Codes With Pankaj



Java Certification Course

Master Java - the most popular programming language underpinning most apps and websites

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No Filler, **Just Code That Works**



Unlock the world of coding

Codes

With Pankaj



Course Overview

The Java Certification Course on codeswithpankaj.com is a comprehensive, industry-aligned program crafted to meet the demands of the 2025 job market. It covers Core Java, Advanced Java, and modern frameworks like Spring Boot and Hibernate, alongside skills in microservices, RESTful APIs, and cloud integration. The course emphasizes hands-on projects, real-world applications, and preparation for Java certifications, enabling learners to secure roles in top tech companies.



Duration

12 weeks (72-95 hours total, approximately 5-7 hours per week)



Target Audience

Beginners, intermediate developers, and professionals aiming for Java certifications or roles such as Java Developer, Backend Developer, or Full-Stack Developer.

🛝 Market and Industry Alignment

This curriculum is designed based on :

- · Job Market Trends (2025): Java remains a top programming language for enterprise applications, cloud-native development, and microservices (e.g., Spring Boot, Kubernetes). Companies prioritize skills in REST APIs, database integration, and DevOps practices.
- · Company Requirements: Tech giants (e.g., Amazon, Google) and IT services firms (e.g., TCS, Infosys) seek Java developers proficient in Spring, Hibernate, microservices, and testing frameworks like JUnit.
- Emerging Technologies: Integration with cloud platforms (AWS, Azure), containerization (Docker), and CI/CD pipelines is in high demand.
- · Certification Goals: Prepares for Oracle Certified Professional: Java SE 17 Developer and Spring Professional Certification.

Welcome to Codes With Pankaj – Learn, Apply, Innovate !



Pankaj Chouhan Software Engineer

About the Instructor

Hi, I'm Pankaj Chouhan, a software engineer with 10+ years of experience, passionate about helping others master coding and problem-solving. My mission is to bridge the gap between theory and real-world application, making coding simple, engaging, and career-focused.

- Hands-On Training Work on real-world projects to gain practical skills.
- S Beginner to Pro Courses for all levels, from first-timers to professionals.
- Job-Ready Skills Learn what tech companies actually look for.
- S Engaging & Fun No boring lectures, just interactive, practical learning.
- 🐼 Industry Insights Stay updated with best coding practices, tips, and trends.
- Community Support Join a thriving community of like-minded learners.

💡 Whether you're learning your first programming language or sharpening advanced skills, Codes With Pankaj provides a structured, fun, and effective way to succeed.

* Start your journey today & build the future with code!



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Course Objectives

- Master Java syntax, object-oriented programming, and advanced features.
- Develop proficiency in collections, file handling, multithreading, and database connectivity.
- Build web applications using JSP, Servlets, and JDBC.
- Prepare for Java certification exams through targeted practice.
- Create a portfolio of projects to showcase skills to employers.

🐣 Part 1 : Core Java (Weeks 1-10, 48 hours)

Module 1 : Introduction to Java Programming Language (4 hours)

Objective: Establish a strong foundation in Java and its development environment..

Topic

- History and relevance of Java in 2025 (enterprise, cloud, Android)
- Java features: platform independence, robustness, security
- Application design principles (modularity, scalability)
- Setting up JDK 17, IDEs (IntelliJ IDEA, Eclipse), and Git
- Writing and debugging a simple Java program

Activities

- Install JDK 17 and IntelliJ IDEA; configure Git.
- Write and debug a "Hello, World!" program.
- Exercises on program structure and command-line arguments.

Market Relevance

Companies require developers to set up modern development environments and use version control (Git).

Module 2 : Data Types, Operators, and Control Structures (6 hours)

Objective: Master Java's core syntax for data manipulation and control flow.

Topic

- Primitive and reference data types
- Variables, naming conventions, and type casting
- Operators: arithmetic, relational, logical, bitwise
- Control structures: if, if-else, switch-case, while, do-while, for loops

Activities

- Advanced Calculator Build with operators and error handling.
- Optimized Loop Problems Prime check and factorial.
- Range Sum Calculation Sum even/odd numbers, calculate average .
- Switch-Case Menu Unit converter.
- Number Series Generator Fibonacci or multiples with validation.

