Intensive Java, XML, JDBC, JNI for Experienced C++ Developers Using Rational Application Developer v7.x or Eclipse 3.x

Course code: JV500

Duration: 5 days

Objective

In this jam-packed hands-on workshop, you will learn how to develop Java applications using J2SE, XML, JDBC, Java Native Interface (Java/C++ integration), and Rational Application Developer v7.x or Eclipse v3.x.

Topics

1. Language features
    - Data type, class, object, instance method, class method, visibility, scope, etc.
2. Difference between C++ and Java
3. Exception Handling
    - Exception model design
4. Inner classes
5. Serialization
6. Reflection
7. Collections
    - Cover all collection types.
    - Design issues: Why use one type vs other type? ArrayList, HashSet, TreeSet,
    - Linked List, HashMap, TreeMap
    - How to sort/search Collection?
    - Pitfalls of classic collection vs Java 2 Collection
8. Files/ Streams / Sockets
    - Directory manipulation
9. XML (DTD, schemas, translation, Java APIs)
    - XSLT
    - XML namespaces
    - Design patterns for XML processing
    - Pitfalls of SAX and DOM and XML Element Handler XML APIs.
    - Mapping OO Model (UML) to XML DTD/Schema
10. Working with large sets of data (possibly data base)
    - JDBC

- Java Stored Procedure
- Mapping OO Model (UML) to Relational Model

11. Class Loader
12. Threads and threads synchronization
    - Interthread communication
13. Java Native Interface
    - JNI data type
    - Java calls C/C++
    - JNI argument passing and return
    - Why uses JNI?
    - Java calls C/C++ then C/C++ calls back Java static method
    - Java calls C/C++ then C/C++ calls back Java instance method
    - Exception handling in C/C++ back to Java
14. Java Invocation APIs - C++ calls Java
15. How to use system clipboard from Java?
16. How to create a process to invoke a command shell?
17. Interprocess communication

Prerequisite

Experienced C++ developers (3 years or more experience). Familiar with object oriented design techniques.