

# Java SE7

## Certification Preparation

Školenie je určené pre začínajúcich, ale aj pokročilejších Java vývojárov, ktorí uvažujú o Oracle Java SE 7 certifikácii. Prostredníctvom teoretického výkladu spojeného s množstvom praktických príkladov prevedieme poslucháča témami, ktoré sú vyžadované pre úspešné zvládnutie Java certifikácie. Obsah kurzu je flexibilný a ponúka prípravu na nasledovné skúšky: 1Z0-803, 1Z0-804 a 1Z0-805.

Obsah kurzu:

- **Java Intro:** installation, configuration, key features, technologies
- **Java Basics:** Java classes, packages, access modifiers, source files, executable applications
- **Java Data Types:** primitive variables, identifiers, reference variables, operators
- **Methods and Encapsulation:** scope of variables, object's lifecycle, constructors and methods, method overloading, accessing object fields, encapsulation
- **String, StringBuilder, Arrays and ArrayList:** String class, mutable StringBuilder, Array and ArrayList, comparing objects
- **Flow Control:** if and if-else, switch statement, for loop, while and do-while loops, loop statements break and continue
- **Inheritance:** inheritance and classes, interface, reference variable and object types, usage of super, polymorphism
- **Exception and Assertions:** exceptions and errors in Java, throwing a exception, handling a exception, common exception classes, single catch block, try-with-resources, test invariants using assertions

- **Java Class Design:** access modifiers, overridden and overloaded methods, casting and instance of operator
- **Advanced Class Design:** abstract classes, static and final keywords, enumerated types
- **OOP Design Principles:** interfaces implementation, cohesion and low-coupling, IS-A and HAS-A relationships, Singleton, DAO and Factory patterns
- **Generics and Collections:** generic class, raw and generic collections, wrapper classes, autoboxing and unboxing, Lists, Sets, Maps, java.util.Comparator, sorting and searching arrays and lists
- **String Processing:** search, parse and build strings, regular expressions, string formatting
- **Java I/O Fundamentals:** read and write from the console, streams, read and write to files
- **Java File I/O and NIO.2:** file and directory paths, check, delete, copy, move file or directory, manipulate file and directory attributes, watch directory for changes
- **Database Access with JDBC:** core JDBC API, database queries, read results from database, PreparedStatement and CallableStatement
- **Threads:** the Thread class and the Runnable interface, thread lifecycle, synchronization of threads
- **Concurrency:** collections and java.util.concurrent package, locks, executors, Callable and Future, thread pools, Fork/Join framework
- **Localization:** Locale object, resource bundles, formatting dates, numbers and currency values, advantage of localization, language and country codes