

Diploma in Java (6 Months)

Duration: 6 Months (~240 Hours)

Mode: Live Online / Classroom

Designation after completion: Full Stack Java Developer / Java Backend Developer / Java Cloud Developer

Tools & Technologies: Java SE 11+, Spring Boot, Hibernate, MySQL/PostgreSQL, React.js/Angular, REST APIs, Kafka, Spring Cloud, JWT Security, Docker, Jenkins, GitHub, AWS/Azure Cloud Deployment

Certifications prepared: Oracle Certified Java Programmer, Spring Certified Professional, Full Stack Java Developer (vendor)

Detailed Syllabus (24 Weeks)

Week 1

- Java Basics: JDK, JVM, JRE, setup in Eclipse/IntelliJ
- Variables, Data Types, Operators
- Assignment

Week 2

- Control Structures (if-else, switch-case, loops)
- Methods & Arrays
- Assignment

Week 3

- Classes & Objects
- Constructors, this keyword
- Encapsulation
- Assignment

Week 4

- Inheritance & Polymorphism
- Abstract classes & Interfaces
- Packages & Access Modifiers
- Assignment
- Mock Interview 1

Week 5

- Exception Handling (try-catch-finally, throw/throws, custom exceptions)
- Assignment

Week 6

- Collections Framework (ArrayList, HashMap, HashSet, LinkedList)
- Iterators & Comparator
- Assignment

Week 7

- Multithreading basics
- Synchronization, Executor framework
- Assignment

Week 8

- File Handling & I/O Streams
- Java 8+ Features (Lambdas, Streams, Date/Time API)
- Assignment
- Mock Interview 2

Week 9

- Spring Core, Dependency Injection
- Spring Boot setup with Maven/Gradle
- Assignment

Week 10

- REST APIs with Spring Boot
- JSON Serialization & Postman testing
- Assignment

Week 11

- JPA & Hibernate ORM basics
- Entity classes, repositories
- Assignment

Week 12

- Advanced Hibernate: relationships (One-to-One, One-to-Many, Many-to-Many)
- JPQL & Criteria API
- Assignment
- Mock Interview 3

Week 13

- Exception Handling in Spring Boot
- Validations (@Valid, @NotNull)
- Assignment

Week 14

- Spring Security basics
- In-memory authentication & role-based access control
- Assignment

Week 15

- JWT Authentication with Spring Boot
- Securing REST APIs
- Assignment

Week 16

- Microservices with Spring Boot
- Eureka, API Gateway, Config Server
- Assignment
- Mock Interview 4

Week 17

- Frontend Basics (HTML, CSS, JS ES6)
- DOM Manipulation & Responsive Design
- Assignment

Week 18

- Angular/React basics
- Components, Routing, State management
- Assignment

Week 19

- Integrating Frontend with Spring Boot REST APIs
- Axios/HttpClient calls
- Assignment

Week 20

- Authentication: JWT login flow (Backend + Frontend)
- Session management
- Assignment
- Mock Interview 5

Week 21

- State Management (Redux Toolkit for React / NgRx for Angular)
- Global state & error handling

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- Assignment

Week 22

- DevOps for Full Stack
- Git branching, Docker basics for Java apps
- Jenkins CI/CD overview
- Assignment

Week 23

- Testing Full Stack Apps
- Backend: JUnit & Mockito
- Frontend: Jest (React) / Jasmine-Karma (Angular)
- Assignment

Week 24

- Deployment: Full stack app on AWS Elastic Beanstalk & S3 hosting
- Final Mock Interview 6
- Capstone project guidance

Capstone Projects

- E-commerce Full Stack Application (Spring Boot + React/Angular + MySQL)
- Banking System with Microservices (Spring Cloud + Kafka)
- Social Media Mini App (JWT Auth, CRUD, APIs, AWS Deployment)