The Ultimate Java Engineer’s Handbook: 100+ Essential Resources

Curated by Engineering with Java Newsletter

Welcome to Your Essential Java Resource Guide!

In the fast-evolving world of Java, staying updated is crucial. We’ve meticulously curated over 100 top-tier articles and resources from leading Java experts and publications to bring you this comprehensive guide.

Whether you’re looking to deepen your understanding of Spring Boot, optimize performance, master new language features, or explore advanced architectural patterns, this guide is your go-to reference.

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1. Spring Boot & Microservices

Dive into the world of Spring Boot and Microservices with these essential reads, covering everything from health checks and event-driven architectures to API optimization and security.

1. Self-Healing Microservices: Implementing Health Checks with Spring Boot and Kubernetes - Java Code Geeks
2. Spring Cloud Stream: Event-Driven Architecture (Part 1) - Foojay
3. Websocket Notifications in Spring Boot Without External Brokers - Medium
4. Monoliths, REST, Spring Boot, Sidecars - DZone
5. Paginating API Results with Spring Boot and Spring Data - Medium
6. How Spring Boot Configures Scheduled Batch Jobs - Medium
7. Structured Logging in Spring Boot - Java Code Geeks
8. Spring Boot Circuit Breaker vs. Retry - Java Code Geeks
9. Building a Declarative API with Spring AOP and SpEL - Foojay
10. How Spring Boot Handles Multiple Datasources Internally - Medium
11. How Spring Boot Implements Feign Clients for REST APIs - Medium
12. Spring Framework 6.2 and Spring Boot 3.4 Improve Containers, Actuators Ahead of New 2025… - InfoQ
13. How Spring Boot Manages Application Properties - Medium
14. How to Optimize API Payloads with Compression in Spring Boot - Medium

15. How to Use Connection Pooling for Faster Database Access in Spring Boot - Medium
16. High Traffic Solutions: Scaling Spring Boot for Millions of Requests - Java Code Geeks
17. Duplicate REST API Requests: Causes and Solutions - Java Code Geeks
18. Improving Spring Boot Performance with Database Optimization - Medium
19. Spring Boot Prototyping with Bootify - Baeldung
20. How to Follow Good Coding Standards in Spring Boot - Medium
21. Best Practices for Using DTOs in Java - Java Code Geeks
22. Spring Boot and SOLID: A Perfect Match - Java Code Geeks
23. Using Reactor Mono.cache() for Memoization in Spring - Java Code Geeks
24. How to Implement a Gateway with Spring Cloud - DZone
25. Spring Microservice Tip: Abstracting DB Hostname - DZone
26. Spring Security JWT - Reflectoring
27. Implement Two-Level Cache with Spring - Java Code Geeks
28. Refresh and Fetch an Entity After Save in Spring Data JPA - Java Code Geeks
29. A Guide to Enabling Tracing in Spring Boot and Kafka - Medium
30. Empower Your Spring Boot Development with These Top Design Patterns - Java Code Geeks
31. Building Clean API Responses with Spring Boot - Java Code Geeks
32. Spring Data JPA Query with Arbitrary AND Clauses Example - Java Code Geeks
33. Spring Security One Time Token Login - Baeldung
34. Spring HTTP Clients: RestClient, WebClient, RestTemplate - Java Code Geeks

2. Java Language Features & Concepts (Core Java, Streams, Concurrency, etc.)

Explore the depths of Java’s core language features, from understanding streams and concurrency to the latest updates in new Java versions.

1. Top 10 Java Gotchas That Still Catch Developers in 2025 - Medium
2. Alternative Functional Approaches in Java - DZone
3. Clean Java Architecture with Supplier Function and Consumer Interfaces - Medium
4. Java Stream Gatherers: Stateful Operations - DZone
5. How Fast Are Streams Really? - Medium
6. Java Thread Per Connection vs. Per Request - Baeldung
7. Async File I/O with Java and io_uring - Foojay
8. Secret Java Stream Hacks That Will Instantly Improve Your Coding Efficiency - Medium
9. Devoxx Belgium: Loom Next - Inside Java
10. Blocking vs. Non-Blocking REST Calls in Java: Which One Should You Use? - Medium
11. GraalVM vs. JVM: Is Native Image the Future of Java Applications? - Java Code Geeks
12. Devoxx Belgium: GC Progress - Inside Java
13. Taking Out the Trash in Java - Medium
14. Mastering Java Virtual Threads: Boost Application Scalability and Performance - Dev.to
15. 5 Advanced Java Reflection Techniques for Dynamic Programming - Dev.to
16. Nested Classes in Java: A Comprehensive Guide - Medium

