Advanced Java Programming

A company's commitment to Java as a development language for internal applications or customer products means that eventually programmers will need to develop knowledge and skills beyond those learned in a basic Java course. Most production programs will need to interface with technologies such as XML, threading, and networking.

This intensive, hands-on course explores advanced Java 5.0 Standard Edition language features and packages. Students will learn to parse XML documents using the JAXP API. Multi-threaded applications will be covered in detail including concepts such as deadlocks and race conditions. Students will also learn how to utilize more advanced I/O capabilities with object serialization and low-level file I/O with the java.nio package. Client/server applications will be written utilizing both the java.net and java.rmi packages. Additional topics on JNI, performance tuning, and advanced RMI are included as appendices for further study.

Course Objectives:

- Access XML content with the Java API for XML Processing (JAXP).
- Use threads to improve performance of Java programs.
- Store and retrieve a serialized Java object.
- Use buffers and channels from Java's New I/O packages
- Use reflection classes to examine objects and classes at runtime.
- Create client/server Java applications using sockets and Remote Method Invocation (RMI).
- Bind and lookup objects in a naming service using the Java Naming and Directory Interface (JNDI).

Audience: Java programmers who wish to increase their depth of knowledge in Java programming and explore the uses of the various advanced packages.

Prerequisites: *Intermediate Java Programming* or equivalent experience is required.

Number of Days: 3 days

13. Appendix B – Native Methods

Overview of Java Native Methods and JNI
How to Create and Use Native Methods
Native Method Declaration
Using javah
Creating the Implementation Code
Compilation
Distribution
Using the Native Methods
JNI
Passing Arguments
Calling Java Methods in Native Code
JNI Signatures