

## Developing Applications with Java EE 6 on WebLogic Server 12c

**Duration:** 5 Days

### What you will learn

The Developing Applications with Java EE 6 on WebLogic Server 12c course teaches you the skills you need to successfully build and deploy enterprise applications. You'll explore applications that comply with the Java Platform, Enterprise Edition 6 Web Profile.

Learn To:

Create mobile web applications.

Create JSF facelet pages.

Develop web profile applications.

Assemble a web application and deploy it into an application server (Java EE platform runtime environment).

Use CDI.

Update a database with JPA.

Perform bean validation.

### Benefits to You

Investing in this course will give you experience using the following technologies: annotations, Session Enterprise JavaBeans (EJBs), the Java Persistence API (JPA), servlets, JavaServer Pages (JSPs), JavaServer Faces (JSF), Contexts and Dependency Injection (CDI) and Bean Validation.

### Create a Web-Based Application

Expert Oracle University instructors will focus on teaching you how to create a web-based application that's accessible from desktop and mobile web browsers using JSF technology. User input is validated using the Bean Validation API, and data is persisted using JPA and optimistic locking.

### Participate in Hands-On Lab Exercises

Taking this course will give you hands-on experience through labs that teach you how to build an end-to-end application. These labs explore session EJB components, which are used to enable container managed transactions and enhance application performance through data caching. You'll perform these lab exercises using the NetBeans IDE and Oracle WebLogic Server.

### Audience

Java Developer

### Related Training

### *Required Prerequisites*

Experience with the Java programming language

Familiarity with HTML and CSS

Familiarity with relational database theory and the basics of structured query language (SQL)

Familiarity with the use of an IDE

Java SE 7 Programming

### *Suggested Prerequisites*

Java SE 7: Develop Rich Client Applications

### **Course Objectives**

Use the Java EE Web Profile

Develop and run an EJB technology application

Develop basic Java Persistence API entity classes to enable database access

Develop a web-based user interface using JSF, Servlets, and JSPs

Design applications to use CDI

Use IDEs and Application Servers for Java EE development

Create mobile web applications

Validate data using Bean Validation

Secure Enterprise Applications

Use Logging

Install Oracle WebLogic Sever 12c zip file distribution

### **Course Topics**

#### **Java Platform, Enterprise Edition**

Describe the purpose of the Java EE Platform

Describe the needs of enterprise applications

List the various Java EE specifications

Compare services and libraries

Describe the Java EE Web Profile

Describe the EE application tiers and layers

## **Enterprise Development Tools and Application Servers**

Describe the purpose of an application server

Identify the potential selection criteria used when choosing an application server

Install the Oracle WebLogic Server 12c Zip Distribution

Describe the properties of Java EE components

Describe the process of developing a Java EE application

Describe how to configure and package Java EE applications

List EE supporting features provided by integrated development environments (IDEs)

## **JavaBeans, Annotations, and Logging**

Describe the Java SE features that are used extensively in enterprise applications

Create POJO JavaBeans components

Log application activity and errors

Write to server logs

Describe common Java SE annotations and features

Develop Java annotations

Describe the role of annotations in Java EE

## **Web Component Model**

Describe the HTTP request-response model

Define the difference between Java Servlets, JSP, and JSF components

Implement application layering and the MVC Pattern

Avoid thread safety issues in web components

Use the Expression Language

## **Developing with JavaServer Faces Technology**

Evaluate the role of JavaServer Faces (JSF) technology as a presentation mechanism

Describe the flow of the JSF life cycle

Author JSF pages using Facelets

Process form submissions and use JSF managed beans

Describe the use of JSF tag libraries

Use the appropriate annotation to control the scope of a bean instance

Use a component to iterate over values in a collection

## **Using AJAX and Composite Components with JSF**

Define Asynchronous JavaScript and XML (AJAX)

Describe how JSF Components can be enhanced with AJAX

Use the `<h:ajax>` tag

Describe how AJAX request integrates with the JSF life cycle

Define a composite component

Create a JSF composite component

## **Apache Trinidad JSF Component Library and Mobile Development**

Create JavaServer Faces (JSF) pages that use Apache Trinidad components

Create a JSF-based mobile application

Dynamically apply Cascading Style Sheets (CSS) with Trinidad Skinning

Use the HTML5 video tag

## **Dependency Injection With CDI**

Create managed bean compatible classes

Inject managed beans

Qualify the bean being requested at an injection point

Use CDI alternatives

### **Using JSF and Bean Validation**

Define the approach JSF uses to convert and validate input data

Use built-in validation constraints provided with JSF

Use built-in validation constraint annotations provided by Bean Validation

Create a custom Bean Validation constraint

### **Developing Servlets**

Describe the servlet API

Use the request and response APIs

Set response headers

Create text and binary response bodies

Process file uploads using servlets

Forward to JSPs using RequestDispatcher

Use the session management API

### **Developing with JavaServer Pages Technology**

Evaluate the role of JSP technology as a presentation mechanism

Author JSP pages

Process data received from servlets in a JSP page

Describe the use of tag libraries

### **EJB Component Model**

Describe the role of EJB components in a Java EE application

Describe the benefits of EJB components

Describe the operational characteristics of a stateless, stateful, and singleton session beans

Create session beans

Create session bean clients

### **The Java Persistence API**

Describe the role of the Java Persistence API (JPA) in a Java EE application

Explain the basics of object-relational mapping

Describe the elements and environment of an entity component

Describe the life cycle and operational characteristics of entity components

### **Implementing a Transaction Policy**

Describe transaction semantics

Compare programmatic and declarative transaction scoping

Use JTA to scope transactions programmatically

Implement a container-managed transaction policy

Support optimistic locking with the versioning of entity components

Support pessimistic locking using EntityManager APIs

Describe the effect of exceptions on transaction state

### **Web Service and Integration Technology Survey**

Describe the purpose of integration technologies

Define the integration layer in a multilayered application architecture

List various Java EE integration technologies

Describe the benefit of Web Services over other integration technologies

### **Implementing a Security Policy**

Leverage container-managed security  
Define user roles and responsibilities  
Create a role-based security policy  
Using Declarative Security  
Configure authentication in the web tier