

Corporate Training
Main #:
239-433-6963



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Department of Corporate Training

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Java Programming 2

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Description

This five day intensive and hands-on course emphasizes becoming productive quickly as a Java™ application developer. This course covers the Java language syntax and then moves into the object-oriented features of the language. Students will then use several of the provided API packages, such as I/O streams, collections, Swing GUI programming, threads, and accessing a database with JDBC. This course is current to Java 7 and uses the Eclipse IDE.

Audience: Programmers moving to object-oriented programming using Java.

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

Duration: 5 days

1. Course Introduction
Course Objectives
Course Overview
Using the Workbook
Suggested References

2. Getting Started with Java
What is Java?
How to Get Java
A First Java Program
Compiling and Interpreting Applications
The JSDK Directory Structure

3. Eclipse
Introduction to Eclipse
Installing Eclipse
Running Eclipse for the First Time
Editors, Views, and Perspectives
Setting up a Project
Creating a New Java Application
Running a Java Application
Debugging a Java Application
Importing Existing Java Code into Eclipse

4. Language Fundamentals

A Java Program

If Statements

Switch Statements

Loop Statements

Syntax Details

Primitive Datatypes

Variables

Expressions in Java

Strings

Arrays

Enhanced for Loop

5. Objects and Classes

Defining a Class

Creating an Object

Instance Data and Class Data

Methods

Constructors

Access Modifiers

Encapsulation

6. Using Java Objects

Printing to the Console

printf Format Strings

StringBuilder and StringBuffer

Methods and Messages toString

Parameter Passing

Comparing and Identifying Objects

Destroying Objects

The Primitive-Type Wrapper Classes

Enumerated Types

7. Inheritance in Java

Inheritance

Inheritance in Java

Casting

Method Overriding

Polymorphism super

The Object Class

8. Advanced Inheritance and Generics

Abstract Classes

Interfaces

Using Interfaces

Collections

Generics

Comparable

9. Packages

- Packages
- The import Statement
- Static Imports
- CLASSPATH and Import
- Defining Packages
- Package Scope

10. Exception Handling

- Exceptions Overview
- Catching Exceptions
- The finally Block
- Exception Methods
- Declaring Exceptions
- Defining and Throwing Exceptions
- Errors and RuntimeExceptions

11. Input/Output Streams

- Overview of Streams
- Bytes vs. Characters
- Converting Byte Streams to Character Streams
- File Object
- Binary Input and Output
- PrintWriter Class
- Reading and Writing Objects
- Closing Streams

12. Core Collection Classes

- The Collections Framework
- The Set Interface
- Set Implementation Classes
- The List Interface
- List Implementation Classes
- The Queue Interface
- Queue Implementation Classes
- The Map Interface
- Map Implementation Classes

13. Collection Sorting and Tuning

- Sorting with Comparable
- Sorting with Comparator
- Sorting Lists and Arrays
- Collections Utility Methods
- Tuning ArrayList
- Tuning HashMap and HashSet

14. Inner Classes

- Inner Classes
- Member Classes
- Local Classes
- Anonymous Classes
- Instance Initializers
- Static Nested Classes

15. Introduction to Swing

- AWT and Swing
- Displaying a Window
- GUI Programming in Java
- Handling Events
- Arranging Components
- A Scrollable Component
- Configuring Components
- Menus
- Using the JFileChooser

16. Swing Events and Layout Managers

- The Java Event Delegation Model
- Action Events
- List Selection Events
- Mouse Events
- Layout Managers
- BorderLayout
- FlowLayout
- GridLayout
- BoxLayout
- Box
- JTabbedPane

17. Introduction to JDBC

- The JDBC Connectivity Model
- Database Programming
- Connecting to the Database
- Creating a SQL Query
- Getting the Results
- Updating Database Data
- Finishing Up

18. JDBC SQL Programming

- Error Checking and the SQLException Class
- The SQLWarning Class
- JDBC Types
- Executing SQL Queries
- ResultSetMetaData
- Executing SQL Updates