

Price: R9,800.00 excl. VAT
Duration: 4.5 days
Code: AJAVA

Advanced Java Programming

Description

This course will take you to the next level as a Java programmer. You will learn advanced Java programming concepts, and techniques to improve your code. The course also covers some of the new features in Java.

Objectives

After you have completed the Advanced Java Programming course, you will be able to:

- Understand advanced Java programming techniques.
- Understand the JEE architecture.
- Write code using the new Java language features.
- Develop database applications using Java technologies (JDBC and JPA).
- Develop distributed applications using the appropriate Java technology.
- Develop networked applications using sockets.
- Understand more about web services.
- Understand the Java Virtual Machine garbage collection and heap management.

Intended Audience

You should attend the Advanced Java Programming course if:

- You are a Java programmer and you want to learn about the advanced aspects of the Java language.
- You are a Java programmer and you want to learn to write better Java code.

Prerequisites

Before you attend the Advanced Java Programming course:

- You must have attended our Java Programming course or already be comfortable with the fundamentals of the Java programming language.
- You should have at least 6 months practical experience programming in Java.

Course Contents

Overview

- Review of the Java platform.
- Overview of JEE architecture.
- Overview of garbage collection and heap management.
- Introduction to native methods - interfacing to C with JNI.

Language Topics

- Java 1.4 assertions.
- Java 5 features - annotations, generics, enums, enhanced for loop, auto-boxing/unboxing, varargs, static imports.
- Java 7 features - binary literals, try-with-resources, multi-catch, type inference, strings in switches.
- Java 8 features - functional/SAM interfaces, default methods, functional programming, lambda expressions.

Java Collections API

- Sets, Lists, Maps, Queues.

- Binary trees and hash tables.
- Iterator and Enumeration interfaces.
- Big O notation.
- Sorting and searching.

JavaBeans

- JavaBeans architecture and the Reflection API.
- Canonical classes.
- MVC.

Persistence

- Serialization.
- JavaBean XML encoding.
- Java API for XML Binding (JAXB).
- Flat files.
- Java Database Connectivity (JDBC).
- Java Persistence API (JPA).

Java Database Connectivity

- Client/server methodology.
- JDBC API: Driver, Connection, Statement and ResultSet interfaces.
- Driver types and loading drivers.
- Connecting to a JDBC database.
- Executing queries and extracting data.

Distributed Systems

- Overview and introduction.
- RMI architecture vs Remote Procedure Calls (RPC).
- RMI interface definitions, stubs and skeleton classes.
- CORBA and IDL.
- Web Services.

Web Services

- Comparison to RMI/CORBA/EJB.
- SOAP vs RESTful Web Services.
- XML and WSDL.
- XML vs JSON.

*** The lecturer reserves the right to modify the contents of the course to suit the needs of the delegates.*