web Site Navigation: Bars, Tabs, Trails and Site Maps
  F. Recommendations and Limitations

XIII. RAD: Page Designer Advanced Features
  A. Page Properties
  B. HTML Syntax Validation and Document Cleanup
  C. Scripting Variables
  D. Using the Snippets and Quick Edit Views
  E. Creating a Faces JSP
  F. Added JSF Components

XIV. RAD: Data Sources
  A. Why Use a Data Source?
  B. Data Source in WebSphere Version 5 and 6
  C. Adding a JDBC Provider
  D. Defining a Data Source
  E. Adding Resource Properties
  F. Editing Module Deployment Descriptors

XV. RAD: JUnit
  A. RAD Testing Support
  B. JUnit TestCase and TestSuite Wizards
  C. Running JUnit Test Cases
  D. JUnit View
  E. Creating Test Projects
  F. Component Test Wizard
  G. Running tests
  H. Analyzing Results

XVI. RAD: J2EE Perspective
  A. Toolbar and Views
  B. Defining Dependencies
  C. Creating an EJB Project
  D. Creating a Session EJB
  E. Promoting Methods
  F. Generating Deployment Code
  G. Using the Universal Test Client
  H. Application Deployment Descriptor: WebSphere V5 and WebSphere V6

XVII.   ANT
  A. Ant View
  B. Ant Editor
  C. Running Build Files
  D. Ant Preferences

XVIII. RAD: Web Services Development
  A. Supported Standards and APIs
  B. Development Approaches
  C. Runtime Environments: Axis and WebSphere
  D. WS-I Compliance
  E. Creating a Web Service from a JavaBean
  F. Exposing a Stateless Session Bean as a Web Service
  G. Generated Files
  H. Testing the Web Service
  I. Editing webservices.xml, ibm-webservices-bnd.xmi and ibm-webservices-ext.xmi
  J. Editing WSDL

XIX. WSAD: Web Services Client Development
  A. Web Service Client Wizard
  B. Generating a Test Client and a Proxy

C. Generated Files
D. Using the Generated Proxy

E. Editing webservicesclient.xml, ibm-webservicesclient-ext.xmi, and ibm-webservicesclient-bnd.xmi

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Course Outline (cont'd)

XX. RAD: XML Perspective
A. Creating and Editing XML documents
B. XML Editor Features
C. DTD Editor
    D. Adding Declarations to a DTD
E. XML Schema Editor
F. Adding Elements to an XML Schema
G. The XML Catalog
H. XPath Expression Wizard
I. XML to XML Mapping Editor
J. Transforming XML
K. XSL Editor
L. Debugging XSL

XXI. RAD: Profiling Tools
A. Profiling Architecture, Resources and Agents
B. Starting a Server in Profiling Mode
C. Launching and Attaching to a Process
D. Defining Profiling Set and Filters
E. Monitoring Application Execution
F. Memory Leak Analysis and Method Execution Analysis
G. Collecting Object References and Monitoring Garbage Collection
H. Viewing Code Coverage Statistics and Sequence Diagrams

XXII. RAD: Log and Trace Analyzer
A. Common Base Event Model
B. Problem Determination Process
C. Analyzer Preferences
D. Importing Log Files
E. Using Symptom Databases
F. Log and Trace Analyzer Views
G. Filtering and Sorting Log Entries
H. Log Analysis and Correlation

XXIII. RAD: Struts
A. Configuring Struts Support
B. Creating Struts Modules
C. Struts Cheat Sheet
D. Adding Struts Components
E. Using the Web Diagram Editor and Struts Explorer
F. Configuring Actions, Action Mappings, Forwards, Exceptions and Form Beans
G. Configuring Data Sources, Controller Attributes, Message Resources and Plug-ins
H. Struts Preferences
I. Examples