

Training Curriculum

Venue: Department of Computer Science and Engineering

Easterr

Training Track: JAVA (Spring Boot)

Total Hour of Training: 80 hours

Day	Topic		Time
Day 1	Java Basics	Introduction to Java and its ecosystem	9:00 am - 10:20 am
		Setting up Java Development Environment (JDK, IntelliJ/Eclipse)	
		Java Syntax, Variables, Data Types, and Operators	
		Control Flow (if-else, switch-case, loops)	
		Break	10:20 am - 10:40 am
		Real-life project:Build a console-based "Hello World" and calculator app	10:40 am - 12:00 pm
Day 2	Functions and Arrays in Java	Functions: definition, parameters, return types	9:00 am - 10:20 am
		Built-in functions vs. user-defined functions	
		Arrays: types, manipulation, and functions	
		Break	10:20 am - 10:40 am
		Real-life project: Build a simple function-based Student Grade Tracker	10:40 am - 12:00 pm
Day 3	OOP Concepts	Class, Object	9:00 am - 10:20 am
		Inheritance, Polymorphism, Encapsulation, Abstraction	10:20 am - 10:40 am
		Break	
		Real-life project:Design a library management system (OOP principles)	10:40 am - 12:00 pm
Day 4	Exception Management & Collections	Exception types, try-catch-finally	9:00 am - 10:20 am
		List, Map, Set	10:20 am - 10:40 am
		Break	
		Real-life project: Manage student records, calculate grades, and handle exceptions using collections	10:40 am - 12:00 pm
Day 5	Database Integration	Introduction to Relational DB & MySQL or SQL SERVER	9:00 am - 10:20 am
		Setting up a database and tables	
		Basic CRUD operations (Create, Read, Update, Delete)	
		Break	10:20 am - 10:40 am
		Real-life project: Employee Management System	10:40 am - 12:00 pm
Day 6	Advanced SQL & Entity Relationships	Joins, Relationships, Normalization	9:00 am - 10:20 am
		Repository Layer Best Practices	10:20 am - 10:40 am
		Break	
		Real-life project: Blog DB design with posts, authors, categories	10:40 am - 12:00 pm
Day 7	Introduction to Spring Boot	Introduction to Spring Boot & Spring Initializr	9:00 am - 10:20 am
		Project structure and configurations, annotations, domain class	10:20 am - 10:40 am
		Break	
		Real-life project: Set up and run a simple Spring Boot app	10:40 am - 12:00 pm
Day 8	REST APIs	Create controllers, services, DTOs, CRUD operations	9:00 am - 10:20 am
		Path Variables, Request Parameters, and Middleware (Filters)	10:20 am - 10:40 am
		Break	
		Real-life project:REST API for managing employee data	10:40 am - 12:00 pm
Day 9	Spring Boot & Database	Connect to MySQL using Spring Data JPA	9:00 am - 10:20 am
		Entity creation, Repository usage	10:20 am - 10:40 am
		Break	
		Real-life project: Product catalog with CRUD in MySQL	10:40 am - 12:00 pm
Day 10	MVC Architecture	Understanding Spring MVC, model-view-controller flow	9:00 am - 10:20 am
		Break	10:20 am - 10:40 am
		Real-life project: Create a basic web app	10:40 am - 12:00 pm
Day 11	Validation &	Spring Boot validations using annotations	9:00 am - 10:20 am
		Break	10:20 am - 10:40 am

Day 11	Error Handling	Real-life project: Form with validation and error messages	10:40 am - 12:00 pm
Day 12	Spring Security Basics	Introduction to Spring Security, configuration	9:00 am - 10:20 am
		Break	10:20 am - 10:40 am
		Real-life project: Secure endpoints with login and access control	10:40 am - 12:00 pm
Day 13	Mid Assessment		9:00 am - 12:00 am
Day 14	JWT Authentication	Implement JWT-based security	9:00 am - 10:20 am
		Login with JWT token	
		Break	10:20 am - 10:40 am
		Real-life project: Build a token-secured REST API	10:40 am - 12:00 pm
Day 15	Authorization and Security	Understanding authorization and roles	9:00 am - 10:20 am
		Implementing policies and gates	
		Securing routes and protecting data	
		Break	10:20 am - 10:40 am
		Real-life project: Build an admin panel with role-based access control.	10:40 am - 12:00 pm
Day 16	Testing in Spring Boot	Unit and integration testing	9:00 am - 10:20 am
		Break	10:20 am - 10:40 am
		Real-life project: Write test cases for existing project	10:40 am - 12:00 pm
Day 17	File Upload & Download	Multipart files, file storage	9:00 am - 10:20 am
		Break	10:20 am - 10:40 am
		Real-life project: Create a file upload/download feature	10:40 am - 12:00 pm
Day 18	Email Sending in Spring Boot	Sending emails using JavaMailSender	9:00 am - 10:20 am
		Break	10:20 am - 10:40 am
		Real-life project: Build a contact form with email sending	10:40 am - 12:00 pm
Day 19	Git & CI/CD Basics	Git basics, GitHub, CI with GitHub Actions or Jenkins	9:00 am - 10:20 am
		Break	10:20 am - 10:40 am
		Real-life project: Push code to GitHub	10:40 am - 12:00 pm
Day 20	Spring Boot with Docker	Dockerize Spring Boot application	9:00 am - 10:20 am
		Break	10:20 am - 10:40 am
		Real-life project: Build and run a Spring Boot Docker image	10:40 am - 12:00 pm
Day 21	Redis Integration with Spring Boot	Introduction to Redis, key-value store, benefits of caching, use cases	9:00 am - 10:20 am
		Installing Redis (Local/Docker), Connecting using Redis CLI, Overview of data types	
		Break	10:20 am - 10:40 am
		Real-life project: Add Redis caching to a sample service , test with Redis CLI	10:40 am - 12:00 pm
Day 22	Freelancing Platforms and Portfolio Building	Introduction to freelancing platforms (Upwork, Freelancer, Fiverr)	9:00 am - 10:20 am
		Tips for building a portfolio and landing clients	
		Break	10:20 am - 10:40 am
		Real-life project: Set up a portfolio website showcasing Spring boot projects	10:40 am - 12:00 pm
Day 23	Preparing for Java Job Market	Java job search strategies	9:00 am - 10:20 am
		Interview preparation for Java roles	
		Break	10:20 am - 10:40 am
		Real-life project: Prepare a resume and cover letter for Java developer roles	10:40 am - 12:00 pm
Day 24	Final Project Discussion	Review of key concepts	9:00 am - 10:20 am
		Guidance on the final project completion	
		Break	10:20 am - 10:40 am
		Real-life project: Start preparing your final capstone project based on previous projects.	10:40 am - 12:00 pm
	Project	Presentation of projects	9:00 am - 10:20 am
		Feedback and course conclusion	

Day 25	Presentation and Feedback	Break	10:20 am - 10:40 am
		Real-life project: Present your final project to the class for feedback and suggestions.	10:40 am - 12:00 pm
Day 26	Final Assessment		9:00 am - 11:00 pm
Day 27	Final Project Submission		9:00 am - 12:00 pm

Total Course Duration:

Hours	Date
3	
3	
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3	

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3	

80 Hours