

# Oracle Middleware 12c: Build Rich Client Applications with ADF

Learn via: **Classroom / Virtual Classroom / Online**

Duration: **5 Days**

## **Overview**

This Oracle Middleware 12c: Build Rich Client Applications with ADF Ed 1 training teaches you how to use the powerful, declarative features of ADF Business Components to build and test reusable business services, which you then expose in the user interface using ADF Faces client components. Each ADF Faces component offers complete customization, skinning and support for internationalization and accessibility, as well as a rich set of visualization components capable of rendering dynamic charts, graphs, gauges and other graphics that provide real-time updates.

Learn To:

- Build end-to-end web applications.
- Build rich user interfaces with ADF Faces.
- Develop Java EE components with Oracle ADF.
- Use the new capabilities of Oracle JDeveloper 12c.

Benefits to You

By taking this course, you will simplify application development in your organization to increase productivity. You'll become more efficient at building Java EE applications using Oracle ADF (innovative yet mature Java EE development framework) and deploying an end-to-end web application.

Build Complex Navigation between Pages

Working with expert Oracle University instructors, you'll also learn how to quickly build complex navigation between pages, define validation logic and secure the application. After using the Fusion technology stack to build and test each part of your application, you'll get a chance to deploy the application to an Integrated WebLogic Server.

## **Prerequisites**

Suggested Prerequisites:

- Basic experience with Oracle JDeveloper
- Java SE 8 Fundamentals

## **What You Will Learn**

- Build and customize a business service by using ADF Business Components
- Expose the data model in a web application with a rich ADF Faces user interface
- Create JSF pages
- Use rich client components in JSF pages
- Add validation to ADF applications
- Secure web applications
- Test, debug, and deploy the ADF Business Components and the web application

## **Outline**

Introduction to Oracle ADF and JDeveloper

- About Oracle Fusion Middleware architecture
- How ADF fits into the architecture?
- Discussing ADF technology stack
- Explaining benefits that JDeveloper provides for application development
- About main windows and editors in the JDeveloper IDE
- Creating applications, projects, and database connections

Building a Business Model with ADF Business Components

- About ADF Business Components

- Creating entity objects and associations from database tables
- Creating view objects and view links
- Defining master-detail relationships between view objects
- Creating application modules
- Testing applications
- Refactoring business components

#### Creating Data-Bound UI Components

- About dynamic webpage technologies
- Explaining JavaServer Faces and the JSF component architecture
- Describing standard JSF components
- Discussing ADF Faces rich client components
- Creating JSF pages
- Adding data-bound components to JSF pages

#### Defining Task Flows and Adding Navigation

- How ADF extends the JSF controller?
- Creating task flows
- Discussing ADF Faces navigation components

#### Declaratively Customizing ADF Business Components

- Editing business components
- Modifying the default behavior of entity objects, view objects, and application modules
- Creating lists of values (LOVs)
- Creating nested application modules

#### Validating User Input

- Understanding validation options: Database, Data Model, or UI
- Triggering validation execution
- Handling validation errors
- Writing Groovy expressions to use in validation
- Internationalizing messages

#### Modifying Data Bindings Between the UI and the Data Model

- Reviewing Oracle ADF model layer
- Creating and using ADF data controls
- Discussing expression Language (EL) and data bindings
- Creating and editing data bindings
- Examining data binding objects and metadata files

#### Adding Functionality to Pages

- Displaying a selection list of values
- Displaying tabular data in tables
- Displaying hierarchical data in trees
- Defining and using search forms and displaying the results
- Displaying data graphically
- Creating and configuring a backing bean

#### Adding Advanced Features to Task Flows and Page Navigation

- Creating bounded and unbounded task flows
- Creating routers for conditional navigation
- Calling methods and other task flows
- Creating menu items, menu bars, pop-up menus, context menus, and navigation panes
- Defining breadcrumbs and trains
- Creating and using page fragments
- Adding a bounded task flow as a region

#### Passing Values Between UI Elements

- Defining the data model to reduce the need to pass values
- Creating a managed bean to hold values
- Storing values in memory-scoped attributes
- Passing values by using parameters

#### Responding to Application Events

- Discussing JSF and ADF life cycle phases
- Implementing partial page rendering (PPR)
- Working with value change event listeners

- Working with action event listeners
- Understanding additional ADF Faces server events

#### Programmatically Implementing Business Service Functionality

- Deciding where to add custom code
- Overview of the framework classes
- Generating Java classes for business components
- Overriding class methods
- Implementing programmatic modifications
- Adding service methods to an application module
- Calling business component client APIs
- Accessing ADF bindings programmatically

#### Implementing Transactional Capabilities

- Handling transactions with ADF BC
- Specifying transaction control in task flows
- Sharing data controls
- Handling transaction exceptions
- Defining response to the Back button

#### Building Reusability into Pages

- Designing pages for reuse
- Creating and using page templates
- Creating and using page fragments
- Packaging reusable components into libraries

#### Achieving the Required Layout

- Defining and using component facets
- Defining and using complex layout components
- Defining and using dynamic page layout
- Adding a custom look by using ADF Faces skins

#### Debugging ADF Applications

- Troubleshooting techniques
- Configuring logging and diagnostics
- Debugging business services by using the Oracle ADF Model Tester
- Debugging an application in JDeveloper
- Developing regression tests with JUnit

#### Implementing Security in ADF Applications

- Benefits of securing web applications
- Understanding the ADF security framework
- Implementing ADF security
- Enabling users to access resources
- Implementing a login page
- Accessing security information programmatically
- Extending security capabilities by using Expression Language

#### Deploying ADF BC Applications

- Understanding the deployment steps
- Creating deployment profiles and configuring deployment options
- Changing the context root for an application
- Deploying an application from JDeveloper
- Building files for deployment by using ojdeploy