Intermediate Java Programming | New Java Features, Jigsaw, JShell, Concurrency & More (TT2211)

Category: Software Development & Programming | **Vendor:** Trivera Tech

Duration: 24.00 hours (3 days) **19.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

Intermediate Java Programming is hands-on fast-track course geared for experienced developers who have prior working of basic Java who want to take advantage of the newest features of Java 11 that can help them improve performance and functionality of their Java applications. Students will explore and learn how to leverage Modules, scale applications into multi-core environments, improve performance, and become a more effective Java developer.

About This Course

Intermediate Java Programming is hands-on fast-track course geared for experienced developers who have prior working of basic Java who want to take advantage of the newest features of Java 11 that can help them improve performance and functionality of their Java applications. Students will explore and learn how to leverage Modules, scale applications into multi-core environments, improve performance, and become a more effective Java developer.

Who Should Attend

This in an intermediate-level Java development course geared for students experienced with Java 8 or higher programming essentials who wish to quickly get up and running with advanced Java skills. This course does not cover Java programming fundamentals.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

Working in a hands-on learning environment, guided by our expert team, attendees will learn to:

Develop modular applications in Java

Explore the Module service loader

Utilize the tooling that is provided in Java 11 to migrate, monitor and optimize applications

Use the new JShell tool to quickly test java constructs

Develop multi-threaded applications

Work with the CompletableFuture instances introduced in Java 8

Use JDBC to read, write and update records in a relational database

Use the HTTP Client API introduced in Java 11

Explore the Dependency Injection (CDI) and Persistence (JPA) API

Apply the Introspection and Reflection APIs

Understand the importance of Reference Objects

Utilize Project Lombok

Detailed Course Outline

Why JigSaw

- Problems with Classpath
- Encapsulation and the public access modifier
- Application memory footprint
- Java 8s compact profile
- Using internal JDK APIs

Introduction to the Module System

- Introduce Project Jigsaw
- Classpath and Encapsulation
- The JDK internal APIs
- Java 9 Platform modules
- Introduce Project Jigsaw
- Classpath and Encapsulation
- The JDK internal APIs
- Java 9 Platform modules
- Defining application modules
- Define module dependencies
- Implicit dependencies
- Implied Readability
- Exporting packages
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The Module Descriptor

- Define module requirements
- Explain qualified exports
- Open modules for reflection
- Use ServiceLoader
- The provides and uses keywords

Working With Modules

- Being backwards compatible
- The ModulePath and ClassPath
- Unnamed Modules
- Automatic Modules
- The JLink tool

JShell

- Introduction to JShell
- Running Expressions in JShell
- Importing packages
- Defining methods and types
- Using the JShell editor
- Save and loading state

Java Data Access JDBC API

- Connecting to a database using JDBC
- Executing a statement against a database that returns a ResultSet
- Setting up and working with PreparedStatements
- Extracting multiple rows of data from a ResultSet
- Inserting, updating and deleting rows in a table
- Tutorial: Simple Maven Setup with Eclipse

Introduction to Annotations

- Discussing how annotations work in Java
- Understanding what is required to work with Javas annotations
- Using annotations
- Other technologies that are using annotations

Introduction to CDI

- Understand the value of CDI
- Explore dependency injection (DI)
- Understand alternatives
- Understand annotation processing
- Use and configure CDI

Overview of JPA

- Discuss Object to Relational (O/R) Mapping (ORM)
- Explore the Java Persistence API (JPA)
- Explain the ORM framework configuration
- Map a simple entity to a database table

Introduction to Multithreading and Concurrency

- Principles of Multithreading
- The Thread class and Runnable interface
- Explore thread synchronization
- Introduce the Java Concurrency API

Concurrent Java

- Thread management using Executors
- The common thread-pool
- Submitting and controlling asynchronous tasks
- Explore the locking API

Non-blocking asynchronous tasks

- The CompletableFuture
- Define non-blocking processes
- Exception handling in multithreaded processes
- The Fork-Join framework

The HTTP Client API

- Making HTTP (Hypertext Transfer Protocol) requests
- Explain Incubator Modules
- HTTP2 Client API
- Introduce WebSockets
- Communicate with WebSocket endpoints

Other New Java Features

- Enhancements on the Optional class
- Improvements made in the Process API
- The Stack-Walking API
- The HTTP2 Client
- The Multi-Resolution API

Performance Optimizations

- Ahead-Of-Time Compilation
- Hotspot Diagnostic commands
- Variable and Method Handles

Memory Management

- Understand memory management in Java
- Discuss the various garbage collectors
- The Garbage-First (G1) Garbage Collector
- The No-Op and ZGS Garbage Collectors

Reference Objects

- List the kinds of object references available in Java
- Introduce Weak, Soft and PhantomReference
- Explain the ReferenceQueue

Introspection and Reflection

- Reflection classes
- Introspection
- Dynamic invocation of methods
- Using annotations
- Type annotations
- Receiver parameter

Project Lombok

- Introduce the Lombok Project
- Configure the Lombok Annotation processor
- Introduce some of the commonly used Lombok annotations

Additional Course Details

Nexus Humans Intermediate Java Programming | New Java Features, Jigsaw, JShell, Concurrency & More (TT2211) training program is a workshop that presents an invigorating mix of sessions, lessons, and masterclasses meticulously crafted to propel your learning expedition forward.

This immersive bootcamp-style experience boasts interactive lectures, hands-on labs, and collaborative hackathons, all strategically designed to fortify fundamental concepts.

Guided by seasoned coaches, each session offers priceless insights and practical skills crucial for honing your expertise. Whether you're stepping into the realm of professional skills or a seasoned professional, this comprehensive course ensures you're equipped with the knowledge and prowess necessary for success.

While we feel this is the best course for the Intermediate Java Programming | New Java Features, Jigsaw, JShell, Concurrency & More (TT2211) course and one of our Top 10 we encourage you to read the course outline to make sure it is the right content for you.

Additionally, private sessions, closed classes or dedicated events are available both live online and at our training centres in Dublin and London, as well as at your offices anywhere in the UK, Ireland or across EMEA.

Frequently Asked Questions

Q: What delivery options are available for Intermediate Java Programming | New Java Features, Jigsaw, JShell, Concurrency & More (TT2211)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 3-day Intermediate Java Programming | New Java Features, Jigsaw, JShell, Concurrency & More (TT2211) course provides up to 19.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Intermediate Java Programming | New Java Features, Jigsaw, JShell, Concurrency & More (TT2211) training?

The training takes place over 3 day(s), with each day lasting approximately 24.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Intermediate Java Programming | New Java Features, Jigsaw, JShell, Concurrency & More (TT2211)?

Yes, we provide corporate training, dedicated training, and closed classes for Intermediate Java Programming | New Java Features, Jigsaw, JShell, Concurrency & More (TT2211). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: Why choose Nexus Human for Intermediate Java Programming | New Java Features, Jigsaw, JShell, Concurrency & More (TT2211)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Intermediate Java Programming | New Java Features, Jigsaw, JShell, Concurrency & More (TT2211) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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