

# JAVA

☀️ **BECOME A JAVA PROGRAMMER** ☀️

## WHY LEARN JAVA?

- Highly in-demand language worldwide.
- Powers software, web, mobile apps (Android), games, banking systems.
- Strong career opportunities.
- Builds solid programming and OOPS skills.

## COURSE HIGHLIGHTS

- Hands-on coding sessions
- Real-world projects & assignments
- Interview preparation & placement guidance
- Learn from experienced instructors



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## Spring Boot with Java

### Module 1: Spring Core

- Introduction to Spring Framework
- Inversion of Control (IOC) & Dependency Injection
- Spring Beans and Scopes
- Spring Configuration (XML and Java-based)
- Spring Annotations:
  - @Component
  - @Service
  - @Autowired
  - @Repository

### Module 2: Spring Boot

- Spring Boot Architecture
- Starter Dependencies
- Embedded Tomcat
- Important Annotations
- Building REST APIs with Spring Boot (see Module 3 for details)
- Consuming APIs: RestTemplate and WebClient

### Module 3: REST API Development with Spring Boot

- Introduction to REST Architecture
- Understanding HTTP Methods (GET, POST, PUT, DELETE, PATCH)
- Building REST Controllers using @RestController
- Request mapping and URL design (@RequestMapping, @GetMapping, @PostMapping)
- Request Parameters, Path Variables, Request Body
- Response handling, HTTP status codes
- Exception handling in REST APIs (@ExceptionHandler, @ControllerAdvice)
- Versioning REST APIs
- Testing REST APIs with **Postman**
- Securing APIs with Spring Security (JWT / OAuth2)

### Module 4: Spring Boot Data JPA

- Working with Repositories
- CRUD Operations
- Pagination & Sorting
- Custom Queries
- Integration of JPA with REST APIs

### Module 5: Spring Security

- Authentication & Authorization
- Spring Security Filters

- JWT Authentication
- OAuth2 Integration
- Securing REST APIs

### Module 6: Thymeleaf & Template Engines

- Introduction to Thymeleaf
- Templates in Spring Boot
- Layouts, Fragments, and Includes
- Data binding with forms (th:object, th:field)
- Conditional rendering (th:if, th:unless)
- Iterating over collections (th:each)
- Integrating with Spring MVC Controllers

### Module 7: Microservices with Spring Boot

- Monolithic vs Microservices Architecture
- Eureka Service Discovery
- API Gateway Configuration
- Feign Client for Service-to-Service Communication
- Ribbon Load Balancing
- Resilience4J (Circuit Breaker)
- Distributed Logging
- REST API integration between microservices

### Module 8: Messaging

- JMS Concepts
- RabbitMQ Messaging
- Apache Kafka Messaging

### Module 9: GraphQL with Spring Boot

- Queries, Mutations, and Subscriptions

### Module 10: Cloud & DevOps for Java Developers (Optional)

- Dockerizing Spring Boot Applications
- Kubernetes Deployment
- Deploying on AWS, Azure, and GCP
- Serverless with AWS Lambda
- Cloud Databases

### Module 11: Performance & Monitoring

- Spring Boot Actuator
- JVM Monitoring
- Memory Profiling and Performance Tuning

### Module 12: Assignments & Exercises

- Hands-on coding exercises for each module
- Debugging and error-fixing tasks
- Mini-projects for real-world scenarios

- Topic-wise quizzes
  - REST API practice using Postman
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### **Module 13: Project Work**

- Full-stack Spring Boot application development
  - Integration with databases (MySQL/PostgreSQL)
  - Implementing REST APIs with security
  - Microservices project with Eureka, Feign, and API Gateway
  - Thymeleaf front-end for MVC projects
  - Cloud deployment of the project
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### **Module 14: Interview Preparation**

- Common Spring & Java interview questions
  - Hands-on coding challenges
  - REST API, Microservices, and Thymeleaf scenario-based questions
  - Tips for Java developer interviews
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### **Module 15: IDEs & Development Tools**

- Setting up **Eclipse IDE** for Spring Boot
- Setting up **IntelliJ IDEA** for Spring Boot
- Setting up **NetBeans** for Spring Boot
- Using **VS Code** for Spring Boot projects
- Debugging tools, breakpoints, and code navigation
- Build automation and Maven/Gradle integration
- Version control with Git & GitHub

# Master Programming

TSS

 Learn. Code. Succeed.

## OFFLINE CLASSES (IN-PERSON)

- Interactive classroom sessions
- Personalized mentorship
- Real-time problem solving

## ONLINE CLASSES (LIVE SESSIONS)

- Attend from anywhere in the world
- Live doubt-clearing sessions
- Full access to assignments & notes
- International time zone flexibility

## WHY CHOOSE US?

- Industry-aligned curriculum
- Experienced and certified trainer
- Real-world projects and assessments

**DATA STRUCTURES**

**MACHINE LEARNING**

**INTERVIEW  
PREPARATION**

**TECHSQUARE SOLUTIONS**

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**aws**  


 **spring  
boot**



 **Java**  
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 **python**<sup>™</sup>

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 **mongoDB**

 **SQL**



**ANGULARJS**