

Oracle JDeveloper 10g: Build Applications with ADF Business Components (5 Days)

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Oracle JDeveloper 10g: Build Applications with ADF Business Components (CTI 213)

This course teaches how to develop J2EE-compliant applications using ADF Business Components. Students learn the benefits of using business components, how to build them using Oracle10g JDeveloper, and how to control the application flow with Struts. Students will also learn how to deploy applications to Oracle10gAS Containers for J2EE (OC4J).

Prerequisites: Experience developing business applications; basic knowledge of Java, SQL, and Oracle; familiarity with JDeveloper. Successful completion of course CTI 137, "Java Programming Using JDeveloper," and CTI 218, "Oracle10g: Introduction to SQL," meets these requirements.

Minimum software requirements: Microsoft Windows NT 4.0, Windows 2000, Windows XP or later. Oracle10g JDeveloper 9.0.5 or later. Oracle or equivalent relational database. Java-compatible browser.

Minimum hardware requirements: Pentium at 500 MHz, 512 Mb RAM; 500 Mb free hard disk space before installation. Classroom machines should be networked. Internet access.

Microsoft PowerPoint on instructor's workstation for presentation purposes.

Module 1: Introduction

- MVC Design and Architecture
- Oracle Application Development Framework
- Middle-Tier Independence
- ADF Business Components
- Object-Relational Mapping
- Apache Struts
- JDeveloper 10g Overview

Module 2: Developing ADF Business Component Applications

- Using Database Connections
- Creating a New Workspace, Project and an ADF Business Components Application
- Creating and Testing Default Business Components
- Entity Objects, View Objects, Application Modules

Module 3: Implementing Business Rules

- Role of Entity Objects
- Creating Entity Objects
- The .java and .xml Files
- Entity Attributes
- Defining Entity Associations
- Creating and Traversing Associations
- Creating Validation Rules
- Mapping an Attribute to an Oracle Database Sequence
- Creating and Using Domains

Module 4: Creating Database Objects

- Creating an Entity Without an Underlying Table
- Creating an Entity With the UML Class Modeler
- Forward Engineering Database Objects
- Using Transient Attributes
- Creating Entity Constraints
- Synchronizing Entity Definitions and Database Objects

Module 5: Presenting Business Data

- Creating and Customizing View Objects
- Adding Calculated Attributes
- Creating and Traversing View Links
- Synchronizing View Objects
- Exposed View Object Methods
- Formatting Data Types (Using Dates)
- View Links
- Application Modules
- Business Components Modeler

Module 6: Leveraging Middle-Tier Validation

- Entity-Level Validation
- Middle-Tier Validation
- Validating on the Middle Tier vs. the Client Tier
- Using Custom Properties and Methods
- Validation Order

Module 7: Struts Architecture

- ADF and Apache Struts
- Role of a Controller
- The Controller in the MVC Architecture
- Struts Navigation

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Module 8: Building ADF View Components

- JSP Architecture
- JSP/HTML Visual Editor
- JSPs in an ADF Application
- Testing a JSP Application
- Basic JSP Elements and Data Tags
- View Object Control Types

Module 9: Creating Struts Actions

- The Struts Configuration File
- The Application Resources File
- Creating an Action Class
- Using Forwards
- Form Beans

Module 10: Using ADF Struts Components

- Data Actions
- Data Pages
- Using the Iterator
- The Data Action Lifecycle
- Forwards and Events in ADF Applications

Module 11: Handling Exceptions and Errors

- Middle-Tier Events and the Standard Java Event Model
- Handling Middle-Tier Errors
- Client Side Validation
- Form Bean Validation
- The Struts Validator
- Exception Handling

Module 12: Security, Authentication and Authorization

- Java Authentication and Authorization Service (JAAS)
- Authentication
- OracleAS JAZN Authorization
- Entity Level Authorization

Module 13: Deploying an ADF Application

- Deployment Options for an ADF Application
- Introduction to EJBs
- Exporting Methods from View Objects and Application Modules
- Deploying an ADF Application as an EJB
- Deploying an Application Module to OC4J
- Deploying an Application as a Web Application
- Using the Business Components Tester
- OC4J Connections
- Deployment Profiles

Module 14: Best Practices: Tuning for Performance

- Application Module Pooling
- Connection Pooling
- Entity and View Object Caching

Review and Summary