Course code: JAVAPROG2

This comprehensive course is suitable for experienced programmers who want to learn the full Java programming language (Java SE), the language constructs, handle collections and concurrency, and utilize core language APIs and modularization. It is designed for people with existing knowledge of computing and programming concepts, and who need to learn all aspects of Java SE in the shortest possible time. Students practice the skills learned in each lesson through hands-on practices. The course is based on the current long-term support version, Java SE 11. After completing this course, students should be in a position to attempt both exams (1Z0-815 and 1Z0-816) that lead to Java 11 certification.

What we teach you:
- Manipulate numeric, text, date and time values using appropriate Java primitives and classes
- Organise Java code using classes, interfaces and enumerations
- Implement program logic using variables, arrays, conditional and loop constructs
- Create Java applications that leverage the object-oriented features of the Java language, such as encapsulation, inheritance, and polymorphism
- Use Lambda Expressions
- Use Java Collections API
- Process information using Streams API
- Use Java Concurrency API
- Implement error propagation and handling
- Implement input/output (I/O) functionality to read and write binary and text data
- Manipulate files, directories and file systems
- Deploy and execute Java applications using a modularized approach

Required skills:
- Knowledge of basic computing concepts
- Knowledge and some experience with a programming language

Teaching methods:
- Professional explanation with practical samples and examples.

Teaching materials:
- Powerpoint handouts and module printouts.

Course syllabus:
Introduction to Java
- Primitive Types, Operators, and Flow Control statements
- Text, Date, Time, and Numeric objects
- Classes and Objects
- Improved Class Design
- Inheritance
- Interfaces
- Arrays and Loops
- Collections
- Nested Classes and Lambda expressions
- Java Streams API
- Handle Exceptions and fix bugs
- Java IO API
- Java Concurrency and Multithreading
- Java Modules

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- Annotations
- JDBC API
- Security
- Generics