

Migrating Java 11 to Java 21 | Java 21 New Features and Skills - TT2136

Real-World Hands-on Scenarios and Expert Guidance to Help You Quickly Transition to the Latest in Java, Java 21

Duration: 1 Day

Skill Level: Intermediate

Available Format: Instructor-Led Online; Instructor-Led, Onsite In Person ; Blended; On Public Schedule

There have been a lot of changes in the Java programming language since the release of Java 11 in September of 2018. Migrating to Java 21 / Java 21 New Features and Skills is a one day course that focuses on the changes that will be most noticeable for Java developers who will make the transition from Java 11 to Java 21.

What You'll Learn

Overview

There have been a lot of changes in the Java programming language since the release of Java 11 in September of 2018. Migrating to Java 21 / Java 21 New Features and Skills is a one day course that focuses on the changes that will be most noticeable for Java developers who will make the transition from Java 11 to Java 21.

This course blends expert instruction and practical, hands-on experience, focusing on bridging the gap between your current Java knowledge and the latest version. Understanding that many developers are now transitioning projects from older versions of Java, this course is your key to making that shift both quickly and effectively. Throughout the course, you'll dive deep into Java 21's key features, such as Records for efficient data management, enhanced text manipulation with String and Text Blocks, the introduction of Sealed Classes, and the refinements in Switch Expressions and Pattern Matching. These updates are not mere enhancements but pivotal tools that will streamline your coding practices and make your development

process more efficient. The real-world labs enable you to quickly pick up useful practical skills you'll be able to apply seamlessly into your work.

Whether you're upgrading existing projects or embarking on new ones, the skills and insights gained here will empower you to use Java 21 efficiently and innovatively. This course is more than just an upgrade in your Java knowledge; it's a comprehensive enhancement of your development skills, preparing you to tackle modern challenges with renewed expertise and confidence.

Objectives

This course is rich with hands-on activities and examples, combining robust real-world hands-on labs with expert instruction, engaging activities and group discussions and review. You'll learn and practice new skills under the guidance of our expert instructor, who will prepare you to apply these in the job, role or project with confidence.

Working in an interactive learning environment, led by our expert facilitator, you'll explore:

- **Updated Java Skills:** Gain updated Java skills, enhancing employability and industry relevance.
- **Efficiency in Coding:** Learn techniques like Records, enhanced text handling, and sealed classes, streamlining coding practices and improving code quality.
- **Adaptive Development:** Seamlessly adapt from Java 11 to Java 21, ensuring effective participation in modern Java projects.
- **Practical Application:** Apply new skills immediately in real-world projects, increasing productivity and code quality.
- **Competitive Edge:** Stand out in the job market with up-to-date Java knowledge, becoming a valuable asset to organizations and potential employers.
- **Mastery of Pattern Matching:** Acquire proficiency in advanced Pattern Matching techniques for concise and error-reducing code.
- **Effective Text Processing:** Learn to handle text efficiently with Java 21's enhanced text handling features, improving application readability and user experience.

Audience

This is an intermediate- level Java programming course, designed for experienced Java 11 developers who wish to get up and running with Java 21 immediately. Attendees should have a working knowledge of developing Java 11 applications.

This course is not for non-developers, or developers new to Java.

Pre-Requisites

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Agenda

1. Versions and Features

- Quick Review of Java versions since Java 8
- (Non) LTS releases
- Preview features
- Java Language Specifications
- Java Specification Requests
- Java Enhancement Proposals
- Tutorial: IntelliJ Community Edition 2023 Quickstart (Using Maven)

2. Records

- Data objects in Java
- Introduce records as carrier of immutable data
- Defining records
- The Canonical constructor
- Compact constructors

3. String and Text Blocks

- Discuss the definition of whitespace in Java
- Introduce the strip() methods of the String class
- The isBlank() and repeat() methods introduced in Java 11
- Using the lines() method to construct a Stream instance using a String
- Compact strings
- Introducing Text Blocks
- Indentation in text blocks

4. Sealed Classes

- Introduce sealed classes
- The sealed and permits modifier
- Sealed interfaces
- Sealed classes and pattern matching

5. Switch Expressions

- Switch Expressions
- Using yield
- Discuss switch fall through

6. Pattern Matching

- Pattern Matching for instanceof
- Scope of variable when using pattern matching
- Refining Patterns in switch
- Dominance of pattern labels
- Pattern Matching in switch statements
- Pattern Matching and sealed classes
- Record Patterns

7. Exception Handling

- Enhanced try-with-resources
- Helpful NullPointerExceptions
- Excluding parameter names in error messages

8. Overview of Virtual Threads

- Introduce Virtual Threads
- Virtual vs System Threads
- Creating and running a Virtual Thread
- Scheduling a Virtual Thread
- Pinned Virtual Threads

Additional Topic: Time Permitting

- More Updates
- private methods in interfaces
- The forRemoval and since attributes of the Deprecated annotation
- Multi-release JAR files
- Javadoc updates
- Class-Data Sharing
- Application Class-Data
- CompactNumberFormat
- Deprecation of the finalize method

Related Courses

TT2136	Migrating Java 11 to Java 21 Java 21 New Features and Skills
TT2100	Core Java Programming Developer's Workshop
TT2135	Migrating to Java 17 Java 17 New Features & Skills
TT2120	Basic Java Programming for Developers New to OO (C, COBOL, etc.)
TT2104	Fast Track to Core Java Programming for OO Experienced Developers

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All applicable course software, digital courseware files or course notes, labs, data sets and solutions, live coaching support channels, CodeCoach.AI anytime tutor access, and rich extended learning and post training resources are provided for you in our “easy access, single source, no install required” online Learning Experience Platform (LXP), remote lab and content environment. Access periods vary by course. We’ll collaborate with you to ensure your team is set up and ready to go well in advance of the class. Please inquire about set up details and options for your specific course of interest.

For More Information

Please [contact us](#) or call 844-475-4559 toll free for more information about our training services (instructor-led, self-paced or blended), coaching and mentoring services, public course enrollment or questions, partner programs, courseware licensing options and more.