

AV-002: Professional Web Component Development with Java®

Certificación Relacionada: Oracle Certified Web Component Developer

Detalles de la Carrera:

Duración:

120 horas.

Introducción:

Java es un lenguaje de programación de propósito general, concurrente, orientado a objetos y basado en clases que fue diseñado específicamente para tener tan pocas dependencias de implementación como fuera posible.

Su intención es permitir que los desarrolladores de aplicaciones escriban el programa una vez y lo ejecuten en cualquier dispositivo (conocido en inglés como WORA, o "write once, run anywhere"), lo que quiere decir que el código que es ejecutado en una plataforma no tiene que ser recompilado para correr en otra.

Java es, a partir del 2012, uno de los lenguajes de programación más populares en uso, particularmente para aplicaciones de cliente-servidor de web, con unos 10 millones de usuarios reportados.

Dirigido a:

- Arquitectos de Software
- Analistas de Sistemas
- Programadores.
- Individuos con experiencia en cualquier plataforma de desarrollo y que deseen adentrarse en el mundo de la mejor plataforma libre de desarrollo de aplicaciones.
- Individuos que busquen una certificación y reconocimiento con la plataforma Java.

Certificaciones Relacionadas:

Después de asistir a esta carrera, estarás listo para poder obtener la(s) siguientes certificación(es):

- **Oracle Certified Associate, Java SE 7 Programmer Certification**
- **Oracle Certified Professional, Java SE 7 Programmer Certification**
- **Oracle Certified Expert, Java EE 6 Web Component Developer**

Contenido de la Carrera:

I. Módulo I: Java SE 7 Fundamentals

Introduction

Prepare for the Oracle Certified Associate Java SE 7 Programmer I exam with help from this exclusive Oracle Press course. In each module, you'll find challenging exercises, practice questions, a two-minute drill, and a chapter summary to highlight what you've learned. This authoritative guide will help you pass the test and will also serve as your essential on-the-job reference. Get complete coverage of all OCA objectives for exam 1Z0-803, including:

- Packaging, compiling, and interpreting Java code
- Programming with Java statements
- Programming with Java operators and strings
- Working with basic classes and variables
- Understanding variable scope and class construction
- Programming with arrays
- Understanding class inheritance
- Understanding polymorphism and casts
- Handling exceptions
- Working with classes and their relationships

Electronic content includes

- One full practice exam
- Detailed answers and explanations
- Score report performance assessment tool
- Free with online registration
 - Bonus exam

Content

1. Packaging, Compiling and Interpreting Java Code

- Understanding Packages
- Understand Package-Derived Classes
- Understand Class Structure
- Compile and Interpret Java Code

2. Programming with Java Statements

- Understand Assignment Statements
- Create and Use Conditional Statements
- Create and Use Iteration Statements
- Create and Use Transfer of Control Statements

3. Programming with Java Operators and Strings

- Understand Fundamentals Operators
 - Understand Operator Precedence
 - Use String Objects and Their Methods
 - Use StringBuilder Objects and Their Methods
 - Test Equality between Strings and Other Objects
- 4. Working with Basic Classes and Variables**
- Understand Primitives, Enumerations and Objects
 - Use Primitives, Enumerations, and Objects
- 5. Understand Methods and Variable Scope**
- Create and Use Methods
 - Pass Objects by Reference and Value
 - Understand Variable Scope
 - Create and Use Constructors
 - Use this and super Keywords
 - Create Static Methods and Instance Variables
- 6. Programming with arrays**
- Work with Java Arrays
 - Work with ArrayList Objects ad Their Methods
- 7. Understanding Class Inheritance**
- Implement and Use Inheritance and Class Types
 - Understand Encapsulation Principles
 - Advanced Use of Classes with Inheritance and Encapsulation
- 8. Understanding Polymorphism and Casts**
- Understand Polymorphism
 - Understand Cast
- 9. Handling Exceptions**
- Understand the Rationale and Type of Exceptions
 - Understand the Nature of Exceptions
 - Alter the Program Flow
 - Recognize Common Exceptions
- 10. Working with Classes and Their Relationships**
- Understand Class Composition and Associations
 - Class Composition and Associations in Practice

II. Módulo II: Java SE 7 Programming

Introduction

Prepare for the OCP Java SE 7 Programmer II exams with this exclusive Oracle Press course. Chapters feature challenging exercises, a certification summary, a two-minute drill, and a self-test to reinforce the topics presented. This authoritative resource helps you pass these exam and also serves as an essential, on-the-job reference. Get complete coverage of all objectives for exam 1Z0-804, including:

- Assertions and Java 7 exceptions
- String processing, data formatting, and resource bundles
- I/O and NIO
- Advanced OO and design patterns
- Generics and collections
- Inner classes
- Threads
- Concurrency
- Java Database Connectivity (JDBC)

Electronic content includes:

