Using Rational Application Developer 7.5

Course Summary

Description

This course teaches students how to use IBM Rational Application Developer (RAD) v7.5 for Java EE development. The course focus is on teaching students how to use the tool to implement Java EE components, not on the underlying Java EE technology. After completing this course, students will feel comfortable using the RAD v7.5 integrated development environment tools to develop Java and Java EE applications utilizing JSP, JSF, servlets, JavaBeans, EJBs, XML, and Web services. The concepts taught in this course are reinforced by hands-on lab exercises.

Topics

- Introduction to Rational Application Developer
- Java EE Architecture Overview
- RAD: Developing Java Applications
- RAD: Debug Perspective
- RAD: Web Perspective
- Application Assembly and Packaging
- RAD: Server Perspective
- RAD: Creating JavaServer Pages
- RAD: Modeling Tools
- RAD: Data Perspective
- RAD: Developing JSF Applications
- RAD: Web2.0/AJAX Support
- RAD: EJB Tooling
- RAD: JPA Tooling
- RAD: XML Tools
- RAD: Web Service Development
- RAD: Test Perspective
- Ant Support
- RAD: Software Analyzer
- RAD: Profiling
- Deploying to WebSphere Application Server
- Appendix: RAD: Log and Trace Analyzer

Audience

This course is designed for java programmers.

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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... to Your Success!"

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Course Outline

I. Introduction to Rational Application Developer
- A. Development Tools
- B. New Features in RAD V7.5
- C. Workspace and Perspectives
- D. Enabling Capabilities
- E. Building Projects
- F. Adding Application Components
- G. Using Editors and Views
- H. Navigating the Workspace and Using Bookmarks
- I. Working with the Tasks and Search Views
- J. Getting Help and Using Cheat sheets
- K. Performance Tips

II. Java EE Architecture Overview
- A. Enterprise Application Overview and Development Cycle
- B. Java EE Architecture and Containers
- C. Servlet, JSP, and Applet Overview
- D. JDBC, JNDI, and JTA
- E. EJB Overview
- F. Security and JavaMail
- G. JAF, JMS, RMI over IIOP Overview
- H. Java EE Connector Architecture
- I. XML and JAXP
- J. Web Services and JAX-RPC
- K. Deployment Descriptors
- L. Java EE Roles
- M. New in Java EE 5

III. RAD: Developing Java Applications
- A. Java Perspective Overview
- B. Creating Java Projects
- C. Java Packages and Components
- D. Java Editor Features
- E. Code and Content Assist
- F. Using Source Commands
- G. Errors, Warnings, and Quick Fix
- H. Using the Outline, Declaration, Problems, and Console Views
- I. Productivity Tips and Keyboard Shortcuts

IV. RAD: Debug Perspective
- A. RAD Debugger Features
- B. Step-by-step Debugging
- C. Breakpoints and Watchpoints
- D. Debugging JSPs
- E. Remote Debugging
- F. Launch Configuration Filters

V. RAD: Web Perspective
- A. Web Perspective Editors and Views
- B. Creating Web Projects
- C. Annotation-based Programming
- D. Web Project Structure and Default Files
- E. Using the Servlet Wizard
- F. Editing the Web Deployment Descriptor
- G. Filters, Security, and References
- H. Servlet Event Listeners and Context Parameters

VI. Application Assembly and Packaging
- A. Java EE Deployable Units
- B. Application Assembly Process
- C. Importing Resources into RAD
- D. JAR Dependency Editor
- E. Using the Application Editor
- F. Deployment Descriptors Elements (Application, Client, Web, EJB, and Connector)
- G. IBM Extensions and Bindings
- H. Exporting Resources

VII. RAD: Server Perspective
- A. New Features
- B. WebSphere Test Environment
- C. Server Types and Resources
- D. Defining New Servers
- E. Running Applications on a Server
- F. Servers View and Actions
- G. Editing Server Configurations
- H. Application Deployment Descriptors
- I. Testing Guidelines
- J. WebSphere Administration Command Assist
- K. Working with WebSphere Profiles and the Profile Management Tool

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Course Outline (cont'd)

VIII. RAD: Creating JavaServer Pages
- A. Page Designer Features
- B. Creating JSPs
- C. Using the Palette View
- D. Adding Basic HTML Tags, Tables and Form Tags
- E. Inserting JavaBeans and Standard JSP Tags
- F. Defining Styles and Editing Style Sheets
- G. Page Properties
- H. HTML Syntax Validation and Cleanup Document
- I. Working with Images
- J. Using Content Assist and Quick Edit
- K. Using and Customizing the Snippets View

