

# Developing Applications for the Java EE 7 Platform Ed 1

## Duración

Días: 5 Días

Horas: 30 horas

## Descripción

The Developing Applications for the Java EE 7 Platform training teaches you how to build and deploy enterprise applications that comply with Java Platform, Enterprise Edition 7. The technologies presented in this course include annotations, Enterprise JavaBeans (EJB), Java Persistence API (JPA), Java Transaction API (JTA), Servlets, JavaServer Pages (JSPs), JavaServer Faces (JSF), Contexts and Dependency Injection (CDI), JAX-RS RESTful and SOAP Web Services, the Java API for WebSocket, Java Message Service API (JMS), Bean Validation, Batch API, Timer services, and Java EE Concurrency.

## A quién se dirige

- Mobile and Web Applications Developer
- Application Developers
- Java Developers
- Developer
- J2EE Developer
- Java EE Developers

## Beneficios para usted

By taking this course, you'll gain hands-on experience building Java EE 7 Applications. You will get the chance to create web-based user interfaces using HTML5 and JavaScript along with JSPs JSFs and servlets. Web-based user interfaces will use AJAX to communicate with RESTful web services you create. Business logic will be handled using CDI and EJB components. You will also create and use JMS resources, Batch and Timer components. You will learn how to persist application data using JPA and JTA APIs.

## Participate in Hands-On Labs

During this course practice sessions you develop a product management application. This application is going to start as a simple client-server application, but will evolve into a Java Enterprise Application having following components:

- Java Persistence API components to handle product database objects
- Enterprise JavaBeans components to handle product management application business logic
- Java Message Service API components to produce and consume messages
- SOAP WebService to produce a product quotes Web user interface to search, display and update products designed with Servlets, Java Server Pages, and Java Server Faces
- REST Service to check product discount
- WebSockets application to implement chat between users
- You will also secure this application using both programmatic and declarative approaches.

## Objetivos

- Deploy Java EE applications
- Handle business logic using POJOs, EJBs, SOAP WebServices, and JMS
- Manage persistency using JPA entities
- Create Java web applications using servlets, JSPs, JSFs, REST Services, and WebSockets
- Secure Java EE applications

## Qué aprenderá

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**Target Audience:** Java Developers who want to learn how to utilize the full power of Java EE 7

- Use Java Persistence and Java Transaction APIs.
- Create a flexible component model using EJB and CDI technology.
- Provide Timer, Concurrency and Batch services.
- Create SOAP and REST WebServices.
- Develop web-based interfaces using Servlets, Java Server Pages, JavaServer Faces.
- Assemble and deploy Java applications to a JEE Application Server.

## Requisitos

### Required Prerequisites

- Java SE 8 Programming

### Suggested Prerequisites

- Experience with XML
- Experience with the Java language
- Experience with basic database concepts and a basic knowledge of SQL
- Java SE 8 Certification
- Completed the Java SE 8 Programming course

## Contenido

### 1. Introduction to Java EE

- Standards, containers, APIs, and services
- Interconnect Application Components with CDI Annotations and JNDI
- Web container technologies, Business logic implementation technologies, and web service technologies
- Application component functionalities mapped to tiers and containers
- Packaging and deployment
- Linking components together with annotations, injections, and JNDI
- Understanding lifecycle and memory scopes
- Enterprise JavaBeans, managed beans, and CDI beans

### 2. Managing Persistence by Using JPA Entities

- Describe persistence management and locking mechanisms
- Create and execute JPQL statements
- Create JPA entities with Object-Relational Mappings (ORM)
- Use Entity Manager to perform database operations with JPA entities
- Handle entity data with conversions, validations, and key generation

### 3. Implementing Business Logic by Using EJBs

- Use asynchronous EJB operations
- Control transactions
- Create EJB business methods
- Create EJB timers
- Create Session EJB components
- Manage EJB life cycle with container callbacks
- Create and apply interceptors

#### 4. Using Java Message Service API

- Use durable and shared topic consumer subscriptions
- Describe Java Message Service (JMS) API messaging models
- Use transactions with JMS
- Create message-driven beans
- Implement Java SE and Java EE message producers and consumers

#### 5. Implementing SOAP Services by Using JAX-WS

- Create SOAP Web Services using JAX-WS API
- Create SOAP Web Service clients
- Describe a SOAP Web Service structure

#### 6. Creating Java Web Applications by Using Servlets

- Create Java servlet classes and map them to URLs
- Implement asynchronous servlets and use NIO API
- Manage servlet life cycle with container callback methods
- Use servlets to handle different content types
- Use Interceptors and Filters
- Handle HTTP headers, parameters, cookies
- Describe HTTP basics
- Use CDI Managed Beans

#### 7. Creating Java Web Applications by Using JSPs

- Describe JSP life cycle
- Handle errors
- Describe JSP syntax
- Use Tag Libraries
- Use Expression Language (EL)
- Use CDI Beans

#### 8. Implementing REST Services using JAX-RS API

- Create REST services using JAX-RS API
- Understand REST service conventions
- Consume REST service within the client tier



## 9. Creating Java Applications with WebSockets

- Manage WebSocket Endpoint lifecycle
- Encode and Decode JSON messages
- Understand WebSockets communication style
- Produce and consume WebSocket messages
- Handle Errors
- Provide WebSocket Client Endpoint handler using JavaScript
- Create WebSocket Endpoint Handlers using JSR 356 API

## 10. Develop Web Applications Using JavaServer Faces

- Add AJAX support
- Use UI templates
- Describe JSF lifecycle and architecture, and understand JSF syntax
- Use Expression Language (EL), and CDI Beans
- Produce messages
- Apply Validators and Converters to UIComponents
- Use JSF Tag Libraries
- Define navigation, and handle localisation

## 11. Securing Java EE Applications

- Define Application Roles and Security Constraints
- Configure Authentication using Login Modules
- WebServices security standards
- Use programmatic security
- Understand Java EE security architecture

## 12. Appendixes/Additional Content

- JAXB API
- CDI Beans
- Pre-CDI Servlet Examples
- BeanValidation and JPA API
- Batch and Concurrency APIs
- Java Logging