17. Serialization and Deserialization in Java - Medium
18. Java ScheduledExecutorService Virtual Threads - Baeldung
19. Processing a Large Log File of 10GB Using Java Parallel Streams - Medium
20. Effective Techniques for Optimizing Java Streams in Your Code - Java Code Geeks
21. The Future of Java: Exploring the New Features of Java 23 - Medium
22. A Complete Guide to Lombok Annotations in Java - Medium
23. Java 23 Has Arrived, And It Brings a Truckload of Changes - Foojay
24. How to Replace Multiple If-Else Conditions with Map in Java - Medium
25. What is Pagination in Java? - Medium
26. Understanding Floating Point Numbers in Java - DZone
27. Java Exception Handling in CompletableFuture (Part 2) - Medium
28. Following the Flow of a Java Stream - Medium
29. Java Concurrency: The Happens-Before Guarantee - DZone
30. Creating Beans: Dos, Don’ts, and Nice-to-Dos - Medium
31. Converting Streams - Inside Java
32. Hidden Costs of Lombok in Enterprise Java Solutions - DZone
33. Monads in Java - Java Code Geeks
34. When to Use a Parallel Stream in Java - Medium
35. Guide to Wrapper Classes in Java - Medium
36. Java Collections and Their Thread-Safe Versions - Medium
37. Memory-Friendly File Reading in Java - Java Code Geeks
38. How Do You Handle Checked Exceptions in Stream Pipeline? - Medium

39. Mastering Exception Handling in Java Lambda Expressions - DZone

3. Performance & Optimization

Boost your Java applications’ speed and efficiency with these articles focused on profiling, database optimization, and scalable solutions.

1. Performance Best Practise No. 1: Optimize Database Operations - Foojay
2. Pageable in Spring Boot Is Powerful, But Here’s Where It Breaks Down - Medium
3. Profiling Java Apps with Flight Recorder & Mission Control - Java Code Geeks
4. Building Resilient Apps with Retry Mechanisms - Java Code Geeks
5. Optimizing GUID/UUID Primary Keys for Performance - Java Code Geeks
6. SQL Query Optimization: How to Identify and Optimize Slow SQL Queries - Foojay
7. Spring Data JPA: Optimizing Performance with Pagination, Sorting, and Filtering Using Specification - Medium

4. Testing & Debugging

Master the art of unit testing, mocking, and API assertion with these valuable resources.

1. Mocking in Unit Tests: Mockito vs. EasyMock vs. JMockit - Java Code Geeks
2. Asserting JSON Responses with Rest Assured in Java - Java Code Geeks
3. How to Write Unit Tests Which Won’t Tie Our Hands - Petri Kainulainen
4. Mock APIs with Playwright - Java Code Geeks
5. Java Spring Boot Test Mock Value - Baeldung

5. Architecture & Design Patterns

Explore best practices for architecting robust Java applications, including design patterns, distributed transactions, and DDD approaches.

1. Event-Driven Architecture and Change Data Capture Made Easy - Foojay
2. Hidden Gems: Powerful JPA Annotations You Probably Missed - Medium
3. Ensuring Atomicity in Distributed Transactions for Microservices - Medium
4. Mastering High Concurrency with CQRS: Independent Scaling of Reads and Writes in Microservices - Medium
5. Transactional Outbox Pattern: Consistency in Microservices - Stackademic
6. SQL Best Practices Every Java Engineer Must Know - Foojay
7. Implement Decorator Pattern for Online - Java Bulletin
8. Understanding the Bridge Design Pattern in Java: A Simplified Guide - Java Code Geeks
9. Storing Value Objects in Postgres: A Tactical DDD Pattern Approach - Medium
10. Hibernate SoftDelete Annotation - Vlad Mihalcea
11. Top 7 Java Microservices Frameworks - Foojay

6. Tools & Ecosystem

Discover essential tools, libraries, and ecosystem updates that enhance Java development, from AI integrations to containerization.

1. Brokk for Java Developers - Foojay
2. Spring AI Deepseek Integration - Medium
3. Reactive Notification System: Server-Sent Events - InfoQ
4. Java Lanterna - Baeldung
5. Jakarta WebSocket Essentials - DZone
6. Dust: Open Source Actors for Java - DZone
7. Implement Hibernate Second Level Cache with NCache - DZone
8. Java Lombok Locked Annotation - Baeldung
9. Modify JSON Data in Postgres and Hibernate - DZone
10. Easily Containerize Java Applications with Cloud Native Buildpacks - Foojay
11. Spring Data WindowIterator - Vlad Mihalcea
12. Observability Agent Architecture - DZone
13. Effective Java Logging - Foojay
14. Spring AI: How to Write GenAI Applications with Java - Foojay
15. 7 Best Plugins to Improve Code Quality in Java - Medium
16. Java Failsafe Fault Tolerance - Baeldung
17. REST CompletableFuture Several Calls - Baeldung

7. General Development & Best Practices

Hone your general development skills with insights into common pitfalls, coding standards, and effective data handling.

1. Memory Leak: ThreadLocal Variables - DZone
2. How Java Servlets Work - DZone
3. Dynamic Constraint Application in Java Bean Validation - Java Code Geeks
4. Sorting a List of Pair<String, Integer> in Java - Java Code Geeks
5. Java Bean Validation: Applying Constraints - DZone

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