IX. RAD: Modeling Tools
- A. Creating Diagrams
- B. Class Diagram Editor Features
- C. Visualizing Java Components
- D. Adding Fields and Methods
- E. Defining relationships
- F. Web and Service Components
- G. Customizing the Display
- H. Topic, Browse an Sequence Diagrams
- I. Modeling Preferences

X. RAD: Data Perspective
- A. Enabling Database Capabilities
- B. Using the DataSource Explorer View
- C. Creating and Connecting to a Database
- D. Creating Data Design and Data Development Projects
- E. Working with Data Diagrams
- F. Adding and Editing Tables
- G. Deploying from RAD
- H. Using SQL Results View and SQL Scripts

XI. RAD: Developing JSF Applications
- A. JSF Development Steps
- B. Creating Faces Web Projects
- C. Developing Faces JSPs
- D. Enhanced Faces Components
- E. Defining Behavior and Validation
- F. Displaying Error Messages
- G. Working with Page Data
- H. Navigation Rules and Faces Preferences

XII. RAD: Web2.0/AJAX Support
- A. AJAX Overview
- B. Advantages and Disadvantages
- C. Using AJAX with JSF Components
- D. Configuring AJAX Requests and Events

XIII. RAD: EJB Tooling
- A. Java EE Perspective Overview
- B. Creating EJB Projects and EJB Client Projects
- C. Creating Session Beans and Message-Driven Beans
- D. Promoting Methods
- E. Editing the EJB Deployment Descriptor
- F. Generating Deployment Code
- G. Testing EJBs

XIV. RAD: JPA Tooling
- A. JPA Perspective Overview
- B. Using Database Diagrams
- C. JPA Project Wizards
- D. JPA Tools for Generating Entities, DDL, and Configuring JDBC Deployment
- E. Adding JPA Manager Beans
- F. RAD 7.5 Supported Databases

XV. RAD: XML Tools
- A. Creating and Editing XML Documents
- B. XML Editor Features
- C. Adding Elements, Attributes, and Grammar Information
- D. Generating DTDs and XML Schemas
- E. DTD, XML Schema, and XSL Editors
- F. Associating XSL with XML Documents
- G. Using the XSL Wizard and the XPath Expression Builder
- H. Transforming XML and Debugging XML Documents
- I. XML Mapping Wizards and Mapping Editor

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Course Outline (cont'd)

XVI. RAD: Web Service Development
- A. Web Service Development Process
- B. Development Approaches
- C. WS-I Support in RAD
- D. Web Service Wizard and Generated Files
- E. Testing the Web Service
- F. Working with Web Service Deployment Descriptors
- G. Using the WSDL Editor

XVII. RAD: Test Perspective
- A. Test Types
- B. Using the Test Perspective
- C. Creating TPTP Tests
- D. Using the Test Editor: Testing Methods and Behavior
- E. Creating and Editing a Datapool
- F. Creating Test Deployments, Artifacts and Locations
- G. Using the Deployment Editor to Add/Associate Elements
- H. Running Tests and Analyzing Execution Results

XVIII. Ant Support
- A. Using the Ant Editor
- B. Running Build Files
- C. Configuring the Environment
- D. Ant Preferences
- E. RAD Extended Ant Support

XIX. RAD: Software Analyzer
- A. Automated Code Review
- B. Customizing Rules and Categories
- C. Viewing Analysis Results
- D. Resolving Violations

XX. RAD: Profiling
- A. Understanding Profiling Concepts and the Profiling Process
- B. Profiling Architecture, Resources, and Agents
- C. Profiling on a Server
- D. Monitoring an Application
- E. Using Performance Analysis Views: Execution Statistics, Call Tree, Method Invocation, Memory Statistics, Object Allocations, Coverage Statistics, and Object References
- F. Using UML Interaction Diagrams
- G. Monitoring Threads and Statistics
- H. Probekit

XXI. Deploying to WebSphere Application Server
- A. WebSphere Architecture Overview
- B. Application Server, Web Server Plug-ins, and Virtual Hosts
- C. Containers: Portlet, Web and EJB
- D. Data Access and Application Services
- E. Using the WebSphere Administrative Console
- F. Managing Servers and Virtual Hosts
- G. Application Installation and Management

XXII. Appendix: RAD: Log and Trace Analyzer
- A. Log and Trace Analyzer Features
- B. Common Base Event Model
- C. Problem Determination Process
- D. Importing a Log File
- E. Using Symptom Databases
- F. Log and Analysis Views
- G. Correlation Diagrams

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