Java Programming

Audience Course Java Programming
The course Java Programming Fundamentals is intended for developers who want to learn Java Programming and other persons who want to understand Java code.

Prerequisites Course Java Programming
Basic knowledge of and experience with programming is recommended. Principles of Object Oriented Programming using Java are explained. Prior knowledge of this is beneficial but not necessary for the understanding.

Realization Training Java Programming
The theory is treated on the basis of presentations and is interspersed with exercises. Demos are used to clarify the theory. The course uses Java 8. The course material is in English. The course times are from 9.30 up and to 16.30.

Certification Java Programming
Participants receive an official certificate Java Programming Fundamentals after successful completion of the course.

Duration: 5 days   **Price: € 2999**

Open Schedule

Java Programming
Fundamentals

Content Course Java Programming

The course Java Programming Fundamentals covers the fundamentals of programming in Java based on version 8 of the Java platform. In addition to the fundamentals of Java, the innovations in Java 8 such as lambdas, optionals and the stream API are also covered in the course.

Java Syntax
By means of successive exercises in a case study, participants learn to program with the variables, data types, operators and control flow constructions of the Java language.

Classes and Objects
The course then discusses object oriented concepts such as class, object, encapsulation, inheritance and polymorphism. Attention is paid to errors and exception handling and it is discussed how Java software is organized in packages.

Multiple Threads
Also the split of a program into different subtasks with threads and the synchronization of these threads is the subject in the course.

Generics
Parameterized types, generics, and their use in the Collection Framework are also part of the course program. Optional modules, if time permits it, are access to databases with JDBC and Java Beans.

OCA Certification
This course is a good preparation for the Java 8 **OCA** , Oracle Certified Associate, exam. In combination with the **Advanced Java Programming course** this course also prepares for the Java 8 OCP, Oracle Certified Professional, exam.

Modules Course Java Programming

Module 1 : Basic Concepts	Module 2 : Language Syntax	Module 3 : Classes and Objects
Java Overview	Types of Variables	Class Definition
Language Editions	Primitive Data Types	Encapsulation
Java Platform	Block Statements	Access Modifiers
Java Community Process	if else Statements	Constructors
Application Types	switch Statement	Fields and Methods
Compiling and Running	for and while Loop	static Modifier
Compiler and Interpreter	break and continue	this Keyword
Application Structure	Arrays and Strings	Parameter Passing
Garbage Collection	Formatted Output	Method Overloading
Module 4 : Inheritance	**Module 5 : Exception Handling**	**Module 6 : Packages**
extends Keyword	Error and Exceptions	Standard Java Packages
Overriding Methods	Checked and Unchecked	java.lang Package
Hiding Attributes	Multiple Catch Clauses	Packages and Directories
Calling Base Constructors	finally Clause	Importing Classes
Polymorphism	try with Resources	Full Class Names
Abstract Classes	Common Exceptions	Using Packages
Interfaces	Throwing and Rethrowing	CLASSPATH
Default Methods	User Defined Exceptions	import static
Type Casting	Chained Exceptions	Packages and Visibility
Implicit and Explicit Casting	Stack Traces	Packaging in JAR
Cloning Objects	Assertions	Runnable JARS
Module 7 : Threads	**Module 8 : Synchronization**	**Module 9 : Special Classes**
Java Thread Model	Synchronization Mechanisms	Inner Classes
Thread Class	synchronized Modifier	Types of Inner Classes
Runnable interface	Blocking on a Monitor	Anonymous Inner Classes
Extending Thread	Mutual Exclusion in Java	Static Inner Classes
Implementing Runnable	synchronized Block	Lambdas
Daemon Threads	Locking and Statics	Functional Interfaces
Thread Life Cycle States	Deadlock	Enumerations
Sleeping and Yielding Control	Condition Synchronization	Enums as Constant Objects
Using join and interrupt	Using wait and notify	Enums are Classes
Thread Priorities	while Loop and notifyall	Enum Methods and Fields
Module 10 : Utility Classes	**Module 11 : Collection Framework**	**Module 12 : Generics**
Object Class	Framework Branches	Need and Benefits of Generics
Wrapper Classes	Collection and Map Interface	Generics in Collections
Autoboxing and Unboxing	Iterator Interface	Type Erasure
Overriding equals	List Interface	Bounded Type Parameter
Math Class	ArrayList and LinkedList Class	Generics and Subtyping
Date and LocalDate	Set and SortedSet	Wildcards
Regular Expressions	Comparable Interface	Bounded Wildcards
Scanner and System Class	Comparator Interface	Raw Types
Localizing Dates and Numbers	map, filter and foreach Method	Generic Methods
Module 13 : Stream I/O	**Optional Module : JDBC**	**Optional Module : Java Beans**
I/O Basics and Classes	JDBC Overall Architecture	Software Components
Byte and Character Streams	JDBC Drivers and URL's	Java Beans
Data Sink Streams	Class forName	Properties
Processing Streams	Making Connections	Getters and Setters
Buffered Streams	Executing a Statement	Bean Component Model
Data Conversion Streams	Retrieving Results	Bean Event Pattern
Serialization	Transactions	Event Firing
Object Streams	Prepared Statements	Event Listener Interface