



J5 - Version: 2
22 September 2021

Advanced java



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 **3 days Course**

Description:

Java is more than programming language; it's an eco-system that contains a lot of technologies and frameworks that simplify the development in java. The java advanced course contains important frameworks from the java language itself and some other popular frameworks that add new concepts and capabilities to the java development. This hands on course will practice you on these frameworks and will extend your box tool in java development.

Intended audience:

This course is designed for Java programmers, team leaders, and software project managers

Prerequisites:

basic knowledge in java
Basic knowledge in C/C++ is advantage
basic knowledge of SQL is required

Objectives:

The students will learn the java connection to the database
The students will learn the java connection to other java process with RMI
The students will learn the java service separation with OSGI
The students will learn aspect oriented programming with AspectJ
The students will learn enterprise scheduling with quartz

Topics:

Distributed programming using RMI

- RMI architecture
- Defining and implementing remote interfaces - step by step example
- RMI callback
- RMI over IIOP - Appendix
- RMI security - Appendix
- RMI Lab

JDBC

- Introduction to JDBC 3.0
- Types of JDBC drivers
- Executing statements, prepared statements and callable statements
- Row sets
- JDBC Transactions
- Save points
- Isolation Levels
- The javax.sql package - Appendix
- JDBC Lab

JNI – Java Native Interface

- What is JNI?
- The “native” Keyword.
- The javah process.
- Invoking native methods.
- Passing arguments to native methods.
- Objects, Arrays and Strings.
- Local and Global references.
- Callbacks methods' id and fields' id.
- Handling Java errors (exception handling).
- Threads.
- Performance issues
- JNI Lab

Introduction to OSGi

- What is and Why OSGi?
- OSGi Architecture
- Starting OSGi runtime
- Bundle
- Installing and starting a bundle
- Services

AOP with AspectJ

- AOP overview
- AspectJ
 - AspectJ overview
 - AJDT
- AspectJ language & API
 - Points
 - Advice
 - Aspects
 - API
- AspectJ lab
- Appendix 2. References.

Quartz scheduler

- Quartz overview
- Jobs
- Triggers
- Advanced Topics
- Quartz Lab