- 500+ practice exam questions
- Test engine that provides practice exams and customized quizzes by chapter or by exam objective
- Bonus content for the Java 5, Java 6, and OCP 6 Upgrade exams
- PDF copy of the book

Content

1. Assertions and Java 7 Exceptions

- Working with Assertion Mechanism
- Working with Java 7 Exception Handling

2. String Processing, Data Formatting, Resource Bundles

- String, StringBuilder, and String Buffer
- Dates, Numbers, Currencies, and Locales
- Parsing, Tokenizing, and Formatting
- Resource Bundles

3. I/O and NIO

- File Navigation and I/O
- Files, Path, and Paths
- File and Directory Attributes
- DirectoryStream
- FileVisitor

- PathMatcher
- WatchService
- Serialization

4. Advanced OO and Design Patterns

- IS-A and HAS-A
- Coupling and Cohesion
- Object Composition Principles
- Singleton Design Pattern
- DAO Design Pattern
- Factory Design Pattern

5. Generics and Collections

- toString(), hashCode(), and equals()
- Collections Overview
- Using Collections
- Generic Types

6. Inner Classes

- Nested Classes
- Inner Classes
- Method-Local Inner Classes
- Anonymous Inner Classes
- Static Nested Classes

7. Threads

- Defining, Instantiating, and Starting Threads
- Thread States and Transitions
- Synchronizing Code, Thread Problems
- Thread Interaction

8. Concurrency

- Concurrency with the java.util.concurrent Package
- Apply Atomic Variables and Locks
- Use java.util.concurrent Collections
- Use Executors and ThreadPools
- Use the Parallel Fork/Join Framework

9. JDBC

- Starring Out: Introduction to Databases and JDBC
- Core Interfaces of the JDBC API
- Connect to a Database Using DriverManager
- Submit Queries and Read Results from a Database
- Use PreparedStatement and CallableStatement Objects

- Construct and Use RowSet Objects
- JDBC Transactions

III. Módulo III: Web Component Development with Servlets & JSPs (Java EE 6)

Course Objective

You will use basic Servlet and JSP programming to create simple web applications.

Target Student

Students should be skilled and experienced in using Java 6. They should be able to create web components (such as servlets and custom tags). Students who are preparing for the Oracle Certified Expert, Java Platform, Enterprise Edition 6 JavaServer Pages, and Servlet Developer certification can take this course.

Prerequisites

To ensure your success, you should be able to:

- Identify object-oriented programming concepts.
- Write Java technology applications, demonstrating significant programming ability.
- Integrate existing Java code (for example, reuse existing classes created by other team members).
- Design Java technology applications.
- Functionally describe the benefits of N-tier architecture.
- Create a web page using HTML.

Objectives

Upon successful completion of this course, students will be able to:

- Use a web server to develop a web component.
- Write servlets.
- Use scopes.
- Process requests.
- Implement servlets.
- Describe the basics of JSP.
- Use the capabilities of the Expression Language.
- Implement JSP tags.

Content

1. Lesson 1: Using a Web Server

- Topic 1A: Examine Servlets, JSPs and Java EE
- Topic 1B: Create a HTML Form
- Topic 1C: Use HTTP Methods
- Topic 1D: Install Eclipse and Tomcat
- Topic 1E: Examine Architecture
- Topic 1F: Use Annotations

- Topic 1G: Create the BBStore Project

2. Lesson 2: Writing Servlets

- Topic 2A: Create a First Servlet
- Topic 2B: Examine a Web Application
- Topic 2C: Examine Request Parameters
- Topic 2D: Enable Servlet Communication

3. Lesson 3: Using Scopes

- Topic 3A: Define HTTP Request
- Topic 3B: Use Hidden Fields
- Topic 3C: Define Sessions
- Topic 3D: Examine Cookies
- Topic 3E: Use ServletContext Scope
- Topic 3F: Select the Right Scope
- Topic 3G: Examine Spring Integration

4. Lesson 4: Processing Requests

- Topic 4A: Define Filters
- Topic 4B: Dispatch Requests
- Topic 4C: Work with Threads
- Topic 4D: Examine Asynchronous Servlets

5. Lesson 5: Implementing Servlets

- Topic 5A: Examine Servlet API
- Topic 5B: Examine the Servlet Lifecycle and Events
- Topic 5C: Secure Web Applications
- Topic 5D: Work with Packages

6. Lesson 6: Basics of JSP

- Topic 6A: Introduction to JSP
- Topic 6B: JSP Architecture
- Topic 6C: JSP Core Concepts

7. Lesson 7: Using the Expression Language

- Topic 7A: Introduction to the Expression Language
- Topic 7B: Use Operators and Objects

8. Lesson 8: Implementing JSP Tags

- Topic 8A: Work with the JSTL Tag Library
- Topic 8B: Custom Tags
- Topic 8C: Handle Exceptions