



# Introduction to Object-Oriented Programming with Java

**Duration:** 3 Days

## Course Description

Intensive and hands-on, this three day course emphasizes becoming productive quickly in the Java language. This course quickly covers the Java 5 language syntax and then moves into more advanced features of the language such as abstract classes, interfaces, generics, packages, and exception handling. Students will then learn two foundational API libraries: I/O streams and collections. Additional appendices on threads, J2EE, and Eclipse are provided for further study.

## Audience

Programmers moving to the Java language.

## Prerequisites

Professional programming experience in C, C++ or C# is required. Knowledge of Object-Oriented concepts is required.

## Course Outline

### Getting Started with J2SE

What is Java?  
A First Java Program  
Compiling and Interpreting Applications

### Packages

The import Statement  
Static Imports  
CLASSPATH and Import

### Language Fundamentals

A Java Program  
Flow control  
Primitive Datatypes  
Variables  
Expressions in Java  
Strings  
Arrays  
Enhanced for Loop

### Exception Handling

Exceptions Overview  
Catching Exceptions  
The finally Block  
Declaring Exceptions  
Defining and Throwing Exceptions  
Errors and RuntimeExceptions  
Assertions

### Objects and Classes

Defining a Class  
Creating an Object  
Instance Data and Class Data

### Input/Output Streams

Overview of Streams  
Bytes vs. Characters  
File Object  
Binary Input and Output



## Sterlink Training

### Application Development Curriculum

Methods  
Constructors  
Access Modifiers  
Encapsulation

#### **Using Java Objects**

Printing to the Console  
StringBuilder and StringBuffer  
Methods and Messages  
Parameter Passing  
Comparing and Identifying Objects  
Destroying Objects  
Using the Primitive-Type Wrapper  
Classes

#### **Inheritance in Java**

Inheritance  
Casting  
Method Overriding  
Polymorphism

#### **Advanced Inheritance and Language Constructs**

Enumerated Types - Pre-Java 5.0  
Enumerated Types Today  
Abstract Classes and Interfaces  
Collections  
Generics

Reading and Writing Objects  
Basic and Filtered Streams

#### **Core Collection Classes**

The Collections Framework

#### **Introduction to Threads**

Creating Threads  
Thread States  
Runnable Threads  
Coordinating Threads  
Interrupting Threads

#### **Introduction to J2EE**

J2SE Building Blocks  
Servlets, JSPs, and Web Applications  
Web Services  
Enterprise JavaBeans  
Additional J2EE APIs  
J2EE Clients  
The J2EE Platform

#### **Introduction to Eclipse**

#### **For more information about this and other offerings**

Please contact Sterlink Data Systems at (416) 859-6470 or email us at [training@sterlink.ca](mailto:training@sterlink.ca)

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