



Java Programming for Developers

40 hours

Course Overview:

The Java Programming Language course is designed for programmers that are familiar with object-oriented concepts and want to learn how to develop Java technology applications.

The course covers the Java platform and the Java syntax while emphasizes best practices and proper OOP approach. The material covered is demonstrated and practiced through intensive programming exercises.

Who Should Attend:

O.O developers moving to Java

Required Skills:

Practical experience in any object-oriented programming language (e.g. C++)

Course Contents:

Introduction to Java

- Java History
- Language features

The Java Environment

- Java Virtual Machine
- First Java Program
- Java compiler
- Garbage collection
- Installation and distribution

Java Syntax

- Comments
- Variables
- Primitive types
- Operations
- Flow control
- Strings
- Arrays

Java Class Definition

- Methods
- Constructors
- Encapsulation
- static and final variables
- Javadoc
- Objects references
- The this keyword



Packages, Jar files, Classpath

- Packages
- The import statement
- Class loading and CLASSPATH
- Package-friendly access
- JAR files

Inheritance and Polymorphism

- Inheritance in Java
- The super keyword
- Single inheritance
- protected access
- Implementing polymorphism

Abstract classes & Interfaces

- Abstract classes
- Interfaces
- Simulating multiple inheritance

Advanced Class issues

- Final members and methods
- The Object class
- Inner classes

Error Handling

- The Throwable class
- Checked and unchecked exceptions
- Multiple catch blocks
- Custom exceptions
- finally clause
- Assertions

Strings

- String, StringBuffer, StringBuiler
- Wrapper classes
- StringTokenizer

Data structures

- Java data structures
- Iterators
- JDK1.1 data structures
- Generics

Multi Threading

- Java Thread API
- The Runnable interface
- Threads lifecycle



- Synchronization
- Wait/notify

Java I/O

- Streams and Filters
- Serialization
- Readers and Writers
- Working with files
- Standard input/output/error

Networking

- TCP communication
- Sockets and ServerSockets
- Simple client-server example

JDBC

- JDBC working model
- JDBC drivers
- Statements
- Transactions
- Prepared statements
- Callable statements