



JAVA TRAINING

Java Developer Advanced Training Course

Advance your Java development skills. Build robust, high-performance applications with advanced Java features and frameworks.

DURATION

24 hours

LEVEL

Intermediate

FORMAT

Instructor-Led

-
- Globally Recognized Certification
 - Expert-Led Hands-On Training
 - Flexible Scheduling

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COURSE OVERVIEW

The Java Developer Advanced Training Course is meticulously designed for intermediate Java developers aspiring to master complex enterprise application development and elevate their career trajectory. This intensive 24-hour program transcends basic syntax, delving deep into advanced Java concepts, modern frameworks, and best practices essential for building robust, scalable, and high-performance applications. Participants will transition from writing functional code to crafting elegant, maintainable, and architecturally sound solutions that meet industry standards.

This course provides hands-on experience with critical technologies, including advanced Object-Oriented Programming principles, multithreading and concurrency utilities, sophisticated database interaction via JDBC and JPA/Hibernate, and the development of RESTful web services using the Spring Boot framework. You'll also learn vital aspects of testing, debugging, and performance optimization, ensuring your applications are not only powerful but also efficient and reliable. By the end of the training, you'll be equipped with the expertise to tackle challenging development tasks and contribute significantly to any Java-based project.

Completing this advanced training will significantly enhance your professional profile, opening doors to more senior and specialized roles within the IT landscape. You'll gain the confidence and technical acumen to lead complex projects, innovate solutions, and become a sought-after expert in the ever-evolving world of Java development. This certification is a strategic investment in becoming a leader in enterprise application development.

Duration	24 hours
Level	Intermediate
Vendor	Java

COURSE CURRICULUM

01 Module 1: Advanced OOP, Design Patterns & Java 8+ Features

- Advanced Generics and Collections API
- Lambda Expressions and Stream API for functional programming
- Functional Interfaces and Method References
- Common Java Design Patterns (e.g., Singleton, Factory, Observer, Decorator)
- SOLID Principles and Clean Code practices for maintainable systems

02 Module 2: Concurrency and Multithreading in Java

- Fundamentals of Multithreading and Thread Life Cycle
- Thread Synchronization Mechanisms (synchronized blocks, locks, semaphores)
- The Executor Framework and Thread Pools for efficient task management
- Concurrent Collections (e.g., ConcurrentHashMap, CopyOnWriteArrayList)
- Atomic Variables and Advanced Concurrency Utilities (Phaser, CyclicBarrier, CountdownLatch)

03 Module 3: Advanced Database Integration & Persistence

- JDBC Best Practices, Connection Pooling (e.g., HikariCP)
- Introduction to ORM with Hibernate Framework
- JPA (Java Persistence API) Fundamentals and Entity Management
- Mapping Complex Entities and Relationships (One-to-One, One-to-Many, Many-to-Many)
- Querying Data with HQL (Hibernate Query Language) and Criteria API

04 Module 4: Building RESTful APIs with Spring Boot

- Spring Framework Overview: Inversion of Control (IoC) and Dependency Injection (DI)
- Setting up Spring Boot Projects with Spring Initializr
- Creating RESTful Controllers and Handling HTTP Methods
- Data Persistence with Spring Data JPA and Repository Pattern
- Exception Handling, Validation, and Internationalization in Spring Boot
- Introduction to Spring Security for API protection (JWT integration concepts)

05 Module 5: Advanced Testing, Debugging & Deployment

- Unit Testing with JUnit 5 and Parameterized Tests
- Mocking Dependencies with Mockito Framework
- Integration Testing for Spring Boot Applications with @SpringBootTest
- Advanced Debugging Techniques and Tools (Profiling, Stack Trace Analysis)
- Introduction to Containerization for Java Applications (Docker basics for deployment)

06 Module 6: Performance Tuning, Monitoring & Best Practices

- JVM Internals and Garbage Collection Tuning Strategies
- Profiling Java Applications for Performance Bottlenecks
- Code Optimization Techniques and Common Pitfalls
- Effective Logging with SLF4J and Logback
- Secure Coding Practices in Java and Common Vulnerabilities
- Introduction to Monitoring Java Applications (e.g., Spring Boot Actuator)

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **Senior Java Enterprise Application Developer**
- > **Java Backend Lead Engineer**
- > **Microservices Architect (Java-focused)**

FREQUENTLY ASKED QUESTIONS

Q: What prior Java experience or knowledge is essential to benefit fully from this Advanced Training Course?

This course is tailored for intermediate Java developers. Participants should have a solid foundation in core Java programming, including strong understanding of Object-Oriented Programming (OOP) concepts, data structures, exception handling, and basic file I/O. Prior exposure to relational databases and SQL is also highly beneficial. While not strictly required, familiarity with a build tool like Maven or Gradle would be advantageous.

Q: Beyond coding, what specific skills will I gain to contribute to the design and architecture of complex Java systems after completing this course?

This course goes beyond mere coding to equip you with critical design and architectural thinking. You will gain a deep understanding of Java design patterns, SOLID principles, and clean code practices, enabling you to design modular, scalable, and maintainable systems. You will learn about concurrency models for high-performance applications, effective database interaction strategies, and how to structure robust RESTful APIs with Spring Boot, all of which are foundational for contributing to or leading the architectural decisions of complex Java enterprise applications.

Q: Will this course equip me with the knowledge to work with modern Java frameworks like Spring Boot for microservices development, and how does it relate to current industry trends?

Absolutely. A significant portion of this advanced training is dedicated to developing RESTful web services using the Spring Boot framework, which is the de facto standard for building modern Java applications, including microservices. You will learn to set up Spring Boot projects, leverage Spring Data JPA for persistence, and implement robust APIs. This direct exposure to Spring Boot ensures you are well-versed in industry-leading practices and prepared to develop scalable, cloud-native applications that align with current microservices architectural trends.

ABOUT COMPUTER PRIDE



East Africa's Premier IT Training Center

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors have empowered thousands of professionals across East Africa.

15+

Years of Excellence

10,000+

Professionals Trained

50+

Vendor Certifications

READY TO ENROL?

Take the next step in your technology career.

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