Java Programming Introduction

Course: **00004**
Filter: **Beginner**
Duration: **4 days**
Category:: **Java**
Price: **3000,00 €**

About Course

Reliability, maintainability, and ease of development is what Java is known for, and its unique architecture enables programmers to develop a single application that can seamlessly run across multiple platforms. In this training course, you gain extensive hands-on experience writing, compiling, and executing Java programs, and building robust applications that use Java's object-oriented features.

What you'll learn

- Design and build robust, object-oriented applications
- Organize complex data using Java collections
- Access any relational database using JDBC
- Read/write files and handle exceptions

Pre-requisites

- Three to six months of experience in a high-level programming language, such as C, Pascal, or Visual Basic
- You should know how to Structure data
- You should know how to Use variables, flow-control statements, and subroutines
- You should know how to Write, compile, and execute a program
- Familiarity with web technologies and object concepts

Curriculum

Module 1: Introduction to Java Programming

- Stand–alone applications and servlets
- Compiling source code into bytecode
- Overview of class libraries

Module 2: Object–Oriented Programming with Java

- Encapsulation, inheritance and polymorphism
- OO analysis and design: "Is a" and "Has a"
- Designing an OO application step by step
- Diagramming object structure with Unified Modeling Language (UML)
- Instantiating objects from classes
- Aggregation and composition
- Extending existing classes
- Overloading and overriding methods

Module 3: Structure of the Java Language

- Declaring and initializing variables
- Declaring and using arrays
- Upcasting, downcasting and autoboxing
- Invoking methods and passing parameters
- Conditionals and loops
- Handling exceptions with try and catch
- Fields (instance data)
- Methods (functions)
- Abstract classes and interfaces
- Organizing classes with packages and modifiers
- Composition vs. inheritance
- Leveraging generics with the collections API
- Developing new classes
- Compiling and debugging

Module 4: Developing GUIs

- Basic GUI widgets
- Event–driven programming
- Benefits of a portable windowing library
- Creating Swing components
- Adding Swing components to containers
- Arranging Swing components using layout managers
- Dialogs and message boxes
- Registering event handlers
- Inner classes and top–level classe

Module 5: Storing and Retrieving Data with File I/O

- Streams, Readers and Writers
- Catching and throwing exceptions
- Formatting text output
- Reading and writing files
- Creating, deleting and renaming files
- Obtaining directory and file information

Module 6: Working with Relational Databases

- Leveraging the JDBC API
- Choosing database drivers
- Connecting to a database
- Submitting SQL statements
- Retrieving and processing results

Module 7: Java Development Tools

- Java Development Kit (JDK)
- Compiler (javac)
- Javadoc utility
- Java Archive (JAR) utility
- Java Integrated Development Environments (IDEs)