Market Relevance

Fundamental for coding interviews and building logic-heavy applications



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Module 3 : Arrays and Strings (6 hours)

Objective: Learn to manage data with arrays and manipulate strings efficiently.

Topic

- Single and multi-dimensional arrays
- String class: immutability, methods
- StringBuffer and StringBuilder: performance differences

Activities

- Create a program to sort student grades using arrays.
- Build a text analyzer using String and StringBuilder.

Market Relevance

Arrays and strings are critical for data processing in enterprise applications

Module 4 : Object-Oriented Programming (OOP) Fundamentals (12 hours)

Objective: Master OOP principles for modular and reusable code.

Topic

- · Classes, objects, methods, constructors
- Encapsulation: access specifiers (public, private, protected)
- Inheritance: types, super keyword
- · Polymorphism: method overloading, overriding
- Abstraction: abstract classes, interfaces
- Use of this and super keywords

Activities

- Develop a library management system with classes and inheritance
- Create a shape calculator using polymorphism and abstraction.

Market Relevance

OOP is foundational for enterprise-grade Java applications and frameworks like Spring

Module 5 : Exception Handling and File I/O (6 hours)

Objective: Master OOP principles for modular and reusable code.

Topic

- Exception types: checked, unchecked
- Exception handling: try-catch, throw, throws, custom exceptions
- File I/O: reading/writing files, serialization

Activities

- Build a program to read/write CSV files with exception handling).
- Create a serialized object storage system.

Market Relevance

Robust error handling and file operations are essential for backend systems.



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Module 6 : Generics & Collections Framework (10 hours)

Objective: Manage dynamic data using Java's collection framework.

Topic

- Collection interfaces: List, Set, Map
- Classes: ArrayList, LinkedList, HashSet, HashMap
- · Iterators, comparators, and generics

Activities

· Build a contact management system using collections

Market Relevance

Collections are widely used in data-driven applications and coding interviews

🐣 Part 2 :Intermediate Java (Weeks 10-12, 24 hours))

Module 7 : Multithreading , Lambda Expressions and Concurrency (8 hours)

Objective: Implement concurrent programming for performance

Topic

- Thread lifecycle, creation (Thread class, Runnable)
- Synchronization, thread safety
- Concurrency utilities: ExecutorService, Fork/Join
- Thread scheduler and priority
- Lambda Expressions

Activities

- Develop a multithreaded file downloader.
- Create a producer-consumer system using synchronization.

Market Relevance

Concurrency is critical for scalable backend systems (e.g., microservices).

Module 8 : Database Connectivity with JDBC (8 hours)

Objective: Connect Java applications to relational databases.

Topic

- JDBC architecture and components : Connection, Statement, PreparedStatement, CallableStatement
- Transaction management
- MySQL setup and integration

Activities

- Build a student management system with CRUD operations.
- Implement transaction management in a banking application.

Market Relevance

Database integration is a core skill for backend developers.



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Module 9 : JSP and Servlets (12 hours)

Objective: Develop dynamic web applications.

Topic

- Setting up Apache Tomcat and Eclipse
- · JSP: expressions, scriptlets, declarations, built-in objects
- · Servlets: handling forms, GET vs. POST
- State management: sessions, cookies
- JSTL: core tags (forEach, if, choose), function tags, i18n tags

Activities

- Create a login system with session tracking.
- Build a multilingual web page using JSTL.

Market Relevance

JSP and Servlets are used in legacy enterprise systems and modern web apps

Optional Modules

Module 10 : Spring Boot and Hibernate (24 hours)

Module 11 : Microservices and Cloud Integration (6 hours)

Module 12 : Capstone Project and Certification Prep (6 hours)





Pricing : Flexible plans (one-time payment or monthly subscription).



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