

Price: R8,600.00 excl. VAT
Duration: 5 days
Code: JAVAP

Java Programming

Description

The Java Programming course provides an introduction to the fundamentals of the Java language. Topics covered include language fundamentals, OO concepts, classes and interfaces, exception handling, and application/applet development. An overview of GUI development, file I/O, collections, threads, networking, and JDBC is included.

Objectives

Delegates who complete the Java Programming course will be able to:

- Understand object-oriented concepts as they pertain to Java.
- Read, develop and debug Java code using Java language constructs.
- Develop console-based Java applications.
- Develop event-driven GUI-based Java applications and applets using AWT and Swing.
- Implement error-handling techniques using exception handling.

Intended Audience

The Java course is for experienced programmers who want to develop applications in Java.

Prerequisites

Experience in programming - preferably with C or C++. Knowledge of object oriented programming would be beneficial.

Course Contents

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

Overview • Java language history. • Portability and the Java Virtual Machine. • The Java development environment and tools.

OO Concepts • Object-oriented vs structured programming. • Data encapsulation. • Classes, attributes and behaviours. • Inheritance and code reuse. • Abstract classes and interfaces. • Polymorphism.

Applets and Applications • Applets versus applications. • Creating Java applications and applets. • Web browser incompatibilities.

Fundamentals • Keywords, identifiers and literals. • Primitive and object reference data types. • Variable declarations, initialization and scope. • Expressions, operators and operator precedence. • Selection and iteration statements. • Exception handling. • Modifiers.

Classes, Interfaces and Packages • Creating and using classes. • Encapsulation - fields and methods. • Constructors and initializers. • Polymorphism - overloading and overriding. • Inheritance - subclasses and superclasses. • Abstract classes and interfaces. • Canonical classes and JavaBeans. • Inner classes. • Packages.

Strings and Arrays • String methods and concatenation. • Strings versus StringBuffer. • Creating, initializing and using arrays. • Collections API overview.

GUI Development • Abstract Windowing Toolkit and Swing. • Primitive graphics and images. • GUI components, containers and layout managers. • Event-driven programming.

File Input/Output • Standard System streams. • Files, Streams, Readers and Writers. • Serializable interface and the transient modifier.

Threads and Multi-tasking • Multi-tasking overview. • Using and creating threads. • The Runnable interface. • Thread attributes, priorities and synchronization.