

Java SE 7 Programmer - II (Course Duration 40 Hours)

Oracle Certified Programmer - Java SE 7 (1Z0-804)

Why JAVA

- Oracle's Java Programmer certification is critical to maximizing your potential and moving your Java career forward.
- Over 30, 000 Java Developers per year become certified on Java.
- More than 800,000 of these Java developers are using the knowledge, skills and recognition learned through Java Certifications to improve their job prospects, earn more money* and become more valuable employees.
- With 3 billion devices running Java worldwide, the world's top companies rely on experienced Java Programmers to build and maintain these critical applications.
- Java is the number one development platform.
- 97% of desktops run Java.
- Java is the number one language for enterprise development.
- Java Programmers Are In Demand
Because of the prevalence of Java, there is a continued demand for well-trained, highly-skilled Java programmers to create and maintain critical applications.

Student benefits

- 1) Oracle License ekit
- 2) 25% discount on certification exam (1z0-804) *
- 3) Course Completion Certificate from Oracle University

What you will learn

This Java SE 7 Programming training covers the core Application Programming Interfaces (API) you'll use to design object-oriented applications with Java. Instructors will teach you how to write database programs with JDBC.

Learn To:

- Create Java technology applications with the latest JDK 7 Technology and the NetBeans Integrated Development Environment (IDE)
- Enhance object-oriented thinking skills using design patterns and best practices.

- Identify good practices in the use of the language to create robust Java applications.
- Manipulate files, directories and file systems.
- Write database applications using standard SQL queries through JDBC.
- Create high-performance, multi-threaded applications.
- Create classes that subclass other classes, extend abstract classes and program with interfaces.
- Properly use exceptions and the Collections framework.
- Develop applications that manipulate files, directories and file systems.

Benefits to You

- Boost the productivity, communication and collaboration of your organization. At the same time, reduce the cost of application ownership through more efficient development and deployment techniques. Maintain your edge by staying current with the global standard for developing networked applications.
- Earn a Java Certification
- You can use this course to further develop your skills with the Java language and prepare for the Oracle Certified Professional, Java SE 7 Programmer Exam.

Audience

- Developer
- J2EE Developer
- Java Developer
- Java EE Developer

Required Prerequisites

- Understand object-oriented principles
- Basic understanding of database concepts and SQL syntax
- Have completed the Java SE 7 Fundamentals course, or experience with the Java language - can create, compile and execute programs
- Experience with at least one programming language
- Java SE7 Fundamentals

Course Objectives

- Perform multiple operations on database tables, including creating, reading, updating and deleting using JDBC technology Process strings using a variety of regular expressions
- Create high-performing multi-threaded applications that avoid deadlock
- Localize Java applications
- Create applications that use the Java Collections framework

- Implement error-handling techniques using exception handling
- Implement input/output (I/O) functionality to read from and write to data and text files and understand advanced I/O streams
- Manipulate files, directories and file systems using the JDK7 NIO.2 specification
- Apply common design patterns and best practices
- Create Java technology applications that leverage the object-oriented features of the Java language, such as encapsulation, inheritance, and polymorphism
- Execute a Java technology application from the command line

Course Topics

Java Platform Overview

- Introductions
- Course Schedule
- Java Overview
- Java Platforms
- OpenJDK
- Licensing
- Java in Server Environments
- The Java Community Process

Java Syntax and Class Review

- Simple Java classes
- Java fields, constructors and methods
- Model objects using Java classes
- Package and import statements

Encapsulation and Polymorphism

- Encapsulation in Java class design
- Model business problems with Java classes
- Immutability
- Subclassing
- Overloading methods
- Variable argument methods

Java Class Design

- Access modifiers: private, protected and public
- Method overriding

- Constructor overloading
- The instanceof operator
- Virtual method invocation
- Polymorphism
- Casting object references
- Overriding Object methods

Advanced Class Design

- Abstract classes and type generalization
- The static and final modifiers
- Field modifier best practices
- The Singleton design pattern
- Designing abstract classes
- Nested classes
- Enumerated types

Inheritance with Java Interfaces

- Java Interfaces
- Types of Inheritance
- Object composition and method delegation
- Implementing multiple interfaces
- The DAO design pattern

Generics and Collections

- Generic classes and type parameters
- Type inference (diamond)
- Collections and generics
- List, set and Map
- Stack and Deque

String processing

- String manipulation with StringBuilder and StringBuffer
- Essential String methods
- Text parsing in Java
- Input processing with Scanner
- Text output and formatting
- Regular expressions with the Pattern and Matcher classes

Exceptions and Assertions

- Exceptions categories
- Standard Java Exception classes
- Creating your own Exception classes
- Using try-catch and the finally clause
- Using try-with-resources and the AutoCloseable interface
- The multi-catch feature
- Best practices using exceptions
- Assertions

I/O Fundamentals

- I/O using Java
- Reading the console input stream
- Writing to the console
- Using I/O Streams
- Chaining I/O Streams
- Channel I/O
- Reading and writing objects using Serialization

File I/O with NIO 2

- The Path interface
- The Files class
- Directory and File operations
- Managing file system attributes
- Reading, writing, and creating files
- Watching for file system changes

Threading

- Operating system task scheduling
- Recognizing multithreaded environments
- Creating multi-threaded solutions
- Sharing data across threads
- Synchronization and Deadlock

- Immutable objects

Concurrency

- Creating Atomic variables
- Using Read-Write Locks
- Thread-safe collections
- Concurrent synchronizers (Semaphore, Phaser, and others)
- Executors and ThreadPools to concurrently schedule tasks
- Parallelism and the Fork-Join framework

Database Application with JDBC

- Layout of the JDBC API
- JDBC drivers
- Queries and results
- PreparedStatement and CallableStatement
- Transactions
- RowSet 1.1 RowSetProvider and RowSetFactory
- The DAO Pattern and JDBC

Localization

- Advantages of localization
- Defining locale
- Read and set locale using the Locale object
- Resource bundles
- Format messages, dates and numbers

Exam Details

Exam Code : 1z0-804 - Java SE 7 Programmer -II

Exam duration : 150 minutes

Questions : 90

Passing Score : 65%

Format : Multiple Choice